



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0027; Directorate Identifier 2010-NM-127-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Supplemental notice of proposed rulemaking (SNPRM); reopening of comment period.

SUMMARY: We are revising an earlier proposed airworthiness directive (AD) for The Boeing Company Model 777-200 and -300 series airplanes, equipped with Rolls-Royce Model RB211-Trent 800 engines. The notice of proposed rulemaking (NPRM) proposed to require repetitive inspections of the thrust reverser (T/R) structure and sealant, and related investigative and corrective actions if necessary. The NPRM was prompted by reports of T/R events related to thermal damage of the T/R inner wall. This action revises the NPRM by proposing to add different repetitive inspections requirements for T/R halves with a thermal protective system installed. This action also revises the NPRM by proposing to require installation of serviceable T/R halves, which would terminate the repetitive inspections in this SNPRM. This SNPRM also proposes to revise the inspection or maintenance program by incorporating new airworthiness limitations. We are proposing this SNPRM to detect and correct a degraded T/R inner wall panel, which could lead to failure of the T/R and adjacent components and their consequent separation from the airplane, and which could result in a rejected takeoff (RTO) and cause asymmetric thrust and consequent loss of control of the airplane during reverse thrust

operation. If a T/R inner wall overheats, separated components could cause structural damage to the airplane, damage to other airplanes, or possible injury to people on the ground. Since these actions impose an additional burden over that proposed in the NPRM, we are reopening the comment period to allow the public the chance to comment on these proposed changes.

DATES: We must receive comments on this SNPRM 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: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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. It is also

available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2011-0027.

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-2011-0027; 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, Washington 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 proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2011-0027; Directorate Identifier 2010-NM-127-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 issued an NPRM to amend 14 CFR part 39 by adding an AD that would apply to certain Model 777-200 and -300 series airplanes. The NPRM published in the Federal Register on January 20, 2011 (76 FR 3561). The NPRM proposed to require repetitive inspections for degradation of T/R structure and sealant, and related investigative and corrective actions if necessary.

Actions Since NPRM (76 FR 3561, January 20, 2011) was Issued

Since we issued the NPRM (76 FR 3561, January 20, 2011), we have received additional reports of thermal damage of the T/R inner wall on Rolls-Royce Model RB211-Trent 800 engines.

The preamble to the NPRM (76 FR 3561, January 20, 2011) specified that we considered those proposed requirements “interim action,” and that the manufacturer was developing a modification to address the unsafe condition. That NPRM explained that we might consider further rulemaking if a modification were developed, approved, and available. The manufacturer now has developed a thermal protection system (TPS) and inner wall. We have determined that further rulemaking is indeed necessary. This proposed AD also would require a revision to the maintenance or inspection program to incorporate new airworthiness limitations. We have determined the following actions are necessary to address the identified unsafe condition:

- For airplanes with pre-TPS insulation blankets, part number P/N 315W5113-(XX) and 315W5010-(XX): The interim actions and repetitive inspections are specified Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010.

- For airplanes with TPS insulation blankets, P/N 315W5115-(XX): The interim repetitive inspections (non-destructive test (NDT) and electronic engine control (EEC) repetitive inspections only) are specified in Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015; and Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013.
- For all airplanes: The final terminating action, installing serviceable T/R halves, is specified in Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014.
- For all airplanes: New airworthiness limitations, Airworthiness Limitations 78-AWL-01 and 78-AWL-02, that need to be incorporated in the maintenance or inspection program are specified in Boeing 777 Maintenance Planning Data (MPD) Document, Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D622W001-9, Revision dated October 2014.

Related Service Information under 1 CFR part 51

We reviewed the following service information. 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 of this SNPRM.

- Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010. This service information describes procedures for a review of the airplane maintenance records to determine whether sealant was added to insulation blankets around compression pad fittings and powered door opening system (PDOS) fittings; inspections of the T/R structure; and related investigative and corrective actions.

- Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014. This service information describes procedures for installing serviceable T/R halves.
- Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015; and Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013. This service information describes, among other actions, procedures for inspections of the T/R structure, and related investigative and corrective actions. Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013, also describes, for airplanes on which the actions specified Boeing Special Attention Service Bulletin 777-78-0071, dated November 29, 2009, have been done, procedures for installation of click bond covers and bracket, a general visual inspection of the compression fitting for incorrect pin orientation, and related investigative and corrective actions.
- Airworthiness Limitations 78-AWL-01, Thrust Reverser Thermal Protection System; and 78-AWL-02, Thrust Reverser Inner Wall; as specified in Boeing 777 Maintenance Planning Data (MPD) Document, Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D622W001-9, Revision dated October 2014. Airworthiness Limitation 78-AWL-01 describes an inspection of the T/R TPS on both engines. Airworthiness Limitation 78-AWL-02 describes an inspection of the T/R inner wall.

Comments

We gave the public the opportunity to comment on the NPRM (76 FR 3561, January 20, 2011). The following presents the comments received on the NPRM and the FAA's response to each comment.

Support for the NPRM (76 FR 3561, January 20, 2011)

Boeing concurred with the contents of the NPRM (76 FR 3561, January 20, 2011).

Requests to Include Terminating Action

American Airlines (AAL), Delta Air Lines, and Air New Zealand requested that we revise the NPRM (76 FR 3561, January 20, 2011) to allow installation of a TPS, which is described in Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013. The commenters proposed that the TPS installation terminate the proposed repetitive inspections of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, which are specified in the NPRM.

We partially agree with the request. We agree to provide a terminating action for the inspections specified in this proposed AD. However, we do not agree that installation of a TPS as described in Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013, would provide an adequate level of safety to completely address the identified unsafe condition. Instead, we have determined that installing serviceable T/R halves as specified in Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014, is terminating action for the inspections specified in this proposed AD. We have also determined that installing serviceable T/R halves (see Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014, for definition of serviceable) and revising the maintenance or inspection program to incorporate new airworthiness limitations addresses the identified unsafe condition. We have added the proposed requirement to install serviceable T/R halves to paragraph (l) of this AD and we have added the proposed requirement to revise the maintenance or inspection program to paragraph (n) of this AD.

Request to Correct Work Package Reference

AAL requested that we revise paragraph (i) of the proposed AD, which incorrectly referred to the compliance time for Work Packages 2 and 5 “or Work

Packages 2 and 6.” The correct reference is to the compliance time for Work Packages 2 and 5 “or Work Packages 5 and 6.”

We agree with this request, and have changed the references accordingly in paragraph (h)(2) in this proposed AD, which was paragraph (i) in the original proposed AD.

We also note a similar typographical error in the preamble of the NPRM (76 FR 3561, January 20, 2011), in the “Relevant Service Information” section, under the subsection titled “Work Package 6” for Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010. That subsection incorrectly specified that Work Package 6 may be done as an option to Work Package 2, if the shorter repetitive inspection intervals specified in “Work Package 2” are followed. The correct intervals are specified in “Work Package 6.” The “Relevant Service Information” section is not repeated in this proposed AD, however, so we have not changed this proposed AD regarding this issue. We have provided a general description of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010 in the “Related Service Information under 1 CFR part 51” section of this proposed AD.

Request to Remove Certain Service Bulletin Exception

AAL requested that we remove paragraph (k) from the proposed AD, which explained that where the Condition column in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, referred to “total flight cycles,” it means “total flight cycles as of the effective date of this AD.” AAL was concerned that total flight cycles are stated to be total flight cycles on the airplane rather than total flight cycles on the T/R half. AAL reported that it is not uncommon for the total flight cycles of the T/R half to differ from the total flight cycles of the airframe, because T/Rs are line-replacement units.

We partially agree. We agree that those compliance times, in terms of total flight cycles, should apply to each T/R half, although we had inadvertently specified total flight cycles on the airplane. We disagree, however, to remove paragraph (k) of the original proposed AD, which is paragraph (h)(4) in this proposed AD. The intent of paragraph (h)(4) of this proposed AD is to provide a relative starting date from which to establish the compliance time; no such starting point was provided in the service information. We have retained the exception in paragraph (h)(4) in this proposed AD, but changed “airplanes with the specified total flight cycles” to “each T/R half with the specified total flight cycles as of the effective date of this AD.”

Requests to Allow Future Aircraft Maintenance Manual (AMM) Revisions

AAL stated that Boeing intends to revise AMM 78-31-06, which is referenced in Work Package 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010. AAL recommended that we revise paragraph (g)(1) of the proposed AD to allow the use of any revision of that AMM during the inspection specified in Work Package 1. AAL stated that the AD does not specify which revision levels of AMM 78-31-06 are acceptable for this inspection.

We disagree that it is necessary to revise the NPRM (76 FR 3561, January 20, 2011) in response to this request. Use of a specific revision level of an AMM is not required during the accomplishment of the actions specified in Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010. An operator can therefore use a new AMM revision during that inspection without requesting FAA approval of an alternative method of compliance (AMOC). We have not changed this proposed AD regarding this issue.

Request to Allow Organization Designation Authorization (ODA) Approval of Repairs

AAL was concerned about the effect on its operation of the proposed requirement for FAA approval of certain repairs. AAL recommended that we revise the NPRM (76

FR 3561, January 20, 2011) to provide Boeing repair approval authority. AAL added that Boeing's technical and engineering support can support any situation and avoid grounding an airplane.

We partially agree with the request. We agree to allow Boeing repair approval authority for structural aspects of the repair, but the FAA must approve non-structural aspects of any repair. We have added new paragraph (r)(3) in this proposed AD to delegate the authority to the Boeing Commercial Airplanes ODA to approve AMOCs for structural repairs that may be conditionally required by this AD.

Request to Allow Flexibility in Work Accomplishment

AAL requested that we revise the NPRM (76 FR 3561, January 20, 2011) to allow airlines the flexibility to reorganize the proposed actions in such a way as to meet the work requirements and more easily fit the work into airline practices. AAL stated that forcing all airlines to do the actions strictly in alignment with the work package sequence in the service information could lead to confusion and the increased potential for noncompliance.

We agree with the intent of the request. Paragraph (g) of this proposed AD refers to Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, as the appropriate source of service information for doing the actions in that paragraph. Note 2 of paragraph 3.A., "General Information," of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, states, "You can do each Work Package independently or at the same time. Refer to Service Bulletin Paragraph 1.E, Compliance, for when to do the work packages." Therefore, for paragraph (g) of this proposed AD, operators are already allowed to combine work packages or otherwise adjust the procedure sequence as necessary to fit their work plan, provided the configuration meets the type design of the airplane before it is returned to service and the work package is done within the compliance time specified in Boeing Alert Service Bulletin

777-78A0065, Revision 2, dated May 6, 2010. We have not revised this proposed AD regarding this issue.

Request to Allow Alternative Sealant Curing

AAL reported that Boeing has agreed to develop alternative methods for sealant curing that would reduce the time to achieve an adequate cure. AAL therefore requested that we revise paragraph (g) of the proposed AD to allow use of this alternative sealant curing method.

We disagree with the request. While acceptable alternative cure methods might exist, the commenter did not supply sufficient information on the proposed cure process to allow the FAA to approve that process as part of the AD. Operators may propose alternative cure methods via the AMOC process as specified in paragraph (r) of this proposed AD. We have not changed this proposed AD regarding this issue.

FAA's Determination

We are proposing this SNPRM 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. Certain changes described above expand the scope of the NPRM (76 FR 3561, January 20, 2011). As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this SNPRM.

Proposed Requirements of this SNPRM

This SNPRM would require accomplishing the actions specified in the service information described previously, except as discussed under "Difference Between this SNPRM and the Service Information." Refer to Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010; Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014; Boeing Service Bulletin 777-78-0082, Revision 1,

dated June 15, 2015; and Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013; for details on the procedures and compliance times.

The phrase “related investigative actions” is used in this SNPRM. “Related investigative actions” are follow-on actions that (1) are related to the primary action, and (2) further investigate the nature of any condition found. Related investigative actions in an AD could include, for example, inspections.

The phrase “corrective actions” is used in this SNPRM. “Corrective actions” are actions that correct or address any condition found. Corrective actions in an AD could include, for example, repairs.

Differences Between this SNPRM and the Service Information

Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013, describe procedures for a general visual inspection of the perforated side of the T/R inner wall aft of the IP8 and the HP3 bleed port exits for color that is different than the normal T/R perforated wall color; a general visual inspection of the compression fitting for incorrect pin orientation; and a general visual inspection of the EEC wire bundles and clips for damage. However, this SNPRM would require detailed inspections instead of general visual inspections. Detailed inspections are necessary in order to adequately determine if the specified condition exists. This difference has been coordinated with Boeing.

Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014, specifies a compliance time of 5 years for doing the installation, but this SNPRM would require a compliance time of 48 months to ensure the safety of the fleet in light of the identified unsafe condition. This difference has been coordinated with Boeing.

Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013, specifies a compliance time of 4 years for installation of click bond covers and bracket, and washer replacement; and for the general visual inspection of the

compression fitting for incorrect pin orientation, a compliance time of 2,000 flight-cycles after accomplishing a certain work package (these actions are for airplanes on which the actions specified Boeing Special Attention Service Bulletin 777-78-0071, dated November 29, 2009, have been done). This SNPRM would require these actions to be done prior to or concurrently with the inspection specified in paragraph (i) of this SNPRM. These actions must be done first in order to accomplish the inspections specified in paragraph (i) of this SNPRM. We have coordinated this difference with Boeing.

Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010; Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013; Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015; and Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014; specify contacting the manufacturer for instructions on how to repair certain conditions. Instead, this SNPRM would require repairing those conditions in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes ODA whom we have authorized to make those findings.

Other Related Rulemaking

On March 31, 2005, we issued AD 2005-07-24, Amendment 39-14049 (70 FR 18285, April 11, 2005), for certain Boeing Model 777-200 and -300 series airplanes. AD 2005-07-24 requires inspecting the T/Rs for damage of the insulation blankets, the inner wall, and the compression and drag link fittings; and repair if necessary. AD 2005-07-24 also requires applying sealant to certain areas of the T/R. AD 2005-07-24 was prompted by two reports of T/R failure. Investigation revealed that the inner wall of the T/Rs had collapsed from exposure to hot engine core compartment air. We issued

AD 2005-07-24 to prevent failure of a T/R and adjacent components and their consequent separation from the airplane, which could result in a rejected takeoff (RTO) and cause asymmetric thrust and consequent loss of control of the airplane during reverse thrust operation. If an RTO does not occur, these separated components could cause structural damage to the airplane or damage to other airplanes and possible injury to people on the ground.

This SNPRM would terminate the actions required by paragraphs (f), (g), and (h) of AD 2005-07-24, Amendment 39-14049 (70 FR 18285, April 11, 2005), by accomplishment of any of the following actions specified in this SNPRM:

- The actions specified in Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010 (paragraph (g) of this SNPRM).
- Certain inspections and actions specified in Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015; and Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013 (paragraphs (i), (j), and (k) of this SNPRM).
- The installation specified in Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014 (paragraph (l) of this SNPRM).

Costs of Compliance

We estimate that this proposed AD affects 55 of U.S. registry. We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Work hours	Average labor rate per hour	Parts cost	Cost per product	Fleet cost
Actions per Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010	Up to 79 work-hours, per T/R half	\$85	\$0	Up to \$6,715 per T/R half	\$0 (No airplanes on the U.S. Register are in the configuration specified in Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010.)
Actions per Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013	Up to 48 work-hours, per T/R half	\$85	\$0	Up to \$4,080 per T/R half	Up to \$897,600 (4 T/R halves per airplane)
Inspections per Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015	Up to 39 work-hours, per T/R half	\$85	\$0	Up to \$3,315 per T/R half	\$0 (No airplanes on the U.S. Register are in the configuration specified in Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015.)
Maintenance or Inspection Program Revision	1 work-hour	\$85	\$0	\$85	\$4,675
T/R half installation per Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014	Up to 206 work-hours, per T/R half	\$85	^[1] Up to \$400,651 per T/R half	Up to \$418,161 per T/R half	^[2] Up to \$91,995,420 (4 T/R halves per airplane)

^[1]The cost of parts is split into two major parts: (1) TPS blankets and (2) inner wall structure. The vast majority of the cost associated with the TPS upgrade has already been completed. In addition, nearly half of the inner wall structure modification has already been done.

^[2]The fleet cost estimate above is based on just a general estimate for a given airplane with two engines having two T/R halves for each engine. Not all tasks required by this SNPRM and specified in the service information would need to be done for a given T/R half. For a given TR half, it may only be necessary to accomplish certain actions or none for compliance, depending on its configuration status. We have no data to determine any given T/R half configuration to determine the cost for each T/R half to do the applicable actions for that T/R half. The majority of this cost has already been incurred.

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this SNPRM.

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-2011-0027; Directorate Identifier 2010-NM-127-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

This AD affects AD 2005-07-24, Amendment 39-14049 (70 FR 18285, April 11, 2005).

(c) Applicability

This AD applies to The Boeing Company Model 777-200 and -300 series airplanes, certificated in any category, equipped with Rolls-Royce Model RB211-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 thrust reverser (T/R) events related to thermal damage of the T/R inner wall. We are issuing this AD to detect and correct a degraded T/R inner wall panel, which could lead to failure of the T/R and adjacent components and their consequent separation from the airplane, and which could result in a rejected takeoff (RTO) and cause asymmetric thrust and consequent loss of control of the airplane during reverse thrust operation. If a T/R inner wall overheats, separated components could cause structural damage to the airplane, damage to other airplanes, or possible injury to people on the ground.

(f) Compliance

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

(g) Records Review, Inspections, and Related Investigative and Corrective Actions for Airplanes with Pre-Thermal Protection System (TPS) Insulation Blankets (Part Numbers (P/Ns) 315W5113-(XX) and 315W5010-(XX)) Installed

For airplanes with pre-TPS insulation blankets, P/Ns 315W5113-(XX) and 315W5010-(XX): Except as required by paragraphs (h)(1), (h)(2), (h)(3), and (h)(4) of this AD, at the applicable time in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, review the airplane maintenance

records to determine whether sealant was added to insulation blankets around the compression pad fittings and the powered door opening system (PDOS) fitting; do the applicable actions specified in paragraphs (g)(1), (g)(2), (g)(3), (g)(4), (g)(5), and (g)(6) of this AD; and do all applicable related investigative and corrective actions; in accordance with the applicable work packages of the Accomplishment Instructions of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, except as required by paragraph (h)(5) of this AD. Do all applicable related investigative and corrective actions before further flight. Repeat the applicable inspections, replacement, and installations required by paragraphs (g)(1), (g)(2), (g)(3), (g)(4), (g)(5), and (g)(6) of this AD thereafter at the applicable intervals specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010.

(1) Do a detailed inspection of all T/R inner wall insulation blanket edges, grommet holes, penetrations, and seams for sealant that is cracked, has gaps, is loose, or is missing; do a general visual inspection of click bond studs, blanket studs, and temporary fasteners; and replace sealant as applicable.

(2) Do the actions specified by either paragraph (g)(2)(i) or (g)(2)(ii) of this AD.

(i) Do a full inner wall panel non-destructive test (NDT) inspection for delamination and disbonding of each T/R half, and do a general visual inspection for areas of thermal degradation.

(ii) Do a limited area NDT inspection of the inner wall panel of each T/R half for delamination and disbonding, and do a general visual inspection for areas of thermal degradation.

(3) Do a general visual inspection of the T/R perforated wall aft of the intermediate pressure compressor 8th stage (IP8) and the high pressure compressor 3rd stage (HP3) bleed port exits for a color that is different from that of the general area.

(4) Do a detailed inspection of the PDOS lug bushings on the upper number 1 compression pad fittings to detect hole elongation, deformation, and contact with the PDOS actuator; and install a PDOS actuator rod and sealant.

(5) Do an NDT inspection for unsatisfactory number 1 upper and numbers 1 and 2 lower compression pad fittings.

(6) Install and seal insulation blankets.

(h) Exceptions to Specifications of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010

(1) Where paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, specifies a compliance time “after the date on the original issue of this service bulletin,” this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where table 2 of paragraph 1.E., “Compliance,” in Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, specifies a compliance time of “2,000 flight cycles after the date of the operator’s own inspections,” for doing Work Packages 2 and 5, or Work Packages 5 and 6, this AD requires compliance within 2,000 flight cycles after the date of the operator’s own inspections, or within 12 months after the effective date of this AD, whichever occurs later.

(3) Where the Condition column in table 2 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, refers to a T/R half that has or has not been inspected before “the date on this service bulletin,” this AD requires compliance for each corresponding T/R half that has or has not been inspected before the effective date of this AD.

(4) Where the Condition column in tables 2 and 3 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, refers to “total flight cycles,” this AD applies to each T/R half with the specified total flight cycles as of the effective date of this AD.

(5) Where Boeing Alert Service Bulletin 777-78A0065, Revision 2, dated May 6, 2010, specifies to contact Boeing for appropriate action: Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (r) of this AD.

(i) Repetitive NDT and Additional Inspections for Airplanes with TPS Insulation Blankets (P/N 315W5115-(XX)) Installed

For airplanes with TPS insulation blankets, P/N 315W5115-(XX): Within 2,000 flight cycles after doing any NDT inspection specified in Boeing Special Attention Service Bulletin 777-78-0071; or within 2,000 flight cycles after doing any NDT inspection specified in Boeing Service Bulletin 777-78-0082; or within 30 days after the effective date of this AD; whichever occurs latest; do the inspections specified in paragraphs (i)(1) and (i)(2) of this AD, and do all applicable related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013, or in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015, as applicable; except as required by paragraph (m) of this AD. Do all applicable related investigative and corrective actions before further flight. Repeat the inspections specified in paragraphs (i)(1) and (i)(2) of this AD thereafter at the applicable time specified in paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013; or Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015; as applicable.

(1) Do an NDT inspection of the full T/R inner wall panel for delaminations and disbonds.

(2) Do a detailed inspection of the perforated side of the T/R inner wall aft of the IP8 and the HP3 bleed port exits for color that is different from the normal T/R perforated wall color.

(j) Concurrent Requirements for Paragraph (i) of this AD

For airplanes with TPS insulation blankets, part number P/N 315W5115-(XX) on which any action specified in Boeing Special Attention Service Bulletin 777-78-0071 have been done but the actions specified paragraphs (j)(1) and (j)(2) of this AD have not been done: Prior to or concurrently with doing the inspection required by paragraph (i) of this AD, do the actions specified in paragraphs (j)(1) and (j)(2) of this AD, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013, except as required by paragraph (m) of this AD.

(1) Install click bond covers and bracket and replace the washers.

(2) Do a detailed inspection of the compression fitting for incorrect pin orientation, and do all applicable related investigative and corrective actions. Do all applicable related investigative and corrective actions before further flight.

(k) Repetitive Electronic Engine Control (EEC) Wire Bundle Inspections for Airplanes with TPS Insulation Blankets (P/N 315W5115-(XX)) Installed

For airplanes with TPS insulation blankets, part number P/N 315W5115-(XX): Do the inspections specified in paragraph (k)(1) or (k)(2) of this AD, as applicable.

(1) For airplanes on which any inspection specified in Boeing Special Attention Service Bulletin 777-78-0071 has been done: Within 2,000 flight hours after doing a detailed inspection of the EEC wire bundles and clips specified in Boeing Special Attention Service Bulletin 777-78-0071, or within 500 flight hours after the effective date of this AD, whichever occurs later; do a detailed inspection of the EEC wire bundles and clips for damage, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013, except as required by paragraph (m) of this AD. Do all applicable corrective actions before further flight. Repeat the inspection thereafter at the applicable time specified in table 5 of paragraph 1.E., “Compliance,” of Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013.

(2) For airplanes on which any inspection specified in Boeing Service Bulletin 777-78-0082 has been done: Within 2,000 flight hours after doing a detailed inspection of the EEC wire bundles and clips specified in Boeing Special Attention Service Bulletin 777-78-0082, or within 500 flight hours after the effective date of this AD, whichever occurs later; do a detailed inspection for damage of the EEC wire bundles and clips, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015, except as required by paragraph (m) of this AD. Do all applicable corrective actions before further flight. Repeat the inspection thereafter at the applicable time specified in paragraph 1.E., “Compliance,” of Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015.

(l) T/R Inner Wall Installation

Within 48 months after the effective date of this AD: Install serviceable T/R halves, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014, except as required by paragraph (m) of this AD. The definition of a serviceable T/R half is specified in Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014. Accomplishing the installation specified in this paragraph and the revision to the maintenance or inspection program required by paragraph (n) of this AD terminates the actions required by paragraphs (g), (i), (j), and (k) of this AD.

(m) Exceptions to Service Information Specified in Paragraphs (i), (j), (k), and (l) of this AD

Where Boeing Alert Service Bulletin 777-78A0094, dated July 29, 2014; Boeing Service Bulletin 777-78-0082, Revision 1, dated June 15, 2015; and Boeing Special Attention Service Bulletin 777-78-0071, Revision 2, dated July 23, 2013; specify to contact Boeing for appropriate action: Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (r) of this AD.

(n) Revise the Maintenance or Inspection Program

Within 30 days after the effective date of this AD, revise the maintenance or inspection program, as applicable, to incorporate Airworthiness Limitations 78-AWL-01, Thrust Reverser Thermal Protection System; and 78-AWL-02, Thrust Reverser Inner Wall; as specified in Boeing 777 Maintenance Planning Data (MPD) Document, Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D622W001-9, Revision dated October 2014.

(1) The initial compliance time for Airworthiness Limitation 78-AWL-01, Thrust Reverser Thermal Protection System, as specified in Boeing 777 Maintenance Planning Data (MPD) Document, Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D622W001-9, Revision dated October 2014, is concurrent with the next inspection required by paragraph (i) of this AD, or within 30 days after the effective date of this AD, whichever occurs later.

(2) The initial compliance time for Airworthiness Limitation 78-AWL-02, Thrust Reverser Inner Wall, as specified in Boeing 777 Maintenance Planning Data (MPD) Document, Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D622W001-9, Revision dated October 2014, is at the applicable time specified in paragraph (n)(2)(i) or (n)(2)(ii) of this AD.

(i) For airplanes on which any inspections required by paragraph (i) of this AD are done: Concurrent with the next inspection required by paragraph (i) of this AD; or within 30 days after the effective date of this AD; whichever occurs later.

(ii) For airplanes on which the installation required by paragraph (l) of this AD is done: The later of the times specified in paragraph (n)(2)(ii)(A) and (n)(2)(ii)(B) of this AD.

(A) Within 1,125 days or 6,000 flight cycles, whichever occurs first after accomplishing the installation required by paragraph (l) of this AD.

(B) Within 30 days after the effective date of this AD.

(o) No Alternative Actions or Intervals

After the the maintenance or inspection program, as applicable, has been revised as required by paragraph (n) of this AD, no alternative actions (e.g., inspections) or intervals may be used unless the actions or intervals are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (r) of this AD.

(p) Credit for Previous Actions

(1) This paragraph provides credit for the actions specified in paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 777-78A0065, dated June 23, 2008; or Boeing Alert Service Bulletin 777-78A0065, Revision 1, dated January 29, 2009. This service information is not incorporated by reference in this AD.

(2) This paragraph provides credit for the actions specified in paragraph (i) of this AD, if those actions were performed before the effective date of this AD using any service information specified in paragraphs (p)(2)(i), (p)(2)(ii), and (p)(2)(iii) of this AD. This service information is not incorporated by reference in this AD.

(i) Boeing Service Bulletin 777-78-0082, dated November 9, 2011.

(ii) Boeing Special Attention Service Bulletin 777-78-0071, dated November 25, 2009.

(iii) Boeing Special Attention Service Bulletin 777-78-0071, Revision 1, dated September 8, 2010.

(3) This paragraph provides credit for the actions specified in paragraph (j) of this AD, if those actions were performed before the effective date of this AD using Boeing Special Attention Service Bulletin 777-78-0071, Revision 1, dated September 8, 2010. This service information is not incorporated by reference in this AD.

(4) This paragraph provides credit for the actions specified in paragraph (k)(2) of this AD, if those actions were performed before the effective date of this AD using

Boeing Service Bulletin 777-78-0082, dated November 9, 2011. This service information is not incorporated by reference in this AD

(q) Terminating Action for AD 2005-07-24, Amendment 39-14049 (70 FR 18285, April 11, 2005)

Accomplishing the actions specified in paragraph (q)(1), (q)(2), or (q)(3) of this AD terminates the actions required by paragraphs (f), (g), and (h) of AD 2005-07-24, Amendment 39-14049 (70 FR 18285, April 11, 2005).

(1) The actions required by paragraph (g) of this AD.

(2) The inspections required by paragraphs (i) and (k) of this AD, and, as applicable, the actions required by paragraph (j) of this AD.

(3) The installation specified in paragraph (l) of this AD.

(r) 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 (s)(1) 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 structural repair 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. For a repair method to be approved, the

repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(s) 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, Washington 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, 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 September 16, 2015.

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

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