



National Transportation Safety Board Aviation Accident Final Report

Location:	Yuma, AZ	Accident Number:	DCA11MA039
Date & Time:	04/01/2011, 1557 MST	Registration:	N632SW
Aircraft:	BOEING 737	Aircraft Damage:	Substantial
Defining Event:	Aircraft structural failure	Injuries:	1 Minor, 121 None
Flight Conducted Under:	Part 121: Air Carrier - Scheduled		

Analysis

The Safety Board's full report is available at http://www.nts.gov/investigations/reports_aviation.html. The Aircraft Accident Brief number is NTSB/AAB-13/02.

On April 1, 2011, about 1558 mountain standard time (MST), a Boeing 737-3H4, N632SW, operating as Southwest Airlines flight 812 experienced a rapid decompression while climbing through flight level 340. The flight crew conducted an emergency descent and diverted to Yuma International Airport (NYL), Yuma, Arizona. Of the 5 crewmembers and 117 passengers on board, one crewmember and one nonrevenue off-duty airline employee passenger sustained minor injuries. The airplane sustained substantial damage; postaccident inspection revealed that a section of fuselage skin about 60 inches long by 8 inches wide had fractured and flapped open on the upper left side above the wing. The flight was conducted under the provisions of 14 Code of Federal Regulations (CFR) Part 121 as a regularly scheduled domestic passenger flight from Phoenix Sky Harbor International Airport, Phoenix, Arizona, to Sacramento International Airport, Sacramento, California.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the improper installation of the fuselage crown skin panel at the S-4L lap joint during the manufacturing process, which resulted in multiple site damage fatigue cracking and eventual failure of the lower skin panel. Contributing to the injuries was flight attendant A's incorrect assessment of his time of useful consciousness, which led to his failure to follow procedures requiring immediate donning of an oxygen mask when cabin pressure is lost.

Findings

Aircraft	Fuselage main structure - Incorrect service/maintenance (Cause)
Personnel issues	Knowledge of procedures - Cabin crew (Factor)

Factual Information

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History of Flight

Enroute-climb to cruise	Aircraft structural failure (Defining event)
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Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BOEING	Registration:	N632SW
Model/Series:	737 300	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	27707
Landing Gear Type:	Retractable - Tricycle	Seats:	149
Date/Type of Last Inspection:		Certified Max Gross Wt.:	139500 lbs
Time Since Last Inspection:		Engines:	2 Turbo Fan
Airframe Total Time:		Engine Manufacturer:	CFM
ELT:	Not installed	Engine Model/Series:	56
Registered Owner:	SOUTHWEST AIRLINES CO	Rated Power:	
Operator:	SOUTHWEST AIRLINES CO	Air Carrier Operating Certificate:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	SWAA

Meteorological Information and Flight Plan

Observation Facility, Elevation:		Observation Time:	
Distance from Accident Site:		Condition of Light:	Day
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:		Temperature/Dew Point:	
Lowest Ceiling:		Visibility:	
Wind Speed/Gusts, Direction:		Visibility (RVR):	
Altimeter Setting:		Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	Phoenix, AZ (PHX)	Type of Flight Plan Filed:	IFR
Destination:	Sacramento, CA (SMF)	Type of Clearance:	IFR
Departure Time:		Type of Airspace:	

Airport Information

Airport:	Yuma International Airport (NYL)	Runway Surface Type:	N/A
Airport Elevation:	1018 ft	Runway Surface Condition:	Dry
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Straight-in

Wreckage and Impact Information

Crew Injuries:	1 Minor, 4 None	Aircraft Damage:	Substantial
Passenger Injuries:	117 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor, 121 None		

Administrative Information

Investigator In Charge (IIC):	William R English	Adopted Date:	02/26/2014
Additional Participating Persons:			
Publish Date:	02/26/2014		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=78737		

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