

Airworthiness Directive Schedule

Lycoming IGSO-540 Series Engines

28 February 2019

- Notes:**
1. This AD schedule is applicable to Lycoming **IGSO-540** series engines manufactured under FAA Type Certificate Number **1E7**.
 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 http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAD.nsf/MainFrame?OpenFrameSet
 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 *
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	From 1 October 2012 the Civil Aviation Authority of New Zealand (CAA) will no longer rewrite the text of State of Design ADs. Applicable State of Design ADs will be listed below and can be obtained directly from the National Airworthiness Authority (NAA) website. The link to the FAA website is available on the CAA website at http://www.caa.govt.nz/airworthiness-directives/states-of-design/ 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.	7
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DCA/LYC/128 Centre Main Bearing Retention - Inspection

- Applicability:** As detailed except those engines affected by DCA/LYC/141
- Requirement:** Accomplish Lycoming SB 327C
- Compliance:**
1. Within the next 10 hours TIS on engines that have accumulated more than 600 hours.
 2. Within the next 50 hours TIS on engines that have accumulated more than 500 hours.
 3. At any time metal contamination is evident in the lubrication suction screens.
 4. The inspections may be discontinued upon compliance with DCA/LYC/131.
- (FAA ADs 71-05-02 and 72-21-06 refer)
- Effective Date:** 31 August 1970

DCA/LYC/131A FAA AD 71-05-02 Crankcase Bearing Dowel Replacement – Modification

- Applicability:** Model IO-360-A, IO-360-C, IO-360-D, AIO-360, HIO-360-C, TIO-360, IGO-540 and IGSO-540 engines listed in Lycoming SB 326A.
- Note 1:** No action required if already in compliance with DCA/LYC/131. This AD revised to include note 2 with no change to the AD requirement or compliance.
- Requirement:** To prevent main bearing failure due to possible bearing movement, modify the crankcase per Lycoming SI No. 1123D or repair the crankcase as described in Lycoming SI No. 1112E whichever is applicable, and install straight crankcase bearing dowels per Lycoming SB No. 326A or accomplish an equivalent approved repair.
- Note 2:** Compliance with earlier or later FAA approved SI and SB revisions is acceptable to meet the requirements of this AD.
(FAA AD 71-05-02 and 72-21-06 refer)
- Compliance:** At next overhaul or at any time the engine is completely disassembled prior to overhaul, unless previously accomplished.
- Effective Date:** DCA/LYC/131 - 30 April 1971
DCA/LYC/131A - 27 November 2008

DCA/LYC/133 Counterweight - Inspection and Replacement

- Applicability:** IGSO-540 engines with P/N 72534 counterweight assemblies
- Requirement:** Accomplish Lycoming SB 333
- Compliance:** Next overhaul
- Effective Date:** 31 March 1972

DCA/LYC/139A FAA AD 74-13-05 Heavy Connecting Rods - Replacement

- Applicability:** Model IGO-540 series engines except model IGO- 540 series engines, S/N 311-49 onward, and
Model IGSO-540 series engines, all S/N,
Except model IGSO-540 series engines, S/N 2558-50 through 2563-50, 2565-50 through 2582-50, 2584-50 through 2589-50, 2591-50 through 2602-50, 2606-50 through 2631-50, 2637-50, 2640-50, 2647-50 through 2652-50, 2657-50 through 2692-50, 2694-50 through 2713-50, 2718-50 through 2727-50, 2730-50 through 2750-50, 2752-50 onward,
Except all model IGO-540 and IGSO-540 series engines overhauled (also known as remanufactured) by Lycoming after 29 October 1970.
- Note 1:** No action required if already in compliance with DCA/LYC/139. This AD revised with SB No. 351 now at revision A and to include note 2 with no change to the AD requirement or compliance.
- Requirement:** To prevent failure of connecting rod assemblies P/N 72606, 73174 and 75548, replace with new connecting rod assembly P/N 77450 or with approved alternate parts.
- Note 2:** Lycoming Lycoming SB No. 351A or later FAA approved revisions pertains to the subject of this AD.
(FAA AD 74-13-05 refers)
- Compliance:** Within the next 50 hours time for engines with more than 400 hours TIS, and within the next 100 hours TIS for engines with less than 400 hours TIS, unless previously accomplished.
- Effective Date:** DCA/LYC/139 - 30 September 1972
DCA/LYC/139A - 27 November 2008

DCA/LYC/140 FAA AD 72-21-06 & 71-05-02 Lubrication System - Inspection

- Applicability:** (a) IGSO-540A series engines except S/N 2537-50 and subsequent; IGSO-540-B series engines except S/N 2541-50 and subsequent; and IGSO-540-A and -B engines S/N 747-50, 844-50, 947-50, 1184-50, 1240-50, 1351-50, 1402-50, 1453-50, 1544-50, 1767-50, 1773-50, 1794-50, 1799-50, 1933-50 overhauled (re-manufactured) by Lycoming after 26 January 1970 and
(b) All IO-360-A & C series engines except S/N 7100-51A and subsequent and all engines overhauled (re-manufactured) by Lycoming after 26 January 1970 except S/N 354-51, 1049-51A, 3003-51A, 3281-51A and 6526-51A.
- Requirement:** The lubrication system is to be inspected for metal contamination. If metal contamination is detected DCA/LYC/141 or 142 must be complied with before further flight.
(FAA AD 72-21-06 & 71-05-02 refer)
- Compliance:** Within the next 10 hours TIS and thereafter at intervals not exceeding 25 hours TIS. The inspection may be discontinued upon compliance with DCA/LYC/142
- Effective Date:** 31 December 1972

DCA/LYC/141 FAA AD 72-21-06 & 71-05-02 Crankcase Bearing - Inspection

Applicability: (a) IGSO-540A series engines except S/N 2537-50 and subsequent; IGSO-540-B series engines except S/N 2541-50 and subsequent; and IGSO-540-A and -B engines S/N 747-50, 844-50, 852-50, 947-50, 1184-50, 1240-50, 1361-50, 1402-50, 1453-50, 1544-50, 1767-50, 1773-50, 1794-50, 1799-50, 1933-50 overhauled (re-manufactured) by Lycoming after 26 January 1970 and

(b) All IO-360-A & C series engines except S/N 7100-51A and subsequent and all engines overhauled (re-manufactured) by Lycoming after 26 January 1970 except S/N 354-51, 1049-51A, 3003-51A, 3281-51A and 6526-51A.

Requirement: The crankcase bearing is to be inspected for shifting as follows:

(a) Engines listed in para (a) above: Remove number four cylinder and examine visually the position of number three main bearing for shifting in accordance with Part II of Avco Lycoming Service Bulletin No. 327C.

(b) Engines listed in para (b) above: Remove number two position cylinder and examine visually the position of the centre main bearing for shifting in accordance with Part II of Avco Lycoming Service Bulletin No. 327C.

If shifting of the bearing is detected comply with DCA/LYC/142 before further flight.
(FAA AD 72-21-06 and 71-05-02 refers)

Compliance: Engines which have accumulated less than 500 hours TIS since new or overhaul: As soon as they accumulate 525 hours TIS.

Effective Date: 31 December 1972

DCA/LYC/142 FAA AD 72-21-06 & 71-05-02 Crankcase and Bearing Dowels - Modification

Applicability: (a) IGSO-540-A series engines except S/N 2537-50 and subsequent; IGSO-540-B series engines except S/N 2541-50 and subsequent; and IGSO-540-A and -B engines S/N 747-50, 844-50, 852-50, 947-50, 1184-50, 1240-50, 1361-50, 1402-50, 1453-50, 1544-50, 1767-50, 1773-50, 1794-50, 1799-50, 1933-50 overhauled (re-manufactured) by Lycoming after 26 January 1970 and

(b) All IO-360-A & C series engines except S/N 7100-31A and subsequent and all engines overhauled (re-manufactured) by Lycoming after 26 January 1970 except S/N 354-51, 1049-51A, 3281-51A and 6526-51A.

Requirement: Modify the crankcase as described in Lycoming Service Instruction No. 1123C or repair the crankcase as described in Lycoming Service Instruction No. 1112E, whichever is applicable, and install straight crankcase bearing dowels per Lycoming Service Bulletin No. 326A or approved equivalent.
(FAA AD's 72-21-06 and 71-05-02 refer)

Compliance: On engines which have accumulated 1200 hours TIS since new or overhaul: within the next 50 hours TIS

Effective Date: 31 December 1972

DCA/LYC/150 FAA AD 73-23-01 Piston Pins - Inspection

Applicability: As detailed

Requirement: Accomplish Lycoming SB 367F.
(FAA AD 73-23-01)

Compliance: Within the next 50 hours TIS

Effective Date: 30 September 1973

DCA/LYC/156 Rotator Type Inlet Valves - Replacement

- Applicability:** HIO-360-O1A and any other engines not specifically listed in Lycoming SI 1280C which have been fitted with rotator type inlet valves
- Requirement:** Some engines have been incorrectly fitted with rotator type inlet valves during overhaul or cylinder replacement. Remove rotator type inlet valves and replace with conventional intake valves P/N 73117.
- Compliance:** Within the next 25 hours TIS
- Effective Date:** 15 May 1975

DCA/LYC/187 FAA AD 92-12-05 Piston Pin - Removal

- Applicability:** Models listed in Textron Lycoming SB 501B
- Requirement:** To prevent piston pin failure, accomplish the following:
1. For engines with S/N's listed in Textron Lycoming SB 501B, remove all piston pins P/N LW-14077 and replace with serviceable parts.
 2. For engines not listed by S/N in SB 501B, determine if piston pin P/N LW-14077 purchased from Textron Lycoming or a Textron Lycoming distributor from 18 June 1991 through 5 August 1991 has been fitted. Remove these pins from service and replace with serviceable parts.
 3. Piston pins P/N LW-14077 purchased from Textron Lycoming or a Textron Lycoming distributor from 18 June 1991 through 5 August 1991 that are not installed in engines are considered unairworthy and shall not be placed in service.
- (FAA AD 92-12-05 refers)
- Compliance:**
1. At 100 hours TTIS or within next 50 hours TIS, whichever is the later.
 2. At 100 hours TTIS or within next 50 hours TIS whichever is the later.
 3. Before installation.
- Effective Date:** 2 October 1992

DCA/LYC/190A FAA AD 97-01-03 Piston Pin - Removal

- Applicability:** Piston Pins P/N LW-14077 that were originally shipped from Textron Lycoming during the time period 15 December 1995 through 17 September 1996.
- These piston pins may have been obtained individually, or be installed in:-
Models and S/Ns of engines listed in Textron Lycoming Service Bulletin 527C.
Overhauled engines and cylinder kits (including Superior Air Parts supplied kits that use P/N LW-14077 piston pins).
- Note 1: Piston pins P/N LW-14077, are not fitted to O-235 series engines.*
- Requirement:** To prevent piston pin failure and engine stoppage, accomplish SB 527C. Piston Pins marked with code 17328 (per SB527B Figure 1) must be removed before further flight.
- (FAA AD 97-01-03 refers)
- Compliance:** Before 50 hours TTIS (piston pins). For piston pins that have already exceeded 50 hours TTIS, before further flight.
- Note 2: The aircraft may be operated to a location where the requirements of this AD can be accomplished.*
- Effective Date:** DCA/LYC/190 16 October 1996
DCA/LYC/190A 6 June 1997

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: For all remanufactured and overhauled engines fitted with affected piston pin end plugs:

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

For all other engines in service fitted with affected piston pin end plugs:

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/222 FAA AD 2012-03-06 AVStar Fuel Servos – Inspection and Replacement

Applicability: All Lycoming fuel injected engines fitted with a AVStar Fuel Systems, Inc. (AFS) fuel servo diaphragm P/N AV2541801 or P/N AV2541803.

Note: This AD supersedes DCA/LYC/219 to expand the applicability to include additional affected engines. Affected fuel servos and fuel servo diaphragms are listed in AFS MSB No. AFS-SB6 revision 2, dated 6 April 2011. This SB remains unchanged since the issue of superseded DCA/LYC/219.

Requirement: To prevent fuel servo failure which could result in loss of engine power and aircraft control, accomplish the following:

1. Review the aircraft records and determine if an AFS fuel servo diaphragm P/N AV2541801 or P/N AV2541803 from an affected production lot listed in AFS MSB No. AFS-SB6 revision 2, dated 6 April 2011 was installed in the fuel servo any time after 20 May 2010.

If the fuel servo is found fitted with an affected diaphragm, replace the fuel servo before further flight

2. Fuel servos with an affected AFS fuel servo diaphragm P/N AV2541801 or P/N AV2541803 from the production lots listed in AFS MSB No. AFS-SB6 revision 2 shall not be fitted to any aircraft.

(FAA AD 2012-03-06 refers)

Compliance: 1. Within the next 5 hours TIS unless previously accomplished.
2. From 24 February 2012.

Effective Date: 24 February 2012

From 1 October 2012 the Civil Aviation Authority of New Zealand (CAA) will no longer rewrite the text of State of Design ADs. Applicable State of Design ADs will be listed below and can be obtained directly from the National Airworthiness Authority (NAA) website. The link to the FAA website is available on the CAA website at <http://www.caa.govt.nz/airworthiness-directives/states-of-design/>. 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