



National Transportation Safety Board Aviation Accident Data Summary

Location:	Dorrance, PA	Accident Number:	ERA10CA001
Date & Time:	10/02/2009, 1025 EDT	Registration:	N74004
Aircraft:	BELL 47D1	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot reported that he performed a preflight inspection of his helicopter "including checking fuel tank was full and without water or other contaminants." The cross country flight was estimated to be one hour and forty-five minutes. Based upon past performance and lack of guidance from the manufacturer, he determined that the helicopter consumed about 13 gallons-per-hour, resulting in a total consumption of 22.8 gallons of fuel, which would leave approximately 6 gallons remaining in the 29-gallon fuel system. After one hour and twenty five minutes of flight time and approximately 5 nautical miles from the destination airport, the engine quit suddenly. The pilot performed an autorotation maneuver; however, the tail boom impacted a dirt and stone pile causing substantial damage to the tail boom. Post accident examination by a Federal Aviation Administration inspector revealed that "the fuel tank was empty" and a "small amount of fuel was found in both the carburetor and the gascolator." Samples from both were verified to be free of water or contaminants. A slight indication of blue fuel stain was found at the fitting for the fuel line which connects the fuel tank and the carburetor. Additional inspection and testing was performed by the helicopter's Airframe and Powerplant maintenance technician twelve days after the accident in an effort to determine the origin of the fuel leak; however, the results were inconclusive. Fuel stains were noted on the carburetor around the split line of the two body halves, and around the fuel strainer screen on the left side.

Flight Events

Enroute-descent - Fuel exhaustion
Emergency descent - Off-field or emergency landing
Autorotation - Collision with terr/obj (non-CFIT)

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
A total loss of engine power due to fuel exhaustion for undetermined reasons.

Findings

Aircraft-Fluids/misc hardware-Fluids-Fuel-Fluid level - C
Not determined-Not determined-(general)-(general)-Unknown/Not determined - C

Pilot Information

Certificate:	Commercial	Age:	54
Airplane Rating(s):	None	Instrument Rating(s):	None
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	None
Flight Time:	387 hours (Total, all aircraft), 316 hours (Total, this make and model), 343 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BELL	Registration:	N74004
Model/Series:	47D1	Engines:	1 Reciprocating
Operator:	HOUSE GUY C	Engine Manufacturer:	FRANKLIN
Air Carrier Operating Certificate:	None	Engine Model/Series:	6V4 SERIES
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	kavp, 962 ft msl	Weather Information Source:	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	Lowest Ceiling:	None
Condition of Light:	Day	Wind Speed/Gusts, Direction:	3 knots, 10°
Temperature:	10°C / 6°C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Castle Creek, NY	Destination:	Hazleton, PA (KHZL)

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None

Administrative Information

Investigator In Charge (IIC):	Shawn Etcher	Adopted Date:	03/03/2010
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=74840		

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.

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