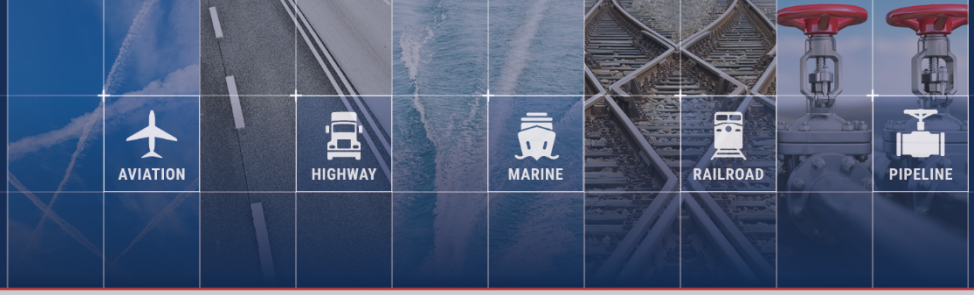

Aviation Investigation Final Report

Location:	Hanover Township, Michigan	**Accident Number:**	CEN12LA296
Date & Time:	May 13, 2012, 19:03 Local	**Registration:**	N420RP
Aircraft:	Maule M-7-420AC	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot departed from a lake in a seaplane, circled, and flew back over the lake. He then saw another lake nearby and decided to land on it. On the downwind leg of the landing, the engine lost power. During the descent toward the lake, the airplane struck trees next to the shore and subsequently went into the water. The pilot and passenger exited the airplane and swam to shore. The fuel selector was found in the OFF position. Two gallons of fuel were drained from the left tank. The right tank was ruptured when the wing struck the tree, and there was evidence of fuel spray on the tree. An examination of the turbine engine failed to reveal a reason for the loss of power. The fuel pump was tested and met factory specifications. While the main fuel control contained only residual fuel, it also tested in accordance with factory specifications; given the presence of fuel after the accident, the investigation was unable to conclude that this was the cause of the power loss. Further, the propeller governor and overspeed governor tested in accordance with factory specifications and electrical power was applied to the Welden fuel pump, which operated normally.

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 for reasons that could not be determined during an exhaustive postaccident examination of the engine and its components.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Maneuvering	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On May 13, 2012, at 1903 eastern daylight time, the pilot of a Maule M-7-420AC, N420RP, attempted to make a forced landing on Pine Hill Lake, Hanover Township, Michigan, after the engine lost power. During the emergency descent, the airplane clipped a tree and impacted the water. The pilot and his passenger, who were not injured, exited the airplane and swam to shore. The airplane was substantially damaged. The airplane was registered to and operated by Bull Dog Aviation, Alpena, Michigan, under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed at the time of the accident, and no flight plan had been filed. The flight originated at 1859 from nearby Round Lake and was en route to Jackson County Regional Airport (KJXN), Jackson, Michigan.

The pilot told a Federal Aviation Administration (FAA) inspector that he had landed at Round Lake earlier in the day to visit a relative. He departed Round Lake and was en route to KJXN for fuel. According to the pilot's accident report, he took off to the south, circled, and flew back over the lake. He saw nearby Farwell Lake and decided to land there. He checked the area for traffic and made a clearing pass over the lake to notify traffic of his intention to land. He then made climbing left turns and was established on the downwind leg when the engine lost power. The pilot said he did not have time to attempt an engine restart. Pine Hill Lake came into view and during the descent towards that lake the airplane struck trees next to the shore. The pilot then returned to the airplane and turned off the fuel selector.

After the airplane was recovered from the lake, the inspector was only able to drain two gallons of fuel from the left tank. The right wing had struck a tree, rupturing the fuel tank. Examination of the tree revealed signatures consistent with a fuel spray. The Maule M-7-420AC has interconnected inboard and outboard tanks in each wing. The fuel control valve selects the left tank, right tank, and the ON and OFF positions. The FAA inspector found the fuel selector in the OFF position. Examination of the turbine engine failed to reveal why it lost power. Both the N1 and N2 shafts rotated freely with continuity between the compressor and the gas producer, and between the power turbine and the accessory gearbox. The chip plugs were clean.

Various fuel components were removed for testing. The engine fuel pump (p.n. 6899253, s.n. 3483) was tested at the Eaton Corporation, Cleveland, Ohio, on July 23, under the auspices of FAA. Also in attendance was a technical representative from Rolls Royce. The fuel pump was opened and only residual fuel was noted. The Rolls Royce representative said it was less than

what was to be expected or was normally found. The unit tested satisfactory in accordance with factory specifications.

The main fuel control (p.n. 23057346, s.n. 334664) was tested at Honeywell Engine Control Systems, South Bend, Indiana, on July 24, under the auspices of FAA. A technical representative from Rolls Royce was also in attendance. Again, only residual fuel was found in the control, and the Rolls Royce representative again noted the amount was less than what was expected or normally found. It also tested satisfactory in accordance with factory specifications.

The propeller governor (p.n. 6875708, s.n. 1705058A/B) and overspeed governor (p.n. 23032241C, s.n. 2164897) were tested at Woodward on July 25, under the auspices of FAA. A technical representative from Rolls Royce was in attendance. The units tested satisfactory in accordance with factory specifications.

FAA later applied electrical power to the Welden fuel pump. The FAA inspector said it operated normally.

Pilot Information

Certificate:	Private	**Age:**	59,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	September 2, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	March 31, 2012
Flight Time:	1600 hours (Total, all aircraft), 1100 hours (Total, this make and model), 1600 hours (Pilot In Command, all aircraft), 27 hours (Last 90 days, all aircraft), 19 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Maule	**Registration:**	N420RP
Model/Series:	M-7-420AC	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	29001C
Landing Gear Type:	Float	**Seats:**	5
Date/Type of Last Inspection:	March 2, 2012 Annual	**Certified Max Gross Wt.:**	2750 lbs
Time Since Last Inspection:	30 Hrs	**Engines:**	1 Turbo prop
Airframe Total Time:	1200 Hrs at time of accident	**Engine Manufacturer:**	Allison
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	250-B17C
Registered Owner:	BULL DOG AVIATION LLC	**Rated Power:**	420 Horsepower
Operator:	BULL DOG AVIATION LLC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:	19:03 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	
Precipitation and Obscuration:			
Departure Point:	Hanover Twnshp, MI	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	19:00 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor, 1 None	**Latitude, Longitude:**	42.087776,-84.486114(est)

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	Raymond K Drew; FAA Flight Standards District Office; Detroit, MI
Original Publish Date:	January 15, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=83640