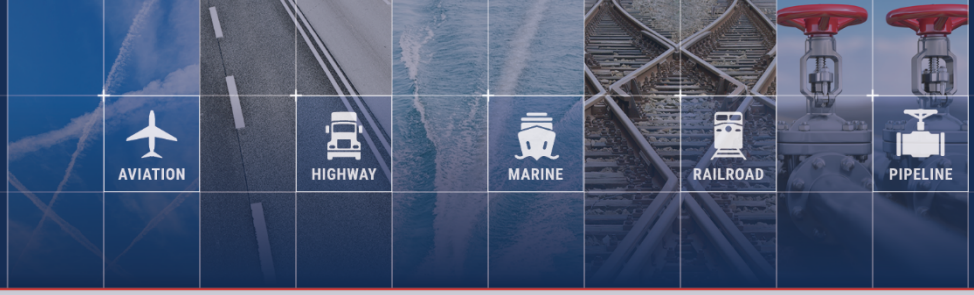

Aviation Investigation Final Report

Location:	Sylacauga, Alabama	**Accident Number:**	ERA12LA305
Date & Time:	April 27, 2012, 16:44 Local	**Registration:**	N388AS
Aircraft:	AVIAT AIRCRAFT INC A-1B	**Aircraft Damage:**	Substantial
Defining Event:	Aerodynamic stall/spin	**Injuries:**	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The pilot was attempting a water takeoff to the southwest. After picking the left float off the water, the amphibious airplane did not accelerate as expected. The pilot reported that he attempted to keep the wings level; however, the right wing "fell," and the airplane stalled and impacted the terrain. A video of the accident sequence indicates that the airplane became airborne and the pilot began a right-hand turn to avoid the trees at the boundary of the lake. Postaccident examination revealed no evidence of a preimpact mechanical malfunction or failure that would have precluded normal operation. Both landing gear floats were dry inside when examined. The carburetor heat knob was found in the "hot" position. The "Before Takeoff" checklist for the airplane specifies that the carburetor heat should be “cold” for takeoff.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's attempt to take off with the carburetor heat in the hot position, which limited the airplane’s performance, and the pilot's subsequent failure to maintain adequate airspeed, which resulted in an aerodynamic stall.

Findings

Aircraft	Fuel control/carburetor - Incorrect use/operation
Personnel issues	Use of equip/system - Pilot
Aircraft	Airspeed - Not attained/maintained

Factual Information

History of Flight

Takeoff	Miscellaneous/other
Initial climb	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On April 27, 2012, about 1644 central daylight time, an Aviat Aircraft Inc. A-1B, N388AS, was substantially damaged following a loss of aircraft control and collision with terrain near Sylacauga, Alabama. The certified flight instructor was not injured and a student pilot had serious injuries. The airplane was registered to a private individual and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as an instructional flight. Visual meteorological conditions prevailed and no flight plan was filed. The flight originated at Alabaster, Alabama, about 1330.

According to the pilot, he landed on the water at Lay Lake on a southwesterly heading. He then attempted a takeoff. During the takeoff sequence, he raised the left float off the surface first. The airplane began to climb, but did not accelerate as expected. He attempted to maintain wings level; however, the right wing "fell." As he attempted to recover from the stall, the airplane impacted the terrain.

A Federal Aviation Administration (FAA) inspector responded to the accident site and examined the wreckage. Flight control and internal engine continuity was established. The magnetos were rotated by hand and produced spark on all leads. The landing gear floats were dry inside.

The wreckage was moved to a storage facility in Clarksville, Tennessee. The wreckage was examined on May 29, 2012 by the NTSB Investigator-in-Charge (IIC). An external inspection of the engine revealed no damage to the case or cylinders. The spark plugs and ignition leads were re-installed and the starter was activated with an external battery. The engine turned through several times and no unusual noises or binding were observed. An engine run was not attempted due to impact damage to the intake system.

The lower spark plugs were removed and the engine was manually rotated with the propeller. Valve action on all four cylinders was correct and compression and suction were observed using the "thumb" method. The spark plug electrodes were normal in color and wear with the exception of some light rust on some surfaces and the plug threads. The fuel strainer was removed and the screen was clean and unobstructed. About 1 ounce of a substance that resembled brown mud was found in the bottom of the strainer bowl. The carburetor was removed and opened and the accelerator pump operated normally. All carburetor control linkages were intact. The venturi was intact and in place. The white plastic floats were

uncompromised and empty of fuel. The carburetor bowl contained about 3 ounces of muddy water with an odor of 100 low lead aviation fuel.

An examination of the cockpit revealed that the carburetor heat knob was in the "hot" position. The knob was bent by impact forces and could not be moved.

The FAA inspector provided the NTSB IIC with a video of the accident sequence. The video was produced by a local witness. A review of the video showed the airplane taking off and entering a gradual, right-hand turn. Trees and terrain were visible at the boundary of the lake. The airplane disappeared behind some trees and the sound on an impact was heard. Engine noise was apparent until the sound of the collision was heard.

The Aviat Husky A-1 "Before Takeoff" checklist, step 13, states, "Carburetor Heat – COLD."

Flight instructor Information

Certificate:	Airline transport; Flight engineer; Flight instructor	**Age:**	44,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	April 3, 2012
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	June 18, 2011
Flight Time:	9000 hours (Total, all aircraft), 2000 hours (Total, this make and model), 3000 hours (Pilot In Command, all aircraft), 5 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft)		

Student pilot Information

Certificate:	Commercial	**Age:**	52,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	June 7, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	2700 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AVIAT AIRCRAFT INC	**Registration:**	N388AS
Model/Series:	A-1B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:		**Serial Number:**	2245
Landing Gear Type:	N/A; Amphibian	**Seats:**	2
Date/Type of Last Inspection:	June 9, 2011 Annual	**Certified Max Gross Wt.:**	2200 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	585 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	Installed	**Engine Model/Series:**	O-360 SERIES
Registered Owner:	On file	**Rated Power:**	180 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:	EET,586 ft msl	**Distance from Accident Site:**	22 Nautical Miles
Observation Time:	16:53 Local	**Direction from Accident Site:**	340°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.01 inches Hg	**Temperature/Dew Point:**	26°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Alabaster, AL (EET)	**Type of Flight Plan Filed:**	None
Destination:	Alabaster, AL (EET)	**Type of Clearance:**	None
Departure Time:	13:30 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 1 Minor	**Latitude, Longitude:**	33.159442,-86.449722(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	Warren Green; FAA FSDO; Birmingham, AL
Original Publish Date:	October 15, 2012
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=83496