Aviation Investigation Final Report

Location:	Meriden, Connecticut	**Accident Number:**	ERA19LA149
Date & Time:	April 11, 2019, 18:54 Local	**Registration:**	N38658
Aircraft:	Piper PA28R	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot stated that he intended to fly in the airport traffic pattern after routine maintenance work. He noted no anomalies in the preflight inspection of the airplane or the engine runup and noted that the fuel was "to the tabs." He flew the normal traffic pattern and extended the downwind leg to allow time for another airplane in the traffic pattern. After reaching an altitude of about 500 ft above ground level on the base leg, he attempted to add power to maintain altitude. The engine did not respond, and the pilot noted that the tachometer indicated 2,000 rpm and was decreasing. The pilot attempted to restart the engine, but it did not respond, and the airplane continued to descend. During the forced landing to a baseball field, the airplane impacted power lines and subsequently impacted the ground tail-first. Postaccident examination of the engine revealed no evidence of any preimpact mechanical failures or malfunctions that would have precluded normal operation, and 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 undetermined reasons.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Approach-VFR pattern base	Loss of engine power (total) (Defining event)
Approach	Collision with terr/obj (non-CFIT)
Landing	Off-field or emergency landing

On April 11, 2019, at 1854 eastern daylight time, a Piper PA28R-201, N38658, was substantially damaged during a forced landing following a loss of engine power while flying in the airport traffic pattern at Meriden Markham Municipal Airport (MMK), Meriden, Connecticut. Both the private pilot and private-pilot-rated passenger were seriously injured.The airplane was registered to the Westchester Flying Club, Inc., and operated under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Visual meteorological conditions prevailed at the time of the accident and no flight plan was filed for the local flight that originated from MMK at 1850.

The pilot stated that he intended to fly in the airport traffic pattern after routine maintenance work "to see how the plane was working." He checked the fuel level during his preflight inspection of the airplane and noted that the fuel was "to the tabs." After completing an engine runup, he departed runway 18 at MMK. He extended the downwind leg to allow time for another airplane in the traffic pattern. After descending to an altitude of about 500 ft above ground level on the base leg, he attempted to add power to maintain altitude; however, the engine did not respond. He noted the engine output was 2,000 rpm and decreasing. He attempted to restart the engine; however, the engine did not respond, and the airplane continued to descend. When he determined that the airplane would not reach the runway, he attempted a forced landing on a baseball field. During the approach, the airplane impacted unmarked power lines one mile north of MMK, which resulted in the airplane "rotating straight up" and then falling tail-first to the ground.

A private pilot-rated witness who lived under the MMK traffic pattern observed the accident airplane from his front yard. He lost sight of the airplane on its downwind leg when it passed behind his house. It was at that time that he heard the engine RPM increase, a "pop" and then the sound of decreasing RPM. The airplane came back into view as it turned to the base leg. The witness stated that he heard no engine sound and watched the airplane strike the power lines.

According to Federal Aviation Administration (FAA) airman records, the pilot held a private pilot certificate with a rating for airplane single-engine land. His most recent FAA third-class medical certificate was issued December 4, 2017. The pilot reported 353.5 total hours of flight experience of which 29.4 hours were in the accident airplane make and model.

According to FAA airworthiness records, the airplane was manufactured in 1977. It was equipped with a Lycoming IO-360 series engine that drove a constant speed propeller. According to maintenance records, the engine was overhauled on June 11, 2018. The engine was then installed in the airplane and an annual inspection performed on July 20, 2018, at an airframe total time-in-service of 1,586.5 hours.

At the time of the accident, the engine had accrued 62.7 hours since overhaul. The last maintenance performed was on April 10, 2019, when the alternator belt tension was adjusted, and a rear alternator support bracket was replaced. At the time of the accident, the tachometer indicated 1,649.23 hours of total time.

Examination of the wreckage revealed that the fuselage aft of the wings and the empennage were impact damaged and crushed forward, and the trailing edges of both wings were impact damaged in multiple areas. The vertical stabilizer and rudder were fractured and crushed toward the right side of the stabilator. The stabilator was attached to the tail and impact crushed. The left fuel tank was breached from impact with power lines and the fuel selector was positioned to the left tank. Several cups of fuel were recovered from the left wing fuel tank. The right wing exhibited a puncture fracture near the wing root and the right wing fuel tank was devoid of fuel. The engine section was canted upward and to the right. The leading edge of one propeller blade exhibited power line strike marks midspan.

Examination of the engine revealed that the engine section remained intact and attached to its mounts. The air filter was removed, examined and found free from obstruction. The air flow ducts to the fuel servo were clear and unobstructed. Removal of the fuel strainer revealed blue liquid consistent with 100-low-lead aviation gasoline, which was absent of water and debris. The top spark plugs were removed for examination and borescope of the cylinders, which revealed no damage to the cylinder walls or pistons. The rocker covers were removed, and no anomalies were noted with the rocker arms, springs, and push rods. Thumb compression was established on all cylinders and spark was noted at each magneto lead when the propeller was rotated by hand. Continuity of the power and valvetrains was established throughout the engine. All spark plugs appeared normal when compared to Champion Check-A-Plug card; however, the top and bottom Nos.1 and 3 spark plugs were oil fouled. The engine driven fuel pump contained fuel when fuel lines were removed, and displaced fuel when actuated by hand. The fuel lines between the flow divider and nozzles were free from obstruction and allowed passage of air. The fuel servo, flow divider, and fuel injector nozzles were flow tested to the "Service Limits" Test Specification and passed the tests. All fuel injector nozzles passed the "Air Flow Test Requirements" and all but the No. 4 nozzle passed the "Fuel Flow Requirements." The No. 4 nozzle flowed .4 pounds-per-hour less than the minimum specified fuel flow.

Pilot Information

Certificate:	Private	**Age:**	56,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	December 4, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	January 15, 2019
Flight Time:	353.5 hours (Total, all aircraft), 29.3 hours (Total, this make and model), 151.8 hours (Pilot In Command, all aircraft), 21.3 hours (Last 90 days, all aircraft), 5.5 hours (Last 30 days, all aircraft)		

Pilot-rated passenger Information

Certificate:	Private	**Age:**	33,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	June 5, 2014
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	June 11, 2018
Flight Time:	200 hours (Total, all aircraft), 40.7 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N38658
Model/Series:	PA28R 201	**Aircraft Category:**	Airplane
Year of Manufacture:	1977	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28R-7737106
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	July 20, 2018 Annual	**Certified Max Gross Wt.:**	2750 lbs
Time Since Last Inspection:	63 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1586.5 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	C91 installed, not activated	**Engine Model/Series:**	IO-360-C1C6
Registered Owner:	Westchester Flying Club Inc	**Rated Power:**	200 Horsepower
Operator:	Westchester 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:	MMK,103 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	18:53 Local	**Direction from Accident Site:**	171°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Overcast / 9500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots / None	**Turbulence Type Forecast/Actual:**	Unknown / Unknown
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	N/A / Unknown
Altimeter Setting:	30.25 inches Hg	**Temperature/Dew Point:**	8°C / -5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Meriden, CT (MMK)	**Type of Flight Plan Filed:**	None
Destination:	Meriden, CT (MMK)	**Type of Clearance:**	None
Departure Time:	18:50 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Meriden Markham Muni MMK	**Runway Surface Type:**	Asphalt
Airport Elevation:	103 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	3100 ft / 75 ft	**VFR Approach/Landing:**	Forced landing;Touch and go;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	41.526943,-72.83139(est)

Administrative Information

Investigator In Charge (IIC):	Spencer, Lynn
Additional Participating Persons:	Barry Donahue; FAA/FSDO; Enfield, CT Jon Hirsch; Piper Aircraft, Inc.; Vero Beach, FL
Original Publish Date:	December 3, 2020
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=99246