FAA
Aviation Safety

EMERGENCY AIRWORTHINESS DIRECTIVE

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DATE: December 10, 2014
AD #: 2014-25-51

Emergency Airworthiness Directive (AD) 2014-25-51 is sent to owners and operators of Airbus Model A318, A319, A320, and A321 series airplanes.

Background

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued Emergency Airworthiness Directive 2014-0266-E, dated December 9, 2014 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition on all Model A318, A319, A320, and A321 series airplanes. The MCAI states:

> An occurrence was reported where an Airbus A321 aeroplane encountered a blockage of two Angle of Attack (AoA) probes during climb, leading to activation of the Alpha Protection (Alpha Prot) while the Mach number increased. The flightcrew managed to regain full control and the flight landed uneventfully.
>
> When Alpha Prot is activated due to blocked AoA probes, the flight control laws order a continuous nose down pitch rate that, in a worst case scenario, cannot be stopped with backward sidestick inputs, even in the full backward position. If the Mach number increases during a nose down order, the AoA value of the Alpha Prot will continue to decrease. As a result, the flight control laws will continue to order a nose down pitch rate, even if the speed is above minimum selectable speed, known as VLS.
>
> This condition, if not corrected, could result in loss of control of the aeroplane.
>
> To address this unsafe condition, Airbus *** [has] developed a specific Aircraft Flight Manual (AFM) procedure, which has been published in AFM Temporary Revision (TR) No. 502.
>
> For the reasons described above, this AD requires amendment of the applicable AFM [to advise the flightcrew of emergency procedures for abnormal Alpha Prot].
>
> This is considered to be an interim action and further [EASA] AD action may follow.

FAA's Determination and AD Requirements

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design

Authority, we have been notified of the unsafe condition described in the MCAI and service information referenced above. We are issuing this AD because we evaluated all pertinent information and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

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.

Presentation of the Actual AD

We are issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator.

2014-25-51 Airbus: Directorate Identifier 2014-NM-228-AD.

(a) Effective Date

This Emergency AD is effective upon receipt.

(b) Affected ADs

None.

(c) Applicability

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

(1) All Model A318-111, -112, -121, and -122 airplanes.

(2) All Model A319-111, -112, -113, -114, -115, -131, -132, and -133 airplanes.

(3) All Model A320-211, -212, -214, -231, -232, and -233 airplanes.

(4) All Model A321-111, -112, -131, -211, -212, -213, -231, and -232 airplanes.

(d) Subject

Air Transport Association (ATA) of America Code 34, Navigation.

(e) Unsafe Condition

This AD was prompted by a report of Angle of Attack (AoA) probes jamming on an in-service Airbus Model A321 airplane. Jamming of the two AoA probes during climb is attributed to

water freezing under the AoA vane slinger, and led to activation of the Alpha Protection (Alpha Prot) while the Mach number increased, which resulted in an airplane pitch down per design. We are issuing this AD to ensure the flightcrew has procedures to counteract the pitch down order due to abnormal activation of the Alpha Prot. An abnormal Alpha Prot, if not corrected, could result in loss of control of the airplane.

(f) Compliance

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

(g) Revision of Airplane Flight Manual (AFM)

Within 2 days after receipt of this AD, revise the AFM to incorporate procedures to address undue activation of Alpha Prot by inserting the text specified in figure 1 to paragraph (g) of this AD into the Emergency Procedures section of the applicable AFM, to advise the flightcrew of emergency procedures for abnormal Alpha Prot. This may be accomplished by inserting a copy of this AD into the AFM. When a statement identical to the text specified in figure 1 to paragraph (g) of this AD is included in the general revisions of the AFM, the general revisions may be inserted in the AFM, and the text specified in figure 1 to paragraph (g) of this AD may be removed.

Figure 1 to paragraph (g) of this AD - AFM Procedure

- **At any time, with a speed above VLS, if the aircraft goes to a continuous nose down pitch rate that cannot be stopped with backward sidestick inputs, immediately:**
  Keep on one ADR.
  Turn off two ADRs.

- **If the Alpha Max strip (red) hides completely the Alpha Prot strip (black and amber) in a stabilized wings-level flight path (without an increase in load factor):**
  Keep on one ADR.
  Turn off two ADRs.
  In case of dispatch with one ADR inoperative, switch only one ADR to OFF.

  CAUTION RISK OF ERRONEOUS DISPLAY OF THE VSW STRIP (RED AND BLACK)

  Consider using the Flight Path Vector (FPV).

- **If the Alpha Prot strip (black and amber) rapidly moves by more than 30 kt during flight maneuvers (with an increase in load factor), with AP ON and speed brakes retracted:**
  Keep on one ADR.
  Turn off two ADRs.
  In case of dispatch with one ADR inoperative, switch only one ADR to OFF.

  CAUTION RISK OF ERRONEOUS DISPLAY OF THE VSW STRIP (RED AND BLACK)

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(h) 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.

(i) Other FAA Provisions

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Branch, ANM-116, 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 ACO, 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. 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 EASA; or Airbus's EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(j) Related Information

(1) For further information about this AD, 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.

(2) For service information referenced 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. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA.

Issued in Renton, Washington, on December 10, 2014.

Original signed by:
Jeffrey E. Duven,
Manager,
Transport Airplane Directorate,
Aircraft Certification Service.