



Aviation Investigation Final Report

Location:	Plymouth, Michigan	Accident Number:	CEN10CA317
Date & Time:	June 13, 2010, 16:00 Local	Registration:	N47WK
Aircraft:	Bell 47G	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The helicopter experienced a total loss of engine power about 2 miles northeast of the departure airport. The pilot then performed an autorotation onto a grass area. The helicopter sustained substantial damage, including damage to the main rotor blades and left side of the fuselage. The pilot was uninjured. Examination of the helicopter revealed no anomalies that would have precluded normal operation. A carburetor temperature gauge had been installed in the helicopter. The pilot stated that he did not use carburetor heat during or after the takeoff from the departure airport. Weather conditions at the time winds 290 degrees at 9 knots, gusts to 17 knots, 10 statute miles, 2,900 feet overcast, temperature 23 degrees Celsius, dew point 17 degrees Celsius, and altimeter 30.00 inches. According to the Carburetor Icing Probability Chart, the conditions were conducive to serious icing at glide power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to use carburetor heat, which led to carburetor icing and a loss of engine power following takeoff.

Findings

Personnel issues	Lack of action - Pilot
Aircraft	Fuel control/carburetor - Related operating info

Factual Information

History of Flight

Enroute	Loss of engine power (total) (Defining event)
Autorotation	Off-field or emergency landing
Autorotation	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Private	Age:	58, Male
Airplane Rating(s):	Single-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 3 Without waivers/limitations	Last FAA Medical Exam:	October 29, 2008
Occupational Pilot:	No	Last Flight Review or Equivalent:	March 15, 2009
Flight Time:	286 hours (Total, all aircraft), 149 hours (Total, this make and model), 130 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N47WK
Model/Series:	47G 2	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	2254
Landing Gear Type:	Skid	Seats:	
Date/Type of Last Inspection:	March 5, 2010 Annual	Certified Max Gross Wt.:	2450 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	7096 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Not installed	Engine Model/Series:	VO-435-A1E
Registered Owner:	Jay Services LC	Rated Power:	240 Horsepower
Operator:	Pilot	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	YIP, 716 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	15:53 Local	Direction from Accident Site:	225°
Lowest Cloud Condition:	Clear	Visibility:	10 miles
Lowest Ceiling:	Overcast / 3100 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	320°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.98 inches Hg	Temperature/Dew Point:	24°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Plymouth, MI (1D2)	Type of Flight Plan Filed:	None
Destination:	Plymouth, MI (1D2)	Type of Clearance:	None
Departure Time:	16:00 Local	Type of Airspace:	

Airport Information

Airport:	Canton-Plymouth-Mettetal Airpo 1D2	Runway Surface Type:	
Airport Elevation:	696 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	42.348056,-83.45639(est)

Administrative Information

Investigator In Charge (IIC): Gallo, Mitchell

Additional Participating Persons:

Original Publish Date: December 20, 2010

Last Revision Date:

Investigation Class: [Class](#)

Note: This accident report documents the factual circumstances of this accident as described to the NTSB.

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=76312>

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