

Brief of Accident

Adopted 08/18/2010

DCA09FA065
File No. 0 07/13/2009 Charleston ,WV Aircraft Reg No. N387SW Time (Local): 17:45 EDT

Make/Model:	Boeing/737		Fatal		Serious		Minor/None
Engine Make/Model:			Crew	0	0		5
Aircraft Damage:	Substantial		Pass	0	0		126
Number of Engines:	2						
Operating Certificate(s):	Flag Carrier/Domestic						
Name of Carrier:	SOUTHWEST AIRLINES CO						
Type of Flight Operation:	Scheduled; Domestic; Passenger Only						
Reg. Flight Conducted Under:	Part 121: Air Carrier						

Last Depart. Point:	Nashville, TN	Condition of Light:	
Destination:	Baltimore, MD	Weather Info Src:	Unknown
Airport Proximity:	Off Airport/Airstrip	Basic Weather:	
		Lowest Ceiling:	
		Visibility:	
		Wind Dir/Speed:	
		Temperature (°C):	Unk/Nr
		Precip/Obscuration:	

Pilot-in-Command Age: 53

Certificate(s)/Rating(s)
Airline Transport; Commercial; Private; Multi-engine Land; Single-engine Land

Instrument Ratings
Airplane

Flight Time (Hours)

Total All Aircraft: 22500
Last 90 Days: 225
Total Make/Model: 19300
Total Instrument Time: 300

*** Note: NTSB investigators either traveled in support of this investigation or conducted a significant amount of investigative work without any travel, and used data obtained from various sources to prepare this aircraft accident report. ***

Flight data recorder data revealed that the airplane took off and climbed for about 25 minutes to an altitude of approximately 35,000 feet, at which point the cabin altitude warning activated, and the captain disengaged the autopilot. Postincident examination of the airplane revealed fatigue cracking of the fuselage skin near the leading edge of the vertical stabilizer adjacent to the rupture. The fatigue cracking penetrated the fuselage skin and created an approximate 18-inch by 12-inch flap in the skin that depressurized the airplane.

The fuselage skin assembly near the leading edge of the vertical stabilizer was manufactured by bonding two full aluminum sheets together, then selectively chemically milling away pockets (bays) of the inner sheet. Continuous fatigue cracks initiated from multiple origins on the inner surface of the skin adjacent to the step formed at the edge of the chemically milled area and propagated outward.

Following the Southwest Airlines (SWA) flight 2294 event, on September 3, 2009, Boeing issued Service Bulletin (SB) 737-53A1301, calling for repetitive external inspections to detect cracks in the fuselage skin along the chemically milled step at stringers S-1 and S-2 right and between BS 827 and BS 847.

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(The hole from the SWA event was within those boundaries.) If cracks are detected, operators are to contact Boeing for repair instructions. On January 12, 2010, the Federal Aviation Administration issued Airworthiness Directive 2010-01-09, which mandated the inspection requirements in SB 737-53A1301.

Updated at Aug 18 2010 1:52PM

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OCCURRENCES

Enroute-cruise - Emergency descent initiated

Enroute-cruise - Aircraft structural failure

FINDINGS

Aircraft-Aircraft structures-Fuselage-Plates/skins (aux fuselage)-Fatigue/wear/corrosion - C

Aircraft-Aircraft structures-Fuselage-Plates/skins (aux fuselage)-Failure - C

Findings Legend: (C) = Cause, (F) = Factor

The National Transportation Safety Board determines the probable cause(s) of this accident as follows:
Fuselage skin failure due to preexisting fatigue at a chemically milled step.