



# Aviation Investigation Final Report

<b>Location:</b>	Sydnorsville, Virginia	<b>Accident Number:</b>	NYC01LA205
<b>Date &amp; Time:</b>	August 8, 2001, 11:00 Local	<b>Registration:</b>	N56RP
<b>Aircraft:</b>	Rans S-7	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Serious
<b>Flight Conducted Under:</b>	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

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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

<b>Certificate:</b>	Private	<b>Age:</b>	51,Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	July 14, 2000
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	August 1, 2001
<b>Flight Time:</b>	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

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

## Meteorological Information and Flight Plan

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

## Airport Information

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

## Wreckage and Impact Information

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

## Administrative Information

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

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).