



# Aviation Investigation Final Report

<b>Location:</b>	Madison, Illinois	<b>Accident Number:</b>	CEN22LA326
<b>Date &amp; Time:</b>	July 19, 2022, 10:27 Local	<b>Registration:</b>	N457PA
<b>Aircraft:</b>	HELICOPTERES GUIMBAL CABRI G2	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of tail rotor effectiveness	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Analysis

The flight instructor and student pilot reported that the purpose of the flight was to practice off-airport landings. On the fourth and final landing, they set up a steep approach with the student pilot on the flight controls. The helicopter was above the effective translational lift (ETL) airspeed as they descended through 100 ft above ground level (agl) in a stabilized descent. The helicopter then started to yaw left and the flight instructor took the controls. As the spin rate increased, the flight instructor’s efforts to regain control were not successful. He then realized the helicopter was spinning out of control. He lowered the collective and the spin rate slowed as the helicopter contacted the ground. The flight instructor shut down the engine and both pilots exited the helicopter. The helicopter’s fuselage sustained substantial damage. The flight instructor reported that there were no preaccident failures or malfunctions with the helicopter that would have precluded normal operations.

## Probable Cause and Findings

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

Loss of tail rotor effectiveness resulting in an in-flight loss of control.

## Findings

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<b>Personnel issues</b>	Aircraft control - Flight crew
<b>Personnel issues</b>	Identification/recognition - Instructor/check pilot
<b>Personnel issues</b>	Delayed action - Instructor/check pilot

## Factual Information

### History of Flight

<b>Landing</b>	Loss of tail rotor effectiveness (Defining event)
<b>Landing</b>	Loss of control in flight
<b>Emergency descent</b>	Collision with terr/obj (non-CFIT)

### Flight instructor Information

<b>Certificate:</b>	Airline transport; Flight instructor	<b>Age:</b>	39, Male
<b>Airplane Rating(s):</b>	None	<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>	October 22, 2021
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	June 17, 2022
<b>Flight Time:</b>	267 hours (Total, all aircraft), 22 hours (Total, this make and model), 176 hours (Pilot In Command, all aircraft), 20 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft), 1 hour (Last 24 hours, all aircraft)		

### Student pilot Information

<b>Certificate:</b>	None	<b>Age:</b>	26, Male
<b>Airplane Rating(s):</b>	None	<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 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 9, 2022
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	8 hours (Total, all aircraft), 8 hours (Total, this make and model), 0 hours (Pilot In Command, all aircraft), 8 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft), 1 hour (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	HELICOPTERES GUIMBAL	<b>Registration:</b>	N457PA
<b>Model/Series:</b>	CABRI G2	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	2019	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	1247
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	June 3, 2022 100 hour	<b>Certified Max Gross Wt.:</b>	1543 lbs
<b>Time Since Last Inspection:</b>	73 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	1702 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	C126 installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	O-360-J2A
<b>Registered Owner:</b>	Ideal Aviation Illinois LLC	<b>Rated Power:</b>	145 Horsepower
<b>Operator:</b>	Ideal Aviation Illinois LLC	<b>Operating Certificate(s) Held:</b>	Pilot school (141)
<b>Operator Does Business As:</b>	Ideal Aviation	<b>Operator Designator Code:</b>	N/A

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KCPS,405 ft msl	<b>Distance from Accident Site:</b>	7 Nautical Miles
<b>Observation Time:</b>	09:53 Local	<b>Direction from Accident Site:</b>	197°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots / 0 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	150°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.9 inches Hg	<b>Temperature/Dew Point:</b>	29°C / 22°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Cahokia, IL (CPS)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Cahokia, IL (CPS)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	19:40 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	St. Louis Downtown CPS	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	413 ft msl	<b>Runway Surface Condition:</b>	Vegetation
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Straight-in

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	38.682123,-90.102261

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Sorensen, Timothy
<b>Additional Participating Persons:</b>	Jason Hurtt; FAA Flight Standards; St. Ann, MO
<b>Original Publish Date:</b>	September 22, 2022
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 4</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=105522">https://data.ntsb.gov/Docket?ProjectID=105522</a>

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