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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0468; Directorate Identifier 2012-NM-147-AD; Amendment 39-17924; AD 2014-15-21]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are superseding Airworthiness Directive (AD) 2006-26-06 for certain The Boeing Company Model 777-200 and -300 series airplanes equipped with Rolls-Royce engines. AD 2006-26-06 required repetitive inspections to detect cracks of the outer V-blades of the thrust reverser, and corrective action if necessary. AD 2006-26-06 also provided for an optional terminating action for the repetitive inspections. This new AD adds, for airplanes on which the optional terminating action is done, repetitive inspections for cracking in the outer V-blade fittings of the hinge beam and latch beam ends of each thrust reverser half, and replacement of an affected thrust reverser half if necessary. This new AD also adds airplanes to the applicability. This AD was prompted by reports of cracked outer V-blade fittings at the hinge beam end of Rolls-Royce engine thrust reversers, on airplanes on which the optional terminating action was done. We are issuing this AD to prevent separation of a thrust reverser from the airplane during normal reverse thrust or during a refused takeoff, which could result in unexpected thrust asymmetry and a possible runway excursion.

DATES: This AD is effective September 19, 2014.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of September 19, 2014.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of January 11, 2007 (71 FR 77586, December 27, 2006).

ADDRESSES: 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.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; 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 AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Narinder Luthra, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6513; fax: 425-917-6590; email: narinder.luthra@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2006-26-06, Amendment 39-14864 (71 FR 77586, December 27, 2006). AD 2006-26-06 applied to Boeing Model 777-200 and -300 series airplanes, equipped with Rolls-Royce engines. The NPRM published in the Federal Register on July 3, 2013 (78 FR 40060). The NPRM proposed to continue to require repetitive inspections to detect cracks of the outer V-blades of the thrust reverser, and corrective action if necessary. The NPRM also proposed to continue to provide an optional terminating action for the repetitive inspections. The NPRM also proposed to require, for airplanes on which the optional terminating action is done, repetitive inspections for cracking in the outer V-blade fittings of the hinge beam and latch beam ends of each thrust reverser half, and replacement of an affected thrust reverser half if necessary.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (78 FR 40060, July 3, 2013) and the FAA's response to each comment.

Requests To Incorporate Boeing Special Attention Service Bulletin 777-78-0091, Dated June 18, 2013

Boeing, American Airlines (AAL), Air New Zealand, Delta Airlines, and Transaero requested that we allow the modifications and inspections defined in Boeing Special Attention Service Bulletin 777-78-0091, dated June 18, 2013, as an alternative to the inspections specified in paragraph (j) of the NPRM (78 FR 40060, July 3, 2013). Boeing stated that Boeing Special Attention Service Bulletin 777-78-0091, dated June 18, 2013, has been approved as an alternative method of compliance (AMOC) with AD 2006-26-06, Amendment 39-14864 (71 FR 77586, December 27, 2006), and is intended as an alternative to the inspections proposed by the NPRM. Boeing also requested that we provide credit for actions specified in paragraph (j) of the NPRM that were done before the effective date of the new AD in accordance with Boeing Special Attention Service Bulletin 777-78-0091, dated June 18, 2013.

We disagree with the request. Boeing is considering revising Boeing Special Attention Service Bulletin 777-78-0091, dated June 18, 2013, to incorporate feedback on the Accomplishment Instructions of the service bulletin that resulted from validation of the service bulletin. The new revision might include improvements to the L-fitting modification to eliminate short edge margin, fastener changes to eliminate interference, and other changes to the installation sequence and other

procedures. We will consider approving the revision of Boeing Special Attention Service Bulletin 777-78-0091 as an AMOC to the actions specified in paragraph (j) of this AD, once this service bulletin is approved and is released. We find that delaying this action would be inappropriate in light of the urgency of the identified unsafe condition. No change has been made to this final rule in this regard.

Request To Reference Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, Dated June 14, 2012

Boeing requested that we add Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012, as a reference to paragraph (g) of the NPRM (78 FR 40060, July 3, 2013). Boeing stated that Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012, reiterates the repetitive inspection intervals from Boeing Special Attention Service Bulletin 777-78-0064, Revision 1, dated November 30, 2006.

We agree. The compliance times specified in Boeing Special Attention Service Bulletin 777-78-0064, Revision 1, dated November 30, 2006; and Revision 2, dated June 14, 2012; are the same, except that Revision 2 states that the compliance times are measured from the effective date of AD 2006-26-06, Amendment 39-14864 (71 FR 77586, December 27, 2006), rather than the issue date of Boeing Special Attention Service Bulletin 777-78-0064, Revision 1, dated November 30, 2006. We have revised paragraph (g) of this final rule to add Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012, as a reference for accomplishing the actions.

Request To Change Format of the NPRM (78 FR 40060, July 3, 2013)

Air New Zealand requested that we change the format of the NPRM (78 FR 40060, July 3, 2013) to clarify the requirements. The commenter requested that we list all repetitive inspection requirements for all airplane configurations in one paragraph. The commenter stated that the format of the NPRM was confusing.

We disagree with changing the format as it is consistent with the format used for most supersedure ADs. Paragraph (g) of this AD clearly identifies the affected airplanes that must continue to accomplish the retained repetitive inspections. Paragraph (j) of this AD clearly identifies the affected airplanes that must accomplish the new repetitive inspections. No change has been made to this final rule in this regard.

Request To Consider AD Implementation Aviation Rulemaking Committee (AD ARC) Recommendations

AAL requested that, in the spirit of the AD ARC to improve the AD process, we consider the guidance from the AD ARC when considering its comments to the proposed AD. AAL provided a general comment noting that certain service information referenced in the proposed AD is quite lengthy and contains extremely detailed data, while one of the referenced service documents is only 29 pages long. AAL does not consider the lengthy service information to be "AD-Friendly." Further, AAL stated that the instructions in this service information does not differentiate between critical and non-critical tasks and figures (i.e., the service information does not incorporate the "Required for Compliance" (RC) concept developed by the AD ARC).

We agree that it is helpful when service information is presented in a way that meets "AD-Friendly" guidelines. The focus of AD-friendly service information is to ensure that the language (including compliance times and instructions) in the document is clear and legally enforceable and, therefore, easier for the FAA to adopt into an AD. However, this focus does not mean the service information will be brief. Many service bulletins are necessarily lengthy and complex due, in part, to multiple actions, multiple airplane groups/configurations, and multiple or complex compliance times.

The RC concept is an additional improvement to service information. The concept was developed between the FAA and industry under the AD ARC to further enhance service bulletins and, in turn, the AD process. The RC concept is a new process for annotating which steps in the service information are "required for compliance" with an AD. Differentiating these steps from other tasks in the service information is expected to improve an owner's/operator's understanding of AD requirements and help provide consistent judgment in AD compliance. However, the RC concept does not necessarily result in less lengthy service information. Details might be necessary to provide clear understanding and accurate service instructions.

In response to the AD ARC's recommendations, the FAA released Advisory Circular (AC) 20-176, dated December 19, 2011 ([http://rgl.avs.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/a78cc91a47b192278625796b0075f419/\\$FILE/AC%2020-176.pdf](http://rgl.avs.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/a78cc91a47b192278625796b0075f419/$FILE/AC%2020-176.pdf)); and Order 8110.117, dated September 12, 2012 ([http://rgl.avs.faa.gov/Regulatory_and_Guidance_Library/rgOrders.nsf/0/984bb9eb07cdd86986257a7f0070744c/\\$FILE/Order%208110.117.pdf](http://rgl.avs.faa.gov/Regulatory_and_Guidance_Library/rgOrders.nsf/0/984bb9eb07cdd86986257a7f0070744c/$FILE/Order%208110.117.pdf)); which discusses the RC concept. The FAA includes this concept in ADs when we receive service information containing RC steps. While some design approval holders have implemented the RC concept, the implementation is voluntary. The FAA does not intend to develop or revise AD requirements to incorporate the RC concept if it is not included in the service information.

Request To Add More Detail for Compliance Requirements in AD

AAL requested that rather than requiring compliance with the referenced service bulletins, the AD should focus compliance requirements on identifying detailed inspections by task name, identifying an optional configuration change by part numbers, and specifying the corrective action for crack findings. AAL stated that requiring compliance with the entirety of the referenced service bulletins would introduce an unnecessary and excessive burden on the operators, impede progress toward correcting the unsafe condition, and introduce unintended compliance risks not relevant to correcting the unsafe condition.

We disagree with the request. As stated previously, the FAA does not intend to develop or revise AD requirements to incorporate the RC concept if it is not included in the service information. This final rule requires certain repetitive inspections and, as applicable, certain corrective actions and replacements, which are described in detail in the service information. No change has been made to this final rule in this regard.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (78 FR 40060, July 3, 2013) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (78 FR 40060, July 3, 2013).

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

Interim Action

We consider this AD interim action. The manufacturer is currently developing a modification that will address the unsafe condition identified in this AD. Once this modification is developed, approved, and available, we might consider additional rulemaking.

Costs of Compliance

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

We estimate the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Cost per product	Cost on U.S. operators
Inspections [retained actions from AD 2006-26-06, Amendment 39-14864 (71 FR 77586 , December 27, 2006)]	16 work-hours × \$85 per hour = \$1,360 per inspection cycle	\$1,360 per inspection cycle	\$74,800 per inspection cycle.
Repetitive inspections outer V-blade [new action] ¹	82 work-hours × \$85 per hour = \$6,970 per inspection cycle	\$6,970 per inspection cycle	\$383,350 per inspection cycle.

¹We have received no definitive data that would enable us to provide a cost estimate for the on-condition actions specified in this AD.

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 have determined that this AD will not have federalism implications under Executive Order 13132. This AD will 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 this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under 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.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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 removing Airworthiness Directive (AD) 2006-26-06, Amendment 39-14864 (71 FR 77586, December 27, 2006), and adding the following new AD:



2014-15-21 The Boeing Company: Amendment 39-17924; Docket No. FAA-2013-0468; Directorate Identifier 2012-NM-147-AD.

(a) Effective Date

This AD is effective September 19, 2014.

(b) Affected ADs

This AD supersedes AD 2006-26-06, Amendment 39-14864 (71 FR 77586, December 27, 2006).

(c) Applicability

This AD applies to The Boeing Company Model 777-200 and -300 series airplanes, certificated in any category, equipped with Rolls-Royce engines.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports of cracked outer V-blade fittings at the hinge beam end of Rolls-Royce engine thrust reversers, on airplanes on which the optional terminating action was done. We are issuing this AD to prevent separation of a thrust reverser from the airplane during normal reverse thrust or during a refused takeoff, which could result in unexpected thrust asymmetry and a possible runway excursion.

(f) Compliance

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

(g) Retained Repetitive Inspections With New Service Information

This paragraph restates the requirements of paragraph (f) of AD 2006-26-06, Amendment 39-14864 (71 FR 77586, December 27, 2006), with new service information. For Group 1, Configuration 1, airplanes, as identified in Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012: Do the detailed inspections to detect cracks in the outer V-blade of the thrust reversers. Do the inspections in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0064, Revision 1, dated November 30, 2006; or Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012. Do the inspections at the applicable times specified in paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 777-78-0064, Revision 1, dated November 30, 2006; except where Boeing Special Attention Service Bulletin 777-78-0064, Revision 1, dated November 30, 2006, specifies an initial compliance time after the date on that service bulletin, this AD requires compliance within the specified time

after January 11, 2007 (the effective date of AD 2006-26-06). Do applicable corrective actions before further flight, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0064, Revision 1, dated November 30, 2006; or Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012; or paragraph (m) of this AD. As of the effective date of this AD, use only Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012, to accomplish the actions required by this paragraph.

(h) Retained Credit for Previous Actions

This paragraph restates the credit provisions for the actions specified in paragraph (g) of AD 2006-26-06, Amendment 39-14864 (71 FR 77586, December 27, 2006). For Group 1, Configuration 1, airplanes as identified in Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012. This paragraph provides credit for the actions specified in paragraph (g) of this AD, if those actions were performed before January 11, 2007 (the effective date of AD 2006-26-06), using Boeing Special Attention Service Bulletin 777-78-0064, dated August 7, 2006.

(i) Retained Optional Terminating Action With New Requirements and New Service Information

This paragraph restates the optional terminating action specified in paragraph (i) of AD 2006-26-06, Amendment 39-14864 (71 FR 77586, December 27, 2006), with new service information. Accomplishment of the actions specified in paragraph (i)(1) or (i)(2) of this AD terminates the requirements of paragraph (g) of this AD. For airplanes on which this terminating action has been accomplished, operators must do the inspection required by paragraph (j) of this AD.

(1) Accomplishment of the applicable inspections and related investigative/corrective actions before the effective date of this AD, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0061, dated July 6, 2006; except, where Boeing Special Attention Service Bulletin 777-78-0061, dated July 6, 2006, specifies to contact the manufacturer for appropriate action, repair before further flight using a method approved in accordance with the procedures specified in paragraph (m) of this AD.

(2) Accomplishment of the applicable modification, inspections, and related investigative/corrective actions, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0061, Revision 1, dated August 28, 2007; except, where Boeing Special Attention Service Bulletin 777-78-0061, Revision 1, dated August 28, 2007, specifies to contact the manufacturer for appropriate action, repair before further flight using a method approved in accordance with the procedures specified in paragraph (m) of this AD.

(j) New Repetitive Inspections

For airplanes in Group 1, Configuration 2, and Groups 2 and 3, as identified in Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012: At the applicable times specified in paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012, except as provided by paragraph (k) of this AD, do a detailed inspection for cracking of the outer V-blade fittings at the latch beam end and hinge beam end of each thrust reverser half, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012.

(1) If no cracking is found, repeat the inspections thereafter at the times specified in paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012.

(2) If any cracking is found, before further flight, replace the affected thrust reverser half with a serviceable thrust reverser half, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012. Repeat the

inspections thereafter at the times specified in paragraph 1.E., "Compliance," of Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012.

(k) Service Information Exception

Where Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012, specifies an initial compliance time "after the date on Revision 2 of this service bulletin," this AD requires compliance within the specified time after the effective date of this AD.

(l) Reporting Not Required

Although Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012, specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(m) 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 the Related Information section 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 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.

(4) AMOCs approved previously in accordance with AD 2006-26-06, Amendment 39-14864 (71 FR 77586, December 27, 2006), are not approved as AMOCs for this AD.

(n) Related Information

(1) For more information about this AD, contact Narinder Luthra, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6513; fax: 425-917-6590; email: narinder.luthra@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference may be obtained at the addresses specified in paragraphs (o)(5) and (o)(6) of this AD.

(o) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on September 19, 2014.

(i) Boeing Special Attention Service Bulletin 777-78-0061, Revision 1, dated August 28, 2007.

(ii) Boeing Special Attention Service Bulletin 777-78-0064, Revision 2, dated June 14, 2012.

(4) The following service information was approved for IBR on January 11, 2007 (71 FR 77586, December 27, 2006).

(i) Boeing Special Attention Service Bulletin 777-78-0061, dated July 6, 2006.

(ii) Reserved.

(5) 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>.

(6) You may view this service information at 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.

(7) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on July 23, 2014.

John P. Piccola,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.