Aviation Investigation Final Report

Location:	York, Pennsylvania	**Accident Number:**	ERA23LA034
Date & Time:	October 22, 2022, 14:20 Local	**Registration:**	N36ZN
Aircraft:	Cessna A185E	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot had just purchased the airplane and was flying it to his home airport. He made a stop, added fuel, checked the oil, and continued to his home airport. About an hour after departure, he noticed a drop in oil pressure and then heard a clanking sound in the engine before it lost total power. He diverted to the nearest airport but landed short of the runway in a field. The airplane slid into the airport perimeter fence, resulting in substantial damage to the left wing.

Postaccident examination of the engine revealed that it contained only 2 quarts of oil out of a total capacity of 12 quarts. There were oil leaks around all the cylinder pushrod housings, with the leak around the No. 1 cylinder being the worst. All spark plugs were dark, indicating oil burn. The No. 1 connecting rod was fractured and separated from the crankshaft, and the connecting rod bearings were destroyed. Heat distress signatures were found on the crankshaft connecting rod location and the No. 1 connecting rod bearings displayed significant scoring consistent with a lack of oil lubrication. Based on this information, it is likely the loss of engine power was the result of oil starvation to the connecting rod bearings.

Probable Cause and Findings

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

Oil starvation of the number 1 connecting rod bearings, which resulted in a total loss of engine power.

Findings

Aircraft	Oil - Fluid level
Aircraft	Recip eng cyl section - Failure

Factual Information

History of Flight

Enroute-cruise	Powerplant sys/comp malf/fail
Enroute-cruise	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

On October 22, 2022, at 1420 eastern daylight time, a Cessna A185E, N36ZN, was substantially damaged when it was involved in an accident near York, Pennsylvania. The pilot was not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to the pilot, he purchased the airplane a few days before the accident flight and was flying it back to Cottonwood Farm Airport (87VA), Crozet, Virginia. He took off from Auburn/Lewiston Municipal Airport (LEW), Auburn/Lewiston, Maine, and flew to Kingston-Ulster Airport (20N), Kingston, New York, for fuel. He stated that he topped off the fuel tanks and checked the oil before departing 20N. About 1 hour into the flight, the engine started running rough, and he noticed a drop in oil pressure. He then heard “clanking” in the engine, and it lost total power. He diverted to York Airport (THV), York, Pennsylvania, but landed short of the runway, in a field, and the airplane slid into the airport perimeter fence.

Postaccident examination of the airplane by a Federal Aviation Administration inspector revealed that the airplane sustained substantial damage to the left wing. The left main landing gear separated, and the right main landing gear was bent aft 90°.

Examination of the engine by an airframe and powerplant mechanic revealed that the engine oil indicated 2 quarts on the engine dipstick (the engine held 12 quarts of oil). There were small oil leaks around all cylinder push rod housings, with the leak around the No. 1 cylinder housing being the worst. All the spark plugs were dark, indicating oil burn. The No. 1 connecting rod was fractured off the crankshaft. The No. 1 crankshaft journal was black and discolored. No other anomalies were noted. The most recent annual inspection was completed on August 25, 2022.

Pilot Information

Certificate:	Airline transport	**Age:**	49,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	June 7, 2022
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	October 19, 2022
Flight Time:	17000 hours (Total, all aircraft), 11 hours (Total, this make and model), 14000 hours (Pilot In Command, all aircraft), 20 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N36ZN
Model/Series:	A185E	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	18501830
Landing Gear Type:	Tailwheel	**Seats:**	6
Date/Type of Last Inspection:	August 25, 2022 Annual	**Certified Max Gross Wt.:**	3350 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	4410 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	C126 installed	**Engine Model/Series:**	IO-520-D
Registered Owner:	On file	**Rated Power:**	300
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:	THV,464 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	14:53 Local	**Direction from Accident Site:**	296°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.21 inches Hg	**Temperature/Dew Point:**	21°C / 3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Kingston, NY (20N)	**Type of Flight Plan Filed:**	None
Destination:	New Market, VA (8W2)	**Type of Clearance:**	None
Departure Time:	11:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	YORK THV	**Runway Surface Type:**	Asphalt
Airport Elevation:	494 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	35	**IFR Approach:**	None
Runway Length/Width:	5188 ft / 100 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	39.917644,-76.873411(est)

Administrative Information

Investigator In Charge (IIC):	Boggs, Daniel
Additional Participating Persons:	William Gossley; FAA/FSDO; Harrisburg, PA
Original Publish Date:	January 31, 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=106179