Aviation Investigation Final Report

Location:	Waianae, Hawaii	**Accident Number:**	WPR16LA119
Date & Time:	May 23, 2016, 11:37 Local	**Registration:**	N6697Y
Aircraft:	Beech C23	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot reported that, during the climb-to-cruise portion of the cross-country interisland flight over open ocean water, the engine began to run roughly. The pilot applied carburetor heat, which resolved the engine roughness. The pilot decided to continue his flight. As the flight approached his destination, the engine began running roughly again, accompanied by a significant loss of engine rpm. The pilot applied carburetor heat and adjusted the mixture, but the engine power was not restored. He then ditched the airplane into the water just offshore of the island.

The airplane wreckage was recovered from the water 3 days after the accident, and it had sustained significant damage from tidal forces. Postaccident examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation.

Weather conditions in the area at the time of the accident were conducive to the formation of carburetor icing at glide and cruise power and serious carburetor icing at glide power. If the pilot had either kept the carburetor heat on or applied it earlier, the loss of engine power and subsequent ditching could have been avoided.

Probable Cause and Findings

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

The total loss of engine power during cruise flight due to carburetor icing. Contributing to the accident was the pilot's delay in applying carburetor heat during flight while operating in an area conducive to carburetor icing.

Findings

Environmental issues	Conducive to carburetor icing - Effect on equipment
Personnel issues	Use of equip/system - Pilot
Personnel issues	Delayed action - Pilot

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (partial) (Defining event)
Enroute-cruise	Fuel related
Enroute-cruise	Off-field or emergency landing
Enroute-cruise	Ditching

On May 23, 2016, about 1137 Hawaiian standard time, A Beech C23, N6697Y, sustained substantial damage following a loss of engine power and subsequent ditching within the open waters of the Pacific Ocean near Waianae, Hawaii. The airplane was registered to and operated by the pilot under the provisions of Title 14 Code of Federal Regulations Part 91. The private pilot and his passenger sustained minor injuries. Visual meteorological conditions prevailed and no flight plan was filed for the personal flight. The cross-country flight originated from the Lihue Airport, Lihue, Hawaii, about 20 minutes prior to the accident, with an intended destination of Kalaeloa Airport, Kapolei, Hawaii.

The pilot reported that during the climb to cruise portion of the flight, the engine began to run rough. The pilot applied carburetor heat, which resolved the roughness, and he continued his climb to 5,500 feet mean sea level. As the flight was approaching the shores of Oahu Island, the engine began running rough in addition to a reduction of engine rpm to about 1,700. The pilot applied carburetor heat and adjusted the mixture, however, was unsuccessful at restoring engine power. The pilot initiated a forced landing into the ocean waters just off shore of the island of Oahu.

The airplane came to rest nose low partially submerged within about 20 feet of water, about 50 to 75 feet from the shoreline. Initial examination of the wreckage revealed that the forward portion of the fuselage was damaged. The wreckage was recovered from the water three days after the accident. Following removal from the water, the engine was rinsed with fresh water and subsequently filled with diesel fuel in an attempt to preserve the engine.

Examination of the recovered airplane on June 30, 2016, revealed that it was mostly fragmented into multiple pieces from the ocean tidal action. The engine remained attached to the firewall structure. Corrosion was observed throughout the engine and firewall. The carburetor was separated from its mounts. The magnetos and fuel pump remained secured to their mounting pads. The bottom spark plugs were removed and exhibited corrosion and debris consistent with ocean water and salt. The magnetos were removed. Partial rotational continuity was obtained when the propeller was rotated about ¼ of a turn and mechanical continuity was obtained at the rear of the engine. The right magneto drive shaft rotated however did not produce spark at the lead terminals. Disassembly of the magneto was not performed due to the corrosion on the cap bolts. The left magneto drive shaft would not rotate by hand. Disassembly of the magneto was not performed due to the corrosion on the cap bolts.

The carburetor was removed and disassembled for inspection. The internal float was intact and the needle valve was intact. A significant amount of salt and other ocean vegetation debris was observed throughout the float bowl and screen.

The right side exhaust remained partially attached to cylinders one and three. No nuts were observed on the cylinder number one exhaust mount and only one nut remained attached to the cylinder number three cylinder exhaust mount. It could not be determined if the missing nuts were displaced prior to the accident or during salvage and subsequent engine preservation methods. No evidence of any preexisting anomalies that would have precluded normal operation and production of power was observed.

The Federal Aviation Administration (FAA) published Special Airworthiness Information Bulletin (SAIB) CE-09-35 on June 30, 2009, regarding carburetor ice prevention. The conditions encountered in this accident (ambient temperature 84 degrees F, dew point 63 degrees F) were in the area of icing at glide and cruise power, and in the area of serious icing at glide power.

Pilot Information

Certificate:	Private	**Age:**	56,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
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:**	July 24, 2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	March 15, 2016
Flight Time:	224 hours (Total, all aircraft), 92 hours (Total, this make and model), 161 hours (Pilot In Command, all aircraft), 3 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N6697Y
Model/Series:	C23 NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:	1979	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	M-2224
Landing Gear Type:	Tricycle	**Seats:**	
Date/Type of Last Inspection:	April 24, 2016 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	648.7 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	O&VO-360 SER
Registered Owner:	On file	**Rated Power:**	0 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PHJR,33 ft msl	**Distance from Accident Site:**	12 Nautical Miles
Observation Time:	20:53 Local	**Direction from Accident Site:**	137°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Broken / 4500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	29°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lihue, HI	**Type of Flight Plan Filed:**	None
Destination:	Kapolei, HI (JRF)	**Type of Clearance:**	None
Departure Time:	11:17 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Minor	**Latitude, Longitude:**	21.463611,-158.21527(est)

Administrative Information

Investigator In Charge (IIC):	Cawthra, Joshua
Additional Participating Persons:	Joesph J Monfort; Federal Aviation Administration; Honolulu, HI
Original Publish Date:	May 25, 2017
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=93269