Aviation Investigation Final Report

Location:	Julian, California	**Accident Number:**	WPR14FA012
Date & Time:	October 9, 2013, 14:45 Local	**Registration:**	N7145U
Aircraft:	Mooney M20E	**Aircraft Damage:**	Destroyed
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot departed on a 65-mile cross-country personal flight over mountainous terrain with a planned destination of his home base. The pilot contacted air traffic control (ATC) for visual flight rules (VFR) flight following. During the course of the flight, the pilot experienced turbulence at 8,500 ft and descended to 4,500 ft. When an ATC controller informed him that he was in an area of high terrain, the pilot stated that he was familiar with the area and could maintain his own terrain obstruction clearance. Several minutes later, radio and radar contact were lost, and an alert notice was issued several hours later. Sheriff's helicopters attempted to search the area but had to abandon their efforts due to inclement weather. The following morning, the airplane was located on the side of a mountain with a 50-percent grade at an elevation of 4,200 ft and near the last radar contact.

Postaccident examination of the recovered airframe and engine revealed no evidence of preimpact mechanical malfunction or failure that would have precluded normal operation. Weather reports for the area indicated that the mountainous terrain was most likely partially obscured by clouds; therefore, it is likely that the pilot was maneuvering to maintain VFR flight when the airplane collided with the mountainous terrain.

The sedating antihistamine diphenhydramine was found in cardiac blood. However, diphenhydramine undergoes significant postmortem redistribution. At the level detected, the investigation was unable to determine if the medication would have impaired the pilot around the time of the accident.

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 clearance from terrain while maneuvering to avoid clouds in mountainous terrain.

Findings

Personnel issues	Monitoring environment - Pilot
Aircraft	Altitude - Not attained/maintained
Environmental issues	Clouds - Contributed to outcome
Environmental issues	Mountainous/hilly terrain - Effect on operation
Environmental issues	Clouds - Effect on operation
Personnel issues	Use of medication/drugs - Pilot

Factual Information

History of Flight

Enroute-cruise	Other weather encounter
Maneuvering	Controlled flight into terr/obj (CFIT) (Defining event)

On October 9, 2013, about 1445 Pacific daylight time, a Mooney M20E, N7145U, collided with terrain near Julian, California. The pilot/owner was operating the airplane under the provisions of Title 14 Code of Federal Regulations (CFR) Part 91. The private pilot and one passenger sustained fatal injuries; the airplane was destroyed from impact forces. The cross-country personal flight departed Palm Springs, California, at 1404, with a planned destination of Gillespie Field, El Cajon, California, which was about 65 miles south of Palm Springs with mountainous terrain in between. Visual meteorological (VMC) conditions prevailed at the reporting station nearest to the accident site, and no flight plan had been filed.

The Federal Aviation Administration (FAA) reported that the pilot was receiving visual flight rules (VFR) flight following from Los Angeles Air Route Traffic Control Center (ZLA).

The pilot contacted Southern California Terminal Radar Approach Control (SCT) after departing Palm Springs. He stated that the intention was to fly toward Thermal, California, which was southeast of Palm Springs, and proceed to Gillespie if the weather permitted him to land VFR. He advised that he was climbing to 8,500 feet msl; SCT advised him to proceed on his own navigation, and contact ZLA. At 1416:12, the pilot established contact with ZLA at 7,300 feet over Thermal. About 13 minutes later after an inquiry from ZLA, the pilot informed them that he experienced turbulence at 8,500, and had descended to 4,500 feet. The controller informed him that he was in an area of high terrain; the pilot stated that he was familiar with the area, and could maintain his own terrain obstruction clearance.

At 1433:27, ZLA cleared the pilot to switch to SCT, and the pilot acknowledged. Five minutes later, the SCT controller contacted ZLA to see if they were still talking to the pilot. The ZLA controller was not; SCT indicated that they had not established radio contact, and also lost radar contact. At 1440:52, the SCT controller stated that radar contact was reestablished, but not radio contact. SCT reported that radar contact was lost again with the target turning eastbound at 1445:51, at 4,500 feet and 5 miles south of Julian.

An alert notice (ALNOT) was issue by ZLA at 1706. The San Diego County Sheriff's Department was notified of the missing airplane at 1818. Helicopters from the Sheriff's ASTREA division attempted to search the area, but had to abandon their efforts due to inclement weather after determining that the flying conditions were unsafe. Ground units utilized network-based cell phone signal analysis off the pilot's cell phone, and located the airplane in the vicinity of the last radar target on the side of the Volcan Mountain at 0115 on October 10, 2013. The wreckage was on a 50 percent grade at an elevation of 4,200 feet. They reported that the airplane had fragmented.

Pilot Information

Certificate:	Private	**Age:**	55,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
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 31, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 881 hours (Total, all aircraft), 226 hours (Total, this make and model), 850 hours (Pilot In Command, all aircraft), 7 hours (Last 90 days, all aircraft)		

A review of FAA airman records revealed that the 55-year-old pilot held a private pilot certificate with ratings for airplane single-engine land, multiengine land, and instrument airplane.

The pilot possessed a third-class medical certificate issued on January 16, 2012. It had the limitations that the pilot must wear corrective lenses for near and distant vision.

An examination of the pilot's logbook indicated an estimated total flight time of 881 hours as of the last entry on August 12, 2013. He logged 7 hours in the previous 90 days. He had an estimated 226 hours in this make and model, and completed a biennial flight review on March 1, 2012.

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	**Registration:**	N7145U
Model/Series:	M20E NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:	1964	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	384
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	2575 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:	C91A installed	**Engine Model/Series:**	IO-360-A1A
Registered Owner:	THULIN ANDREW W	**Rated Power:**	200 Horsepower
Operator:	THULIN ANDREW W	**Operating Certificate(s) Held:**	None

The airplane was a Mooney M20E, serial number 384. The engine was a Lycoming IO-360-A1A, serial number L-800-51.

Logbooks for the airplane were not available.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Unknown	**Condition of Light:**	Day
Observation Facility, Elevation:	KRNM,1393 ft msl	**Distance from Accident Site:**	22 Nautical Miles
Observation Time:	14:43 Local	**Direction from Accident Site:**	240°
Lowest Cloud Condition:	Scattered / 2500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 3500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.78 inches Hg	**Temperature/Dew Point:**	14°C / 9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Palm Springs, CA (KPSP)	**Type of Flight Plan Filed:**	None
Destination:	El Cajon, CA (KSEE)	**Type of Clearance:**	VFR flight following
Departure Time:	14:04 Local	**Type of Airspace:**	

Ramona (KRMN), California, (elevation 1,395 feet, 17 nautical miles (nm) southwest of the accident site) was the nearest weather reporting station. Aviation routine weather reports (METAR) issued around the time of the accident were:

1443 PDT wind from 230 degrees at 9 knots; visibility 10 miles; sky 2,500 feet scattered, 3,500 feet broken, 5,000 feet overcast; temperature 14/57 degrees C/F; dew point 9/48 degrees C/F; altimeter 29.78 inches of mercury.

1453 PDT wind from 250 degrees at 12 knots gusting to 18 knots; visibility 10 miles; sky 2,500 feet broken, 3,200 feet overcast; temperature 14/57 degrees C/F; dew point 9/48 degrees C/F; altimeter 29.78 inches of mercury.

METARS for San Diego, Montgomery Field (KMYF) (elevation 427 feet, 8 nm west of the destination airport) issued around the time of the accident were:

1400 PDT special wind from 230 degrees at 14 knots gusting to 19 knots; visibility 10 miles; sky 2,900 feet broken, 4,600 feet overcast; temperature 17/63 degrees C/F; dew point 9/48 degrees C/F; altimeter 29.80 inches of mercury.

1453 PDT wind from 180 degrees at 13 knots gusting to 17 knots; visibility 10 miles; sky 2,700 feet broken, 6,000 feet overcast; temperature 17/63 degrees C/F; dew point 9/48 degrees C/F; altimeter 29.78 inches of mercury.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	33.162498,-116.959724

Medical and Pathological Information

The County of San Diego Coroner, Office of the Medical Examiner, completed an autopsy, and ruled the cause of death as blunt force injuries. The FAA Forensic Toxicology Research Team, Oklahoma City, Oklahoma, performed toxicological testing on specimens of the pilot.

Analysis of the specimens revealed no findings for carbon monoxide or volatiles. They did not perform tests for cyanide.

The report contained the following findings for tested drugs: atenolol detected in blood and urine; 0.032 (ug/ml, ug/g) diphenhydramine detected in blood; diphenhydramine detected in urine; ranitidine detected in urine, but not detected in blood; and 53.7 (ug/ml, ug/g) Salicylate detected in urine.

Atenolol is a prescription medication for blood pressure marketed as Tenormin. Ranitidine is a non-sedating acid reducing medication available over the counter and often marketed as Zantac. Salicylate is a byproduct produced by the body during the metabolism of aspirin. Diphenhydramine is a sedating antihistamine used to treat allergy symptoms and as a sleep aid. It is available over the counter under various trade names including Benadryl and Sominex. It carries the warning that it may impair mental and/or physical ability required for the performance of potentially hazardous tasks such as driving or operating heavy machinery.

Tests and Research

Investigators from the NTSB and Lycoming examined the wreckage at the facilities of Blackhawk Helicopters, El Cajon, on October 23, 2013. They observed no evidence of preimpact mechanical malfunction of the recovered airframe or engine. A full report is contained within the public docket for this accident.

Administrative Information

Investigator In Charge (IIC):	Plagens, Howard
Additional Participating Persons:	Tom Marquez; FAA - FSDO; San Diego, CA Mark Platt; Lycoming Engines; Williamsport, PA
Original Publish Date:	January 14, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=88187