



ERA18LA031

Clearwater, Florida

November 25, 2017

Piper PA-46-500TP, N863RB

NTSB ENGINE AND PROPELLER EXAMINATION
REPORT

January 29-30, 2018

PARTICIPANTS IN THE EXAMINATION

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Hartzell Propeller
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HISTORY OF FLIGHT

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 serious injuries. The airplane was registered to and operated by a corporation as a 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.

ENGINE INFORMATION

Engine Manufacturer: Pratt & Whitney Canada

Engine Model Number: PT6A-42A

Engine Serial Number: RM0231

Recent Inspection: April 1, 2017 – Annual Inspection

Recent Recorded Total Time: 1341.0 as of annual inspection.

HOVEY's Aviation

Date: 01 April 2017

Model: PT6A-42A

Total Time: 1341.0

Make: Pratt & Whitney

N#: N863RB

Serial #: PCE-RM0231

Hour meter: 1341.0

Cycles: 912

1. C/W an ANNUAL inspection IAW FAR 43 Appendix D using Piper Meridian Event 1 and Event 2 as a guide.
2. C/W 1000 hour replacement main oil filter.
3. Inspected fuel filters and strainer. Replaced paper filter.
4. C/W P&W minor inspection items.
5. C/W chip detector system inspection.
6. Checked igniters. Replaced both ignitors.
7. Replaced left ignitor lead.
8. Replaced beta brush block.
9. C/W compressor wheel rinse.
10. Washed engine down. Lubed engine controls.
11. Ground run up and leak checked.

This engine is determined to be in airworthy condition and approved for return to service.

George Hovey A&P [redacted] IA

INITIAL EXAMINATION

The engine remained in the shipping container and was removed for examination. The following was noted:

- The engine mounts remained attached to the engine.
- The accessories remained attached to the engine.

DETAILED EXAMINATION

Reduction Gear Box

The forward section of the reduction gear box was separated and remained attached to the propeller. It was removed for further examination. The reduction gear box chip detector was removed and environmental debris was noted on it as it was exposed as a result of the impact sequence.

Power Section

The power section was removed from the engine. The first stage power turbine exhibited rotational scoring.

The combustion chamber was examined and no anomalies were noted.

Gas Generator Section

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 centrifugal compressor was examined and no anomalies were noted.

The two bleed valves were removed and could be actuated by hand. The o-rings and gaskets were examined with no cracking noted.

Two T5 probes were separated.

Accessory Section

Oil drained from the engine as it was being disassembled. The oil filter was removed and no debris was noted in the screen.

The accessory gear box chip detector was removed and no debris was noted.

SUMMARY

There were no anomalies noted within the engine that would have precluded normal operation prior to the accident.

FUTURE ACTIVITIES

The fuel pump, fuel control, fuel filter, torque controller, propeller governor were removed and will be sent for examination at the Pratt & Whitney facility in Canada.

PROPELLER INFORMATION

Propeller Manufacturer: Hartzell

Propeller Model Number: HC – E4N-3Q

Propeller Serial Number: HH2248

Recent Inspection: April 1, 2017 – Annual Inspection

Recent Recorded Total Time: 1341.0 hours as of annual inspection

Recent Recorded TSO: 105 hours.

HOVEY's Aviation	
Date: 01 April 2017	N#: N863RB
Model: HC-E4N-3Q	Serial #: HH2248
Total Time: 1341.0	Hour Meter: 1341.0
Make: Hartzell	TSO: 105.0
Cycles: 912	
1. C/W an ANNUAL inspection IAW FAR 43 Appendix D using Piper Meridian Event 1 and Event 2 as a guide.	
2. Lubed propeller.	
3. Dressed propeller blades.	
This propeller has been determined to be in airworthy condition and is approved for return to service.	
George Hovey A&P	

INITIAL EXAMINATION

The propeller was received in a shipping container. When it was removed, the following was noted:

- The forward section of the reduction gear box remained attached to the propeller.
- Two of the 4 blades were partially separated from the propeller.
- All 4 blades exhibited bending in the opposite direction of travel.

DETAILED EXAMINATION

While disassembling the propeller, the following was noted:

- Leading edge gouging was noted on the blades.
- Chordwise scratching was also noted on the blades.
- The spin exhibited rotational scoring.
- The spinner was removed and impact marks from the propeller counterweights were noted on the interior of the spinner. In addition, two rub marks on the interior of the spinner were noted within the field of motion of the propeller counter weights.
- The spring and spring cup remained intact.
- A bearing race in one of the blades was shattered and exhibited impact marks from the bearing balls.
- All of the propeller blades were in the unfeathered position.
- The beta ring was removed and no anomalies were noted.
- All pitch change links were impact damaged.
- Black marks were noted on the interior of the propeller hub where the blades entered the hub.

SUMMARY

Evidence indicated that the propeller exhibited signs of power and the blades were at a low pitch setting.

FUTURE ACTIIVES

The propeller will be returned to the salvage yard in Jacksonville, Florida.