

N2112A Lycoming Field Notes

Fuel System Remarks:

The various fuel supply lines at the engine and firewall had been cut during the removal of the engine to facilitate removal from the site via helicopter, thus compromising the fuel system. There was no fuel observed.

All engine compartment fuel lines were found to be in place and secure at their respective fitting of each fuel system component.

The fuel injection servo remained securely attached at the mounting pad of the plenum. The throttle/mixture controls were found securely attached at their respective control arm of the servo. The castellated nut and cotter pin remained secure and the serrated interface at the throttle and mixture arm remained securely mated. The manually operated turbocharger exhaust bypass valve (aka wastegate) control linkage remained continuous and secure at each linkage terminus and respective control arms. The plug on the side of the injector body was secure with the safety wire in place. The servo fuel inlet screen was found properly installed and free of contamination. The fuel injection servo and induction system were examined and observed to be free of obstruction.

The fuel injection servo and induction system were examined and observed to be free of obstruction. The foam filter element remained securely attached to the airbox bracket. The filter element remained intact and exhibited no evidence of pre-impact obstruction to airflow.

The fuel injection nozzles remained secure at each cylinder with the respective fuel line attached. The nozzles were removed and examined. The nozzles remained free of visible contamination or obstruction to flow.

The fuel pump was attached to the engine at the mounting pad. The fuel lines remained secure at their respective fittings. The fuel pump was removed for examination. The drive of the fuel pump was intact and rotated without notable binding.

The fuel flow transducer was free of internal obstruction. The internal paddle/turbine wheel could be heard spinning when air was applied at the inlet.

Spark Plug Remarks:

The spark plugs were secure at each position with their respective spark plug lead attached. The spark plugs were removed, examined and photographed. The spark plugs electrodes remained mechanically undamaged, and according to the Champion Spark Plugs Check-A-Plug chart AV-27, the spark plugs electrodes displayed coloration consistent with normal operation.

The ignition harness was attached at the magneto cap and each spark plug.

Oil System Remarks:

The oil suction screen and oil filter were removed. The oil suction screen was free of any pre-mishap debris. The full flow oil filter was cut open to expose the filter media and remained free of any pre-mishap debris. There was no evidence of pre-mishap metal contamination observed at the rocker boxes.

Turbo System Remarks:

The turbocharger system components remained secure at their respective mountings. The turbocharger compressor and turbine impellers remained intact and undamaged. The turbine was free to hand rotate. Each exhaust system clamp was secure at each location. The exhaust bypass valve (aka: wastegate) remained secure at the transition. The butterfly valve remained intact and undamaged.

Engine Examination:

The powerplant is a six-cylinder, air cooled, direct drive, horizontally opposed, fuel-injected, turbocharged, internal combustion engine rated at 300hp @ 2700rpm.

The engine remained attached to the engine mount, which had been cut to facilitate transport from the site. The engine had sustained minor impact energy damage and was received in generally good condition. The starter was securely attached at the mounting pad, with the electrical connection secure at the post. The alternator was securely attached at the mounting pad with the electrical connections secure at each post. The rear-mounted vacuum pump was secure at the mounting pad. The vacuum pump was not removed for examination.

Visual examination of the engine revealed no evidence of pre-impact catastrophic mechanical malfunction or fire. The airframe firewall remained free of oil and exhaust gas sooting.

The top spark plugs were removed, examined and photographed.



The crankshaft was rotated by hand utilizing the propeller. The crankshaft was free and easy to rotate in both directions. "Thumb" compression was observed on all six cylinders. The complete valve train was observed to operate in proper order and appeared to be free of any pre-mishap mechanical malfunction. Normal "lift action" was observed at each rocker assembly. Clean, uncontaminated oil was observed at all six rockerbox areas. Mechanical continuity was established throughout the rotating group, valve train and accessory section during hand rotation of the crankshaft. The bottom spark plugs were not removed. The combustion chamber of each cylinder was examined through the spark plug holes utilizing a lighted borescope. The combustion chambers and bottom spark plug electrodes remained mechanically undamaged and there was no evidence of foreign object ingestion or detonation. The valves were intact and undamaged. There was no evidence of valve to piston face contact observed. The gas path and combustion signatures observed at the spark plugs, combustion chambers and exhaust system components displayed coloration consistent with normal operation. There was no oil residue observed in the exhaust system gas path. The exhaust system was found free of obstructions.

The single drive dual magneto was found securely clamped at the mounting pad. The impulse coupling was heard clicking during rotation of the crankshaft. The magneto to engine timing was observed at (right) 20° & (left) 20° BTDC of the cylinder #1. The magneto was observed to produce spark at all twelve plug leads during the operational check. The impulse coupler drive was observed to be intact and properly safetied. The magneto ignition lead cover was removed. The points and internal mechanics remained free of obvious anomalies.

There was no evidence of pre-impact mechanical malfunctions observed during the examination of the engine.