Aviation Investigation Final Report

Location:	Shreveport, Louisiana	**Accident Number:**	CEN18LA281
Date & Time:	July 19, 2018, 08:02 Local	**Registration:**	N7080F
Aircraft:	Piper PA28	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot departed on a postmaintenance check flight after an annual inspection on the previous day. According to the pilot, the airplane was flown in the local traffic pattern before departing the area. As the airplane climbed through 2,500 ft, it was not climbing more than 300 ft per minute without losing airspeed, and the pilot noticed a decrease in engine rpm. The pilot indicated that the oil pressure and oil temperature were normal, the vacuum gauge indicated "zero," and gyroscopic instruments began to drift and tumble. The pilot proceeded directly for the nearest airport, and when on final approach for the runway, the engine rpm and airspeed decreased. The engine did not respond to throttle inputs, and the pilot landed the airplane on a river levy. The airplane bounced, contacted a road, and came to rest against the airport perimeter fence, which resulted in substantial damage to both wings. Examination of the engine revealed that the output shaft of the vacuum pump was sheared. It could not be determined if the vacuum pump output shaft failed before or during the accident sequence. Additional engine information was not available. The reason for the partial 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 partial loss of engine power for reasons that could not be determined based on the available evidence.

Findings

Not determined	(general) - Unknown/Not determined
Aircraft	(general) - Failure

Factual Information

History of Flight

Maneuvering	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

On July 19, 2018, about 0802 central daylight time, a Piper PA28A, N7080F, sustained substantial damage during a forced landing after a partial loss of engine power near the Shreveport Executive Airport (DTN), Shreveport, Louisiana. The commercial pilot, who was the sole occupant, was not injured. The airplane was owned and piloted by a private individual. Visual meteorological conditions prevailed and a flight plan was not filed. The post-maintenance check flight was conducted under the provisions of Title 14 *Federal Code of Regulations* Part 91. The flight originated about 0730 from DTN.

The annual inspection on the airplane was completed on July 18, 2018, and the purpose of the flight was a post-maintenance check flight. According to the pilot, after takeoff from DTN, he stayed in the local traffic pattern and performed two touch and go landings. He proceeded north of the airport and climbed through 2,500 ft; however, the airplane could not attain more than a 300-ft per minute rate of climb without losing airspeed, and he noticed a decrease in engine RPM's. The oil pressure and oil temperature were in the normal operating range, the vacuum gauge indicated "zero," and gyroscopic instruments began to drift and tumble. The pilot proceeded directly for DTN and planning to land on runway 14. On final, the engine RPM's decreased and the airplane airspeed decreased. The engine did not respond to throttle inputs and the pilot was forced to land the airplane on a river levy. The airplane bounced into the air and came back down, contacted a road, and came to rest against the perimeter fence of runway 14. Both wings sustained substantial damage.

Examination of the engine by a Federal Aviation Administration inspector revealed that the output shaft of the vacuum pump was sheared. The pilot did not submit the National Transportation Safety Board Accident Report Form 6120, and additional engine information was not available. The reason for the vacuum pump output shaft failure and partial loss of engine power was not determined.

Pilot Information

Certificate:	Commercial; Private	**Age:**	32,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:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	January 5, 2018
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	January 5, 2018
Flight Time:	265 hours (Total, all aircraft), 7 hours (Total, this make and model), 3 hours (Last 90 days, all aircraft), 0.5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N7080F
Model/Series:	PA28	**Aircraft Category:**	Airplane
Year of Manufacture:	1976	**Amateur Built:**	
Airworthiness Certificate:	None	**Serial Number:**	28-7725-085
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	July 18, 2018 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:	0 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3301.18 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-320-E3D
Registered Owner:		**Rated Power:**	150 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:	DTN,179 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	07:53 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.93 inches Hg	**Temperature/Dew Point:**	29°C / 24°C
Precipitation and Obscuration:			
Departure Point:	Shreveport, LA (DTN)	**Type of Flight Plan Filed:**	
Destination:	Shreveport, LA (DTN)	**Type of Clearance:**	None
Departure Time:	07:30 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Shreveport Executive DTN	**Runway Surface Type:**	
Airport Elevation:	179 ft msl	**Runway Surface Condition:**	Vegetation
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	32.540279,-93.745002(est)

Administrative Information

Investigator In Charge (IIC):	Lemishko, Alexander
Additional Participating Persons:	Lisa Cotham; FAA FSDO; Baton Rouge, LA
Original Publish Date:	June 3, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97818