



ERA14FA077

Biglerville, Pennsylvania

December 26, 2013

Piper PA-30, N8372Y

NTSB ENGINE EXAMINATION REPORT

February 25-26, 2014

PARTICIPANTS IN THE EXAMINATION

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HISTORY OF FLIGHT

On December 26, 2013, about 0530 eastern standard time, a Piper PA-30, N8372Y, was destroyed following an inflight break up, and impact with terrain near Biglerville, Pennsylvania. Night visual meteorological conditions prevailed and no flight plan was filed for the flight. The certificated private pilot and passenger were fatally injured. The personal flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91. The flight originated from Bloomsburg Municipal Airport (N13), Bloomsburg, Pennsylvania, around 0445, with an intended destination of Summerville Airport (DYB), Summerville, South Carolina.

ENGINE INFORMATION

Engine Manufacturer: Lycoming
Engine Model Number: IO-550-B4F
Engine Serial Number: 249168-R
Recent Inspection: July 1, 2013 – annual inspection
Last Overhaul: August 3, 1988
Built: August 3, 1988
Recent Recorded TSMOH: 1121.9 hours on July 1, 2013
Total Airframe Time in Service: 2764.1 hours

INITIAL EXAMINATION AS RECEIVED

Both engines were examined at Anglin Aircraft Salvage in Clayton, Delaware. They were removed from storage and placed on pallets prior to the investigation team arrival. Upon arrival, the team determined which engine was the left and the right.

DETAILED EXAMINATION OF THE LEFT ENGINE

IO-320B1A SN L-3600-55A

Initial view of the engine still had part of the firewall and cowling attached to it. Propeller and crankshaft flange were impact separated.

The engine was set up for exam and both mags were secure on the accessory housing, were removed. The right mag would not spark when rotated by hand and was impact damaged on the lower right side. The left mag produced spark on all towers when rotated by hand.

The engine driven fuel pump was impact broken and was unable to be tested due to the damage. The fuel injector was impact separated and all the fuel lines were separated. The inlet fuel screen was not recovered. All of the fuel injector nozzles were destroyed. The flow divider was not identified. All top spark plugs were impact damaged and all lower spark plugs except number 4 were removed and displayed a mid service life. The no 4 spark plug was destroyed.

The starter was impact separated but rotational score was observed on the starter housing. The alternator was impact separated and damaged. The vacuum pump was secure on its mount, removed, and disassembled. There were no anomalies noted.

All of the oil lines were destroyed. The oil cooler was impact separated and breached. The oil sump was broken on the lower left side of the engine. The oil suction screen was removed and there were no contaminants noted.

It was attempted to rotate the engine by hand by using a turning tool inserted into the vacuum pump pad adaptor. However, the engine would not rotate. Four holes were drilled into the top of the crankcase to facilitate inspection with a lighted borescope. Crankshaft and camshaft, and valve train continuity was visually established. No anomalies were observed in the crankcase.

RIGHT ENGINE

IO320-B1A
SN L-3236-55A

Initial view of the engine still had part of the firewall and cowling attached to it. Propeller and crankshaft flange were impact separated.

The front of the crankcase was broken away on both sides of the crankshaft. The crankshaft flange was impact separated. The oil pan was impact separated and fragmented but the data plate was recovered. The propeller governor was impact damaged. The gasket was removed, the screen was inspected, and was found to be free of contaminants.

All of the fuel injector nozzles were removed and found partially obscured. The fuel servo was impact separated and damaged. The inlet fuel screen was removed and inspected. There were no contaminants noted. All fuel carrying lines were destroyed. The fuel flow divider was not identified. The engine driven fuel pump was destroyed.

Both magnetos were impact separated from their mounts. Both were rotated by hand and produced spark on all towers.

All bottom spark plugs were removed. The No. 2, 3, 4 top spark plugs were removed. All of the removed spark plugs displayed an extended service life. The No.1 top spark plug was destroyed.

The ignition harness was destroyed. The starter was impact separated and rotational scoring was observed on the starter housing. The alternator was destroyed. The vacuum pump was impact separated, disassembled, and no anomalies were noted within the vacuum pump.

The oil cooler was impact separated and breached. All oil lines were separated. No oil was observed in the engine.

It was attempted to rotate the engine by hand by using a turning tool inserted into the vacuum pump pad adaptor. However, the engine would not rotate. Four holes were drilled into the top of the crankcase to facilitate inspection with a lighted borescope. Crankshaft and camshaft, and valve train continuity was visually established. No anomalies were observed in the crankcase.

SUMMARY

The examination revealed that there were no abnormalities with the left or right engine. Therefore, the probability exists that both engines was operating normally with no mechanical malfunctions or abnormalities that would have precluded normal operation.

FUTURE ACTIVITES

The engine will be returned to storage at Anglin Aircraft Recovery, and kept with the accident airplane in preparation for the release of the wreckage by the National Transportation Safety Board IIC.