



Aviation Investigation Final Report

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| Location: | St. Louis, Illinois | Accident Number: | GAA19CA279 |
| Date & Time: | May 23, 2019, 14:10 Local | Registration: | N369PA |
| Aircraft: | Guimbal Cabri | Aircraft Damage: | Substantial |
| Defining Event: | Loss of control on ground | Injuries: | 2 None |
| Flight Conducted Under: | Part 91: General aviation - Instructional | | |

Analysis

The flight instructor reported that, during a training flight in the helicopter, he briefed the student pilot on the procedures required to land with a simulated stuck left pedal. The student began a descent to enter a shallower-than-normal glidepath to the runway surface, and he completed his final checks for the maneuver and continued the approach. During the approach the flight instructor directed the student pilot to use "throttle manipulation to control the yaw caused by a fixed input on the anti-torque system." Upon contacting the runway, the helicopter veered left, and the instructor chose to abort the landing. As the helicopter lifted off, it began to rapidly yaw left while drifting left of the runway. Recognizing that the helicopter was in a spin, they attempted to correct by leveling the helicopter long enough to regain tail rotor authority. The helicopter's left skid impacted mud on the left side of the runway, and the helicopter rolled onto its left side. The helicopter sustained substantial damage to the main rotor, fuselage, and tailboom. The instructor reported that there were no preaccident mechanical failures or malfunctions with the helicopter that would have precluded normal operation. A manufacturer's service letter, SL 19-002 A, stated, "During in-flight tail rotor control failure simulation, pilots should never use the twist grip to control yaw." Therefore, the flight instructor's direction to the student to use the throttle to correct the yaw was incorrect and led to ground impact and a dynamic rollover.

Probable Cause and Findings

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

The flight instructor's improper emergency procedure instruction to the student pilot, which resulted in the student improperly using the throttle to correct the loss of yaw control, which resulted in ground impact and a dynamic rollover.

Findings

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| Aircraft | Directional control - Not attained/maintained |
| Personnel issues | Aircraft control - Student/instructed pilot |
| Personnel issues | Aircraft control - Instructor/check pilot |
| Environmental issues | Wet/muddy terrain - Effect on operation |

Factual Information

History of Flight

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| Landing-aborted after touchdown | Loss of control on ground (Defining event) |
| Landing-aborted after touchdown | Attempted remediation/recovery |
| Landing-aborted after touchdown | Runway excursion |
| Landing-aborted after touchdown | Collision with terr/obj (non-CFIT) |
| Landing-aborted after touchdown | Dynamic rollover |

Flight instructor Information

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| Certificate: | Commercial; Flight instructor | Age: | 32, Male |
| Airplane Rating(s): | None | Seat Occupied: | Left |
| Other Aircraft Rating(s): | Helicopter | Restraint Used: | Unknown |
| Instrument Rating(s): | Helicopter | Second Pilot Present: | No |
| Instructor Rating(s): | Helicopter; Instrument helicopter | Toxicology Performed: | No |
| Medical Certification: | Class 2 Without waivers/limitations | Last FAA Medical Exam: | June 18, 2018 |
| Occupational Pilot: | Yes | Last Flight Review or Equivalent: | August 27, 2018 |
| Flight Time: | (Estimated) 653 hours (Total, all aircraft), 425 hours (Total, this make and model), 545 hours (Pilot In Command, all aircraft), 135 hours (Last 90 days, all aircraft), 32 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft) | | |

Student pilot Information

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| Certificate: | Student | Age: | 27, 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: | No |
| Medical Certification: | Class 2 Without waivers/limitations | Last FAA Medical Exam: | January 29, 2019 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | (Estimated) 62 hours (Total, all aircraft), 62 hours (Total, this make and model), 11 hours (Pilot In Command, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|---|---------------------------------------|--------------------|
| Aircraft Make: | Guimbal | Registration: | N369PA |
| Model/Series: | Cabri G2 | Aircraft Category: | Helicopter |
| Year of Manufacture: | 2015 | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 1109 |
| Landing Gear Type: | Skid | Seats: | 2 |
| Date/Type of Last Inspection: | May 8, 2019 100 hour | Certified Max Gross Wt.: | 1543 lbs |
| Time Since Last Inspection: | | Engines: | 1 Reciprocating |
| Airframe Total Time: | 1839.8 Hrs at time of accident | Engine Manufacturer: | LYCOMING |
| ELT: | C126 installed, activated, did not aid in locating accident | Engine Model/Series: | O-360-J2A |
| Registered Owner: | D H Helicopter Inc | Rated Power: | 145 Horsepower |
| Operator: | D H Helicopter Inc | 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: | KCPS,413 ft msl | Distance from Accident Site: | 0 Nautical Miles |
| Observation Time: | 18:53 Local | Direction from Accident Site: | 295° |
| Lowest Cloud Condition: | Few / 3500 ft AGL | Visibility | 10 miles |
| Lowest Ceiling: | | Visibility (RVR): | |
| Wind Speed/Gusts: | / | Turbulence Type Forecast/Actual: | None / None |
| Wind Direction: | | Turbulence Severity Forecast/Actual: | N/A / N/A |
| Altimeter Setting: | 30.05 inches Hg | Temperature/Dew Point: | 26°C / 21°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | St Louis, IL (CPS) | Type of Flight Plan Filed: | None |
| Destination: | St. Louis, IL (CPS) | Type of Clearance: | VFR |
| Departure Time: | 14:10 Local | Type of Airspace: | Class D |

Airport Information

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| Airport: | St Louis Downtown CPS | Runway Surface Type: | Concrete |
| Airport Elevation: | 412 ft msl | Runway Surface Condition: | Dry |
| Runway Used: | 30R | IFR Approach: | None |
| Runway Length/Width: | 5301 ft / 75 ft | VFR Approach/Landing: | 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: | 38.570278,-90.154998(est) |

Administrative Information

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| Investigator In Charge (IIC): | Gutierrez, Eric |
| Additional Participating Persons: | Stephen Ragin ; FAA; St Louis, MO |
| Original Publish Date: | April 13, 2020 |
| Last Revision Date: | |
| Investigation Class: | Class |
| Note: | This accident report documents the factual circumstances of this accident as described to the NTSB. |
| Investigation Docket: | https://data.nts.gov/Docket?ProjectID=99479 |

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](#).