Aviation Investigation Final Report

Location:	Jacksonville, Texas	**Accident Number:**	CEN13LA062
Date & Time:	November 18, 2012, 16:35 Local	**Registration:**	N635J
Aircraft:	JABIRU USA SPORT AIRCRAFT, LLC J250-SP	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The accident occurred during the student pilot's third solo flight. The pilot's husband, who was a commercial pilot and former naval aviator, reported that he witnessed the accident flight, which consisted of two landings. He stated that the first landing appeared to be fairly flat, consistent with an insufficient landing flare upon touchdown. After landing, the pilot taxied the airplane to the approach end of the runway for the next takeoff. On the second landing, the airplane again appeared to have a flat pitch attitude upon touchdown. The airplane bounced, which was followed by an audible increase in engine power. The airplane then entered a nose-high pitch attitude as it began a slow climb. The airplane climbed about 100 feet above the runway before the pilot's husband heard another increase in engine power and observed the airplane enter a descending left turn. The airplane still had a nose-high pitch attitude and was in a 60-degree left bank when he lost visual contact with the airplane as it descended toward hangars located on the northeast side of the airport. Two additional witnesses provided similar statements about the airplane's pitch attitude, engine operation, and flightpath following the bounce and subsequent aborted landing. These witnesses also reported seeing the airplane enter a nose-low, left spin shortly before it collided with the hangars. The postaccident examination of the airplane revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. Based on the witnesses' descriptions of the airplane's flightpath, it is likely that the pilot flew the airplane beyond its critical angle-of-attack during the aborted landing, which resulted in an aerodynamic stall and spin at a low altitude.

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 adequate airspeed during initial climb following an aborted landing, which resulted in an aerodynamic stall and spin at a low altitude.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Landing-flare/touchdown	Hard landing
Landing-aborted after touchdown	Attempted remediation/recovery
Initial climb	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On November 18, 2012, about 1635 central standard time, a Jabiru USA Sport Aircraft, LLC model J250-SP light sport airplane, N635J, was substantially damaged when it collided with airport hangars during an aborted landing at Cherokee County Airport (JSO), Jacksonville, Texas. The student pilot, who was the sole occupant, was fatally injured. The airplane was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 without a flight plan. Day visual meteorological conditions prevailed for the local solo-instructional flight that departed about 1625.

The student pilot's husband, a commercial pilot and former naval aviator, reported that he and his wife had flown together immediately before the accident flight and that there were no anomalies with the airplane during that flight. He stated that his wife, who had soloed for the first time earlier in the month, wanted to practice solo landings in the traffic pattern. He reported that he witnessed the accident flight, which consisted of two landings on runway 14. He stated that the first landing appeared to be fairly flat, consistent with an insufficient landing flare upon touchdown. After landing, the airplane taxied to the approach end of runway 14 for the next takeoff. On the second landing, the airplane again appeared to have a flat pitch attitude upon touchdown. The airplane bounced, which was followed by an audible increase in engine power. The airplane then entered a nose-high pitch attitude as it began a slow climb. The airplane climbed about 100 feet above the runway before he heard another increase in engine power and observed the airplane enter a descending left turn. The airplane was still in a nose-high pitch attitude and had achieved a 60-degree left bank, when he lost visual contact with the airplane as it descended toward hangar structures located on the northeast side of the airport.

Two additional witnesses provided similar statements about the airplane's pitch-attitude, engine operation, and flight path following the bounced landing. These witnesses also reported seeing the airplane enter a nose-low, left spin shortly before it collided with the hangars.

Pilot Information

Certificate:	Student	**Age:**	60
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
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 21, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 7, 2012
Flight Time:	33.2 hours (Total, all aircraft), 33.2 hours (Total, this make and model), 0.6 hours (Pilot In Command, all aircraft), 18 hours (Last 90 days, all aircraft), 7.5 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

According to Federal Aviation Administration (FAA) records, the accident pilot, age 60, held a student pilot certificate that was issued on August 21, 2012. Her last aviation medical examination was completed on August 21, 2012, when she was issued a third-class medical certificate with a restriction for corrective lenses. A search of FAA records showed no accident, incident, enforcement, or disciplinary actions.

The pilot's most recent logbook entry was dated November 15, 2012, at which time she had accumulated 33.2 hours total flight time, of which 0.7 hours were as pilot-in-command. With the exception of a single flight, which was completed in a Cessna model 150 airplane, all of the pilot's flight experience was completed in the accident airplane. She had flown 31 hours during the prior 6 months, 18 hours during previous 90 days, and 7.6 hours in the 30 day period before the accident flight. The pilot's logbook did not contain any recorded flight time for the 24 hour period before the accident flight. The logbook contained a flight instructor endorsement, dated November 7, 2012, for solo flight in Jabiru model J250 airplanes.

According to the pilot's logbook, since beginning flight training in May 2012, she had completed two solo flights. Her first solo flight, 0.5 hours in duration, was completed on November 7, 2012, and consisted of three landings. The second solo flight, 0.2 hours in duration, was completed on November 15, 2012, and consisted of two landings. Both solo flights were completed in the accident airplane.

Aircraft and Owner/Operator Information

Aircraft Make:	JABIRU USA SPORT AIRCRAFT, LLC	**Registration:**	N635J
Model/Series:	J250-SP	**Aircraft Category:**	Airplane
Year of Manufacture:	2008	**Amateur Built:**	
Airworthiness Certificate:	Special light-sport (Special)	**Serial Number:**	500
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	April 25, 2012 Condition	**Certified Max Gross Wt.:**	1320 lbs
Time Since Last Inspection:	192 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	357 Hrs at time of accident	**Engine Manufacturer:**	Jabiru
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	3300A
Registered Owner:	On file	**Rated Power:**	120 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The accident airplane was a 2008 Jabiru USA Sport Aircraft, LLC model J250-SP light sport airplane, serial number (s/n) 500. A 120-horsepower Jabiru model 3300A reciprocating engine, s/n 33A1536, powered the airplane. The airplane was equipped with a fixed-pitch, two blade, Sensenich model W60ZK-53 wood propeller. The two-seat airplane had a fixed tricycle landing gear and a maximum takeoff weight of 1,320 pounds.

On February 14, 2008, the accident airplane was issued a special airworthiness certificate and associated operating limitations. The airplane had accumulated a total service time of 357.1 hours at the time of the accident. The last condition inspection was completed on April 25, 2012, at 164.6 total airframe hours. A postaccident review of the maintenance records found no history of unresolved airworthiness issues.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	JSO,678 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	16:35 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	100°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.25 inches Hg	**Temperature/Dew Point:**	18°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Jacksonville, TX (JSO)	**Type of Flight Plan Filed:**	None
Destination:	Jacksonville, TX (JSO)	**Type of Clearance:**	None
Departure Time:	16:25 Local	**Type of Airspace:**	Class G

At 1635, the airport's automated surface observing system reported the following weather conditions: wind 100 degrees at 3 knots, visibility 10 miles, sky clear, temperature 18 degrees Celsius, dew point 1 degrees Celsius, and an altimeter setting 30.25 inches of mercury.

Astronomical data obtained from the United States Naval Observatory indicated that the local sunset was at 1720, about 45 minutes after the accident, and the end of civil twilight was at 1746.

Airport Information

Airport:	Cherokee County Airport JSO	**Runway Surface Type:**	Asphalt
Airport Elevation:	678 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	14	**IFR Approach:**	None
Runway Length/Width:	5006 ft / 75 ft	**VFR Approach/Landing:**	Go around;Traffic pattern

The Cherokee County Airport (JSO), a public-use airport, located about 7 miles south-southeast of Jacksonville, Texas, was served by a single runway: 14/32 (5,006 feet by 75 feet, asphalt). The airport elevation was 678 feet mean sea level (msl). Runway 14 was equipped with a four-light precision approach path indicator.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	31.869443,-95.217498(est)

A postaccident examination, completed by FAA inspectors, confirmed that all airframe structural components were located at the accident site. The airplane had collided with two hangars during the impact sequence. The damage to the hangars and the overall lack of a wreckage debris path was consistent with a near vertical impact angle. A majority of the wreckage was located in the alleyway between the hangars. The airplane came to rest inverted, about 15 feet above ground level, supported between the two hangar structures. Both wings had separated from their respective fuselage attachments and were located beneath the fuselage. The empennage remained attached to the aft fuselage and was resting on the roof of one of the hangars.

The postaccident examination was unable to establish flight control continuity due to airframe damage; however, all observed flight control system separations were consistent with overstress. Ample fuel was found in both wing fuel tanks. Cylinder compression and suction was noted on all cylinders while the engine was rotated by hand. The postaccident examination revealed no evidence of a mechanical malfunction or anomaly that would have precluded normal operation of the airplane.

Medical and Pathological Information

On November 19, 2012, an autopsy was performed on the pilot at the Southwestern Institute of Forensic Sciences, located in Dallas, Texas. The cause of death for the pilot was attributed to multiple blunt-force injuries sustained during the accident.

The FAA Civil Aerospace Medical Institute (CAMI) in Oklahoma City, Oklahoma, performed toxicology tests on samples obtained during the pilot's autopsy. Carbon monoxide, cyanide, and ethanol were not detected. Lidocaine was detected in urine samples. Lidocaine is commonly used in emergency situations as an antiarrhythmic agent.

Administrative Information

Investigator In Charge (IIC):	Fox, Andrew
Additional Participating Persons:	Christopher M Doherty; Federal Aviation Administration - Dallas FSDO; Dallas, TX
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Last Revision Date:	
Investigation Class:	Class
Note:	
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