



# Aviation Investigation Final Report

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<b>Location:</b>	Morgan City, Louisiana	<b>Accident Number:</b>	CEN23FA019
<b>Date &amp; Time:</b>	October 26, 2022, 17:11 Local	<b>Registration:</b>	N34BM
<b>Aircraft:</b>	Bell 407	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Medical event	<b>Injuries:</b>	1 Fatal, 2 Serious
<b>Flight Conducted Under:</b>	Part 135: Air taxi & commuter - Non-scheduled		

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## Analysis

The helicopter was returning to its home base after a normal offshore air taxi flight. The pilot was seated in the right front seat, one passenger was seated in the left front seat, and another passenger was seated in the right rear seat. The left front seat passenger stated that they were flying about 1,500 ft above the water when the pilot expressed that he was not feeling well. The pilot then slumped over in his seat and became unresponsive. The passenger seated in the right rear seat reported that he also saw the pilot slump over in his seat. With the helicopter about 400 ft above the water, the front left seat passenger reported that he reached over and attempted to control the helicopter with the pilot's controls. At some point during the descent, the skid-mounted float system was deployed. The helicopter impacted the water and became inverted. After impact, both passengers egressed and waited on top of the floating helicopter's belly until they were rescued. During salvage operations, most of the helicopter wreckage was lost at sea. The only parts of the helicopter that were recovered included portions of the intermediate fuselage/ baggage compartment, and most of the landing gear skids.

Medical investigation showed that the pilot had cardiovascular conditions including high blood pressure, mild coronary artery disease, and severe aortic atherosclerosis. It is likely that the pilot's loss of consciousness was due to diminished blood flow to his brain due to a medical event causing an abrupt drop in blood pressure, mediated by his cardiovascular system. His cardiovascular disease increased his risk for certain conditions that could lead to such an episode without leaving autopsy evidence, including unstable arrhythmia, carotid sinus syndrome, and heart attack. The pilot's autopsy did not identify a definitive cause of his loss of consciousness. The pilot's postmortem toxicological testing detected low levels of ethanol in blood and urine, along with n-propanol, indicating possible microbial activity in those specimens. Some or all the detected ethanol was likely from postmortem production, rather

than alcohol consumption. It is unlikely that that ethanol contributed to the pilot's incapacitation. Based on his risk factors and the surviving passengers' accounts, the pilot's loss of consciousness was likely due to a cardiovascular event, which resulted in the helicopter departing controlled flight and colliding with water.

## Probable Cause and Findings

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

The pilot's loss of consciousness due to a cardiovascular event.

### Findings

Personnel issues	
	Cardiovascular - Pilot

## Factual Information

### History of Flight

#### Enroute

Medical event (Defining event)

On October 26, 2022, about 1711 central daylight time, a Bell 407 helicopter, N34BM, was destroyed when it was involved in an accident in the Gulf of Mexico, about 25 miles south of Morgan City, Louisiana. The pilot sustained fatal injuries, and two passengers sustained serious injuries. The helicopter was operated as a Title 14 *Code of Federal Regulations* Part 135 air taxi flight.

On the morning of the accident, the helicopter originated from the Westwind Helicopter base (IYA) in Abbeville, Louisiana, to transport two workers to several offshore platforms in the Gulf of Mexico to perform telecommunications work on the platforms. The flight arrived at the first platform, Green Canyon 18 (GC18), about 0848. The helicopter was refueled at GC18. They departed GC18 about 1402, proceeded to platform Ship Shoal 349 (SS349), and landed there about 1411. The crew had lunch on SS349. The helicopter departed SS349 about 1631 for the return flight to IYA.

About 1720, the operator received an “overdue” message from their Sky Connect flight following system. After many attempts to communicate with the pilot/helicopter, the operator launched a search helicopter (N1416) toward the accident helicopter’s last known position. Search and rescue operations were coordinated with local authorities and the Coast Guard. About 1836, N1416 spotted the accident helicopter’s wreckage floating in the water inverted with the skid-mounted float system deployed. Two survivors were seen clinging to the top (on the belly) of the helicopter.

The two surviving passengers were rescued by a Coast Guard helicopter and transported to a hospital. The helicopter wreckage position was marked and additional flotation was attached. The body of the pilot was recovered through coordinated efforts from the local authorities, the Coast Guard, and the operator. After the two survivors and the pilot’s body were recovered, efforts were coordinated to recover the helicopter wreckage.

Both surviving passengers were interviewed at the hospital on October 27, 2022.

The surviving passenger who was seated in the left front seat of the helicopter stated they had loaded up the helicopter and left the SS349 platform and were heading back to the Westwind helicopter base at Abbeville, Louisiana. He said that they were flying about 1,500 ft above the water. He heard the pilot say something like, “this is not good,” and, “I am not going to make it.” The passenger asked the pilot if there was a problem with the helicopter. The pilot said something like, “it is not the helicopter, it is me.” The passenger asked what was wrong, and

the pilot said something like, "I'm overheating." Then, the pilot slumped over in his seat and was not responsive. The passenger estimated that the helicopter was about 400 ft above the water when he reached over to the pilot's flight controls and attempted to control the helicopter. At some point during the descent, the skid-mounted float system was activated. The helicopter impacted the water and became inverted. The passenger exited out of the submerged cockpit and crawled onto the belly of the helicopter. The passenger stated that he suffered a broken back.

The surviving passenger who was seated in the right rear seat stated that he was taking a nap when he recognized that the sound of the helicopter engine had changed. He woke up and saw that the pilot was slumped over in his seat and the helicopter was headed toward the water. He stated that the passenger who was seated in the front left seat had reached over to the pilot's flight controls and was attempting to control the helicopter. The next thing that he recalled was that the helicopter was upside down in the water. He stated that he exited out of the cabin and climbed on top of the belly of the helicopter. He stated he fired a signal and put dye into the water. The passenger stated that he suffered a broken leg and several cuts and scratches.

Both passengers stated that the entire flight had been normal until the pilot became incapacitated.

The passengers stated that they saw a helicopter fly over top of them and guessed that the pilot of that helicopter called the location of the wreckage into the Coast Guard. Both passengers stated that their injuries prevented them from trying to find the pilot in the wreckage. While waiting for rescue, a small work boat, coordinated by Westwind, stayed until the Coast Guard arrived. They both stated that the Coast Guard eventually rescued them and transported them to the LSU Medical Center in New Orleans.

ADS-B data indicated that at 1710:26, the helicopter was flying in level flight about 1,400 ft mean sea level (msl). About 10 seconds later, the data showed the helicopter make a right descending turn to about 1,100 ft msl. About 5 seconds later, the data showed the helicopter make an abrupt left descending turn to about 800 ft msl. The data showed the helicopter continue to descend through 400 ft msl in a relatively straight flight path for about 11 seconds until the data stopped. The ADS-B data was consistent with the passenger accounts of the event.

## Pilot Information

<b>Certificate:</b>	Airline transport	<b>Age:</b>	63, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane; Helicopter	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	October 12, 2022
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	October 3, 2022
<b>Flight Time:</b>	21435 hours (Total, all aircraft), 520 hours (Total, this make and model), 20000 hours (Pilot In Command, all aircraft), 191 hours (Last 90 days, all aircraft), 80 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Bell	<b>Registration:</b>	N34BM
<b>Model/Series:</b>	407	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	1998	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	53310
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	7
<b>Date/Type of Last Inspection:</b>	October 7, 2022 100 hour	<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>	15646 Hrs at time of accident	<b>Engine Manufacturer:</b>	Rolls Royce
<b>ELT:</b>	C126 installed, not activated	<b>Engine Model/Series:</b>	250-C47B
<b>Registered Owner:</b>	GULF HELICOPTERS LLC	<b>Rated Power:</b>	650 Horsepower
<b>Operator:</b>	Westwind Helicopters INC	<b>Operating Certificate(s) Held:</b>	On-demand air taxi (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	IAVA

The helicopter was equipped with a single set of flight controls operated from the right front seat (pilot station). The helicopter was equipped with an Apical emergency float system. The floats were mechanically activated from a handle that was located on the pilot's cyclic control stick.

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KPTN,9 ft msl	<b>Distance from Accident Site:</b>	25 Nautical Miles
<b>Observation Time:</b>	17:55 Local	<b>Direction from Accident Site:</b>	300°
<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>	3 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	330°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	29.99 inches Hg	<b>Temperature/Dew Point:</b>	18°C / 9°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Offshore Platform SS349 Gulf of Mexico, LA	<b>Type of Flight Plan Filed:</b>	Company VFR
<b>Destination:</b>	Abbeville, LA (IYA)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	16:31 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	Patterson PTN	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	9 ft msl	<b>Runway Surface Condition:</b>	Water-choppy
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	2 Serious	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal, 2 Serious	<b>Latitude, Longitude:</b>	29.141389,-91.617778(est)

After the accident, the position of the helicopter wreckage was located, marked, and additional flotation was attached. During the wreckage retrieval, the engine, transmission, flight controls, most of the cabin structure, tail boom, and main rotors were lost at sea due to rough, unfavorable sea conditions. The only parts of the helicopter wreckage that were recovered

were portions of the intermediate fuselage/ baggage compartment, and most of the landing gear skids. The skid-mounted floats were attached to the skids and were deployed. The wreckage examination was conducted on the deck of the recovery vessel when it docked.

Both skid and cross tubes were recovered. The forward cross tube strap assemblies were fractured. The aft cross tube remained attached to the fuselage. The floats remained attached to the skid tubes and had been deployed. Evidence showed that the float system was activated from the cockpit before water entry.

## **Flight recorders**

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According to the operator, the helicopter was equipped with an on-board an Appareo video recording system. The system was lost at sea and was not recovered.

## **Medical and Pathological Information**

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An autopsy of the pilot was performed by St Mary Parish Forensics, Broussard, Louisiana. According to the autopsy report, his cause of death was helicopter crash into ocean and his manner of death was accident. Coronary artery disease was present, including 30-40% narrowing of the left anterior descending coronary artery and right coronary artery by plaque. The heart muscle was described as diffusely softened. There was no focal scarring of the heart muscle although heart and kidney tissue showed some microscopic abnormalities. Severe aortic atherosclerosis and mild intracranial atherosclerosis were present. The remainder of the pilot's autopsy did not identify other significant natural disease.

According to medical records, the pilot had a history of high blood pressure treated with the prescription medication losartan. His primary physician was also an aviation medical examiner (AME). The pilot's last primary care visit and aviation medical examination were on October 12, 2022. At that time, his high blood pressure was qualified under conditions AMEs can issue (CACI) criteria. He was issued a first-class medical certificate limited by a requirement to have available glasses for near vision.

The FAA Forensic Sciences laboratory performed toxicological testing of postmortem specimens from the pilot. The testing detected ethanol at 0.024 g/dL in blood and 0.016 g/dL in urine. Some or all the ethanol detected may have been from postmortem production. N-propanol and losartan (unquantified) were also detected in blood and urine.

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Lemishko, Alexander
<b>Additional Participating Persons:</b>	Myron Billiot; FAA FSDO; Baton Rouge, LA Rob Phillips; Westwind Helicopters; Santa Fe, TX Beverley Harvey; TSB of Canada Accredited Representative; Quebec Gary Howe; Bell Tech Advisor to TSB of Canada; Fort Worth, TX
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<b>Investigation Class:</b>	<a href="#">Class 3</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=106209">https://data.nts.gov/Docket?ProjectID=106209</a>

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