



Aviation Investigation Final Report

Location:	Marysvale, Utah	Accident Number:	DEN02FA089
Date & Time:	August 8, 2002, 19:50 Local	Registration:	N1088B
Aircraft:	Mooney M20A	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	4 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was found on a mountain ridge (elevation 11,814 feet; oriented 330 degrees) approximately 800 feet from a mountain peak (elevation 12,175). Family members said that the pilot commonly flew near the ridge "looking for animals." Two men camping nearby said that the wind was out of the west at 10 to 15 knots, with gusts over 20 knots, at the time of the accident. The density altitude was calculated to be 14,668 feet.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's poor in-flight decision to fly so close to the ridge (looking for animals). Contributing factors were the mountainous terrain condition, the downdraft weather conditions in high mountains, and the high density altitude weather condition.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: MANEUVERING

Findings

1. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
2. (C) IN-FLIGHT PLANNING/DECISION - POOR - PILOT IN COMMAND
3. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY

4. (F) WEATHER CONDITION - DOWNDRAFT
5. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE

Factual Information

HISTORY OF FLIGHT

On August 8, 2002, at approximately 1950 mountain daylight time, a Mooney M20A, N1088B, was destroyed when it impacted terrain while maneuvering near Delano Peak (elevation 12,175 feet), near Marysvale, Utah. The private pilot and his three passengers were fatally injured. The pilot was operating the airplane under Title 14 CFR Part 91. Visual meteorological conditions prevailed for the cross-country flight which originated from Richfield Municipal Airport, Richfield, Utah, at approximately 1930. The pilot had not filed a flight plan, but family members said that the airplane was destined for Colorado City, Arizona.

The Fixed Base Operator's records at the Richfield Municipal Airport indicate the pilot had the airplane "topped" off with 41.2 gallons of fuel. The refueler on the ramp remembered that the airplane departed at approximately 1930. The Air Force Rescue Coordination Center confirmed the location of an Emergency Locator Transmitter (ELT) signal in the Delano Peak area at approximately 2115. The following morning the Civil Air Patrol located the missing airplane, and a rescue/recovery team was dispatched. The airplane was found on a ridgeline at 11,814 feet.

Family members said the pilot, "would fly around that ridgeline, on many occasions, looking for animals."

PERSONNEL INFORMATION

The pilot took his last second class Federal Aviation Administration (FAA) flight medical examination on April 26, 2001, and at that time he reported on his application that he had 750 hours of flight experience, with 30 hours during the previous 6 months. The pilot's flight logbook was never located; it could not be determined if he had a current FAA mandated flight review.

AIRCRAFT INFORMATION

The airplane was a single engine, propeller-driven, four seat airplane, which was manufactured by Mooney Aircraft Corporation in 1958. It was powered by a Lycoming O-360-A1A, four cylinder, reciprocating, horizontally opposed, direct drive, air cooled, normally aspirated engine, which had a maximum takeoff rating of 180 horsepower at sea level. The last FAA mandated airplane annual inspection was completed on March 21, 2000. At the time of the accident, the airplane had an estimated 4,265 hours of total flight time.

METEOROLOGICAL INFORMATION

At 1954, the weather conditions at the Milford Municipal Airport (elevation 5,039 feet), Milford, Utah, 280 degrees 30 nautical miles (nm) from the accident site, was as follows: wind 020 degrees for 9 knots; visibility 10 statute miles; clear of clouds; temperature 82 degrees Fahrenheit; dew point 25 degrees Fahrenheit; altimeter setting 30.22 inches. Two men camping approximately 2 miles from the accident site said at approximately 1945 on the evening of the accident, the wind was out of the southwest at 10 to 15 knots with gust over 20 knots.

The calculated density altitude was approximately 14,668 feet.

WRECKAGE AND IMPACT INFORMATION

The airplane was found upright (N38 degrees, 22.38'; W112 degrees, 22.37'; elevation 11,814 feet) on Delano Peak (12,175 feet; approximately 800 feet from the wreckage), on the east side of a ridge, which extended approximately 330 degrees from the peak. A ground scar extending approximately 150 feet, on a 175 degree orientation, led to the wreckage. The airplane's fuselage was oriented approximately 030 degrees.

All of the airplane's major components were accounted for at the accident site. Both of the airplane's wings were separated from the fuselage, and the empennage was bent to the left. The cockpit area was crushed, and the engine assembly was bent approximately 90 degrees to the right. The bottom of the fuselage was "ripped" open. Flight control continuity check was not possible due to impact damage. The engine's throttle was found full forward, and the propeller and mixture controls were found approximately 1 inch aft.

The engine remained attached to the engine mount. Mechanical continuity was established throughout the rotating group, valve train, and accessory section by hand rotation of the crankshaft. "Thumb" compression was observed in all four cylinders, and both magnetos produced spark at each respective lead. The two bladed constant speed propeller remained attached the crankshaft flange. Both propeller blades displayed leading edge gouging, torsional twisting, chordwise striations across the cambered surface, and trailing edge "S" bending. The outboard 4 inches of both propeller blades were separated.

There was no evidence of pre or post impact fire. No preimpact engine or airframe anomalies, which might have affected the airplane's performance, were identified.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot by the State of Utah, Department of Health, Salt Lake City, Utah, on August 10, 2002.

The FAA's Civil Aeromedical Institute (CAMI) in Oklahoma City, Oklahoma, performed toxicology tests on the pilot. According to CAMI's report (#200200217001), the pilot's blood

was tested for carbon monoxide, cyanide, and drugs with negative results. The pilot's blood did prove positive for the volatiles (ethanol) ethanol and acetaldehyde. CAMI personnel reported that the ethanol and acetaldehyde (an ethanol intermediate product; either production of or metabolite of) found in this case were from postmortem formation.

ADDITIONAL RESEARCH

The airplane, including all components and logbooks, was released to the owner's brother on August 19, 2002.

Pilot Information

Certificate:	Private	Age:	39, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
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 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	April 26, 2001
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	750 hours (Total, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	Registration:	N1088B
Model/Series:	M20A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	1314
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	March 15, 2000 Annual	Certified Max Gross Wt.:	2450 lbs
Time Since Last Inspection:	89 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	4265 Hrs at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, aided in locating accident	Engine Model/Series:	O-360-A1A
Registered Owner:	Holm Con	Rated Power:	180 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	MLF,5039 ft msl	Distance from Accident Site:	280 Nautical Miles
Observation Time:	19:54 Local	Direction from Accident Site:	22°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	20°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.21 inches Hg	Temperature/Dew Point:	28°C / -4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Richfield, UT (RIF)	Type of Flight Plan Filed:	None
Destination:	Colorado City, AZ (AZC)	Type of Clearance:	None
Departure Time:	19:30 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	3 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 Fatal	Latitude, Longitude:	38.373054,-112.373054

Administrative Information

Investigator In Charge (IIC):	STRUHSAKER
Additional Participating Persons:	Dennis A Seals; SLC FAA FSDO; Salt Lake City, UT
Original Publish Date:	September 30, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=55446

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).