Aviation Investigation Final Report

Location:	Lopez, Washington	**Accident Number:**	WPR11LA095
Date & Time:	January 9, 2011, 13:15 Local	**Registration:**	N5850D
Aircraft:	Piper PA-22-150	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor reported that, shortly after takeoff during the instructional flight, the airplane began to lose engine power. The instructor lowered the airplane's nose and began a turn toward open terrain. About 90 degrees into the turn, the engine lost total power. The pilots tried unsuccessfully to resolve the problem by applying carburetor heat, changing throttle positions, and switching fuel tanks. The instructor performed a forced landing in a nearby field, and the airplane collided with thick vegetation during the landing roll. Postaccident examination of the engine revealed no preaccident mechanical malfunctions or failures that would have precluded engine operation. The airplane was operating in conditions potentially conducive to carburetor icing at the time of the accident; however, this particular engine and its installation in this airframe is not known to be susceptible to carburetor icing.

Probable Cause and Findings

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

Findings

Not determined	(general) - Unknown/Not determined
Aircraft	(general) - Not specified

Factual Information

History of Flight

Initial climb	Loss of engine power (total) (Defining event)
Landing	Collision with terr/obj (non-CFIT)

On January 9, 2011, at 1315 Pacific standard time, a Piper PA-22-150, N5850D, sustained substantial damage following a loss of engine power and subsequent forced landing near the Lopez Island Airport (S31), Lopez, Washington. The certified flight instructor and student pilot receiving instruction were not injured. The airplane was registered to the student pilot, and operated as an instructional flight under the provisions of 14 Code of Federal Regulations (CFR) Part 91, when the accident occurred. Visual meteorological conditions (VMC) prevailed in the area during the time frame of the accident. No flight plan was filed for the local instructional flight.

In a written statement, the flight instructor reported that shortly after takeoff, approximately 500 feet above ground level, the airplane began to lose engine power. The instructor lowered the airplane's nose and began a turn towards open terrain. Approximately 90 degrees into the turn, the engine quit developing power. The pilots attempted to resolve the problem by applying carburetor heat, changing throttle positions, and switching fuel tanks; however, they were unsuccessful. The instructor maneuvered the airplane to a nearby field and initiated an emergency off airport forced landing. During the landing roll, the airplane collided with thick vegetation and came to rest adjacent to the field's perimeter fence.

The airplane sustained substantial damage to the fuselage and forward undercarriage.

Postaccident examination of the airframe and engine revealed no preaccident mechanical malfunctions or failures that would have precluded engine operations. A detailed engine examination report is contained in the public docket for this case file.

The airplane was operating in conditions potentially conducive to carburetor icing at the time of the accident. The carburetor icing probability chart included in Federal Aviation Administration Special Airworthiness Information Bulletin No. CE-09-35, Carburetor Icing Prevention, indicated that there was a risk of carburetor ice accumulation; however, it was not determined if carburetor ice contributed to the loss of engine power.

The reported weather was, in part, temperature 2 degrees Celsius, dew point minus 6 degrees Celsius and a relative humidity of 57 percent.

Flight instructor Information

Certificate:	Airline transport; Commercial	**Age:**	42,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Glider	**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:**	August 5, 2010
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	December 14, 2010
Flight Time:	8000 hours (Total, all aircraft), 25 hours (Total, this make and model), 6700 hours (Pilot In Command, all aircraft), 80 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Student	**Age:**	54,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):		**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	July 22, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	124 hours (Total, all aircraft), 114 hours (Total, this make and model), 90 hours (Pilot In Command, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N5850D
Model/Series:	PA-22-150	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	22-4529
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	December 6, 2010 Annual	**Certified Max Gross Wt.:**	2000 lbs
Time Since Last Inspection:	6 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3870 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-320 SERIES
Registered Owner:	LOPEZ TAILDRAGGERS LLC	**Rated Power:**	180 Horsepower
Operator:	Robert Wilson	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KFHR,108 ft msl	**Distance from Accident Site:**	5 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	99°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Overcast / 600 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots / 18 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	10°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.17 inches Hg	**Temperature/Dew Point:**	2°C / -6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lopez Island, WA (S31)	**Type of Flight Plan Filed:**	Company VFR
Destination:	Lopez, WA (S31)	**Type of Clearance:**	None
Departure Time:	13:14 Local	**Type of Airspace:**	

Airport Information

Airport:	Lopez Island Airport S31	**Runway Surface Type:**	
Airport Elevation:	209 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	48.48389,-122.9375(est)

Administrative Information

Investigator In Charge (IIC):	Hogenson, Dennis
Additional Participating Persons:	Clifton Peterson; FAA Seattle FSDO; Renton, WA
Original Publish Date:	August 7, 2012
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=78140