Aviation Investigation Final Report

Location:	Cameron, Missouri	**Accident Number:**	CEN12LA636
Date & Time:	September 16, 2012, 18:52 Local	**Registration:**	N3533D
Aircraft:	JDT MINI-MAX LLC 1500R	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

A witness to the accident reported that he was outside his residence when he heard the accident airplane departing to the south. He initially heard the sound of the airplane's engine before he saw the airplane climbing away from the runway at an estimated 45-degree, nose-up pitch attitude. The witness did not perceive any engine anomalies as the airplane climbed to about 350 feet above the ground, where it suddenly rolled right and entered a near-vertical descent into terrain. The postaccident examination of the airplane revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. The witness's description of the airplane's flightpath was consistent with an aerodynamic stall and spin during initial climb.

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, 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

Initial climb	Loss of control in flight (Defining event)
Initial climb	Aerodynamic stall/spin
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On September 16, 2012, about 1852 central daylight time, an experimental JDT Mini-Max LLC model 1500R light sport airplane, N3533D, was substantially damaged when it collided with terrain shortly after takeoff from the Cameron Memorial Airport (EZZ), Cameron, Missouri. The sport pilot, who was the sole occupant, was fatally injured. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 without a flight plan. Day visual meteorological conditions prevailed for the personal flight. The local area flight was originating at the time of the accident.

A witness to the accident reported that he was outside his residence when he heard the accident airplane departing to the south. He initially heard the sound of the engine before he spotted the airplane climbing away from runway 17 at an estimated 45-degree nose up pitch attitude. The witness reported that he did not perceive any engine anomalies as the airplane climbed to about 350 feet above the ground, where it suddenly rolled to the right and entered a near vertical descent into terrain.

Pilot Information

Certificate:	Sport Pilot	**Age:**	52
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Single
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Sport pilot None	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	October 9, 2010
Flight Time:	72.8 hours (Total, all aircraft), 30 hours (Total, this make and model), 38.5 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

According to Federal Aviation Administration (FAA) records, the accident pilot, age 52, held a sport pilot certificate, issued on October 9, 2010, with airplane single engine land rating. The pilot had never applied for an aviation medical certificate; however, the operation of a light-sport aircraft only required a valid driver's license. A search of FAA records showed no accident, incident, enforcement, or disciplinary actions.

The pilot's most recent logbook entry was dated August 12, 2012, at which time he had accumulated 72.8 hours total flight time, of which 38.5 hours were as pilot-in-command. The pilot's first recorded flight in the accident airplane was completed on June 11, 2011. He had accumulated 30 hours in the accident airplane as of the last logbook entry. He had flown 27.5 hours during the past year, 16 hours during the prior 6 months, and 10 hours during previous 90 days. There was no record that the pilot had flown during the 30 day period before the accident flight. All of the flight time accumulated during the previous year had been completed in the accident airplane.

Aircraft and Owner/Operator Information

Aircraft Make:	JDT MINI-MAX LLC	**Registration:**	N3533D
Model/Series:	1500R	**Aircraft Category:**	Airplane
Year of Manufacture:	2002	**Amateur Built:**	
Airworthiness Certificate:	Experimental light sport (Special)	**Serial Number:**	852
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	630 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	253 Hrs at time of accident	**Engine Manufacturer:**	Rotax
ELT:	Not installed	**Engine Model/Series:**	447UL
Registered Owner:	David D. King	**Rated Power:**	40 Horsepower
Operator:	David D. King	**Operating Certificate(s) Held:**	None

The experimental light sport airplane was a 2002 JDT Mini-Max LLC model 1500R, serial number (s/n) 852. A two-stroke, two-cylinder, air cooled, 40-horsepower, Rotax model 447UL engine, s/n 5504279, powered the airplane. The engine was equipped with a three-blade Ivoprop propeller. The single-seat, tail-wheel equipped airplane was constructed of wood and fabric and had a maximum takeoff weight of 630 pounds.

According to FAA records, the airplane had already accumulated 195 hours when it received its experimental airworthiness certificate on November 23, 2007, by a designated airworthiness representative. A digital hour meter found in the wreckage indicated that the airplane had accumulated 253 hours total time at the time of the accident. The airplane maintenance records were not located during the on-scene investigation.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	GPH,777 ft msl	**Distance from Accident Site:**	28 Nautical Miles
Observation Time:	18:55 Local	**Direction from Accident Site:**	184°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	29.96 inches Hg	**Temperature/Dew Point:**	22°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cameron, MO (EZZ)	**Type of Flight Plan Filed:**	None
Destination:	Cameron, MO (EZZ)	**Type of Clearance:**	None
Departure Time:	18:52 Local	**Type of Airspace:**	Class G

The closest weather observing station was located at the Midwest National Air Center Airport (GPH), about 28 miles south of the accident site. At 1855, the GPH automatic weather observing station reported: calm wind conditions, clear sky, surface visibility 10 miles, temperature 22 degrees Celsius, dew point 16 degrees Celsius, and an altimeter setting of 29.97 inches of mercury.

Astronomical data obtained from the United States Naval Observatory indicated that the local sunset was at 1923, about 31 minutes after the accident, and the end of civil twilight was at 1950.

Airport Information

Airport:	Cameron Memorial Airport EZZ	**Runway Surface Type:**	Concrete
Airport Elevation:	1040 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	17	**IFR Approach:**	None
Runway Length/Width:	4000 ft / 75 ft	**VFR Approach/Landing:**	None

The Cameron Memorial Airport (EZZ), a public-use airport, located about 2 miles southwest of Cameron, Missouri, was served by a single runway: 17/35 (4,000 feet by 75 feet, concrete). The airport elevation was 1,040 feet mean sea level (msl). According to airport data, there were trees, measuring 23 feet tall, located 1,200 feet from the departure end of runway 17 and 326 feet west of the extended runway centerline.

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:**	39.722221,-94.275558(est)

A postaccident investigation, completed by FAA inspectors, confirmed that all airframe structural components were located at the accident site. The main wreckage was located about 94 feet north of the runway end and about 27 feet east of the runway edge. The entire wreckage was contained within an area comparable to the lateral dimensions of the aircraft. The lack of a wreckage debris path was consistent with a near vertical impact angle. A portion of a wing leading edge rib was found embedded into the ground. The angle between the rib and the surrounding terrain was about 75 degrees. Elevator and rudder flight control continuity was established from the control surfaces to their associated cockpit controls. Aileron flight control continuity could not be established due to damage; however, all observed separations were consistent with overstress failure. Both wing fuel tanks appeared undamaged and were about 1/2 full. The airframe examination revealed no evidence of mechanical malfunctions or anomalies that would have precluded normal operation.

The engine remained partially attached to the fuselage; however, the carburetor and fuel pump had separated from the engine. Internal engine and valve train continuity was confirmed as the engine crankshaft was rotated. Compression and suction were noted on both cylinders in conjunction with crankshaft rotation. The spark plugs were removed and exhibited features consistent with normal engine operation. All three composite propeller blades remained attached to the metal hub assembly and exhibited damage consistent with ground impact. The engine examination revealed no evidence of mechanical malfunctions or anomalies that would have precluded normal operation.

Medical and Pathological Information

On September 19, 2012, an autopsy was performed on the pilot at the First Call Morgue, located in Kansas City, Kansas. 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. Pseudoephedrine was detected in blood and urine samples. Pseudoephedrine, brand name Sudafed, is a non-sedating over-the-counter medication that is used to relieve nasal congestion and pressure caused by colds, allergies, and hay fever.

Administrative Information

Investigator In Charge (IIC):	Fox, Andrew
Additional Participating Persons:	Christopher P Morris; Federal Aviation Administration - Kansas City FSDO; Kansas City, MO Rodwin L McLaughlin; Federal Aviation Administration - Kansas City FSDO; Kansas City, MO
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