
Failure of wheel and tire assembly, Boeing 727-224, September 10, 2000

Micro-summary: This Boeing 727-224 experienced a failure of the #3 wheel and tire assembly, which subsequently damaged the airframe.


Event Date: 2000-09-10 at 0938 CDT


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


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

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		NTSB ID: CHI00LA296		Aircraft Registration Number: N296SC	
		Occurrence Date: 09/10/2000		Most Critical Injury: None	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place MINNEAPOLIS		State MN	Zip Code 55450	Local Time 0938	Time Zone CDT
Airport Proximity: On Airport		Distance From Landing Facility: 0		Direction From Airport: 0	
Aircraft Information Summary					
Aircraft Manufacturer Boeing		Model/Series 727-224		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 September 10, 2000, at 0938 central daylight time, a Boeing 727-224, N296SC, operated by Sun Country Airlines as flight 791, sustained substantial damage when the number 3 wheel and tire assembly failed during taxi at the Minneapolis International Airport, Minneapolis, Minnesota. Pieces of the wheel assembly subsequently impacted the airframe causing the damage. The 14 CFR Part 121 flight was operating in visual meteorological conditions at the time of the accident. No injuries were reported to the 7 crew members or 94 passengers on board. The flight was taxiing to the runway for a departure to the San Francisco International Airport, San Francisco, California.</p> <p>The wheel components were sent to the NTSB Materials Laboratory in Washington, D.C. for further examination. The examination report indicates that most of the fracture surfaces exhibited signatures consistent with overstress fracture. However, a portion of the fracture surface exhibited signatures consistent with fatigue. The fatigue origin was found to emanate from a point at the inside diameter of one of the brake lugs. A circumferential scratch was found adjacent to the fatigue origin.</p> <p>The wheel half had been inspected by an approved repair station and shipped to the airline on July 21, 2000. The wheel had accumulated 356.2 hours time in service at the time of the accident. A review of repair station records revealed that the repair station had been rejecting about 4 wheel halves per month. Prior to the accident, the repair station was finding cracks on other wheel halves in the area where the wheel failure occurred. The repair station had been in contact with the wheel manufacturer concerning this matter and had sent representative wheel halves to the manufacturer for evaluation. In a conversation with a representative of the Federal Aviation Administration, the wheel manufacturer stated that one of the returned wheel halves had been examined and that a manufacturing defect had created a stress concentrator, which resulted in a fatigue failure of the wheel half.</p> <p>On May 04, 2001, the wheel manufacturer issued a Service Bulletin, number 2604561-32-001, to rework the lugs and to provide guidance in inspecting the affected areas of the wheel assembly.</p>					
FACTUAL REPORT - AVIATION					

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: CHI00LA296				
		Occurrence Date: 09/10/2000				
		Occurrence Type: Accident				
Landing Facility/Approach Information						
Airport Name		Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
MINNEAPOLIS ST. PAUL INTL		MSP	Ft. MSL	0		
Runway Surface Type:						
Runway Surface Condition:						
Type Instrument Approach: NONE						
VFR Approach/Landing: None						
Aircraft Information						
Aircraft Manufacturer		Model/Series		Serial Number		
Boeing		727-224		22449		
Airworthiness Certificate(s): Transport						
Landing Gear Type: Retractable - Tricycle						
Homebuilt Aircraft? No		Number of Seats: 179	Certified Max Gross Wt. 190500 LBS		Number of Engines: 3	
Engine Type:		Engine Manufacturer:		Model/Series:	Rated Power:	
Turbo Fan		P&W		JT8D-15	12000 LBS	
- Aircraft Inspection Information						
Type of Last Inspection		Date of Last Inspection	Time Since Last Inspection		Airframe Total Time	
Continuous Airworthiness			Hours		Hours	
- Emergency Locator Transmitter (ELT) Information						
ELT Installed? Yes		ELT Operated? No		ELT Aided in Locating Accident Site?		
Owner/Operator Information						
Registered Aircraft Owner		Street Address				
		4 EMBACADERO CTR. STE 3550				
PEGASUS AVIATION, INC.		City		State	Zip Code	
		SAN FRANCISCO		CA	94111	
Operator of Aircraft		Street Address				
		2520 PILOT KNOB RD. SUITE 250				
SUN COUNTRY AIRLINES		City		State	Zip Code	
		MENDOTA HEIGHTS		MN	55120	
Operator Does Business As:				Operator Designator Code:		
- 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: CHI00LA296
	Occurrence Date: 09/10/2000
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth	Age 53
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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; Single-engine Sea

Rotorcraft/Glider/LTA: Glider; Helicopter

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--w/ waivers/lim.	Date of Last Medical Exam: 05/2000
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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	14265	8975	1142	13123	1888	2147	64	83	20	
Pilot In Command(PIC)	12009	7000	1142	10500						
Instructor	522		522							
Last 90 Days	191	191		191						
Last 30 Days	73	73		17						
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 MSP	Departure Time 0925	Time Zone CDT
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Destination SAN FRANCISCO	State CA	Airport Identifier SFO	
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Type of Clearance: None

Type of Airspace:

Weather Information

Source of Briefing:

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
MSP	0953	CDT	841 Ft. MSL	0 NM	0 Deg. Mag.

Sky/Lowest Cloud Condition: Scattered 20000 Ft. AGL Condition of Light: Day

Lowest Ceiling: None 0 Ft. AGL Visibility: 10 SM Altimeter: 29.00 "Hg

Temperature: 66 °C Dew Point: 45 °C Wind Direction: Variable Density Altitude: Ft.

Wind Speed: 5 Gusts: Weather Conditions at Accident Site: Visual Conditions

Visibility (RVR): 0 Ft. Visibility (RVV) 0 SM Intensity of Precipitation: Unknown

Restrictions to Visibility: None

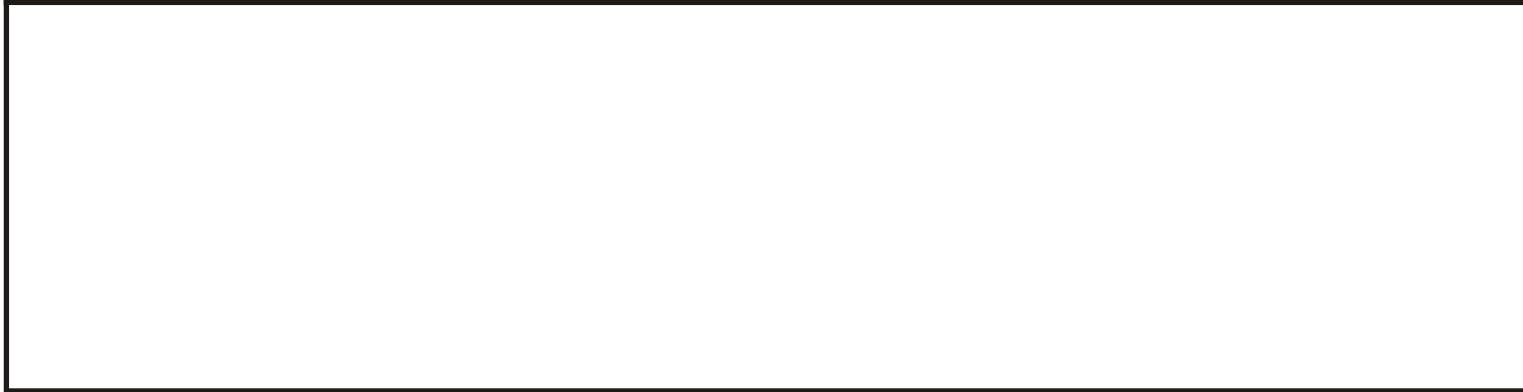
Type of Precipitation: None

Accident Information

Aircraft Damage: Substantial 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				1	1
Cabin Attendants				4	4
Other Crew					
Passengers				94	94
- TOTAL ABOARD -				101	101
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	101	101



National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: CHI00LA296

Occurrence Date: 09/10/2000

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

JOHN M. BRANNEN

Additional Persons Participating in This Accident/Incident Investigation:

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