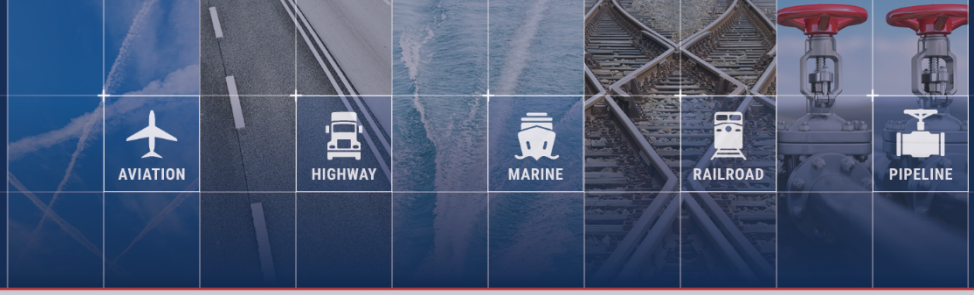

Aviation Investigation Final Report

Location:	North Bend, Oregon	**Accident Number:**	WPR10LA149
Date & Time:	February 28, 2010, 14:30 Local	**Registration:**	N105NL
Aircraft:	SCHAFER STARDUSTER SA-300	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After being airborne for about 10 minutes, the pilot applied full carburetor heat as he entered an area that he felt had high humidity. About five minutes later the airplane's engine, a 220 horsepower Continental W670 radial, began to lose power. Although the pilot managed to keep it at cruise power for a short period of time by pumping the throttle, the engine then slowly lost all power. The pilot was forced to execute an emergency landing in a rough log-covered clear-cut in the forest. Upon touchdown, the airplane cartwheeled and came to a stop within about 100 feet. A post-accident inspection of the airplane's fuel system, ignition system, and air induction system did not reveal any evidence of a malfunction or anomaly that would have kept the engine from producing cruise power. The airplane had about 28 gallons of fuel in its tank at takeoff, and the pilot said that he had flown the airplane many times in the high humidity conditions found near the ocean, and that with the full application of carburetor heat; the airplane's carburetor had never accumulated ice in its throat. The reported temperature and dewpoint (14 and 7 degrees C respectively), when plotted on a carburetor icing probability chart, fell in the area annotated "Moderate Icing Cruise Power or Serious Icing Descent Power".

Probable Cause and Findings

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

Findings

Environmental issues	Mountainous/hilly terrain - Contributed to outcome
Environmental issues	Rough terrain - Contributed to outcome
Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Landing-flare/touchdown	Collision with terr/obj (non-CFIT)

On February 28, 2010, about 1430 Pacific standard time, an experimental Schafer Starduster SA-300 experimental biplane, N105NL, impacted the terrain during a forced landing about 20 miles east of North Bend, Oregon. The commercial pilot, who was the sole occupant, received minor injuries, and the airplane, which was owned and operated by the pilot, sustained substantial damage. The 14 Code of Federal Regulations Part 91 personal pleasure flight, which departed Roseburg, Oregon, about 20 minutes prior to the accident, was being operated in visual meteorological conditions. The pilot was en route to North Bend. No flight plan had been filed.

According to the pilot, he applied full carburetor heat about 10 minutes after departing Roseburg because of the humid ambient conditions. Then about 5 minutes later, the airplane's engine, a 220 horsepower Continental W670 radial, started to lose power. Although he was able to get it to temporarily accelerate by pumping the throttle, the rpm eventually slowed to idle. He therefore selected a nearby location where the forest had been clear-cut, and attempted a forced landing at that location. By the time he descended to the landing spot the propeller was wind-milling, but the engine was not producing any power. Because the surrounding area was heavily forested, the pilot was forced to make the landing in a clear-cut area of very rough hilly terrain that was covered with numerous branches and small logs. Immediately after the airplane touched down, it cartwheeled and then slid/rolled for about 100 feet.

During a post-accident inspection directed/monitored by a Federal Aviation Administration Airworthiness Inspector, the airplane's fuel system, ignition system, and air induction system were checked and partially disassembled. No anomalies where discovered, and there was no evidence of any malfunction that would have kept the engine from producing normal cruise power.

According to the pilot, who added fuel just prior to departure, the airplane's fuselage fuel tank contained about 28 gallons of fuel at the time he took off. He also stated that he had flown the airplane many times in the high humidity conditions found near the ocean, and that with the full application of carburetor heat; the airplane's carburetor had never accumulated ice in its throat.

The reported temperature and dewpoint (14 and 7 degrees C respectively) when plotted on a

carburetor icing probability chart fell in the area annotated "Moderate Icing Cruise Power or Serious Icing Descent Power".

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	64,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	August 31, 2009
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	June 21, 2008
Flight Time:	913 hours (Total, all aircraft), 247 hours (Total, this make and model), 747 hours (Pilot In Command, all aircraft), 13 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	SCHAFER	**Registration:**	N105NL
Model/Series:	STARDUSTER SA-300	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	685
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	December 30, 2009 Condition	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	247 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	C126 installed, activated, did not aid in locating accident	**Engine Model/Series:**	W670-16
Registered Owner:	SCHAFER PAUL B	**Rated Power:**	220 Horsepower
Operator:	SCHAFER PAUL B	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 2000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/ None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	14°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Roseburg, OR (KRBG)	**Type of Flight Plan Filed:**	None
Destination:	North Bend, OR (KOTH)	**Type of Clearance:**	None
Departure Time:	14:10 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	43.365554,-123.828056(est)

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	Paul Lehman; FAA PDX FSDO; Hillsboro, OR
Original Publish Date:	June 17, 2010
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=75423