


EASA	AIRWORTHINESS DIRECTIVE
	<p>AD No.: 2014-0219</p> <p>Date: 29 September 2014</p> <p>Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.</p>
<p>This AD is issued in accordance with EU 748/2012, Part 21.A.3B. In accordance with EC 2042/2003 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].</p>	
<p>Design Approval Holder's Name:</p> <p>AIRBUS</p>	<p>Type/Model designation(s):</p> <p>A330 and A340 aeroplanes</p>
TCDS Number:	EASA.A.004, EASA.A.015
Foreign AD:	Not applicable
Supersedure:	This AD supersedes EASA AD 2010-0192 and EASA AD 2010-0193, both dated 29 September 2010, including their Corrections, both dated 11 October 2010.
ATA 27	Flight Controls – Trimmable Horizontal Stabilizer Actuator – Inspection / Modification
Manufacturer(s):	Airbus (formerly Airbus Industrie)
Applicability:	<p>Airbus A330-201, A330-202, A330-203, A330-223, A330-243, A330-301, A330-302, A330-303, A330-321, A330-322, A330-323, A330-341, A330-342 and A330-343 aeroplanes, all manufacturer serial numbers (MSN), and</p> <p>Airbus A340-211, A340-212, A340-213, A340-311, A340-312, A340-313, A340-541, A340-542, A340-642 and A340-643 aeroplanes, all MSN.</p>
Reason:	<p>Several cases of transfer tube disconnection from the ball-nut of the trimmable horizontal stabilizer actuator (THSA) part number (P/N) 47172 and 47147-400 were detected on the ground during greasing and maintenance. Investigation results showed that this was caused by water ingress into the ball-nut, resulting in the jamming of the ball transfer circuit when the water froze. If the three (independent) ball circuits fail, then the THSA operates on a fail-safe nut (which operates without balls), which jams after several movements on the ballscrew of the THSA.</p> <p>This condition, if not detected and corrected, could damage the ball screw and the fail-safe nut, possibly resulting in jamming of the THSA and consequent reduced control of the aeroplane.</p> <p>To detect at an early stage any distortion or initiation of disconnection, DGAC France issued AD 2001-356 and AD 2001-357 to require repetitive inspections</p>

	<p>of the transfer tubes and their collars and, depending on findings, corrective action(s).</p> <p>Prompted by another case of transfer tube disconnection, DGAC France issued AD 2001-356R2 and AD 2001-357R2 to require additional repetitive greasing and reinforcement of the ball-nut maintenance greasing instructions.</p> <p>Subsequently, DGAC France issued AD 2002-037 and AD 2002-038 to require a modification that was also terminating action for the repetitive inspections and greasing tasks required by DGAC France AD 2001-356R2 and AD 2001-357R2 for the THSA P/N 47172 by application of Service Bulletin (SB) A330-27-3085 or SB A340-27-4089 (equivalent to Airbus production modification 49590), as applicable, changing the THSA P/N from 47172 to 47172-300.</p> <p>Later on, DGAC France issued AD 2002-414 (later revised to R3) and AD 2002-415 (later revised to R2), which superseded the DGAC France AD 2001-356R2, AD 2001-357R2, AD 2002-037 and AD 2002-038, requiring:</p> <ul style="list-style-type: none"> - repetitive inspections of all THSA P/N in service, - repetitive lubrication of some THSA P/N, and - replacement of THSA P/N 47172, 47147-400 and 47147-2XX/-3XX. <p>In addition, the electrical flight control computers monitor the operation of the THSA and the jamming of this actuator could be detected and indicated by messages on the maintenance system and on the ECAM. For that reason, DGAC France AD 2002-414 and AD 2002-415 also required inspection of the THSA after display of such message(s).</p> <p>After those ADs were issued, Airbus introduced 4 new THSA, P/N 47172-500, P/N 47172-510, P/N 47172-520 and P/N 47172-530.</p> <p>As these new THSA also needed to be inspected/lubricated, EASA issued AD 2010-0192 and AD 2010-0193, which retained the requirements of DGAC France AD F-2002-414R3 and AD F-2002-415R2 respectively, which were superseded, to add required repetitive inspections and lubrications of the new THSA P/N.</p> <p>Since those ADs were issued, all requirements of EASA AD 2010-0192 and AD 2010-0193 were transferred into Airbus Airworthiness Limitations Section (ALS) Part 4, except the requirement of paragraph (2.3) of those ADs. At this time, compliance with ALS Part 4 tasks is required by EASA AD 2013-0268 (A330 aeroplanes) and AD 2013-0269 (A340 aeroplanes), respectively.</p> <p>In addition, Airbus developed a Checkable Shear Pin (CSP) for the THSA and an associated additional electrical harness, which consists of installation of two Electrical Detection Devices (EDD) on the lower attachment secondary load path, which gives an indication to the Flight Control Primary Computers of secondary load path engagement.</p> <p>After embodiment of these modifications on an aeroplane, the repetitive inspections of the ballscrew assembly for integrity of the primary and secondary load paths is no longer required, because the failure is detected automatically by this new device.</p> <p>For the reasons described above, this AD retains only the requirement of paragraph (2.3) of EASA AD 2010-0192 and 2010-0193, which are superseded, and requires the installation of CSP and associated additional electrical harness on the THSA of the aeroplane. This AD also requires, for A340-500/-600 aeroplanes that are post-SB A340-92-5008 (at Revision 06 or earlier), accomplishment of A340 ALS Part 3 task 274000-B0002-1-C, providing a grace period of 3 months for aeroplanes that have exceeded the applicable threshold or interval.</p>
Effective Date:	13 October 2014

Required Action(s)
and Compliance
Time(s):

Required as indicated, unless accomplished previously:

For the purpose of this AD, groups of aeroplanes are defined:

Group 1 aeroplanes	A330-200/-300 aeroplanes on which Airbus SB A330-27-3137 at original issue or Revision 1, as applicable, and SB A330-92-3046 Revision 04 or Revision 05 have been embodied in service
	A340-200/-300 aeroplanes on which Airbus SB A340-27-4136 at original Issue or Revision 01 and SB A340-92-4056 Revision 03 have been embodied in service
Group 2 aeroplanes	A330-200/-300 and A340-200/-300 aeroplanes on which Airbus modifications 55780 and 52269 and 56056 have been embodied in production
	A340-500/-600 aeroplanes on which Airbus modifications 54882 and 52191 and 56058 have been embodied in production
Group 3 aeroplanes	A330-200/-300 aeroplanes on which Airbus SB A330-27-3137 at original issue or Revision 1 has been embodied in service and Airbus modifications 52269 and 56056 have been embodied in production
	A330-200/-300 aeroplanes on which Airbus modification 55780 has been embodied in production and Airbus SB A330-92-3046 Revision 04 or Revision 05 has been embodied in service
	A340-200/-300 aeroplanes on which Airbus SB A340-27-4136 at original Issue or Revision 01 has been embodied in service and Airbus modifications 52269 and 56056 have been embodied in production
	A340-200/-300 aeroplanes on which Airbus modification 55780 has been embodied in production and on which Airbus SB A340-92-4056 Revision 03 has been embodied in service

For all aeroplanes, except Group 1, Group 2 and Group 3 aeroplanes:

- (1) From the effective date of this AD, each time if, during flight, one of the "PRIM X PITCH FAULT" or "STAB CTL FAULT" messages is displayed on the ECAM associated with the "PITCH TRIM ACTR (1CS)" maintenance message, before next flight following the messages display, accomplish the actions as specified in paragraphs (1.1) and (1.2) of this AD.
 - (1.1) Accomplish a detailed inspection of the THSA ball screw assembly for integrity of the primary and secondary load path and check the CSP (if installed), and accomplish the applicable corrective actions, in accordance with the accomplishment instructions of Airbus SB A330-27-3102 Revision 08 or SB A340-27-4107 Revision 08, as applicable to the aeroplane type and model. For A340-500/-600 aeroplanes, this inspection must be accomplished in accordance with the instructions of A340 ALS Part 3 task 274000-B0002-1-C.
 - (1.2) Lubricate the THSA ball-nut. This can be accomplished in accordance with the instructions of A330 ALS Part 4 task 274400-00002-1-E or A340 ALS Part 4 task 274400-00002-1-E or A340 ALS Part 3 task 274000-B0003-1-C, as applicable to the aeroplane type and model.

Note 1: For terminating action for the requirements of paragraph (1) of this AD, see paragraph (6) or (7) of this AD, as applicable. Modification of an aeroplane as required by this AD does not constitute terminating action for the generic ALS tasks referenced in paragraph (1.2) (lubrication of THSA) of this AD.

For all aeroplanes, except Group 2 aeroplanes, no later than 31 December 2016, accomplish the actions as specified in paragraph (2) or (3) or (4), as applicable.

- (2) Modify the aeroplane to install CSP on the THSA and additional electrical harness in accordance with the accomplishment instructions of Airbus SBs, as defined in Table 1 of this AD, depending on installed THSA P/N and aeroplane model.

Table 1 – Applicable SB for modification

THSA P/N	CSP	Electrical harness (see Note 2 of this AD)
47172-300	SB A330-27-3137 Revision 02, or SB A340-27-4136 Revision 02, as applicable	SB A330-92-3046 Revision 06, or SB A340-92-4056 Revision 04, as applicable
47147-500	SB A330-27-3143 Revision 01 or SB A340-27-4143, as applicable	
47175-200 47175-300	SB A340-27-5030	SB A340-92-5008 Revision 07

Note 2: Some aeroplanes might already have the electrical harness installed in production with Airbus modifications 52269 **and** 56056 for A330-200/-300 and A340-200/-300 aeroplanes, and with Airbus modifications 52191 **and** 56058 for A340-500/-600 aeroplanes. For these aeroplanes, only the CSP must be installed on the THSA.

- (3) For aeroplanes that have already been modified (installation of CSP on the THSA and electrical harness) before the effective date of this AD, in accordance with the instructions of any previous revision of an Airbus SB as listed in Table 1 of this AD, as applicable to aeroplane type, depending on the aeroplane configuration, accomplish the applicable additional work (if any) as specified in the Airbus SB revision listed in Table 1 of this AD.
- (4) For aeroplanes having one of the THSA P/N listed in Table 2 of this AD which are compliant with CSP installation as required by paragraph (2) of this AD, verify whether the electrical harness is installed on the aeroplane and, if found to be not installed, modify the aeroplane to install the electrical harness in accordance with the instructions of Airbus SB as defined in Table 2 of this AD.

Table 2 - Electrical harness installation on the aeroplane

THSA P/N (see Note 3 of this AD)	Applicable SB
47172-500, 47172-510, 47172-520 or 47172-530	SB A330-92-3046 Revision 06, or SB A340-92-4056 Revision 04, as applicable
47147-700 or 47147-710	
47175-500, 47175-520 or 47175-530	SB A340-92-5008 Revision 07

Note 3: Aeroplanes having one of the THSA installed with a P/N listed in Table 2 of this AD already have the CSP installed on the THSA, and only the electrical harness must be installed on the aeroplane.

- (5) Modification of an aeroplane, before the effective date of this AD, in accordance with instructions of :

- Airbus SB A330-27-3137 at original issue or Revision 01, **and** Airbus SB

	<p>A330-92-3046 Revision 04 or Revision 05, or</p> <ul style="list-style-type: none"> - Airbus SB A340-27-4136 at original issue or Revision 01, and Airbus SB A340-92-4056 Revision 03, <p>as applicable to aeroplane type, constitutes terminating action for the repetitive inspections as specified in</p> <ul style="list-style-type: none"> - A330 ALS Part 4 task 274400-00001-1-E, task 274400-00001-2-E, task 274400-00001-3-E and task 274400-00001-4-E, and - A340 ALS Part 4 task 274400-00001-1-E, task 274400-00001-2-E, task 274400-00001-3-E and task 274400-00001-4-E, <p>as applicable to that aeroplane.</p> <p>(6) Modification of an A340-200/300 aeroplane in accordance with the instructions of Airbus SB A340-27-4143 and SB A340-92-4056 Revision 03, constitutes terminating action for the repetitive actions as required by paragraph (1) of this AD for that aeroplane.</p> <p>Note 4: For aeroplanes as defined in paragraphs (5) and (6) of this AD, refer to paragraph (3) of this AD for some additional work.</p> <p>(7) Modification of an aeroplane as required by paragraph (2), (3) or (4) of this AD, as applicable, constitutes terminating action for that aeroplane, for the following:</p> <ul style="list-style-type: none"> - For all aeroplanes: the repetitive actions as required by paragraph (1) of this AD. - For A340-500/-600 aeroplanes: ALS Part 3 task 274000-B0002-1-C. - For A330-200/-300 and A340-200/-300 aeroplanes: the ALS tasks as specified in paragraph (5) of this AD, as applicable. <p>(8) For an A340-500/-600 aeroplane that is post-SB A340-92-5008 (at Revision 06 or earlier), before exceeding the threshold or interval, as applicable, of A340 ALS Part 3 task 274000-B0002-1-C, or within 3 months after the effective date of this AD, whichever occurs later, accomplish A340 ALS Part 3 task 274000-B0002-1-C and, thereafter, within the applicable intervals (see paragraph (7) of this AD for terminating action).</p> <p>(9) Do not install on an aeroplane any THSA having P/N 47172-300, P/N 47147-500, P/N 47175-200 or P/N 47175-300, as specified in paragraph (9.1) or (9.2) of this AD, as applicable.</p> <p>(9.1) For aeroplanes that must comply with paragraph (2), (3) or (4) of this AD: after modification of the aeroplane as required by paragraph (2), (3) or (4) of this AD, as applicable.</p> <p>(9.2) For Group 2 aeroplanes: from the effective date of this AD.</p>
Ref. Publications:	<p>Airbus SB A330-27-3102 Revision 08 dated 06 December 2007.</p> <p>Airbus SB A340-27-4107 Revision 08 dated 06 December 2007.</p> <p>Airbus SB A330-27-3137 original issue dated 20 March 2007, Revision 01 dated 06 December 2007, or Revision 02 dated 18 January 2010.</p> <p>Airbus SB A330-27-3143 Revision 01 dated 10 July 2012.</p> <p>Airbus SB A340-27-4136 original issue dated 20 March 2007, Revision 01 dated 06 December 2007, or Revision 02 dated 24 February 2010.</p> <p>Airbus SB A340-27-4143 original issue dated 21 February 2012.</p> <p>Airbus SB A340-27-5030 original issue dated 06 December 2007, or Revision 01 dated 20 November 2009.</p> <p>Airbus SB A330-92-3046 Revision 04 dated 16 July 2010, or Revision 05 dated</p>

	<p>07 November 2011, or Revision 06 dated 15 November 2013.</p> <p>Airbus SB A340-92-4056 Revision 03 dated 16 July 2010, or Revision 04 dated 05 December 2013.</p> <p>Airbus SB A340-92-5008 Revision 07 dated 08 February 2013.</p> <p>The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.</p>
Remarks:	<ol style="list-style-type: none"> 1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. This AD was posted on 20 May 2014 as PAD 14-080 for consultation until 17 June 2014. The Comment Response Document can be found at http://ad.easa.europa.eu/. 3. Enquiries regarding this AD should be referred to the Safety Information Section, Certification Directorate, EASA. E-mail: ADs@easa.europa.eu. 4. For any question concerning the technical content of the requirements in this AD, please contact: AIRBUS – Airworthiness Office – EIAL; E-mail: airworthiness.A330-A340@airbus.com.