



# Aviation Investigation Final Report

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<b>Location:</b>	Deeherd, Tennessee	<b>Accident Number:</b>	ATL05CA158
<b>Date &amp; Time:</b>	September 5, 2005, 19:04 Local	<b>Registration:</b>	N60770
<b>Aircraft:</b>	Christen Industries S-2B	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The pilot stated he flew the airplane for three flights on September 4, 2005, and refueled the airplane before and after the first flight. He did not refuel the airplane after the third flight. On the day of the accident he completed a preflight inspection of the airplane and no anomalies were noted. He did not check or stick the fuel tank to measure the fuel quantity. He departed on a local flight, picked up a friend, and flew around the local area before landing back at Tullahoma. He did not add any fuel before departing Tullahoma back to Sewanee. The pilot stated, "I then departed Tullahoma for Sewanee and ran out of fuel in flight over Woods Reservoir at an altitude of 3000 feet AGL." He made a forced landing to an open field, and the airplane nosed over on touchdown.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilots inadequate preflight of the fuel tank resulting in a total loss of engine power in cruise flight, forced landing, and nose over on landing roll out.

## Findings

Occurrence #1: LOSS OF ENGINE POWER

Phase of Operation: CRUISE

### Findings

1. FLUID,FUEL - EXHAUSTION
2. (C) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND
3. (C) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND

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Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

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Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: EMERGENCY LANDING

### Findings

4. (F) TERRAIN CONDITION - ROUGH/UNEVEN
5. TERRAIN CONDITION - GROUND

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Occurrence #4: NOSE OVER

Phase of Operation: LANDING - ROLL

## Factual Information

On September 5, 2005 at 1904 central daylight time, an experimental Christen Industries S-2B, N60770, registered to and operated by a private owner, lost engine power and nosed over during a forced landing at an open field in Deeherd, Tennessee. The flight operated under provisions of Title 14 CFR Part 91. Visual meteorological conditions prevailed at the time of the accident and no flight plan was filed. The pilot received minor injuries. The airplane was substantially damaged. The flight originated from Tullahoma Regional Airport, Tullahoma, Tennessee on September 5, 2005 at 1850.

The pilot stated he flew the airplane for three flights on September 4, 2005, and refueled the airplane before and after the first flight. He did not refuel the airplane after the third flight with his wife. On the day of the accident he completed a preflight inspection of the airplane and no anomalies were noted. He did not check or stick the fuel tank to measure the fuel quantity. He departed on a local flight from Sewanee, Tennessee, to Tullahoma, Tennessee. He landed at Tullahoma, Tennessee, picked up a friend, and flew around the local area before landing back at Tullahoma. He did not add any fuel before departing Tullahoma back to Sewanee. The pilot stated, "I then departed Tullahoma for Sewanee and ran out of fuel in flight over Woods Reservoir at an altitude of 3000 feet AGL." The pilot made a forced landing to an open field, and the airplane nosed over on touch down.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	52, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Rear
<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 With waivers/limitations	<b>Last FAA Medical Exam:</b>	June 1, 2005
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	October 1, 2003
<b>Flight Time:</b>	347 hours (Total, all aircraft), 183 hours (Total, this make and model), 81 hours (Pilot In Command, all aircraft), 24 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Christen Industries	<b>Registration:</b>	N60770
<b>Model/Series:</b>	S-2B	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>		<b>Serial Number:</b>	5115
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	December 1, 2004 Annual	<b>Certified Max Gross Wt.:</b>	1625 lbs
<b>Time Since Last Inspection:</b>	57 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	1349 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	AEIO-540
<b>Registered Owner:</b>	Thomas E. Hartvigsen	<b>Rated Power:</b>	260 Horsepower
<b>Operator:</b>	Thomas E. Hartvigsen	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>	220 Choctaw Road	<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	BNA, 599 ft msl	<b>Distance from Accident Site:</b>	49 Nautical Miles
<b>Observation Time:</b>	19:04 Local	<b>Direction from Accident Site:</b>	349°
<b>Lowest Cloud Condition:</b>	Few / 5000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	40°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.2 inches Hg	<b>Temperature/Dew Point:</b>	29°C / 14°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Tullahoma, TN (THA )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Sewanee, TN (UOS )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	18:50 Local	<b>Type of Airspace:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<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 Minor	<b>Latitude, Longitude:</b>	35.380001,-86.246109

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Smith, Carrol
<b>Additional Participating Persons:</b>	Gary Sigvaldsen; Nashville FSDO-03; Nashville, TN
<b>Original Publish Date:</b>	December 20, 2005
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	This accident report documents the factual circumstances of this accident as described to the NTSB.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=62387">https://data.nts.gov/Docket?ProjectID=62387</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](#).