



Aviation Investigation Final Report

Location:	Spearfish, South Dakota	Accident Number:	GAA18CA429
Date & Time:	July 19, 2018, 08:30 Local	Registration:	N432W
Aircraft:	Cessna 170	Aircraft Damage:	Substantial
Defining Event:	Collision during takeoff/land	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that, during takeoff on a grass runway, after liftoff, he noticed the airplane was not able to climb at a normal rate. He lowered the airplane's nose, but the airspeed remained "dangerously low," and the stall horn sounded intermittently. He reduced power to abort the takeoff, but there was insufficient runway remaining. The airplane touched down and overran the runway, the left wing impacted a tree, and the airplane spun 180° before coming to rest.

The airplane sustained substantial damage to the left wing.

The automated weather observation station located on the airport reported that, about 5 minutes after the accident, the wind was from 140° at 5 knots. The airplane was departing from runway 26.

Probable Cause and Findings

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

The pilot's improper decision to take off in tailwind conditions, which resulted in an aborted takeoff with insufficient runway remaining.

Findings

Personnel issues	Decision making/judgment - Pilot
Personnel issues	Aircraft control - Pilot
Environmental issues	Tailwind - Decision related to condition
Environmental issues	Tailwind - Effect on operation
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

History of Flight

Takeoff-rejected takeoff	Miscellaneous/other
Takeoff-rejected takeoff	Aerodynamic stall/spin
Takeoff-rejected takeoff	Runway excursion
Takeoff-rejected takeoff	Collision during takeoff/land (Defining event)

Pilot Information

Certificate:	Private	Age:	31,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	September 2, 2015
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N432W
Model/Series:	170 B	Aircraft Category:	Airplane
Year of Manufacture:	1952	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	20325
Landing Gear Type:	Tailwheel	Seats:	4
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	2200 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Continental
ELT:		Engine Model/Series:	C145 SERIES
Registered Owner:		Rated Power:	145 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KSPF,3931 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	13:35 Local	Direction from Accident Site:	6°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.02 inches Hg	Temperature/Dew Point:	18°C / 15°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Spearfish, SD (SPF)	Type of Flight Plan Filed:	Unknown
Destination:	Newcastle, WY (ECS)	Type of Clearance:	Unknown
Departure Time:	08:30 Local	Type of Airspace:	Class G

Airport Information

Airport:	BLACK HILLS-CLYDE ICE FIELD SPF	Runway Surface Type:	Grass/turf
Airport Elevation:	3933 ft msl	Runway Surface Condition:	Dry
Runway Used:	26	IFR Approach:	None
Runway Length/Width:	4003 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	44.480834,-103.783332(est)

Administrative Information

Investigator In Charge (IIC):	Benhoff, Kathryn
Additional Participating Persons:	Todd Obrick; FAA; Rapid City, SD
Original Publish Date:	March 18, 2019
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=97824

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.

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