



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-4225; Directorate Identifier 2015-NM-139-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for The Boeing Company Model 777-200 and -300 series airplanes equipped with Rolls-Royce Model Trent 800 engines. This proposed AD was prompted by reports of damage to the upper bifurcation forward fire seal and seal deflector, and localized damage to the insulation blanket installed just aft of the fire seal. This proposed AD would require installing serviceable thrust reverser (T/R) halves on the left and right engines. We are proposing this AD to prevent a breach in the engine firewall due to a failed upper bifurcation forward fire seal. A breach could delay or prevent the fire detection and suppression system from functioning properly, and could result in an increased risk of a fire, prolonged burning, and breach of the fire zone; and could allow fire to reach unprotected areas of the engine, the strut, and wing after engine shutdown. Also, fan air bypassing the fire seal could cause localized damage to the T/R insulation blanket installed just aft of the fire seal, which could allow limited thermal degradation of the thrust reverser inner wall. This could aggravate existing damage and cause the thrust reverser's inner wall to fail.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-4225.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-4225; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Kevin Nguyen, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6501; fax: 425-917-6590; email: kevin.nguyen@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2016-4225; Directorate Identifier 2015-NM-139-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We received reports of damage to the upper bifurcation forward fire seal and seal deflector. The damage included cracking, wear, and missing material on the fire seal; and cracking and wear on the seal deflector. There was also a report of localized damage to the insulation blanket installed just aft of the damaged fire seal. Boeing has determined that a design deficiency is the most probable root cause for the damage to the upper bifurcation forward fire seal and seal deflector. A combination of factors including operational pressure differential and seal deflections that the system is subjected to during high thrust operation were not accounted for in the design. This design deficiency allows

the upper bifurcation forward fire seal to allow air to bypass the sealing interface at the unsupported section, which, over time, damages the upper bifurcation forward fire seal and seal deflector.

The T/R firewall seal is an integral part of the fire suppression system for the engine core compartment. A damaged upper bifurcation forward fire seal and seal deflector can result in a breach of the engine firewall and allow airflow into the engine fire zone, which can decrease the effectiveness of the engine fire detection and suppression systems due to excess fan air entering the core compartment fire zone. A breach in the engine firewall could delay or prevent the fire detection and suppression system from functioning properly, and could result in an increased risk of a fire, prolonged burning, and potential breach of the fire zone. A breach of the fire wall could allow fire to reach unprotected areas of the engine, strut, and wing after engine shutdown. Also, engine fan air bypassing the seal could cause localized damage to the T/R insulation blanket installed just aft of the fire seal, which could allow limited thermal degradation of the thrust reverser inner wall. This could aggravate existing damage and cause the thrust reverser's inner wall to fail.

Related Service Information under 1 CFR part 51

We reviewed Boeing Special Attention Service Bulletin 777-78-0101, Revision 1, dated October 30, 2015. The service information describes procedures for installing serviceable left and right T/R halves on the left and right engines. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require accomplishing the actions specified in the service information described previously.

Differences Between this Proposed AD and the Service Information

The service information specifies the compliance time as 1,875 days. For this proposed AD, we specified a compliance time of 60 months.

Other Relevant Rulemaking

We have issued additional proposed rulemaking related to the T/Rs for Model 777-200 and -300 series airplanes equipped with Rolls-Royce Model RB211-Trent 800 engines. We issued a supplemental NPRM (SNPRM), Docket No. FAA-2011-0027, Directorate Identifier 2010-NM-127-AD, that published in the Federal Register on September 25, 2015 (80 FR 57744). The SNPRM proposes to require repetitive inspections requirements for T/R halves having a thermal protective system installed. The SNPRM also proposes to require installation of serviceable T/R halves. The SNPRM also proposes to revise the maintenance or inspection program by incorporating new airworthiness limitations.

Costs of Compliance

We estimate that this proposed AD affects 55 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Install serviceable T/R halves	Up to 91 work-hours X \$85 per hour = \$7,735	Up to \$7,338	Up to \$15,073 per airplane	Up to \$829,015

According to the manufacturer, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

Authority for this Rulemaking

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

We 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 this 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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

The Boeing Company: Docket No. FAA-2016-4225; Directorate Identifier 2015-NM-139-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 777-200 and -300 series airplanes equipped with Rolls-Royce Model Trent 800 engines.

(d) Subject

Air Transport Association (ATA) of America Code 78, Engine Exhaust.

(e) Unsafe Condition

This AD was prompted by reports of damage to the upper bifurcation forward fire seal and seal deflector, and localized damage to the insulation blanket installed just aft of the fire seal. We are issuing this AD to prevent a breach in the engine firewall due to a failed upper bifurcation forward fire seal. A breach could delay or prevent the fire detection and suppression system from functioning properly, and could result in an increased risk of a fire, prolonged burning, and breach of the fire zone; and could allow fire to reach unprotected areas of the engine, the strut, and wing after engine shutdown. Also, fan air bypassing the seal could cause localized damage to the thrust reverser (T/R) insulation blanket installed just aft of the fire seal, which could allow limited thermal degradation of the thrust reverser inner wall. This could aggravate existing damage and cause the thrust reverser's inner wall to fail.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Installation of Serviceable T/R Halves on Each Engine

Within 60 months after the effective date of this AD: Install serviceable left and right T/R halves on the left and right engines, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0101, Revision 1, dated October 30, 2015. A serviceable T/R half is defined in the Accomplishment Instructions

of Boeing Special Attention Service Bulletin 777-78-0101, Revision 1, dated October 30, 2015.

(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (i) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane and the approval must specifically refer to this AD.

(4) For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (h)(4)(i) and (h)(4)(ii) apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining

approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(i) Related Information

(1) For more information about this AD, contact Kevin Nguyen, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6501; fax: 425-917-6590; email: kevin.nguyen@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on March 9, 2016.

Michael Kaszycki,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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