National Transportation Safety Board
Aviation Accident Final Report

Location:	Union City, OK	**Accident Number:**	CEN17FA138
Date & Time:	03/24/2017, 1520 CDT	**Registration:**	N2053Y
Aircraft:	BEECH V35	**Aircraft Damage:**	Destroyed
Defining Event:	Aerodynamic stall/spin	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot was on a local pleasure flight in a single-engine airplane. A witness reported seeing the airplane descending in a "spin" from a high altitude. The airplane impacted terrain and a post-crash fire ensued. A review of radar data showed the airplane's departure from a small airport on a north heading. The airplane reached an altitude of 5,500 ft, before it slowed down. The last radar return was about 9 minutes after the airplane departed and showed the airplane near the accident site at 5,250 ft and 73 knots. The post-crash fire consumed or thermally damaged most of the airplane. The extensive fire and impact damage limited the scope of the examination; however, no pre-impact abnormities were noted with the engine or airframe. The pilot's toxicology test was positive for an over-the-counter pain and an anti-depressant medication; neither medication is considered impairing. However, the possible effects of depression could not be determined from the available evidence. Weather conditions were favorable for the flight. The accident is consistent with the pilot not recovering from the spin; however, a reason for the initial loss of control could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's improper recovery from a spin.

Findings

Aircraft	Performance/control parameters - Not attained/maintained (Cause)
Personnel issues	Aircraft control - Pilot (Cause) Mental/emotional state - Pilot
Not determined	Not determined - Unknown/Not determined (Cause)

Factual Information

History of Flight

Enroute-cruise	Unknown or undetermined
	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)
Post-impact	Fire/smoke (post-impact)

On March 24, 2017, about 1520 central daylight time, a Beechcraft V35B airplane, N2053Y, impacted terrain near Union City, Oklahoma. The pilot was fatally injured, and the airplane was destroyed. The airplane was registered to JE Aviation LLC, Oklahoma City, Oklahoma, and operated by a private individual under Title 14 *Code of Federal Regulations* Part 91 as a personal fight. Visual meteorological conditions prevailed, and the airplane was not on a flight plan. The local flight originated from the Chickasha Municipal Airport (KCHK), Chickasha, Oklahoma.

A review of radar data revealed that the flight originated from KCHK (elevation 1,152 ft) about 1510. After departure, the airplane turned to a northerly heading and climbed to 5,500 ft. The radar tracked the airplane northward before the airplane slowed and disappeared from the radar. The last radar point at 1519 recorded the airplane at 73 knots and 5,250 ft in the vicinity of the accident site.

The pilot was not in contact with an air traffic control facility nor was he required to be.

A witness reported hearing the airplane and then seeing it descending in a "spin;" the airplane disappeared behind a tree line and a fire erupted. Another witness said that he heard the airplane, stating that "the engine sounded weird, like cutting in and out." The witness added that he heard the crash and saw smoke and fire.

Pilot Information

Certificate:	Private	**Age:**	31
Airplane Rating(s):	Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With Waivers/Limitations	**Last FAA Medical Exam:**	10/20/2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 286.5 hours (Total, all aircraft), 20 hours (Total, this make and model), 20.3 hours (Last 30 days, all aircraft)		

The pilot held a private pilot certificate with ratings for airplane single-engine land and instrument airplane. The pilot's third-class medical certificate was issued on October 20, 2015, with the limitation: "must wear corrective lenses." A review of the pilot's logbook revealed that he had 286.5 hours total flight and 19.3 hours in the accident airplane.

Aircraft and Owner/Operator Information

Aircraft Make:	BEECH	**Registration:**	N2053Y
Model/Series:	V35 B	**Aircraft Category:**	Airplane
Year of Manufacture:	1978	**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	D-10200
Landing Gear Type:	Retractable - Tricycle	**Seats:**	
Date/Type of Last Inspection:	01/16/2017, Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	Reciprocating
Airframe Total Time:	5074.5 Hours	**Engine Manufacturer:**	Continental
ELT:	C126 installed, not activated	**Engine Model/Series:**	IO-550
Registered Owner:	JE Aviation LLC	**Rated Power:**	300 hp
Operator:	JE Aviation LLC	**Operating Certificate(s) Held:**	None

The Beechcraft V35B is a 4-place, low-wing, single-engine airplane with retractable landing gear. The accident airplane was powered by a 300-horsepower, 6-cylinder, reciprocating Continental IO-550 engine, which drove a constant-speed propeller. The normally aspirated engine was modified with the addition of a turbocharger. The airplane was also modified with

two 20-gallon wing tip fuel tanks. These modifications were approved under supplemental type certificates (STCs). A review of the airplane's maintenance records revealed the airplane's most recent annual inspection was conducted on January 16, 2017, at a total airframe time of 5,074.5 hours. A review of Federal Aviation Administration (FAA) records revealed that JE Aviation LLC's purchase of the airplane was completed on March 2, 2017.

METEOROLOGICAL INFORMATION

At 1535, the weather observation facility located at KCHK, located about 18 miles south of the accident site, recorded wind 220° at 22 knots gusting to 29 knots, 10 miles visibility, clear sky, temperature 77°F, dew point 36°F, and an altimeter setting of 29.69 inches of mercury.

Astronomical data from the U.S. Navy Observatory for Chickasha recorded a sunrise on March 24, 2017, at 0704 and sunset at 1947.

WRECKAGE AND IMPACT INFORMATION

The airplane impacted an open field located in a rural, lightly wooded area. A postcrash fire consumed most of the airplane and ignited a brush/grass fire which also consumed small buildings located near a residence.

The on-site examination of the of the impact site revealed an absence of a wreckage path, and small ground creators, near the engine and right-wing tip. Damage to the nose of the airplane, wings, and the flat position of the wreckage along with the ground scars, are were consistent with the airplane impacting terrain in a slightly right-wing-down, nose-low attitude, with little forward velocity.

The airplane's fuselage and wings were largely consumed by the fire, leaving heavier structures and an outline of the components. Flight control continuity from the control column to both the left and right ailerons bellcranks was confirmed. The ruddervator cables were traced to the control column and rudder pedals. The control column and pedals were impact-damaged; however, the attaching hardware for the flight controls was in place. All three of the airplane's landing gear were in the "down" position with the gear actuator in the extended (gear down) position. The cabin's instrument panel and avionics were destroyed by impact and fire damage.

After the initial on-site documentation of the wreckage, the airplane was recovered and transported to a salvage facility. A detailed engine examination was conducted on April 20, 2017, at the salvage facility by the National Transportation Safety Board (NTSB) investigator-in-charge and a technical representative from the engine manufacturer.

The engine received extensive fire damage and impact damage, and the three-bladed propeller remained attached to the crankshaft flange. Initially, the engine would not rotate by hand;

however, when an extension was applied to the crankshaft, a "pop" was heard and the crankshaft would rotate with difficulty. Later, when the engine was disassembled, it was confirmed that the camshaft had broken just before the camshaft gear. No preimpact abnormalities were noted with the crankshaft or through the valve train. The magnetos were fire damaged and could not be field tested. The fuel metering unit, manifold, and fuel pump were examined; all had either fire or impact damage. The turbocharger had impact damage and was partially melted. The top set of sparkplugs were removed; the plugs exhibited light colored combustion deposits; and the electrodes exhibited normal signatures.

Although the examination was limited by thermal and impact damage, no pre-impact abnormalities were noted during the airframe or engine examinations.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	KCHK	**Distance from Accident Site:**	
Observation Time:	1535 CDT	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 Miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	22 knots / 29 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	220°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.69 inches Hg	**Temperature/Dew Point:**	25°C / 2°C
Precipitation and Obscuration:	No Precipitation		
Departure Point:	Chickasha, OK (KCHK)	**Type of Flight Plan Filed:**	None
Destination:	Wiley Post, OK (KPWA)	**Type of Clearance:**	None
Departure Time:	1510 CDT	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	On-Ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	35.361389, -97.912778

Medical And Pathological Information

The Office of the Chief Medical Examiner, Oklahoma City, Oklahoma conducted an autopsy on the pilot. The cause of death was determined to be "multiple blunt force injuries and thermal injury"

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, conducted toxicological testing on the pilot. The specimens were not tested for cyanide and carbon monoxide. The tests were negative for ethanol and positive for aproxen, and ertraline.

Naproxen is an overthecounter anti-inflammatory pain medication commonly marketed with the names Naprosyn and Aleve; it is not impairing. Desmethylsertraline is a metabolite of ertraline, which is an antidepressant prescription medication, often marketed under the name Zoloft. While Zoloft is not generally considered impairing, the underlying depression can impair cognition, judgment, and slow psychomotor responses. As a result, depression is a disqualifying condition to the FAA, but medical certificates may be issued if the depression is in remission for at least 6 months. In this case, personal medical records were not obtained and the status of the pilot's psychiatric illness at the time of the accident is unknown.

Administrative Information

Investigator In Charge (IIC):	Craig Hatch	**Report Date:**	10/01/2018
Additional Participating Persons:	Adama Allmound; FAA FSDO; Oklahoma City, OK Andrew Hall; Textron Aviation; Wichita, KS John Kent; CMI; Mobile, AL		
Publish Date:	10/01/2018		
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=94909		