

the use of the power lever. For airplanes equipped with limiters that automatically prevent engine operating limits from being exceeded under existing ambient conditions, other means may be used to increase the thrust or power in the event of a CPR failure provided the means is located on or forward of the power levers; is easily identified and operated under all operating conditions by a single action of either pilot with the hand that is normally used to actuate the power levers; and meets the requirements of § 25.777 (a), (b), and (c);

(ii) Provide a means for the flightcrew to deactivate the automatic CPR function. This means must be designed to prevent inadvertent deactivation.

(iii) Provide a means for the flightcrew to verify that the CPR system is in a condition to operate.

(e) Powerplant Instruments. In addition to the requirements of § 25.1305, a means must be provided to indicate when the CPR is in the armed or ready condition.

Issued in Renton, Washington, on June 5, 1997.

Darrell M. Pederson,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service, ANM-100.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 97-ANE-22-AD; Amendment 39-10046; AD 97-12-04]

RIN 2120-AA64

Airworthiness Directives; General Electric Company GE90 Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to General Electric Company (GE) GE90 series turbofan engines. This action requires initial and repetitive borescope inspections of compressor discharge pressure (CDP) manifolds for cracks, and replacement, if necessary, with an improved design CDP manifold. In addition, this AD requires, as terminating action to the inspections, replacement with an improved design CDP manifold. This amendment is prompted by reports of CDP manifold cracking that has resulted in liberated material causing high pressure compressor (HPC) blade damage. The actions specified in this AD are intended to prevent inflight engine

power loss or shutdown due to HPC blade damage caused by liberated material from the CDP manifold.

DATES: Effective June 27, 1997.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 27, 1997.

Comments for inclusion in the Rules Docket must be received on or before August 11, 1997.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 97-ANE-22-AD, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may also be sent via the Internet using the following address: "9-ad-engineprop@faa.dot.gov". Comments sent via the Internet must contain the docket number in the subject line.

The service information referenced in this AD may be obtained from General Electric Technical Services, Attention: Leader for distribution/microfilm, 10525 Chester Road, Cincinnati, OH 45215; telephone (513) 672-8400 Ext. 114, fax (513) 672-8422. This information may be examined 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. **FOR FURTHER INFORMATION CONTACT:** John E. Golinski, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (617) 238-7135, fax (617) 238-7199.

SUPPLEMENTARY INFORMATION: The Federal Aviation Administration (FAA) has received reports of cracked compressor discharge pressure (CDP) manifolds, Part Number (P/N) 1686M48G11, installed on General Electric Company (GE) GE90 series turbofan engines. In two reports, the cracked CDP manifold liberated material that resulted in high pressure compressor (HPC) blade damage beyond serviceable limits. The failure investigation has determined that the cause of the crack initiation and propagation is attributed to excessive stresses in the manifold. The cracks may initiate in a localized area around any one of the six outer diameter bolts that attach the CDP manifold to the combustor case. Multiple cracks that initiate can propagate in a direction that allow CDP manifold material to become liberated. This material can enter the

HPC and result in hard body impact damage to the HPC blades. The FAA has determined that an earlier configuration CDP manifold, P/N 1686M48G10, is also susceptible to cracking, which could result in liberated CDP manifold material. This condition, if not corrected, could result in inflight engine power loss or shutdown due to HPC blade damage caused by liberated material from the CDP manifold.

The FAA has reviewed and approved the technical contents of GE Aircraft Engines GE90 Service Bulletin (SB) No. 72-263, dated February 5, 1997, that describes procedures for initial and repetitive borescope inspections for cracks in the CDP manifold, P/Ns 1686M48G10, 1686M48G11, and 1686M48G12. This AD, however, only requires inspection of CDP manifolds, P/Ns 1686M48G10 and 1686M48G11. The FAA has also reviewed and approved the technical contents of GE Aircraft Engines GE90 SB No. 72-126, Revision 1, dated April 29, 1997, that describes procedures for installation of improved design CDP manifolds.

Since an unsafe condition has been identified that is likely to exist or develop on other engines of the same type design, this AD is being issued to prevent liberation of CDP manifold material. This AD requires initial and repetitive borescope inspections for cracks in CDP manifolds, P/Ns 1686M48G10 and 1686M48G11. The repetitive inspection intervals, or possible removal and replacement prior to further flight, are defined by the condition of the CDP manifold based on the borescope inspections. In addition, this AD requires, at the next shop visit after the effective date of this AD, installing the improved design CDP manifold, P/N 1686M48G12. Installation of the improved design CDP manifold constitutes terminating action to the inspection requirements of this AD. The actions are required to be accomplished in accordance with the SBs 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 97-ANE-22-AD." 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. 106(g), 40113, 44701.

§39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

97-12-04 **General Electric Company:**
Amendment 39-10046. Docket 97-ANE-22-AD.

Applicability: General Electric Company (GE) Models GE90-76B, -77B, -85B, -90B, and -92B turbofan engines, with compressor discharge pressure (CDP) manifolds, Part Numbers (P/Ns) 1686M48G10 or 1686M48G11, installed. These engines are installed on but not limited to Boeing 777 series aircraft.

Note 1: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent inflight engine power loss or shutdown due to liberated CDP manifold material, accomplish the following:

(a) Perform borescope inspections of the CDP manifold for cracks in accordance with the Accomplishment Instructions of GE90 Service Bulletin (SB) No. 72-263, dated February 5, 1997, as follows:

(1) For engines with greater than 500 total engine cycles (TEC) on the effective date of this AD, inspect within 25 cycles in service (CIS) after the effective date of this AD.

(2) For engines with 500 or less TEC on the effective date of this AD, inspect within 125 CIS after the effective date of this AD, or prior to accumulating 500 TEC, whichever occurs first.

(b) Based on inspections accomplished in paragraph (a) of this AD, accomplish the following:

(1) Prior to further flight, remove those manifolds found with liberated pieces or with cracks that meet or exceed the length or orientation criteria in paragraph C(3)(c) or D(3)(c) of the Accomplishment Instructions of GE90 SB No. 72-263, dated February 5, 1997, and replace with CDP manifolds, P/N 1686M48G12, in accordance with GE90 SB No. 72-126, Revision 1, dated April 29, 1997.

(2) For manifolds found with axial cracks less than or equal to 0.5 inches, thereafter, perform borescope inspections of CDP manifolds daily, remove, if necessary, and replace in accordance with paragraph (b)(1) of this AD.

(3) For manifolds with no visible cracks, accomplish the following:

(i) Perform borescope inspections of CDP manifolds at intervals not to exceed 125 CIS since last inspection, remove, if necessary, and replace in accordance with paragraph (b)(1) of this AD.

(ii) If manifolds are found with axial cracks less than or equal to 0.5 inches, thereafter, perform borescope inspections of CDP manifolds daily, remove, if necessary, and replace in accordance with paragraph (b)(1) of this AD.

(c) At the next shop visit after the effective date of this AD, install an improved CDP manifold, P/N 1686M48G12, in accordance with GE90 SB No. 72-126, Revision 1, dated April 29, 1997. Installation of this CDP manifold constitutes terminating action to the inspection requirements of this AD.

(d) For the purpose of this AD, a shop visit is defined as an engine removal for engine maintenance that cannot be performed while installed on the aircraft and that entails separation of pairs of mating engine flanges.

(e) 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, Engine Certification Office. Operators shall submit their request through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Engine Certification Office.

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Engine Certification Office.

(f) 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 requirements of this AD can be accomplished.

(g) The actions required by this AD shall be done in accordance with the following GE90 SBs:

Document No.	Revision	Pages	Date
72-263 Total pages: 18.	Original ..	1-18	Feb. 5, 1997.
72-126 Total pages: 8.	1	1-8	Apr. 29, 1997.

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 General Electric Technical Services, Attention: Leader for distribution/microfilm, 10525 Chester Road, Cincinnati, OH 45215; telephone (513) 672-8400 Ext. 114, fax (513) 672-8422. 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.

(h) This amendment becomes effective on June 27, 1997.

Issued in Burlington, Mass., on May 30, 1997.

Jay J. Pardee,

Manager, Engine and Propeller Directorate, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 97-ANE-23-AD; Amendment 39-10047, AD 97-12-05]

RIN 2120-AA64

Airworthiness Directives; General Electric Company GE90 Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to General Electric Company (GE) GE90 series turbofan engines. This action supersedes Telegraphic AD T97-09-51 that currently requires visual checks of the engine Debris Monitoring System (DMS) sensor for bearing debris, and, if necessary, performing procedures for additional maintenance actions. In addition, that AD requires replacing Variable Speed Constant Frequency (VSCF) gearshaft flange ball bearings that may incorporate rivets that are manufactured of improper material with serviceable bearings. This action references a later revision of the applicable Service Bulletin (SB) that

includes additional engine serial numbers; however, these changes do not affect the Applicability or compliance requirements of this AD. This amendment is prompted by the issuance of the new revision to the SB. The actions specified by this AD are intended to prevent a VSCF gearshaft flange ball bearing failure, which could result in an inflight engine shutdown.

DATES: Effective June 27, 1997.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 27, 1997.

Comments for inclusion in the Rules Docket must be received on or before August 11, 1997.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 97-ANE-23, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may also be sent via the Internet using the following address: "9-ad-engineprop@faa.dot.gov". Comments sent via the Internet must contain the docket number in the subject line.

The service information referenced in this AD may be obtained from General Electric Technical Services, Attention: Leader For Distribution/Microfilm, 10525 Chester Road, Cincinnati, OH 45215; fax (513) 672-8422, telephone (513) 672-8400 Ext. 114. This information may be examined 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.

FOR FURTHER INFORMATION CONTACT: John Golinski, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (617) 238-7135, fax (617) 238-7199.

SUPPLEMENTARY INFORMATION: On April 22, 1997, the Federal Aviation Administration (FAA) issued Telegraphic airworthiness directive (AD) T97-09-51, applicable to General Electric Company (GE) GE90 series turbofan engines, which requires visual checks of the engine Debris Monitoring

System (DMS) sensor for bearing debris, and, if necessary, performing procedures for additional maintenance actions. In addition, that AD requires replacing Variable Speed Constant Frequency (VSCF) gearshaft flange ball bearings that may incorporate rivets that are manufactured of improper material with serviceable bearings. That action was prompted by reports of two recent failures of the Accessory Gearbox (AGB) VSCF gearshaft flange ball bearing, Part Number (P/N) 1770M41P01. This ball bearing is installed on the VSCF gearshaft which is located in the AGB and drives the Boeing 777 VSCF generator. The VSCF generator is a backup power supply for the Boeing 777 airplane. The ball bearing that failed is installed in GE90 AGBs, P/Ns 1650M71G03 and 1650M71G04. A third AGB configuration incorporates a different ball bearing design and has no reported service problems. The bearing failure investigation is ongoing; however, there is evidence that suggests the failures may be attributed to bearing operation with insufficient internal radial clearances that results in excessive ball to cage pocket forces causing bearing distress and premature failure. The investigation has also determined that a population of the VSCF gearshaft ball bearings, P/N 1770M41P01, may contain improper cage rivet material. Metallurgical evaluation of the rivets installed in the two failed VSCF gearshaft flange ball bearings has confirmed both bearings contained rivets manufactured from improper material. Results of the engineering analysis and testing suggest the improper rivet material may be a contributor to premature bearing distress when the improper rivets are installed in a bearing that contains insufficient internal radial clearance. That condition, if not corrected, could result in a VSCF gearshaft flange ball bearing failure, which could result in an inflight engine shutdown.

Since the issuance of that Telegraphic AD, GE has issued Revision 4, dated April 17, 1997, to Service Bulletin (SB) No. 72-283, which adds additional engine serial numbers; however, these changes do not affect the Applicability or compliance requirements of this AD. This AD references this revised SB.

The FAA has reviewed and approved the technical contents of GE SB No. 79-