



National Transportation Safety Board Aviation Accident Final Report

Location:	Stoughton, WI	Accident Number:	CEN11LA536
Date & Time:	08/01/2011, 0920 CDT	Registration:	N74260
Aircraft:	BELLANCA 14-13	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	2 Serious
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot reported that he performed an engine run-up prior to takeoff and everything was normal. He had the flaps extended 2 notches when he initiated the takeoff to the north on the 2,500-foot-long wet grass runway. The airplane became airborne about half way down the runway. The pilot stated that upon reaching 65 to 70 mph, he reduced the flaps to 1 notch to maintain the best rate of climb. He stated that the airplane cleared the initial group of trees, then it began to descend. The airplane subsequently contacted the trees and sustained substantial damage to the fuselage and both wings. A witness said the airplane was “mushy” during the takeoff and the nose remained high prior to the right wing dropping and the airplane descending. The airplane was about 190 pounds under gross weight and the density altitude was approximately 2,600 feet. The operation of the airplane near maximum gross weight at a high density altitude on a wet grass runway degraded the airplane’s takeoff performance. A postaccident examination of the airplane and engine did not reveal any anomalies that would have precluded any normal operation. The pilot reported that he did not get the landing gear retracted prior to impact.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot’s improper preflight planning and his failure to gain proper airspeed during takeoff from a grass airstrip resulting in a stall, the loss of control, and subsequent impact with the trees. Contributing to the accident was the pilot operating the airplane at near maximum gross weight and the high density altitude.

Findings

Aircraft	Loading - Not specified (Factor) Main landing gear - Incorrect use/operation (Factor)
Personnel issues	Aircraft control - Pilot (Cause)
Environmental issues	High density altitude - Effect on operation (Factor)

Factual Information

On August 1, 2011, at 0920 central daylight time, a Bellanca 14-13, N74260, contacted trees and the terrain during takeoff from the Matson Airport (2WI6), Stoughton, Wisconsin. The private pilot and the passenger both received serious injuries. The airplane sustained substantial damage to the fuselage and both wings. The airplane was owned and operated by the pilot under the provisions 14 Code of Federal Regulations Part 91. The personal flight was operating in visual meteorological conditions without a flight plan. The planned destination for the flight was the Worthington Municipal Airport (OTG), Worthington, Minnesota.

The pilot reported that he performed an engine run-up prior to takeoff and everything was normal. He had the flaps extended 2 notches when he initiated the takeoff to the north on the 2,500 foot long grass runway. The airplane became airborne about half way down the runway. The pilot stated that upon reaching 65 to 70 miles per hour, he reduced the flaps to 1 notch to maintain best climb. He stated the airplane cleared the initial group of trees, then the airplane began to descend. The airplane subsequently contacted the trees and came to rest in a clearing. The pilot reported that he did not get the landing gear retracted prior to impact.

A relative of the pilot's who watched the takeoff reported that the airplane was about 25 to 30 feet above his head when it passed near him at the north (departure) end of the runway. He stated the airplane looked "mushy" as it crossed the highway, and the nose remained high until the right wing dropped and the airplane contacted the trees. This witness reported that he did not hear any unusual engine noises.

A second witness who heard the airplane for 1 1/2 to 2 seconds reported hearing the engine sounded like it was "stumbling" prior to it backfiring immediately before the sound of the impact.

According to a FAA inspector, the runway was dew covered at the time of the takeoff. The north half of the runway sloped downward, and the highway and the terrain on which the trees were located were higher than the elevation at the departure (north) end of the runway. The inspector reported that pieces of the right wing were located near the treeline and there was a slash in the terrain at the initial ground impact. There was a piece of broken propeller blade located near the slash mark.

The winds at the time of the accident were variable at 4 knots.

A postaccident inspection of the airplane and engine revealed the left fuel tank was ruptured during the accident and the fuel level in the right tank was about 4 inches below the filler cap. Both magnetos produced spark when turned by hand. Fuel was present in the fuel pump. The fuel pump check valves functioned normally and the pump diaphragm was intact. The carburetor was partially separated from the engine due to impact and it did not contain any fuel. The carburetor accelerator pump functioned normally. The only anomaly noted with the fuel system was that the inner sleeve at one of the end fittings on the fuel line that ran from the fuel pump to the carburetor was crimped, which decreased the inside diameter of the fuel line at the end fitting. A postaccident examination of the airplane and engine did not reveal any anomalies that would have resulted in a loss of engine power.

The field elevation at the 2WI6 is 915 feet. Density altitude at the time of the accident was approximately 2,600 feet. The pilot reported that the gross weight at the time of the accident was about 1,910 pounds and the maximum gross weight was 2,100 pounds.

History of Flight

Initial climb	Loss of control in flight (Defining event) Collision with terr/obj (non-CFIT)
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Pilot Information

Certificate:	Private	Age:	51, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 With Waivers/Limitations	Last Medical Exam:	11/03/2010
Occupational Pilot:	No	Last Flight Review or Equivalent:	04/26/2011
Flight Time:	375 hours (Total, all aircraft), 169 hours (Total, this make and model), 292 hours (Pilot In Command, all aircraft), 55 hours (Last 90 days, all aircraft), 24 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BELLANCA	Registration:	N74260
Model/Series:	14-13	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	1373
Landing Gear Type:	Tailwheel	Seats:	4
Date/Type of Last Inspection:	05/04/2011, Annual	Certified Max Gross Wt.:	2100 lbs
Time Since Last Inspection:	10 Hours	Engines:	1 Reciprocating
Airframe Total Time:	1660 Hours	Engine Manufacturer:	FRANKLIN
ELT:	Installed, not activated	Engine Model/Series:	6A4-165 B3
Registered Owner:	CROSS RICHARD G	Rated Power:	165 hp
Operator:	CROSS RICHARD G	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	MSN, 887 ft msl	Observation Time:	0953 CDT
Distance from Accident Site:	17 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	330°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Few / 3500 ft agl	Temperature/Dew Point:	28° C / 23° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	4 knots, Variable	Visibility (RVR):	
Altimeter Setting:	30.06 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Stoughton, WI (2WI6)	Type of Flight Plan Filed:	None
Destination:	Worthington, MN (OTG)	Type of Clearance:	None
Departure Time:	0920 CDT	Type of Airspace:	Class G

Airport Information

Airport:	Matson Airport	Runway Surface Type:	Grass/turf
Airport Elevation:	915 ft	Runway Surface Condition:	Dry
Runway Used:	36	IFR Approach:	None
Runway Length/Width:	2500 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious		

Administrative Information

Investigator In Charge (IIC):	Pamela S Sullivan	Adopted Date:	12/01/2011
Additional Participating Persons:	Michael Piecznski; FAA-MKE-FSDO; Milwaukee, WI		
Publish Date:	12/01/2011		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81335		

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