

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

Western Pacific Region

August 9, 2018

Airframe and Engine Examination Report

WPR18FA211 This document contains 2 embedded photos.

ACCIDENT:

Location: Santa Ana, CA Date: August 5, 2018 Aircraft: Cessna 414, Registration Number: N727RP, Serial #: 414-0385 NTSB IIC: Albert Nixon

EXAMINATION PARTICIPANTS:

Albert Nixon	Peter Basile
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A postaccident examination of the airframe and engine was accomplished at the facilities of Southwest Aircraft Transportation and Recovery Inc., at the Chino Airport, Chino, California.

Left Engine:

Impact damage was observed to the front, bottom, left side of the engine, and cylinders Nos. 2, 4, and 6 were noted. Cylinder Nos. 4 and 6 rocker box covers were separated. Manual rotation was attempted by using a hand tool but was unable to be accomplished. A borescope inspection of the cylinders revealed normal operational conditions. Both magnetos sustained impact damage and were separated from the engine but remained partially attached to the ignition harness. The magnetos were removed and manually rotated and spark was observed at all leads. The oil sump sustained extensive crush damage. The top spark plugs were removed and exhibited normal wom out wear signatures when compared to the Champion Check-A-Plug comparison chart. The fuel flow divider lines were attached at all cylinder fuel injectors and examination of the fuel nozzles revealed no anomalies. The fuel pump was observed to have impact damage and examination of the pump revealed no anomalies.

The turbocharger remained attached to its respective housing. The turbocharger displayed impact damage and the compressor blades were observed bent.

The crankcase was disassembled. No thermal damage was observed, and all bearings displayed normal wear. Cylinders Nos. 1 and 3 were removed and eventually, rotation was confirmed. The remaining cylinders were also removed, in addition to the crankshaft, and camshaft; No

anomalies were noted. The oil filter was removed and cut open. The filter folds were clear of contamination.

The three blade, constant speed propeller remained attached to the propeller flange but had separated from the crankshaft. One propeller blade had separated at the hub, and all three blades exhibited impact damage signatures.



Figure 1: Left engine being prepared for examination (Left side).

Right Engine:

The engine sustained impact damage to the front, left, and bottom portions of the engine. The No. 6 cylinder sustained impact damage. The No. 6 rocker cover was separated. Both magnetos were separated from the engine but remained attached to their respective ignition harness. All spark plugs were removed and exhibited normal worn out wear signatures when compared to the Champion Check-A-Plug comparison chart. The fuel flow dividers lines remained attached at all cylinder fuel injectors. Examination of the fuel pump and fuel nozzles revealed no anomalies.

Both magnetos were manually rotated, and spark was observed at all leads. The turbocharger remained attached to its respective housing. The turbocharger blades were observed bent but no other anomalies were noted during its examination.

All six cylinders, crankshaft, and camshaft were removed, and no anomalies were noted.

The oil filter was removed and cut open. The filter folds were clear of contamination.

The crankcase was disassembled, and no thermal damage was observed. The bearings displayed normal wear and no anomalies were noted.

The three blade, constant speed propeller remained attached to the propeller flange; however, the propeller flange had separated from the crankshaft. All three blades remained attached to the propeller hub and displayed impact damage signatures.



Figure 2: Right engine being prepared for examination (Top front side).

Propeller Breakdown and Examination: (accomplished at a later date)

The propeller examination revealed that both propellers showed signs of rotation and there were no indications that either propeller was at or near the feathered position. Leading edge gouging, chordwise/rotational scoring, blade bending, and twisting was observed on both propellers, consistent with rotation. Overall, the damage to both the left and right propellers was similar and consistent with a power on, symmetric condition, at the time of impact.

Cockpit/Cabin Observations:

The cockpit area sustained substantial impact damage and most instrumentation was damaged and unreadable. The throttles were near the idle position and the mixture and propeller controls were full in. Several electronic devices were recovered from the wreckage and sent to the NTSB Vehicle Recorders Laboratory for potential download.

Postaccident examination of the airframe and engines revealed no preimpact mechanical malfunctions or failures that would have precluded normal operation.

Submitted by: Albert Nixon