



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Easton, Maryland	Accident Number:	ERA19LA160
Date & Time:	March 13, 2019, 17:40 Local	Registration:	N33305
Aircraft:	Piper PA28R	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor and pilot were on a flight to resume the pilot's instrument training. After performing maneuvers and several touch-and-go landings, the pilots elected to perform a practice instrument approach to the destination airport. While on the approach, they configured the airplane for landing. The flight instructor noted that the airplane was below the glideslope and asked the pilot to increase engine power; however, the engine did not respond to the throttle input. The flight instructor took the controls and attempted to restore engine power without success. The propeller continued to windmill, the pilot switched fuel tanks, and the engine did not restart. The flight instructor performed a forced landing in a nearby field, during which the fuselage was substantially damaged. During recovery from the field, fuel was drained from both fuel tanks, and no water or debris was noted in the fuel. An examination of the engine revealed crankshaft and valvetrain continuity throughout the engine. The propeller was rotated through 360° of motion, and compression and suction were noted on all cylinders. In addition, fuel was plumbed into the engine, and the engine was started and ran smoothly without hesitation. The engine power was decreased to idle power, and then the engine was shut down. There were no mechanical malfunctions or failures noted with the engine that would have precluded normal operation before the accident. 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: The loss of engine power for reasons that could not be determined because postaccident engine examination and testing revealed no preimpact mechanical malfunctions or failures that would have precluded normal operation.

Findings

Not determined	(general) - Unknown/Not determined
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Factual Information

History of Flight

Approach-circling (IFR)	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Landing-flare/touchdown	Collision during takeoff/land

On March 13, 2019, about 1740 eastern daylight time, a Piper PA-28R-200, N33305, was substantially damaged during a forced landing to a field near Easton, Maryland. The flight instructor and the private pilot were not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the instructional flight that departed from the Cambridge-Dorchester Regional Airport (CGE), Cambridge, Maryland, about 1720. The flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91 and had an intended destination of Easton/Newnam Field (ESN), Easton, Maryland.

According to the flight instructor, the purpose of the flight was to reacquaint the pilot with the airplane and resume his instrument flight training. They departed Lee Airport (ANP), Annapolis, Maryland, about 1630, and flew to CGE and performed two landings. Then, they departed CGE and were cleared for the "ILS Rwy 4" approach with a circle to land clearance for runway 22 at ESN. While descending on the approach, they configured the airplane for landing by reducing engine power, moving the propeller control to the full forward position, setting the mixture to full rich, turning the electric fuel pump on, moving the landing gear selector to the down position, and extending the flaps "one notch." The airplane descended below the glideslope and the flight instructor told the pilot to add engine power, however, while advancing the throttle, the engine did not respond. The flight instructor took the controls and attempted to get the engine to respond without success. The propeller continued to windmill, the pilot switched the fuel tanks, and again, the engine did not restart. The flight instructor looked for a place to land and found a nearby field. They were about 1,000 ft mean sea level, so he extended the flaps, elected to retract the landing gear, and performed a forced landing to the muddy field. The airplane came to rest in the field, the two occupants turned "everything off" and egressed the airplane.

According to Federal Aviation Administration (FAA) airworthiness records, the airplane was manufactured in 1975. The airplane was equipped with a Lycoming IO-360-C1C, 200-horsepower engine. According to the engine maintenance logbook, the most recent annual inspection was completed on March 5, 2019, at 1,567.6 hours since major overhaul.

An examination of the wreckage by an FAA inspector revealed that a fuselage rib was substantially damaged during the accident sequence. Fuel was noted in both fuel tanks and during recovery was drained using the electric fuel pump, which pumped fuel into exterior containers. No water or contaminants were noted in the fuel. An examination of the fuel selector revealed that it moved smoothly, and it could be clearly felt when the selector was in each respective detent.

Examination of the engine revealed that there was no damage to the crankcase. Crankshaft and valvetrain continuity were confirmed. Compression and suction were noted on all cylinders. The magneto timing was checked, the magnetos were sparked, and no anomalies were noted. The airbox was

examined and not obstructed. Engine control cable continuity was confirmed from the propeller, mixture, and throttle control cables to their respective connections on the engine.

Later, the airplane was secured, fuel was plumbed into to the engine, and the engine was started. It ran smoothly, without hesitation, the engine power was decreased to idle power, and then the engine was shutdown. There were no anomalies noted with the engine.

Flight instructor Information

Certificate:	Commercial; Flight instructor; Private	Age:	29, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	January 4, 2017
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	January 26, 2019
Flight Time:	855 hours (Total, all aircraft), 158 hours (Total, this make and model), 814 hours (Pilot In Command, all aircraft), 198 hours (Last 90 days, all aircraft), 67 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Commercial; Private	Age:	40, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	July 24, 2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	October 26, 2018
Flight Time:	263 hours (Total, all aircraft), 21 hours (Total, this make and model), 190 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N33305
Model/Series:	PA28R 200	Aircraft Category:	Airplane
Year of Manufacture:	1975	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	28R-7535131
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	March 5, 2019 Annual	Certified Max Gross Wt.:	2650 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	4537.6 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	IO-360-C1C
Registered Owner:	Aquila Aviation LLC	Rated Power:	200
Operator:	Navy Annapolis Flight Center	Operating Certificate(s) Held:	Pilot school (141)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	ESN, 72 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	17:57 Local	Direction from Accident Site:	31°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Broken / 6000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	8 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.3 inches Hg	Temperature/Dew Point:	13°C / -2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cambridge, MD (CGE)	Type of Flight Plan Filed:	None
Destination:	Easton, MD (ESN)	Type of Clearance:	None
Departure Time:	17:20 Local	Type of Airspace:	

Airport Information

Airport:	Easton/Newnam Field ESN	Runway Surface Type:	Asphalt
Airport Elevation:	72 ft msl	Runway Surface Condition:	Vegetation
Runway Used:	04	IFR Approach:	ILS
Runway Length/Width:	5500 ft / 100 ft	VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	38.779724,-76.088058(est)

Administrative Information

Investigator In Charge (IIC):	Kemner, Heidi
Additional Participating Persons:	Erskine Geer; FAA/FSDO; Baltimore, MD
Original Publish Date:	August 3, 2020
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=99349

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](#).