Aviation Investigation Final Report

Location:	Sebastian, Florida	**Accident Number:**	ERA15LA130
Date & Time:	February 13, 2015, 09:00 Local	**Registration:**	N112TH
Aircraft:	ROBERTSON JAMES F VELOCITY STD/RG E	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot had recently purchased the experimental, amateur-built airplane. He received 3.6 hours of familiarization training in another airplane by the same manufacturer during the 2 days before the accident while maintenance and inspections were performed on his airplane. Once the work was completed, the pilot departed on the accident flight. Witnesses reported that, immediately after rotation, they observed the right cabin door open. The airplane briefly maintained the runway heading and then began a "slow, lingering" left turn. One witness described the engine sound as increasing and decreasing between idle and full power. The airplane rolled left, then wings level, then left again before it descended to the ground. The airplane impacted trees near the airport perimeter; the right wing separated, and the fuselage was substantially damaged. Immediately after the accident, the pilot reported that he was taking off and that "the door blew open." The pilot subsequently reported that the airplane "pitched up violently" on takeoff and would not respond to nose-down pitch trim.

Examination of the airplane revealed flight control continuity from the cockpit area to the flight control surfaces. The latch mechanism on the right cabin door was found intact and fully functional. The pitch trim was found in a nearly full nose-up setting, and, when activated, the pitch trim motor ran through its full range at its normal rate. The pilot reported that there were no mechanical deficiencies with the airplane that would have precluded normal operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's loss of airplane control after takeoff, which resulted in collision with terrain. Contributing to the accident was the pilot's failure to properly secure the cabin door and trim the airplane for takeoff, which resulted in the cabin door opening and the nose pitching up suddenly at liftoff.

Findings

Aircraft	(general) - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Personnel issues	Lack of action - Pilot
Personnel issues	Use of equip/system - Pilot
Aircraft	Passenger/crew doors - Incorrect use/operation
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

History of Flight

Prior to flight	Preflight or dispatch event
Initial climb	Miscellaneous/other
Initial climb	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On February 13, 2015, about 0900 eastern daylight time, an experimental amateur-built Velocity STD/RG-E, N112TH, was substantially damaged during collision with terrain after takeoff from Sebastian Municipal Airport (X26), Sebastian, Florida. The private pilot/owner was seriously injured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight, which was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

According to the chief pilot of Velocity Aircraft, the airplane was recently purchased by the pilot. The sale was brokered by the previous owner, and the airplane was flown to the Velocity facility for a conditional inspection, the installation of new door latches, and delivery to the new owner. The pilot was provided with 3.6 hours of familiarization training in a Velocity company airplane over the two days prior to the accident.

The accident flight was witnessed by the chief pilot and others, and their descriptions of the event were consistent throughout.

The airplane departed runway 28 after a ground roll of approximately 1,000 feet and passing the intersection of runway 05/23. Immediately after rotation, the witnesses watched the right cabin door open. The airplane maintained runway heading briefly, then began a "slow, lingering" left turn back towards runway 05. One witness described the engine sound as increasing and decreasing between idle and full power. The airplane would alternately roll left, then wings level, and roll left again before it ultimately descended to ground contact south of runway 05. The airplane impacted trees near the airport perimeter, where the right wing separated and the fuselage was substantially damaged.

Immediately after the accident, a responding police officer asked the pilot what happened. The pilot reported that he was taking off, and when the airplane reached about 50 feet, at approximately 80-90 knots, "the door blew open."

In a subsequent interview with a Federal Aviation Administration (FAA) aviation safety inspector, the pilot said the airplane "pitched up violently" on takeoff, and wouldn't respond to nose-down pitch trim.

Examination of the airplane by the FAA inspector revealed that control continuity could be established from the flight control surfaces on the left wing to the cockpit area and from the flight control surfaces in the right wing to the break. The control stick was broken off in the cockpit.

The latch mechanism on the right cabin door was found intact and fully functional. The pitch trim was found in a nearly full nose-up setting. Electrical power was applied, and when activated the pitch trim motor ran through its full range at its "normal" rate.

The pilot held a private pilot certificate with ratings for airplane single-engine land and instrument airplane. Examination of his logbook revealed 935 total hours of flight experience, of which 9 hours were in the accident airplane make and model. His most recent FAA third class medical certificate was issued on January 31, 2015.

The airplane was manufactured in 2007 and was equipped with a Superior IO-360 series, 180 hp, reciprocating engine. The airplane's most recent conditional inspection was completed on December 16, 2014 at 79 total aircraft hours.

Pilot Information

Certificate:	Private	**Age:**	72,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3	**Last FAA Medical Exam:**	January 31, 2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 28, 2012
Flight Time:	935 hours (Total, all aircraft), 9 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBERTSON JAMES F	**Registration:**	N112TH
Model/Series:	VELOCITY STD/RG E	**Aircraft Category:**	Airplane
Year of Manufacture:	2007	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	SRE042
Landing Gear Type:	Retractable - Tricycle	**Seats:**	2
Date/Type of Last Inspection:	December 16, 2014 Condition	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	79 Hrs at time of accident	**Engine Manufacturer:**	SUPERIOR
ELT:	Not installed	**Engine Model/Series:**	IO-360
Registered Owner:	Andrew J. Liptak	**Rated Power:**	180 Horsepower
Operator:	Andrew J. Liptak	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	VRB,23 ft msl	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	09:53 Local	**Direction from Accident Site:**	156°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	360°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	30.15 inches Hg	**Temperature/Dew Point:**	16°C / 9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sebastian, FL (X26)	**Type of Flight Plan Filed:**	None
Destination:	Whiteville, NC (CPC)	**Type of Clearance:**	None
Departure Time:	09:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Sebastian Municipal X26	**Runway Surface Type:**	Asphalt
Airport Elevation:	21 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	28	**IFR Approach:**	None
Runway Length/Width:	3199 ft / 75 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	27.813333,-80.495552(est)

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	Rick Shannon; FAA/FSDO; Orlando, FL
Original Publish Date:	January 5, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=90723