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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0094; Directorate Identifier 2012-NM-160-AD; Amendment 39-17573; AD 2013-17-09]

RIN 2120-AA64

Airworthiness Directives; Airbus Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all Airbus Model A318, A319, A320, and A321 series airplanes. This AD was prompted by reports that certain trimmable horizontal stabilizer actuators (THSA) were found with corrosion that affected the ballscrew lower splines between the tie-bar and screw-jack. This AD requires repetitive inspections of the THSA; ballscrew integrity tests, if necessary; and replacement of affected THSAs. We are issuing this AD to detect and correct corrosion in the ballscrew lower splines, which, if the ballscrew ruptured, could lead to transmission of THSA torque loads from the ballscrew to the tie-bar, prompting THSA blowback, and possible loss of control of the airplane.

DATES: This AD becomes effective October 9, 2013.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of October 9, 2013.

ADDRESSES: You may examine the AD docket on the Internet at http://www.regulations.gov or in person at the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC.

FOR FURTHER INFORMATION CONTACT: Sanjay Ralhan, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone (425) 227-1405; fax (425) 227-1149.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. The NPRM was published in the Federal Register on February 26, 2013 (78 FR 12988). The NPRM proposed to correct an unsafe condition for the specified products. The European Aviation Safety Agency (EASA), which is the aviation authority for the Member States of the European Community, has issued EASA Airworthiness Directive 2012-0175, dated September 7, 2012 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition for the specified products. The MCAI states:

> Some Trimmable Horizontal Stabilizer Actuators (THSA), Part Number (P/N) 47147-500 fitted on A330/A340 aeroplanes have been found with corrosion, affecting the ballscrew lower splines between the tie bar and the screw-jack. The affected ballscrew is made of steel and anti-corrosion protection is ensured, except on both extremities (upper and lower splines) where Molykote is applied.
>
> The results of the technical investigations have identified that the corrosion was caused by a combination of:
>
> –contact/friction between the tie bar and the inner surface of the ballscrew leading to the removal of Molykote (corrosion protection) at the level of the tie bar splines,
>
> –humidity ingress initiating surface oxidation starting from areas where Molykote is removed, and
>
> –water retention in THSA lower part leading to corrosion spread out and to the creation of a brown deposit (iron oxide).
>
> The results of the technical investigations have also concluded that A320 family THSA P/N 47145-XXX (where XXX stands for any numerical value) ballscrews might be affected by this corrosion issue.
>
> This condition, if not detected and corrected, may lead, in case of ballscrew rupture, to loss of transmission of THSA torque loads from the ballscrew to the tie-bar, prompting THSA blowback, possibly resulting in loss of control of the aeroplane.
>
> For the reasons described above, this [EASA] AD requires repetitive detailed inspections of the ballscrew lower splines of THSAs having P/N 47145-XXX to detect corrosion and, depending on findings, the accomplishment of applicable corrective actions.

The required actions are repetitive detailed inspections of the gaps between the ballscrew shaft and tie-rod splines of the affected THSAs to determine the corrosion category. Depending on the corrosion category, additional actions include a ballscrew shaft integrity test and replacing the THSA if necessary. You may obtain further information by examining the MCAI in the AD docket.

Comments

We gave the public the opportunity to participate in developing this AD. We considered the comments received.

Requests To Allow Replacement of a THSA With a Part That Is Not New

Delta Airlines (DAL) and United Airlines (UAL) requested that paragraph (i) of the NPRM (78 FR 12988, February 26, 2013) be revised to delete the word "new" so a part other than a new part could be used to replace an affected THSA. DAL requested that the replacement requirements be changed to allow for the installation of a THSA unit overhauled using the instructions in the applicable Goodrich component maintenance manual instead of a new THSA part. DAL stated that if Type I or Type II corrosion is found on an affected THSA, the corroded ballscrew and claw (end stop) could be easily replaced if the guidance in the applicable Goodrich component maintenance manual is followed. DAL suggested that replacing the ballscrew and the claw would restore the integrity and the level of safety of the assembly. DAL also pointed out that obtaining a new THSA may be difficult because demand may outpace supply and airplanes might be grounded while waiting for parts.

UAL stated that it is not necessary to replace an affected THSA with a brand new THSA and that any THSA inspected in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1214, including Appendix 01, dated February 23, 2012, that is determined to have Type I corrosion (i.e., no corrosion), should be acceptable as a replacement part.

We agree with both commenters' statements that affected THSAs do not need to be replaced with new parts. Our intent is that an affected THSA is replaced with a part that meets the criteria specified in paragraph (l) of this final rule. We revised paragraphs (i)(1), (i)(2), and (i)(3) of this final rule to remove the word "new" and to state to replace an affected THSA with a THSA that meets the criteria specified in paragraph (l) of this final rule.

We do not agree with DAL's request to allow for the installation of a THSA unit that was overhauled using the applicable Goodrich component maintenance manual. We do not have a way to determine if an overhauled THSA is airworthy. We also disagree with UAL's recommendation that any THSA inspected in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1214, including Appendix 01, dated February 23, 2012, that is determined to have Type I corrosion, should be acceptable as a replacement part. In addition to the inspection requirement in paragraph (h) of this final rule, we must ensure that a THSA utilized as a replacement part meets the applicable requirements in paragraphs (l)(1) and (l)(2) of this AD. No change was made to this final rule in this regard. However, we have revised paragraph (l) of this final rule to provide clarification of the criteria for parts installation.

Request To Reference Revised Vendor Service Information

Airbus requested that paragraphs (g), (h), and (i) of the NPRM (78 FR 12988, February 26, 2013) be revised to reference the current revision of the Goodrich service information. Goodrich has issued Service Bulletin 47145-27-16, Revision 2, dated January 7, 2013. Airbus noted that the definition of THSA first flight was changed in Revision 2 of Goodrich Service Bulletin 47145-27-16, dated January 7, 2013, and requested that paragraph (g) of the NPRM be revised to include this definition. Airbus also requested that credit be given for actions that were accomplished before the effective date of this final rule using Goodrich Service Bulletin 47145-27-16, dated November 7, 2011; and Revision 1, dated August 1, 2012.

We agree with the commenter's requests and have revised paragraphs (g), (h), and (i) of this final rule to reference Goodrich Service Bulletin 47145-27-16, Revision 2, dated January 7, 2013. We have also revised the definition of THSA first flight in paragraph (g) of this final rule to include the information provided in Goodrich Service Bulletin 47145-27-16, Revision 2, dated January 7, 2013.

In addition, we included a new paragraph (m) to provide credit for actions done prior to the effective date of this AD using Goodrich Service Bulletin 47145-27-16, dated November 7, 2011; or Revision 1, dated August 1, 2012; and reidentified the subsequent paragraphs accordingly.

Request To Clarify When Repetitive Inspections of THSAs Should Start

UAL stated that the intent of paragraph (l)(2) of the NPRM (78 FR 12988, February 26, 2013) should be clarified to indicate that only THSAs with more than 20 years accumulated since first flight need to be inspected as required by paragraph (h) of the NPRM. UAL also asked if a THSA should accumulate 20 years since first flight before an operator must begin doing the repetitive inspections required by paragraph (h) of the NPRM.

We agree that clarification is necessary. As discussed previously, we revised paragraph (l) of this final rule, in part, to clarify that only THSAs that have accumulated 20 years or more since first flight are required to be inspected repetitively, as required by paragraph (h) of this final rule. Paragraph (h) of this final rule requires an initial inspection of the THSAs within 22 years accumulated by the THSA since the THSA's first flight, but no earlier than 20 years accumulated by the THSA since its first flight, or within three months after the effective date of this final rule, and subsequent repetitive inspections at intervals not to exceed 24 months.

Request To Revise Reporting Requirement

UAL requested that the reporting requirement in paragraph (k) of the NPRM (78 FR 12988, February 26, 2013) be deleted if an inspection finding reveals that the THSA has Type I corrosion (i.e., no corrosion). UAL stated that only findings of Type II and Type III corrosion should be reported.

We disagree that only findings of Type II and Type III corrosion should be reported. Airbus has not determined terminating action for the repetitive inspections required by this final rule, and reports of Type I corrosion will be a factor in Airbus's decision. No change was made to this final rule.

Conclusion

We reviewed the available data, including 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 changes:

- Are consistent with the intent that was proposed in the NPRM (78 FR 12988, February 26, 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 12988, February 26, 2013).

Costs of Compliance

We estimate that this AD affects 755 products of U.S. registry. We also estimate that it will take about 4 work-hours per product to comply with the basic requirements of this AD. The average labor rate is $85 per work-hour. Based on these figures, we estimate the cost of this AD to the U.S. operators to be $256,700, or $340 per product.

In addition, we estimate that any necessary follow-on actions would take about 15 work-hours and require parts costing $2,203, for a cost of $3,478 per product. We have no way of determining the number of products that may need these actions.

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB control number. The control number for the collection of information required by this AD is 2120-0056. The paperwork cost associated with this AD has been detailed in the Costs of Compliance section of this document and includes time for reviewing instructions, as well as completing and reviewing the collection of information. Therefore, all reporting associated with this AD is mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at 800 Independence Ave., SW., Washington, DC 20591. ATTN: Information Collection Clearance Officer, AES-200.

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 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 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the MCAI, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is in the ADDRESSES section.

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 AD:

2013-17-09 Airbus: Amendment 39-17573. Docket No. FAA-2013-0094; Directorate Identifier 2012-NM-160-AD.

(a) Effective Date

This airworthiness directive (AD) becomes effective October 9, 2013.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Airbus Model A318-111, -112, -121, and -122 airplanes; Airbus Model A319-111, -112, -113, -114, -115, -131, -132, and -133 airplanes; Airbus Model A320-111, -211, -212, -214, -231, -232, and -233 airplanes; and Airbus Model A321-111, -112, -131, -211, -212, -213, -231, and -232 airplanes; certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 27, Flight controls.

(e) Reason

This AD was prompted by reports that certain trimmable horizontal stabilizer actuators (THSA) were found with corrosion that affected the ballscrew lower splines between the tie-bar and screw-jack. We are issuing this AD to detect and correct corrosion in the ballscrew lower splines, which, if the ballscrew ruptured, could lead to transmission of THSA torque loads from the ballscrew to the tie-bar, prompting THSA blowback, and possible loss of control of the airplane.

(f) Compliance

You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

(g) Definition of THSA First Flight

For the purposes of this AD, the definition of THSA first flight is the THSA "entry into service date," which is the date of the first flight of the airplane on which the THSA was originally fitted in production. All entry into service dates are included in the table that appears after the Accomplishment Instructions in Goodrich Service Bulletin 47145-27-16, Revision 2, dated January 7, 2013. If the entry into service date is not included in this table, use the manufacturing date engraved on the THSA's identification plate as the "entry into service date."

(h) Repetitive Inspections

At the later of the times specified in paragraphs (h)(1) and (h)(2) of this AD: Do a detailed inspection of the gaps between the ballscrew shaft and tie-rod splines on any THSA having P/N 47145-XXX (where XXX stands for any numerical value) to determine if the corrosion category is Type I, Type II, or Type III, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1214, including Appendix 01, dated February 23, 2012; and the Accomplishment Instructions and the flowchart following the Accomplishment Instructions of Goodrich Service Bulletin 47145-27-16, Revision 2, dated January 7, 2013. Repeat the inspection thereafter at intervals not to exceed 24 months.

(1) Within 22 years accumulated by the THSA since the THSA's first flight, but no earlier than 20 years accumulated by the THSA since its first flight.

(2) Within three months after the effective date of this AD.

(i) Ballscrew Integrity Test and Corrective Actions

If, during any inspection required by paragraph (h) of this AD, it is determined that a THSA has Type II or Type III corrosion: Before further flight, do a ballscrew integrity test, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1214, including Appendix 01, dated February 23, 2012; and the Accomplishment Instructions and the flowchart following the Accomplishment Instructions of Goodrich Service Bulletin 47145-27-16, Revision 2, dated January 7, 2013. If Type I corrosion is found, no action is required by this paragraph.

(1) For THSAs having Type II or Type III corrosion and for which the results of the ballscrew integrity test are not correct, as specified in Airbus Service Bulletin A320-27-1214, including Appendix 01, dated February 23, 2012: Before further flight, replace the affected THSA with a THSA that meets the criteria specified in paragraph (l) of this AD, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1214, including Appendix 01, dated February 23, 2012.

(2) For THSAs having Type III corrosion and on which the results of the ballscrew integrity test are correct, as specified in Airbus Service Bulletin A320 27-1214, including Appendix 01, dated February 23, 2012: Within 10 days after the most recent inspection, replace the THSA with a THSA that meets the criteria specified in paragraph (l) of this AD, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1214, including Appendix 01, dated February 23, 2012.

(3) For THSAs having Type II corrosion and on which the results of the ballscrew integrity test are correct, as specified in Airbus Service Bulletin A320 27-1214, including Appendix 01, dated February 23, 2012: Within 24 months or 5,000 flight cycles after the most recent inspection, whichever occurs first, replace the THSA with a THSA that meets the criteria specified in paragraph (l) of this AD, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1214, including Appendix 01, dated February 23, 2012.

(j) Replacement of a THSA is not Terminating Action

Replacement of a THSA, as required by paragraph (i) of this AD, does not constitute terminating action for the repetitive inspections required by paragraph (h) of this AD.

(k) Reporting Requirement

If any corrosion type is found during any inspection required by paragraph (h) of this AD, at the applicable time specified in paragraph (k)(1) or (k)(2) of this AD, report the findings to Airbus, Customer Services Engineering–SEEL5, Flight Control Systems A320 Family, 1 Rond Point Maurice

Bellonte, 31707 Blagnac Cedex, France; fax +33 5 61 93 44 25. The report must include the information specified in Appendix 01 of Airbus Service Bulletin A320-27-1214.

(1) If the inspection was done on or after the effective date of this AD: Within 90 days after that inspection.

(2) If the inspection was done before the effective date of this AD: Within 90 days after the effective date of this AD.

(l) Parts Installation Limitations

As of the effective date of this AD, no person may install a THSA having P/N 47145-XXX (where XXX stands for any numerical value) on any airplane, unless that THSA meets the applicable criteria specified in paragraph (l)(1) or (l)(2) of this AD.

(1) The THSA must not have accumulated 20 years or more since the THSA's first flight, and after installation must be inspected as required by paragraph (h) of this AD, at the later of the times specified in paragraphs (h)(1) and (h)(2) of this AD, and be inspected thereafter at intervals not to exceed 24 months as required by paragraph (h) of this AD; and any applicable actions specified in paragraph (i) of this AD must be accomplished.

(2) If the THSA has accumulated 20 years or more since the THSA's first flight, it must have been inspected before installation as required by paragraph (h) of this AD and determined to have Type I corrosion (if the screw shaft lower splines thread condition does not meet the Type II or Type III condition), and be inspected thereafter at intervals not to exceed 24 months as required by paragraph (h) of this AD; and any applicable actions specified in paragraph (i) of this AD must be accomplished.

(m) Credit for Previous Actions

This paragraph provides credit for actions required by paragraphs (h) and (i) of this AD, if those actions were performed before the effective date of this AD using Goodrich Service Bulletin 47145-27-16, dated November 7, 2011; or Revision 1, dated August 1, 2012.

(n) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Branch, ANM-116, Transport Airplane Directorate, 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 International Branch, send it to ATTN: Sanjay Ralhan, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone (425) 227-1405; fax (425) 227-1149. Information may be emailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov. 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. The AMOC approval letter must specifically reference this AD.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(3) Reporting Requirements: A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number

for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing, and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW., Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

(o) Special Flight Permits

Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the airplane can be modified (if the operator elects to do so), provided that, if any THSA corrosion is found during any action required by paragraph (h) of this AD, that corrosion is classified as Type I or Type II, as defined in Goodrich Service Bulletin 47145-27-16, dated November 7, 2011; Revision 1, dated August 1, 2012; or Revision 2, dated January 27, 2013.

(p) Related Information

Refer to Mandatory Continuing Airworthiness Information European Aviation Safety Agency Airworthiness Directive 2012-0175, dated September 7, 2012, for related information, which can be found in the AD docket on the Internet at http://www.regulations.gov.

(q) 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) Airbus Service Bulletin A320-27-1214, including Appendix 01, dated February 23, 2012.

(ii) Goodrich Service Bulletin 47145-27-16, dated November 7, 2011.

(iii) Goodrich Service Bulletin 47145-27-16, Revision 1, dated August 1, 2012. Pages 1 through 4 of this document are identified as Revision 1, dated August 1, 2012. Pages 5 through 117 of this document are dated November 7, 2011.

(iv) Goodrich Service Bulletin 47145-27-16, Revision 2, dated January 7, 2013. Pages 1, 2, and 4 of this document are identified as Revision 1, dated August 1, 2012. Page 3 of this document is identified as Revision 2, dated January 7, 2013. Pages 5 through 117 of this document are dated November 7, 2011.

(3) For Airbus service information identified in this AD, contact Airbus, Airworthiness Office–EIAS, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 44 51; email account.airworth-eas@airbus.com; Internet http://www.airbus.com. For Goodrich service information identified in this AD, contact Goodrich Corporation, Actuation Systems, Stafford Road, Fordhouses, Wolverhampton WV10 7EH, England; telephone +44 (0) 1902 624938; fax +44 (0) 1902 788100; email techpubs.wolverhampton@goodrich.com; Internet http://www.goodrich.com/TechPubs.

(4) You may review copies of the 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.

(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 Renton, Washington, on August 23, 2013.

Stephen P. Boyd,

Acting Manager, Transport Airplane Directorate,

Aircraft Certification Service.