



Aviation Investigation Final Report

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|--------------------------------|---|-------------------------|-------------|
| Location: | Gila Bend, Arizona | Accident Number: | ANC22FA030 |
| Date & Time: | April 15, 2022, 08:37 Local | Registration: | N7516G |
| Aircraft: | ROBINSON HELICOPTER R22 BETA | Aircraft Damage: | Substantial |
| Defining Event: | Loss of control in flight | Injuries: | 1 Fatal |
| Flight Conducted Under: | Part 91: General aviation - Instructional | | |

Analysis

The solo student pilot was conducting a cross-country flight when it impacted the terrain 212 ft before the approach end of the runway at the destination airport. The helicopter then slid about 30 ft and came to rest on its right side. A witness located about 1/2 mile west of the accident site reported seeing the helicopter go down and stated that the rotor blades were rotating before the impact.

Postaccident airframe and engine examinations revealed no evidence of any preimpact mechanical failures or malfunctions that would have precluded normal operation.

Given the upright orientation of the wreckage at impact, the significant damage to the underside of the fuselage, engine and skids, damage to the main rotor blades, coupled with the witness statement, were all consistent with a loss of control and a subsequent uncontrolled descent that resulted in the collision with terrain.

Probable Cause and Findings

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

The student pilot’s failure to maintain control during the landing approach.

Findings

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| Not determined | (general) - Unknown/Not determined |
| Personnel issues | Aircraft control - Student/instructed pilot |
| Aircraft | (general) - Not attained/maintained |

Factual Information

History of Flight

| Approach | Loss of control in flight (Defining event) |
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On April 15, 2022, about 0837 mountain standard time, a Robinson R22 helicopter, N7516G, sustained substantial damage when it was involved in an accident near Gila Bend, Arizona. The student pilot was fatally injured. The helicopter was operated as a Title 14 *Code of Federal Regulations* Part 91 instructional flight.

The flight initiated at the Chandler Municipal Airport (CHD), Chandler, Arizona at about 0757. The flight was intended to be a solo cross-country flight to the Gila Bend Municipal Airport (E63), Gila Bend, Arizona.

A witness located about 1/2 mile west of the accident site reported that the helicopter “came directly down.” He stated that before the impact the rotor blades on the helicopter were rotating; however, he was unable to hear the engine of the helicopter because he was operating heavy equipment.

The helicopter impacted the terrain about 212 ft from the end of the runway, slid, and came to rest about 181 ft from the approach end of runway 22 at E63, and 52 ft left of runway centerline. The ground scars indicated the helicopter impacted on about a 180° heading and continued to travel on about a 210° heading before coming to rest on its right side with the nose of the helicopter heading about 096°.

Pilot Information

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| Certificate: | Student | Age: | 29, Male |
| Airplane Rating(s): | None | Seat Occupied: | Right |
| Other Aircraft Rating(s): | None | Restraint Used: | Unknown |
| Instrument Rating(s): | None | Second Pilot Present: | No |
| Instructor Rating(s): | None | Toxicology Performed: | Yes |
| Medical Certification: | Class 2 With waivers/limitations | Last FAA Medical Exam: | September 1, 2020 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | (Estimated) 97 hours (Total, all aircraft), 97 hours (Total, this make and model), 8 hours (Pilot In Command, all aircraft), 43 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|-------------------------------|---------------------------------------|--------------------|
| Aircraft Make: | ROBINSON HELICOPTER | Registration: | N7516G |
| Model/Series: | R22 BETA | Aircraft Category: | Helicopter |
| Year of Manufacture: | 2003 | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 3513 |
| Landing Gear Type: | None; Skid | Seats: | 2 |
| Date/Type of Last Inspection: | March 28, 2022 100 hour | Certified Max Gross Wt.: | 1370 lbs |
| Time Since Last Inspection: | | Engines: | 1 Reciprocating |
| Airframe Total Time: | 15010 Hrs at time of accident | Engine Manufacturer: | Lycoming |
| ELT: | Not installed | Engine Model/Series: | O-360-J2A |
| Registered Owner: | DELTA LEASING INC DBA | Rated Power: | 145 Horsepower |
| Operator: | Quantum Helicopters | Operating Certificate(s) Held: | 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: | KGYR,968 ft msl | Distance from Accident Site: | 31 Nautical Miles |
| Observation Time: | 08:47 Local | Direction from Accident Site: | 26° |
| Lowest Cloud Condition: | Clear | Visibility | 10 miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | 3 knots / None | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 30° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29.91 inches Hg | Temperature/Dew Point: | 19°C / -5°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | Chandler, AZ (CHD) | Type of Flight Plan Filed: | Company VFR |
| Destination: | Gila Bend, AZ | Type of Clearance: | None |
| Departure Time: | 07:57 Local | Type of Airspace: | Class G |

Airport Information

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|-----------------------------|---------------------------------|----------------------------------|-------------|
| Airport: | Gila Bend Municipal Airport E63 | Runway Surface Type: | Asphalt |
| Airport Elevation: | 789 ft msl | Runway Surface Condition: | Dry |
| Runway Used: | 22 | IFR Approach: | None |
| Runway Length/Width: | 5200 ft / 75 ft | VFR Approach/Landing: | Straight-in |

Wreckage and Impact Information

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|----------------------------|---------|-----------------------------|---------------------------|
| Crew Injuries: | 1 Fatal | Aircraft Damage: | Substantial |
| Passenger Injuries: | | Aircraft Fire: | None |
| Ground Injuries: | | Aircraft Explosion: | None |
| Total Injuries: | 1 Fatal | Latitude, Longitude: | 32.950237,-112.65026(est) |

The helicopter sustained upward crushing on the underside of the fuselage and the engine compartment, the landing gear skids were displaced in multiple pieces, and all major components of the helicopter were located at the scene.

A postaccident examination revealed that the braided shielding around the governor motor power cable had been repaired with heat shrink for shielding. The governor motor was placed

on a test bench and functioned as designed with the heat shrink repair in place. The heat shrink was removed, and it was noted that the braided shield had been worn away or removed and there was a small area where bare wire was visible through the shielding.

The engine crankshaft was rotated, and engine continuity was established. Thumb compression was obtained on all cylinders. The magnetos were placed on a test bench and both produced spark at all leads. Internal examination of the cylinders with a lighted borescope showed normal coloration with no evidence of foreign object ingestion, and no evidence of detonation. About 15 gallons of fuel were removed from the fuel bladders. The fuel was free of contaminants. The blue main rotor blade, serial number 3363, was bent upward at about 99 inches on the span with chordwise scoring and scratching on the tip. The red main rotor blade, serial number 3107, was bowed downward about 58 inches at the span.

The clutch assembly spun freely and operated as designed in the locked and freewheeled directions. The drive belts were displaced from their grooves from impact with no abnormal wear noted. The main rotor mast rotated freely through 360°. Flight control continuity was established for all flight controls.

Administrative Information

Investigator In Charge (IIC): Ward, Mark

Additional Participating Persons: Mark Platt; Lycoming Engines; Phoenix, AZ
Hannah Warren; Robinson Helicopter Company; Torrance, CA
Paul Mansfield; Quantum Helicopters; Chandler, AZ

Original Publish Date: October 19, 2023

Last Revision Date:

Investigation Class: [Class 3](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=104949>

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](#).