National Transportation Safety Board
Aviation Accident Data Summary

Location:	Eden Prairie, MN	**Accident Number:**	CEN10LA188
Date & Time:	04/01/2010, 1440 CDT	**Registration:**	N20FP
Aircraft:	BEECH 95	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot stated that he had no recollection of the events leading up to the accident. The passenger reported that the airplanes' engines seemed to come up to full power during takeoff. The airplane lifted off about halfway down the runway; however, it didn't climb very well. The stall warning sounded just as the airplane was off the end of the runway, and the pilot's efforts to continue flight were unsuccessful. The right wing dropped, and the airplane descended and impacted the ground. A witness reported that the airplane's nose was pitched up 10 to 15 degrees and the wings appeared to be level, as it was flying in ground effect about 10 feet agl. He noted that the engines seemed to be running without any obvious problems. A postaccident examination revealed a lack of compression on the right engine No. 4 cylinder. Further investigation determined that the intake valve spring on the cylinder had fractured. Metallurgical examination noted that the fracture surfaces exhibited features indicative of fatigue progression initiated by corrosion pitting. Corrosion pits and red rust deposits were observed on many areas of the spring. The fatigue initiation also coincided with longitudinal tooling marks consistent with the original forming of the spring. Maintenance records indicated the right engine had been overhauled nearly 2 years prior to the accident. The cylinders were replaced with new non-original equipment manufacturer (OEM) assemblies at that time. The replacement cylinder assemblies were furnished with the valves and valve springs installed. According to the pilot, the right engine had accumulated 18 hours since overhaul.

Flight Events

Initial climb - Powerplant sys/comp malf/fail
Initial climb - Loss of engine power (partial)
Initial climb - Aerodynamic stall/spin
Initial climb - Loss of control in flight
Uncontrolled descent - Collision with terr/obj (non-CFIT)

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
The fatigue failure of an intake valve spring on the right engine, which resulted in a partial loss of engine power on takeoff.

Findings

Aircraft-Aircraft power plant-Engine (reciprocating)-Recip eng cyl section-Failure - C
Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Altitude-Attain/maintain not possible
Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot

Pilot Information

Certificate:	Airline Transport	**Age:**	56
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	**Instrument Rating(s):**	Airplane
Other Aircraft Rating(s):	None	**Instructor Rating(s):**	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane
Flight Time:	11320 hours (Total, all aircraft), 55 hours (Total, this make and model), 11220 hours (Pilot In Command, all aircraft), 60 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BEECH	**Registration:**	N20FP
Model/Series:	95	**Engines:**	2 Reciprocating
Operator:	Fischer Air LLC	**Engine Manufacturer:**	LYCOMING
Air Carrier Operating Certificate:	None	**Engine Model/Series:**	O&VO-360 SER
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	FCM, 906 ft msl	**Weather Information Source:**	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	**Lowest Ceiling:**	None
Condition of Light:	Day	**Wind Speed/Gusts, Direction:**	11 knots, 150°
Temperature:	26°C / 11°C	**Visibility**	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Minneapolis, MN (FCM)	**Destination:**	New Richmond, MN (RNH)

Airport Information

Airport:	Flying Cloud Airport (FCM)	**Runway Surface Type:**	Asphalt
Runway Used:	18	**Runway Surface Condition:**	Dry
Runway Length/Width:	2691 ft / 75 ft		

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

Administrative Information

Investigator In Charge (IIC):	Timothy Sorensen	**Adopted Date:**	06/20/2011
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=75643		