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We must receive any comments on this proposed AD by June 22, 2007.

Use one of the following addresses to comment on this proposed AD.

- *DOT Docket Web site:* Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.
- *Government-wide rulemaking Web site:* Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- *Mail:* Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-0001.
- *Fax:* (202) 493-2251.
- *Hand Delivery:* Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

You may examine the comments on this proposed AD in the AD docket on the Internet at <http://dms.dot.gov>.

FOR FURTHER INFORMATION CONTACT: Back to Top

Colleen M. D'Alessandro, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; telephone (781) 238-7133; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: Back to Top

Comments Invited Back to Top

We invite you to send us any written relevant data, views, or arguments regarding this proposal. Send your comments to an address listed under ADDRESSES. Include "Docket No. FAA-2007-27229; Directorate Identifier 2007-NE-03-AD" in the subject line of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the proposed AD. We will consider all comments received by the closing date and may amend the proposed AD in light of those comments.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this proposed AD. Using the search function of the DOT Web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 ([65 FR 19477-78](#)) or you may visit <http://dms.dot.gov>.

Examining the AD Docket Back to Top

You may examine the docket that contains the proposal, any comments received

and, any final disposition in person at the DOT Docket Offices between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone (800) 647-5227) is located on the plaza level of the Department of Transportation Nassif Building at the street address stated in ADDRESSES.

Comments will be available in the AD docket shortly after the Docket Management Facility receives them.

This AD is required because TRFs, part numbers 340-166-205-0, 340-166-206-0, 340-166-207-0, 340-166-208-0, 340-166-209-0, 340-166-210-0, now require an initial inspection threshold of 25,000 cycles-in-service (CIS) on the commercial (air carrier) models engines and 19,000 CIS on the business jet models. This proposed AD would not affect any other CFM56-7B part number TRFs. We have been monitoring CFM's revised life analysis progress since February 2005. CFM International provided to us the November 15, 2006 revision to the ESM to introduce mandatory inspections of the TRF. CFM International has been using a damage tolerant lifing approach, based on an FAA approved methodology for structural lifed components, to prepare life extensions for all CFM56 TRFs using on-condition life management. This improved life management process defines a first inspection threshold and reinspection intervals accounting for crack initiation and propagation. The previous life management process was based on crack initiation only. This condition, if not corrected, could result in failure of the TRF from low-cycle fatigue cracks. Failure of the TRF could result in engine separation from the airplane, which could lead to loss of control of the airplane.

FAA's Determination and Requirements of the Proposed AD Back to Top

We have evaluated all pertinent information and identified an unsafe condition that is likely to exist or develop on other products of this same type design. We are proposing this AD, which would require revising the Airworthiness Limitations Section in the ESM and the air carrier's approved continuing airworthiness maintenance program to incorporate life reductions for certain TRFs.

Costs of Compliance Back to Top

We estimate that this proposed AD would affect 1,228 engines installed on airplanes of U.S. registry. Since life extensions are possible on condition, the cost of the proposed AD will be limited to performing TRF inspections. We also estimate that it would take about 3.0 work-hours per engine to perform the proposed actions, including the TRF inspections, and that the average labor rate is \$80 per work-hour. There are no required parts. Based on these figures, we estimate the total cost of the proposed AD to U.S. operators to be \$294,720.

Authority for This Rulemaking Back to Top

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings Back to Top

We have determined that this proposed AD would not have federalism implications under [Executive Order 13132](#). This proposed AD would 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.

For the reasons discussed above, I certify that the proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this proposed AD. See the ADDRESSES section for a location to examine the regulatory evaluation.

The Proposed Amendment Back to Top

Under the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend [14 CFR part 39](#) as follows:

begin regulatory text

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. The FAA amends § 39.13 by adding the following new airworthiness directive:

CFM International: Docket No. FAA-2007-27229; Directorate Identifier 2007-NE-03-AD.

Comments Due Date Back to Top

(a) The Federal Aviation Administration (FAA) must receive comments on this airworthiness directive (AD) action by June 22, 2007.

Affected ADs Back to Top

(b) None.

Applicability Back to Top

(c) This AD applies to CFM International CFM56-7B18, -7B20, -7B22, -7B24, -7B26,

-7B27, -7B22/B1, -7B24/B1, -7B26/B1, -7B27/B1, -7B22/B2, -7B26/B2, -7B27/B3 turbofan engines with Turbine Rear Frame (TRF), part numbers 340-166-205-0, 340-166-206-0, 340-166-207-0, 340-166-208-0, 340-166-209-0, 340-166-210-0, installed. These engines are installed on, but not limited to, Boeing 737 series airplanes.

Unsafe Condition Back to Top

(d) This proposed AD results from a refined lifing analysis by the engine manufacturer that shows the need to identify an initial threshold for inspecting certain TRFs. We are proposing this AD to prevent failure of the TRF from low-cycle fatigue cracks. Failure of the TRF could result in engine separation from the airplane, which could lead to loss of control of the airplane.

Compliance Back to Top

(e) You are responsible for having the actions required by this AD performed within 30 days after the effective date of this AD, unless the actions have already been done.

Mandatory Inspections Back to Top

(f) Within the next 30 days after the effective date of this AD, revise the applicable inspection program for the Business Jet and Air Carrier engine models by adding the Mandatory Inspection Intervals as specified in this AD, and revise the Airworthiness Limitations Section (chapter 05-21-03) of the CFM56-7B Engine Shop Manual, CFMI-TP-SM.10 by adding the following:

"TURBINE REAR FRAME WITH TANGENTIAL STRUTS—MANDATORY INSPECTIONS—LIFE LIMITS

TASK 05-21-03-200-001

1. General

A. This procedure gives the FAA and EASA mandatory Eddy Current inspection intervals for the turbine rear frame with tangential struts. The inspection uses:

- A threshold limit,
- Inspection intervals,

B. The threshold limit is the timing of the first required inspection. First inspection must be done before that part has reached the threshold number of flight cycles.

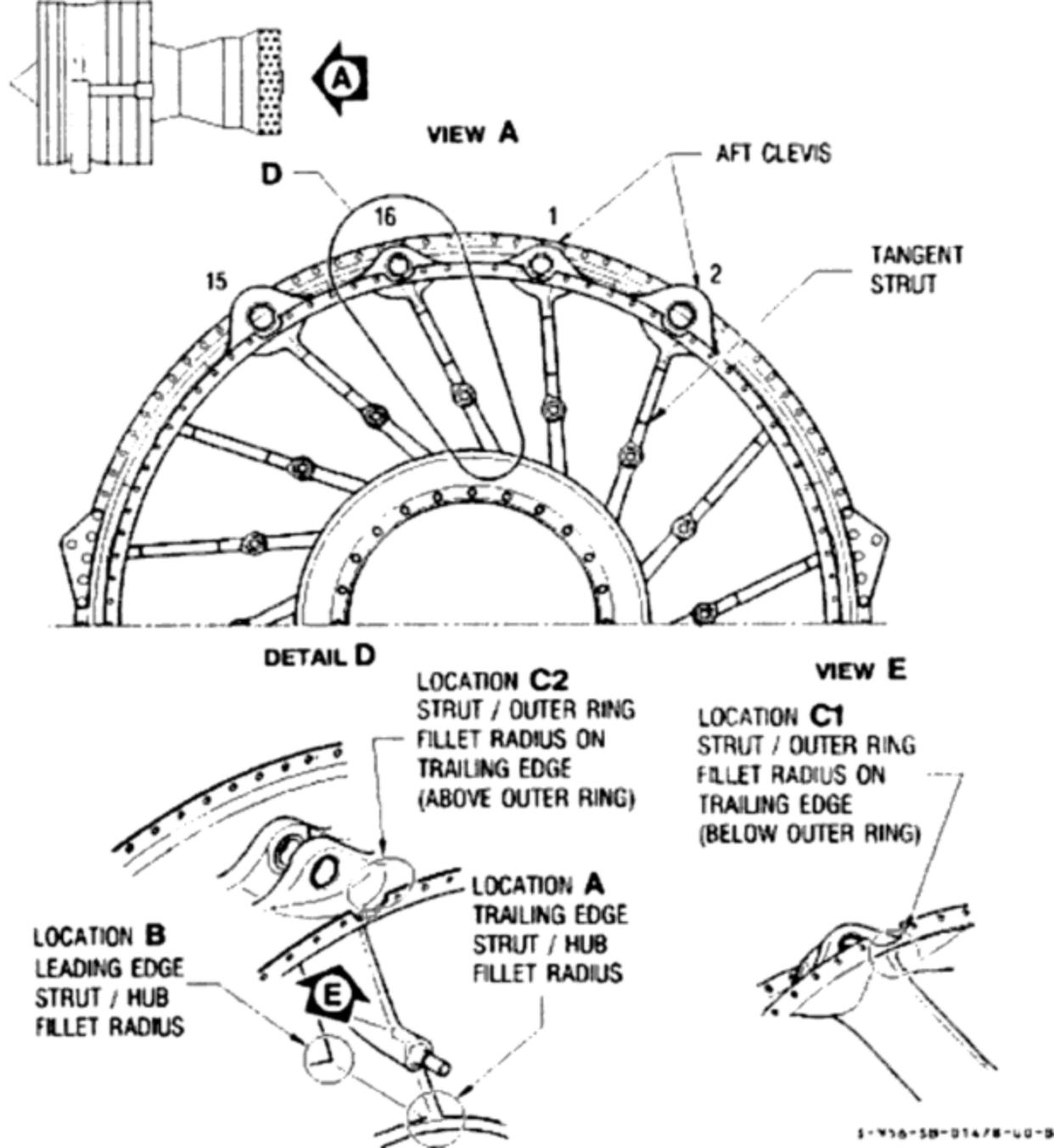
C. The inspection intervals specify the timing of inspections to be done after the threshold inspection has been reached. Inspections are repetitive without any limit.

2. Mandatory Inspection Intervals for the Critical Areas of the Turbine Rear Frame with Tangential Struts (4 Mount Struts, No. 1, 2, 15, and 16).

C. Turbine Rear Frame Part Numbers 340-166-205-0, 340-166-206-0, 340-166-207-0, 340-166-208-0, 340-166-209-0, 340-166-210-0, for all CFM56-7B SAC engine models (except -7B27A engine models). Refer to figure 805.

Figure index No.	Inspection location	Inspection threshold (cycles since new)	Inspection intervals (cycles)	Inspection reference
805	Strut/outer ring fillet radius on trailing edge (A)	25,000* for -7B SAC (except business jet) engine models	Refer to Figure 806* for -7B SAC commercial applications	Refer to SB 72-0579*.
	Strut/outer ring fillet radius on leading edge (B)	19,000* for -7B SAC business jet engine models	Refer to Figure 807* for -7B SAC business jet applications	
	Strut/outer ring fillet radius on trailing edge (C1 below outer ring)			
	Strut/outer ring fillet radius on trailing edge (C2 above outer ring)			

Note: Applicable to all inspection locations. If inspection is not performed, part must be removed.*



Turbine Rear Frame with Tangential struts P/N 340-166-205-0, 340-166-206-0, 340-166-207-0, 340-166-208-0, 340-166-209-0, 340-166-210-0-Areas to Be Inspected

Figure 805,

MANDATORY INSPECTION INTERVAL FOR TURBINE REAR FRAME P/N 340-166-205/206/207/208/209/210-0

IF NO CRACK IS FOUND ON ANY OF THE FOUR MOUNT STRUTS, THE TURBINE REAR FRAME IS SERVICEABLE AND MUST BE RE-INSPECTED AT 4,700 CYCLE REPETITIVE INTERVALS. IF CRACKS ARE FOUND ON THE MOUNT STRUTS, THE TRF MUST BE RE-INSPECTED ACCORDING TO THE FOLLOWING REPETITIVE INTERVALS

Total cumulated crack length at each location	Re-inspect within
L 0.20 (5)	4,700.
0.20 (5) ≤ L 0.28 (7)	3,300.

0.28 (7) ≤ L 0.39 (10)	1,300.
0.39 (10) ≤ L 0.59 (15)	700.
0.59 (15) ≤ L 0.79 (20)	120.
L ≥ 0.79 (20)	IMMEDIATELY REMOVE THE TURBINE FRAME.

DURING EACH INSPECTION, ALL THE LOCATIONS MUST BE INSPECTED. IF CRACKS ARE FOUND AT DIFFERENT LOCATIONS, THE REPETITIVE INSPECTION INTERVAL IS THE MINIMUM INTERVAL CORRESPONDING TO THE MAX. CUMULATED CRACK LENGTHS.

NOTE:

DIMENSIONS ARE IN INCHES WITH MILLIMETERS IN PARENTHESES.

Inspection Intervals for -7B SAC (Except Business Jet) Engine Models

Figure 806

MANDATORY INSPECTION INTERVAL FOR TURBINE REAR FRAME P/N 340-166-205/206/207/208/209/210-0

IF NO CRACK IS FOUND ON ANY OF THE FOUR MOUNT STRUTS, THE TURBINE REAR FRAME IS SERVICEABLE AND MUST BE RE-INSPECTED AT 3,300 CYCLE REPETITIVE INTERVALS. IF CRACKS ARE FOUND ON THE MOUNT STRUTS, THE TRF MUST BE RE-INSPECTED ACCORDING TO THE FOLLOWING REPETITIVE INTERVALS

Total cumulated crack length at each location	Re-inspect within
L 0.20 (5)	3,300.
0.20 (5) ≤ L 0.28 (7)	2,400.
0.28 (7) ≤ L 0.39 (10)	900.
0.39 (10) ≤ L 0.59 (15)	500.
0.59 (15) ≤ L 0.79 (20)	80.
L ≥ 0.79 (20)	IMMEDIATELY REMOVE THE TURBINE FRAME.

DURING EACH INSPECTION, ALL THE LOCATIONS MUST BE INSPECTED. IF CRACKS ARE FOUND AT DIFFERENT LOCATIONS, THE REPETITIVE INSPECTION INTERVAL IS THE MINIMUM INTERVAL CORRESPONDING TO THE MAX. CUMULATED CRACK LENGTHS.

NOTE:

DIMENSIONS ARE IN INCHES WITH MILLIMETERS IN PARENTHESES.

Inspection Intervals for -7B SAC Business Jet Engine Models

Figure 807

(g) After the effective date of this AD, we will not approve any alternative inspection intervals for these parts except as provided for in paragraph (j) of this AD.

TRFs With Unknown Cycles Back to Top

(h) If you can not establish the number of cycles accumulated since new, remove or inspect the TRF within 300 cycles-in-service after the effective date of this AD. The CFM56-7B ESM or CAMP contains information for inspecting the TRF.

(i) You may install a TRF removed in paragraph (h) of this AD after the TRF passes an initial inspection for cracks. The CFM56-7B ESM or continuous airworthiness program contains information on inspecting the TRF.

Alternative Methods of Compliance Back to Top

(j) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

Maintaining Records of the Mandatory Inspections Back to Top

(k) You have met the requirements of this AD by making the changes to the Engine Shop Manual as specified in paragraph (f) of this AD, and, for air carriers operating under part 121 of the Federal Aviation Regulations (14 CFR part 121), by modifying your continuous airworthiness maintenance plan to reflect those changes. You must maintain records of the mandatory inspections that result from those changes to the ALS according to the regulations governing your operation. You do not need to record each inspection as compliance to this AD. For air carriers operating under part 121, you may use the system established to comply with section 121.369.

Related Information Back to Top

(l) CFM International Service Bulletin CFM56-7B S/B 72-0579, Revision 1, Dated October 27, 2006, contains information about Eddy Current inspection.

Issued in Burlington, Massachusetts, on April 13, 2007.

Peter A. White,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

end regulatory text

BILLING CODE 4910-13-P