



National Transportation Safety Board Aviation Accident Final Report

Location:	Pawtucket, RI	Accident Number:	ERA17LA014
Date & Time:	10/13/2016, 1000 EDT	Registration:	N518AR
Aircraft:	CESSNA 525	Aircraft Damage:	Substantial
Defining Event:	Runway excursion	Injuries:	6 None
Flight Conducted Under:	Part 91: General Aviation - Business		

Analysis

After an uneventful instrument flight rules flight, the flight crew of the turboprop-powered airplane conducted an instrument approach to the 5,000-ft-long runway. The commercial pilot, who was the pilot flying, reported that the airplane's airspeed during the approach was "a little too fast" at 130 to 135 knots. A witness watched as the airplane flew beyond the runway touchdown zone and touched down on the runway with about 2,000 ft remaining. The flying pilot stated that he then "slammed on the brakes," and the airplane's antiskid system engaged. The airplane subsequently departed the end of the runway, struck several localizer antennae, and came to rest in trees and bushes beyond the departure end of the runway.

Although the flying pilot reported that the brakes felt "a little spongy" during the landing, the nonflying pilot stated that, during the landing, both pilots were applying the brakes and that it appeared that the brakes and the antiskid system were working. Postaccident examination of the brakes and brake lines showed no evidence of any preimpact anomalies, and intermittent tire skid marks near the end of the runway appeared consistent with braking and operation of the airplane's antiskid system. Postaccident calculations showed that the airplane's approach speed should have been about 114 knots; the airplane's actual approach speed was more than 130 knots. Additionally, the airplane's calculated landing distance was 2,650 ft; however, there was only about 2,000 ft of runway available when the airplane touched down. Given this information, it is likely that the flight crew approached the runway at an excessive speed and touched down with insufficient runway remaining to stop the airplane and prevent a runway overrun.

Probable Cause and Findings

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

The flight crew's failure to maintain an appropriate approach speed and obtain an appropriate touchdown point on the runway, which resulted in a runway overrun.

Findings

Aircraft	Descent/approach/glide path - Not attained/maintained (Cause) Airspeed - Not attained/maintained (Cause)
Personnel issues	Aircraft control - Pilot (Cause)
Environmental issues	Tower/antenna (incl guy wires) - Contributed to outcome

Factual Information

On October 13, 2016, about 1000 eastern daylight time, a Cessna 525B, N518AR, was substantially damaged during a runway excursion at North Central State Airport (SFZ), Pawtucket, Rhode Island. The commercial and airline transport pilots, and four passengers were not injured. The airplane departed Allegheny County Airport (AGC), Pittsburgh, Pennsylvania, about 0900. The airplane was registered to A R Wings LLC and operated as a Title 14 *Code of Federal Regulations* Part 91 business flight. Instrument meteorological conditions prevailed and an instrument flight rules (IFR) flight plan was filed for the personal flight.

According to a written statement provided by the commercial pilot (pilot flying), they departed from AGC around 0900. The reported weather conditions at SFZ included a 200-foot ceiling, ½ to 1-mile visibility. They elected to conduct an instrument approach to runway 5. Upon breaking out of the clouds at an altitude of 850 feet, the flight crew "...saw runway could not stop. Brakes and tires not gripping the runway. Hit a fence and went into the ground."

During a postaccident interview the pilot stated that the weather at SFZ was below approach minimums, but the crew elected to fly the instrument approach to and see if they could break out of the clouds. The airplane subsequently broke out of the clouds at an altitude of 800 to 850 ft mean sea level (msl). The pilot further stated that during the approach the airplane's airspeed was, "a little too fast" at 130 to 135 knots. After touching down he "slammed on the brakes" and the anti-skid system engaged. The pilot felt like the brakes were not working as they were supposed to and said that they felt, "a little spongy."

The non-flying pilot stated that during the landing, both pilots were applying the brakes. He stated it appeared that the brakes and the anti-skid system were working.

A witness, who was also a pilot, was at SFZ on the morning of the accident. Between 0900 and 1030, he was standing in the main hangar at the airport waiting for the fog to lift in order to depart in his single-engine airplane for an IFR flight. He estimated that the airport weather observation-reported ceiling of 200 feet agl was accurate by watching another airplane depart. He watched as the accident airplane broke out of the clouds on approach to runway 5. He thought that the airplane appeared "high" as it crossed the runway threshold and estimated that the airplane was "well above the surface" as it passed the touchdown zone of the runway. As the airplane passed directly in front of his location, located about 2,100 feet down the runway, the airplane's wheels were about 20 to 30 feet above the surface. He then began shouting, "Go around! Go around!," knowing that only half of the runway remained. The airplane touched down on the runway near the B4 taxiway, or with about 2,000 feet of runway remaining. He did not hear the sound of thrust reversers, screeching brakes, nor an impact. As he started to look for the airplane he saw an airport vehicle as it proceeded to the accident site.

Runway 5 at SFZ was 5,000 feet-long by 100 feet-wide, and the airport was located at an elevation of 441 msl.

Based on data from the Aircraft Flight Manual the airplane's calculated landing distance would have been 2,650 ft. The calculated approach speed, V_{app}, would have been 114 knots indicated airspeed (KIAS). The V_{ref} speed, or threshold crossing speed, would have been 105 knots KIAS. These calculations were based on zero wind conditions and the use of the ground flaps after touchdown.

Postaccident examination of the airplane by an FAA inspector revealed that it had struck several localizer antennae located beyond the departure end of runway 5, the came to rest in trees and bushes located about 20 feet down an embankment. The airplane's wings and fuselage sustained substantial damage to the right aileron and wing tip, left wing leading edge, and nose landing gear. cursory examination of the brakes and hydraulic brake lines revealed no evidence of any preimpact anomalies. Additionally, the inspector observed intermittent tire skid marks near the departure end of the runway.

The pilot held a commercial certificate with single-pilot type ratings for the Cessna CE-525 airplane. His most recent third-class medical certificate was issued on January 2, 2015. The pilot reported 8,000 hours of flight experience, of which 400 hours were in the accident make and model.

The airline transport pilot in the right seat held single-pilot type ratings for the Cessna CE-525 airplane. He was the non-flying pilot for the accident flight and described that generally his role was to be primarily responsible for flight planning and would fly alternate flying legs with the pilot. He reported 6,000 hours of flight experience, and 700 hours in the accident airplane make and model. His most recent third-class medical certificate was issued on June 19, 2016.

At 1023, the weather reported at SFZ included wind calm; visibility 3 statute miles in mist, an overcast ceiling at 200 feet; temperature, 15° C; dew point, 14° C; and a barometric altimeter setting of 30.09 inHg.

History of Flight

Landing-landing roll	Runway excursion (Defining event) Collision with terr/obj (non-CFIT)
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Pilot Information

Certificate:	Commercial; Private	Age:	79, Male
Airplane Rating(s):	Multi-engine Land; Single-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 3 With Waivers/Limitations	Last FAA Medical Exam:	01/02/2015
Occupational Pilot:	No	Last Flight Review or Equivalent:	11/09/2015
Flight Time:	8000 hours (Total, all aircraft), 400 hours (Total, this make and model), 8000 hours (Pilot In Command, all aircraft)		

Co-Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial; Military; Private	Age:	44, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Without Waivers/Limitations	Last FAA Medical Exam:	07/19/2016
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	07/01/2016
Flight Time:	6000 hours (Total, all aircraft), 700 hours (Total, this make and model), 2500 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N518AR
Model/Series:	525 B	Aircraft Category:	Airplane
Year of Manufacture:	2014	Amateur Built:	No
Airworthiness Certificate:	Commuter	Serial Number:	525B0412
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	10/07/2016, Continuous Airworthiness	Certified Max Gross Wt.:	13750 lbs
Time Since Last Inspection:		Engines:	2 Turbo Fan
Airframe Total Time:	748 Hours as of last inspection	Engine Manufacturer:	WILLIAMS
ELT:	Installed, not activated	Engine Model/Series:	FJ44-3A
Registered Owner:	A R WINGS LLC	Rated Power:	3000 lbs
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KSFZ, 441 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1423 UTC	Direction from Accident Site:	206°
Lowest Cloud Condition:		Visibility	3 Miles
Lowest Ceiling:	Overcast / 200 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:		Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.09 inches Hg	Temperature/Dew Point:	15° C / 14° C
Precipitation and Obscuration:	Moderate - Mist		
Departure Point:	Pittsburg, PA (AGC)	Type of Flight Plan Filed:	IFR
Destination:	Pawtucket, RI (SFZ)	Type of Clearance:	IFR
Departure Time:	0900 EDT	Type of Airspace:	

Airport Information

Airport:	NORTH CENTRAL STATE (SFZ)	Runway Surface Type:	Asphalt
Airport Elevation:	440 ft	Runway Surface Condition:	Dry
Runway Used:	05	IFR Approach:	RNAV
Runway Length/Width:	5000 ft / 100 ft	VFR Approach/Landing:	Full Stop

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	4 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	6 None	Latitude, Longitude:	41.929167, -71.485278

Administrative Information

Investigator In Charge (IIC):	Millicent M Hill	Report Date:	04/13/2020
Additional Participating Persons:	Aiden Seltsam-Wilps; FAA/FSDO; Boston, MA		
Publish Date:	04/13/2020		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=94201		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).