



# Aviation Investigation Final Report

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<b>Location:</b>	Houma, Louisiana	<b>Accident Number:</b>	CEN22FA100
<b>Date &amp; Time:</b>	January 14, 2022, 10:01 Local	<b>Registration:</b>	N167RL
<b>Aircraft:</b>	Bell 407	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Medical event	<b>Injuries:</b>	2 Fatal
<b>Flight Conducted Under:</b>	Part 135: Air taxi & commuter - Non-scheduled		

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## Analysis

The pilot and passenger departed in the helicopter on the on-demand passenger flight. Cockpit imagery indicated that, while enroute, the pilot experienced a sudden loss of consciousness. The helicopter departed controlled flight and impacted terrain. Examination of the helicopter revealed no mechanical anomalies that would have precluded normal operation.

Autopsy of the pilot was limited due to extensive traumatic injury. While the pilot's cardiovascular system showed no evidence of natural disease, an arrhythmia or other electrical disorder would not leave evidence on autopsy; thus, the cause of the pilot's sudden incapacitation could not be determined.

Varying levels of ethanol were detected in the pilot's liver, lung, kidney, and muscle tissue. Butanol and propanol were also detected in some tissues. Given the differing ethanol tissue concentrations, the state the body was recovered, and the presence of butanol and propanol in some tissues, it is likely that the identified ethanol was from sources other than ingestion.

## Probable Cause and Findings

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

The pilot's sudden loss of consciousness for undetermined reasons during cruise flight, which resulted in a loss of control and impact with terrain.

## Findings

**Personnel issues**

(general) - Flight crew

## Factual Information

### History of Flight

<b>Enroute-cruise</b>	Medical event (Defining event)
<b>Enroute-cruise</b>	Loss of control in flight
<b>Uncontrolled descent</b>	Collision with terr/obj (non-CFIT)

On January 14, 2022, about 1001 central standard time, a Bell 407, N167RL, was destroyed when it was involved in an accident near Houma, Louisiana. The commercial pilot and a passenger sustained fatal injuries. The helicopter was operated as a Title 14 *Code of Federal Regulations* Part 135 on-demand passenger flight.

The helicopter was equipped with an Appareo Vision 1000, which captured cockpit imagery of the accident flight.

The recorded video indicated that the flight was proceeding normally until about 10:00:50, when the pilot's head began to fall back in a motion not consistent with scanning for traffic or with directed attention. The helicopter was traveling at a speed of about 123 knots and an altitude about 1,220 ft mean sea level. The pilot's movements after this time appeared to be undirected and solely in response to the g-forces resulting from aircraft motion.

The pilot's head began to move toward the right and upward until the end of the recording. The pilot's motion remained consistent with an undirected response to aircraft motion. The view outside the windscreen was consistent with a nose-down, inverted attitude just before the end of the recording.

A witness near the accident site stated that he saw the helicopter descend into terrain in a nose-down attitude and did not see any parts separate from the helicopter while it was airborne.

## Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	30, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Helicopter	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Helicopter	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	November 13, 2021
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	November 13, 2021
<b>Flight Time:</b>	(Estimated) 1951.5 hours (Total, all aircraft), 29.8 hours (Total, this make and model), 1951.5 hours (Pilot In Command, all aircraft), 86.2 hours (Last 90 days, all aircraft), 59.6 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Bell	<b>Registration:</b>	N167RL
<b>Model/Series:</b>	407	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	1997	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	53167
<b>Landing Gear Type:</b>	Emergency float; Skid	<b>Seats:</b>	7
<b>Date/Type of Last Inspection:</b>	December 26, 2022 AAIP	<b>Certified Max Gross Wt.:</b>	5250 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Turbo shaft
<b>Airframe Total Time:</b>	20224.6 Hrs at time of accident	<b>Engine Manufacturer:</b>	Rolls Royce
<b>ELT:</b>	C126 installed, not activated	<b>Engine Model/Series:</b>	M250-C47B
<b>Registered Owner:</b>	Rotorcraft Leasing Company, LLC	<b>Rated Power:</b>	650 Horsepower
<b>Operator:</b>	Rotorcraft Leasing Company, LLC	<b>Operating Certificate(s) Held:</b>	On-demand air taxi (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	YTRA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	HUM,9 ft msl	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	09:47 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	6 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	10°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.07 inches Hg	<b>Temperature/Dew Point:</b>	16°C / 9°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Venice, LA (VEN)	<b>Type of Flight Plan Filed:</b>	Company VFR
<b>Destination:</b>	Patterson, LA (PTN)	<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	09:26 Local	<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	1 Fatal	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 Fatal	<b>Latitude, Longitude:</b>	29.491308,-90.42939(est)

A postaccident examination of the helicopter revealed there was no mechanical failure or malfunction that would have precluded normal operation.

## Medical and Pathological Information

The 30-year-old male pilot held a second-class Federal Aviation Administration (FAA) medical certificate with a limitation for corrective lenses. At the time of the most recent exam, he

reported no medications or medical conditions. No significant medical concerns were identified. Department of Veterans Affairs disability records showed that the pilot had a history of migraines and tinnitus, but had no diagnosis of traumatic brain injury.

According to the autopsy, the pilot's cause of death was massive total body trauma and the manner of death was accident. The examination was limited by extensive trauma. The cardiovascular system showed no evidence of natural disease.

Toxicology testing performed by the FAA Forensic Sciences Laboratory detected ethanol in the pilot's liver, lung, kidney, and muscle tissue at 0.056 grams per hectogram (gm/hg), 0.012 gm/hg, 0.055 gm/hg, and 0.039 gm/hg, respectively (grams per hectogram in tissue samples are directly comparable to grams per deciliter in blood samples). N-butanol was detected in liver, kidney, and muscle tissues, but was not detected in lung tissue. N-propanol was detected in kidney and muscle tissues but was not detected in his liver and lung tissues. The non-impairing over-the-counter antihistamine, fexofenadine, and its metabolite, azacyclonol, were detected in the pilot's liver and muscle tissue.

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Gallo, Mitchell
<b>Additional Participating Persons:</b>	Jose Areizaga; FAA FSDO; Baton Rouge, LA Gary Howe; Bell; Fort Worth, TX Jack Johnson; Rolls Royce; Indianapolis, IN Jason Melancon; Rotorcraft Leasing Company, LLC; Broussard, LA
<b>Original Publish Date:</b>	July 6, 2023
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=104527">https://data.nts.gov/Docket?ProjectID=104527</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](#).