



AIRFRAME AND ENGINE EXAMINATION REPORT

NTSB ACCIDENT NUMBER: ERA22LA172

AIRCRAFT REGISTRATION: N5067W

OPERATOR: Individual

ACCIDENT LOCATION: Melbourne, FL

Investigative Team:

NTSB Investigator-in-Charge (IIC): Daniel Boggs, Air Safety Investigator

FAA Coordinator: Cheryl King, Aviation Safety Inspector (Orlando, FL FSDO)

David Harsanyi, Lycoming Engines, Air Safety Investigator

ENGINE EXAMINATION

The engine remained attached to the accident aircraft airframe through its respective engine mounts. The top left engine mount was found impact fractured from the engine case. The engine would rotate approximately 90 degrees before it came to a hard stop and a metal clunk sound was heard. The top side of the engine showed signs of impact damage in the form of abrasions, cracks, and a bent lifting hook. The top of cylinder number 2 suffered multiple cracks along the rocker box mating flange and a fractured top spark plug. All rocker boxes were found securely attached to their respective cylinders. Two holes were observed on the lower crankcase halves around the cylinder 2 and 3 locations. Lower Spark plugs on cylinders 1, 2, and 3 were not tight and removed with little effort using a ratchet while cylinder 4 was tight.

Cylinders number 2 and 3 were removed for an internal examination of the engine which revealed fractured connecting rods on each cylinder. The connecting rod on cylinder 2 was found fractured with its bottom cap heavily damaged and flat in shape laying below the engine crankshaft along with its corresponding bearings. The number 3 connecting rod was found fractured similar to number 2, but both the connecting rod end and crankshaft journal had a dark color and remnants

of its bearing were dark and smeared on the connecting rod end and cap. The number 3 crankshaft journal was found pitted, coloration consistent with presence of corrosion. And smeared bearing material. All connecting rod bolts and nuts were accounted for within the engine. The engine was heavily damaged internally from the fractured rotating components and chunks of metal moving throughout the engine crankcase.

The oil pump was removed from the accessory section and examined. The pump rotated freely, no scoring or issues were noted within the gears or pump housing.

The engine driven fuel pump was removed and fuel was noted from the inlet and outlet port upon removal. Actuation of the pump by hand showed suction and compression at each port.

The engine driven vacuum was found securely installed to the accessory section, once removed the drive coupling was found partially missing. Small plastic like balls were found in-between the pump and mounting pad on the engine when removed. This material appears to be pieces of the missing drive coupler that may have been formed while the engine was operating. The rotor was found cracked when disassembled, but all vanes were intact.

The sparkplugs when compared to a Champion Check-A-Plug chart showed coloration consistent with normal operation to carbon fouled.

The carburetor was found securely attached to the engine and was removed for further examination. The float bowl was separated and the floats examined and were found unremarkable. The presence of fuel was observed and the accelerator pump moved fuel when actuated. The throttle arm and throttle plate both rotated freely by hand.

The starter and alternator were not examined during the course of this examination.