

## Lycoming Parallel Valve Cylinder Assemblies

23 April 2018

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Issued by the Civil Aviation Authority of New Zealand in the interests of aviation safety. A Continuing Airworthiness Notice (CAN) is intended to alert, educate, and make recommendations to the aviation community. A CAN contains non-regulatory information and guidance that does not meet the criteria for an Airworthiness Directive (AD). The inspections and practices described in this CAN must still be carried out in accordance with the applicable NZCAR Parts 21, 43 and 91. CAN numbering is by ATA Chapter followed by a sequential number for the next CAN in that ATA Chapter.

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### Applicability:

Lycoming parallel valve cylinder assemblies with casting supplier identification symbol (E) and casting pattern revision letters AB, AC, AD or AE. Affected cylinder castings were manufactured from September 2013 through to April 2015. This CAN is not applicable to cylinder assemblies fitted to Lycoming O-235 and O-233 series engines.

### Purpose:

To advise aircraft operators and maintainers of possible compression loss with certain Lycoming parallel valve cylinder assemblies, which could result in a loss of engine power.

### Background:

This Continuing Airworthiness Notice (CAN) is prompted by reports received by the CAA of operators experiencing a loss of compression and engine power due to cracks found in a number of Lycoming parallel valve cylinders listed in the applicability section of this CAN.

The loss of compression and engine power loss is gradual, with no cylinder head separations to date. Investigation has revealed that the loss of compression and engine power is due to cracking in the vicinity of the cylinder assembly intake valve. Affected cylinder assemblies can be identified by a low cylinder compression leak down, visible discolouration/residue next to the intake port, or a whistling sound during a compression test, or a whistling sound with the engine at idle. The manufacturer is aware of this safety concern with affected cylinder assemblies, and work is in progress to issue a Service Bulletin.

### Recommendations:

The CAA strongly recommends the following actions every 50 hours TIS for affected cylinders listed in the applicability section of this CAN:

- Inspect affected cylinder assemblies for visible discolouration/residue on the cylinder fins.
- Accomplish a compression test on affected cylinders (refer Lycoming Service Instruction 1191A). Any loss of compression may be due to a cracked cylinder assembly.
- Check for a whistling sound while accomplishing the compression test.
- Check for a whistling sound with the engine at idle.

If residue is found on the cylinder fins, or the compression value does not meet OEM requirements, or if a whistling sound is detected while accomplishing the compression test, or if a whistling sound with the engine at idle is detected, then the cylinder may be cracked and further investigation is required. If a cylinder is found cracked, replace before further flight. The CAA strongly recommend that all other affected cylinders fitted to the engine should also be replaced before further flight.

Complete a CA005 Defect Report form for every affected engine reviewed regardless of whether or not any anomalies were found. Please include the cylinder assembly P/N, the cylinder assembly S/N, the casting pattern revision letters, the cylinder hours TTIS, the cylinder hours since last O/H (if applicable), and any other relevant technical information.

A CA005D Defect Report form can be obtained from [http://www.caa.govt.nz/assets/legacy/Forms/CA005D\\_Form.pdf](http://www.caa.govt.nz/assets/legacy/Forms/CA005D_Form.pdf)  
The completed form can be emailed to the CAA at [CA005@caa.govt.nz](mailto:CA005@caa.govt.nz)

The CAA is aware that previous defects found in affect cylinder assemblies may not have been reported to the CAA. To assist the OEM and the CAA with this investigation, please report all compression loss/cracking defects found in affected cylinder assemblies to the CAA.

### Enquiries:

Enquiries regarding this Continuing Airworthiness Notice should be sent to:  
Owen Olls  
Airworthiness Specialist  
Email: [owen.olls@caa.govt.nz](mailto:owen.olls@caa.govt.nz)  
Phone: 04 560 9569