National Transportation Safety Board
Aviation Accident Final Report

Location:	Millville, NJ	**Accident Number:**	ERA16LA061
Date & Time:	12/04/2015, 1245 EST	**Registration:**	N88F
Aircraft:	PIPER PA-24	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 Minor, 1 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The private pilot and flight instructor were conducting an instructional flight. The pilot reported that, before the flight, he conducted a preflight inspection and before-takeoff check, which were normal. During the initial climb and when the airplane was about 150 ft above ground level, the engine lost total power. The pilot chose to land the airplane straight ahead between two taxiways on the airport. The airplane impacted a grassy area and sustained substantial damage to the left wing and fuselage.

An examination of the airframe and engine did not reveal any evidence of preimpact mechanical failures or malfunctions that would have precluded normal operation, and there was sufficient fuel onboard at the time of the accident. Although the weather conditions at the time of the accident were conducive to serious carburetor icing at glide power, the pilot applied full power for takeoff; therefore, it is unlikely that carburetor ice formed during the takeoff sequence. The investigation could not determine the reason for the total loss of engine power.

Probable Cause and Findings

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

The total loss of engine power during initial climb for reasons that could not be determined because postaccident examination of the engine revealed no anomalies that would have precluded normal operation.

Findings

Environmental issues	Soft surface - Contributed to outcome
Not determined	Not determined - Unknown/Not determined (Cause)

Factual Information

On December 4, 2015, about 1245 eastern standard time, a Piper PA-24-250, N88F, was substantially damaged during a forced landing following a total loss of engine power near Millville, New Jersey. The private pilot/owner incurred minor injuries and the flight instructor was not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the local flight, which originated from Millville Municipal Airport (MIV), Millville, New Jersey, about 1245, and was destined for South Jersey Regional Airport (VAY), Mount Holly, New Jersey. The instructional flight was conducted under the provisions of 14 Code of Federal Regulations Part 91.

According to the pilots, they had flown the airplane earlier in the day with no anomalies noted. Then, after a brief break, the private pilot/owner of the airplane completed a preflight inspection and engine run up with no anomalies noted. Then, they departed runway 32. After takeoff, about 150 feet above ground level, the private pilot/owner retracted the landing gear, and then the engine experienced a total loss of power. The private pilot/owner lowered the nose and noted that the airplane was "too low and fast to try a restart." He elected to land the airplane straight ahead between two taxiways on the airport. The airplane impacted a grassy area and sustained substantial damage to the left wing and fuselage.

A postaccident examination of the airplane by a Federal Aviation Administration (FAA) inspector revealed that the left and right fuel tanks contained an undetermined amount of fuel, and no debris was noted in the fuel. All three propeller blades remained attached to the propeller hub, exhibited chordwise scratching, and were bent in the aft direction.

An examination of the engine revealed that there were no obvious oil or fuel leaks. In addition, the FAA inspector reported that the carburetor contained approximately two tablespoons of fuel. The auxiliary fuel pump was placed in the "ON" position and fuel was noted flowing from the carburetor drain plug. Throttle control cable continuity was confirmed to the engine. Both the left and right magnetos produced spark on all leads when rotated manually. The ignition leads were normal in appearance. All spark plugs appeared to be in "normal" condition with no fouling or damage. Suction and compression was observed on all cylinders when the engine crankshaft was rotated manually. The fuel system appeared normal and there were no contaminants in the tanks.

According to FAA records and maintenance logbooks, the airplane was manufactured in 1960, and registered to the private pilot/owner on November, 9, 2015. It was powered by a Lycoming O-540 series, 250-hp engine. The most recent annual inspection was completed on November 30, 2015, at a tachometer reading of 152.7 hours, and a total time of 3455.47 flight hours. The tachometer indicated 154.3 hours at the time of accident.

According to the 1254 weather observation at the airport, the temperature and dew point were 50 degrees F and 32 degrees F, respectively. According to the carburetor icing probability chart in FAA Special Airworthiness Information Bulletin CE-09-35 (Carburetor Icing Prevention), dated June 30, 2009, the temperature/dew point at the time of the accident was conducive to the formation of serious icing at glide power.

History of Flight

Initial climb	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing

Pilot Information

Certificate:	Private	**Age:**	73, Male
Airplane Rating(s):	Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
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:**	06/25/2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Flight Instructor Information

Certificate:	Flight Instructor; Commercial	**Age:**	74, Male
Airplane Rating(s):	Single-engine Land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap Only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 With Waivers/Limitations	**Last FAA Medical Exam:**	09/24/2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	05/22/2015
Flight Time:	4952 hours (Total, all aircraft), 150 hours (Total, this make and model), 4852 hours (Pilot In Command, all aircraft), 42 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	**Registration:**	N88F
Model/Series:	PA-24 250	**Aircraft Category:**	Airplane
Year of Manufacture:	1960	**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	24-1961
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	11/30/2015, Annual	**Certified Max Gross Wt.:**	2899 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3454.97 Hours as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-540 SERIES
Registered Owner:	On file	**Rated Power:**	250 hp
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	MIV, 76 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	1254 EST	**Direction from Accident Site:**	101°
Lowest Cloud Condition:	Clear	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	260°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.46 inches Hg	**Temperature/Dew Point:**	10°C / 0°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Millville, NJ (MIV)	**Type of Flight Plan Filed:**	None
Destination:	MOUNT HOLLY, NJ (VAY)	**Type of Clearance:**	VFR
Departure Time:	1245 EST	**Type of Airspace:**	

Airport Information

Airport:	MILLVILLE MUNI (MIV)	**Runway Surface Type:**	Concrete
Airport Elevation:	84 ft	**Runway Surface Condition:**	Dry
Runway Used:	32	**IFR Approach:**	None
Runway Length/Width:	5058 ft / 150 ft	**VFR Approach/Landing:**	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 Minor, 1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor, 1 None	**Latitude, Longitude:**	39.367778, -75.072222 (est)

Administrative Information

Investigator In Charge (IIC):	Heidi Moats	**Report Date:**	10/02/2017
Additional Participating Persons:	Robert Fus; FAA/FSDO; Philadelphia, PA		
Publish Date:	10/02/2017		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=92405		