

[Federal Register Volume 83, Number 151 (Monday, August 6, 2018)]  
[Rules and Regulations]  
[Pages 38250-38253]  
From the Federal Register Online via the Government Publishing Office [www.gpo.gov]  
[FR Doc No: 2018-16499]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2018-0110; Product Identifier 2017-NM-125-AD; Amendment 39-19345; AD 2018-16-05]**

**RIN 2120-AA64**

#### **Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 757 airplanes. This AD was prompted by reports of bolt rotation in the engine drag fitting joint and fasteners heads; an inspection of the fastener holes revealed that cracks were found in the skin on two airplanes. This AD requires repetitive inspections for skin cracking and shim migration at the upper link drag fittings, diagonal brace cracking, and fastener looseness; and applicable on-condition actions. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective September 10, 2018.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of September 10, 2018.

**ADDRESSES:** For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0110.

#### **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-2018-0110; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The address for Docket

Operations (phone: 800-647-5527) is Docket Operations, 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:** Chandra Ramdoss, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5239; fax: 562-627-5210; email: chandraduth.ramdoss@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain The Boeing Company Model 757 airplanes. The NPRM published in the Federal Register on February 16, 2018 (83 FR 6984). The NPRM was prompted by reports of bolt rotation in the engine drag fitting joint and fasteners heads; an inspection of the fastener holes revealed that cracks were found in the skin on two airplanes. The NPRM proposed to require repetitive inspections for skin cracking and shim migration at the upper link drag fittings, diagonal brace cracking, and fastener looseness; and applicable on-condition actions.

We are issuing this AD to address cracking in the wing upper skin and forward drag fittings, which could lead to a compromised upper link and reduced structural integrity of the engine strut.

### **Comments**

We gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment. Micaela Murrugarra and United Airlines stated that they supported the NPRM.

### **Effect of Winglets on Accomplishment of the Proposed Actions**

Aviation Partners Boeing stated that accomplishing the supplemental type certificate (STC) ST01518SE does not affect the actions specified in the NPRM.

We concur with the commenter. We have redesignated paragraph (c) of the proposed AD as paragraph (c)(1) of this AD and added paragraph (c)(2) to this AD to state that installation of STC ST01518SE does not affect the ability to accomplish the actions required by this AD. Therefore, for airplanes on which STC ST01518SE is installed, a “change in product” alternative method of compliance (AMOC) approval request is not necessary to comply with the requirements of 14 CFR 39.17.

### **Request To Include Additional Inspections**

American Airlines (AAL) and FedEx requested that we revise the proposed AD to include additional inspections. FedEx stated that releasing the proposed AD using Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017, would have potential safety and economic implications on the operator. FedEx stated that the safety concern in its entirety is not addressed in Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017, and any additional mandated inspections issued later would require a duplication of effort to address the remaining fastener locations. FedEx requested that the proposed AD include additional inspections.

AAL stated that due to the ongoing efforts at Boeing to conduct a safety analysis on cracking found in the upper link drag fitting layer on multiple airplanes, it encourages the FAA to work together with Boeing to include any new inspection requirements beyond those in Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017, into the proposed AD. AAL

commented that publication of the final rule without incorporating any new inspection requirements could drive additional unnecessary burden to operators by requiring multiple maintenance visits to conduct work that could have been consolidated.

We disagree with the commenters' request. We do not consider that delaying this action until release of new service information is warranted since sufficient data and technology currently exist to justify the requirements in this AD within the required compliance time. We may consider further rulemaking in the future to require additional inspections based on revised service information, and if so, would determine an appropriate compliance time that would provide operators sufficient time to coordinate the inspection intervals. We have not changed this AD in this regard.

### **Request To Revise the Costs of Compliance**

AAL requested that we revise the costs of compliance in the NPRM. AAL stated that based on the inspections and repairs previously accomplished on 5 of its airplanes, it estimated 100 work-hours to complete the inspection requirements, 20 work-hours to complete a minor hole oversize repair, and 800 work-hours to accomplish a more complex hole repair or shim replacement. AAL also stated that the current fastener pricing procured from Boeing averages \$445 per fastener.

While we acknowledge AAL's varied work-hour estimates based on its repair experience for the requirements of this AD, we disagree with the commenter's request. The cost estimates and required man-hours are only approximate values and are not necessarily the same for different maintenance organizations and part suppliers. Because operators' schedules vary substantially, we cannot accommodate every operator's optimal scheduling in each AD. We have not changed this AD in this regard.

### **Request To Revise the Compliance Time**

AAL requested that we revise the grace period for the high frequency eddy current (HFEC) hole probe inspection from 3,000 flight cycles to 6,500 flight cycles after the effective date of this AD due to the extent of access that may be required to correct discrepancies. AAL stated that this proposed grace period would allow operators with a 72-month heavy check interval, flying 3 flight cycles per day, to perform the required HFEC hole probe inspections at a visit with adequate span time and structures personnel to correct any possible findings. AAL also proposed adding interim inspections to justify this compliance-time extension.

We disagree with the commenter's request. We have determined that the compliance time, as proposed, represents the maximum interval of time allowable for the affected airplanes to safely operate before the inspection and bolt replacement is done. Since maintenance schedules vary among operators, there would be no assurance that the airplane would be inspected and the bolt replaced during that maximum interval. In terms of adding interim inspections to justify the compliance-time extension, we have not received enough technical data to make this determination. However, under the provisions of paragraph (i) of this AD, we will consider requests for approval of interim inspections if sufficient data are submitted to substantiate that the change would provide an acceptable level of safety. We have not changed this AD in this regard.

### **Request To Replace the Inspection Type From the Proposed Action**

The Boeing Company and FedEx requested that we revise the proposed AD to remove the requirement of the dye-penetrant inspection of the bolts and to include a requirement to perform a detailed inspection of the bolts. Boeing stated that the dye-penetrant inspection of the bolts to look for cracking in the fillet between head and shank is problematic due to the coating on the bolt, creating an unacceptably high chance for false indication. Boeing commented that it has determined that replacing the dye-penetrant inspection with a detailed inspection is as an acceptable means to detect cracking in the fillet between head and shank. Boeing commented that it should be noted that the bolt

head cracking is not the unsafe condition specified in Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017. Boeing also commented that the bolt head cracking correlates with clamp loss, which can be a predecessor to early fatigue cracking of the wing skin; the condition duly mitigated by Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017.

FedEx stated that the bolt dye-penetrant inspection is not an effective method due to the coating on the bolts. FedEx stated that Boeing indicates that it plans to revise the service information to provide an alternative detailed inspection that will be more effective. FedEx requests that the proposed AD include the revised inspection to allow operators a way to determine if the existing bolts are in a serviceable condition.

We agree with the commenters' request. We have added paragraph (h)(3) to this AD accordingly to allow a detailed inspection for cracks in the fillet between head and shank on the removed fasteners in lieu of the dye-penetrant inspection. Either inspection will provide an adequate level of safety.

### **Request To Increase Shim Migration Limits**

AAL requested that we increase the shim migration limits. AAL stated that according to Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017, any shim migration of the horizontal shims greater than 0.200 inch and any shim migration where the migrated shim is greater than 0.020 inch thick are considered "Major" shim migration, which, according to paragraph (h) of the proposed AD, would require an approval for an alternative method of compliance for the corrective action.

AAL commented that the shim migration limits noted above are far more conservative than the two-shim migration allowable limits currently contained in Boeing Model 757 Structural Repair Manual (SRM) 54-50-90 for shim locations in the pylon. AAL stated that both SRM allowable limits have no restriction on shim thickness and allow migration of at least 25 percent of the total shim area.

AAL recommended applying these same general principles from these SRM sections to the shims specified in the Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017, and increasing the limits for minor shim migration to include full shim thickness, and migration up to 0.5 inch. AAL stated that the inspections contained in Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017, and proposed in the proposed AD, are already adding additional surveillance of the upper link drag fitting to the upper wing skin joint, which would mitigate any risk associated with the increase in shim migration limits.

We disagree with the commenter's request. Shim inspection procedures do not currently exist for the wing skin joint described in Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017. However, under the provisions of paragraph (i) of this AD, we will consider requests for approval of an AMOC if sufficient data are submitted to substantiate that the change would provide an acceptable level of safety. We have not changed this AD 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 final rule 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 for addressing the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

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

## Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017. This service information describes procedures for repetitive detailed inspections for skin cracking and shim migration at the upper link drag fittings, repetitive general visual inspections for diagonal brace cracking and fastener looseness, and applicable on-condition actions. 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.

### Costs of Compliance

We estimate that this AD affects 606 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

**Estimated Costs for Required Actions**

| Action      | Labor cost   | Parts cost | Cost per product             | Cost on U.S. operators            |
|-------------|--|------------|------------------------------|-----------------------------------|
| Inspections | 83 work-hours × \$85 per hour = \$7,055 per inspection cycle | \$0        | \$7,055 per inspection cycle | \$4,275,330 per inspection cycle. |

We have received no definitive data that would enable us to provide cost estimates 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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

### Regulatory Findings

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 adding the following new airworthiness directive (AD):



**2018-16-05 The Boeing Company:** Amendment 39-19345; Docket No. FAA-2018-0110; Product Identifier 2017-NM-125-AD.

**(a) Effective Date**

This AD is effective September 10, 2018.

**(b) Affected ADs**

None.

**(c) Applicability**

(1) This AD applies to The Boeing Company Model 757-200, -200PF, -200CB, and -300 series airplanes, certificated in any category, as identified in Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017.

(2) Installation of Supplemental Type Certificate (STC) ST01518SE does not affect the ability to accomplish the actions required by this AD. Therefore, for airplanes on which STC ST01518SE is installed, a “change in product” alternative method of compliance (AMOC) approval request is not necessary to comply with the requirements of 14 CFR 39.17.

**(d) Subject**

Air Transport Association (ATA) of America Code 57, Wings.

**(e) Unsafe Condition**

This AD was prompted by bolt rotation in the engine drag fitting joint and fasteners heads; an inspection of the fastener holes revealed that cracks were found in the skin on two airplanes. We are issuing this AD to detect and correct cracking in the wing upper skin and forward drag fittings, which could lead to a compromised upper link and reduced structural integrity of the engine strut.

**(f) Compliance**

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

**(g) Required Actions**

Except as required by paragraph (h) of this AD: At the applicable times specified in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017.

Note 1 to paragraph (g) of this AD: Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin 757-57A0073, dated July 14, 2017, which is referred to in Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017.

#### **(h) Exceptions to Service Information Specifications**

(1) For purposes of determining compliance with the requirements of this AD: Where Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017, uses the phrase “the original issue date of the requirements bulletin,” this AD requires using “the effective date of this AD.”

(2) Where Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017, specifies contacting Boeing, this AD requires repair using a method approved in accordance with the procedures specified in paragraph (i) of this AD.

(3) Where Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017, specifies a dye-penetrant inspection for cracks in the fillet between head and shank on the removed fasteners,” this AD allows a detailed inspection for cracks in the fillet between head and shank on the removed fasteners, as an optional method of compliance with the dye-penetrant inspection.

#### **(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles ACO Branch, 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 certification office, send it to the attention of the person identified in paragraph (j)(1) of this AD. Information may be emailed to: 9-ANM-LAACO-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, Los Angeles ACO Branch, FAA, 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.

#### **(j) Related Information**

(1) For more information about this AD, contact Chandra Ramdoss, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5239; fax: 562-627-5210; email: chandraduth.ramdoss@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

#### **(k) 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.

(i) Boeing Alert Requirements Bulletin 757-57A0073 RB, dated July 14, 2017.

(ii) Reserved.

(3) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; internet <https://www.myboeingfleet.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) 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 Des Moines, Washington, on July 24, 2018.

James Cashdollar,  
Acting Director, System Oversight Division,  
Aircraft Certification Service.