| EASA | AIRWORTHINESS DIRECTIVE |
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| | **AD No.: 2012-0236**<br>**[Correction: 12 November 2012]**<br><br>**Date: 09 November 2012**<br><br>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. |

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:** | **Type/Model designation(s):** |
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| AIRBUS | A318, A319, A320 and A321 aeroplanes |

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| TCDS Number: | EASA.A.064 |
| Foreign AD: | Not applicable |
| Supersedure: | This AD supersedes EASA AD 2011-0203 dated 13 October 2011. |

| **ATA 34** | **Navigation – Angle of Attack (AoA) Sensors – Replacement / Modification** |
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| 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, A320-111, 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: | During Airbus Final Assembly Line flight tests, AoA data from two different aeroplanes was found inaccurate, which was confirmed by flight data analysis.<br><br>The results of the investigation conducted by Airbus and Thales on the removed sensors revealed oil residue between the stator and the rotor parts of the AoA vane position resolvers. This oil residue was the result of incorrect removal of machining oil during the manufacturing process of the AoA resolvers. At low temperatures, this oil residue becomes viscous (typically in cruise), causing delayed and/or reduced AoA vane movement. Multiple AoA sensors could be simultaneously affected, providing incorrect indications of the AoA of the aeroplane.<br><br>This condition, if not corrected, could lead to erroneous AoA information and consequent delayed activation or non-activation of the AoA protection systems which, if during flight at a high angle of attack, could result in reduced control of the aeroplane.<br><br>To address this unsafe condition, EASA issued AD 2011-0203 to require the identification of the serial number (s/n) of each installed Thales Avionics |

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| | (formerly SEXTANT) Part Number (P/N) C16291AA AoA sensor and the replacement of all suspect units with serviceable ones. EASA AD 2011-0203 also prohibited the (re)installation of these same s/n sensors on any aeroplane, unless corrective measures had been accomplished.<br><br>Since that AD was issued, it was discovered that a part of the affected population of AoA sensors may have been modified and re-identified from P/N C16291AA to P/N C16291AB, in accordance with the instructions of Airbus Service Bulletin (SB) A320-34-1444, without having passed the inspection in accordance with the instructions of Thales Avionics SB C16291A-34-007 Revision 01.<br><br>In addition, to anticipate compliance with new airworthiness regulations concerning icing, new conic plates have been developed to improve the protection of AoA sensors from ice crystals.<br><br>For the reasons described above, this new AD retains the requirements of EASA AD 2011-0203, which is superseded, and requires, for the affected population that was not addressed by EASA AD 2011-0203, the replacement of the suspect units with serviceable ones, and modification of all AoA sensor plates, which consist of replacement of the current AoA flat plates with the new conic plates for all Thales Avionics (formerly SEXTANT) Part Number (P/N) C16291AA, P/N C16291AB and Goodrich P/N 0861ED AoA sensors.<br><br>This AD has been republished to correct a typographical error (wrong AOA protection cover P/N) in paragraph (7). |
| Effective Date: | 23 November 2012 |
| Required Action(s) and Compliance Time(s): | Required as indicated, unless accomplished previously:<br><br>(1) For aeroplanes fitted with P/N C16291AA AoA sensors: within 12 months after 27 October 2011 [the effective date of EASA AD 2011-0203], replace each P/N C16291AA AoA sensor installed on the aeroplane, if identified to have a s/n as listed in Thales Avionics SB C16291A-34-007 Revision 04, in accordance with the instructions of Airbus SB A320-34-1452.<br><br>A review of aeroplane maintenance records is acceptable to determine the P/N and s/n of the installed AoA sensors, provided the P/N and s/n of the installed AoA sensors can be conclusively identified from that review.<br><br>(2) For aeroplanes fitted with P/N C16291AB AoA sensors with s/n listed the Thales Avionics SB C16291A-34-007 Revision 04: within 3 months after the effective date of this AD, replace each P/N C16291AB AoA sensor installed on the aeroplane, in accordance with the instructions of Airbus SB A320-34-1452, unless it can be demonstrated by maintenance records that the affected AoA sensor has passed the inspection in accordance with the instructions of Thales Avionics SB C16291A-34-007 Revision 01.<br><br>(3) Aeroplanes on which Airbus modification (mod.) 150006 (installation of AoA sensors P/N C16291AB) or mod. 26934 (installation of AoA sensors P/N 0861ED) has been embodied in production and on which no AoA sensor replacements have been made since first flight are not affected by the requirements of paragraphs (1) and (2) of this AD.<br><br>(4) For all aeroplanes, within 36 months after the effective date of this AD, modify each AoA sensor (replacement of the flat plate with a conic plate and/or replacement of the AoA protection covers in the flight kit n°2, as applicable to aeroplane configuration and operator local approved procedure) in accordance with the instructions of Airbus SB A320-34-1521. Concurrent with this modification, depending on the P/N of the AoA sensors installed on the aeroplane, accomplish the actions contained by reference in the concurrent requirements section of Airbus |

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| | SB A320-34-1521.<br><br>(5) From the effective date of this AD, do not install on an aeroplane a P/N C16291AA AoA sensor having a s/n as listed in Thales SB C16291A-34-007 Revision 01, or a P/N C16291AB AoA sensor with a s/n as listed in Thales Avionics SB C16291A-34-007 Revision 04, unless it has passed the inspection in accordance with the instructions of Thales Avionics SB C16291A-34-007 Revision 01 as specified in Thales Avionics SB C16291A-34-009 Revision 1.<br><br>(6) Aeroplanes on which Airbus mod. 153214 (installation of conic plates associated to sensors P/N C16291AA and P/N C16291AB) or mod. 153213 (installation of conic plates associated to AoA sensors P/N 0861ED) has been embodied in production and on which no AoA conic plates replacements with respectively a flat plate P/N D3411007620000 or D3411013520000 have been made since first flight are not affected by the requirement of paragraph (4) of this AD.<br><br>(7) After modification of an aeroplane as required by paragraph (4) of this AD, or from the effective date of this AD for an aeroplane that has had Airbus mod. 153214 or mod. 153213 embodied in production as specified in paragraph (6) of this AD associated with Airbus mod. 153491 (AOA protection cover P/N 98D34203003000), do not use AoA protection cover P/N 98A10001500000 and do not install on that aeroplane:<br><br>• any AoA sensor flat plate P/N D3411007620000, or P/N D3411013520000,<br><br>• any Thales (formerly Sextant) AoA sensor P/N 45150320, or P/N 16990568. |
| Ref. Publications: | Airbus SB A320-34-1452 original issue dated 29 January 2010.<br><br>Airbus SB A320-34-1521 original issue dated 07 May 2012, or Revision 01 dated 12 September 2012.<br><br>Airbus SB A320-34-1444 original issue dated 07 October 2009.<br><br>Thales SB C16291A-34-007 Revision 01 dated 03 December 2009, or Revision 02 dated 16 December 2011, or Revision 03 dated 10 April 2012, or Revision 04 dated 11 October 2012.<br><br>Thales SB C16291A-34-009 original issue dated 10 September 2009, or Revision 01 dated 07 January 2010.<br><br>The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD. |
| Remarks: | 1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.<br><br>2. This AD was posted on 30 July 2012 as PAD 12-093 for consultation until 27 August 2012. The Comment Response Document can be found at http://ad.easa.europa.eu.<br><br>3. Enquiries regarding this AD should be referred to the Safety Information Section, Executive Directorate, EASA. E-mail: ADs@easa.europa.eu.<br><br>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. |