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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [60 FR 10308 NO. 37 2/24/95]

Docket No. 94-ANE-57; Amendment 39-9150; AD 95-03-14

Airworthiness Directives; Teledyne Continental Motors IO-346, IO-520, and IO-550 Series Reciprocating Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to certain Teledyne Continental Motors (TCM) IO-346, IO-520, and IO-550 series reciprocating engines, that currently requires initial and repetitive inspections of the engine mount brackets for cracks, and if found cracked, replacement with improved design engine mount brackets. All engine mount brackets require replacement with improved design engine mount brackets at the next engine removal after the effective date of that airworthiness directive (AD). This amendment clarifies the identification procedures to determine which engine mount brackets must be inspected. This amendment is prompted by reports that the engine mount bracket part numbers, which are ink stamped, can be easily obliterated. The actions specified by this AD are intended to prevent engine separation from the aircraft due to cracks in the engine mount brackets.

DATES: Effective March 13, 1995.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of March 13, 1995. Comments for inclusion in the Rules Docket must be received on or before April 25, 1995.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 94-ANE-57, 12 New England Executive Park, Burlington, MA 01803-5299.

The service information referenced in this AD may be obtained from Teledyne Continental Motors, P.O. Box 90, Mobile, AL 36601; telephone (334) 438-3411. This information may be examined at the FAA, New England Region, Office of the Assistant Chief Counsel, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Jerry Robinette, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, Campus Building, 1701 Columbia Ave., Suite 2-160, College Park, GA 30337-2748; telephone (404) 305-7371, fax (404) 305-7348.

SUPPLEMENTARY INFORMATION:

On April 19, 1994, the Federal Aviation Administration (FAA) issued airworthiness directive (AD) 94-09-07, Amendment 39-8896 (59 FR 23148, May 5, 1994), applicable to certain Teledyne Continental Motors (TCM) IO-346, IO-520, and IO-550 series reciprocating engines, to require initial and repetitive dye penetrant inspections for cracks in certain lower left engine mount brackets, Part Number (P/N) 630695. If the lower left engine mount bracket is found cracked, that AD requires replacing both the lower left and lower right engine mount brackets with improved design engine mount brackets, P/N 653306 and 653305, respectively. If a crack is not detected, the lower left engine mount bracket requires repetitive inspections at intervals not to exceed 500 hours time in service (TIS) until the next engine removal, at which time engine mount brackets, P/N 630694 and 630695, are replaced with improved design engine mount brackets, P/N 653306 and 653305. Installation of these improved design engine mount brackets constitutes terminating action to the inspection requirements of that AD. That action was prompted by reports of cracks in engine mount brackets on engines that have completed at least one overhaul cycle. That condition, if not corrected, could result in engine separation from the aircraft due to cracks in the engine mount brackets.

Since the issuance of that AD, the FAA has received reports of difficulty in identifying the engine mount brackets that must be inspected. The P/N is ink-stamped on the part and is quite easily obliterated. The problem arises when the Casting Number (C/N), which is different from the P/N, is mistaken for the P/N, and the AD is incorrectly believed to not apply.

The FAA has reviewed and approved the technical contents of TCM Mandatory Service Bulletin (MSB) No. MSB94-9, dated October 21, 1994, that provides positive identification of affected engine mount brackets that require inspection, and replacement, if necessary.

Since an unsafe condition has been identified that is likely to exist or develop on other engines of this same type design, this AD supersedes AD 94-09-07 to clarify the identification procedures to determine which engine mount brackets must be inspected. The actions are required to be accomplished in accordance with the MSB described previously.

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified under the caption "**ADDRESSES**." All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and

energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 94-ANE-57." The postcard will be date stamped and returned to the commenter.

The regulations adopted herein will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption "**ADDRESSES**."

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.
Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. App. 1354(a), 1421 and 1423; 49 U.S.C. 106(g); and 14 CFR 11.89.

§39.13 - [AMENDED]

2. Section 39.13 is amended by removing Amendment 39-8896 (59 FR 23148, May 5, 1994), and by adding a new airworthiness directive, Amendment 39-9150, to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

95-03-14 Teledyne Continental Motors: Amendment 39-9150. Docket 94-ANE-57. Supersedes AD 94-09-07, Amendment 39-8896.

Applicability: Teledyne Continental Motors (TCM) engine models IO-346A, IO-346B, IO-520C, IO-520CB, and IO-550C; rebuilt engine model IO-520C with serial numbers (S/N) 287051-R and lower; rebuilt engine model IO-520CB with S/N 282226-R and lower; rebuilt engine model IO-550C with S/N 271742-R and lower; and all factory overhauled IO-520C, IO-520CB, and IO-550C engines with a build date prior to August 6, 1992. These engines are installed on but not limited to Beech model A23, A23A, 95-C55, 95-C55A, D55, D55A, E55, E55A, 58, and 58A airplanes.

Compliance: Required as indicated, unless accomplished previously.

To prevent engine separation from the aircraft due to cracks in the engine mount brackets, accomplish the following:

(a) For engines with engine mount brackets that have completed at least one engine overhaul or rebuild cycle, or have accumulated 2,500 or more hours time in service (TIS) on the effective date of this airworthiness directive (AD), inspect the lower left engine mount bracket, Part Number (P/N) 630695 or Casting Number (C/N) 630724, for cracks using the dye penetrant techniques specified in this paragraph and in accordance with TCM Mandatory Service Bulletin (MSB) No. MSB94-9, dated October 21, 1994, within the next 50 hours TIS after the effective date of this AD. NOTE 1: TCM MSB No. MSB94-9, dated October 21, 1994, differs from TCM MSB No. M92-13, dated September 4, 1992, which was referenced in AD 94-09-07, only in clarification of part identification by utilizing a cross reference table for P/N and C/N. NOTE 2: The P/N is ink stamped on the part and may not be visible. The engine mount bracket can be identified by the C/N which is cast in the engine mount bracket.

(1) Perform the dye penetrant inspection as follows: NOTE: Military Specification MIL-I-6866 and American Society of Testing Materials specifications ASTM E1417-93 and E165-9 contain additional information on dye penetrant inspection processes.

(i) Preparation: clean and dry all parts in such a manner as to leave the surfaces free from grease, oil, soaps, alkalies, and other substances which would interfere with inspection. Vapor degreasing is generally suitable for this purpose.

(ii) Penetrant Application Procedure: after preparation, spray or brush the parts with the penetrant, and allow to stand for not less than 5 minutes. The effectiveness of the penetrant increases if left standing for a longer time, as the penetrant will reach finer discontinuities.

(iii) Penetrant Cleaning: clean the parts thoroughly using a medium which will remove penetrant from the surfaces of parts; wash with water when the penetrant is water soluble. When other than water soluble penetrants are used, the penetrant shall be removed with a suitable cleaner. Avoid excessive cleaning which would remove the penetrant from discontinuities.

(iv) Drying: dry the parts as thoroughly as possible. Drying of parts may be accomplished by evaporation at room temperature or by placing the parts in a circulating warm air oven or in the air stream of a hot air dryer. Avoid excessive drying time or drying temperatures above 75°C (165°F) to prevent excessive evaporation of the penetrant. If heat is used for drying parts, cool parts to approximately 50°C (120°F) before proceeding to the developing procedure.

(v) Developing: apply the developer to the dry parts as lightly and as evenly as possible, using as thin a coating of developer as is possible. A translucent film is adequate. Mix wet developer by agitation immediately prior to applying it. After applying the developer, take care that no penetrant indication is disturbed or obliterated in subsequent handling.

(vi) Examination: examine the developed penetrant indications in accordance with the dye penetrant manufacturer's instructions. Examine parts for indications of discontinuities open to the surface.

(vii) Final cleaning: clean the parts following the inspection to remove penetrant and developer. NOTE 1: Caution: because of differences among penetrants, take care to ensure that the final cleaner, the penetrant, the penetrant remover, and the developer are suitable for use with each other. NOTE 2: Caution: all penetrant materials should be kept as free from moisture as possible. NOTE 3: Caution: most penetrants, cleaning agents, and developer suspensions are low flash point material; use caution to prevent fires.

(2) If no crack is detected, inspect in accordance with paragraph (a) of this AD at intervals not to exceed 500 hours TIS since the last inspection.

(3) If a crack is detected, prior to further flight replace both the lower left engine mount bracket, P/N 630695 or C/N 630724, and lower right engine mount bracket, P/N 630694 or C/N 630723, with improved design engine mount brackets, P/N 653306 or C/N 653299, and P/N 653305 or C/N 653298, respectively.

(b) For all engines, replace both the lower left engine mount bracket, P/N 630695 or C/N 630724, and lower right engine mount bracket, P/N 630694 or C/N 630723, with improved design engine mount brackets, P/N 653306 or C/N 653299, and P/N 653305 or C/N 653298, respectively, at the next engine removal after the effective date of this AD.

(c) Installation of the improved design engine mount brackets, P/N 653306 or C/N

653299, and P/N 653305 or C/N 653298, constitutes terminating action to the inspection requirements of this AD.

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office. NOTE: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Atlanta Aircraft Certification Office.

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the inspection may be performed.

(f) The inspections and replacement shall be done in accordance with the following service document:

Document No.	Pages	Date
TCM MSB No. MSB94-9	1-2	October 21, 1994

Total pages: 2.

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Teledyne Continental Motors, P.O. Box 90, Mobile, AL 36601; telephone (334) 438-3411. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) This amendment becomes effective on March 13, 1995.