



National Transportation Safety Board Aviation Accident Final Report

Location:	Chesterfield, IN	Accident Number:	CHI06LA074
Date & Time:	02/02/2006, 0143 EST	Registration:	N593AE
Aircraft:	Bell 206L-1	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	3 Serious
Flight Conducted Under:	Part 91: General Aviation - Positioning - Air Medical (Medical Emergency)		

Analysis

The emergency medical service (EMS) flight was dispatched at night to pickup a patient from a hospital. The pilot reported that after receiving the dispatch orders he went outside to assess the current weather conditions, which he described as being a "little hazy." The pilot then obtained the local weather radar depiction and surface weather conditions. The pilot determined the weather at the departure and destination was suitable for visual flight rules (VFR) operations. The pilot did not listen to the airport's automated weather observing system (AWOS) broadcast before departure. The helicopter departed and almost immediately entered instrument meteorological conditions. He elected to terminate the flight and began a right turn back toward the departure airport. The pilot stated that he had difficulty maintaining level flight and felt that the helicopter was climbing slightly during the turn. He thought the attitude indicator was giving a false indication because it was not moving and was "cocked off center about 30 degrees." The pilot verified that the circuit breaker for the attitude indicator was not tripped. He saw some ground lighting to the left of the helicopter and started a left turn toward the lights. The pilot remembered seeing two houses before impact and attempted to steer the helicopter between them. Global positioning system (GPS) data showed the helicopter departing to the north, and then it made a climbing right turn, followed by a climbing left turn. The helicopter's maximum recorded altitude during the left turn was about 1,035 feet above ground level (agl). The helicopter impacted two pine trees, utility lines, a residential structure, a tree, and a garage before coming to a stop. The helicopter traveled about 325 feet from the initial contact with the two pine trees to its final position. The local weather conditions were continually broadcast and accessible using a telephone or radio. About one hour before the accident, the airport's AWOS indicated that the sky was overcast at 400 feet agl and the surface visibility was 3 sm with mist. About two minutes after the accident, the airport's AWOS indicated that the sky was overcast at 400 feet agl and the ground visibility was 2 1/2 sm. During the accident flight, the helicopter was operating in instrument meteorological conditions (IMC). The pilot held an instrument rating, but the accident helicopter was not certified for flight in IMC. According to company documentation, the pilot had logged 26 hours of instrument experience since being hired in 1989. He had flown 13 hours during the prior 90 days, none of which were in IMC. The attitude indicator was bench-tested and no discrepancies were noted with its operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain aircraft control after becoming spatially disorientated shortly after departure. Contributing to the accident was the pilot's inadequate preflight weather evaluation, his inadvertent flight into night instrument meteorological conditions, and the ground objects that the helicopter impacted during the descent.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER

Phase of Operation: MANEUVERING

Findings

1. (F) WEATHER EVALUATION - INADEQUATE - PILOT IN COMMAND
2. (F) LIGHT CONDITION - NIGHT
3. (F) WEATHER CONDITION - LOW CEILING
4. (F) VFR FLIGHT INTO IMC - INADVERTENT - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: MANEUVERING

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. (F) OBJECT - TREE(S)
6. (F) OBJECT - WIRE, TRANSMISSION
7. (F) OBJECT - RESIDENCE
8. (F) OBJECT - BUILDING(NONRESIDENTIAL)

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

9. TERRAIN CONDITION - GROUND

Factual Information

On February 2, 2006, at 0143 eastern standard time (est), a Bell 206L-1 helicopter, N593AE, operated by Petroleum Helicopters, Inc., based in Lafayette, Louisiana, was destroyed during impact with trees, wires, and residential structures while maneuvering near Chesterfield, Indiana. The emergency medical service (EMS) flight was dispatched to pickup a patient at the St. Joseph Hospital, Kokomo, Indiana, and was operating under the provisions of 14 Code of Federal Regulations Part 91 when the accident occurred. Instrument meteorological conditions prevailed during the flight. The pilot, flight nurse, and paramedic were seriously injured. The flight departed Anderson Municipal Airport (AID), Anderson, Indiana, at 0139.

During an interview with a Federal Aviation Administration (FAA) Operations Inspector, the pilot reported that they received the dispatch call at 0131. He went outside to assess the current weather conditions, which he described as being a "little hazy." The pilot then checked the local weather radar depiction and the surface conditions at the departure airport and Kokomo Municipal Airport (OKK). He indicated that the weather conditions at AID and OKK were suitable for visual flight rules (VFR) operations. The pilot reported that he did not listen to the airport's automated weather observing system (AWOS) broadcast before departure.

The pilot stated that he departed to the north and almost immediately entered instrument meteorological conditions. He radioed dispatch advising that he was aborting the flight and returning to the base. He started a right turn back toward the airport. The pilot stated that he had difficulty maintaining level flight and felt that the helicopter was climbing slightly during the turn. He thought the attitude indicator was giving a false indication because it was not moving and was "cocked off center about 30 degrees." The pilot verified that the circuit breaker for the attitude indicator was not tripped. He saw some ground lighting to the left of the helicopter and started a left turn toward the lights. The pilot remembered seeing two houses before impact and attempted to steer the helicopter between them.

According to company dispatch records, the flight departed at 0139:30 (hhmm:ss) and shortly after departure the pilot reported that he was aborting the flight due to poor weather conditions. The helicopter's position (latitude, longitude, altitude) was transmitted to a dispatch center every 30 seconds. The global positioning system (GPS) data was recovered from the dispatch monitoring system. The plotted data showed the helicopter departing to the north, and then it made a climbing right turn, followed by a climbing left turn. The helicopter's maximum recorded altitude during the left turn was 1,952 feet mean sea level (msl), or about 1,035 feet above ground level (agl). At 0142:30, the final GPS position showed the helicopter near the intersection of Linden Lane and 10th Street at an altitude of 1,528 feet msl (610 feet agl).

The helicopter initially impacted two pine trees located on the southwest corner of SR-32 (Main Street) and Shepard Drive. The helicopter then contacted utility lines that were running parallel to and located on the south side of Main Street. The helicopter then proceeded northeast across Main Street impacting a residential structure, a tree, and a garage. The helicopter traveled about 325 feet from the initial contact with the two pine trees to its final position.

The closest weather reporting facility to the accident site was at the departure airport. The airport was equipped with an automated weather observing system (AWOS). The local weather conditions were continually broadcast and accessible using a telephone or radio. The following

weather conditions were reported by the AID AWOS:

At 0045 est: Calm winds; visibility 3 statute miles (sm) with mist; sky overcast at 400 feet agl; temperature 2 degrees Celsius; dew point 2 degrees Celsius; altimeter setting 29.78 inches of mercury.

At 0145 est: Calm winds; visibility 2 1/2 sm; sky overcast at 400 feet agl; temperature 2 degrees Celsius; dew point 2 degrees Celsius; altimeter setting 29.78 inches of mercury.

The departure airport was classified as Class-D airspace when the control tower was operational (0600 to 2200 est). At the time of the accident, the departure airport was classified as Class-G (uncontrolled) airspace. At night, the minimum visibility to operate under visual flight rules (VFR) in Class-G airspace is 3 sm. In addition to the minimum visibility, an aircraft must also maintain a minimum distance of 500-feet below, 1,000-feet above, and 2,000-feet horizontal from any cloud formation.

The accident helicopter was not certified for flight in instrument meteorological conditions (IMC). The pilot held a commercial pilot certificate with an instrument rating for helicopters. According to company documentation, the pilot had logged 26 hours of instrument experience since being hired in 1989. He had flown 13 hours during the prior 90 days, none of which were in IMC.

The attitude indicator (p/n 504-0017-901-5, s/n 10432B) was manufactured by Jet Electronics & Technology, Inc. The electronic attitude indicator was removed from the wreckage and sent to the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) for testing. The attitude indicator was tested in the presence of the NTSB IIC on December 27, 2006. The attitude indicator was mounted on an oscillating test apparatus commonly used during maintenance. Electrical power was applied to the attitude indicator and it displayed a level attitude within the approved time specifications. The attitude indicator displayed values within test specifications when the device was placed in several static pitch and roll positions. The attitude indicator displayed the correct orientation while it was oscillated in both roll and pitch axis for a period of 5 minutes. The attitude indicator displayed values within test specifications when it was rechecked using several static pitch and roll positions. Electrical power was disconnected from the instrument and its gyro spun-down completely. The attitude indicator was then powered-up again and it displayed a level attitude within the approved time specification.

Pilot Information

Certificate:	Commercial	Age:	50, Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 With Waivers/Limitations	Last FAA Medical Exam:	02/01/2005
Occupational Pilot:		Last Flight Review or Equivalent:	08/01/2005
Flight Time:	5865 hours (Total, all aircraft), 1369 hours (Total, this make and model), 4814 hours (Pilot In Command, all aircraft), 13 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N593AE
Model/Series:	206L-1	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	45421
Landing Gear Type:	Skid	Seats:	7
Date/Type of Last Inspection:	02/01/2006, AAIP	Certified Max Gross Wt.:	4150 lbs
Time Since Last Inspection:		Engines:	1 Turbo Shaft
Airframe Total Time:	13433 Hours at time of accident	Engine Manufacturer:	Allison
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	250-C30P
Registered Owner:	Petroleum Helicopters, Inc.	Rated Power:	650 hp
Operator:	Petroleum Helicopters, Inc.	Operating Certificate(s) Held:	On-demand Air Taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	AID, 919 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	0145 EST	Direction from Accident Site:	180°
Lowest Cloud Condition:		Visibility	2.5 Miles
Lowest Ceiling:	Overcast / 400 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:	Variable	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.78 inches Hg	Temperature/Dew Point:	2° C / 2° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Anderson, IN (AID)	Type of Flight Plan Filed:	Company VFR
Destination:	Kokomo, IN	Type of Clearance:	None
Departure Time:	0139 EST	Type of Airspace:	

Airport Information

Airport:	Anderson Municipal Airport (AID)	Runway Surface Type:	
Airport Elevation:	919 ft	Runway Surface Condition:	
Runway Used:	NA	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	3 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 Serious	Latitude, Longitude:	40.111111, -85.603889

Administrative Information

Investigator In Charge (IIC):	Andrew T Fox	Report Date:	01/31/2008
Additional Participating Persons:	Doug Tate; Federal Aviation Administration - Indianapolis; Indianapolis, IN		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).