



Aviation Investigation Final Report

Location:	Burnsville, North Carolina	Accident Number:	ATL02FA171
Date & Time:	September 20, 2002, 18:37 Local	Registration:	N574DJ
Aircraft:	Mooney M20R	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was on an approach to the 2875-foot mountaintop runway in gusting winds, the airplane was observed to bank sharply left and drop down the mountainside just prior to reaching the runway 14 threshold. The airplane then collided with trees and terrain and burst into flames. Several witnesses outside on the decks of a country club and a restaurant adjacent to the mountaintop runway observed the airplane make a low pass down runway 14, then enter the traffic pattern. Witnesses reported seeing the airplane on a low, flat final approach to runway 14 with its gear and flaps down. One witness stated the airplane appeared as if it was going to land directly on the numbers, but just prior to reaching the end of the runway, it suddenly banked left and dropped down the mountainside out of view. The published airport information card stated, "Runway 32 has an uphill incline of 46 feet. Runway 14, thus, downhill 46 feet. Recommended approach unless there is significant tailwind is runway 32." The card also stated, "High banks on right hand side of approach ends of both runway 14 and 32, within 20 feet of edge of pavement Mountainous terrain in area. Caution: Mountain turbulence, approach downdrafts, density altitude." Examination of the airplane revealed no evidence of mechanical malfunction or failure. The pilot had reported turbulence prior to conducting the approach.

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 airspeed during final approach, which resulted in an inadvertent stall and uncontrolled descent into trees and terrain. Factors were wind gusts and terrain-induced turbulence.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

1. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
2. STALL - INADVERTENT - PILOT IN COMMAND
3. (F) WEATHER CONDITION - GUSTS
4. (F) WEATHER CONDITION - TURBULENCE, TERRAIN INDUCED
5. TERRAIN CONDITION - MOUNTAINOUS/HILLY

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: DESCENT - UNCONTROLLED

Findings

6. OBJECT - TREE(S)

Factual Information

HISTORY OF FLIGHT

On September 20, 2002, at 1837 eastern daylight time, a Mooney M20R, N574DJ, registered to Yancey Aviation LLC and operated by the commercial pilot, collided with trees and caught fire during an attempted landing at the Mountain Air Country Club Airport in Burnsville, North Carolina. The personal flight was operated under the provisions of Title 14 CFR Part 91 with no flight plan filed. Visual meteorological conditions prevailed. The pilot and passenger received fatal injuries, and the airplane was destroyed by post-impact fire. The flight departed Asheville Regional Airport in Asheville, North Carolina, on September 20, 2002, at an undetermined time.

The pilot received wind information from a pilot monitoring the airport UNICOM, then announced she would make a low pass over runway 14 to observe the windsocks. The pilot stated on the radio that conditions were bumpy, then announced she would attempt a landing on runway 14, and, if unsuccessful, she would divert to Asheville, North Carolina.

Several witnesses outside on the decks of a country club and a restaurant adjacent to the mountaintop runway observed the airplane make a low pass down runway 14, then enter the traffic pattern. Witnesses reported seeing the airplane on a low, flat final approach to runway 14 with its gear and flaps down. One witness stated the airplane appeared as if it were going to land directly on the numbers, but just prior to reaching the end of the runway, it suddenly banked left and dropped down the mountainside out of view. Two other witnesses reported the airplane appeared to pitch up and bank left, then drop from view. The witnesses then heard a loud crash and observed smoke. The witnesses ran toward the smoke and observed the airplane in flames on the wooded slope below the left side of the runway.

PERSONNEL INFORMATION

The pilot held a commercial certificate issued March 29, 1991, with ratings for airplane single engine land, airplane multi-engine land, and instrument airplane. The pilot held a third class medical dated January 5, 2001, with the restriction, "must have available glasses for near vision." Remnants of a pilot log retrieved from the wreckage disclosed that the pilot recorded more than 2600 hours flight time, including approximately 250 hours flight time in the accident airplane since April 9, 2001.

AIRCRAFT INFORMATION

The Mooney M20R was manufactured in 1994 and powered by a Teledyne Continental IO-550-G series engine. The airframe, propeller, and engine logs were not recovered. A review of work orders provided by a maintenance facility revealed an annual inspection was completed on

March 18, 2002, at an airframe total time of 1141.2 hours. A work order dated August 16, 2002, recorded the airframe total time at 1245.6 hours.

METEOROLOGICAL INFORMATION

The Asheville Regional Airport, Asheville, North Carolina, automated surface observation system reported at 1754 winds were 140 degrees magnetic at 3 knots, sky conditions broken at 2400 feet above ground level, temperature 22 degrees Celsius, dew point 19 degrees Celsius, altimeter 30.02 inches. The weather reporting facility is 28 nautical miles southwest of the accident site at an elevation of 2165 feet. Witnesses at the Mountain Air Country Club Airport, Burnsville, North Carolina, described the wind conditions as generally from the east southeast with gusts from 5 to 15 knots, and one witness stated there was a wind gust of 10 knots from the northwest while the airplane was on final approach.

AIRPORT INFORMATION

Mountain Air Country Club Airport, Burnsville, North Carolina, was a private, mountaintop airport with an elevation of 4436 feet. The paved surface for runways 32 and 14 was 2875 feet long and 50 feet wide. Runway 14 began atop a steeply sloping terrace with an abrupt drop-off at the approach end, departure end, and left side of the threshold. The published Airport Information Summary card stated, "Runway 32 has an uphill incline of 46 feet. Runway 14, thus, downhill 46 feet. Recommended approach unless there is significant tailwind is runway 32." The card also stated, "High banks on right hand side of approach ends of both runway 14 and 32, within 20 feet of edge of pavement Mountainous terrain in area. Caution: Mountain turbulence, approach downdrafts, density altitude."

WRECKAGE AND IMPACT INFORMATION

Examination of the accident site revealed wreckage debris was scattered over an area 80 feet long and 50 feet wide. The wreckage path was oriented on a 153-degree magnetic heading. The main fuselage, right wing, and engine assembly were heavily fire damaged and found approximately 75 feet down slope from a freshly felled tree approximately 16 inches in diameter. The left wing was separated and found approximately 35 feet down slope from the felled tree. The felled tree displayed a propeller slash mark approximately four inches deep about 30 feet above the tree base. The propeller hub and flange were separated with all three blades attached and was found embedded in the ground beneath the right wing. Each propeller blade displayed chordwise scoring.

Examination of the airframe revealed the nose and cabin sections were consumed by fire, and the fuselage skin was melted away. The aft empennage, vertical fin, and rudder remained intact. The primary flight control push-pull tubes were exposed and had been cut by emergency response personnel during extraction. Examination of the aileron, flap, and elevator control surfaces, attachment points, rod ends, and push-pull tubes revealed no evidence of pre-impact mechanical malfunction or failure.

Examination of the engine revealed the intake system, exhaust system, and oil cooler were impact and fire damaged. The aft engine mount legs were separated. The oil sump was crushed upward with the oil dipstick tube protruding through the bottom. The oil pickup tube was impact damaged, and the oil screen was clean. Cylinders no. 1, 3, and 5 were impact and fire damaged, and cylinders no. 2, 4, and 6 were fire damaged. The piston domes were clean and dark in color. The accessory section, including the magnetos, fuel pump, and vacuum pump, was impact and fire damaged. The fuel injector lines, throttle body, and metering unit sustained impact and fire damage that precluded movement of the throttle arm and butterfly valve. There was no evidence of pre-impact mechanical malfunction or failure.

MEDICAL AND PATHOLOGICAL INFORMATION

Autopsy was performed on the pilot by Watauga Medical Center, Boone, North Carolina. The cause of death was multiple trauma. Forensic toxicology was performed on specimens from the pilot by the Office of the Chief Medical Examiner, Chapel Hill, North Carolina. The report stated no ethanol was detected in the blood.

ADDITIONAL INFORMATION

Published safety information from the Mountain Air Pilot's Association stated pilots unfamiliar with the airport should divert to Asheville, North Carolina, in wind conditions greater than 10 knots or if winds are favoring runway 14. The pilot had flown into the airport for several years and was familiar with landing on runway 14.

About 1600 on the day of accident flight, the pilot brought the airplane to a maintenance facility in Tifton, Georgia, to have a brake caliper checked after a small amount of fluid was observed on the ground near one main gear wheel. The mechanic told the pilot a brake caliper seal was seeping slightly. According to the mechanic, the pilot elected to postpone the repair, because the hydraulic reservoir was full of fluid, and the brakes were functioning normally.

Pilot Information

Certificate:	Commercial	Age:	58,Female
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	January 5, 2001
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	2600 hours (Total, all aircraft), 240 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	Registration:	N574DJ
Model/Series:	M20R	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	29-0020
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	March 18, 2002 100 hour	Certified Max Gross Wt.:	2525 lbs
Time Since Last Inspection:	104 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1141 Hrs as of last inspection	Engine Manufacturer:	Teledyne Continental
ELT:	Installed, not activated	Engine Model/Series:	IO-550-G
Registered Owner:	Yancey Aviation LLC	Rated Power:	280 Horsepower
Operator:	Carol G. Peddy	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	AVL,2165 ft msl	Distance from Accident Site:	28 Nautical Miles
Observation Time:	17:54 Local	Direction from Accident Site:	207°
Lowest Cloud Condition:		Visibility	6 miles
Lowest Ceiling:	Broken / 2400 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.02 inches Hg	Temperature/Dew Point:	22°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Asheville, NC (AVL)	Type of Flight Plan Filed:	None
Destination:	Burnsville, NC (2NCO)	Type of Clearance:	Unknown
Departure Time:		Type of Airspace:	Class G

Airport Information

Airport:	Mountain Air Country Club 2NCO	Runway Surface Type:	Asphalt
Airport Elevation:	4463 ft msl	Runway Surface Condition:	Dry
Runway Used:	14	IFR Approach:	None
Runway Length/Width:	2875 ft / 50 ft	VFR Approach/Landing:	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	35.872222,-82.344718

Administrative Information

Investigator In Charge (IIC):	Powell, Phillip
Additional Participating Persons:	Mitzi Crouse; FAA Charlotte FSDO - 33; Charlotte, NC Al Butler; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	September 30, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=55754

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