



Aviation Investigation Final Report

Location:	Moose Lake, Minnesota	Accident Number:	CEN19FA139
Date & Time:	May 8, 2019, 16:30 Local	Registration:	N111JP
Aircraft:	Mooney M20J	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Business		

Analysis

The instrument rated private pilot departed into a snowstorm at the time of the accident. The pilot had just received a weather briefing and an instrument flight rules clearance. One witness heard the airplane take off from the non-towered airport toward the north and turn west before the sound of the engine stopped abruptly. A search was initiated after the pilot did not contact air traffic control. The airplane was found partially submerged in a river the next morning.

Weather observations around the time of the accident depicted gusty wind out of the north, low clouds, and light snow. Several witnesses in the area reported large snowflakes and an accumulation of 1.5 to 2 inches within an hour. The airplane was parked outside on the day of the accident. A witness at the airport was unaware of any tools that the pilot had access to clear snow or ice from the airplane before the flight. Investigators were unable to determine how much snow may have accumulated on the airplane before the flight or if the pilot removed any wing contamination before he took off.

The airplane came to rest near the west bank of the river in about 2 to 4 ft of water. The engine and propeller were imbedded in the mud and silt on the bank of the river and the tail was extended into the air. Signatures on the leading edge of both wings and at the fuselage were consistent with a nose low, wings level attitude at the time of impact. An examination of the airframe, engine, and related systems revealed no anomalies that would have precluded normal operations.

From the toxicology results, it appears that the pilot had taken the prescription medication clonazepam. The concentration of clonazepam in cavity blood was below therapeutic levels. The inactive metabolite, 7-amino-clonazepam was also detected at low concentrations, suggesting the use of the medication occurred several days prior to the accident. Thus, it is unlikely that the pilot's use of clonazepam was a factor in the accident.

Based upon the statement from the witness, the prevailing wind at the time of the accident, and the location of the wreckage, the pilot likely departed from the north/south runway. It is most likely that the pilot lost control of the airplane after entering the snowstorm. The reason for the loss of control could not be determined with the available information.

Probable Cause and Findings

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

The pilot's failure to maintain control of the airplane after departing into a snowstorm.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Environmental issues	Low ceiling - Effect on operation
Environmental issues	Low visibility - Effect on operation
Environmental issues	Snow - Effect on operation

Factual Information

History of Flight

Initial climb	Other weather encounter
Initial climb	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On May 8, 2019, about 1630 central daylight time, a Mooney M20J airplane, N111JP, was substantially damaged when it was involved in an accident near Moose Lake, Minnesota. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 business flight

According to colleagues, the pilot arrived at the hospital the morning of the accident for his scheduled shift and worked all day. Federal Aviation Administration records indicate that the pilot obtained a weather briefing from flight service station at 1541. Colleagues noted that he left the hospital around 1600 and drove to the airport about 5 minutes away. According to flight service station records, he received his instrument flight rules clearance, via telephone, at 1628 and was issued an instrument clearance with a void time of 1635. The business flight was enroute to Crystal Airport (MIC), Minneapolis, Minnesota.

One witness heard the airplane take off toward the north from the non-towered airport and turn west before the engine stopped abruptly. The witness did not report what he heard to law enforcement until after he heard about the accident on the radio.

When the pilot did not check in with air traffic control, a search for the airplane and the pilot was initiated. The airport manager returned to the airport about 1700 and the airplane was not there. Local law enforcement and fire/rescue personnel located the wreckage of the airplane the next morning about 1/4 mile to the northwest of the Moose Lake Carlton County Airport (MZH) in the Moose Horn River.

There were no air traffic control services provided during the flight and no radar data was available.

Pilot Information

Certificate:	Private	Age:	65, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
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:	May 16, 2018
Occupational Pilot:	No	Last Flight Review or Equivalent:	October 31, 2018
Flight Time:	(Estimated) 4182.7 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	Registration:	N111JP
Model/Series:	M20J No Series	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	24-1608
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	March 7, 2019 100 hour	Certified Max Gross Wt.:	2899 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	4001.4 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	C91A installed, not activated	Engine Model/Series:	IO-360-A3860D
Registered Owner:		Rated Power:	
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Day
Observation Facility, Elevation:	KMZH, 1075 ft msl	Distance from Accident Site:	0.5 Nautical Miles
Observation Time:	16:35 Local	Direction from Accident Site:	90°
Lowest Cloud Condition:		Visibility	1.25 miles
Lowest Ceiling:	Overcast / 600 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	11 knots / 18 knots	Turbulence Type Forecast/Actual:	Convective / Unknown
Wind Direction:	30°	Turbulence Severity Forecast/Actual:	Moderate / Unknown
Altimeter Setting:	30.01 inches Hg	Temperature/Dew Point:	0°C / 0°C
Precipitation and Obscuration:	Light - None - Snow		
Departure Point:	Moose Lake, MN (KMZH)	Type of Flight Plan Filed:	IFR
Destination:	Minneapolis, MN (KMIC)	Type of Clearance:	IFR
Departure Time:	16:30 Local	Type of Airspace:	Class G

The closest official weather observation station was located just east of the accident site at Moose Lake Carlton County Airport. The routine aviation weather observation for KMZH issued at 1536 reported wind at 040° at 7 knots, gusting to 15 knots, visibility 5 miles with rain, sky condition overcast clouds at 1,400 ft, temperature 2° C, dewpoint temperature 0°C. The observation issued at 1615 reported wind 040° at 11 knots, gusting to 16 knots, visibility 2.5 miles with light snow, sky condition overcast clouds at 800 ft, temperature 1° C, dewpoint temperature 0° C. The observation issued at 1655 reported wind 040° at 10 knots, gusting to 15 knots, visibility 1 mile with light snow, sky condition overcast clouds at 600 ft.

Weather radar data from Duluth, Minnesota (KLDH), located 35 miles northeast of the accident site, depicted both dry snow and graupel above and south of the accident location. The wind profile for KLDH depicted wind between 2,000 and 4,000 ft east-northeast at 30 to 35 knots.

Multiple witnesses in the area reported large wet snowflakes than initially melted on impact but over an hour about an inch and a half to two inches of snow accumulated on the ground and vehicle surfaces. The roads were slippery.

AIRMETS for icing, turbulence, and instrument meteorological conditions were issued for the accident site over the time of the accident.

The airplane was parked outside on the day of the accident. A witness at the airport was unaware of any tools that the pilot had access to clear snow or ice from the airplane before the flight. Investigators were unable to determine how much snow may have accumulated on the airplane before the flight or if the pilot removed any wing contamination before he took off.

Airport Information

Airport:	Moose Lake Carlton County Airp KMZH	Runway Surface Type:	Asphalt
Airport Elevation:	1076 ft msl	Runway Surface Condition:	
Runway Used:	04	IFR Approach:	None
Runway Length/Width:	3200 ft / 75 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	46.423332,-92.805556

The airplane came to rest near the west bank of the river in about 2 to 4 ft of water. The engine and propeller were imbedded in the mud and silt on the bank of the river and the tail was extended into the air. When first responders arrived on scene the next morning, the visible portion of the empennage was covered in snow as illustrated in figure 1.



Figure 1. Empennage covered in snow (provided by LEO).

The airplane was recovered from the river and relocated to a hangar for further examination. Both the right and left aileron were damaged, and full range flight control continuity could not be confirmed. The flaps and landing gear appeared to be retracted. The leading edge of both wings exhibited accordion-type crush signatures and was rolled up and aft. The forward fuselage was crushed up and aft about 45°. The elevator and rudder controls were free and correct. The examination of the airframe did not reveal any anomalies that would have precluded normal operations.

The engine was impact separated and the propeller assembly remained attached at the hub. An examination of the engine revealed no anomalies that would have precluded normal operations. Signatures on the propeller blades were consistent with rotation at the time of impact.

Medical and Pathological Information

The autopsy report for the pilot attributed the cause of death to multiple blunt-force injuries. FAA Forensic Sciences Laboratory toxicology testing detected the sedating medication clonazepam in cavity blood and its inactive metabolite 7-aminoclonazepam in cavity blood (15 nanograms per milliliter

[ng/ml]) and in liver tissue. Clonazepam is commonly marketed as Klonopin and according to a family member the pilot was taking it for restless leg syndrome.

Administrative Information

Investigator In Charge (IIC):	Rodi, Jennifer		
Additional Participating Persons:	Edward Martin; Federal Aviation Administration; Minneapolis, MN Nikolas Halatsis; Federal Aviation Administration; MN John Butler; Lycoming Engines		
Original Publish Date:	February 9, 2022	Investigation Class:	3
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=99405		

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