Aviation Investigation Final Report

Location:	Ashland, Virginia	**Accident Number:**	ERA10LA294
Date & Time:	June 1, 2010, 12:55 Local	**Registration:**	N858JK
Aircraft:	SWANSON RV-9A	**Aircraft Damage:**	Substantial
Defining Event:	Landing area overshoot	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot/builder was in the process of conducting the experimental airplane's 40-hour Phase 1 test flights. He departed his home airport and landed at an airport about 30 miles away without incident. Shortly after takeoff, the engine experienced a momentary sudden reduction in rpm. The pilot elected to return to his home airport and while en route the engine experienced additional sudden and intermittent power reductions. The pilot was able to restore power either by applying full throttle or the application of carburetor heat. With the airplane approximately 2.5 miles from his home airport, the engine rpm decreased again and the pilot applied carburetor heat without any affect. The engine ceased producing power completely and the pilot elected to attempt to lose altitude and perform a forced landing to the runway. The pilot overshot the runway and the airplane touched down in the grass past the runway surface and nosed over. A postaccident examination of the airplane and engine did not reveal any mechanical malfunctions that would have resulted in a loss of engine power. Removal of several of the engine's spark plugs revealed that they were dark in coloration, consistent with a rich mixture. A weather observation taken at the airport, about the time of the accident included, wind from 210 degrees at 10 knots, gusting to 19 knots, a temperature 30 degrees Celsius (C), and a dew point of 20 degrees C. Review of a carburetor icing envelope chart revealed that the reported temperature and dew point at the time of the accident was within the "serious icing" at glide power area of the chart.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to obtain the proper touchdown point during a forced landing in gusting wind. Contributing to the accident was a total loss of engine power, likely due to carburetor ice.

Findings

Aircraft	(general) - Failure
Environmental issues	Conducive to carburetor icing - Effect on equipment
Aircraft	Descent/approach/glide path - Not attained/maintained
Environmental issues	(general) - Effect on operation
Personnel issues	Incorrect action performance - Pilot

Factual Information

History of Flight

Approach	Loss of engine power (total)
Emergency descent	Off-field or emergency landing
Emergency descent	Landing area overshoot (Defining event)

On June 1, 2010, about 1255 eastern daylight time, an experimental, amateur-built Vans RV-9A, N858JK, was substantially damaged during a forced landing, after experiencing a loss of engine power while on approach to the Hanover County Municipal Airport (OFP), Ashland, Virginia. The certificated private pilot sustained minor injuries. Visual meteorological conditions prevailed and no flight plan had been filed for the personal flight conducted under the provisions of 14 Code of Federal Regulations Part 91.

The pilot/builder reported that he was in the process of conducting the airplane's 40-hour Phase 1 test flights. He departed OFP and landed at the Tappahannock-Essex County Airport (XSA), Tappahannock, Virginia, without incident. Shortly after takeoff from XSA, the airplane experienced a momentary sudden reduction in rpm, and the pilot elected to fly to OFP. While en route, the engine experienced additional sudden intermittent power reductions from 2,350 to 2,100 rpm. The pilot was able to restore power either by applying full throttle or the application of carburetor heat. The airplane was at an altitude of 1,300 feet, approximately 2.5 miles south of OFP, when the engine rpm decreased again. The pilot applied carburetor heat without any affect, and the engine subsequently ceased producing power completely. The pilot attempted to lose altitude and perform a forced landing on runway 34, a 5,402-foot-long, 100-foot-wide, asphalt runway; however, the airplane overshot the runway, touched down in the grass north of the runway and nosed over.

The airplane sustained substantial damage to the vertical stabilizer and fuselage.

The airplane was equipped with an ECI O-320 series engine, which had been operated for about 22 hours since new. Examination of the airplane and engine by a Federal Aviation Administration inspector (FAA), with assistance from representatives of the engine manufacturer did not reveal any mechanical malfunctions which would have resulted in a loss of engine power. It was noted that the spark plugs removed from the engine were dark, consistent with a rich mixture.

The pilot reported 261 hours of total flight experience, which included approximately 30 hours in the same make and model as the accident airplane.

A weather observation taken at OFP, about the time of the accident reported, wind from 210 degrees at 10 knots, gusting to 19 knots; visibility 10 statute miles; scattered clouds at 3,400

feet, temperature 30 degrees Celsius (C), dew point 20 degrees C; altimeter 29.93 inches of mercury.

Review of an FAA carburetor icing envelope chart revealed that the reported temperature and dew point at the time of the accident was within the "serious icing (glide power)" area of the chart.

Pilot Information

Certificate:	Private	**Age:**	56,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:**	May 11, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 13, 2009
Flight Time:	261 hours (Total, all aircraft), 30 hours (Total, this make and model), 159 hours (Pilot In Command, all aircraft), 35 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	SWANSON	**Registration:**	N858JK
Model/Series:	RV-9A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	91328
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	August 21, 2009 Condition	**Certified Max Gross Wt.:**	1750 lbs
Time Since Last Inspection:	22 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	22 Hrs at time of accident	**Engine Manufacturer:**	ECi
ELT:	Installed, not activated	**Engine Model/Series:**	O-320
Registered Owner:	On file	**Rated Power:**	150 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:	OFP,207 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	12:54 Local	**Direction from Accident Site:**	160°
Lowest Cloud Condition:	Scattered / 3400 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots / 19 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.93 inches Hg	**Temperature/Dew Point:**	30°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tappahannock, VA (XSA)	**Type of Flight Plan Filed:**	None
Destination:	Ashland, VA (OFP)	**Type of Clearance:**	None
Departure Time:	12:30 Local	**Type of Airspace:**	

Airport Information

Airport:	Hanover County OFP	**Runway Surface Type:**	Asphalt
Airport Elevation:	207 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	34	**IFR Approach:**	None
Runway Length/Width:	5402 ft / 1647 ft	**VFR Approach/Landing:**	Forced landing;Traffic pattern

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:**	37.708889,-77.436386(est)

Administrative Information

Investigator In Charge (IIC):	Schiada, Luke
Additional Participating Persons:	James E Rhoads; FAA/FSDO; Richmond, VA
Original Publish Date:	April 7, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=76195