



# Aviation Investigation Final Report

<b>Location:</b>	Plymouth, Michigan	<b>Accident Number:</b>	CEN10CA317
<b>Date &amp; Time:</b>	June 13, 2010, 16:00 Local	<b>Registration:</b>	N47WK
<b>Aircraft:</b>	Bell 47G	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	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

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



## Factual Information

### History of Flight

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

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	58, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	October 29, 2008
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	March 15, 2009
<b>Flight Time:</b>	286 hours (Total, all aircraft), 149 hours (Total, this make and model), 130 hours (Pilot In Command, all aircraft)		

## Aircraft and Owner/Operator Information

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

## Meteorological Information and Flight Plan

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

## Airport Information

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

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	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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