



Aviation Investigation Final Report

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| Location: | Ridgeland, South Carolina | Accident Number: | GAA19CA144 |
| Date & Time: | February 22, 2019, 15:30 Local | Registration: | N201AZ |
| Aircraft: | Mooney M20J | Aircraft Damage: | Substantial |
| Defining Event: | Loss of control in flight | Injuries: | 2 None |
| Flight Conducted Under: | Part 91: General aviation - Instructional | | |

Analysis

The flight instructor in the retractable-landing gear airplane reported that, during final with student at the controls, there were no abnormal weather conditions, but as the airplane passed over the runway threshold, the airplane encountered "severe wind shear" that he believed to be a "microburst." The airplane then pitched up, rolled left, and the instructor and student added full power to go around. During the attempted go-around, the instructor took control of the airplane with the landing gear down, full flaps, and the propeller full forward. He added that the airplane "simply" did not have enough performance to climb. Subsequently, the airplane drifted left of the runway and impacted a gravel hill.

The airplane sustained substantial damage to the fuselage and right wing.

The flight instructor reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

An automated weather observation system about 14 nautical miles from the airport reported that, about the time of the accident, the wind was variable at 3 knots, temperature 73°F, dew point 68°F, altimeter 30.14 inches of mercury, and few clouds at 500 ft. The airplane landed on runway 3. The pilot reported that the weather at the airport was wind light and variable, visibility 10 miles, and few clouds at 2,000 ft. The instructor reported the wind as calm to light and variable, visibility 10 miles, and few clouds at 5,000 ft.

The instructor further reported that, during the go-around, the airplane's configuration with full flaps for landing was not changed. The airplane's Pilot's Operating Handbook, "Go Around (balked landing)," stated that, following establishing a climb, the flaps should be reduced to the takeoff setting.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The flight instructor's failure to retract the flaps during an attempted go-around and his failure to maintain the runway heading, which resulted in a collision with terrain left of the runway.

Findings

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| Personnel issues | Aircraft control - Instructor/check pilot |
| Personnel issues | Use of equip/system - Instructor/check pilot |
| Personnel issues | Lack of action - Instructor/check pilot |
| Aircraft | Heading/course - Not attained/maintained |
| Environmental issues | Mountainous/hilly terrain - Effect on operation |

Factual Information

History of Flight

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|----------------|--|
| Landing | Loss of control in flight (Defining event) |
| Landing | Attempted remediation/recovery |
| Landing | Runway excursion |
| Landing | Collision with terr/obj (non-CFIT) |

Pilot Information

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|----------------------------------|---|--|-------------------|
| Certificate: | Private | Age: | 74, Male |
| Airplane Rating(s): | Single-engine land | Seat Occupied: | Left |
| Other Aircraft Rating(s): | None | Restraint Used: | 3-point |
| Instrument Rating(s): | Airplane | Second Pilot Present: | Yes |
| Instructor Rating(s): | None | Toxicology Performed: | No |
| Medical Certification: | Class 2 With waivers/limitations | Last FAA Medical Exam: | September 7, 2018 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | October 15, 2018 |
| Flight Time: | (Estimated) 1174 hours (Pilot In Command, all aircraft) | | |

Flight instructor Information

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|----------------------------------|--|--|-----------------|
| Certificate: | Airline transport; Commercial; Flight instructor | Age: | 36, Male |
| Airplane Rating(s): | Single-engine land; Multi-engine land | Seat Occupied: | Right |
| Other Aircraft Rating(s): | Helicopter; Powered-lift | Restraint Used: | 3-point |
| Instrument Rating(s): | Airplane; Helicopter; Powered-lift | Second Pilot Present: | Yes |
| Instructor Rating(s): | Airplane single-engine; Powered-lift | Toxicology Performed: | No |
| Medical Certification: | Class 1 Without waivers/limitations | Last FAA Medical Exam: | October 8, 2018 |
| Occupational Pilot: | Yes | Last Flight Review or Equivalent: | July 3, 2018 |
| Flight Time: | (Estimated) 1521 hours (Total, all aircraft), 42 hours (Total, this make and model), 466 hours (Pilot In Command, all aircraft), 28 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|--------------------------------|---------------------------------------|-----------------|
| Aircraft Make: | Mooney | Registration: | N201AZ |
| Model/Series: | M20J No Series | Aircraft Category: | Airplane |
| Year of Manufacture: | 1978 | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 24-0423 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 4 |
| Date/Type of Last Inspection: | September 5, 2018 Annual | Certified Max Gross Wt.: | 2899 lbs |
| Time Since Last Inspection: | | Engines: | 1 Reciprocating |
| Airframe Total Time: | 3354 Hrs as of last inspection | Engine Manufacturer: | Lycoming |
| ELT: | Installed | Engine Model/Series: | IO-360-A3B60 |
| Registered Owner: | | Rated Power: | 200 Horsepower |
| Operator: | On file | Operating Certificate(s) Held: | None |

Meteorological Information and Flight Plan

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|---|----------------------------------|---|-------------------|
| Conditions at Accident Site: | Visual (VMC) | Condition of Light: | Day |
| Observation Facility, Elevation: | KNBC, 38 ft msl | Distance from Accident Site: | 14 Nautical Miles |
| Observation Time: | 14:56 Local | Direction from Accident Site: | 93° |
| Lowest Cloud Condition: | Few / 500 ft AGL | Visibility | 10 miles |
| Lowest Ceiling: | | Visibility (RVR): | |
| Wind Speed/Gusts: | 3 knots / | Turbulence Type Forecast/Actual: | None / None |
| Wind Direction: | | Turbulence Severity Forecast/Actual: | N/A / N/A |
| Altimeter Setting: | 30.18 inches Hg | Temperature/Dew Point: | 23°C / 20°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | Allendale, SC (AQX) | Type of Flight Plan Filed: | None |
| Destination: | Ridgeland, SC (3J1) | Type of Clearance: | None |
| Departure Time: | 14:00 Local | Type of Airspace: | Class G |

Airport Information

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|-----------------------------|---------------------------|----------------------------------|-------------------------------------|
| Airport: | RIDGELAND-CLAUDE DEAN 3J1 | Runway Surface Type: | Asphalt |
| Airport Elevation: | 79 ft msl | Runway Surface Condition: | Dry |
| Runway Used: | 03 | IFR Approach: | None |
| Runway Length/Width: | 2692 ft / 70 ft | VFR Approach/Landing: | Full stop;Go around;Traffic pattern |

Wreckage and Impact Information

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|----------------------------|--------|-----------------------------|---------------------------|
| Crew Injuries: | 2 None | Aircraft Damage: | Substantial |
| Passenger Injuries: | | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 2 None | Latitude, Longitude: | 32.494167,-80.991111(est) |

Administrative Information

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|--|---|
| Investigator In Charge (IIC): | Swenson, Eric |
| Additional Participating Persons: | Todd Clamp; FAA; West Columbia, SC |
| Original Publish Date: | September 26, 2019 |
| Note: | This accident report documents the factual circumstances of this accident as described to the NTSB. |
| Investigation Docket: | https://data.nts.gov/Docket?ProjectID=99015 |

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).