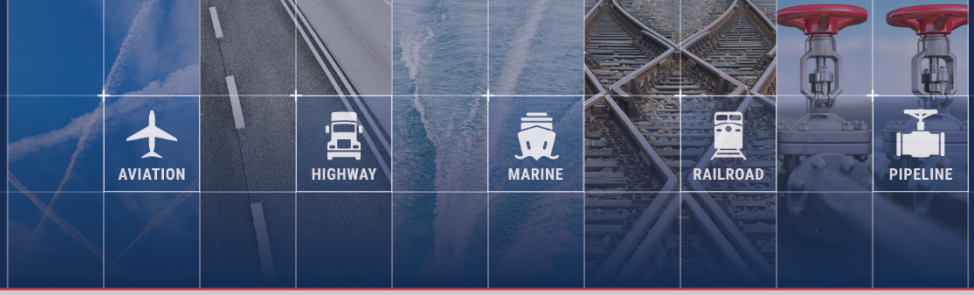

Aviation Investigation Final Report

Location:	Billings, Montana	**Accident Number:**	WPR20LA308
Date & Time:	September 12, 2020, 11:43 Local	**Registration:**	N7602Y
Aircraft:	Piper PA 30	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

According to the FAA, the pilot contacted the air traffic control tower at the destination airport and requested clearance to land on runway 28. The pilot mentioned that the airplane had one engine “out” but did not share details, nor did he declare an emergency. As the airplane was on short final, the pilot made another radio call to the tower indicating that he lost the second engine. The airplane landed short of the runway against a cliffside. On scene law enforcement reported that they did not smell fuel at the accident site, nor was fuel present in the unbreeched fuel tanks. Postaccident examination of the airframe and both engines did not reveal any anomalies that would have precluded normal operations.

The pilot does not recall the accident; however, he recalls that he had an issue with the right engine and had to shut it down. Estimated fuel calculations were completed assuming the fuel tanks were full and 75% power was used. The airplane would have consumed 77.4 gallons of the 84 usable gallons during the 4.5 hr accident flight. The calculations did not account for variables such as engine leaning, wind, climb, or descent. Taking those variables into account, it is likely that the airplane did not have enough fuel to complete the flight.

Probable Cause and Findings

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

The pilot’s improper fuel planning, which resulted in a total loss of engine power due to fuel exhaustion.

Findings

Aircraft	Fuel - Fluid management
Personnel issues	Fuel planning - Pilot

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (partial)
Approach	Fuel exhaustion (Defining event)
Approach	Loss of engine power (total)
Approach	Collision with terr/obj (non-CFIT)

On September 12, 2020, about 1143 mountain daylight time, a Piper PA-30 airplane, N7602Y, was substantially damaged when it was involved in an accident near Billings Logan International Airport (BIL). The airline transport pilot was seriously injured. The airplane was operated as a Title 14 *Code of Federal Regulations (CFR)* Part 91 personal flight.

The pilot does not recall the accident; however, he recalls that he had an issue with the right engine and had to shut it down. The airplane departed Lake Elmo Airport (21D), St. Paul, Minnesota, and was destined for BIL. According to the FAA, the pilot contacted the BIL air traffic control tower asking for clearance to land on runway 28. In addition, the pilot mentioned that the airplane had one engine "out" but did not share details, nor did he declare an emergency. As the airplane was on short final, the pilot made another radio call to the tower indicating that he lost the second engine. The airplane landed short of the runway against a cliffside. On-scene law enforcement reported that they did not smell fuel at the accident site, nor was fuel present in the fuel tanks.

Postaccident examination of the airframe did not reveal any anomalies that would have precluded normal operations. Flight control continuity was established throughout. All of the fuel caps were loose in their filler necks; however, the cap seals were pliable and undamaged. No fuel was present in any of the fuel bladders. The fuel strainers were drained, and a small amount of uncontaminated fuel exited. The strainer bowls were removed, and no anomalies were noted. The fuel selector valve hands were undamaged; they moved freely by hand and exhibited normal detents. The auxiliary pumps would not operate when the switch was in the ON position. The airplane structure near the pumps exhibited extensive damage and the pumps were unable to be examined.

Examination of both engines did not reveal any anomalies that would have precluded normal operations. All upper spark plugs were removed and exhibited normal operating wear signatures. All cylinder rocker covers were removed, and the valves were lubricated with a light brown oil. The crankshaft was rotated by hand on both engines; thumb compression was obtained on all cylinders and the valves moved accordingly. In addition, spark was obtained from each ignition lead.

The right engine propeller assembly was found in the feathered position, and the spinner exhibited impact damage to one side. One blade was bent about midspan and exhibited

multidirectional scuffing near its leading edge. The other propeller blade exhibited damage consistent with recovery. The left engine propeller assembly was found in the low pitch position. One blade was bent aft near the shank and exhibited scuff marks on its cambered side near the leading edge. The other blade was unremarkable.

Estimated fuel calculations were completed for full fuel tanks. The accident flight was about 4 hours and 31-minutes long. According to the Piper Twin Comanche Owner's Handbook, the airplane's fuel capacity is 84 gallons of usable fuel, and it would have consumed about 77.4 gallons when operated at 75% power. The calculations did not account for variables such as engine leaning, wind, climb, or descent.

Pilot Information

Certificate:	Airline transport; Commercial	**Age:**	67,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	February 14, 2020
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	March 23, 2020
Flight Time:	18024 hours (Total, all aircraft), 820 hours (Total, this make and model), 15 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N7602Y
Model/Series:	PA 30 No Series	**Aircraft Category:**	Airplane
Year of Manufacture:	1964	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	30-672
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	May 15, 2020 Annual	**Certified Max Gross Wt.:**	2381 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	4736 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-320 SERIES
Registered Owner:	On file	**Rated Power:**	160
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:	BIL,2662 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	11:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	24°C / 0°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	St. Paul, MN (21D)	**Type of Flight Plan Filed:**	IFR
Destination:	Billings, MT	**Type of Clearance:**	IFR
Departure Time:		**Type of Airspace:**	Unknown

Airport Information

Airport:	Billings Logan International Airport KBIL	**Runway Surface Type:**	Asphalt
Airport Elevation:	3662 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	28R	**IFR Approach:**	Visual
Runway Length/Width:	10518 ft / 150 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	45.649333,-108.38076(est)

Administrative Information

Investigator In Charge (IIC):	Link, Samantha
Additional Participating Persons:	John Cosenza; Federal Aviation Administration; Helena, MT Jon Hirsch; Piper Aircraft; Vero Beach, FL
Original Publish Date:	June 28, 2022
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=101981