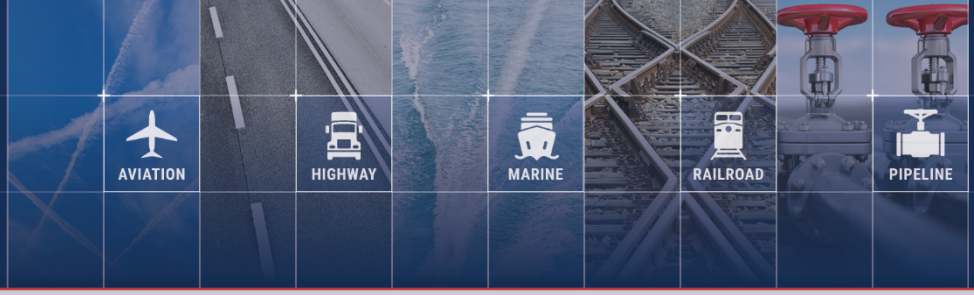

Aviation Investigation Factual Report

Location:	McArthur, Ohio	**Accident Number:**	CEN12FA115
Date & Time:	December 24, 2011, 13:50 Local	**Registration:**	N33SR
Aircraft:	Beech 19A	**Aircraft Damage:**	Substantial
Defining Event:	Aerodynamic stall/spin	**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Factual Information

HISTORY OF FLIGHT

On December 24, 2011, about 1350 eastern standard time, a Beech model 19A, N33SR, impacted a road about 250 feet south of the departure end of runway 27, at the Vinton County Airport (22I), McArthur, Ohio. The pilot and two passengers were fatally injured. The airplane sustained damage to the fuselage, both wings, and the landing gear. The aircraft was registered to and operated by the private pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which was not on a flight plan. The origin of the flight was not determined.

The airport manager reported seeing the airplane depart from 22I several hours before the accident. He did not see the airplane return to the airport, nor did he see the accident.

Another witness who lived in a house near the accident site reported hearing the airplane "rev up". He said that he glanced out of his window and saw the airplane above the runway and climbing toward the west. The airplane was about treetop level when he saw it. This witness said that he didn't continue watching the airplane and looked away. Seconds later he heard an impact and he and his mother drove to accident scene where they discovered the crashed airplane.

The airplane came to rest along a road that parallels the runway on the south side of the airport. There were witness marks on the road that indicated the direction of travel was to the west-southwest. The airplane slid into the roadside ditch on the south side of the road and came to rest facing north.

PERSONNEL INFORMATION

The pilot held a private pilot certificate with a single-engine land airplane rating. According to the pilot’s flight logbook, his pilot certificate was initially issued on September 22, 2000. His most recent third-class airman medical certificate, with a restriction for corrective lenses, was issued on March 29, 2011.

The pilot had logged about 126.5 hours total flight time, with 11.7 hours flight time in the accident airplane. The pilot's logbook included an endorsement that indicated that he had met the requirement for a flight review as required by 14 CFR 61.56 on September 28, 2010.

AIRCRAFT INFORMATION

The accident airplane was a Beech model 19A, serial number MB-443. It was a four-place, low wing, single engine airplane, with a tricycle landing gear configuration. The airplane was issued an FAA normal category standard airworthiness certificate on June 17, 1969. The airplane was powered by a 150-horsepower Lycoming O-320-E2C four-cylinder, reciprocating engine, serial number L25414-27A.

According to maintenance records, the airframe had accumulated 6,973 hours total time in service as of the most recent annual inspection dated January 7, 2011.

METEOROLOGICAL INFORMATION

Weather conditions recorded by the Ohio University Airport-Snyder Field Airport (UNI) Automated Weather Observing System (AWOS), located about 12 miles southeast of the accident site, at 1435, were: wind from 180 degrees at 10 knots, visibility 10 miles, clear skies, temperature 5 degrees Celsius, dew point -3 degrees Celsius, and altimeter 30.36 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

At the time of the on-scene examination, the airplane had been moved from the accident scene and relocated to an outdoor storage lot in McArthur, Ohio.

The right wing was separated from the airplane. The breaks in the spar roots exhibited features consistent with overload failure. Except for the spar breaks, the right wing was intact with the flap and aileron still attached. The flap pushrod end fitting was fractured through its shank on the end attached to fuselage mounted torque tube. The fracture surface was consistent with overload failure. The fuel tank contained about 1/2 tank of fuel. One aileron cable had been cut to facilitate transport, and the balance cable exhibited signatures consistent with overload failure. Continuity from the free ends of the cables to the aileron was established. The right main landing gear remained intact and attached to the wing.

The left wing was separated from the airplane. The breaks in the spar roots exhibited features consistent with overload failure. The flap and aileron were separated from the wing. The flap hinges were fractured and the fracture surfaces exhibited features consistent with overload failure. The flap pushrod end fitting was fractured through its shank on the end attached to fuselage mounted torque tube. The fracture surface exhibited features consistent with overload failure. The aileron hinges were intact and portions of the wing substructure had separated from the wing and remained attached to the aileron. One aileron cable had been cut to facilitate transport, and the balance cable exhibited signatures consistent with overload failure. Continuity from the free ends of the cables to the aileron bellcrank was established. The pushrod from the bellcrank to the aileron control surface was fractured at the shank of the

rod end closest to the aileron. The fracture surface exhibited features consistent with overload failure. The left main landing gear remained intact and attached to the wing. The fuel tank contained no fuel; however, the root rib which forms the inboard wall of the wet wing fuel tank was compromised. The outboard portion of the wing was crushed and internal structure exposed.

The engine and forward fuselage were crushed rearward. The engine remained attached to the tubular engine mount and the engine mount remained attached to the firewall; however, the engine mount tube structure was compromised due to impact. The nose landing gear was partially attached to the fuselage but folded rearward under the fuselage. The Instrument panel was partially separated from the fuselage. The cabin door was separated from the fuselage. The fuselage was buckled aft of where the wing trailing edge was located. The aft fuselage remained intact with no visible damage. The tail surfaces remained attached to the aft fuselage and were predominately intact. Control system continuity was established from the rudder pedals to the rudder, and from the control yoke t-bar to the stabilator. Both control yokes had separated from the t-bar. Aileron control cable continuity was established from the pulley on the t-bar to the penetrations in the fuselage where the wing roots would have been located. Both cables had been cut to facilitate transport. The flap handle was in the full-flap position. The flap torque tube was in the retracted flap position. The cable between the flap handle and the torque tube was fractured with fracture features consistent with overload failure. There were no shoulder harnesses installed in the airplane.

The engine was removed from the airframe and supported by the lifting eye on a tow truck. The propeller was removed from the engine. When the crankshaft was rotated, the engine produced suction and compression on all cylinders and vacuum pump rotation was noted confirming accessory gear continuity. Removal of the rocker box covers revealed no anomalies. The spark plugs were removed and exhibited signatures consistent with a normal to rich combustion mixture. The magnetos were removed and were intact. The magnetos were spun using a battery powered electric drill and both magnetos produced spark on all leads. The carburetor was removed and disassembled. There was fuel in the float bowl and the floats were intact. The fuel pump was removed and the cam arm was actuated. Suction was felt on the inlet hose when actuated.

The propeller blades were bent rearward about 10 degrees and chordwise scratching was observed on the aft faces of the blades.

The participants traveled to the accident scene which was on the south side of the road that ran along the south side of the east-west runway. The airplane was reportedly facing north with the spinner approximately adjacent to the south edge of the road pavement. The airplane came to rest approximately adjacent to the departure end of runway 27. There were witness marks on the road pavement indicating the direction of travel to the west-southwest at impact.

Postaccident examinations did not reveal any anomalies consistent with a preimpact failure or malfunction.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy of the pilot was performed by the Franklin County Coroner's Office, Columbus, Ohio, on December 27, 2011. The pilot's death was attributed to injuries received in the accident.

Toxicology testing was performed by the FAA Civil Aerospace Medical Institute. Testing results indicated the following:

>> 0.032 (ug/mL, ug/g) Hydromorphone detected in Blood
>> Midazolam detected in Liver
>> Midazolam detected in Blood
>> 0.03 (ug/ml, ug/g) Morphine detected in Blood

A review of the toxicology results indicated that the substances detected resulted from hospital treatment following the accident.

Pilot Information

Certificate:	Private	**Age:**	54,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
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:**	March 29, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 28, 2010
Flight Time:	127 hours (Total, all aircraft), 12 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N33SR
Model/Series:	19A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	MB-443
Landing Gear Type:		**Seats:**	4
Date/Type of Last Inspection:	January 7, 2011 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	6973 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	C91 installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-320-E2C
Registered Owner:	On file	**Rated Power:**	150 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:	UNI,766 ft msl	**Distance from Accident Site:**	12 Nautical Miles
Observation Time:	14:35 Local	**Direction from Accident Site:**	135°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.36 inches Hg	**Temperature/Dew Point:**	5°C / -3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Unknown	**Type of Flight Plan Filed:**	None
Destination:	McArthur, OH (22I)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	

Airport Information

Airport:	Vinton County Airport 22I	**Runway Surface Type:**	Asphalt
Airport Elevation:	958 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	27	**IFR Approach:**	None
Runway Length/Width:	3725 ft / 75 ft	**VFR Approach/Landing:**	Go around

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	39.328056,-82.441947(est)

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Brian Crogan; FAA-Cleveland FSDO; Cleveland, OH Mike Childers; Textron Lycoming; Williamsport, PA
Report Date:	June 12, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=82574