Aviation Investigation Final Report

Location:	Englewood, Florida	**Accident Number:**	ERA18LA162
Date & Time:	June 7, 2018, 11:50 Local	**Registration:**	N907CB
Aircraft:	BRYAN C L/LABRASH R D SEAREY	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The student pilot of the experimental, amateur-built airplane reported that he performed an engine run-up at 3,500 rpm along the entire length of the runway and then turned around for takeoff in the opposite direction. After rotation, the engine lost partial power. The airplane descended and struck a tree at the end of the runway before coming to rest in grass near the runway end. The fuselage and left wing sustained substantial damage.

Postaccident examination of the engine revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation. The atmospheric conditions at the time of the accident were conducive to the accumulation of serious carburetor icing at glide power and icing at glide and cruise power. The engine was not equipped with a carburetor heat system. Therefore, it is likely that the carburetor accumulated ice during ground operations, which resulted in the partial loss of engine power during the subsequent climb.

Probable Cause and Findings

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

The partial loss of engine power due to carburetor icing.

Findings

Environmental issues	Conducive to carburetor icing - Effect on operation
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

History of Flight

Initial climb	Other weather encounter
Initial climb	Loss of engine power (partial) (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)
After landing	Runway excursion

On June 7, 2018, about 1150 eastern daylight time, an experimental, amateur-built Searey, N907CB, was substantially damaged following a partial loss of engine power near Englewood, Florida. The student pilot was not injured. The airplane was operated by the pilot under the provisions of Title14 Code of Federal Regulations part 91 as a solo instructional flight. Visual meteorological conditions prevailed, and no flight plan was filed for the flight that originated at Buchan Airport (X36), Englewood, Florida and was destined for Airport Manatee (48X), Palmetto, Florida.

The pilot reported that he flew the airplane earlier that morning for about 75 minutes with no anomalies noted. He landed at X36 and took a break for about 30 minutes. He fueled the airplane earlier that day and there were 13.6 gallons on board for takeoff from X36. He performed an engine runup at 3,500 rpm along the entire length of runway 30, then turned around for a takeoff on runway 12. After rotation, the pilot noted a partial loss of engine power. The airplane sank and struck a tree at the end of runway 12 before coming to rest in a lawn near the runway end.

An inspector with the Federal Aviation Administration (FAA) responded to the accident site and examined the wreckage. He reported that the fuselage and left wing sustained structural damage. Examination of the fuel system revealed that the fuel tank was "almost full." The see-through fuel filter was about ¾ full and the fuel inside was clean. The clear plastic fuel lines contained fuel and the fuel was clean.

The FAA inspector's examination of the engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. The engine choke was examined and it operated normally. The engine was not equipped with a carburetor heat system. Internal continuity was established and there were no holes or leaks on the engine case.

The closest weather reporting facility was the about 6 miles north-northwest of the accident site. At 1155, the weather conditions reported at Venice, Florida Municipal Airport (VNC) included temperature 30° C and dew point 22° C.

An FAA carburetor icing probability chart indicated the temperature and dew point conditions were conducive to the formation of serious icing at glide power, and icing at glide and cruise power.

According to the FAA Pilot's Handbook of Aeronautical Knowledge, carburetor ice occurs due to the effect of fuel vaporization and the decrease in air pressure in the carburetor's venturi, which can cause a sharp temperature decrease in the carburetor. If water vapor in the air condenses when the carburetor

temperature is at or below freezing, ice may form on the internal surfaces of the carburetor, including the throttle valve. This then restricts the flow of the fuel/air mixture and reduces engine power. Generally, the first indication of carburetor icing in an airplane with a fixed-pitch propeller is a decrease in engine rpm, which may be followed by engine roughness. Under certain conditions, carburetor ice can build unnoticed until power is added.

Pilot Information

Certificate:	Student	**Age:**	38,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	October 16, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	274 hours (Total, all aircraft), 9 hours (Total, this make and model), 215 hours (Pilot In Command, all aircraft), 137 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BRYAN C L/LABRASH R D	**Registration:**	N907CB
Model/Series:	SEAREY NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:	1997	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	1MK105
Landing Gear Type:	Retractable - Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	February 8, 2018 Condition	**Certified Max Gross Wt.:**	1370 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	878 Hrs as of last inspection	**Engine Manufacturer:**	Rotax
ELT:	Installed	**Engine Model/Series:**	912
Registered Owner:		**Rated Power:**	80 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:	VNC,17 ft msl	**Distance from Accident Site:**	6 Nautical Miles
Observation Time:	15:55 Local	**Direction from Accident Site:**	327°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	260°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	30°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Englewood, FL (X36)	**Type of Flight Plan Filed:**	None
Destination:	Palmetto, FL (48X)	**Type of Clearance:**	None
Departure Time:	11:45 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Buchan Airport X36	**Runway Surface Type:**	Grass/turf
Airport Elevation:	15 ft msl	**Runway Surface Condition:**	Dry;Rough
Runway Used:	12	**IFR Approach:**	None
Runway Length/Width:	2040 ft / 120 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	26.987499,-82.368888(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	Scott Olson; FAA/FSDO; Tampa, FL
Original Publish Date:	April 30, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97429