



Aviation Investigation Final Report

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|--------------------------------|-------------------------------------------|-------------------------|-------------|
| Location: | Emmett, Idaho | Accident Number: | WPR23LA265 |
| Date & Time: | July 8, 2023, 13:52 Local | Registration: | N74778 |
| Aircraft: | ROBINSON HELICOPTER R22 BETA | Aircraft Damage: | Substantial |
| Defining Event: | Loss of control in flight | Injuries: | 2 Minor |
| Flight Conducted Under: | Part 91: General aviation - Instructional | | |

Analysis

The flight instructor reported that he was demonstrating a turning autorotation to his student. The instructor entered the glide, turned, and kept the engine and rotor RPM gauges in the green arc, while maintaining an airspeed of about 55 knots. He increased the throttle setting and raised the collective lever as the helicopter descended through 200 ft AGL, however, the rotor RPMs fell below the green arc. The instructor made the decision to continue the autorotation with ground contact and applied aft cyclic to reduce the decent rate. The helicopter landed hard and nosed over onto its right side, resulting in substantial damage to the tailboom and tail rotor assembly. The instructor reported that there were no preaccident mechanical malfunctions or failures that would have precluded normal operation.

Probable Cause and Findings

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

The instructor's failure to maintain airspeed during a simulated turning autorotation, which resulted in a hard landing.

Findings

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|-------------------------|-------------------------------------------|
| Personnel issues | Aircraft control - Instructor/check pilot |
| Aircraft | Airspeed - Not attained/maintained |

Factual Information

History of Flight

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|---------------------|--------------------------------------------|
| Maneuvering | Loss of control in flight (Defining event) |
| Autorotation | Hard landing |

Pilot Information

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|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------|
| Certificate: | Commercial; Flight instructor | Age: | 25, Male |
| Airplane Rating(s): | None | Seat Occupied: | Left |
| Other Aircraft Rating(s): | Helicopter | Restraint Used: | 3-point |
| Instrument Rating(s): | Helicopter | Second Pilot Present: | Yes |
| Instructor Rating(s): | Instrument helicopter | Toxicology Performed: | |
| Medical Certification: | Class 2 Without waivers/limitations | Last FAA Medical Exam: | December 27, 2022 |
| Occupational Pilot: | Yes | Last Flight Review or Equivalent: | January 27, 2023 |
| Flight Time: | 571.6 hours (Total, all aircraft), 391.3 hours (Total, this make and model), 523 hours (Pilot In Command, all aircraft), 228.8 hours (Last 90 days, all aircraft), 67.8 hours (Last 30 days, all aircraft), 1.5 hours (Last 24 hours, all aircraft) | | |

Student pilot Information

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|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------|
| Certificate: | Student | Age: | Male |
| Airplane Rating(s): | None | Seat Occupied: | Right |
| Other Aircraft Rating(s): | None | Restraint Used: | 3-point |
| Instrument Rating(s): | None | Second Pilot Present: | Yes |
| Instructor Rating(s): | None | Toxicology Performed: | |
| Medical Certification: | Class 2 Without waivers/limitations | Last FAA Medical Exam: | April 12, 2022 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | 70.4 hours (Total, all aircraft), 70.4 hours (Total, this make and model), 1.4 hours (Pilot In Command, all aircraft), 42.3 hours (Last 90 days, all aircraft), 17.1 hours (Last 30 days, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|-----------------------------------|---------------------------------------|------------------------------------------------------------------------------|
| Aircraft Make: | ROBINSON HELICOPTER | Registration: | N74778 |
| Model/Series: | R22 BETA | Aircraft Category: | Helicopter |
| Year of Manufacture: | 2005 | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 3968 |
| Landing Gear Type: | Skid | Seats: | 2 |
| Date/Type of Last Inspection: | June 14, 2023 100 hour | Certified Max Gross Wt.: | 1370 lbs |
| Time Since Last Inspection: | 58.75 Hrs | Engines: | 1 Reciprocating |
| Airframe Total Time: | 7283.75 Hrs as of last inspection | Engine Manufacturer: | Lycoming |
| ELT: | Not installed | Engine Model/Series: | O-360-J2A |
| Registered Owner: | On file | Rated Power: | 145 Horsepower |
| Operator: | On file | Operating Certificate(s) Held: | Rotorcraft external load (133), On-demand air taxi (135), Pilot school (141) |

Meteorological Information and Flight Plan

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|-----------------------------------------|----------------------------------|---------------------------------------------|------------------|
| Conditions at Accident Site: | Visual (VMC) | Condition of Light: | Day |
| Observation Facility, Elevation: | KEUL, 2429 ft msl | Distance from Accident Site: | 9 Nautical Miles |
| Observation Time: | 13:56 Local | Direction from Accident Site: | 204° |
| Lowest Cloud Condition: | Clear | Visibility | 10 miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | / | Turbulence Type Forecast/Actual: | / Convective |
| Wind Direction: | | Turbulence Severity Forecast/Actual: | / Light |
| Altimeter Setting: | 29.87 inches Hg | Temperature/Dew Point: | 31°C / 11°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | Caldwell, ID (KEUL) | Type of Flight Plan Filed: | Company VFR |
| Destination: | Caldwell, ID (KEUL) | Type of Clearance: | None |
| Departure Time: | 13:22 Local | Type of Airspace: | Class G |

Wreckage and Impact Information

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|----------------------------|---------|-----------------------------|----------------------|
| Crew Injuries: | 2 Minor | Aircraft Damage: | Substantial |
| Passenger Injuries: | N/A | Aircraft Fire: | None |
| Ground Injuries: | | Aircraft Explosion: | None |
| Total Injuries: | 2 Minor | Latitude, Longitude: | 43.794444,-116.54444 |

Administrative Information

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|------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Investigator In Charge (IIC): | Blocher, Kristyn |
| Additional Participating Persons: | Jeremy Blanford; Federal Aviation Administration; Boise, ID |
| Original Publish Date: | November 2, 2023 |
| Last Revision Date: | |
| Investigation Class: | Class 4 |
| Note: | The NTSB did not travel to the scene of this accident. |
| Investigation Docket: | https://data.nts.gov/Docket?ProjectID=192583 |

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).