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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2016-3696; Directorate Identifier 2015-NM-113-AD; Amendment 39-18625; AD 2016-17-12]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Airbus Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for all Airbus Model A318 and A319 series airplanes, Model A320-211, -212, -214, -231, -232, and -233 airplanes, and Model A321 series airplanes. This AD was prompted by a report of a partial loss of the no-back brake (NBB) efficiency during endurance qualification tests on the trimmable horizontal stabilizer actuator (THSA). This AD requires inspecting certain THSAs to determine the number of total flight cycles the THSA has accumulated, and replacing the THSA if necessary. We are issuing this AD to prevent premature wear of the carbon friction disks on the NBB of the THSA, which could lead to reduced braking efficiency in certain load conditions, and, in conjunction with the inability of the power gear train to keep the ball screw in its last commanded position, could result in uncommanded movements of the trimmable horizontal stabilizer and loss of control of the airplane.

**DATES:** This AD is effective September 30, 2016.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of September 30, 2016.

**ADDRESSES:** For service information identified in this final rule, 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>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-3696.

## Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-3696; 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 street address for the Docket Office (telephone 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:** 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 by adding an AD that would apply to all Airbus Model A318 and A319 series airplanes, Model A320-211, -212, -214, -231, -232, and -233 airplanes, and Model A321 series airplanes. The NPRM published in the Federal Register on February 17, 2016 (81 FR 8023) ("the NPRM").

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2015-0080, dated May 7, 2015 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition for all Airbus Model A318 and A319 series airplanes, Model A320-211, -212, -214, -231, -232, and -233 airplanes, and Model A321 series airplanes. The MCAI states:

During endurance qualification tests on A380 Trimmable Horizontal Stabilizer Actuator (THSA), a partial loss of the no-back brake (NBB) efficiency was experienced. Investigation results concluded that this particular malfunction was due to an ageing/endurance issue of the surfaces of the NBB carbon friction disks, leading to a partial loss of braking efficiency in some specific aerodynamic load conditions.

Due to design similarity on A320 family fleet, the same tests were initiated by the THSA manufacturer on certain SA [single-aisle] type THSA, sampled from the field. Subject tests confirmed that THSA Part Number (P/N) 47145 series, as installed on A320 family aeroplanes, are also affected by this partial loss of NBB efficiency.

This condition, if not detected and corrected, and in conjunction with the power gear train not able to keep the ball screw in its last commanded position, could lead to an uncommanded movement of the THS, possibly resulting in loss of control of the aeroplane.

For the reasons described above, this [EASA] AD requires [inspecting certain THSAs to determine the number of total flight cycles the THSA has accumulated and replacing THSAs having certain total flight cycles] . . . .

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-3696.

## **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Request To Refer to the Latest Service Information**

Airbus requested that we refer to the latest service information: Airbus Service Bulletin A320-27-1242, Revision 01, dated February 4, 2016 (we referred to Airbus Service Bulletin A320-27-1242, dated February 9, 2015, as the appropriate source of service information for accomplishing the replacement specified in the NPRM). Airbus also requested that we provide credit for previous actions done per Airbus Service Bulletin A320-27-1242, dated February 9, 2015.

We agree with the request to refer to the latest service information. Airbus Service Bulletin A320-27-1242, Revision 01, dated February 4, 2016, includes updated information and specifies that no additional work is necessary for airplanes modified by the previous issue. We have revised paragraphs (h)(1) and (h)(2) of this AD to refer to Airbus Service Bulletin A320-27-1242, Revision 01, dated February 4, 2016. We have also added new paragraph (k) to this AD (and redesignated subsequent paragraphs accordingly) to provide credit for actions done as specified in Airbus Service Bulletin A320-27-1242, dated February 9, 2015.

### **Request To Extend the Compliance Times**

United Airlines (UAL) requested that we extend the compliance times proposed in the NPRM. UAL stated that U.S. operators receive less time to prepare and plan compared to their counterparts in Europe who follow EASA AD 2015-0080, dated May 7, 2015. UAL noted that the large amount of THSAs that need to be replaced will cause cancellations, spare shortages, and interruptions to its operation. UAL recommended a later compliance time than proposed in paragraph (g)(2) of the proposed AD.

We disagree with the request to extend the compliance time. UAL did not provide data to substantiate that an extension to the compliance time will provide an acceptable level of safety. We determine AD compliance times primarily on our assessment of the safety risk. Some safety issues are more time-sensitive than others, so we consider the overall risk to the fleet, including the severity of the failure and the likelihood of the failure's occurrence.

We and our colleagues in the foreign civil airworthiness authorities (in this case, EASA) work closely with manufacturers to ensure that all appropriate actions are taken at appropriate times to mitigate risks to the fleet and address identified unsafe conditions. In addition, U.S. operators have the same opportunity as their European counterparts to prepare and plan by reviewing and providing comments to EASA's proposed airworthiness directives (PADs). An EASA PAD is a rulemaking document similar to the FAA's NPRM. In most cases, the FAA follows the intent of the AD issued by the state of design; therefore, we encourage U.S. operators to provide feedback to EASA PADs, which are accessible at the following link: <http://ad.easa.europa.eu>.

For this AD, we determined that accomplishing the replacements before specific dates, as stated in the MCAI, are necessary in order to address the identified unsafe condition in a timely manner. Therefore, we have not changed this AD in this regard. However, under the provisions of paragraph (l)(1) of this AD, we may approve requests for adjustments to the compliance time if data are submitted to substantiate that such an adjustment would provide an acceptable level of safety.

### **Request To Remove Replacement Requirement**

UAL requested that we remove the replacement requirement specified by paragraph (h)(2) of the proposed AD. UAL stated that the requirements in paragraphs (h)(1) and (h)(2) of the proposed AD are contradictory. UAL noted that operators will not be able to predict the future number of flight

cycles. UAL stated, as an example, that a THSA having accumulated 38,000 total flight cycles on the effective date would be out of compliance with paragraph (h)(2) of the proposed AD when the AD becomes effective, since the THSA has exceeded 36,000 total flight cycles.

We disagree with the request to remove paragraph (h)(2) of this AD. However, we do find it necessary to clarify the requirements. After accomplishing each inspection required by paragraph (g) of this AD, operators must comply with paragraph (h)(1) of this AD, which mandates the first requirement for THSA replacement after each inspection of the THSAs if any part number 47145-(XXX) is found and the THSA has exceeded the corresponding flight-cycle limits specified in paragraphs (g)(1) through (g)(5) of this AD.

Paragraph (h)(2) of this AD establishes the life limit of the THSA as of each date specified in paragraphs (g)(1) through (g)(5) of this AD and mandates replacement before the corresponding flight-cycle limit. The flight-cycle limit varies on each date specified in paragraphs (g)(1) through (g)(5) of this AD. Paragraphs (h)(1) and (h)(2) of this AD are separate requirements that do not conflict.

For example, if the THSA has accumulated 38,000 total flight cycles as of the effective date of this AD, then paragraph (h)(1) of this AD does not require replacement immediately (on the effective date of this AD) since the THSA has fewer than 40,000 total flight cycles (which is the flight-cycle limit specified in paragraph (g)(1) of this AD). That THSA would be subject to the compliance time of paragraph (h)(2) of this AD, which requires that, as of the effective date of this AD, the THSA must be replaced before exceeding 40,000 total flight cycles until the next inspection is done before December 31, 2016. The new flight-cycle limit as of that date is 36,000 total flight cycles (which is the flight-cycle limit specified in paragraph (g)(2) of this AD).

Each U.S. operator has unique fleet utilization data that can assist in predicting the number of flight cycles accumulated on the THSA and therefore can estimate when a THSA must be replaced. However, under the provisions of paragraph (l)(1) of this AD, we may approve requests for adjustments to the compliance time for replacing the THSA if data are submitted to substantiate that such an adjustment would provide an acceptable level of safety. We have not changed this AD in this regard.

### **Change to Paragraph (j) of This AD**

We made minor changes to the language in paragraph (j) of this AD to clarify the parts installation limitation.

### **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 for correcting 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 AD.

### **Related Service Information Under 1 CFR Part 51**

We reviewed Airbus Service Bulletin A320-27-1242, Revision 01, dated February 4, 2016. The service information describes procedures for replacing the THSA with a serviceable THSA. 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 959 airplanes of U.S. registry.

We also estimate that it would take about 1 work-hour 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 on U.S. operators to be \$81,515, or \$85 per product.

In addition, we estimate that any necessary follow-on actions would take about 21 work-hours and require parts costing \$26,500, for a cost of \$28,285 per product. We have no way of determining the number of aircraft that might need this action.

## **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.

## **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):



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**2016-17-12 Airbus:** Amendment 39-18625; Docket No. FAA-2016-3696; Directorate Identifier 2015-NM-113-AD.

**(a) Effective Date**

This AD is effective September 30, 2016.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Airbus airplanes, certificated in any category, identified in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4) of this AD, all manufacturer serial numbers.

- (1) Model A318-111, -112, -121, and -122 airplanes.
- (2) Model A319-111, -112, -113, -114, -115, -131, -132, and -133 airplanes.
- (3) Model A320-211, -212, -214, -231, -232, and -233 airplanes.
- (4) Model A321-111, -112, -131, -211, -212, -213, -231, and -232 airplanes.

**(d) Subject**

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

**(e) Reason**

This AD was prompted by a report of a partial loss of the no-back brake (NBB) efficiency during endurance qualification tests on the trimmable horizontal stabilizer actuator (THSA). We are issuing this AD to prevent premature wear of the carbon friction disks on the NBB of the THSA, which could lead to reduced braking efficiency in certain load conditions, and, in conjunction with the inability of the power gear train to keep the ball screw in its last commanded position, could result in uncommanded movements of the trimmable horizontal stabilizer and loss of control of the airplane.

**(f) Compliance**

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

**(g) Inspection To Determine THSA Part Number and Accumulated Total Flight Cycles**

No later than each date specified in paragraphs (g)(1) through (g)(5) of this AD: Inspect the THSA to determine if it has a part number (P/N) 47145-(XXX), and, if any THSA P/N 47145-(XXX) is found, determine the total number of flight cycles accumulated since the THSA's first installation on an airplane, or since the most recent NBB replacement, whichever is later. A review of airplane delivery or maintenance records is acceptable in lieu of this inspection if the part number of the THSA can be conclusively determined from that review. In case maintenance records concerning the

most recent NBB disk replacement are unavailable or incomplete, the total flight cycles accumulated since first installation of the THSA on an airplane apply.

(1) As of the effective date of this AD: The THSA flight-cycle limit (since first installation on an airplane, or since the most recent NBB replacement, whichever is later) is 40,000 total flight cycles.

(2) As of December 31, 2016: The THSA flight-cycle limit (since first installation on an airplane, or since the most recent NBB replacement, whichever is later) is 36,000 total flight cycles.

(3) As of December 31, 2017: The THSA flight-cycle limit (since first installation on an airplane, or since the most recent NBB replacement, whichever is later) is 33,600 total flight cycles.

(4) As of December 31, 2018: The THSA flight-cycle limit (since first installation on an airplane, or since the most recent NBB replacement, whichever is later) is 31,600 total flight cycles.

(5) As of December 31, 2019: The THSA flight-cycle limit (since first installation on an airplane, or since the most recent NBB replacement, whichever is later) is 30,000 total flight cycles.

#### **(h) Replacements**

For airplanes with any THSA P/N 47145-(XXX): Do the replacements required by paragraphs (h)(1) and (h)(2) of this AD.

(1) No later than each date specified in paragraphs (g)(1) through (g)(5) of this AD, replace all THSA that have reached or exceeded on each date the corresponding number of flight cycles specified in paragraphs (g)(1) through (g)(5) of this AD. Do the replacement in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1242, Revision 01, dated February 4, 2016. Affected THSAs must be replaced with serviceable THSAs.

(2) As of each date specified in paragraphs (g)(1) through (g)(5) of this AD, and before exceeding the flight cycle limit corresponding to each date, as applicable: Replace each THSA with a serviceable THSA, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1242, Revision 01, dated February 4, 2016.

#### **(i) Definition of Serviceable THSA**

For the purposes of this AD: A serviceable THSA is a THSA that has not exceeded the applicable flight-cycle limits, as specified paragraphs (g)(1) through (g)(5) of this AD, since first installation of the THSA on an airplane or since last NBB replacement, whichever is later.

Note 1 to paragraph (i) of this AD: Guidance for NBB disc replacement can be found in UTC Aerospace Systems Service Bulletin 47145-27-17, Revision 1, dated July 21, 2015.

#### **(j) Parts Installation Limitation**

As of each date specified in paragraphs (g)(1) through (g)(5) of this AD, as applicable, only installation of a serviceable THSA P/N 47145-(XXX) is allowed on an airplane.

#### **(k) Credit for Previous Actions**

This paragraph provides credit for actions required by paragraph (h) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A320-27-1242, dated February 9, 2015.

#### **(l) 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) Contacting the Manufacturer: For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the European Aviation Safety Agency (EASA); or Airbus's EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(3) Required for Compliance (RC): If any service information contains procedures or tests that are identified as RC, those procedures and tests must be done to comply with this AD; any procedures or tests that are not identified as RC are recommended. Those procedures and tests that are not identified as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the procedures and tests identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to procedures or tests identified as RC require approval of an AMOC.

#### **(m) Special Flight Permits**

Special flight permits, as described in Section 21.197 and Section 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199), are not allowed.

#### **(n) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2015-0080, dated May 7, 2015, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-3696.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (o)(3) and (o)(4) 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 this AD specifies otherwise.

(i) Airbus Service Bulletin A320-27-1242, Revision 01, dated February 4, 2016.

(ii) Reserved.

(3) For 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](mailto:account.airworth-eas@airbus.com); Internet <http://www.airbus.com>.

(4) You may view this 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 18, 2016.

Dorr M. Anderson,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.