



Aviation Investigation Final Report

Location:	Ennis, Montana	Accident Number:	WPR20LA245
Date & Time:	July 30, 2020, 09:38 Local	Registration:	N337V
Aircraft:	Cessna 337	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Fatal, 2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The left seat pilot-in-command (PIC) reported that, he passed the controls to the right seat student pilot once they were en route on the accident flight. The rear seat passenger's postaccident statement indicated that the left seat pilot was at the controls for the duration of the flight; however, he may not have seen the exchange of the flight controls as he was seated behind both pilots at the time. As they were flying southbound on the cross-country flight over a valley about 3,000 ft above ground level, they agreed that they wanted to view a resort in the area. The student pilot then turned the airplane to the southeast towards higher mountainous terrain. After the airplane had entered a boxed canyon, and with a ridge in the airplane's flightpath that it could not clear, the PIC took control of the airplane and attempted an evasive maneuver to reverse course to exit the canyon. However, during the maneuver, the PIC likely did not maintain sufficient airspeed, which resulted in an aerodynamic stall/spin and subsequent impact with remote mountainous terrain. The PIC reported no mechanical anomalies with the airplane that would have precluded normal operation.

Toxicology results indicated that the student pilot had used cannabis, but likely had metabolized it such that no detectable psychoactive chemicals remained in his blood. The toxicology results and the student pilot's limited role in the accident flight suggest that the effects of cannabis use were unlikely to have 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-in-command's failure to maintain sufficient airspeed while attempting an evasive maneuver from a boxed canyon, which resulted in an aerodynamic stall/spin and impact with mountainous terrain. Contributing to the accident was the pilot-in-command's failure to monitor the environment before flying into mountainous terrain.

Findings

Aircraft	Airspeed - Not attained/maintained
Aircraft	Angle of attack - Capability exceeded
Personnel issues	Aircraft control - Pilot
Personnel issues	Monitoring environment - Pilot
Environmental issues	Mountainous/hilly terrain - Effect on operation

Factual Information

History of Flight

Maneuvering	Loss of control in flight (Defining event)
Maneuvering	Aerodynamic stall/spin
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On July 30, 2020, about 0938 mountain daylight time, a Cessna 337F, N337V, was substantially damaged when it was involved in an accident near Ennis, Montana. The right-front seat student pilot was fatally injured, and the left-front seat commercial pilot-in-command (PIC) and rear-seat passenger were seriously injured. The airplane was operated as a Title 14 *Code of Federal Regulations (CFR)* Part 91 personal cross-country flight.

According to the PIC, he planned a route of flight from Helena, Montana, to Jackson Hole, Wyoming. The PIC further reported that the right seat student pilot was flying the airplane about 3,000 ft above ground level. When they decided to fly over a ski resort at Big Bear, Montana, the flying right-seat student pilot turned the airplane to the southeast in the direction of mountainous terrain. The airplane subsequently entered a boxed canyon, and with a ridge now in the airplane's flightpath that could not be cleared, the PIC took control of the airplane and attempted an evasive maneuver to exit the boxed canyon. However, the evasive maneuver, which was unsuccessful, resulted in a stall/spin and subsequent impact with remote mountainous terrain.

The PIC opined that the accident should have been easily avoided by having more than sufficient altitude before entering mountainous terrain. Additionally, the PIC reported no mechanical anomalies with the airplane or engine prior to the accident that would have precluded normal operation.

The rear seat passenger reported that they departed Helena at 0845 and that the "entirety of the flight was flown by the front left-seat pilot." He further stated that the PIC was climbing in an attempt to clear a ridge when the airplane stalled and impacted terrain in a nose-down attitude.

The Montana State Medical Examiner, Missoula, Montana, performed an autopsy on the student pilot and noted the cause of death as multiple blunt force injuries.

Right Seat Student Pilot Medical Review

Toxicology testing performed at the Federal Aviation Administration Forensic Sciences Laboratory identified 11-hydroxy-delta-9-THC [tetrahydrocannabinol] in the urine and its metabolite, carboxy-delta-9-THC was detected in the blood and urine. Levels of 11-hydroxy-

delta-9-THC were 26.4 ng/mL and levels of carboxy-delta-9-THC were 3.1 ng/mL and 1225 ng/mL, respectively.

Delta-9-THC (the primary psychoactive component in cannabis) was not detected. The cannabis plant contains chemicals called cannabinoids. Significant performance impairments are usually observed for at least 1-2 hours following cannabis use, and residual effects have been reported up to 24 hours. However, it is difficult to relate blood levels of delta-9-THC to effects, and there is no mechanism for relating levels in any other specimens to psychoactive effects.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	27, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Lap only
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	September 28, 2017
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	July 22, 2020
Flight Time:	671 hours (Total, all aircraft), 37 hours (Total, this make and model), 653 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 89 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Student	Age:	Male
Airplane Rating(s):	None	Seat Occupied:	Right
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:	May 14, 2020
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	200 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N337V
Model/Series:	337 F	Aircraft Category:	Airplane
Year of Manufacture:	1971	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	33701369
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	April 1, 2020 Annual	Certified Max Gross Wt.:	4630 lbs
Time Since Last Inspection:	43 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	2028 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	Installed	Engine Model/Series:	TSIO-360-C
Registered Owner:	On file	Rated Power:	210 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:	EKS,5423 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	09:55 Local	Direction from Accident Site:	43°
Lowest Cloud Condition:	Clear	Visibility	
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	None / None
Wind Direction:		Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.37 inches Hg	Temperature/Dew Point:	19°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Helena, MT (HLN)	Type of Flight Plan Filed:	None
Destination:	Jackson Hole, WY (JAC)	Type of Clearance:	None
Departure Time:	09:00 Local	Type of Airspace:	Class E;Class G

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	1 Fatal, 1 Serious	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Fatal, 2 Serious	Latitude, Longitude:	45.389999,-111.558052(est)

Administrative Information

Investigator In Charge (IIC):	Little, Thomas
Additional Participating Persons:	Troy McClanahan; Aviation Safety Inspector; Helena, MT Casey Love; Textron Aviation; Wichita, KS
Original Publish Date:	June 14, 2022
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=101709

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