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Sektion 2. Utlandstillverkad flygmateriel

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**TITEL:** Kontroll av infästning för vipparmsaxeln

**GÄLLER:** Continental TCMIO-360, TSIO-360, LTSIO-360 och Rolls-Royce TSIO-360 i enlighet med bifogad kopia av FAA AD 92-04-09.

**ÅTGÄRD:** Utför åtgärder i enlighet med FAA AD 92-04-09 och TCM SB M92-4 revision 1 daterad 5 februari 1992 eller senare utgåva.

**TID FÖR ÅTGÄRD:** Före flygning om ej tidigare utförts.

**UNDERLAG:** FAA AD 92-04-09  
TCM SB nr M92-4 revision 1, daterad 5 februari 1992 eller senare utgåva.

**REFERENS:** FAA AD 92-04-09  
Skrivelse L 9201-152-31207 daterade 1992-01-24 och 1992-02-24 till svenska motorverkstäder och generalagenter samt till ägare/brukare.

**UTGIVNINGS-DATUM:** 1992-06-25

**LFS: 1992:17**

Åtgärd enligt LVD utgör nödvändig förutsättning för ifrågavarande flygmateriels luftvärdighet. Referens BCL M 1.11. Anteckning om åtgärd, som vidtagits i enlighet med LVD, skall införas i teknisk journal för berörd flygmateriel med hänvisning till ifrågavarande LVD-nummer. Angivet underlag refererar till senaste gällande revision/utgåva. LVD utges i luftfartsverkets författningssamlingar LFS.

**EMERGENCY AIRWORTHINESS DIRECTIVE**

OFFICE OF AVIATION SYSTEM STANDARDS  
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U.S. Department  
of Transportation  
Federal Aviation  
Administration

February 18, 1992  
92-04-09

92 -03- 0 2

This Priority Letter Airworthiness Directive (AD) 92-04-09 supersedes Priority Letter AD 92-02-20 R1, which was issued on January 24, 1992. Priority Letter AD 92-02-20 R1 currently requires inspection and if necessary, rework of the cylinder head rocker shaft pocket in accordance with TCM Service Bulletin No. M92-4, dated January 10, 1992.

AD 92-02-20, as revised by AD 92-02-20 R1, was issued because of two reports of rocker shaft hold down stud failure that resulted in engine failure. One failure occurred at 2 hours time in service (TIS) and the other at 6 hours TIS. Analysis shows that these failures were caused by core shift on some cylinder head castings. This situation created interference between the rocker arm shaft and the side of the rocker box wall of the cylinder head casting. The interference caused improper seating of the rocker shaft which led to failure of the rocker shaft hold down stud and consequent engine failure.

Since issuance of AD 92-02-20 R1, the FAA has been advised by TCM that the torque value for torquing the rocker shaft stud nut as stated in TCM Service Bulletin No. M92-4, dated January 10, 1992, is incorrect. TCM has issued TCM Service Bulletin M92-4, Revision 1, dated February 5, 1992, correcting the torque value of 75 to 85 inch pounds to 110 to 120 inch pounds.

Based on recent data from inspections of affected cylinders, the FAA has determined that failure of the stud could occur any time during the service life of the cylinder because of the high alternating stresses imposed on the stud. Therefore, the stud failure expectancy interval of 50 hours TIS specified in Priority Letter AD 92-02-20 R1 is no longer valid. This condition, if not corrected, can result in engine failure.

The FAA has also determined that Rolls-Royce Motors Model TSIO-360 series reciprocating engines are of the same type design and should be added to the applicability.

The FAA has reviewed and approved the technical contents of TCM Service Bulletin (SB) No. M92-4, Revision 1, dated February 5, 1992, that lists engine model and serial numbers for affected new and rebuilt engines, and manufacturing dates and part numbers for uninstalled new service cylinder assemblies. The SB also describes inspections of the rocker shaft to cylinder head rocker shaft pocket fit, and rework, if necessary, of the cylinder head rocker shaft pocket.

Since an unsafe condition has been identified that is likely to exist or develop on other engines of this same type design, this AD requires inspection, and if necessary, rework of the cylinder head rocker shaft pocket, in accordance with the service bulletin previously described.

**EMERGENCY AIRWORTHINESS DIRECTIVE**

Pursuant to the authority of the Federal Aviation Act of 1958, delegated to me by the Administrator, the following Priority Letter AD 92-04-09, applicable to TCM Model IO-360 series, TSIO-360 series, LTSIO-360 series, and Rolls-Royce Motors Model TSIO-360 series reciprocating engines, is issued and is effective immediately upon receipt.

**92-04-09 TELEDYNE CONTINENTAL MOTORS (TCM):** Priority Letter AD 92-04-09 issued February 18, 1992, becomes effective immediately upon receipt.

**Applicability:** TCM IO-360 series, TSIO-360 series, and LTSIO-360 series reciprocating engines, identified by model and serial number in TCM Service Bulletin (SB) No. M92-4, Revision 1, dated February 5, 1992, and all other TCM IO-360 series, TSIO-360 series, LTSIO-360 series, and Rolls-Royce Motors Model TSIO-360 series reciprocating engines, installed on but not limited to Cessna 337, T337, and P337 series; Cessna 172XP; Mooney M20K; Piper PA34-200T, PA34-220T, PA28R-201T and PA28RT-201T airplanes.

**Compliance:** Required prior to further flight, unless accomplished previously.

To prevent engine failure caused by failure of the rocker shaft hold down stud, accomplish the following:

(a) For engines that have the rocker arm shaft hold down stud nut torqued in accordance with TCM SB No. M92-4, dated January 10, 1992, and are in compliance with AD 92-02-20 or AD 92-02-20 R1, retorque the rocker arm shaft hold down stud nut to 110-120 inch pounds in accordance with TCM SB M92-4, Revision 1, dated February 5, 1992.

(b) For engines listed by model and serial number in TCM SB No. M92-4, Revision 1, dated February 5, 1992, inspect, and if necessary, rework cylinder assembly, in accordance with TCM SB No. M92-4, Revision 1, dated February 5, 1992.

(c) For Rolls-Royce Motors engines and all other engines containing cylinder assemblies, with cylinder assembly dates between June 1991 through December 1991, and identified by TCM Part Numbers 646924, 649484, 652955, or 653098, and all "A" suffix numbers of these base part numbers, inspect, and if necessary, rework, in accordance with TCM SB No. M92-4, Revision 1, dated February 5, 1992.

**NOTE:** Cylinder assembly dates are stamped on the cylinder head between the two rocker shaft pockets.

(d) Uninstalled cylinder assemblies, with cylinder assembly dates between June 1991 and December 1991, and identified by TCM Part Numbers 646924, 649484, 652955, 653098, and all "A" suffix numbers of these base part numbers, shall not be placed in service unless inspected or reworked in accordance with TCM SB No. M92-4, Revision 1, dated February 5, 1992.

(e) After accomplishment of the requirements of paragraphs (a), (b), (c), or (d) of this AD, as applicable, mark with VIBRO-ETCH or other similar device the letter "B" adjacent to the cylinder assembly date on the cylinder head between the two rocker shaft pockets.

(f) An alternative method of compliance or adjustment of the compliance time, which provides an acceptable level of safety, may be used when approved by the Manager, Atlanta Aircraft Certification Office, Small Airplane Directorate. The request should be forwarded through an FAA Principal Maintenance Inspector, who may concur or comment and then send it to the Manager, Atlanta Aircraft Certification Office.

(g) Copies of the applicable service information may be obtained from Teledyne Continental Motors, P.O. Box 90, Mobile, Alabama 36601. This information may be examined at the FAA, Office of the Assistant Chief Counsel, New England Region, 12 New England Executive Park, Burlington, Massachusetts.

(h) This Priority Letter AD 92-04-09, issued on February 18, 1992, becomes effective immediately upon receipt.

**FOR FURTHER INFORMATION CONTACT:**

Jerry Robinette, Propulsion Branch, ACE-140A, Atlanta Aircraft Certification Office, Small Airplane Directorate, Aircraft Certification Service, FAA, Suite 210C, 1669 Phoenix Parkway, Atlanta, Georgia 30349; telephone (404) 991-3810.