



Aviation Investigation Final Report

Location:	Willow Springs, Missouri	Accident Number:	CEN14CA532
Date & Time:	September 1, 2014, 06:50 Local	Registration:	N2017A
Aircraft:	Airborne EDGE X	Aircraft Damage:	Substantial
Defining Event:	Windshear or thunderstorm	Injuries:	2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot stated that, about 45 minutes before departure, he obtained the current weather conditions via an internet website and observed a thunderstorm located about 100 miles west of the departure airport. About 20 minutes into the local area flight, he recalled seeing a low cloud bank, with a base of about 1,000 feet above ground level (agl), about 1/4 mile east of the airport. At the same time, he noticed an area of heavy rain from clouds located about 15 miles west of his position. He decided to land as soon as possible due to the deteriorating weather. Instead of making an approach to the airport's single runway, he decided to land toward the west in an open pasture area that was located on the airport property. Shortly after clearing trees and hangars that were located on the east side of the airport, the weight-shift-control aircraft suddenly lost altitude, from about 20 feet agl, and impacted the ground in an upright attitude. After the impact, the aircraft rolled over onto its left side. The pilot reported that the aircraft did not appear to have any forward velocity when it impacted terrain, as indicated by a lack of damage to the surrounding vegetation. The aircraft sustained substantial damage to the wing and fuselage. He stated that there were no mechanical malfunctions of the aircraft that would have precluded normal operation. Additionally, he reported that the aircraft's operating limitations included a maximum headwind and crosswind component of 21 knots and 11 knots, respectively.

Meteorological data collected during the accident investigation indicated that, at the time of the accident, there was a squall line of strong-to-severe thunderstorms within a few miles of the accident site. Local weather stations indicated that there was a wind shift from the south to the north that was associated with the passage of the frontal boundary. The weather stations also reported wind gusts reaching 24 knots. A review of weather radar imagery indicated that, at the time of the pilot's preflight weather check, there was a line of thunderstorms located about 40 miles northwest of the departure airport. The same line of thunderstorms was within a few miles of the airport at the time of the accident and moved through the area almost immediately thereafter. The meteorological data suggested that the aircraft likely encountered a gust front that was associated with approaching line of thunderstorms. Although the pilot checked the weather before departure, his failure to correctly identify the location and speed of the approaching line of thunderstorms contributed to the low-level wind shear encounter shortly before touchdown.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's loss of control after the weight-shift-control aircraft encountered low-level wind shear shortly before touchdown. Also causal to the accident was the pilot's inadequate preflight weather assessment that failed to correctly determine the actual location and speed of the approaching line of thunderstorms.

Findings

Environmental issues	Windshear - Ability to respond/compensate
Personnel issues	Weather planning - Pilot
Personnel issues	Identification/recognition - Pilot

Factual Information

History of Flight

Prior to flight	Preflight or dispatch event
Landing	Windshear or thunderstorm (Defining event)
Landing	Loss of control in flight
Landing	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Sport Pilot	Age:	67
Airplane Rating(s):	None	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	Lap only
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Sport pilot None	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	October 24, 2012
Flight Time:	496 hours (Total, all aircraft), 356 hours (Total, this make and model), 466 hours (Pilot In Command, all aircraft), 7 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Airborne	Registration:	N2017A
Model/Series:	EDGE X	Aircraft Category:	Weight-shift
Year of Manufacture:	2007	Amateur Built:	
Airworthiness Certificate:	Experimental light sport (Special)	Serial Number:	582-587
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	April 14, 2014 Condition	Certified Max Gross Wt.:	882 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	431 Hrs at time of accident	Engine Manufacturer:	Rotax
ELT:	Not installed	Engine Model/Series:	582
Registered Owner:	On file	Rated Power:	65 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	UNO,1228 ft msl	Distance from Accident Site:	7 Nautical Miles
Observation Time:	06:53 Local	Direction from Accident Site:	160°
Lowest Cloud Condition:	Scattered / 6000 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.02 inches Hg	Temperature/Dew Point:	22°C / 21°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Willow Springs, MO (1H5)	Type of Flight Plan Filed:	None
Destination:	Willow Springs, MO (1H5)	Type of Clearance:	None
Departure Time:	06:30 Local	Type of Airspace:	Class G

Airport Information

Airport:	Willow Springs Memorial 1H5	Runway Surface Type:	Grass/turf
Airport Elevation:	1247 ft msl	Runway Surface Condition:	Dry;Vegetation
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Precautionary landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Minor	Latitude, Longitude:	36.989723,-91.95417(est)

Administrative Information

Investigator In Charge (IIC):	Fox, Andrew
Additional Participating Persons:	Samuel Cochran; Federal Aviation Administration, St. Louis FSDO; St. Ann, MO Harvinder Pujji; Federal Aviation Administration, St. Louis FSDO; St. Ann, MO
Original Publish Date:	April 7, 2015
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=90399

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).