Airworthiness Directive Schedule

Engines

Engines General – Reciprocating Engines

28 June 2018

Notes:

1. This AD schedule is applicable to general equipment, components and parts installed on reciprocating engines. These ADs should be listed in the AD section of the reciprocating engine logbook.

2. This AD schedule includes those National Airworthiness Authority (NAA) ADs applicable to aircraft engines. NAA ADs can be obtained directly from the applicable NAA web site. Links to NAA web sites are available on the CAA web site at http://www.caa.govt.nz/airworthiness-directives/states-of-design/

3. The date above indicates the amendment date of this schedule.

4. 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 you can obtain them directly from the National Airworthiness Authority (NAA) web sites. Links to the NAA web sites are available on the CAA web site 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. ................................................................. 8

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DCA/ENG/1  Oil Filter - Replacement

Applicability: Champion oil filters P/N CH48108 and CH48109 approved for installation in, but not limited to, Beech V35, V35B, A36, 58 series aircraft and Cessna R172K, 340, 401, 402 series aircraft

Requirement: To preclude possible oil filter malfunction remove from service all P/N CH48108 filters with date code 1A7E and 2A7C, and all P/N CH48109 filters with date code 1A7G and 1A7I. Filters with "Insp OK 507A" stamped adjacent to manufacturing date code are not affected

Compliance: Within the next 50 hours TIS

Effective Date: 30 September 1977

DCA/ENG/2  Hoses - Inspection

Applicability: All Aircraft Metal Products Corporation oil and fuel system hoses P/N 762506 known to be installed on, but not limited to, certain Piper model PA-28 and PA-32 aircraft

Requirement: To prevent possible fire or explosion in engine compartment or engine failure due to loss of engine oil, accomplish the following:

1. Inspect hoses for fluid leakage, excessive abrasion or excessive length. Renew any hose found leaking, worn, or which is too long.
2. Loosen each coupling fitting and check for hose movement in direction of fitting. Renew any hose found with evidence of pre-existing twist.
3. Retighten each coupling fitting, gripping collar just behind fitting with pliers with just enough force to prevent hose from turning with fitting. If hose turns, loosen and repeat retightening procedure.
4. Inspect installation for adequate clearance between hose and other parts of aircraft. If contact found, complete insulation must be provided by use of AN742 cushion clamps and/or koroseal lacing, or other equivalent means.

(FAA AD 79-26-05 refers)

Compliance: Within the next 50 hours TIS

Effective Date: 8 February 1980

DCA/ENG/3  Turbocharger Installations - Inspection

Applicability: Roto-Master Inc (Rajay Industries Inc) Rajay model 325E10 and 3AT6EE10J2 turbochargers installed on but not limited to: Continental engine models TSIO-360, O-470, IO-470, IO-520, TIO-520; Lycoming engine models O-320, IO-320, LIO-320, O-360, IO-360, TO-360, O-540, IO-540, TIO-540. These engines are installed on but not limited to: Piper PA-28R-201T, PA-28-RT-201T, PA-28-201T series; PA-34-200, PA-34-200T series; PA-30 and PA-39 series; Mooney M20 A through K series; Lake LA-4, LA-4A and LA-4-200 series

Requirement: To preclude possibility of fire in power plant nacelle and/or heat damage to power plant installation caused by exhaust gases escaping through a cracked turbocharger turbine housing, inspect per FAA AD 82-27-03. Renew defective parts as prescribed

Compliance: Within the next 50 hours TIS and thereafter at intervals not exceeding 200 hours TIS until turbine housing Roto-Master P/N 600510-04 (TCM P/N 643931) installed

Effective Date: 28 January 1983
DCA/ENG/4A  Bracket Air Filters - Inspection and Replacement

Applicability  The following Bracket air filter assemblies that utilise a neoprene gasket. Air filter assemblies; BA-2010, BA-4106, BA-4106-1, BA-4210, BA-5110, BA-5110A, BA-6110, BA-8910, AAF-117 and AAF-118. These air filters could be installed as original equipment or in accordance with STC SA71GL or STC SA693CE.

Requirement:  To prevent gasket particles from entering the carburettor because of air filter gasket failure, accomplish the following:

1.  Visually inspect the inside and outside of the air filter frame for gasket looseness, movement, or deterioration in accordance with Bracket Air Filter Document I-194, dated March 16, 1994.  If any gasket is found to be damaged, prior to further flight, replace the air filter assembly with one having a retaining lip per the applicable Brackett Installation Instruction Sheet listed.

Air Filter Assembly  Replace with Assembly  Instruction Sheet
BA-2010          BA-2010 Revision A                     BA-2004, dated 6/6/95
BA-4106          BA-4106 Revision D                     BA-4105, dated 6/15/95
BA-4106-1        BA-4106-1 Revision A                  RM-1, dated 7/6/95
BA-4210          BA-4210 Revision B                     BA-4205, dated 6/14/95
BA-5110          BA-5110 Revision H                     BA-5105, dated 5/8/95
BA-5110A         BA-5110A Revision D                    BA-5111, dated 5/8/95
BA-6110          BA-6110 Revision C                     BA-6105, dated 6/5/95
BA-8910          BA-8910 Revision B                     BA-8910-3, dated 6/6/95
AAF-117          BA-4106 Revision D                     BA-4105, dated 6/15/95
AAF-118          BA-5110 Revision H                     BA-5105, dated 5/8/95

2.  Replace the air filter assembly with one having a retaining lip per the applicable Brackett Installation Instruction Sheet listed.

(FAA AD 96-09-06 refers)

Compliance:  1.  Within next 100 hours TIS and thereafter at intervals not to exceed 100 hours TIS until replaced per part 2 of this airworthiness directive.

2.  Within next 500 hours TIS.

Effective Date:  DCA/ENG/4  14 April 1995
               DCA/ENG/4A  5 July 1996

DCA/ENG/5  Tornado Alley Turbo System Exhaust Clamp - Replacement


Requirement:  To prevent the tailpipe from detaching from the turbocharger due to failure of the V-band exhaust clamp, the release of high temperature gases inside the engine compartment and possible engine compartment fire, accomplish the following:-

Replace the V-band exhaust clamp, Aeroquip P/N 4404C375-M per the Turbo-Flite 520/550 System Maintenance and Troubleshooting manual. Tornado Alley Turbo Mandatory SB TAT 98-1 also references these procedures.

(FAA AD 2001-08-08 refers)

Compliance:  At 400 hours TIS after incorporating STC SA5223NM and STC SE5222NM or within the next 25 hours TIS, whichever occurs later, and thereafter at intervals not to exceed 400 hours TIS.

Effective Date:  31 May 2001
Bracket Single Screen Air Filters - Inspection and Modification

Applicability: Brackett single screen air filter assemblies, P/N BA-2410, that are installed on, but not limited to, the following aircraft:

- Cessna Model
  - TP206A, TP206B, TP206C, TP206D, and TP206E,
  - 210 All S/Ns equipped with air conditioning.
- T207A,

Requirement: To detect and correct incorrect installation of the air filter, which could result in failure of the air filter, engine/turbocharger ingestion of the air filter foam element and possible engine failure, accomplish the following:

1. Visually or by touch, check the single screen Brackett air filter assembly P/N BA-2410 to ensure that it is installed with the screen on the down-stream side of the filter assembly as follows:
   a) Remove both upper engine cowlings. Open the alternate air access door located on the right side of the engine compartment by applying pressure.
   b) While viewing through the alternate air access door, use an inspection mirror and light to check that the screen is installed on the down stream side of the filter assembly; OR
   c) Partially insert a hand into the open alternate air access door and touch the back of the filter element, feeling for the presence of the screen or absence of the screen. If the screen is not present on the down stream side of the filter, fit additional screen P/N 2404-00 or alternate approved filter assembly before further flight.

2. Ensure that the BA-2410 air filter assembly has screens on both sides. Install an additional screen P/N 2404-00 on the BA-2410 air filter assembly if it is not already equipped with screens on both sides. Alternatively, replace the single screen Brackett air filter assembly, P/N A-2410, with an alternate approved filter that is not Brackett P/N BA-2410.

3. Do not install, any single screen Brackett air filter assembly, P/N BA-2410. (FAA AD 2002-26-03 refers)

Compliance: 1. Within next 50 hours TIS.
2. Within next 100 hours TIS.
3. From 25 March 2004

Effective Date: 25 March 2004

B.C. Aero Engines - Non-Conformance of Maintenance.

Applicability: All Textron Lycoming and Teledyne Continental Motors reciprocating engines that have been overhauled, repaired or disassembled between 1 February 2002 and 18 July 2004, to the extent where the main crankcase halves have been split, by B.C. Aero Engines Ltd., an approved maintenance organization (AMO) 84-02, of 5-9566 Hurricane Road, Sidney, British Columbia, Canada.
Requirement: Investigations carried out by Transport Canada have determined certain Textron Lycoming and Teledyne Continental Motors reciprocating engines that have been overhauled, repaired or disassembled by B.C. Aero Engines Ltd. are not in conformance with the manufacturer’s overhaul data and have serious quality issues that may result in an unsafe situation. Transport Canada cancelled B.C. Aero Engines’ AMO (84-02) on 18 July 2004. To correct the above situation which may result in an in-flight engine failure, accomplish the following.

1. Engine Log Book Review. Review the Technical Records including the engine logbook to determine if the engine had been inspected, repaired or disassembled to the extent the crankcase halves were split, or if the engine had been overhauled by B.C. Aero Engines Ltd. between 1 February 2002 and 18 July 2004. If no engine inspection, repair or disassembly to the extent the crankcase halves were split, or no engine overhaul work was performed by B.C. Aero Engines Ltd., no further action is required by this directive.

2. Inspect the affected engine for evidence of non-conformity, including the excessive use of crankcase split-line sealant to that recommended by the applicable overhaul manual, crankcase split-line fretting, excessive split-line oil leaks, loss of crankcase through-bolt torque and unapproved repairs. If necessary, restore the engine’s conformity.

(Transport Canada AD CF-2005-40 refers)


2. For Single Engine-Powered Aircraft: Within the next 50 hours TIS, or by 23 August 2006, whichever occurs sooner.

For Twin Engine-Powered Aircraft: Within the next 100 hours TIS, or by 23 February 2007, whichever occurs sooner.

If the engine exhibits in-service difficulties (such as oil leaks or oil filter contamination), then inspect within 5 hours TIS or by 23 March 2006, whichever occurs sooner.

Effective Date: 23 February 2006

DCA/ENG/8 Kelly Turbochargers – Replacement


These rebuilt turbochargers are installed on, but not limited to, the engines and aircraft listed in table IV of Kelly Aerospace Energy Systems, LLC SB No. 039 A, dated 10 February 2010.

Note: Turbocharger P/N with an asterisk may have a CF prefix.

Requirement: To prevent failure of the turbocharger turbine which could result in partial or complete loss of engine power, loss of engine oil and smoke in the aircraft cabin, accomplish the following:

1. Remove affected turbochargers and replace with a new or overhauled turbocharger per SB No. 039 A before further flight.
2. Affected turbochargers shall not be fitted to any engine unless the turbocharger is overhauled by an approved maintenance organisation. The overhaul must include the replacement of the turbine wheels with P/N listed in table II of SB No. 039 A and the replacement of the turbine wheel mating bushings, and the attached Return to Service Tag marked with this AD number.

(FAA AD 2010-07-08 refers)

Compliance:
1. Within the next 10 hours TIS.
2. From 19 April 2010.

Effective Date: 19 April 2010

DCA/ENG/9 Hartzell Turbochargers – Inspection and Rework

Applicability: Lycoming and TCM turbocharged reciprocating engines listed in, but not limited to table 1 of this AD,
Fitted with Hartzell Engine Technologies, LLC (HET) turbocharger models TA3601, TAO401, TAO402, TAO411, TAO413, T1879, T18A21, T18A44, THO867 and TEO659 which were manufactured (known as the -0000 series) before S/N H-NJL00003, or rebuilt (known as the -9000 series) before S/N H-NJR00002, and
With a P/N listed in table 2 or table 3 of this AD, and
With a “slanted A” foundry mark located on the Center Housing and Rotating Assembly (CHRA).

Table 1 – Lycoming and TCM Engines Affected

<table>
<thead>
<tr>
<th>TSIO-520-BE</th>
<th>TSIO-360-H</th>
<th>TIO-540-AF1A</th>
<th>TIGO-541-E</th>
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<td>TSIO-360-MB, SB</td>
<td>O-540-L3C5D</td>
<td>TIO-540-AF1B</td>
<td>GTSIO-520-F</td>
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<tr>
<td>TIO-540-AK1A</td>
<td>TSIO-520-T</td>
<td>TIO-540-AH1A</td>
<td>GTSIO-520-K</td>
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<tr>
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<td>L/TO-360-E1A6D</td>
<td>TIO-541-E1D4</td>
<td>GTSIO-520-D</td>
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<td>TIO-540-AG1A</td>
<td>TIO-541-E1C4</td>
<td>GTSIO-520-H</td>
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Table 2 – KAES Turbocharger P/N Affected

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Table 3 – Original Equipment Turbocharger P/N Affected

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</table>

**Note 1:**
This AD is not applicable to turbochargers with more than 50 hours TIS on the effective date of this AD, or turbochargers with a circled "JT" foundry mark on the CHRA, or engines with new or overhauled turbochargers installed on or before September 2001.

**Requirement:**
To prevent the turbocharger turbine seizing which could result in damage to the engine and smoke in the aircraft cabin, accomplish the following:

1. Review the aircraft records or inspect the aircraft and determine if an affected turbocharger is fitted. If an affected turbocharger is found fitted, accomplish requirement 2 of this AD at the applicable compliance threshold.

2. Disassemble the turbocharger and clean the CHRA center housing cavity per the instructions in paragraphs 1 through 10 of Hartzell Engine Technologies, LLC SB No. 040, revision A, dated 22 December 2010.

**Note 2:**
The reference to step 16 in paragraph 10 in SB No. 040 is incorrect. The correct reference is step 9.

(FAA AD 2011-13-03 refers)

**Compliance:**
1. Before further flight.

2. For affected turbochargers including overhauled turbochargers with up to 10 hours TIS:

   Before further flight unless previously accomplished.

For affected turbochargers including overhauled turbochargers with more than 10 hours TIS but less than 50 hours TIS:

   Within the next 10 hours TIS unless previously accomplished.

For affected turbochargers with more than 50 hours TIS:

   No further AD action required.

**Effective Date:**
16 July 2011
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 you can obtain them directly from the National Airworthiness Authority (NAA) web sites. Links to the NAA web sites are available on the CAA web site 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.

FAA AD 2018-02-04   Mufflers - Inspection

Applicability: The following Aerospace Welding Minneapolis, Inc. (AWI) mufflers:

P/N A1754001-23, S/N 33553 through to 33557; 34721 through to 34728; 35322 through to 35329; 35670; 38481 through to 38485; 38584 through to 38586; and 38723 through to 38727.

P/N A1754001-25, S/N 32795 through to 32800; 33558 through to 33569; 33779 through to 33790; 34636 through to 34653; 34968 through to 34984; 35159 through to 35176; 37903 through to 37906; 38174 through to 38193; 38502 through to 38506; 38566 through to 38575; and 38817 through to 38836.

These mufflers are known to be installed on but not limited to the aircraft listed in figure 2 of paragraph (c) in FAA AD 2018-02-04.

Effective Date: 21 February 2018