



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Easton, Maryland	<b>Accident Number:</b>	ERA19LA160
<b>Date &amp; Time:</b>	March 13, 2019, 17:40 Local	<b>Registration:</b>	N33305
<b>Aircraft:</b>	Piper PA28R	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	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

<b>Approach-circling (IFR)</b>	Loss of engine power (total) (Defining event)
<b>Emergency descent</b>	Off-field or emergency landing
<b>Landing-flare/touchdown</b>	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

<b>Certificate:</b>	Commercial; Flight instructor; Private	<b>Age:</b>	29, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	January 4, 2017
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	January 26, 2019
<b>Flight Time:</b>	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

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

## Aircraft and Owner/Operator Information

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

## Meteorological Information and Flight Plan

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

## Airport Information

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

## Wreckage and Impact Information

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

## Administrative Information

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

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).