



# Aviation Investigation Final Report

<b>Location:</b>	Glenwood Springs, Colorado	<b>Accident Number:</b>	DEN02FA030
<b>Date &amp; Time:</b>	March 10, 2002, 20:19 Local	<b>Registration:</b>	N1323D
<b>Aircraft:</b>	Mooney M20C	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

After visiting his girlfriend, the non-instrument rated private pilot took off in dark night visual meteorological conditions to return home. When he failed to arrive, a search was initiated and the wreckage was found 2 days later in deep snow in mountainous terrain. According to recorded radar data at two different sites, a target departed the airport and climbed to 13,900 feet msl and took up a direct heading toward what would have been the pilot's planned destination. Halfway there, the target made a wide circle to the left of approximately 450 degrees, followed immediately by a tight circle to the right of approximately 360 degrees. The difference in time and altitude between the last two radar "hits" 14 seconds and 3,000 feet, respectively, equates to a 12,857 foot per minute rate of descent.

## 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 aircraft control due to spatial disorientation, resulting in a collision with terrain. Contributing factors were the pilot's lack of an instrument rating and the dark night conditions.

## Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: MANEUVERING

Findings

1. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
2. (C) SPATIAL DISORIENTATION - PILOT IN COMMAND
3. (F) LACK OF CERTIFICATION - PILOT IN COMMAND

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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

Findings

4. TERRAIN CONDITION - MOUNTAINOUS/HILLY
5. (F) LIGHT CONDITION - DARK NIGHT

## Factual Information

### HISTORY OF FLIGHT

On March 10, 2002, at 2019 mountain standard time, a Mooney M20C, N1323D, owned and operated by the pilot, was destroyed when it impacted terrain about 16 miles north-northeast of Glenwood Springs, Colorado. The private pilot, the sole occupant aboard, was fatally injured. Visual meteorological conditions prevailed, and no flight plan had been filed for the personal flight being operated under Title 14 CFR (Code of Federal Regulations) Part 91. The flight originated at Kremmling, Colorado, approximately 1946, and was en route to Grand Junction, Colorado.

According to a friend of the pilot who lived in Kremmling, she received a telephone call from him some time after 1700. He told her that his wife had left for Washington State to be with their daughter who was expecting a child soon, and he was hoping to fly over from Grand Junction that evening to see her. Approximately 1850, she received another telephone call from the pilot, telling her he was at the Kremmling Airport. She drove to the airport and, according to her statement, they sat in her car and made plans for the coming weekend. He told her that his trip from Grand Junction had been "pretty smooth" and his speed had been 125 mph, increasing to about 200 mph as he descended over the mountains. Prior to his departure, the pilot preflighted his airplane as "he always did." She said that he was in "a very good mood," and happy about being able to see her that weekend. She said he departed Kremmling between 1930 and 2000 to return to Grand Junction.,

When the pilot failed to arrive in Grand Junction, FAA was notified and an ALNOT (Alert Notification) was issued on March 11 at 2241. The ALNOT was cancelled on March 12 at 1747 when National Guard helicopters, aided by a weak ELT (emergency locator transmitter) signal, located the wreckage in mountainous terrain at a location of 30 degrees, 43.202' north latitude, and 107 degrees, 13.406' west longitude.

### CREW INFORMATION

The 50-year-old pilot possessed a private pilot certificate with an airplane single-engine land rating, dated June 29, 2001. He was not instrument rated. His third class airman medical certificated, dated March 7, 2001, contained the limitation: "Holder shall possess correcting glasses for near vision while exercising the privileges of his/her airman certificate." The pilot's logbook indicated the following (all times approximate due to arithmetical errors):

Total time - 224.7

Pilot-in-command - 181.2

Airplane, single engine - 224.7

Mooney M20C - 29.9  
Night - 19.1  
Simulated instruments - 3.9

On December 18, 2001, the pilot was involved in a landing accident at Crested Butte, Colorado. No one was injured in the accident, but the airplane, a Piper PA-28-235, N8704W, was damaged beyond economical repair. In his logbook the pilot wrote, "Crashed plane on landing. Frozen left brake." With the insurance money, the pilot purchased N1323D. Between December 30, 2001, and January 21, 2002, he flew the airplane three different times, logging 4.8 hours as part of a complex airplane checkout.

#### AIRCRAFT INFORMATION

The Mooney Aircraft Corporation, of Kerrville, Texas, manufactured N1323D, a model M20C (s/n 2681), in 1964. It was equipped with a Lycoming O-360-A1D engine (s/n L-4200-36), rated at 180 horsepower, and a McCauley 2-blade, all-metal, constant speed propeller (m/n 793969).

According to the airplane maintenance records, an annual inspection was performed on the airplane on October 5, 2001, when it had accrued 3,572.4 hours time-in-service, and the engine had accrued 930.6 hours since major overhaul. A "pre-purchase" 100-hour inspection was performed on January 19, 2002. At that time, the airplane had accrued 3,602.0 hours time-in-service, and the engine had accrued 960.0 hours since major overhaul. The propeller was overhauled on October 21, 1997, after it had accrued 2,960.6 hours since new. The last 100-hour inspection on the propeller was recorded on August 20, 1998, at a total time of 3,006.71 hours.

#### METEOROLOGICAL INFORMATION

Weather data retrieved from the Eagle County Regional, Rifle (stations nearest the accident site), and Grand Junction (destination station) AWOS's (Automated Weather Observatory Station) indicated visual meteorological conditions prevailed along the route of flight.

According to data from the U.S. Naval Observatory, the sunset at 1811 and civil twilight ended at 1838. The moon was described as "waning crescent with 10% of the visible disk illuminated."

#### WRECKAGE AND IMPACT INFORMATION

Due to unfavorable weather conditions and snow depths, the on-scene investigation was postponed until May 13, 2002.

At the beginning of a ground scar, aligned on a magnetic heading of 147 degrees, were green lens fragments. At the end of the scar was a crater containing the engine and propeller. From this point, the wreckage debris was spread in a fan-shaped pattern. On a magnetic heading of

154 degrees and approximately the 36 foot mark was the right wing. On a magnetic heading of 167 degrees and approximately the 60 foot mark was the cabin area. On a magnetic heading of 211 degrees and also at the 60-foot mark was the left wing. The cabin area and left wing were approximately 51 feet apart and on a magnetic heading of 211 degrees.

A crushed tachometer was found in the wreckage. Disassembly of the tachometer revealed that it registered 0 rpm, and the hour totalizer read 63X3.48 hours. Cockpit examination revealed the throttle, mixture, and propeller controls were full forward, and the carburetor heat was closed. The auxiliary fuel boost pump was off. The right control wheel was over to the right, and the air vent was closed.

#### MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed at Community Hospital in Grand Junction, Colorado. FAA's Civil Aeromedical Institute (CAMI) in Oklahoma City, Oklahoma, did a toxicological screen. According to CAMI's report, there was no evidence of carbon monoxide, hydrogen cyanide, ethyl alcohol, or drugs.

#### TESTS AND RESEARCH

The Denver Air Route Traffic Control Center (ARTCC) retrieved recorded National Track Analysis Program (NTAP) radar data. Most of the data came from a radar site located on top of Red Table Mountain, near Aspen, Colorado. The radar detected a target at 1946, departing the Kremmling area at 13,900 feet msl. The target took up a direct heading to Grand Junction, Colorado, 148 miles southwest of Kremmling. When the target was approximately 57 miles southwest of Kremmling, it made a wide turn to the left of approximately 450 degrees, followed immediately by a tight turn to the right of approximately 360 degrees. Radar contact was lost at 2019:19, when the target was at 13,500 feet msl (above mean sea level).

NTAP data was also retrieved from a radar site located at Walker Field, Grand Junction, Colorado. Radar contact was lost at 2019:17, when the target was at 13,200 feet. A secondary return was detected at 2019:33 at 10,500 feet msl. The difference in time and altitude between the last contact recorded by the Red Table and Grand Junction radars was 14 seconds and 3,000 feet, respectively. Computing, this equates to a 12,857 foot per minute descent rate.

#### ADDITIONAL INFORMATION

The friend of the pilot and her daughter-in-law gave written statements to the Kremmling Police Department. These statements were turned over to NTSB's investigator-in-charge. The daughter-in-law's statement completely outlined the relationship between her mother-in-law and the pilot.

Other than the Federal Aviation Administration, there were no other parties to the investigation.

The wreckage was released to the aircraft insurance adjuster on May 13, 2002.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	50, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 3 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	April 7, 2001
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	June 29, 2001
<b>Flight Time:</b>	225 hours (Total, all aircraft), 30 hours (Total, this make and model), 181 hours (Pilot In Command, all aircraft), 33 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Mooney	<b>Registration:</b>	N1323D
<b>Model/Series:</b>	M20C	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	2681
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	2575 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, activated, aided in locating accident	<b>Engine Model/Series:</b>	O-360-A1B
<b>Registered Owner:</b>	Jerry W. Elliott	<b>Rated Power:</b>	180 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Night/dark
<b>Observation Facility, Elevation:</b>	EGE,6535 ft msl	<b>Distance from Accident Site:</b>	19 Nautical Miles
<b>Observation Time:</b>	20:15 Local	<b>Direction from Accident Site:</b>	90°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	300°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.01 inches Hg	<b>Temperature/Dew Point:</b>	4°C / -6°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Kremmling, CO (20V )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Grand Junction, CO (GJT )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	19:45 Local	<b>Type of Airspace:</b>	Class E

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	39.716667,-107.216667

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Scott, Arnold
<b>Additional Participating Persons:</b>	David J Rodda; FAA Flight Standards District Office; Salt Lake City, UT
<b>Original Publish Date:</b>	April 1, 2003
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB traveled to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=54344">https://data.ntsb.gov/Docket?ProjectID=54344</a>

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