Aviation Investigation Final Report

Location:	Sydnorsville, Virginia	**Accident Number:**	NYC01LA205
Date & Time:	August 8, 2001, 11:00 Local	**Registration:**	N56RP
Aircraft:	Rans S-7	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was conducting his first flight in the experimental homebuilt airplane. Shortly after takeoff from a private airstrip, the engine water pressure dropped to zero, and the engine began to overheat. The pilot turned back toward the private airstrip; however, the engine was losing power, and the airplane was not able to maintain altitude. The pilot attempted to perform a forced landing to field, however, the airplane struck a tree prior to coming to rest in a field. The pilot added that the engine appeared to stop just prior to the impact with the tree. Examination of the wreckage did not reveal any pre-impact mechanical failure. The airplane's cooling system was impact damaged and a significant amount of engine coolant was observed on the ground. It was noted that the composite propeller did not exhibit any damage consistent with rotation. The airplane was equipped with a Rotax 582 engine, which was not certified for airplane use.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power due to an engine over-temperature condition, which resulted in a forced landing and subsequent collision with trees.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CLIMB - TO CRUISE

Findings
1. (C) POWERPLANT - OVERTEMPERATURE

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Findings
2. OBJECT - TREE(S)

Factual Information

On August 8, 2001, about 1100 eastern daylight time, a homebuilt Rans S-7, N56RP, was substantially damaged during a forced landing shortly after takeoff from a private airstrip in Sydnorsville, Virginia. The certificated private pilot was seriously injured. Visual meteorological conditions prevailed and no flight plan had been filed for the personal flight conducted under 14 CFR Part 91.

The pilot was conducting his first flight in the airplane. In a written statement, the pilot said he took off from the private airstrip, circled the area three times, and then elected to fly to the New River Valley Airport, Dublin, Virginia. As the airplane began to climb, the engine water pressure dropped to zero, and the engine began to overheat. The pilot turned back toward the private airstrip; however, the engine was losing power, and the airplane was not able to maintain altitude. The pilot attempted to perform a forced landing to field; however, the airplane struck a tree prior to coming to rest in a field. The pilot added that the engine appeared to stop just prior to the impact with the tree.

The wreckage was examined by a Federal Aviation Administration inspector. The airplane was equipped with an uncertificated Rotax 582 engine. The complete engine assembly was bent 90 degrees up and to the left, and the forward cockpit area was severely damaged. The composite propeller did not exhibit any damage consistent with rotation; however, the engine rotated freely, and compression was attained on both cylinders. The airplane's cooling system was impact damaged and a significant amount of engine coolant was observed on the ground.

The Rotax 582 Engine Operator's Manual stated:

"Danger!: This engine, by its design, is subject to sudden stoppage! Engine stoppage can result in crash landings. Such crash landings can lead to serious bodily injury or death. Never fly the aircraft equipped with this engine at locations, airspeeds, altitudes, or other circumstances from which a successful no-power landing cannot be made, after sudden engine stoppage."

The manual further stated:

"Warning!: This is not a certificated aircraft engine. It has not received any safety or durability testing, and conforms to no aircraft standards. It is for use in experimental, uncertificated aircraft and vehicles only in which an engine failure will not compromise safety...."

Pilot Information

Certificate:	Private	**Age:**	51,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Front
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 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	July 14, 2000
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	August 1, 2001
Flight Time:	132 hours (Total, all aircraft), 0 hours (Total, this make and model), 59 hours (Pilot In Command, all aircraft), 5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Rans	**Registration:**	N56RP
Model/Series:	S-7	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	1189060
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	June 1, 2001 Annual	**Certified Max Gross Wt.:**	1100 lbs
Time Since Last Inspection:	0 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	642 Hrs at time of accident	**Engine Manufacturer:**	Rotax
ELT:	Not installed	**Engine Model/Series:**	582
Registered Owner:	Cecil A. Philpott	**Rated Power:**	65 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	ROA,1176 ft msl	**Distance from Accident Site:**	30 Nautical Miles
Observation Time:	10:54 Local	**Direction from Accident Site:**	170°
Lowest Cloud Condition:	Clear	**Visibility**	3 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	30°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sydnorsville, VA (NONE)	**Type of Flight Plan Filed:**	None
Destination:	DUBLIN, VA (PSK)	**Type of Clearance:**	None
Departure Time:	10:50 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Private NONE	**Runway Surface Type:**	Grass/turf
Airport Elevation:	900 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	09	**IFR Approach:**	None
Runway Length/Width:	2800 ft / 100 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	36.989082,-79.88903(est)

Administrative Information

Investigator In Charge (IIC):	Schiada, Luke
Additional Participating Persons:	Manuel M Carvalho; Richmond, VA
Original Publish Date:	June 3, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=52967