Aviation Investigation Final Report

Location:	Laceys Spring, Alabama	**Accident Number:**	ERA12FA194
Date & Time:	February 26, 2012, 13:30 Local	**Registration:**	N1193S
Aircraft:	STROUT FRANK AVENTURA II	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot and passenger departed for a local flight with the intent of landing the amphibious airplane in a nearby farm field that had been flooded with water. A friend of the pilot noted that the water level in the field was not sufficient for a landing and waved off the pilot as he overflew the field. The airplane then entered a steep bank and nose-down attitude from an estimated altitude of 100 feet. Ground scars and observed impact-related damage to the airframe suggested that the airplane impacted the ground in a left-wing-low attitude. The symmetric damage signatures observed on the airplane's propeller and observations of a witness to the accident confirmed that the engine operated until impact. Examination of the wreckage revealed no evidence of any preimpact mechanical failures or malfunctions. The pilot did not possess the required rating on his pilot certificate to operate the accident airplane, and examination of available pilot records showed that he had not logged any flight training in the accident airplane make and model or any other seaplane. While the pilot possessed a reported 700 total hours of flight experience and was said to have logged about 10 previous flights in the accident airplane, the pilot's most recent flight review was completed nearly 6 years prior to the accident flight. Federal Aviation Administration published guidance on flying seaplanes equipped with engines mounted above the center of gravity "strongly urged" pilots to obtain training specific to the make and model of seaplane to be flown, as their unique handling characteristics were "not intuitive and must be learned."

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain control of the airplane during a low-altitude maneuver. Contributing to the accident was the pilot's lack of the required rating to operate the airplane.

Findings

Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Maneuvering-low-alt flying	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On February 26, 2012, about 1330 central standard time, a experimental amateur-built Aventura II, N1193S, was substantially damaged when it impacted terrain and was subsequently consumed by a postimpact fire near Laceys Spring, Alabama. The certificated private pilot and the passenger were fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the flight. The local personal flight, which originated from a nearby private airstrip about 1328, was operated under the provisions of Title 14 Code of Federal Regulations Part 91.

According to a friend of the pilot, who also witnessed the accident, the pilot had purchased the airplane about 2 months prior to the accident, and since that time had completed about 10 total flights in the airplane. Several days before the accident, the friend and the pilot flew the airplane from the pilot's private airstrip to a flooded farm field located about one mile northeast, so that the pilot could practice landing the amphibious airplane on water. During that flight, the friend reported that the airplane performed normally.

On the day of the accident flight, the pilot again intended to fly to the flooded farm field to practice water landings. The friend thought that the water level in the field might have receded since their last flight, as he believed that the field was being drained, so he drove out to the field to assess the situation. Upon reaching the flood gate, the friend noted that the water level was too low to attempt a landing, and as the accident airplane approached him head-on, he "waved-off" the pilot. The airplane then passed over his left shoulder at an altitude about 100 feet above the ground. Moments later, the airplane impacted the ground about 100 feet behind and to the right of him and immediately caught fire. The friend then ran toward the airplane in an attempt to extract the occupants, but when the whole airframe ballistic recovery parachute rocket ignited, he had to vacate the area of the wreckage. The fire worsened, and the entire airframe was consumed in about 10 minutes.

The friend reported that the airplane's engine operated throughout the accident sequence, and that its sound was smooth and continuous. He estimated that the engine might have been operating with a 3/4 throttle setting.

Another witness reported observing the airplane during the final moments of the flight as he drove along a road parallel to the airplane's flight path. When he initially observed the airplane,

it was flying westbound at an estimated altitude of 400 feet. He then returned his attention to driving, but looked at the airplane several seconds later when his son called his attention back to it. The second time he observed the airplane, it was at a significantly lower altitude, and was in a steep left bank and in a nose down attitude. He lost sight of the airplane behind obstructions thereafter, but knew that based on the airplane's last observed attitude and proximity to the ground, that it would crash. He subsequently contacted local emergency services and proceeded toward the accident site in order to render assistance.

PERSONNEL INFORMATION

According to Federal Aviation Administration (FAA) airman records, the pilot, age 63, held a private pilot certificate with a rating for airplane single engine land. He did not hold a rating for airplane single engine sea. His most recent FAA third class medical certificate was issued on August 31, 2009 with the limitation, "holder shall wear correcting lenses."

A personal flight logbook was recovered from the pilot's hangar. Examination of the logbook revealed a period of flight activity between April 2002 and February 2008. During that time, the pilot accumulated a reported total of 729 hours of flight experience. The logbook did not contain any entries showing transition training to, or previous flight experience in the accident airplane make and model or in any seaplanes. The log also noted the pilot's most recent flight review was completed on June 14, 2006.

AIRCRAFT INFORMATION

According to FAA airworthiness information, the experimental amateur-built amphibious airplane was certificated on August 19, 2006. Review of FAA registration information showed that the airplane's builder was also listed as the registered owner of the airplane. According to the builder, the accident pilot purchased the airplane from him about 2 months prior to the accident. At that time, the airplane had not undergone the required annual condition inspection for two years. No record of sale, application for registration, or maintenance records for the airplane were recovered following the accident.

On February 20, 2012, an advertisement for the sale of the accident airplane was placed on an internet classified forum, which listed the accident pilot as the point of contact. The advertisement claimed that the airframe had accumulated 350 total hours of operating time, and that the engine had accumulated 125 total hours of operating time.

The fuselage of the airplane consisted of a fiberglass hull with seating provisions for two occupants. Pontoons were located at the outboard portion of each wing, retractable main landing gear were attached to the fuselage, and a steerable tail wheel was attached to the empennage. A Rotax 912ULS engine equipped with a three blade composite propeller was installed above the wing, aft of the fuselage.

METEOROLOGICAL INFORMATION

The weather conditions reported at Huntsville International Airport, Huntsville, Alabama, located about 10 nautical miles northwest of the accident site, at 1353, included winds from 170 degrees at 7 knots, clear skies, visibility 10 statute miles, a temperature of 16 degrees Celsius (C), a dewpoint of -4 degrees C, and an altimeter setting of 30.29 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The airplane came to rest in an open field adjacent to a gravel road and barbed wire fence. The initial impact point was identified by an area of flattened grass and a depression in the mud oriented along the wreckage path. Portions of the airplane's fabric covering and several pieces of fiberglass were found along the wreckage path, which was 73 feet long and oriented 155 degrees magnetic. The main wreckage was located at the opposite end of the wreckage path and was oriented 025 degrees magnetic. The left wing pontoon and pontoon support structure was separated from the main wreckage and located 36 feet to the left of it.

The main wreckage was almost entirely consumed by a post-impact fire, and most of the airplane's aluminum, plastic, and fiberglass components were damaged beyond recognition. Several steel components comprising the fuselage, wing, and empennage structure remained relatively intact, though the fabric covering had been completely consumed by fire. Control continuity was traced from the left cockpit control stick to the elevator and flaperon control surfaces, and the elevator trim cable continuity was traced to the cockpit area. Rudder control continuity was also confirmed from the rudder pedal bar attachment points to the rudder control horn/tail wheel attachment point. Each of the control surfaces was free to move about its respective hinge mount. The throttle control cable remained attached to both of the engine's carburetors.

The engine was separated from the airplane and examination revealed that it was also extensively fire-damaged. Each of the three composite propeller blades exhibited fibrous separations between 5 and 6 inches from the respective blade roots. Continuity of the drivetrain was confirmed through rotation of the propeller from the output drive gearbox to the accessory section of the engine. The top 4 spark plugs were removed and displayed electrodes that were light gray in color.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot by the Alabama Department of Forensic Sciences, Huntsville, Alabama.

The FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing on the pilot. The testing was negative for the presence of ethanol, carbon monoxide, cyanide, and drugs.

ADDITIONAL INFORMATION

According to the Federal Aviation Administration Seaplane, Skiplane, and Float/Ski Equipped Helicopter Operations Handbook, "Many of the most common flying boat designs have the engine and propeller mounted well above the airframe’s CG [center of gravity]. This results in some unique handling characteristics. The piloting techniques necessary to fly these airplanes safely are not intuitive and must be learned. Any pilot transitioning to such an airplane is strongly urged to obtain additional training specific to that model of seaplane." The handbook further stated, "Depending on how far the engine is from the airplane’s CG, the mass of the engine can have detrimental effects on roll stability. Some seaplanes have the engine mounted within the upper fuselage, while others have engines mounted on a pylon well above the main fuselage. If it is far from the CG, the engine can act like a weight at the end of a lever, and once started in motion it tends to continue in motion."

Pilot Information

Certificate:	Private	**Age:**	63,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:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	August 31, 2009
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	June 14, 2006
Flight Time:	(Estimated) 729 hours (Total, all aircraft), 5 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	STROUT FRANK	**Registration:**	N1193S
Model/Series:	AVENTURA II	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	1X
Landing Gear Type:	Tailwheel; Amphibian	**Seats:**	2
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	1430 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Rotax
ELT:	Installed, not activated	**Engine Model/Series:**	912ULS
Registered Owner:	On file	**Rated Power:**	100 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:	HSV,629 ft msl	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	13:53 Local	**Direction from Accident Site:**	295°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.29 inches Hg	**Temperature/Dew Point:**	16°C / -4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Laceys Spring, AL (NONE)	**Type of Flight Plan Filed:**	None
Destination:	Laceys Spring, AL (NONE)	**Type of Clearance:**	None
Departure Time:	13:28 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	34.570278,-86.594444

Administrative Information

Investigator In Charge (IIC):	Diaz, Dennis
Additional Participating Persons:	John D Park; FAA/FSDO; Vestavia Hills, AL
Original Publish Date:	August 29, 2012
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=82972