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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2018-0505; Product Identifier 2017-NM-178-AD; Amendment 39-19419; AD 2018-19-19]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Airbus SAS 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 SAS Model A350-941 airplanes. This AD was prompted by a report of an overheat failure mode of the hydraulic engine-driven pump, which could cause a fast temperature rise of the hydraulic fluid. This AD requires modifying the hydraulic monitoring and control application (HMCA) software. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective October 29, 2018.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of October 29, 2018.

**ADDRESSES:** For service information identified in this final rule, contact Airbus SAS, Airworthiness Office–EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 45 80; email continued-airworthiness.a350@airbus.com; internet <http://www.airbus.com>. You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0505.

#### **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-2018-0505; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The address for Docket Operations (phone: 800-647-5527) is in the ADDRESSES section.

**FOR FURTHER INFORMATION CONTACT:** Kathleen Arrigotti, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3218.

## **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 SAS Model A350-941 airplanes. The NPRM published in the Federal Register on June 11, 2018 (83 FR 26880). The NPRM was prompted by a report of an overheat failure mode of the hydraulic engine-driven pump, which could cause a fast temperature rise of the hydraulic fluid. The NPRM proposed to require modifying the HMCA software. We are issuing this AD to address high hydraulic fluid temperature combined with an inoperative fuel tank inerting system, which could result in uncontrolled overheating of the hydraulic system and consequent ignition sources inside the fuel tank, which, combined with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2017-0200, dated October 10, 2017 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for all Airbus SAS Model A350-941 airplanes. The MCAI states:

In the Airbus A350 design, the hydraulic fluid cooling system is located in the fuel tanks. Recently, an overheat failure mode of the hydraulic engine-driven pump (EDP) was found. Such EDP failure may cause a fast temperature rise of the hydraulic fluid.

This condition, if not detected and corrected, combined with an inoperative fuel tank inerting system, could lead to an uncontrolled overheat of the hydraulic fluid, possibly resulting in ignition of the fuel-air mixture in the affected fuel tank.

To address this potential unsafe condition, Airbus issued a Major Event Revision (MER) of the A350 Master Minimum Equipment List (MMEL) that incorporates restrictions to avoid an uncontrolled overheat of the hydraulic system. Consequently, EASA issued Emergency AD 2017-0154-E to require implementation of these dispatch restrictions.

Since EASA Emergency AD 2017-0154-E was issued, following further investigation, Airbus issued another MER of the A350 MMEL that expands the number of restricted MMEL items. At the same time, Airbus revised Flight Operation Transmission (FOT) 999.0068/17, to inform all operators about the latest MMEL restrictions.

Consequently, EASA issued AD 2017-0180, retaining the requirements of EASA Emergency AD 2017-0154-E, which was superseded, and requiring implementation of the new Airbus A350 MMEL MER and, consequently, restrictions for aeroplane dispatch.

Since EASA AD 2017-0180 was issued, Airbus developed a software (SW) update of the Hydraulic Monitoring and Control Application (HMCA) SW S4.2, introduction of which avoids uncontrolled overheat of the hydraulic system. HMCA SW S4.2 is embodied in production through Airbus modification (mod) 112090, and introduced in service through Airbus Service Bulletin (SB) A350-29-P012.

For the reasons described above, this [EASA] AD retains the requirements of EASA AD 2017-0180, which is superseded, and requires modification of the aeroplane by installing HMCA SW S4.2.

This [EASA] AD is still considered to be an interim action and further AD action may follow.

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-2018-0505.

## **Comments**

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

### **Support for the NPRM**

The Air Line Pilots Association, International (ALPA) expressed support for the NPRM.

### **Request To Include Revised Service Information**

Delta Air Lines (Delta) requested that Airbus Service Bulletin A350-29-P012, Revision 01, dated February 1, 2018, be included in paragraph (h) of the proposed AD because the effectivity identified in Airbus Service Bulletin A350-29-P012, dated October 6, 2017, is incomplete. Delta added that Revision 01 of the service information was issued to include all airplanes affected by the HMCA software update that were embodied in production.

We agree with the commenter's request. We have included Airbus Service Bulletin A350-29-P012, Revision 01, dated February 1, 2018, in this AD. We have added paragraph (k) to this AD to provide credit for actions done in accordance with the original issue of the referenced service information. Revision 01 of the service information updates certain manufacturer serial numbers, but specifies that no additional work is necessary.

### **Request To Clarify Group 2 Airplane Definition**

Delta asked that we revise the definition of Group 2 airplanes in paragraph (g)(2) of the proposed AD, from “post-mod 112090 airplanes on which the HMCA SW S4.2 is installed” to “airplanes on which the HMCA SW S4.2 is installed in production by embodiment of Mod 112090 or as retrofit, per Airbus Service Bulletin A350-29-P012, Revision 01, dated February 1, 2018.” Delta stated that this addition will define the connection between the mod 112090 and Airbus Service Bulletin A350-29-P012, and clarify that the post-mod condition could be driven by production embodiment or retrofit per the referenced service bulletin.

We agree with the commenter's request. We have clarified the definition in paragraph (g)(2) of this AD to include the commenter's suggested language with minor revisions.

### **Request To Clarify Parts Prohibition Language**

Delta asked that we clarify the prohibited parts language specified in paragraph (i) of the proposed AD, from “an HMCA software pre-mod HMCA SW S4.2” to “an HMCA software prior to Standard 4.2.” Delta stated that this change will properly identify the HMCA software nomenclature.

We agree with the commenter's request to clarify the prohibited parts language specified in paragraph (i) of this AD. We have revised paragraph (i) of this AD to refer to “HMCA software prior

to HMCA SW S4.2.” While we acknowledge that SW S4.2 constitutes a software standard, we have not included the phrase “Standard 4.2” in this AD because that term is not used in the MCAI.

**Request To Exclude Certain Airplanes**

Delta asked that paragraph (c), “Applicability,” of the proposed AD be changed from “all A350-941 airplanes” to exclude “airplanes on which the Mod 112090 has been accomplished in production or retrofit via Airbus Service Bulletin A350-29-P012, Revision 01, dated February 1, 2018.” Airbus stated that this exclusion will limit the applicability and reduce engineering work-hours required for administrative paperwork for future delivery of new airplanes.

We disagree with the commenter's request to limit the applicability. Although the requirement to install updated software, as specified in paragraph (h) of this AD, is limited to airplanes without that software, the prohibition against installing earlier software, as specified in paragraph (i) of this AD, applies to all Model A350-941 airplanes. Without that restriction on all airplanes, installation of earlier software would be allowed on airplanes delivered in the future. Therefore, we have not changed this AD in this regard.

**Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule 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 addressing 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 final rule.

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

Airbus SAS has issued Service Bulletin A350-29-P012, Revision 01, dated February 1, 2018. This service information describes procedures for modifying HMCA software by installing HMCA software S4.2 upgrades. 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 7 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

**Estimated Costs for Required Actions**

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
2 work-hours × \$85 per hour = \$170	\$450	\$620	\$4,340

**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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

### **Regulatory Findings**

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):



**FAA**  
**Aviation Safety**

## **AIRWORTHINESS DIRECTIVE**

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)  
[www.gpoaccess.gov/fr/advanced.html](http://www.gpoaccess.gov/fr/advanced.html)

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**2018-19-19 Airbus SAS:** Amendment 39-19419; Docket No. FAA-2018-0505; Product Identifier 2017-NM-178-AD.

**(a) Effective Date**

This AD is effective October 29, 2018.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all Airbus SAS Model A350-941 airplanes, certificated in any category.

**(d) Subject**

Air Transport Association (ATA) of America Code 29, Hydraulic Power.

**(e) Reason**

This AD was prompted by a report of an overheat failure mode of the hydraulic engine-driven pump, which could cause a fast temperature rise of the hydraulic fluid. We are issuing this AD to address high hydraulic fluid temperature combined with an inoperative fuel tank inerting system, which could result in uncontrolled overheating of the hydraulic system and consequent ignition sources inside the fuel tank, which, combined with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

**(f) Compliance**

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

**(g) Definition of Airplane Groups**

(1) Group 1 airplanes are those on which the hydraulic monitoring and control application (HMCA) software (SW) S4.2 is not installed.

(2) Group 2 airplanes are those on which HMCA SW S4.2 is installed in production by embodiment of Mod 112090 or installed in-service as specified in Airbus Service Bulletin A350-29-P012.

**(h) Software Modification**

For Group 1 airplanes: Within 30 days after the effective date of this AD, modify the HMCA software by installing HMCA SW S4.2, in accordance with the Accomplishment Instructions of

Airbus Service Bulletin A350-29-P012, Revision 01, dated February 1, 2018. Where paragraphs 3.C.(1)(a) and 3.C.(2)(a) of Airbus Service Bulletin A350-29-P012, Revision 01, dated February 1, 2018, identify “SOFTWARE-\*\*\*” and indicate that the “Software becomes” new software: For purposes of this AD, the software titles/descriptions might not match exactly with the airplane and the service information; the old and new software titles/descriptions are for reference only as an aid to operators.

**(i) Parts Prohibition**

At the applicable time specified in paragraph (i)(1) or (i)(2) of this AD: No person may install HMCA software prior to HMCA SW S4.2 on any airplane.

(1) For Group 1 airplanes: After accomplishment of the modification required by paragraph (h) of this AD.

(2) For Group 2 airplanes: As of the effective date of this AD.

**(j) Other Acceptable SW Standards and Installation Methods**

Installation of an HMCA SW standard approved after the effective date of this AD is acceptable for compliance with the corresponding actions required by paragraph (h) of this AD, provided the conditions required by paragraphs (j)(1) and (j)(2) of this AD are met.

(1) The HMCA SW standard must be approved by the Manager, International Section, Transport Standards Branch, FAA; the European Aviation Safety Agency (EASA); or Airbus SAS's EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(2) The installation must be accomplished in accordance with the modification instructions approved by the Manager, International Section, Transport Standards Branch, FAA; the EASA; or Airbus SAS's EASA DOA. If approved by the DOA, the approval must include the DOA-authorized signature.

**(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 A350-29-P012, dated October 6, 2017.

**(l) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Section, Transport Standards Branch, 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 Section, send it to the attention of the person identified in paragraph (m)(2) of this AD. 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.

(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 Section, Transport Standards Branch, FAA; or the EASA; or Airbus SAS's EASA 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) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA AD 2017-0200, dated October 10, 2017, for related information. You may examine the MCAI on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0505.

(2) For more information about this AD, contact Kathleen Arrigotti, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3218.

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

**(n) 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 A350-29-P012, Revision 01, dated February 1, 2018.

(ii) Reserved.

(3) For service information identified in this AD, contact Airbus SAS, Airworthiness Office–EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 45 80; email [continued-airworthiness.a350@airbus.com](mailto:continued-airworthiness.a350@airbus.com).

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(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 Des Moines, Washington, on September 11, 2018.

Michael Kaszycki,  
Acting Director, System Oversight Division,  
Aircraft Certification Service.