Aviation Investigation Final Report

Location:	Collinsville, Oklahoma	**Accident Number:**	CEN13FA221
Date & Time:	April 7, 2013, 18:00 Local	**Registration:**	N57672
Aircraft:	Mooney M20J	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot and passenger were on the return leg of a cross-country flight. Before departing from his home airfield, the pilot filed the outbound and return legs for the instrument flight rules flight as, "GPS direct." The surface wind was reported as 17 knots gusting to 24 knots with a ceiling at 2,000 feet. Shortly after departure, the pilot contacted air traffic control and was given a clearance to 6,000 feet and an amended flight routing. About 5 minutes later, the airplane disappeared from radar, and the pilot did not respond to the air traffic controller's radio call. Witnesses reported seeing the airplane at a steep angle and at a high rate of speed before it impacted terrain. The wreckage was largely fragmented, and a postcrash fire consumed a large portion of the airplane. The airplane's bottom skin panel was located about 1.4 miles from the accident site; because of its location, it is likely the airplane's skin panel separated during the high-speed descent. Review of radar data revealed the airplane climbed to about 4,300 feet and then entered a right descending turn before disappearing from radar. Examination of the wreckage did not reveal any abnormalities that would have precluded normal operation. The reason for the pilot's loss of control could not be determined. An autopsy was not conducted; therefore, it would not be determined whether a medical or physiological issue contributed to the accident.

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 of the airplane for reasons that could not be determined because an examination of the airplane did not find an abnormality that would have precluded normal operations.

Findings

Not determined	(general) - Unknown/Not determined
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Unknown	Unknown or undetermined
Enroute-climb to cruise	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On April 7, 2013, about 1800 central daylight time, a Mooney M20J, airplane, N57672, impacted terrain near Collinsville, Oklahoma. The commercial rated pilot and passenger were fatally injured and the airplane was destroyed. The airplane was registered and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which operated on an instrument flight rules flight plan. The flight originated from the Tulsa International Airport (KTUL), Tulsa, Oklahoma, at 1747, and was en route to the Manhattan Regional airport, Manhattan, Kansas (KMHK).

A review of the air traffic control communications and radar data revealed that the pilot contacted the TUL departure controller; which cleared him to climb to 6,000 feet and to the "DELAT" intersection. About 5 minutes later, the aircraft disappears from the controller's radar, and the pilot does not respond to the controller's radio calls.

Several witnesses reported seeing the airplane descending at a high rate of speed, before it impacted terrain, in a small lot behind a vacant house.

PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with ratings for airplane single-engine and multiengine land, and instrument-airplane. The pilot held a third class medical certificate that was issued on January 9, 2013, with the restriction, "must have available glasses for near vision". At the time of the exam the pilot had reported 3,686.7 total flight hours and 150.8 hours in the preceding six months. A pilot logbook was located among the wreckage; however, additional flight time entries could not be read, due to the condition of the logbook.

AIRCRAFT INFORMATION

The accident airplane was a Mooney M20J which is a low-wing, single-engine airplane, with retractable tricycle gear, powered by a reciprocating engine driving a constant speed propeller.

A review of the airplane's maintenance records revealed that the airplane's last annual inspection was conducted on April 1, 2012, with a Hobbs meter reading of 4,818.6 hours. At the time of the inspection the engine had a total time of 3,650.5 and 551.6 hours since overhaul.

The airplane was equipped with a fiberglass belly panel, installed per Supplemental Type Certificate (STC), SA3252NM.

METEOROLOGICAL INFORMATION

At 1753, the automated weather observation facility located at KTUL, reported wind from 160 degrees at 17 knots gusting to 24 knots, with a peak wind recorded at 1743, at 170 degrees at 29 knots, visibility 9 miles, overcast ceiling at 2,000 feet, temperature 66 Fahrenheit (F), dew point 61 F, and a barometric pressure of 29.72 inches of mercury.

Prior to the pilot's departure from MHK, he telephoned flight service and received a weather briefing for this planned flight. He filed two IFR flight plans, one for the flight to TUL, and one for the return trip back to MHK; the route of flight for each trip was filed as GPS direct. About 1706 the pilot telephoned flight service, and received an abbreviated weather brief for the return flight from Tulsa to Manhattan.

COMMUNICATIONS and RADAR INFORMATION

A review of air traffic communications revealed that the pilot was transferred from the KTUL tower controller to the departure controller. The departure controller then issued instructions for the pilot to climb to 6,000 and proceed direct "DELAT". The accident pilot acknowledged the controller instructions, with the read back as 6,000 and what sounded like, "direct vlap". Approximately five minutes later, the controller tried to contact the pilot; the pilot did not respond and there was no further communication or distress calls from the pilot.

RADAR

A review of the radar data revealed the airplane departed TUL on a northward heading. The data revealed the airplane, climbed to about 4,300 feet, before a descending right turn was depicted. No other radar points from the aircraft were observed and the last radar point was near the accident site.

WRECKAGE AND IMPACT INFORMATION

The National Transportation Safety Board, inspectors from the Federal Aviation Administration (FAA), and a technical representative from Lycoming aircraft engines examined the airplane wreckage on site.

The airplane's impact left a crater approximately 10 feet in diameter and about 4 feet deep. The airplane's engine and part of a propeller blade was visible in the crater; the left wing, empennage, were just outside the crater. One end of a narrow ground scar contained pieces of a fiberglass wingtip and a green navigation light, the other end of the scar was at the impact crater. A postcrash fire consumed part of the fuselage and rear stabilizer. The remainder of the airplane wreckage was fragmented.

The airplane impacted the backyard of a vacant house, in a residential area. All major components of the airplane were accounted for on scene. Fragmented pieces of the airplane were located within yards of the neighboring houses.

The fiberglass belly skin panel was located away from the main crash site, on a heading of about 346 degrees and approximately 1.4 miles from the main impact point.

The airplane's artificial horizon (attitude indicator) was located; the instrument had heavy impact damage. The unit was disassembled, and the gyro had scoring consistent with rotation at the time of impact.

The engine was located in the center of the crater and had received extensive damage. The aft accessory case and sump were shattered and separated from the main case. Pieces of the accessories; fuel pump, magneto, and vacuum pump were found scattered around the accident site. Three blades of the constant speed propeller were located; each blade had separated from the hub. The blades each had a wave type bend, leading edge polishing, and had leading edge damage.

MEDICAL AND PATHOLOGICAL INFORMATION

Due to extensive trauma, an autopsy on the pilot was not conducted.

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, did not perform toxicological tests on the specimens for carbon monoxide or cyanide. The specimens were negative for ethanol and tested drugs.

TEST AND RESEARCH

The wreckage was examined on May 22, 2013 at a salvage facility, near Lancaster, Texas, by the NTSB and a technical representative from the engine manufacturer. The main wing spar was fractured into several sections; the exam noted that the deformation and damages were consistent with the wing being intact at the time of ground impact. The left horizontal stabilizer, left and right elevator, vertical stabilizer, and rudder remained attached to the empennage. The right horizontal stabilizer was separated and was fire damaged. The left elevator counterweight was not located in the wreckage; however, damage to the outboard stabilizer and elevator was consistent with the counterweight being attached at impact.

All of the examined fracture surfaces exhibited features consistent with overload failures and no evidence of fatigue or flutter.

Pilot Information

Certificate:	Commercial	**Age:**	70
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
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:**	January 9, 2013
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	3686.6 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	**Registration:**	N57672
Model/Series:	M20J	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-1493
Landing Gear Type:	Retractable - Tricycle	**Seats:**	
Date/Type of Last Inspection:	April 1, 2012 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	4819 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	IO-360
Registered Owner:	On file	**Rated Power:**	200 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:	KTUL	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	17:53 Local	**Direction from Accident Site:**	5°
Lowest Cloud Condition:	Thin Overcast / 2000 ft AGL	**Visibility**	9 miles
Lowest Ceiling:	Overcast / 2000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	17 knots / 24 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	160°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.71 inches Hg	**Temperature/Dew Point:**	19°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tulsa, OK (KTUL)	**Type of Flight Plan Filed:**	IFR
Destination:	Manhattan, KS (KMHK)	**Type of Clearance:**	IFR
Departure Time:	17:47 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	36.365276,-95.84111

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Dan Donnelly; FAA FSDO; Oklahoma City, OK John Butler; Lycoming Engines; Arlington, TX
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Investigation Class:	Class
Note:	
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