

EASA	AIRWORTHINESS DIRECTIVE
	<p>AD No.: 2013-0309</p> <p>Date: 20 December 2013</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>
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].	
Design Approval Holder's Name: AIRBUS	Type/Model designation(s): A318, A319, A320 and A321 aeroplanes
TCDS Number:	EASA.A.064
Foreign AD:	Not applicable
Supersedure:	This AD supersedes EASA AD 2010-0046R1 dated 23 May 2012.
ATA 27	Flight Controls – Elevator Servo-Control Rod Eye-Ends – Inspection / Replacement
Manufacturer(s):	Airbus (formerly Airbus Industrie)
Applicability:	Airbus A318-111, A318-112, A318-121, A318-122, A319-111, A319-112, A319-113, A319-114, A319-115, A319-131, A319-132, A319-133, A320-211, A320-212, A320-214, A320-215, A320-216, A320-231, A320-232, A320-233, A321-111, A321-112, A321-131, A321-211, A321-212, A321-213, A321-231 and A321-232 aeroplanes, all manufacturer serial numbers.
Reason:	<p>One case of elevator servo-control disconnection was reported on an aeroplane of the A320 family. Investigation results revealed that the failure occurred at the servo-control rod eye-end. Prompted by this finding, additional inspections revealed cracking at the same location on a number of other servo-control rod eye-ends. In several cases, both actuators of the same elevator surface were affected.</p> <p>It has been determined that the detected rod end cracks are caused by fatigue, induced by a bending effect which is linked to the spherical bearing rotational torque. As the elevator surface is neither actuated nor damped, a dual servo-control disconnection on the same elevator would result in an uncontrolled surface.</p> <p>This condition, if not corrected, could result in reduced control of the aeroplane.</p> <p>To address this potential unsafe condition, EASA issued AD 2008-0149 to require a one-time inspection of the elevator servo-control rod eye-ends for aeroplanes which have accumulated more than 10 000 total flight cycles (FC)</p>

	<p>since aeroplane first flight and, in case of findings, accomplishment of corrective actions.</p> <p>As a result of this AD, a significant number of rod eye-ends have been found cracked. In addition, some cracks have been reported on rod eye-ends that had not yet accumulated the 10 000 FC of the established threshold.</p> <p>Prompted by these findings, EASA issued AD 2010-0046, which partially retained the initial inspection requirement of EASA AD 2008-0149, which was superseded, reduced the compliance time of the initial inspection and introduced a repetitive inspection programme.</p> <p>Subsequently, EASA AD 2010-0046 was revised to specify that repetitive inspections and corrective actions of an elevator servo-control rod-end at part level was an acceptable alternative method to comply with the actions required by this AD. In addition, some editorial changes were made (Table 1) for reasons of standardisation.</p> <p>Since EASA AD 2010-0046R1 was issued, a new elevator servo-control rod eye-end has been developed, incorporating a re-greasable roller bearing.</p> <p>For the reason described above, this AD retains the requirements of EASA AD 2010-0046R1, which is superseded, and introduces an optional terminating action for the repetitive inspections by replacement of the existing elevator servo-control rod eye-ends with the new elevator servo-control rod eye-end. In addition, this AD prohibits, for aeroplanes that incorporate this optional modification, (re)installation of unmodified elevator servo-controls.</p> <p>This AD also deletes the Model A320-111 from the Applicability, as its approval has been withdrawn and it is no longer listed in the TCDS.</p>
Effective Date:	03 January 2014
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <p>Note 1: Paragraphs (1) through (7) of this AD are applicable to aeroplanes with elevator servo-controls installed, having Part Number (P/N) 31075-0xx, or P/N 31075-1xx, or P/N 31075-2xx, or P/N 31075-3xx, or P/N 31075-4xx, fitted with rod-end assembly P/N 341203-xxx.</p> <p>(1) For aeroplanes which, on 19 August 2008 [the effective date of EASA AD 2008-0149], have accumulated 10 000 FC or more since aeroplane first flight:</p> <p>(1.1) Within 1 500 FC after 19 August 2008 [the effective date of EASA AD 2008-0149], inspect both left-hand (LH) and right-hand (RH) inboard elevator servo-control rod eye-ends in accordance with the instructions of Airbus Service Bulletin (SB) A320-27A1186 Revision 05.</p> <p>(1.2) Within 3 000 FC after 19 August 2008 [the effective date of EASA AD 2008-0149], inspect both LH and RH outboard elevator servo-control rod eye-ends in accordance with the instructions of Airbus SB A320-27A1186 Revision 05.</p> <p>(2) For aeroplanes, other than those identified in paragraph (1) of this AD, within the compliance time specified in Table 1 of this AD, as applicable, inspect both LH and RH inboard and outboard elevator servo-control rod eye-ends in accordance with the instructions of Airbus SB A320-27A1186 Revision 05.</p>

Table 1

Elevator servo-control rod eye-ends to be inspected	Compliance time, whichever occurs later
Inboard	Before accumulating 5 000 FC since aeroplane first flight, or within 20 months after 02 April 2010 [the effective date of the original issue of EASA AD 2010-0046R1] without exceeding 11 500 FC since aeroplane first flight
Outboard	Before accumulating 7 500 FC since aeroplane first flight, or within 40 months after 02 April 2010 [the effective date of the original issue of EASA AD 2010-0046R1] without exceeding 13 000 FC since aeroplane first flight

- (3) For all aeroplanes, within 5 000 FC after the initial inspection as required by paragraph (1) or (2) of this AD, as applicable, and, thereafter, at intervals not to exceed 5 000 FC, repeat the inspections of both LH and RH **inboard** and **outboard** elevator servo-control rod eye-ends in accordance with the instructions of Airbus SB A320-27A1186 Revision 05.
- (4) If, during any inspection as required by paragraph (1) or (2) or (3) of this AD, discrepancies are detected, before next flight, accomplish the applicable corrective actions in accordance with the instructions of Airbus SB A320-27A1186 Revision 05.
- (5) Aeroplanes that have passed the inspections of the LH and RH inboard or outboard elevator servo-control rod eye-ends, prior to 02 April 2010 [the effective date of the original issue of EASA AD 2010-0046R1], in accordance with the instructions of Airbus AOT A320-27A1186 at original issue or any later revision, are compliant with the requirements of paragraph (1) or (2) of this AD, as applicable. The repetitive inspections required by paragraph (3) of this AD remain applicable.
- (6) From 02 April 2010 [the effective date of the original issue of EASA AD 2010-0046R1], do not install an elevator servo-control rod eye-end on an aeroplane, unless the part is new, or it has been determined (see paragraph (7) of this AD) that the part has not yet accumulated 5 000 FC since new or since its last inspection in accordance with Airbus SB A320-27A1186 Revision 05 or Goodrich SB 31075-27-21 Revision 2 or Airbus AOT 27A1186 at original issue, on the conditions that the FC accumulated by the elevator servo-control rod eye-end are conclusively determined from the review of aeroplane maintenance records and that, thereafter, the installed elevator servo-control rod eye-end is inspected and, depending on findings, corrected in accordance with the requirements of this AD.
- (7) Accomplishment of inspections and corrective actions on each elevator servo-control rod eye-end on an aeroplane, before the accumulation of 5 000 FC since first flight, and, thereafter, at intervals not to exceed 5 000 FC, in accordance with the instructions of Airbus SB A320-27A1186 Revision 5, or Goodrich SB 31075-27-21 Revision 2, or Airbus AOT A320-27A1186, is an acceptable method to comply with the requirements of paragraphs (1), (2), (3) and (4) of this AD for that aeroplane, provided that the FC accumulated by the elevator servo-control rod eye-end can be conclusively determined from the review of aeroplane maintenance records.
- (8) Modification of an aeroplane by replacing all four elevator servo-control rod

	<p>eye-ends with modified (i.e. re-greasable) parts, and re-identification of those servo-controls to P/N 31075-6xx or P/N 31075-8xx, or by installation on that aeroplane of four modified (in accordance with the instructions of Airbus SB A320-27-1223 or Goodrich SB 31075-27-22) servo-controls having P/N 31075-6xx or P/N 31075-8xx, as applicable, constitutes terminating action for the repetitive inspections required by this AD for that aeroplane.</p> <p>(9) Aeroplanes on which Airbus modification 154554 (installation of servo-controls having P/N 31075-6xx or P/N 31075-8xx, fitted with modified rod eye-end roller bearing) has been embodied in production are not affected by the requirements of paragraphs (1) through (7) of this AD, provided that no servo-control with a P/N as defined in Note 1 of this AD has been reinstalled since first flight.</p> <p>Note 2: Taking into account that the new elevator servo-control rod eye-end is a re-greasable one, Maintenance Review Board Report (MRBR) task reference 27.34.00/06 becomes applicable to aeroplanes modified as specified in paragraph (8) or (9) of this AD, as applicable.</p> <p>(10) Do not install on any aeroplane an elevator control having P/N 31075-0xx, or P/N 31075-1xx, or P/N 31075-2xx, or P/N 31075-3xx, or P/N 31075-4xx, or an elevator servo-control rod eye-end P/N 341203 or P/N 341203-XXX, as required by paragraph (10.1) or (10.2) of this AD, as applicable:</p> <p>(10.1) For aeroplanes that do not have Airbus modification 154554 embodied in production: After optional modification of the aeroplane as specified in paragraph (8) of this AD.</p> <p>(10.2) For aeroplanes on which Airbus modification 154554 has been embodied in production: From the effective date of this AD.</p>
Ref. Publications:	<p>Airbus All Operators Telex (AOT) A320-27A1186 at original issue.</p> <p>Airbus SB A320-27A1186 Revision 05 dated 10 March 2010.</p> <p>Airbus SB A320-27-1223 original issue dated 03 September 2013.</p> <p>Goodrich SB 31075-27-21 Revision 2 dated 04 March 2010.</p> <p>Goodrich SB 31075-27-22 original issue dated 02 July 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 11 November 2013 as PAD 13-164 for consultation until 09 December 2013. 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, Executive 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 – EIAS Fax +33 5 61 93 44 51, E-mail: account.airworth-eas@airbus.com.