



# National Transportation Safety Board Aviation Accident Preliminary Report

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<b>Location:</b>	Dubois, WY	<b>Accident Number:</b>	CEN17FA035
<b>Date &amp; Time:</b>	11/05/2016, 0756 MDT	<b>Registration:</b>	N924WY
<b>Aircraft:</b>	STAMPER RV-10	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Flight Test		

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On November 5, 2016, about 0756 mountain daylight time, an experimental amateur-built Stamper model RV-10 single-engine airplane, N924WY, was destroyed during a postimpact fire following a loss of control shortly after takeoff from Dubois Municipal Airport (DUB), Dubois, Wyoming. The private pilot, 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 as a test flight. Day visual meteorological conditions prevailed for the presumed local flight.

A witness, who was also a pilot, reported that he saw the accident airplane takeoff from runway 28 (6,100 feet by 60 feet, asphalt). He stated that he saw the right-side gull-wing door open immediately after liftoff. After the door opened, he saw the pilot reach for the fully open door with his right hand and heard a momentary reduction of engine power. He saw the airplane descend momentarily before he heard an increase in engine power and saw the airplane level off over the runway. He reported that the pilot continued to reach for the open cabin door as the airplane overflew the remaining runway about 35 feet above ground level (agl). The witness then observed the airplane's left wing and nose drop suddenly. He surmised that the airplane had entered an aerodynamic stall/spin. The airplane descended below his line-of-sight before he observed a large explosion.

The accident airplane was an experimental amateur-built Stamper model RV-10 single-engine airplane, serial number 40146. An experimental 260-horsepower Aero Sport Power model IO-540-D4A5 reciprocating engine, serial number 1542, powered the airplane through a constant-speed, three blade, Whirl Wind Aviation model 375RV composite propeller, serial number 375-106. The airplane had a fixed tricycle landing gear, was capable of seating four individuals, and had a certified maximum gross weight of 2,700 pounds. The airplane was equipped with two composite gull-wing cabin doors. The airplane was issued a special airworthiness certificate on April 23, 2016. According to available information, the airplane likely had accumulated 10-12 hours since receiving the airworthiness certificate. The last condition inspection of the airplane was completed on April 23, 2016, in conjunction with the issuance of the airworthiness certificate. A postaccident review of available maintenance records found no history of unresolved airworthiness issues. The airplane had a total fuel capacity of 60 gallons distributed between two wing fuel tanks. A review of fueling records established that the airplane fuel tanks were topped-off before the accident flight.

According to FAA records, the pilot, age 44, held a private pilot certificate with airplane single engine land, airplane single engine sea, and instrument airplane ratings. His last aviation medical examination was completed on September 17, 2015, when he was issued a second-class medical certificate with no limitations or restrictions. A pilot logbook was not recovered during the on-scene investigation. According to recent insurance documentation, provided during October 2016, the pilot reported having a total flight experience of 1,500 hours, of which 40 hours were completed in Vans Aircraft RV-6 airplanes, 4 hours in Vans Aircraft model RV-10 airplanes, and 2 hours in the accident airplane.

At 0755, the DUB automated surface observing system reported the following weather conditions: wind 270 degrees true at 6 knots, visibility 10 miles, sky clear, temperature 0 degrees Celsius, dew point -8 degrees Celsius, and an altimeter setting 30.29 inches of mercury.

The initial point-of-impact was in an open field about 1,675 feet past the runway 28 departure threshold and 183 feet left of the extended runway centerline. A 67-foot-long debris path, oriented on a 210-degree magnetic heading, was observed between the initial point-of-impact and the main wreckage. A ground impact crater, containing propeller fragments, was observed about 44 feet from the initial point-of-impact. The main wreckage consisted of the fuselage, wings, and empennage. The cabin, including the cockpit instrument panel, was destroyed during the postimpact fire. Both wings exhibited damage consistent with ground impact. The empennage was relatively undamaged. A flight control continuity check was not possible due to the extent of damage; however, all observed flight control separations were consistent with fire and impact related damage.

The right-side gull-wing door was located in a ravine about 600 feet northeast of the main wreckage. The door was located about 1,500 feet past the runway 28 departure threshold and 200 feet right of the extended runway centerline. The door had separated from the fuselage hinges. There was no evidence that the door had struck any portion of the airplane after it had separated. The door was equipped with forward and aft door latch pins and a center latch mechanism. The center latch consisted of a rotating semicircular cam that worked in conjunction with the two door latch pins. The door was not equipped with the safety latch mechanism that was provided by the airframe kit manufacturer. Before the door was recovered from the ravine, the door latch handle was observed to be about 20 degrees from a vertical position or about 110 degrees from the fully latched position. The forward and aft door latch pins were found extended about 1/8 inch outside the door. The curved portion of the semicircular center latch was found facing aft. A functional test of the door latch mechanism did not reveal any anomalies. The door latch handle rotated 180-degrees between the open and latched positions. When the handle was in the latched position, the forward and aft door latch pins extended 1-1/4 inches outside the door and the curved portion of the semicircular center latch faced down. The latch pins were equipped with embedded magnets that interfaced with position switches installed in the fuselage door frames. These position switches, which were destroyed during the postimpact fire, were part of a door latch annunciator circuit. A functional test of the door latch annunciator system was not possible due to fire damage sustained after the accident to the fuselage and instrument panel.

The engine remained partially attached to the firewall by its mounts. Internal engine and valve train continuity was confirmed as the engine crankshaft was rotated. Compression and suction were noted on cylinder Nos. 1, 2, 3, and 5 in conjunction with crankshaft rotation. No compression was noted on cylinder Nos. 4 and 6 due to thermal damage to the valve springs. The engine was equipped with a traditional magneto and an electronic ignition system. The traditional magneto exhibited extensive thermal damage and could not be tested. The electronic ignition was not recovered and likely was destroyed during the postimpact fire. The upper spark plugs were removed and exhibited features consistent with normal engine operation. A borescope inspection revealed no anomalies with the cylinders, valves, or pistons. The propeller hub remained attached to the engine crankshaft flange. Two of the three composite blades were destroyed during the impact sequence. The remaining composite blade exhibited thermal damage from the postimpact fire.

### Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	STAMPER	<b>Registration:</b>	N924WY
<b>Model/Series:</b>	RV-10	<b>Aircraft Category:</b>	Airplane
<b>Amateur Built:</b>	Yes		
<b>Operator:</b>	On file	<b>Air Carrier Operating Certificate:</b>	None

### Meteorological Information and Flight Plan

<b>Observation Facility, Elevation:</b>	DUB, 7299 ft msl	<b>Observation Time:</b>	0755 MDT
<b>Lowest Cloud Condition:</b>	Clear	<b>Conditions at Accident Site:</b>	Visual Conditions
<b>Lowest Ceiling:</b>	None	<b>Temperature/Dew Point:</b>	0°C / -8°C
<b>Wind Speed/Gusts, Direction:</b>	6 knots, 270°	<b>Visibility</b>	10 Miles
<b>Altimeter Setting:</b>	30.29 inches Hg	<b>Type of Flight Plan Filed:</b>	None
<b>Departure Point:</b>	Dubois, WY (DUB)	<b>Destination:</b>	Dubois, WY (DUB)

### Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	On-Ground
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	On-Ground
<b>Total Injuries:</b>	1 Fatal		

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Andrew T Fox
<b>Additional Participating Persons:</b>	Joshua L Pritchard; Federal Aviation Administration, Denver FSDO; Denver, CO Troy R Helgeson; Lycoming Engines; Milliken, CO
<b>Note:</b>	The NTSB traveled to the scene of this accident.