National Transportation Safety Board
Aviation Accident Final Report

Location:	Merritt Island, FL	**Accident Number:**	ERA13LA069
Date & Time:	11/28/2012, 1435 EST	**Registration:**	N155JD
Aircraft:	LAWSON J/BOWIE R/SMITH M CA-8	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot was conducting a cross-country flight, and the first leg of the flight was uneventful. After the airplane was refueled, the pilot departed for his destination airport. About 200 miles from the destination airport, the airplane began experiencing a left rolling tendency, which required right aileron control inputs to counteract; the rolling progressively worsened as the flight continued. During that time, the pilot could have diverted to several other airports along his route of flight. While maneuvering in the traffic pattern at the destination airport, full right aileron control was required to maintain straight-and-level flight, and only a slight relaxing of right aileron control was needed to turn left. The pilot had difficulty compensating for a northwest crosswind and performed a go-around. During the second approach, the pilot lined up the airplane on the northern side of the runway approach course, and, subsequently, he attempted to perform another go-around. When the pilot applied engine power, the airplane began to roll slowly left despite right aileron and rudder control inputs. He decreased the engine power, but the airplane's left wing struck the ground, and the airplane flipped over. Examination of the airplane did not reveal any preimpact malfunctions that would have precluded normal operation; however, the condition of the wreckage, which included impact damage to the aileron control servo, precluded the ability to functionally check the flight control system, which was electrically actuated. Wind reported at an airport located about 8 miles southeast of the accident site was from 340 degrees at 16 knots about the time of the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper decision to continue a cross-country flight as a primary control (aileron) system anomaly progressively worsened. Contributing to the accident was an aileron control system anomaly, the reason for which could not be determined because the aileron control system could not be tested due to impact damage, and the pilot’s inability to compensate for crosswind conditions encountered during the approach due to the aileron problem.

Findings

Aircraft	Aileron control system - Malfunction (Factor)
Personnel issues	Decision making/judgment - Pilot (Cause)
Environmental issues	Crosswind - Effect on operation (Factor)
Not determined	Not determined - Unknown/Not determined (Factor)

Factual Information

On November 28, 2012, about 1435 eastern standard time, an experimental amateur-built Comp Air 8 (CA-8), N155JD, operated by a private individual, was substantially damaged during a go-around, while attempting to land at the Merritt Island Airport (COI), Merritt Island, Florida. The certificated commercial pilot sustained serious injuries and a passenger sustained minor injuries. Visual meteorological conditions prevailed and no flight plan was filed for the personal flight that was conducted under the provisions of 14 Code of Federal Regulations Part 91.

The pilot reported that he flew from Smithfield, North Carolina, to Marion, South Carolina (MAO), without incident. After refueling, he departed MAO for COI. While en route, approximately 150 miles north of Ormond Beach, Florida, the airplane began to experience a left rolling tendency, which required right aileron control inputs to counteract. He configured the fuel selector to the left fuel tank in an attempt to lighten the wing and compensate for the turning tendency; however, the force required to maintain directional control became greater as the flight progressed.

The pilot subsequently entered the traffic pattern at COI for runway 29, a 3,601-foot-long, 75-foot-wide, asphalt runway. While maneuvering in the traffic pattern, full right aileron control was required to maintain straight and level flight, and only a slight relaxing of right aileron control was needed to turn left. The pilot had difficulty compensating for a northwest crosswind, which resulted in the airplane drifting to the southern edge of the runway. He performed a go-around and lined-up on the northern side of the runway 29 approach course for a second landing attempt, which again resulted in a go-around. When the pilot applied engine power, the airplane began to slowly roll to the left despite right aileron and rudder control inputs. He decreased engine power; however, the airplane's left wing struck the ground and the airplane flipped-over. The left wing, propeller, and empennage separated during the impact sequence.

The airplane's flight controls were electrically actuated. On site examination of the airplane by a Federal Aviation Administration (FAA) inspector did not reveal any preimpact malfunctions, which would have precluded normal operation. The fuel tanks were compromised during the accident. The airplane's rudder, elevator, and aileron control servos were removed for further examination. According to the FAA inspector, the rudder and elevator control servos functioned normally; however, the aileron control servo sustained impact damage during the accident sequence and could not be tested.

The six seat, high-wing, tail-wheel, turboprop airplane, serial number 998205, was constructed primarily of composite material and was equipped with a Walter M601D series, 650 horsepower engine, with an AVIA 3-bladed constant-speed propeller.

According to FAA records, the airplane was issued an experimental airworthiness certificate on April 26, 2001. The airplane was purchased from one of the builders, by the commercial pilot, through a corporation, on September 30, 2012. At that time, the airplane had been operated for

about 925 total hours and had undergone a condition inspection.

The pilot reported about 5,570 hours of total flight experience, which included about 100 hours in the same make and model as the accident airplane. In addition, the pilot had accumulated about 23 hours and 5 hours in make and model, during the 30 and 90 days preceding the accident, respectively.

Winds reported at an airport located about 8 miles southeast of the accident site, about the time of the accident, were from 340 degrees at 16 knots.

History of Flight

Enroute-cruise	Flight control sys malf/fail
Approach-VFR go-around	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Flight Instructor; Commercial	**Age:**	42
Airplane Rating(s):	Single-engine Land; Single-engine Sea	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane Single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 None	**Last FAA Medical Exam:**	09/04/2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	5569 hours (Total, all aircraft), 102 hours (Total, this make and model), 5357 hours (Pilot In Command, all aircraft), 42 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	LAWSON J/BOWIE R/SMITH M	**Registration:**	N155JD
Model/Series:	CA-8	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Experimental	**Serial Number:**	998205
Landing Gear Type:	Tailwheel	**Seats:**	6
Date/Type of Last Inspection:	09/30/2011, Condition	**Certified Max Gross Wt.:**	5800 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo Prop
Airframe Total Time:	923 Hours as of last inspection	**Engine Manufacturer:**	WALTER
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	M601D
Registered Owner:	Bog Hog Mud Motors Inc.	**Rated Power:**	650 hp
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	COF, 8 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	1437 EST	**Direction from Accident Site:**	150°
Lowest Cloud Condition:	Scattered / 1900 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	16 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	340°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.19 inches Hg	**Temperature/Dew Point:**	21°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	MARION, SC (MAO)	**Type of Flight Plan Filed:**	None
Destination:	Merritt Island, FL (COI)	**Type of Clearance:**	None
Departure Time:	1100 EST	**Type of Airspace:**	Class G

Airport Information

Airport:	Merritt Island (COI)	**Runway Surface Type:**	Asphalt
Airport Elevation:	6 ft	**Runway Surface Condition:**	Dry
Runway Used:	29	**IFR Approach:**	None
Runway Length/Width:	3601 ft / 75 ft	**VFR Approach/Landing:**	Full Stop; Straight-in

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:**	28.338889, -80.685278 (est)

Administrative Information

Investigator In Charge (IIC):	Luke Schiada	**Report Date:**	03/07/2014
Additional Participating Persons:	Ike Gray; FAA/FSDO; Orlando, FL		
Publish Date:	03/07/2014		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=85705		