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SERVICE INSTRUCTION

DATE: November 10, 2020

Service Instruction No. 1577
Engineering Aspects are
FAA Approved

SUBJECT: Intake Valve In-Service Data

MODELS AFFECTED: O-540-F1B5 engines with serial number ending with “-40E” installed in Robinson R44 Raven I and R44 Cadet helicopters

TIME OF COMPLIANCE: During the next scheduled 50-hour inspection for engines with less than 500 hours since new, rebuild, overhaul, or cylinder replacement. Then every 50 hours until 500 hours since new, rebuild, overhaul, or cylinder replacement. At next scheduled 100-hour inspection for engines with more than 500 hours since new, rebuild, overhaul, or cylinder replacement.

NOTICE: Incomplete review of all the information in this document can cause errors. Read the entire Service Instruction to make sure you have a complete understanding of the requirements.

This service instruction provides guidance for surveying operators to collect field data on the condition of intake valves across the O-540-F1B5 engine population referenced in MODELS AFFECTED within TIME OF COMPLIANCE. A differential compression test is used to assess valve condition. For lower time engines or cylinders, the compression test must be completed at 50-hour intervals rather than the scheduled 100-hour intervals to provide early trend analysis.

See also the Robinson Safety Alert dated 14 October 2020 regarding intake valves [R44 I/R44 Cadet Safety Alert](#).

NOTICE: Lycoming recommends completion of this test as soon as safely possible after engine shutdown (a hot engine provides the best test results).

If this test is completed for replaced cylinders with less than 500 hours since installation, only those cylinders with less than 500 hours time in service must be tested every 50 hours. Cylinders with more than 500 hours time in service are to be tested at the scheduled 100-hour intervals.

1. Complete a differential compression test on each affected cylinder in accordance with the latest revision of Service Instruction No. 1191.
 - If, during the differential compression test, an audible leak past the intake valve is detected, contact Lycoming Technical Support for further guidance.
2. Record the differential compression test results in the engine maintenance records.
3. To accurately and efficiently compile data, Lycoming Engines must collect certain information. Each time you complete the Differential Compression Check, please visit <http://www.lycoming.com/SI1577questionnaire> and fill out all pages of the questionnaire completely. Note that when page 1 is completed, additional pages to add data will appear.

If you have any questions, contact Lycoming Technical Support by phone at 570-327-7222 or 877-839-7878 or email to Technicalsupport@lycoming.com.



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