



SAIB: NE-10-09

Date: November 20, 2009

SUBJ: Reciprocating Engine Power Section: Hydraulic Valve Lifters

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) alerts you, owners, operators, certificated repair facilities, and flight standards district offices, of **Teledyne Continental Motors (TCM) 240, 360, 470, 520, and 550 series reciprocating engines and Rolls-Royce Motors, Ltd. (R-RM) 240 and 360 series reciprocating engines** hydraulic lifter failures. These TCM hydraulic lifters, part numbers (P/Ns) 657913, 657915, and 657916 have experienced rapid wear on the surface of the hydraulic lifter assemblies both in new and rebuilt engines. Hydraulic lifter failures have occurred at very low time-in-service (i.e., between 5 and 38 hours). When a hydraulic lifter fails, it no longer opens the associated valve, which makes the associated cylinder ineffective. As a result, the engine runs rough with a loss of power potentially leading to a safety of flight issue.

Background

Teledyne Continental Motors has identified a service issue with certain TCM hydraulic lifters. TCM has verified and documented occurrences of rapid wear on the surface of the hydraulic lifter assemblies, both in new and rebuilt engines and hydraulic lifter assemblies sold as spares beginning on 19 June 2009. All TCM 240, 360, 470, 520, and 550 series reciprocating engine models and R-RM 240 and 360 series reciprocating engines are affected. In June 2009, TCM released for production new part number lifters made from casting from a different foundry. To distinguish the change in the casting source, these parts were assigned new part numbers. Hydraulic lifters manufactured using castings from the new source were designated by part numbers 657913, 657915, and 657916.

TCM has issued Mandatory Service Bulletin (MSB) No. MSB09-8, dated November 3, 2009. MSB09-8 details inspection procedures to prevent an engine cylinder failure. The FAA issued emergency airworthiness directive (AD) 2009-24-52, dated November 18, 2009, to mandate inspection and replacement of these hydraulic lifters. The inspections are to be accomplished before further flight of any airplane with an affected engine model installed. The MSB lists those engine models and serial numbers that had the affected hydraulic lifters installed at the factory. Engines that had the affected hydraulic lifters installed during field repair or maintenance should also be inspected. Replacement hydraulic lifters should be part numbers 628488, 646277, 653877, 653888, or 653906.

Hydraulic lifters, part numbers 653877, 653888, and 653906, are not affected by the MSB or AD 2009-24-52. The FAA has approved the installation of TCM factory-rebuilt hydraulic lifters in affected engine models. These hydraulic lifters have accumulated previous hours time-in-service, but have been inspected, reconditioned, and functionally tested.

Recommendations

The FAA recommends that you replace TCM hydraulic lifters, P/Ns 657913, 657915, and 657916. The FAA has approved the installation of TCM factory rebuilt hydraulic lifters, P/Ns 628488, 646277, 653877, 653888, or 653906, during assembly of the affected engines (new, overhauled,

rebuilt, or repaired). These TCM factory rebuilt hydraulic lifters have accumulated previous time in service. However, these TCM factory rebuilt hydraulic lifters are 1) inspected and reconditioned to comply with new print limits, 2) comply with approved oversize/undersize tolerances, and 3) functionally tested. The FAA approved the installation of these TCM factory rebuilt hydraulic lifters during assembly of the affected engines (new, overhauled, rebuilt, or repaired) due to shortage of replacement parts only from November 16, 2009 through May 16, 2010.

For Further Information Contact

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