Airworthiness Directive Schedule

Engines

Lycoming TVO-435 Series

28 November 2024

Notes:

1. This AD schedule is applicable to Lycoming **TVO-435** series engines manufactured under FAA Type Certificate Number **1E13.**
2. The Federal Aviation Administration (FAA) is the National Airworthiness Authority (NAA) responsible for the issue of State of Design Airworthiness Directives (ADs) for Lycoming reciprocating engines.

   State of Design ADs applicable to these engines can be obtained directly from the FAA website at: Dynamic Regulatory System (faa.gov)
3. Where a NZ AD is based on a foreign AD, compliance may be shown with either the NZ AD or the equivalent State of Design AD, because they will have essentially the same requirements i.e. the logbook will need to list all the NZ ADs, but the CAA will accept compliance with the equivalent State of Design AD as a means of compliance with the NZ AD. (The same as happens now for an imported aircraft.)
4. Manufacturer service information referenced in Airworthiness Directives listed in this schedule may be at a later approved revision. Service information at later approved revisions can be used to accomplish the requirements of these Airworthiness Directives.
5. The date above indicates the amendment date of this schedule.
6. New or amended ADs are shown with an asterisk *

Contents

DCA/LYC/123B FAA AD 68-08-08 Limited Travel Valve Lifters – Replacement

Applicability: Model VO-360 and IVO-360 series engines, and

Model VO-435 and TVO-435 series engines, and

Model IGSO-480 series engines excluding model IGSO-480-A1D6, IGSO-480-A1E6, and IGSO-480-A1G6 engines, and

Model VO-540, IVO-540 and TIVO-540 series engines, and

Fitted with hydraulic valve lifters P/N 76289.

Note 1: No action required if already in compliance with DCA/LYC/123A. This AD revised to include notes 2 and 3 with no change to the AD requirement or compliance.

Note 2: This AD is not applicable to engines manufactured before 1 January 1966 fitted with hydraulic valve lifters P/N 72876 including those engines fitted with hydraulic lifters P/N 72876, 76290 or 78289.

Note 3: Lycoming SB No. 314C or later FAA approved revisions lists the S/Ns of new and factory remanufactured engines which were fitted with affected hydraulic valve lifters P/N 76289.

Requirement: To prevent failure of the valves accomplish the following:

1. For model TVO-435, VO-540, IVO-540, and TIVO-540 series engines replace affected hydraulic lifters with P/N 78290 or with alternate approved parts.

2. For model VO-360, IVO-360, VO-435 and IGSO-480 series engines replace affected hydraulic lifters with P/N 78290 or with alternate approved parts.

(FAA AD 68-08-08 refers)

Compliance: 1. Within the next 50 hours TIS unless previously accomplished.

2. At 650 hours TIS on affected valves with less than 600 hours TIS, and within the next 50 hours TIS on affected valves with 600 hours or more TIS, unless previously accomplished.

Effective Date: DCA/LYC/123A - 30 September 1968
DCA/LYC/123B - 27 November 2008

DCA/LYC/157A Turbocharger - Replacement

Applicability: Model TVO-435-A and TVO-435-B series engines installed in Bell model 47G-38-1 helicopters.

Note 1: No action required if already in compliance with DCA/LYC/157. This AD revised with Lycoming SB No. 391 now at revision A and to include note 2 with no change to the AD requirement.

Requirement: Accomplish Lycoming SB 391A.

Note 2: Lycoming SB No. 391A or later FAA approved revisions pertains to the subject of this AD.

Compliance: Within the next 25 hours TIS or by 18 January 2009 whichever occurs sooner, unless previously accomplished.

Effective Date: DCA/LYC/157A - 18 December 2008

DCA/LYC/171 FAA AD 80-04-04R1 Crankshaft Flange Bolt Installation - Inspection

Applicability: All VO and TVO-435 series and VO, IVO, TVO and TIVO-540 series engines

Requirement: To prevent possible failure of crankshaft flange bolts perform following unless already accomplished:

1. (a) Check engine crankshaft flange to transmission drive coupling attachment bolt nuts for 15 ft lb torque measured in tightening direction.

(b) If torque is less than 15 ft lb, inspect engine crankshaft flange and helicopter transmission drive coupling flange for cracks, fretting, galling or any metal transfer from one surface to its mating surface.

(c) Remove from service any crankshaft or coupling with any such defects.

2. Prior to returning engine to service accomplish the following:

(a) Remove and discard all flange bolts, measure all bolt holes in crankshaft flange and repair as necessary per Avco Lycoming SI 1209B.

(b) Install replacement bolts per Avco Lycoming SI 1209B.

(FAA AD 80-04-04R1 refers)

Compliance: 1. (a) At 600 hours TIS and thereafter at intervals not exceeding 600 hours TIS until 2(a) and 2(b) accomplished.

Engines with 550 hours or more TIS since new or overhaul shall be initially inspected within next 50 hours TIS

Effective Date: 15 August 1980

DCA/LYC/196A Piston Pin Plug Wear – Inspection

Applicability: All Lycoming engines fitted with piston pin end plugs P/N 60828 or LW-11775.

Note 1: This AD revised to clarify the applicability and the compliance.

Note 2: This AD is not applicable to engines fitted with piston pin end plugs P/N 72198. Engines manufactured, overhauled or rebuilt by Lycoming after February 1999 are fitted with piston pin end plugs P/N 72198.

Requirement: To prevent abnormal wear of piston pin plugs which could result in engine failure, inspect the oil screen, the oil filter element, the oil suction screen and the oil from the filters as applicable per Lycoming SI 1492C of later FAA approved revisions.

If abnormal aluminium or iron content is found accomplish corrective actions per manufacturer instructions before further flight.

(Lycoming Service Instructions 1267C and 1492C refer)

Compliance: <u>For all remanufacturered and overhauled engines fitted with affected piston pin end plugs</u>:

Within the first 10 hours TIS and the next 25 hours TIS, and thereafter at intervals not to exceed 50 hours TIS.

<u>For all other engines in service fitted with affected piston pin end plugs</u>:

At the next oil/oil filter change or before 50 hours TIS whichever is the sooner, and thereafter at intervals not to exceed 50 hours TIS.

Effective Date: DCA/LYC/196 - 28 January 1999
DCA/LYC/196A - 25 June 2009

DCA/LYC/223A FAA AD 2012-03-07 Carburettors – Inspection and Replacement

Applicability: All Lycoming reciprocating engines fitted with model HA-6 carburettors P/N 10-5219-XX, 10-5224-XX, 10-5230-XX, 10-5235-XX, 10-5253-XX, 10-5255-XX, 10-5283-XX, 10-6001-XX, 10-6019-XX and 10-6030-XX including all dash numbers.

Note: DCA/LYC/223A revised to clarify the applicability with no change to the AD requirement. Affected carburettors have a ‘machined-from-billet' body.

Requirement: To prevent the mixture control sleeve from rotating in the carburetor body which could result in fuel restriction and a loss of engine power, accomplish the inspections and corrective actions specified in FAA AD 2012-03-07.

(FAA AD 2012-03-07 refers)

Compliance: Within the next 50 hours TIS from 29 March 2012 (the effecitve date of DCA/LYC/223), unless previously accomplished.

Effective Date: DCA/LYC/223 - 29 March 2012
DCA/LYC/223A - 31 May 2012

The State of Design ADs listed below are available directly from the National Airworthiness Authority (NAA) websites. Links to NAA websites are available on the CAA website at Links to state of design airworthiness directives | aviation.govt.nz
If additional NZ ADs need to be issued when an unsafe condition is found to exist in an aircraft or aeronautical product in NZ, they will be added to the list below.

DCA/LYC/224A Lycoming Parallel Valve Cylinder and Head Assemblies – Inspection

Applicability: All Lycoming engines fitted with parallel valve cylinder and head assemblies listed in Table 1 of Lycoming Mandatory Service Bulletin (MSB) 634, dated 11 October 2018, or later FAA approved revision.

Note: DCA/LYC/224A revised to introduce a repetitive inspection requirement for affected parallel valve cylinder and head assemblies, until replacement per requirement 2 of this AD. Affected cylinder and head assemblies were supplied in cylinder kits and installed on all parallel valve engines (except O-235 model engines), that were supplied by Lycoming Engines between 1 September 2013 and 30 April 2015. To identify affected cylinder and head assemblies refer to Lycoming MSB 634.

Requirement: To prevent loss of engine power due to a cracked cylinder assembly, accomplish the following:

1. Inspection:
   Inspect affected parallel valve cylinder and head assemblies for visible discolouration/residue on the cylinder fins. If residue is found on the cylinder fins, then the cylinder may be cracked and further investigation is required.
   Accomplish a compression test on affected cylinders (refer to Lycoming Service Instruction 1191A). If the compression value does not meet OEM requirements, then the cylinder may be cracked and further investigation is required. Any loss of compression may be due to a cracked cylinder assembly.
   If a whistling sound is evident while accomplishing the compression test, then the cylinder may be cracked and further investigation is required.
   If a cracked cylinder assembly is found, then replace all affected parallel valve cylinder and head assemblies fitted on the engine, before further flight.
2. Replacement:
   Remove and replace all parallel valve cylinder and head assemblies listed in Table 1 of MSB 634, dated 11 October 2018, or later FAA approved revision.

   Affected parallel valve cylinder and head assembly listed in Table 1 of MSB 634 shall not be overhauled, refurbished, or repaired and returned to service.

   From the effective date of this AD, an affected parallel valve cylinder and head assembly listed in Table 1 of MSB 634, shall not be installed on any engine.

Compliance:

1. Inspection:

   Within the next 50 hours TIS and thereafter at intervals not to exceed 50 hours TIS until requirement 2 of this AD is accomplished.

2. Replacement:

   Replace all affected cylinder and head assemblies at the next engine overhaul.

Effective Date: DCA/LYC/224 - 25 October 2018
DCA/LYC/224A - 28 February 2019

*** 2024-21-02 Connecting Rod Assemblies - Inspection**

Applicability: Lycoming engines that are fitted with an affected part and P/N, and were assembled within the ship date range specified in Table 1 to paragraph (c) of FAA AD 2024-21-02.

Note: Affected P/N parts are known to be installed on Lycoming AEIO-320 series, AEIO-360 series, AEIO-390 series, AEIO-540 series, AEIO-580-B1A, AIO-320 series, AIO-360 series, HIO-360 series, HIO-390-A1A, HIO-540-A1A, HO-360 series, IO-320 series, IO-360 series, IO-390 series, IO-540 series, IVO-360-A1A, IVO-540-A1A, LHIO-360 series, LIO-320 series, LIO-360 series, LO-360 series, LTIO-540 series, LTO-360 series, O-233-A1, O-235 series, O-320 series, O-340 series, O-360 series, O-435 series, O-540 series, SO-580 series, TEO-540 series, TIGO-541 series, TIO-360 series, TIO-540 series, TIO-541 series, TIVO-540-A2A, TO-360 series, TVO-435 series, TVO-540-A1A, VO-360 series, VO-435 series, VO-540 series, and VSO-580-A1A engines.

Effective Date: 5 December 2024