



Aviation Investigation Final Report

Location:	Cottonwood Falls, Kansas	Accident Number:	CEN09CA158
Date & Time:	February 7, 2009, 15:30 Local	Registration:	N2333D
Aircraft:	Cessna 170	Aircraft Damage:	Substantial
Defining Event:	Runway excursion	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot attempted a takeoff from a 2,300-foot-long dry turf runway with a five-knot crosswind from the right side. A witness stated that the airplane never seemed to gain momentum, its tail did not raise during the take off, and its brakes locked at the last minute before hitting the fence at the end of the runway. The airplane then flipped over on its back causing damage to the right wing, vertical fin, and rudder. The pilot suffered minor injuries and the second pilot was not injured. A postaccident weight and balance calculation showed that the 575-pound combined weight of the two front seat occupants placed the airplane outside the allowable forward center of gravity limit. A postaccident performance planning calculation showed that on a grass/turf runway the takeoff distance would be approximately 2,299 feet with zero flaps, no wind, and with weight and balance within limits.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The decision of the pilot to attempt operations outside the forward center of gravity limit. Contributing to the accident was the pilot's selection of an inadequate runway for the conditions.

Findings

Personnel issues	Decision making/judgment - Pilot
Aircraft	CG/weight distribution - Capability exceeded
Environmental issues	(general) - Decision related to condition

Factual Information

History of Flight

Takeoff	Runway excursion (Defining event)
Takeoff-rejected takeoff	Nose over/nose down

Pilot Information

Certificate:	Commercial	Age:	26, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	September 13, 2007
Occupational Pilot:	No	Last Flight Review or Equivalent:	May 17, 2008
Flight Time:	493 hours (Total, all aircraft), 3 hours (Total, this make and model), 384 hours (Pilot In Command, all aircraft), 3 hours (Last 90 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Other flight crew Information

Certificate:	Commercial	Age:	26
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	June 2, 2007
Occupational Pilot:	No	Last Flight Review or Equivalent:	January 6, 2009
Flight Time:	690 hours (Total, all aircraft), 1 hours (Total, this make and model), 553 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N2333D
Model/Series:	170 B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	20485
Landing Gear Type:	Tailwheel	Seats:	4
Date/Type of Last Inspection:	September 30, 2008 Annual	Certified Max Gross Wt.:	2200 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2800 Hrs as of last inspection	Engine Manufacturer:	CONTINENTAL
ELT:		Engine Model/Series:	C145
Registered Owner:	On file	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:	KEMP,1208 ft msl	Distance from Accident Site:	17 Nautical Miles
Observation Time:	13:53 Local	Direction from Accident Site:	89°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	250°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.04 inches Hg	Temperature/Dew Point:	19°C / 0°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cottonwood Falls, KS (9K0)	Type of Flight Plan Filed:	None
Destination:	El Dorado, KS (EQA)	Type of Clearance:	None
Departure Time:	15:30 Local	Type of Airspace:	

Airport Information

Airport:	Chase County Airport 9K0	Runway Surface Type:	Grass/turf
Airport Elevation:	1273 ft msl	Runway Surface Condition:	Dry
Runway Used:	17	IFR Approach:	None
Runway Length/Width:	2300 ft / 155 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor, 1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor, 1 None	Latitude, Longitude:	38.355278,-96.55278(est)

Administrative Information

Investigator In Charge (IIC):	Latson, Thomas
Additional Participating Persons:	Christopher Grotewohl; FAA Wichita FSDO; Wichita, KS Seth D Butner; Cessna; Wichita, KS
Original Publish Date:	June 11, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=73332

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