

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [65 FR 21642 4/24/2000]

[Docket No. 98-ANE-39-AD; Amendment 39-11696; AD 2000-08-10]

RIN 2120-AA64

Airworthiness Directives; General Electric Company GE90 Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to certain General Electric Company GE90 series turbofan engines, that currently requires revisions to the Airworthiness Limitations Section (ALS) of the manufacturer's Instructions for Continued Airworthiness (ICA) to include required enhanced inspection of selected critical life-limited parts at each piece-part exposure. This action adds additional critical life-limited parts for enhanced inspection. This amendment is prompted by additional focused inspection procedures for other critical life-limited rotating engine parts that have been developed by the manufacturer. The actions specified by this AD are intended to prevent critical life-limited rotating engine part failure, which could result in an uncontained engine failure and damage to the airplane.

DATE: Effective October 23, 2000.

ADDRESSES: The information referenced in this AD may be examined at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

FOR FURTHER INFORMATION CONTACT: Karen Curtis, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7134, fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding (AD) 99-08-17, Amendment 39-11123 (64 FR 17961), that is applicable to General Electric Company GE90 series turbofan engine was published in the **Federal Register** on October 7, 1999 (64 FR 54591). That action proposed to require revisions to the Airworthiness Limitations Section of the manufacturer's Instructions for Continued Airworthiness (ICA) for General Electric Company (GE) GE90 series turbofan engines to include required enhanced inspection of selected critical life-limited parts at each piece-part exposure.

New Inspection Procedures

Since the issuance of that AD, additional focused inspection procedures for other critical life-limited rotating engine parts have been developed by GE. This AD will require modification of

the airworthiness limitations section in the manufacturers manual and an air carrier's approved continuous airworthiness maintenance program to incorporate these inspection procedures.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the five comments received.

"Unsafe Condition"

One commenter objects to the language in the preamble of the NPRM supersedure for the second phase of enhanced inspections which includes a finding of an "unsafe condition." The commenter asks that the term "unsafe condition" be deleted and replaced with the justification language from the original NPRM. The FAA does not agree. The commenter does not disagree with the proposed rule itself but rather with the term "unsafe condition" that is contained in the preamble to the NPRM. It is not the intent of the FAA to completely change the enhanced disk inspection program established by the current AD, which evolved as a cooperative effort between the FAA and industry. This intervention strategy was designed to reduce the number of uncontained engine failures by mandating enhanced nondestructive inspections of critical rotating components that could most likely result in a hazard to the airplane in the event of a failure. Since the engine maintenance manuals did not mandate these enhanced inspections, the current AD was necessary to establish the inspection program as an airworthiness limitation. Regardless of the fact that it was not stated explicitly in the original NPRM, the FAA determined that an "unsafe condition" existed because the engine maintenance manuals did not contain enhanced inspections as an airworthiness limitation.

There was no intent to imply any defect in the actual engine hardware, but simply to state that the maintenance manuals, that form part of the approved engine design, must be revised to mandate the enhanced inspections. The supersedure repeats that finding with respect to the additional parts being added to the enhanced inspection program. Because a finding of an "unsafe condition" is required for the FAA to issue an AD, future NPRM's adding parts to the program will also include that finding.

"Life Limits" vs. "Airworthiness Limitations" sections

One commenter recommends replacing references to the "Life Limits" section with references to the "Airworthiness Limitations" section because Chapter 5 now contains two subsets, 05-11 for Life Limits, and 05-21 for the mandatory inspection. The FAA agrees. The Final Rule references the "Airworthiness Limitations" section instead of the "Life Limits" section.

Task numbers and inspection descriptions

One commenter recommends that 2nd level task numbers and inspection descriptions be used instead of the subtask numbers to ensure that all appropriate preparatory steps (e.g. cleaning) are included in the mandatory inspection. The FAA agrees. The Final Rule has been revised accordingly to ensure that all appropriate preparatory steps (e.g. cleaning) are included in the mandatory inspection.

Effectivity date

Two commenters request that the AD's effectivity date be set to allow sufficient time for publication of the procedures, equipment procurement and training necessary to perform the mandatory inspection. The FAA agrees. The effectivity date for the Final rule has been extended

to 180 days after publication to allow sufficient time for the publication of the inspection procedures and for operators to prepare.

Removal of "of this chapter" from Paragraph (e) of the Compliance Section

The statement "of this chapter" has been removed from the first sentence of paragraph (e) to improve the clarity of the paragraph.

Economic Analysis

No comments were received on the economic analysis contained in the proposed rules. The FAA has determined that the annual cost of complying with this AD does not create a significant economic impact on small entities.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes described previously. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Regulatory Impact

This final rule does not have federalism implications, as defined in Executive Order No. 13132, because it does not have a substantial direct effect 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. Accordingly, the FAA has not consulted with state authorities prior to publication of this final rule.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order No. 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it 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, 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 removing Amendment 39-11118 (63 FR 40220, April 13, 1999), and by adding a new airworthiness directive, Amendment 39-11696 to read as follows:

SUPERSEDED

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460



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

AD's are posted on the internet at <http://av-info.faa.gov>

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) 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).

2000-08-10 General Electric Company: Amendment 39-11696. Docket No. 98-ANE-39-AD. Supersedes AD 99-08-17, Amendment 39-11123.

Applicability: General Electric Company (GE) GE90-76B/ -77B/ -85B/ -90B/ -92B series turbofan engines, installed on but not limited to Boeing 777 series airplanes.

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 (c) 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 critical life-limited rotating engine part failure, which could result in an uncontained engine failure and damage to the airplane, accomplish the following:

Inspections

(a) Within the next 30 days after the effective date of this AD, revise the manufacturer's Airworthiness Limitations Section of the Instructions for Continued Airworthiness (ICA), and for air carrier operations revise the approved continuous airworthiness maintenance program, by adding the following:

"MANDATORY INSPECTIONS

(1) Perform inspections of the following parts at each piece-part opportunity in accordance with the instructions provided in the applicable manual provisions:

Part Nomenclature For GE90 Engines:	Part No. (P/N)	Inspect per Engine Manual Chapter
HPCR, Disk, Stage 7	All	72-31-07-200-001-001 Fluorescent Penetrant Inspection, and 72-31-07-200-001-001 Eddy Current Inspection of the Rim Boltholes
HPTR, Interstage Seal	All	72-53-03-200-001-001 Fluorescent Penetrant Inspection, and 72-53-03-200-001-001 Eddy Current Inspection of the Bore
Fan Disk, Stage 1	All	72-21-03-200-001-001 Fluorescent Penetrant Inspection, and 72-21-03-200-001-001 Eddy Current Inspection of the Bore, and 72-21-03-200-001-001 Ultrasonic Inspection of Dovetail Slots
HPTR Disk, Stage 1	All	72-53-02-200-001-002 Fluorescent Penetrant Inspection, and 72-53-02-200-001-002 Eddy Current Inspection of the Bore
HPTR Disk, Stage 2	All	72-53-04-200-001-004 Fluorescent Penetrant Inspection, and 72-53-04-200-001-004 Eddy Current Inspection of the Bore
HPCR Disk, Stage 1	All	72-31-05-200-001-001 Fluorescent Penetrant Inspection, and 72-31-05-200-001-001 Eddy Current Inspection of the Bore, and 72-31-05-200-001-001 Eddy Current Inspection of the Dovetail Slots
HPCR Spool, Stage 2- 6	All	72-31-06-200-001-001 Fluorescent Penetrant Inspection, and 72-31-06-200-001-001 Eddy Current Inspection of the S2 Dovetail Slots
HPCR Seal, Compressor Discharge Pressure	All	72-31-09-200-001-001 Fluorescent Penetrant Inspection, and 72-31-09-200-001-001 Eddy Current Inspection of the Boltholes

(2) For the purposes of these mandatory inspections, piece-part opportunity means:

(i) The part is considered completely disassembled when accomplished in accordance with the disassembly instructions in the manufacturer's engine manual; and

(ii) The part has accumulated more than 100 cycles in service since the last piece-part opportunity inspection, provided that the part was not damaged or related to the cause for its removal from the engine."

(b) Except as provided in paragraph (c) of this AD, and notwithstanding contrary provisions in section 43.16 of the Federal Aviation Regulations (14 CFR 43.16), these mandatory inspections shall be performed only in accordance with the Airworthiness Limitations Section of the manufacturer's ICA.

Alternative Methods of Compliance

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

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

Ferry Flights

(d) 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 airplane to a location where the requirements of this AD can be accomplished.

Continuous Airworthiness Maintenance Program

(e) FAA-certificated air carriers that have an approved continuous airworthiness maintenance program in accordance with the record keeping requirement of § 121.369 (c) of the Federal Aviation Regulations [14 CFR 121.369 (c)] must maintain records of the mandatory inspections that result from revising the Airworthiness Limitations Section of the Instructions for Continuous Airworthiness (ICA) and the air carrier's continuous airworthiness program. Alternately, certificated air carriers may establish an approved system of record retention that provides a method for preservation and retrieval of the maintenance records that include the inspections resulting from this AD, and include the policy and procedures for implementing this alternate method in the air carrier's maintenance manual required by § 121.369 (c) of the Federal Aviation Regulations [14 CFR 121.369 (c)]; however, the alternate system must be accepted by the appropriate PMI and require the maintenance records be maintained either indefinitely or until the work is repeated. Records of the piece-part inspections are not required under § 121.380 (a) (2) (vi) of the Federal Aviation Regulations [14 CFR 121.380 (a) (2) (vi)]. All other Operators must maintain the records of mandatory inspections required by the applicable regulations governing their operations.

Note 3: The requirements of this AD have been met when the engine manual changes are made and air carriers have modified their continuous airworthiness maintenance plans to reflect the requirements in the engine manuals.

(f) This amendment becomes effective on October 23, 2000.

FOR FURTHER INFORMATION CONTACT:

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Issued in Burlington, Massachusetts, on April 14, 2000.

Jay J. Pardee, Manager, Engine and Propeller Directorate, Aircraft Certification Service.