



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Bayport, Minnesota	Accident Number:	CEN23LA101
Date & Time:	February 4, 2023, 16:30 Local	Registration:	N9111L
Aircraft:	Bellanca 7ACA	Aircraft Damage:	Substantial
Defining Event:	Collision with terr/obj (non-CFIT)	Injuries:	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that before departure he checked the fuel level in the wing fuel tanks with a dip stick and the level correlated to about 24 gallons of fuel. After departure, he flew for about 3 hours. While approaching the destination airport, the engine started to run rough and then lost all power. The pilot executed a forced landing to a snow-covered field about 3 miles from the airport. The left wing collided with a tree during the forced landing and sustained substantial damage to the fuselage and wings during the impact.

A postaccident examination found that the left-wing fuel cap was missing and the fuel tank was void of fuel; however, there was no evidence of fuel leaking from the left fuel tank nor was there fuel evidence on the ground or in the snow. The fuel tank was not compromised. The fuel cap was not located during a search of the accident site or of the fueling location; however, it is most likely that the fuel cap separated during the impact with the tree.

During recovery of the airplane, when the right wing was cut at the root, a fire ignited and consumed a portion of the right wing and investigators were unable to determine the amount of fuel in the right wing.

A detailed engine and airframe examination did not reveal any preimpact mechanical malfunctions or anomalies that would have precluded normal operation. The accident flight departed with ample fuel for the flight. Given the empty left fuel tank and the lack of evidence to support a fuel leak, it is most likely that the engine lost power due to fuel starvation.

During the accident sequence the seatbelt failed with a separation of the threading at the "Y" junction. The date of manufacturing stamp on the shoulder harness restraint was December 15, 2017. The shoulder harness label stated that the restraint system was an FAA-PMA part with a rated strength assembly of 1,500 pounds.

Probable Cause and Findings

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

The pilot’s poor inflight fuel monitoring that resulted in a total loss of engine power due to fuel starvation.

Findings

Aircraft	Fuel - Fluid level
Aircraft	Fuel storage - Unknown/Not determined

Factual Information

History of Flight

Enroute	Fuel starvation
Landing	Collision with terr/obj (non-CFIT) (Defining event)

On February 4, 2023, about 1630 central standard time, a Bellanca Aircraft 7ACA, N9111L, was substantially damaged when it was involved in an accident near Bayport, Minnesota. The pilot sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that before departure he checked the fuel level in the wing fuel tanks with a dip stick and the level correlated to about 24 gallons. After departure from Lake Elmo Airport (21D), Lake Elmo, Minnesota, he flew for about 3 hours and had estimated an average burn rate of 6 gallons per hour. While approaching 21D, the engine started to run rough and then lost all power. The pilot executed a forced landing to a snow-covered field about 3 miles from 21D. The left wing collided with a tree during the forced landing and sustained substantial damage to the fuselage and wings during the impact.

A postaccident examination by the Federal Aviation Administration found that the left-wing fuel cap was missing and the fuel tank was void of fuel. There was no evidence of fuel on the ground or in the surrounding snow nor was there any aft streaking fuel stain on the wing near the fuel port. The fuel cap was not located during a search of the area or of the fueling location at 21D. The left fuel tank was not compromised. During recovery of the airplane, when the right wing was cut at the root, a fire ignited and consumed a portion of the right wing and investigators were unable to determine the amount of fuel in the right wing.

During the accident sequence the seatbelt, an Aero Fabricators Model No. H-702-300, failed with a separation of the threading at the "Y" junction. The date of manufacturing stamp on the shoulder harness restraint was December 15, 2017. The shoulder harness label stated that the restraint system was an FAA-PMA part with a rated strength assembly of 1,500 pounds.

During a postaccident examination of the airframe and engine, no mechanical malfunctions or anomalies were found that would have precluded normal operation.

Pilot Information

Certificate:	Commercial	Age:	36, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	April 24, 2020
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	January 6, 2023
Flight Time:	540 hours (Total, all aircraft), 24 hours (Total, this make and model), 481 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bellanca	Registration:	N9111L
Model/Series:	7ACA	Aircraft Category:	Airplane
Year of Manufacture:	1971	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	2-71
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	July 5, 2022 Annual	Certified Max Gross Wt.:	1604 lbs
Time Since Last Inspection:	23 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1391 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed	Engine Model/Series:	O-235-C
Registered Owner:	HOLMAN HOBOS FLYING CLUB INC	Rated Power:	115 Horsepower
Operator:	HOLMAN HOBOS FLYING CLUB INC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	K21D,932 ft msl	Distance from Accident Site:	3 Nautical Miles
Observation Time:	16:15 Local	Direction from Accident Site:	270°
Lowest Cloud Condition:	Scattered / 10000 ft AGL	Visibility	10 miles
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.8 inches Hg	Temperature/Dew Point:	-3°C / -9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lake Elmo, MN (21D)	Type of Flight Plan Filed:	None
Destination:	Bayport, MN	Type of Clearance:	VFR
Departure Time:		Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	44.995739,-92.813886

Administrative Information

Investigator In Charge (IIC):	Williams, David
Additional Participating Persons:	Greg Thurston; FAA; Minneapolis, MN
Original Publish Date:	April 18, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=106684

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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](#).