



Aviation Investigation Final Report

Location:	West Liberty, Ohio	Accident Number:	CEN14LA398
Date & Time:	July 29, 2014, 16:51 Local	Registration:	N89ZC
Aircraft:	Hughes 369D	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 Serious
Flight Conducted Under:	Part 133: Rotorcraft ext. load		

Analysis

The commercial pilot was using an aerial saw to trim trees when the accident occurred. As the helicopter was going through a tree line, the engine lost power, and it then descended into trees and terrain.

A postaccident examination of the helicopter revealed that no fuel was present in either the fuel tank or in the engine fuel line. When electrical power was applied to the helicopter after the accident, the fuel quantity indicator showed that the fuel tank was empty. The helicopter was topped off with fuel before the accident flight, and it had been flown 1 hour 50 minutes before the accident. The operator stated that the fuel tank holds 62.4 gallons, and the pilot reported that the helicopter consumes about 30 gallons per hour. It is likely that the pilot did not adequately monitor the fuel quantity during the flight, which resulted in a total loss of engine power due to fuel exhaustion.

Probable Cause and Findings

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

A total loss of engine power, which resulted from fuel exhaustion due to the pilot's failure to adequately monitor the fuel quantity during the flight.

Findings

Aircraft	Fuel - Fluid level
Personnel issues	Use of equip/system - Pilot
Aircraft	Fuel - Fluid management

Factual Information

History of Flight

Maneuvering-low-alt flying	Loss of engine power (total) (Defining event)
Maneuvering-low-alt flying	Loss of control in flight
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On July 29, 2014, at 1651 eastern daylight time, a Hughes 369D helicopter, N89ZC, collided with the terrain following a loss of engine power while trimming trees in West Liberty, Ohio. The commercial pilot was seriously injured. The helicopter sustained substantial damage. The helicopter was registered to DAH Aircraft LLC and operated by Rotor Blade LLC as a 14 Code of Federal Regulations Part 133 external load flight. Visual meteorological conditions prevailed for the flight, which did not operate on a flight plan. The local flight originated from a nearby field at 1501.

The pilot was using a 10-bladed aerial saw to trim trees along a railroad track when the accident occurred. A witness reported the engine sounded like it lost power and the tail of the helicopter oscillated to the left as the helicopter began losing altitude. The helicopter then rolled to the left and descended to impact with the trees and terrain.

A postaccident examination of the helicopter was conducted by a Federal Aviation Administration inspector. The inspector reported the tail boom separated from the helicopter during the impact. The tail rotor drive shaft did not show evidence of torsional twisting. The main and tail rotor blades contained little damage. He reported there was no evidence of fuel spill at the accident site. The helicopter's fuel system was intact and there was no fuel present in the fuel tank or in the fuel line at the engine. The inspector applied electrical power to the helicopter and the fuel quantity indicator showed the tank was empty.

The helicopter was topped off with fuel prior to the flight. According to the helicopter operator, the helicopter holds 62.4 gallons of fuel. The pilot reported the helicopter consumes about 30 gallons per hour. The operator stated the spot tracker information showed the helicopter flew 1 hour and 50 minutes from the last fueling to the time of the accident and they drained about one quart of fuel from the helicopter after the accident.

The operator stated the pilots and ground crew time the flights for fuel consumption. The ground crew gave the pilot a one hour time check followed by additional 15 minute time checks prior to the accident.

Pilot Information

Certificate:	Commercial	Age:	50, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	November 26, 2013
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	September 15, 2013
Flight Time:	11490 hours (Total, all aircraft), 2500 hours (Total, this make and model), 11000 hours (Pilot In Command, all aircraft), 240 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Hughes	Registration:	N89ZC
Model/Series:	369D	Aircraft Category:	Helicopter
Year of Manufacture:	1981	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	1098D
Landing Gear Type:	Unknown	Seats:	
Date/Type of Last Inspection:		Certified Max Gross Wt.:	3000 lbs
Time Since Last Inspection:		Engines:	
Airframe Total Time:		Engine Manufacturer:	
ELT:		Engine Model/Series:	
Registered Owner:	DAH AIRCRAFT LLC	Rated Power:	
Operator:	Rotor Blade LLC	Operating Certificate(s) Held:	Rotorcraft external load (133)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	EDJ,1122 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	16:30 Local	Direction from Accident Site:	230°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Broken / 3700 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	250°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.03 inches Hg	Temperature/Dew Point:	19°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	West Liberty, OH	Type of Flight Plan Filed:	None
Destination:	West Liberty, OH	Type of Clearance:	None
Departure Time:	15:01 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious	Latitude, Longitude:	40.301944,-83.76889(est)

Administrative Information

Investigator In Charge (IIC):	Sullivan, Pamela
Additional Participating Persons:	Charles Heck; FAA; Columbus, OH
Original Publish Date:	September 14, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=89775

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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](#).