
Failure of retract actuator, Boeing 767-232, December 6, 1999

Micro-summary: This Boeing 767-232 experienced a failure of the main landing gear retract actuator on takeoff.


Event Date: 1999-12-06 at 1655 MST


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


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

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		NTSB ID: DEN00IA023		Aircraft Registration Number: N111DN	
		Occurrence Date: 12/06/1999		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place SALT LAKE CITY		State UT	Zip Code 84122	Local Time 1655	Time Zone MST
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Boeing		Model/Series 767-232		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
<p>On December 6, 1999, at 1655 mountain standard time, a Boeing 767-232, N111DN, operated by Delta Air Lines, Inc., as flight 990, scheduled domestic passenger service from Salt Lake City, Utah, to Dallas-Fort Worth, Texas, sustained minor damage when the main landing gear retraction arm failed during initial climb immediately following takeoff from Salt Lake City International Airport, Salt Lake City, Utah. There were no injuries to the airline transport certificated captain and first officer, a first officer riding in the jump seat, 6 flight attendants, and 76 passengers. Visual meteorological conditions prevailed, and an IFR flight plan had been filed for the regularly scheduled domestic passenger flight being conducted under Title 14 CFR Part 121. The flight was originating at the time of the incident.</p> <p>The following is based on written statements submitted by the captain, check captain, and a deadheading first officer. The captain had just received his Boeing 767 type rating, and this was his first initial operating experience (IOE) flight. The crew heard a loud noise and felt a vibration when the landing gear was retracted after takeoff. An emergency was declared, and the flight returned to Salt Lake City. When the landing gear was lowered, the nose and right main landing gear DOWN AND LOCKED lights illuminated, but a GEAR UNSAFE light illuminated for the left main landing gear. Following a low pass over the airport, maintenance personnel advised the landing gear appeared to be down and locked. An uneventful landing was made at 1705, and the airplane was stopped on the runway. Maintenance personnel informed the crew that the landing gear actuator had sheared and could not be pinned for towing. Passengers were deplaned via mobile stairs and bused to the terminal.</p> <p>It was discovered the main landing gear retract actuator (p/n 273T1104-3) had failed. The part was shipped to the Boeing Airplane Company's metallurgical laboratory where, under FAA direction, it was examined. According to the Boeing report, stress corrosion cracking had occurred through 75% of the piston, followed by ductile separation. The corrosion had formed when a faulty fillet seal around the base of the rod end allowed moisture to enter the joint. The retract actuator was an original part, but it was determined that it had previously been reworked.</p>					
FACTUAL REPORT - AVIATION					
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 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: DEN001A023			
		Occurrence Date: 12/06/1999			
		Occurrence Type: Incident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used 0	Runway Length	Runway Width
Runway Surface Type:					
Runway Surface Condition:					
Type Instrument Approach:					
VFR Approach/Landing:					
Aircraft Information					
Aircraft Manufacturer Boeing		Model/Series 767-232		Serial Number 22223	
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 217	Certified Max Gross Wt.	300000 LBS	Number of Engines: 2	
Engine Type: Turbo Fan	Engine Manufacturer: GE	Model/Series: CF6-80A2	Rated Power: 48000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection Continuous Airworthiness	Date of Last Inspection 12/1999	Time Since Last Inspection Hours	Airframe Total Time 51977 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? No	ELT Operated?	ELT Aided in Locating Accident Site?			
Owner/Operator Information					
Registered Aircraft Owner DELTA AIR LINES, INC.		Street Address 1020 DELTA BLVD., DEPT. 023			
		City ATLANTA	State GA	Zip Code 30320	
Operator of Aircraft Same as Reg'd Aircraft Owner		Street Address 1775 AVIATION BLVD.			
		City ATLANTA	State GA	Zip Code 30320	
Operator Does Business As:			Operator Designator Code: DALA		
- 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: DEN001A023
	Occurrence Date: 12/06/1999
	Occurrence Type: Incident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 53
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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

Airplane Rating(s): Multi-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: 08/1999
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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	15000	1								
Pilot In Command(PIC)										
Instructor										
Last 90 Days	120	1								
Last 30 Days										
Last 24 Hours										

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

Departure Point Same as Accident/Incident Location	State	Airport Identifier SLC	Departure Time 1655	Time Zone MST
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Destination DALLAS-FT WORTH	State TX	Airport Identifier DFW	
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Type of Clearance: IFR

Type of Airspace: Class B

Weather Information

Source of Briefing:
Company

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
SLC	1700	MST	4227 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: Unknown			0 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken		7000 Ft. AGL		Visibility: 8 SM	Altimeter: 30.00 "Hg
Temperature: 2 °C	Dew Point: -3 °C	Wind Direction: 290		Density Altitude: 3551 Ft.	
Wind Speed: 4	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM	Intensity of Precipitation: Unknown			
Restrictions to Visibility: None					
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				1	1
Flight Engineer					
Cabin Attendants				6	6
Other Crew					
Passengers				76	76
- TOTAL ABOARD -				85	85
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	85	85

National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: DEN001A023

Occurrence Date: 12/06/1999

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

ARNOLD W. SCOTT

Additional Persons Participating in This Accident/Incident Investigation:

THOMAS R CARMAN

FAA FSDO

SALT LAKE CITY, UT 84116