



Aviation Investigation Final Report

Location:	WISCONSIN RPDS, Wisconsin	Accident Number:	CHI94FA330
Date & Time:	March 22, 1994, 15:40 Local	Registration:	N2991W
Aircraft:	BELL 47G-5A	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE ACCIDENT HELICOPTER DEPARTED WISCONSIN RAPIDS, WISCONSIN, IN VFR CONDITIONS, ON MARCH 22, 1994, AND DID NOT ARRIVE AT THE INTENDED DESTINATION OF MASON CITY, IOWA. A SEARCH WAS INITIATED ON MARCH 24, 1994, AND THE WRECKAGE WAS FOUND BY HUNTERS ON SEPTEMBER 17, 1994, IN A WOODED AREA, APPROXIMATELY 12 MILES WEST OF THE DEPARTURE AIRPORT. AN EXAMINATION OF THE WRECKAGE DID NOT IDENTIFY ANY MECHANICAL ANOMALIES IN THE ENGINE OR AIRFRAME. POST MORTEM EXAMINATION OF THE PILOT FAILED TO REVEAL ANY PRE-EXISTING ANOMALIES.

Probable Cause and Findings

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

Findings

Occurrence #1: UNDETERMINED
Phase of Operation: UNKNOWN

Findings

1. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: UNKNOWN

Findings

2. OBJECT - TREE(S)

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

It is presumed that on March 22, 1994, at approximately 1540 central standard time, a Bell 47G-5A, N2991W, registered to Central Wisconsin Helicopter, Inc., of Wisconsin Rapids, Wisconsin, and operated by a commercial pilot collided with trees and the terrain, approximately 12 statute miles west of the Wisconsin Rapids Municipal Airport. The helicopter had departed Wisconsin Rapids with the intended destination of Mason City, Iowa, at 1530. When the helicopter did not arrive at Mason City, it was reported missing. The helicopter was located by hunters on September 17, 1994, about 2000. The helicopter was destroyed and the pilot sustained fatal injuries. Witnesses to the departure reported visual meteorological conditions prevailed at the time. No flight plan was on file. The flight was a 14 CFR Part 91 personal flight.

There are no known witnesses to the accident. The Civil Air Patrol conducted a search for the missing helicopter starting on March 24, 1994, and continuing for several weeks without locating the helicopter.

On April 15, 1994, an investigator from the Jackson County Sheriff's Department interviewed an individual who resides at Rt 1, Black River Falls, Wisconsin. The individual gave a voluntary statement indicating that on March 24, 1994, at approximately 1400 he was awakened by his dog barking and when he investigated he discovered a helicopter had landed in a field across the road from his residence. He described the helicopter to be "grayish" in color and to "have what appeared to be a balloon on the front and top of the helicopter." He indicated when he walked to the end of his driveway the helicopter took off and departed in a northwest direction. The witness stated that the helicopter sounded like it was "having trouble", because, "the helicopter appeared to be following the road instead of going over the trees." A search of the area conducted on April 14, 1994, failed to find evidence of the helicopter.

OTHER DAMAGE

There was some damage to the tops of several trees in the immediate vicinity of the wreckage.

PERSONAL INFORMATION

Personal logbooks for the pilot were not recovered; however, Federal Aviation Administration records for the pilot show that on March 19, 1994, he received a physical examination for a Second Class Medical Certificate at which time he indicated a total pilot time of 5,695 hours. Total helicopter time and time in this type of helicopter is unknown. The date of his most recent biennial flight review is unknown.

AIRCRAFT INFORMATION

The helicopter was a Bell 47G-5A, N2991W, serial number 25068. The helicopter was registered to Central Wisconsin Helicopter, Inc., of Wisconsin Rapids, Wisconsin. Officials of that organization stated the pilot had just purchased the helicopter and was en route to his home in Tilden, Nebraska, when the helicopter became missing. Logbook records for the helicopter were located in the area of the pilot's residence and show that the helicopter received an annual inspection completed on March 18, 1994, with a total time of 8,700 hours on the airframe and 8,931 hours on the engine. The Hobbs meter was found in the wreckage. It was displaying 2,028 hours which did not correlate to any logbook entries.

METEOROLOGICAL INFORMATION

Persons who witnessed the departure of the helicopter stated that visual meteorological conditions prevailed at the time of take off. A check of archived meteorological information confirmed the weather to be VFR both at the point of departure and the accident site at the presumed time of the accident.

COMMUNICATIONS

No radio communications were reported by any reporting station nor were there pilot reports of communication with the accident helicopter at or near the time of the accident.

WRECKAGE AND IMPACT INFORMATION

The wreckage of the helicopter was found lying on its left side and was facing an easterly heading, at the base of several trees averaging 55 to 65 feet in height. The entire helicopter with the exception of the bubble (cockpit enclosure) was found near the impact point. Pieces of the bubble were found from 50 to 200 feet east of the helicopter.

The main rotor system had received little impact damage during the accident sequence. One main rotor blade had a small leading edge deficit with chordwise wrinkling behind the leading edge damage. On that particular blade the trailing link had separated and the blade rotated 180 degrees from its normal track. The other main rotor blade displayed no operational impact damage and its integrity through the rotor system remained intact. The tail rotor blades had no evidence of rotational impact damage. The tail rotor was located on the right side of the helicopter. The helicopter was found on its left side. The tail rotor system received downward bending in both rotor blades and the tail rotor system failed through the pinion gear attachment. There was deformation of the airframe around the engine and it was partially buried in the terrain.

The helicopter was removed from the wooded area. The engine and transmission were removed for further examination. The controls were examined for continuity and found to

perform without anomalies with the exception of the throttle. The throttle arm which was fractured at the attachment where the carburetor and air box had separated from their mount.

Both fuel tanks were ruptured and open to the elements.

The magnetos were exposed to the elements. They were found to be internally contaminated and could not be functionally tested.

No anomalies were found during the post accident examination of the airframe.

MEDICAL AND PATHOLOGICAL INFORMATION

The post mortem examination of the pilot was conducted by Dr. Robert W. Huntington III, at the University of Wisconsin Medical School at Madison, Wisconsin on September 19, 1994. The examination did not yield any indication of pre-existing anomalies.

There were no specimens available for a toxicological examination.

TESTS AND RESEARCH

The engine and transmission were disassembled at DuPage Airport, West Chicago, Illinois, on December 13, 1994. The engine would not turn over; however, on disassembly it was found that the starter had received impact damage and was locking up the operation of the engine. When the starter was removed the engine rotated. On internal examination of the engine no pre-existing anomalies were found. There was evidence of lubrication throughout the engine.

The transmission and overriding clutch were intact and no mechanical problems were found during the disassembly. All static tests were performed satisfactorily.

The carburetor was dissembled and no mechanical anomalies were noted. No fuel was found anywhere in the system. The air box contained contaminants consistent with the terrain and vegetation at the location where the wreckage was found, but no anomalies were noted in its operation.

ADDITIONAL INFORMATION

Representatives of the pilot's estate were notified of the location of the wreckage. The engine and transmission were returned to the pilot's estate.

Parties to the investigation were the Federal Aviation Administration Flight Standards District Office, Milwaukee, Wisconsin; Lycoming Engine Company, Williamsport, Pennsylvania; and Bell Helicopter, Fort Worth, Texas.

Pilot Information

Certificate:	Commercial	Age:	56, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	March 19, 1994
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	5695 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELL	Registration:	N2991W
Model/Series:	47G-5A 47G-5A	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	25068
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	March 18, 1994 Annual	Certified Max Gross Wt.:	2850 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	VO-435-B1A
Registered Owner:	CENTRAL WIS. HELICOPTER, INC.	Rated Power:	260 Horsepower
Operator:	RUTERBORIES, CARYL J.	Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	CWA ,1277 ft msl	Distance from Accident Site:	28 Nautical Miles
Observation Time:	15:45 Local	Direction from Accident Site:	25°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	15 knots / 21 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	300°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	16°C / -1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	WIS. RAPIDS , WI (ISW)	Type of Flight Plan Filed:	None
Destination:	MASON CITY , IA (MCW)	Type of Clearance:	None
Departure Time:	15:30 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	44.33916,-89.730911(est)

Administrative Information

Investigator In Charge (IIC):	Wilson, Stephen
Additional Participating Persons:	KAY LANNOYE; MILWAUKEE , WI
Original Publish Date:	March 27, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=9392

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