National Transportation Safety Board
Aviation Accident Final Report

Location:	Clearwater, Florida	**Accident Number:**	ERA18LA031
Date & Time:	November 25, 2017, 13:15 Local	**Registration:**	N863RB
Aircraft:	Piper PA46	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot performed a preflight inspection of the turboprop airplane and an engine run-up with no anomalies noted. The takeoff roll and lift off from the runway were normal; however, when the pilot initiated a landing gear retraction, the engine torque decreased, but the rpm did not change. The torque then surged back to full power and continued to surge as the pilot attempted to return to the runway. The left wing of the airplane struck the ground, and the airplane came to rest in the grass on the side of the runway. Examination of the engine, engine accessories, and propeller revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation before the accident. The reason for the partial loss of engine power could not be determined based on the available information.

Probable Cause and Findings

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

A partial loss of engine power for reasons that could not be determined based on the available information.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

On November 25, 2017, about 1315 eastern standard time, a Piper PA-46-500TP, N863RB, was substantially damaged when it experienced a loss of engine power during the initial climb from St. Pete/Clearwater International Airport (PIE), Clearwater, Florida. The airline transport pilot sustained minor injuries. The airplane was registered to and operated by a corporation as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed at the time of the accident, and an instrument flight rules flight plan was filed for the flight that was destined for Pensacola International Airport (PNS), Pensacola, Florida.

According to the pilot, he performed a preflight inspection of the airplane and engine runup with no anomalies noted. The takeoff roll and lift off from runway 36 were "normal;" however, when he initiated a landing gear retraction, the engine torque decreased to 300-400 [ft-lbs], and rpm remained at 2,000. The torque surged back toward full power; however, he could not recall how high. The pilot initiated a 20° right turn in anticipation to return to the runway, and throughout the engine continued to surge. The pilot attempted to return to the runway instead of landing in the water; however, the left wing of the airplane struck the ground and it came to rest near runway 18.

Initial examination of the airplane by a Federal Aviation Administration (FAA) inspector revealed that the left wing was impact separated. The right wing remained attached to the fuselage. The fuselage was partially separated at the cabin section of the airframe. The engine remained attached to the airframe and the propeller remained attached to the engine.

According to the pilot, he held an airline transport pilot certificate with ratings for airplane multiengine land and instrument airplane. In addition, he held a flight instructor certificate with a rating for airplane single-engine. His most recent FAA first-class medical certificate was issued on October 11, 2017. He reported 15,000 hours of total flight time, of which, 25 hours were in the same make and model as the accident airplane. In addition, in the previous 90 days, he had accumulated 35 hours of flight time.

According to FAA airworthiness records, the airplane was manufactured in 2005. It was powered by a Pratt & Whitney PT6A-42A, 850-shaft-horsepower engine equipped with a Hartzell constant-speed propeller. According to airplane maintenance logbooks, the most recent annual inspection was completed on April 1, 2017, at a total time of 1,341.0 hours and 912 cycles.

Examination of the airframe revealed that the there were no blockages noted with the fuel system. The both electric fuel pumps were tested, and no anomalies were noted. In addition, fuel similar to Jet A was noted in the right-wing during recovery of the airplane. The left fuel tank was breached.

The engine and propeller were removed from the airplane for further examination.

Examination of the propeller revealed that all four propeller blades were bent aft, opposite the direction of rotation, and twisted towards a low pitch blade angle. Two blades fractured approximately 8 inches outboard of the blade shank and separated from the propeller assembly during the impact sequence. In addition, chordwise scratching and leading-edge gouging was noted. When the propeller was disassembled, all of the blades were not in a feathered position and the pitch change components were

impact damaged. The beta ring was removed, and no anomalies were noted. There were no anomalies noted with the propeller that would have precluded normal operation prior to the accident.

The engine was sent to the manufacturer for further examination and teardown. The first stage power turbine exhibited rotational scoring. The compressor turbine rotated with no binding or scraping. The disk and blade fir tree faces of the compressor turbine exhibited rotational scoring. The axial compressors were rotated without anomaly. They were all removed and examined. The turbine blades exhibited a small amount of rotational scoring. The two bleed valves were removed and could be actuated by hand. The o-rings and gaskets were examined with no cracking noted. There were no anomalies noted with the engine that would have precluded normal operation prior to the accident.

The fuel pump, fuel control, fuel filter, torque controller, and propeller governor were removed and sent to Pratt & Whitney Canada for further examination . Each component was tested an no anomalies were noted.

The data acquisition unit (DAU) was removed from the airframe and sent to the NTSB Recorders Laboratory for data download. The DAU was an engine instrument display system that also included dual instrument panel mounted displays and various engine and fuel tank sensors. It recorded engine condition trim monitoring data, exceedances, and fault data on two channels; both channels of the DAU were downloaded. There were no engine condition trend monitoring data nor exceedances recorded on the day of the accident. Two faults were recorded on the day of the accident which noted "oil press AtoD reversion failure" and "Torque AtoD reversion failure.; however, the faults could not be correlated to the accident.

History of Flight

Takeoff	Loss of engine power (partial) (Defining event)
Landing	Abnormal runway contact

Pilot Information

Certificate:	Airline transport; Flight engineer; Flight instructor	**Age:**	67,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):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	October 11, 2017
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	April 20, 2017
Flight Time:	15000 hours (Total, all aircraft), 25 hours (Total, this make and model), 7500 hours (Pilot In Command, all aircraft), 35 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N863RB
Model/Series:	PA46 500TP	**Aircraft Category:**	Airplane
Year of Manufacture:	2005	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	4697213
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	April 1, 2017 Annual	**Certified Max Gross Wt.:**	5130 lbs
Time Since Last Inspection:	26 Hrs	**Engines:**	1 Turbo prop
Airframe Total Time:	1341 Hrs as of last inspection	**Engine Manufacturer:**	Pratt & Whitney
ELT:	Installed	**Engine Model/Series:**	PT6A-42A
Registered Owner:		**Rated Power:**	850 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PIE,11 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	13:31 Local	**Direction from Accident Site:**	167°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	23°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Clearwater, FL (PIE)	**Type of Flight Plan Filed:**	IFR
Destination:	PENSACOLA, FL (PNS)	**Type of Clearance:**	IFR
Departure Time:	13:15 Local	**Type of Airspace:**	

Airport Information

Airport:	ST PETE-CLEARWATER INTL PIE	**Runway Surface Type:**	Asphalt
Airport Elevation:	10 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	36	**IFR Approach:**	None
Runway Length/Width:	9730 ft / 150 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	27.924165,-82.69139(est)

Administrative Information

Investigator In Charge (IIC):	Kemner, Heidi
Additional Participating Persons:	Scott Olson; FAA/FSDO; Tampa, FL Les Doud; Hartzell Propeller; Piqua, OH Robert Martellotti; Piper Aircraft; Vero Beach, FL Karel Currey; Pratt & Whitney; Bridgeport, WV
Original Publish Date:	June 29, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=96369