Aviation Investigation Final Report

Location:	Greenfield, Indiana	**Accident Number:**	CEN12LA332
Date & Time:	May 26, 2012, 07:03 Local	**Registration:**	N9815D
Aircraft:	Piper PA-22-150	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	2 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that he conducted an engine run-up, which included a carburetor heat check, without any anomalies. The pilot stated that the taxi distance from the run-up location to the takeoff position was about 200 feet, and the start of the takeoff was not delayed for any reason. The ground roll was slightly longer than normal, which did not initially concern the pilot. However, after the airplane lifted off, it did not accelerate as usual. The pilot was able to clear an intervening set of power lines, but was unable to gain enough airspeed to sustain a climb. The pilot stated that he was concerned about inducing an aerodynamic stall by attempting to climb over the approaching tree line, and he elected to maintain controlled flight into the trees. A postaccident examination of the engine and fuel system did not reveal any anomalies that would have precluded normal engine operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A partial loss of engine power for undetermined reasons during takeoff.

Findings

Not determined	(general) - Unknown/Not determined
Aircraft	Climb rate - Attain/maintain not possible

Factual Information

History of Flight

Takeoff	Loss of engine power (partial) (Defining event)
Takeoff	Collision with terr/obj (non-CFIT)

On May 26, 2012, about 0703 eastern daylight time, a Piper PA-22-150, N9815D, was substantially damaged during a forced landing after takeoff from Pope Field Airport (GFD), Greenfield, Indiana. The pilot and front seat passenger sustained minor injuries. The rear seat passenger was not injured. The airplane sustained substantial damage to the wings and fuselage. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as personal flight. Visual meteorological conditions prevailed for the flight, which was not operated on a flight plan. The flight was originating at the time of the accident.

The pilot reported that he taxied from the hangar at the south end of the airport to runway 18 (2,165 feet by 150 feet, grass/turf) at the north end of the field. He then conducted an engine run-up, which included a carburetor heat check, without any anomalies. Partial wing flaps were extended for takeoff. The pilot stated that the taxi distance from the run-up location to the takeoff position was about 200 feet, and the start of the takeoff was not delayed for any reason. The ground roll was slightly longer than normal, which did not initially concern the pilot. However, after the airplane lifted off, it did not accelerate as usual. The pilot was able to clear an intervening set of power lines, but was unable to gain enough airspeed to sustain a climb. The pilot stated he was concerned about inducing an aerodynamic stall by attempting to climb over the approaching tree line and he elected to maintain controlled flight into the trees.

A postaccident examination of the engine and fuel system did not reveal any anomalies consistent with a partial loss of engine power.

Weather conditions recorded at the Shelbyville Municipal Airport (GEZ), located about 13 miles south of the accident site, at 0653, were: Calm wind; clear sky; visibility 4 miles in mist; temperature 19 degrees Celsius; dew point 18 degrees Celsius, and altimeter 30.12 inches of mercury. Federal Aviation Administration guidance noted a possibility of serious carburetor icing at glide power and moderate carburetor icing at cruise power under those conditions. The accident airport elevation was 895 feet. Based on the local weather data, the corresponding density altitude was about 1,346 feet. The pilot reported calm wind at the accident airport.

The owner's handbook noted that the required takeoff ground roll was 1,220 feet with wing flaps extended. The takeoff distance over a 50-foot obstacle was 1,600 feet with flaps extended. No takeoff distance information was provided with no flaps or with partial flaps. The

airplane was configured with three flap positions; up, one-half down, and full down. The handbook stated, "The full flap position is used for maximum effect in landing and take-offs, while the half flap position is used when intermediate results are desired."

The maximum gross weight was 2,000 pounds. Loading information provided by the pilot indicated that the airplane was operating below the maximum takeoff weight at the time of the accident.

Pilot Information

Certificate:	Private	**Age:**	76,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	February 22, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	March 19, 2011
Flight Time:	849 hours (Total, all aircraft), 150 hours (Total, this make and model), 10 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N9815D
Model/Series:	PA-22-150	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	22-6702
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	March 25, 2012 Annual	**Certified Max Gross Wt.:**	2000 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	1510 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	Installed	**Engine Model/Series:**	O-320-A2
Registered Owner:	Mark A. Grant	**Rated Power:**	180 Horsepower
Operator:	Melvin E. Grant	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	GEZ,803 ft msl	**Distance from Accident Site:**	13 Nautical Miles
Observation Time:	06:53 Local	**Direction from Accident Site:**	194°
Lowest Cloud Condition:	Clear	**Visibility**	4 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	19°C / 18°C
Precipitation and Obscuration:	N/A - None - Mist		
Departure Point:	Greenfield, IN (GFD)	**Type of Flight Plan Filed:**	None
Destination:	Greenfield, IN (GFD)	**Type of Clearance:**	None
Departure Time:	07:00 Local	**Type of Airspace:**	

Airport Information

Airport:	Pope Field GFD	**Runway Surface Type:**	Grass/turf
Airport Elevation:	895 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	2165 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor, 1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Minor, 1 None	**Latitude, Longitude:**	39.790279,-85.736114(est)

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	David Shaul; FAA – Indianapolis Flight Standards; Plainfield, IN
Original Publish Date:	August 15, 2012
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=83802