

Inspector Statement

On 04/17/2023, Inspectors from the Kansas City Flight Standards Office travelled to New Century, KS to the New Century Air Service hangar to examine an aircraft engine Continental O-470-U serial # 809786-R. Installed on N982NC. Cessna Model 182Q serial # 182-67655.

The engine was found with all major components installed. Hole in the crankcase caused by the separation of the connecting rod from crankshaft above the #6 cylinder was observed. Engine could not be rotated in the normal direction. All 6 cylinders, propeller, and components were removed for further investigation. Removed all valve covers to expose the intake and exhaust valves. All of the valve assemblies and push rods were intact and undamaged. Cylinders #1 - #4 pistons light in color. Minor damage to the pistons caused by detonation. Cylinder walls indicating being glazed over. Cylinder #5 piston melted on the intake side, revealing extreme detonation. Cylinder #6 piston could not be removed from the cylinder and be inspected due to the damage on the skirt not allowing removal of the piston. Damage to the exhaust stacks and muffler caused by impacting the ground. Propeller governor missing arm. Oil level could not be verified.

An inspection of the ignition system found the correct magnetos installed for the engine. Both magnetos were removed from the engine. All spark plugs were inspected. 12 Champion RHB-32E installed. The tips of the spark plugs were light in color and the electrode gap was within of the manufactures recommended gap.

Inspection of the propeller showed damage to both blades. Both blade was backwards from its normal operating range. Damage to the spinner due to the impacting the ground. No damage to the hub assembly was noted. Components were removed and not tested.

During records review. Jeffery Opat Installed 2 new cylinders and 4 repaired cylinders on 01/03/2023. No mention of any work accomplished on the pistons or rings being repaired. All work performed in accordance with Continental overhaul manual. No discrepancies noted during engine ground run. No mention of cold valve clearance in the engine installation entry. When asked about it, He stated he did not perform a cold tappet clearance on the rocker arms when all the cylinders were installed. On 01/04/2023 100 hour inspection completed on the engine. 12 qts Aeroshell w100 added. This was entered in error in the entry. Mr. Opat stated he added 12 qts Aeroshell 100 mineral. Only .8 hour engine ground run between cylinder installation and the 100 hr inspections. Differential compression test not performed during the 100 hr inspection, entry states this will be done in 25 hours during an oil change. No engine oil change inspection or compression test entry could be found at a 25 hour interval.

Justin Reimer and Jeffery Opat, Aviation Maintenance Technicians with New Century Air Service were supervised by the Inspectors in the removal of the propeller, cylinders assemblies and components from the engine during this investigation.

90.7 hours total time in service on the cylinders.

This concludes this statement.

Thomas J. Davis, ASI

Kansas City FSO