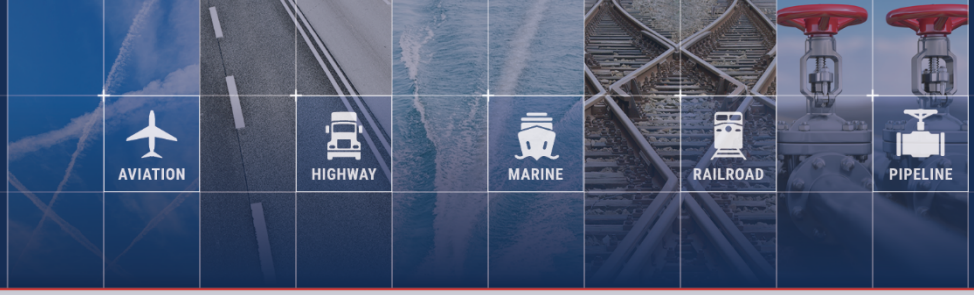

Aviation Investigation Final Report

Location:	Gardner, Kansas	**Accident Number:**	CEN23LA313
Date & Time:	July 19, 2023, 06:15 Local	**Registration:**	N34KP
Aircraft:	PIETENPOL Aircamper	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that shortly after takeoff, the engine started to run rough. The pilot reversed course back toward the departure airport when the roughness increased and then the engine lost all power. The pilot performed a forced landing to a field and the airplane nosed over, which resulted in substantial damage to the wings and fuselage.

An examination of the engine revealed that the No. 3 cylinder spark plug's firing end contained hard, cinder-like deposits, consistent with lead fouling. When tested, the No. 3 cylinder spark plug did not spark; however, after it was cleaned, the spark plug functioned normally. No other mechanical anomalies with the engine or airframe were noted that would have precluded normal operation. The pilot reported that he used 100LL aviation fuel in the engine. It is likely that the loss of power was due to the lead fouling on the No. 3 cylinder spark plug.

Probable Cause and Findings

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

A loss of engine power due to lead fouling of a spark plug.

Findings

Aircraft	Spark plugs/igniters - Failure

Factual Information

History of Flight

Enroute	Loss of engine power (partial) (Defining event)
Approach	Loss of engine power (total)

On July 19, 2023, about 0615 central daylight time, an Pietenpol Aircamper airplane, N34KP, was substantially damaged when it was involved in an accident near Gardner, Kansas. The pilot sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that shortly after takeoff, the engine started "missing" on one cylinder. The pilot reversed course back toward Gardner Municipal Airport (K34), Gardner, Kansas. The airplane was initially able to maintain altitude; however, as he approached the airport, the airplane began to descend. The engine ran rough and then lost all power. The pilot executed a forced landing to a construction site; the airplane nosed over and sustained substantial damage to both wings and the fuselage.

A witness reported that he heard the airplane's engine "cutting out" as the airplane descended to the field and then nosed over after landing.

The airplane was equipped with an in-line, four-cylinder, liquid cooled Ford Model A engine with an owner-fabricated, electronic-type ignition system. A postaccident examination of the engine revealed that the No. 3 cylinder spark plug did not produce spark during field test with a Champion spark plug service unit cleaner and tester. Further examination revealed the No. 3 cylinder spark plug's firing end contained hard cinder-like deposits, consistent with lead fouling when compared to the Champion Aviation Service Manual AV6-R. The spark plug functioned normally after its firing end was cleaned of the deposits. The other three spark plugs exhibited various degrees of lead deposits, but functioned when tested.

The pilot reported that he used 100LL aviation fuel in the engine. Review of the engine logbooks revealed that the spark plugs were replaced during the last condition inspection and had accrued about 18.7 hours of service. There were no other preimpact mechanical malfunctions or failures with the engine or airframe that would have precluded normal operation.

Pilot Information

Certificate:	Private	**Age:**	68,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Sport pilot Unknown	**Last FAA Medical Exam:**	August 19, 2019
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 10, 2023
Flight Time:	(Estimated) 780 hours (Total, all aircraft), 171 hours (Total, this make and model), 734 hours (Pilot In Command, all aircraft), 14 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIETENPOL	**Registration:**	N34KP
Model/Series:	Aircamper	**Aircraft Category:**	Airplane
Year of Manufacture:	2000	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special); Experimental light sport (Special)	**Serial Number:**	6
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	October 14, 2022 Condition	**Certified Max Gross Wt.:**	1150 lbs
Time Since Last Inspection:	18.7 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	340.7 Hrs at time of accident	**Engine Manufacturer:**	Ford
ELT:	Installed, not activated	**Engine Model/Series:**	Conversion / Model A
Registered Owner:	On file	**Rated Power:**	60 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:	KIXD,1055 ft msl	**Distance from Accident Site:**	3 Nautical Miles
Observation Time:	05:59 Local	**Direction from Accident Site:**	59°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots / None	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	70°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.92 inches Hg	**Temperature/Dew Point:**	22°C / 21°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Gardner, KS (K34)	**Type of Flight Plan Filed:**	None
Destination:	Brodhead, WI (C37)	**Type of Clearance:**	None
Departure Time:	06:05 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Gardner Municipal Airport K34	**Runway Surface Type:**	Asphalt
Airport Elevation:	1040 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	08	**IFR Approach:**	Unknown
Runway Length/Width:	2399 ft / 36 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	38.79798,-94.9412(est)

Administrative Information

Investigator In Charge (IIC):	Galbraith, Damian
Additional Participating Persons:	David Wood; FAA; Kansas City, MO
Original Publish Date:	October 23, 2024
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=192661