



National Transportation Safety Board Aviation Accident Final Report

Location:	Zephyrhills, FL	Accident Number:	ERA14LA159
Date & Time:	03/16/2014, 1037 EDT	Registration:	N125DS
Aircraft:	CESSNA 500	Aircraft Damage:	Substantial
Defining Event:	Runway excursion	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The two flight crewmembers reported that, after landing on runway 36, the pilot, who was the pilot flying, applied the brakes normally; however, the airplane did not decelerate as expected. The pilot applied the brakes a second time, and the right main landing gear tire subsequently failed. The airplane departed the end of runway 36 and came to rest in an area of unfinished gravel, which resulted in structural damage to the airframe.

Examination of the 4,954-foot-long runway revealed that the airplane touched down about 1,400 feet from the approach end. Skid marks were visible for about 2,982 feet, and the tire failure occurred about 3,153 feet into the landing. Examinations revealed that the right main landing gear tire had a flat spot with a 4-inch diameter hole consistent with a locked brake. The airplane was equipped with an optional antiskid wheel braking system; however, it was disabled in 2004.

The pilots reported that they decided to land on runway 36 based on the wind at flight level 180 and that they did not check the surface wind at the airport. The surface wind at the airport at the time of the accident was from 158 degrees at 15 knots gusting to 25 knots. Thus, the airplane landed with a significant quartering tailwind, which resulted in it touching down at a location and speed at which the pilots were unable to stop the airplane on the runway using normal braking.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilots' inadequate in-flight planning and improper selection of runway 36 for landing, which resulted in a significant quartering tailwind during the landing, exceedance of the airplane's braking capability, and a subsequent runway overrun.

Findings

Aircraft	Tire casing - Capability exceeded Surface speed/braking - Capability exceeded (Cause)
Personnel issues	Decision making/judgment - Flight crew (Cause)
Environmental issues	Tailwind - Effect on operation (Cause)

Factual Information

On March 16, 2014, about 1037 eastern daylight time, a Cessna 500, N125DS, was substantially damaged following a runway excursion at Zephyrhills Municipal Airport (ZPH), Zephyrhills, Florida. The airline transport pilot-rated pilot and co-pilot were not injured. The airplane was operated by JJ Aeronautics, Inc. under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Day, visual meteorological conditions prevailed for the flight, and an instrument flight rules flight plan was filed. The flight originated at Opa Locka, Florida (OPF), about 0952.

The pilots reported the following. The pilot was the flying pilot and the co-pilot was the pilot monitoring. After the landing and touchdown on runway 36, the brakes were applied normally; however, the airplane did not decelerate as expected. The brakes were applied a second time and the right main landing gear tire failed. The airplane departed the end of runway 36 and came to a stop in an area of unfinished gravel.

An inspector with the Federal Aviation Administration responded to the accident site and inspected the wreckage. He reported the following. The nose gear was separated from the airplane. The right main gear tire had a flat spot and a four-inch diameter hole in the tread area. The tread was otherwise normal in appearance. There was a creased area in the pressure vessel. The airplane was equipped with an anti-skid braking system; however, it was optional equipment and was disabled in 2004. The airplane was not equipped with a cockpit voice recorder.

An examination of the landing runway revealed visible skid marks that began about 1,400 feet from the approach end of runway 36, and continued for about 2,982 feet. Evidence of the tire failure was observed about 3,153 feet into the landing. Runway 36 was 4,954 feet in length.

According to airport personnel, the recorded surface wind near the time of the accident was from 158 degrees at 15 knots, with gusts to 23 knots. The pilots reported that they made their landing runway determination for runway 36 based on the wind at flight level 180 and not the actual surface wind at the airport.

History of Flight

Landing-landing roll

Runway excursion (Defining event)

Pilot Information

Certificate:	Airline Transport	Age:	40
Airplane Rating(s):	Multi-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without Waivers/Limitations	Last Medical Exam:	06/30/2013
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	11/22/2013
Flight Time:	3921 hours (Total, all aircraft), 530 hours (Total, this make and model), 2362 hours (Pilot In Command, all aircraft), 257 hours (Last 90 days, all aircraft), 131 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Co-Pilot Information

Certificate:	Airline Transport	Age:	32
Airplane Rating(s):	Multi-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without Waivers/Limitations	Last Medical Exam:	11/17/2013
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	5289 hours (Total, all aircraft), 1380 hours (Total, this make and model), 3286 hours (Pilot In Command, all aircraft), 120 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N125DS
Model/Series:	500	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	500-0258
Landing Gear Type:	Retractable - Tricycle	Seats:	7
Date/Type of Last Inspection:	08/13/2013, Continuous Airworthiness	Certified Max Gross Wt.:	12500 lbs
Time Since Last Inspection:		Engines:	2 Turbo Fan
Airframe Total Time:	8736 Hours	Engine Manufacturer:	P&W
ELT:	C126 installed, not activated	Engine Model/Series:	JT15D-4B
Registered Owner:	JJ AERONAUTICS INC	Rated Power:	2500 lbs
Operator:	JJ AERONAUTICS INC	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	ZPH, 90 ft msl	Observation Time:	1035 EDT
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	23°C / 16°C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	14 knots/ 22 knots, 170°	Visibility (RVR):	
Altimeter Setting:	29.94 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Opa Locka, FL (OPF)	Type of Flight Plan Filed:	IFR
Destination:	Zephyrhills, FL (ZPH)	Type of Clearance:	IFR
Departure Time:	0952 EDT	Type of Airspace:	

Airport Information

Airport:	ZEPHYRHILLS MUNI (ZPH)	Runway Surface Type:	Asphalt
Airport Elevation:	90 ft	Runway Surface Condition:	Dry
Runway Used:	36	IFR Approach:	None
Runway Length/Width:	4954 ft / 100 ft	VFR Approach/Landing:	Full Stop

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	28.235000, 82.153056 (est)

Administrative Information

Investigator In Charge (IIC):	Ralph E Hicks	Adopted Date:	11/03/2014
Additional Participating Persons:			
Publish Date:	11/03/2014		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=88942		

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