



# Aviation Investigation Final Report

<b>Location:</b>	Cahokia, Illinois	<b>Accident Number:</b>	CEN23LA150
<b>Date &amp; Time:</b>	April 9, 2023, 08:45 Local	<b>Registration:</b>	N372PA
<b>Aircraft:</b>	HELICOPTERES GUIMBAL CABRI G2	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Sys/Comp malf/fail (non-power)	<b>Injuries:</b>	1 Minor, 1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Analysis

The flight instructor stated that during an instructional flight he lost left cyclic control during an approach for landing. The student pilot's right cyclic controls continued to function, and the flight instructor coached him on cyclic control inputs to maintain control of the helicopter. The student's cyclic control became unresponsive to control inputs during the attempted landing and the helicopter impacted the ground resulting in substantial damage to the main rotor blades. Postaccident examination of the flight control system revealed that retaining hardware for the pins used to attach the left cyclic control were not installed. Maintenance personnel were unable to provide information regarding previous maintenance performed on the cyclic controls. The left cyclic control did not have any deformation/damage.

## Probable Cause and Findings

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

The lack of proper attachment of the cyclic control that resulted in a loss of control during a landing approach and impact with terrain. Contributing to the accident was the improper maintenance performed.

## Findings

Aircraft	(general) - Not specified
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# Factual Information

## History of Flight

Landing-flare/touchdown	Sys/Comp malf/fail (non-power) (Defining event)
Landing-flare/touchdown	Loss of control in flight
Landing-flare/touchdown	Attempted remediation/recovery
Landing-flare/touchdown	Collision with terr/obj (non-CFIT)

On April 9, 2023, at 0845 central daylight time, a Helicopteres Guimbal Cabri G2, N372PA, was involved in an accident near Cahokia, Illinois. The helicopter sustained substantial damage. The flight instructor received minor injuries and the student pilot was uninjured. The helicopter was operated under Title 14 *Code of Federal Regulations* Part 91 as an instructional flight.

The flight instructor stated that during the approach for landing at the departure airport, his left cyclic had “a little bit of play,” and the helicopter was not responding fully to his control inputs. He then completely lost cyclic control upon lining up with the taxiway of intended landing site. He stated that he still had collective and rudder control. The student pilot’s cyclic controls continued to function, and the flight instructor coached him on cyclic control inputs to maintain control of the helicopter, but the student pilot’s cyclic control then ceased to function. The helicopter impacted the ground during the attempted landing and sustained substantial damage to the main rotor blades.

Postaccident examination of the flight control system revealed that the helicopter’s Illustrated Parts Catalog part #34 (Reference HG17-0545) - Pin and part #36 (Reference HG21-0803) – Safety Pin were found not inplace on the left cyclic control. Part #43.0 (Reference G41-41-300) – Pin Locker, part # 44 (Reference HG20-2036) – Bolt and part #7 (Reference HG12-0332) – Nut were not installed. Ideal Aviation was unable to a date when these parts were removed. There was no evidence indicating these parts were impacted by the crash. The left cyclic control did not have any deformation/damage.

## Flight instructor Information

<b>Certificate:</b>	Commercial; Flight instructor; Private	<b>Age:</b>	27,Male
<b>Airplane Rating(s):</b>		<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Helicopter	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Helicopter; Instrument helicopter	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	January 2, 2023
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	June 5, 2022
<b>Flight Time:</b>	545 hours (Total, all aircraft), 542 hours (Total, this make and model), 483 hours (Pilot In Command, all aircraft), 87 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Student pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	41,Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 7, 2021
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	July 2, 2010
<b>Flight Time:</b>	131 hours (Total, all aircraft), 17 hours (Total, this make and model), 34 hours (Pilot In Command, all aircraft), 17 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	HELICOPTERES GUIMBAL	<b>Registration:</b>	N372PA
<b>Model/Series:</b>	CABRI G2	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	2016	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	1150
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	April 7, 2023 Annual	<b>Certified Max Gross Wt.:</b>	1543 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	C126 installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	O-360
<b>Registered Owner:</b>	Rotor Leasing LLC	<b>Rated Power:</b>	145 Horsepower
<b>Operator:</b>	Ideal Aviation	<b>Operating Certificate(s) Held:</b>	Pilot school (141)

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	CPS,413 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	08:45 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	8 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	130°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.4 inches Hg	<b>Temperature/Dew Point:</b>	11°C / -1°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Cahokia, IL	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Cahokia, IL	<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class D

## Airport Information

<b>Airport:</b>	St Louis Downtown Airport CPS	<b>Runway Surface Type:</b>	Concrete
<b>Airport Elevation:</b>	413 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	Taxiway A	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	2000 ft / 50 ft	<b>VFR Approach/Landing:</b>	Straight-in;Traffic pattern

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor, 1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor, 1 None	<b>Latitude, Longitude:</b>	38.570361,-90.155083(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Gallo, Mitchell
<b>Additional Participating Persons:</b>	Robert Prenger, Federal Aviation Administration, St. Louis FSDO; St. Ann, MO Bernard Boudaille; Bureau d'Enquêtes et d'Analyses pour la sécurité de l'aviation civile Dennis Mueller, Federal Aviation Administration, St. Louis FSDO; St. Ann, MO
<b>Original Publish Date:</b>	July 10, 2024
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=107038">https://data.nts.gov/Docket?ProjectID=107038</a>

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](#).