



Aviation Investigation Final Report

Location:	Charles Town, West Virginia	Accident Number:	ERA23LA190
Date & Time:	April 11, 2023, 17:11 Local	Registration:	N2554L
Aircraft:	Cessna 172H	Aircraft Damage:	Substantial
Defining Event:	Unknown or undetermined	Injuries:	4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

While en route to the destination airport, the engine began “sputtering.” The pilot reported that the mixture was in the full rich position and he applied carburetor heat; however, the engine did not regain full power. He performed a forced landing to a field and during the landing the nose landing gear collapsed, which resulted in substantial damage to the fuselage. During the recovery of the airplane, 5 gallons of fuel was noted in the right fuel tank and 10 gallons of fuel was noted in the left fuel tank. A postaccident examination of the wreckage revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation; the reason for the loss of engine power could not be determined.

Probable Cause and Findings

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

A loss of engine power for undetermined reasons.

Findings

Aircraft	(general) - Unknown/Not determined
-----------------	------------------------------------

Factual Information

History of Flight

Enroute	Unknown or undetermined (Defining event)
Landing	Off-field or emergency landing

On April 11, 2023, about 1711 eastern daylight time, a Cessna 172, N2554L, was substantially damaged when it was involved in an accident near Charles Town, West Virginia. The private pilot and three passengers were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to the pilot, they departed from Eastern West Virginia Regional Airport/Shepherd Field (MRB), Martinsburg, West Virginia, and flew to Winchester Regional Airport (OKV), Winchester, Virginia. On their return flight to MRB at 2,000 ft mean sea level (msl), the engine lost partial power. The pilot stated that the engine was “sputtering in and out.” The mixture was in the full rich position and he applied carburetor heat; however, the engine did not regain full power. The pilot performed a forced landing to a field and during the landing the nose landing gear collapsed, which resulted in substantial damage to the fuselage.

During the recovery of the airplane, 5 gallons of fuel was noted in the right fuel tank and 10 gallons of fuel was noted in the left fuel tank.

About 1653, the weather reported at MRB, about 11 miles northwest of the accident site, included a temperature of 23°C and a dew point of -5°C. The calculated relative humidity at this temperature and dewpoint was less than 20%. Review of the icing probability chart contained within Federal Aviation Administration Special Airworthiness Information Bulletin CE-09-35 revealed the atmospheric conditions at the time of the accident were not conducive to icing.

An examination of the airplane revealed that fuel was plumbed into the right- and left-wing fuel tanks and flowed to the carburetor without anomaly. The engine remained attached to the fuselage through the engine mounts. Crankshaft and valvetrain continuity were confirmed by rotating the propeller by hand through 720° of rotation. Compression was confirmed on all cylinders. The magnetos produced spark on all leads. The carburetor was examined and no anomalies were noted. The oil filter was examined and was not obstructed. There were no anomalies found with the engine that would have precluded normal operation.

Pilot Information

Certificate:	Commercial; Private	Age:	19,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):	None	Toxicology Performed:	
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	January 14, 2022
Occupational Pilot:	No	Last Flight Review or Equivalent:	October 28, 2022
Flight Time:	450 hours (Total, all aircraft), 420 hours (Total, this make and model), 380 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N2554L
Model/Series:	172H	Aircraft Category:	Airplane
Year of Manufacture:	1967	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	17255754
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	April 1, 2023 Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:	10 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	2189.9 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	Installed	Engine Model/Series:	O-300
Registered Owner:	On file	Rated Power:	145 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:	MRB,541 ft msl	Distance from Accident Site:	11 Nautical Miles
Observation Time:	16:53 Local	Direction from Accident Site:	325°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	Unknown / N/A
Altimeter Setting:	30.08 inches Hg	Temperature/Dew Point:	23°C / -5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Winchester, VA (OKV)	Type of Flight Plan Filed:	None
Destination:	Martinsburg, WV (MRB)	Type of Clearance:	None
Departure Time:	16:54 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	3 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 None	Latitude, Longitude:	39.254252,-77.83768(est)

Administrative Information

Investigator In Charge (IIC):	Kemner, Heidi
Additional Participating Persons:	Phil DeRosier; FAA/FSDO; Baltimore, MD
Original Publish Date:	June 5, 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=107045

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).