## **Airworthiness Directive Schedule**

# **Engines**

Continental C-90 Series and O-200 Series

**Rolls-Royce C-90 Series** 

28 May 2020

#### Notes:

1. This AD schedule is applicable to the following Continental engine series, including those Continental engine series manufactured under license by Rolls-Royce:

Engine Series:	FAA Type Certificate:
C-90 Series	E-252
RR C-90 Series	E3IN
O-200 Series	E-252

 The Federal Aviation Administration (FAA) is the National Airworthiness Authority (NAA) responsible for the issue of State of Design Airworthiness Directives (ADs) for these engines. State of Design ADs can be obtained directly from the FAA website at

http://rgl.faa.gov/Regulatory\_and\_Guidance\_Library/rgAD.nsf/MainFrame?OpenFrameSet

- 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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#### DCA/CON/122 Cluster Gear Teeth - Modification

**Applicability:** O-200-A engines manufactured by Rolls Royce.

**Background:** Six cases have been reported of chipping of the cluster gear teeth on the subject

engines. The gear P/N 35016 engages the Delco-Remy starter pinion. Until replacement gears are fitted, all old type Rolls Royce gears are to be inspected for

chipping of teeth.

**Requirement:** Inspection - Each periodic inspection until gears replaced.

Replacement - Continental gears or modified Rolls Royce gears are to be fitted not

later than next overhaul.

Compliance: By 30 November 1966

## DCA/CON/126 Cylinder Assemblies P/N A50222 - Inspection

**Applicability:** O-200, C-90, and O-300 series engines.

**Background:** Several cases have been reported where cylinder assemblies P/N A50222 have

cracked in the vicinity of the junction of the barrel and cylinder head.

Requirement: All cylinder assemblies are to be inspected at the junction of the aluminium head and

steel barrel for oil leaks and/or combustion product stains. For this inspection it may be necessary to remove engine cowling or access doors to permit visual examination with mirrors or other visual aids of the prescribed area of the cylinder. If the engine is clean and free of oil in the area to be inspected, the inspection may be performed without further cleaning of the engine. If oil leakage from an unknown source has caused a generally oily condition, the engine should be washed down and run up to normal operating conditions prior to the inspection. During the inspection it may also be helpful to rotate the propeller to detect significant differences in compression between cylinders, or audible compression leakage through a crack in the cylinder

barrel.

The inspection detailed above is to be made every periodic and maintenance release inspection of the engine, and defective cylinders replaced by serviceable cylinders

before further operation.

**Compliance:** Every periodic inspection.

Effective Date: 30 November 1968

## DCA/CON/144 Oil Pump Drive Gears - Inspection and Replacement

Applicability: All C-90, O-200 and O-300 series engines fitted with a Rolls Royce manufactured oil

pump drive gears with P/N 22354/RR or P/N 23403/RR.

Note: Affected engines may include model RR C90, except S/N 11R021 and subsequent;

model RR O-200 engines, except S/N 23R590 through to 23R600 and 23R638 and subsequent and model RR O-300 engines, except S/N 31R162 and subsequent.

**Requirement:** Rolls Royce SB T-200 dated 26 November 1971, or a FAA approved equivalent.

Compliance: 1. Inspect within the next 50 hours TIS, unless already accomplished and thereafter

as detailed in SB T-200.

2. Replace with improved gears at next overhaul.

(FAA AD 72-25-02 refers)

Effective Date: 31 October 1975

#### DCA/CON/154 Fuel Pump - Inspection

All A-65, A-75, C-75, C-85, C-90, A-100, C-125, O-200, O-240 and O-300 engines Applicability:

with AC fuel pumps P/N 40585, 50695 and 631391.

Inspect and renew parts as necessary per TCM SB M81-8. Requirement:

(FAA AD 81-07-06 refers)

Within the next 50 hours TIS or 30 days whichever is the sooner and thereafter at Compliance:

intervals not exceeding 12 months.

7 August 1981 **Effective Date:** 

#### DCA/CON/163 Valve Retainer Key Installation - Inspection

Continental O-200, O-300, IO/TSIO/LTSIO-360, O/IO/TSIO-470, Applicability:

> IO/TSIO/LTSIO/GTSIO-520, and IO/TSIO/TSIOL-550 series engines listed by S/N in TCM Mandatory Service Bulletin (MSB) 93-12 that have less than 25 hours TIS.

> Also engines that contain cylinder assemblies purchased from TCM between 29 July 1992 and 30 March 1993 and have less than 25 hours TIS since cylinder installation.

Affected cylinders are installed on but not limited to: Aeronca Models 15AC and S15AC; American Champion (Bellanca) Models 7ACA and 402; Beagle Model 206S; Beech Models Debonaire, Bonanza, and Baron; Bellanca Models 14-19, 14-19-2, 14-19-3, 14-19-3A, 17-30, 17-31, and 17-31TC; Cessna Models 150, 170, 172, 180, 182, 185, 188, 205, 206, 207, 210, 303, 310, 320, 335, 336, 337, 340, 401, 402, 404, 414, 421, and T41; Aero Commander Models 200, 500, and 685; Champion Models Citabria and Lancer; Maule Models Bee Dee M-4, M-4, M-4C, M-4S, M-4T, M-4-210, M-4-210C, M-4-210S, M-4-210T, and M-5-210C; Mooney Models 231 and 252; Navion series; Piper Models Arrow, Seneca, and PA46-310P; and Taylorcraft Model F-19 aircraft.

Requirement:

To prevent engine failure due to a missing cylinder valve retainer key accomplish the

following:-

Visually inspect each cylinder per TCM MSB 93-12. If a valve retainer is missing, or if a rotocoil, if applicable, is improperly installed, repair or replace the cylinder per the

applicable TCM overhaul manual before further flight.

(FAA AD 93-10-02 refers)

Compliance: Before further flight.

28 May 1993 **Effective Date:** 

### DCA/CON/164 Incorrect Connecting Rods - Removal from Service

New or factory overhauled O-200A, O-300A, O-300C, and O-300D engines with S/Ns Applicability:

listed in FAA AD 93-11-03, that have completed less than 100 hours since new or

overhaul.

To prevent engine failure due to incorrect connecting rod installation, inspect and Requirement:

rectify as necessary per FAA AD 93-11-03.

Compliance: Within next 5 hours TIS.

**Effective Date:** 9 July 1993

#### DCA/CON/167 Carburettor Air Intake Housing Assembly - Inspection

Applicability: Model O-200A, S/N 256030 through to 256037 and models C85, C90, O-200 and O-

240 series with carburettor air intake housing assemblies P/Ns CE11141, CE11142, 639814, 639815, 6413534 and repair kit assemblies P/N 641689 purchased after 31 August 1991 without a permanent ink stamp "CSB 93-13" located on the inside of the

housing assembly.

**Requirement:** To prevent engine failure due to a cracked air valve in the carburettor air intake

housing assembly, inspect housing assembly per TCM Critical Service Bulletin (CSB) 93-13. If the assembly meets the requirements of paragraph 2A of TCM CSB93-13, no further action is required. If the assembly meets the requirements of paragraph 2B of CSB 93-13, inspect the assembly for cracks per CSB 93-13. If cracks are found anywhere in the assembly, prior to further flight replace with a serviceable assembly.

(FAA AD 93-22-05 refers)

**Compliance:** Within the next 25 hours TIS.

For those assemblies that meet the requirements of paragraph 2B of CSB 93-13,

thereafter at intervals not to exceed 25 hours TIS.

Effective Date: 24 December 1993

## DCA/CON/172 Magneto Timing - Procedures

Applicability: Teledyne Continental Motors and Rolls-Royce models O-200A, O-200B and O-200C

**Requirement:** To prevent possible cylinder cracking and loss of engine power, accomplish the

following:-

For engines that have one or more cylinders with P/N lower than 641917, reset the engine timing to 24° ±1° before top centre (BTC) on both magnetos per Teledyne Continental Motors SB 94-8. Restamp the engine data plate to indicate magneto timing of 24° BTC.

For engines that have all four cylinders with P/N 641917 or higher, the engine timing may be reset to 28° ±1° BTC on both magnetos per Teledyne Continental Motors SB 94-8. If timing is reset to 28° ±1° BTC restamp the engine data plate to indicate magneto timing of 28° BTC. Subsequent installation of cylinders must be of P/N 641917 or higher to retain the 28° BTC timing.

(FAA AD 96-12-06 refers)

Compliance: Within next 50 hours TIS

Effective Date: 2 August 1996

#### DCA/CON/174 Oil Filter Adapter Assemblies - Inspection

## **Applicability:** Cessna engine oil filter adapter assemblies, P/N 0450404-(all dash numbers),

0556004-(all dash numbers), 0556010-(all dash numbers), 0756023-(all dash numbers), 0756024-(all dash numbers), 1250403-(all dash numbers), 1250417 -(all dash numbers), 1250418-(all dash numbers), 1250921-(all dash numbers) and

1250922-(all dash numbers).

These may be installed on, but not limited to the following Teledyne Continental Motors series engines:

O-200, O-470, IO-470, TSIO-470, O-520, IO-520, TSIO-520, GTSIO-520, IO-550 and TSIO-550.

This airworthiness directive does not apply to engine oil filter adapter assemblies manufactured by Teledyne Continental Motors.

## Requirement:

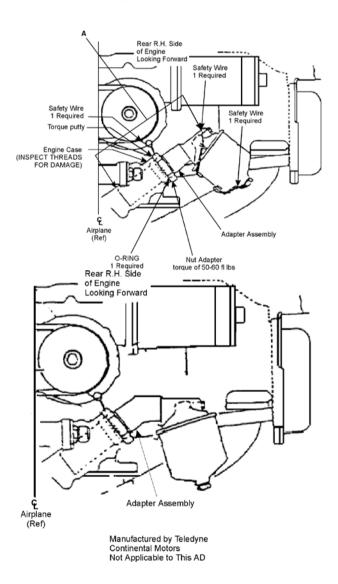
To prevent loss of engine oil caused by loose or separated oil filter adapters, which could result in engine stoppage, accomplish the following:-

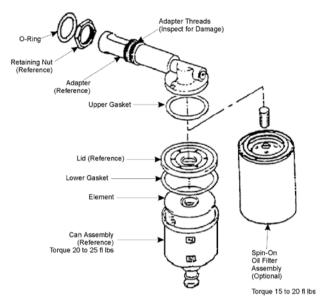
- 1. For oil filter adapter assemblies that do not have torque putty between the engine filter adapter assembly, nut, and oil pump housing, accomplish the following:
- (a) Inspect the adapter locking nut installation for evidence of oil leakage.
- (b) Check the torque of the adapter nut installation and ensure that the torque value is within the limits of 50 through 60 foot pounds.
- (c) If evidence of oil leakage is found or the torque is not within the 50 through 60 foot pound limit, prior to further flight, remove the adapter and filter assembly, and:

- (i) Inspect the threads of the adapter assembly and engine for signs of damaged or cracked threads; and
- (ii) Replace any adapter assembly and engine oil pump housing (if necessary) that have evidence of thread damage or cracks.
- (d) Apply torque putty between the engine filter adapter assembly, nut, and oil pump housing as specified in the diagram.
- (e) Reassemble the engine oil filter assembly.
- 2. For oil filter adapter assemblies that do have torque putty between the engine filter adapter assembly, nut, and oil pump housing, inspect the torque putty for misalignment, evidence of oil leakage, or cracks.

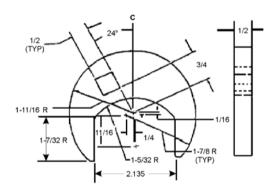
If any misalignment, evidence of oil leakage, or torque putty cracks are found, prior to further flight, accomplish the requirements specified in paragraph (1) of this AD, including all subparagraphs.

Note: Replacing the engine oil filter adapter assembly does not eliminate the repetitive inspection requirement of this AD. (FAA AD 96-12-22 refers)





DETAIL A



ALL DIMENSIONS ARE INCHES

MATERIAL: 4130 (Rc. 35-38)

TOOL NUMBER SE709 IS AVAILABLE FROM THE CESSNA SERVICE PARTS CENTER

Snap-On crows foot P/N AN8508-34A have ground down the ends for clearance

Compliance: Comply with requirement 1 within the next 100 hours TIS or when the engine oil filter

is removed, whichever occurs first. Thereafter accomplish requirement 2 every time

the oil filter is removed.

Effective Date: 2 August 1996

#### DCA/CON/176A Cancelled - Refer to Continental Motors Publication M-O

Note: DCA/CON/176A mandated the part replacement requirements in Teledyne

Continental SB97-6B. The AD and the SB identified certain parts to be replaced at the next and each subsequent engine overhaul. Continental Motors advised that SB97-6B is no longer active. The requirements in SB97-6B have now been incorporated into the Continental Aircraft Engine Maintenance Manual - Standard Practice for Spark

Ignited Engines, Publication M-O.

Effective Date: 27 June 2019

Applicability:

## DCA/CON/179 Repaired Crankshafts - Inspection

Models A-65, A65-3, A65-8, A75, A75-8, C75-12, C85, C85-8, C85-12, C90-8FJ, C90-12, O-200, O-200-A, O-300, O-300-D, IO-360-C, E-185-4, E-225-8, O-470, O-470-K, O-470-L, O-470-R, O-470-11, IO-470, IO-470-N, IO-470-S, IO-520, IO-520-D, GTSIO-520, and TSIO-520-VB reciprocating engines, with installed crankshafts repaired by Nelson Balancing Service, Bedford, Massachusetts, USA, Repair Station Certificate No. NB7R820J, between February 1, 1995, and December 31, 1997, inclusive, as

listed (by work order (W/O)) in Table 1 of this AD.

( - )	(		
Table 1			
MODEL	W/O	DATE	ENGINE S/N
A-65	1152	1/25/96	
A-65	1154	2/7/96	7187
A-65	1183	2/22/96	
A-65	1185	3/28/96	
A-65	1233	6/23/96	
A-65	1290	10/29/96	
A-65	1296	11/14/96	4933868
A-65	1299	11/19/96	
A-65	1325	3/26/97	
A-65	1326	3/26/97	
A-65	1376	4/29/97	
A-65	1438	6/17/97	5890178
A-65-3	1243	8/13/96	324993
A-65-8	1541	12/2/97	
A-65-8	1276	10/5/96	5762568
A75	1156	2/7/96	5321868
A75	1255	9/3/96	
A75	1256	9/4/96	
A75-8	1275	10/5/96	5162868
C75-12F	1293	11/4/96	3316-6-12
C85	1088	10/4/95	
C85	1092	10/18/95	
C-85	1198	4/17/96	29652-7-8
C-85	1297	11/14/96	
C-85	1352	3/10/97	
C-85	1381	4/28/97	
C-85	1391	4/19/97	
C-85	1392	4/19/97	00.40= 0.40
C-85	1484	9/4/97	28487-6-12
C-85-8FJ	1139	1/17/96	29845-7-8
C-85-8FJ	1420	5/12/97	29465-7-8
C-85-12	1031	4/6/95	04500 0 40
C85-12	1182	3/18/96	21596-6-12
C-85-12	1217	5/15/96	1.4657
C85-12	1265	9/12/96	14657
C-85-12	1298	11/14/96	23610-6-12
C-90-8F	1471	9/6/97	42838-1-8

C-90-12 E-185-4 E-225-8 GTSIO-520 IO-360-C IO-470 IO-470-N IO-470-S IO-520 IO-520-D O-200 O-200	1279 1124 1505 1208 1126 1028 1421 1331 1174 1167 1033 1043	10/7/96 1/16/96 10/28/97 5/7/96 12/28/95 3/23/95 5/13/97 3/11/97 3/4/96 2/22/96 4/18/95 5/12/95 6/2/95	44747-6-12 25700D-1-9 35477-D-9-8-P 210114-70H F-51439-9-C 87329-R 95271-1-N 102412-2-S-I
O-200 O-200 O-200 O-200	1076 1104 1131	9/11/95 11/21/95 1/5/96	214668-27A 213830-71A
O-200 O-200 O-200 O-200 O-200 O-200 O-200 O-200 O-200 O-200	1142 1147 1190 1193 1195 1197 1213 1261 1303	1/18/96 1/23/96 4/13/96 4/13/96 4/13/96 4/17/96 5/13/96 9/9/96 12/5/96	265349-R
O-200	1321	2/7/97	28115
O-200	1324	2/6/97	
O-200	1344	3/2/97	
O-200	1393	5/5/97	
O-200	1413	5/7/97	61001-5-4
O-200	1430	5/23/97	
O-200	1437	6/17/97	255759A-48
O-200	1488	9/7/97	
O-200	1506	11/18/97	
O-200	1522	11/11/97	
O-200-A	1052	6/21/95	254150-A-48
O-200-A	1085	9/29/95	
O-200-A O-200-A O-200-A	1120 1161 1215	12/29/95 2/9/96 5/15/96	253971 24R-469
O-200-A O-200-A O-200-A O-300	1240 1254 1264 1356 1027	8/5/96 9/3/96 9/12/96 3/10/97 3/20/95	69589-8-A 6105-71-A-R
O-300	1042	5/12/95	34012-D-6-D
O-300	1083	9/26/95	
O-300	1096	10/23/95	464481
O-300	1137	1/17/96	
O-300	1259	9/4/96	
O-300	1387	4/22/97	
O-300	1397	4/26/97	5928-9A
O-300	1403	4/28/97	
O-300	1423	6/9/97	3834D8Z
O-300	1555	1/13/98	
O-300-A	1446	6/27/97	
O-300-D O-300-D O-300-D O-300-D O-470	1022 1079 1487 1543 1046	3/17/95 9/17/95 9/6/97 12/3/97 6/1/95	35110-D-6-D 24276-D-0-D

O-470	1383	4/4/97	
O-470-11	1017	2/22/95	
O-470-11	1491	10/19/97	
O-470-11	1492	10/19/97	
O-470-11	1493	10/19/97	
O-470-11	1494	10/19/97	
O-470-F	1236	7/25/96	76956-4-F
O-470-K	1087	10/3/95	47172-6-K
O-470-L	1128	1/10/96	68681-8-L
O-470-L	1359	5/19/97	68245-8-L
O-470-L	1399	4/28/97	
O-470-R	1016	2/10/95	133087-6-R
O-470-R	1086	10/3/95	
O-470-R	1165	2/22/96	
O-470-R	1178	3/10/96	
O-470-R	1201	6/2/96	83164-1-R
O-470-R	1319	1/6/97	459408
TSIO-520-VB	1055	6/9/95	

#### Requirement:

To prevent crankshaft failure due to cracking, which could result in an inflight engine failure and possible forced landing, accomplish the following:

- a) Determine if this AD applies, as follows:
- 1. Determine if any repair was conducted on the engine that required crankshaft removal during the February 1, 1995, to December 31, 1997, time frame; if the engine was not disassembled for crankshaft removal and repair in this time frame, no further action is required.
- 2. If the engine and crankshaft was repaired during this time frame, determine from the maintenance records (engine log book), and Table 1 of this AD if the crankshaft was repaired by Nelson Balancing Service, Repair Station Certificate No. NB7R820J, Bedford, Massachusetts, USA. The maintenance records should contain the Return to Service (Yellow) tag for the crankshaft that will identify the company performing the repair. Also the work order number contained in Table 1 of this AD was etched on the crankshaft propeller flange, adjacent to the closest connecting rod journal. Because some etched numbers will be difficult to see, if necessary, use a 10X magnifying glass with an appropriate light source to view the work order number. In addition, the propeller spinner, if installed, will have to be removed in order to see this number.
- 3. If it cannot be determined who repaired the crankshaft, compliance with this AD is required.
- 4. If the engine and crankshaft were not repaired during the time frame specified in a) 1, or if it is determined that the crankshaft was not repaired by Nelson Balancing Service, no further action is required.
- b) Accomplish the following:
- 1. Perform a visual inspection as defined in paragraph b) 2 of this AD, magnetic particle inspection, and a dimensional check of the crankshaft journals, or remove from service affected crankshafts and replace with serviceable parts.
- 2. For the purpose of this AD, a visual inspection of the crankshaft is defin-24s the inspection of all surfaces of the crankshaft for cracks which include heat check cracking of the nitrided bearing surfaces, cracking in the main or aft fillet of the main bearing journal and crankpin journal, including checking the bearing surfaces for scoring, galling, corrosion, or pitting.

Note: Further guidance on all inspection and acceptance criteria is contained in applicable Overhaul or Maintenance Manuals.

3. Replace any crankshaft that fails the visual inspection, magnetic particle inspection, or the dimensional check with a serviceable crankshaft, unless the crankshaft can be reworked to bring it in compliance with:

- i) All the overhaul requirements of the appropriate Overhaul/Maintenance Manuals; or
- ii) All of the approved requirements for any repair station which currently has approval for limits other than those in the appropriate Overhaul/Maintenance Manuals.
- 4. For the purpose of this AD, a serviceable crankshaft is one which meets the requirements of paragraph b) 3 i) or b) 3) ii) of this AD.

Note: Crankshafts removed from engine models IO-360, IO-520, and TSIO-520 series engines are also subject to compliance with DCA/CON/177.

(FAA AD 98-17-11 refers)

Compliance: By 25 October 1998 **Effective Date:** 25 September 1998

### DCA/CON/198 AVStar Fuel Servos - Inspection and Replacement

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

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

> 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.

From 24 February 2012.

**Effective Date:** 24 February 2012 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 <a href="http://www.caa.govt.nz/airworthiness-directives/states-of-design/">http://www.caa.govt.nz/airworthiness-directives/states-of-design/</a>

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.

69-24-03 Carburettor – Inspection

Applicability: A-65 series, A-75 series, O-200 series, C-85 series, C-90 series, C-145 series and O-

470 series fitted with Marvel Schebler models MA-3-A, MA-3-PA, MA-3-SPA, MA-4-SPA, MA-4-5, MA-4-5, MA-4-5-AA, MA-6AA, and HA-6 carburetors with the following listed P/Ns and S/Ns installed on the Continental model engines listed in the AD.

**Compliance:** Before the issue of a New Zealand Certificate of Airworthiness, or at the next Review

of Airworthiness (RA), whichever is the sooner, unless previously accomplished. Repetitive inspections, if required, to be accomplished at intervals not to exceed the

times specified in the FAA AD.

Effective Date: 25 August 2016

80-06-05 Magnetos – Inspection

Applicability: Model A-65-8, A-75-8, C-85-8, C-90-8, O-200-A, O-300-A, -B, -C, -D; O-470-U, IO-

360-KB, IO-470, IO-520-A, -B, -F; TSIO-470 and TSIO-520-T engines.

**Compliance:** Before the issue of a New Zealand Certificate of Airworthiness, or at the next Review

of Airworthiness (RA), whichever is the sooner, unless previously accomplished. Repetitive inspections, if required, to be accomplished at intervals not to exceed the

times specified in the FAA AD.

Effective Date: 25 August 2016

93-19-04 Carburettor – Inspection

**Applicability:** Precision Airmotive (formerly Facet Aerospace Products (formerly Marvel-Schebler))

model MA3, MA3A, MA3PA, MA3SPA, and MA4SPA carburetors, installed on

Teledyne Continental A-65, A-75, C-75, C-85, C-90, C-115, C-125, C-145, O-200, and

O-300 series engines.

**Compliance:** Before the issue of a New Zealand Certificate of Airworthiness, or at the next Review

of Airworthiness (RA), whichever is the sooner, unless previously accomplished. Repetitive inspections, if required, to be accomplished at intervals not to exceed the

times specified in the FAA AD.

Effective Date: 25 August 2016

94-05-05R1 Cylinder Rocker Shaft Bosses – Inspection

Applicability: Continental C75, C85, C90, C125, C145, O-200, O-300 and GO-300 series engines.

Rolls-Royce C90, O-200 and O-300 series engines.

**Note:** This AD is applicable to all engine models listed in the applicability section regardless

of the type of cylinder installed (e.g. factory new cylinders, PMA cylinders, new or

used, etc.).

These engines are installed on, but not limited to, American Champion 7BCM, 7CCM, 7DC, S7DC, S7CCM, 7EC, S7EC, 7FC, 7JC, and 7ECA; Cessna 120, 140, 150, 170, 172, 172A-H, and 175; Luscombe 8E, 8F, and T-8F; Maule Bee Dee M-4, M-4, M-4C, M-4S, M-4T, M-4-210, M-4-210C, M-4-210S, M-4-210T, and M-5-210C; Piper PA-18 and PA-19; Reims Aviation F172D, E, F, G, H, K; F150G, H, J, K, L, M; FA150K, L; FRA150L; Swift GC-1A and GC-1B; Univair (Erco) 415-D, E, and G; Univair (Forney)

F-1 and F-1A; Univair (Alon) A-2 and Univair (Mooney) M-10 aircraft.

Effective Date: 27 September 2018