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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2016-4278; Directorate Identifier 2012-SW-022-AD; Amendment 39-18758; AD 2016-26-01]**

**RIN 2120-AA64**

#### **Airworthiness Directives; AgustaWestland S.p.A. (Agusta) Helicopters**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Agusta Model AB139 and AW139 helicopters. This AD requires performing operational checks of both hydraulic systems. This AD was prompted by an assessment of the hydraulic systems of the helicopter following an accident. These actions are intended to prevent the unsafe condition on these products.

**DATES:** This AD is effective January 31, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain document listed in this AD as of January 31, 2017.

**ADDRESSES:** For service information identified in this final rule, contact AgustaWestland, Product Support Engineering, Via del Gregge, 100, 21015 Lonate Pozzolo (VA) Italy, ATTN: Maurizio D'Angelo; telephone 39-0331-664757; fax 39 0331-664680; or at <http://www.agustawestland.com/technical-bulletins>. You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

#### **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-2016-4278; or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the European Aviation Safety Agency (EASA) AD, the economic evaluation, any incorporated-by-reference service information, any comments received, and other information. The street address for the Docket Operations Office (phone: 800-647-5527) is U.S. Department of Transportation, Docket

Operations Office, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Matt Wilbanks, Aviation Safety Engineer, Safety Management Group, Rotorcraft Directorate, FAA, 10101 Hillwood Parkway, Fort Worth, Texas 76177; telephone (817) 222-5110; email matt.wilbanks@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

On March 11, 2016, at 81 FR 12838, the Federal Register published our notice of proposed rulemaking (NPRM), which proposed to amend 14 CFR part 39 by adding an AD that would apply to certain serial-numbered Agusta Model AB139 and AW139 helicopters. The NPRM proposed to require, within 50 hours time-in-service (TIS), performing operational tests of the Number 1 and Number 2 hydraulic systems power control modules (PCMs), the tail shut-off valve, the PCM1 and PCM2 flight control shut-off valves, and the emergency landing gear shut-off valve for correct functionality. Depending on the results of the operational checks, the NPRM proposed to require replacing a PCM, the tail shut-off valve, a flight control shut-off valve, the number 2 hydraulic control panel, the number 1 hydraulic module, the number 1 or number 2 PCM pressure switch, or repairing the electrical wiring. The proposed requirements were intended to prevent loss of hydraulic power to the flight controls and subsequent loss of control of the helicopter.

The NPRM was prompted by AD No. 2011-0207, dated October 20, 2011 (AD No. 2011-0207), issued by EASA, which is the Technical Agent for the Member States of the European Union, to correct an unsafe condition for certain serial-numbered Agusta Model AB139 and AW139 helicopters. EASA advises that an accident involving a Model AW139 helicopter caused the tail rotor (T/R), the T/R gearbox, and part of the fin to detach from the aircraft, rupturing the hydraulic lines and draining all of the hydraulic fluid. According to EASA, an assessment of the helicopter's hydraulic systems following the accident revealed that an operational check of the hydraulic systems is necessary to ensure its functionality. EASA advises that this condition, if not corrected, could lead, in the case of multiple failures, to loss of hydraulic power and subsequent loss of control of the helicopter. To address this, EASA AD No. 2011-0207 requires, within 50 flight hours or 2 months, operational checks of the power control modules and shutoff valves and reporting the results to the manufacturer.

### **Comments**

After our NPRM (81 FR 12838, March 11, 2016) was published, we received comments from one commenter.

### **Request**

The commenter requested we not adopt the proposed AD, as it is unnecessary. The commenter stated that following the release of EASA AD No. 2011-0207 and Agusta Bollettino Tecnico No. 139-269, dated September 30, 2011 (BT 139-269), they already have a 600 hour/12 month inspection and operational check of the hydraulic systems as part of their maintenance program that covers all of the proposed actions in the NPRM. Finally, the commenter stated that the proposed AD would not change any of their maintenance procedures, but it would add an additional burden of required paper work for the same results.

We disagree. EASA AD No. 2011-0207 is not mandatory for U.S. operators. Additionally, while an operator may incorporate the procedures described in BT 139-269 into its maintenance program,

not all operators are required to do so. In order for the corrective actions in BT 139-269 to become mandatory, and to correct the unsafe condition identified in the NPRM, the FAA must issue an AD.

### **FAA's Determination**

These helicopters have been approved by the aviation authority of Italy and are approved for operation in the United States. Pursuant to our bilateral agreement with Italy, EASA, its technical representative, has notified us of the unsafe condition described in the EASA AD. We are issuing this AD because we evaluated all information provided by EASA, reviewed the relevant information, considered the comment received, and determined the unsafe condition exists and is likely to exist or develop on other helicopters of these same type designs and that air safety and the public interest require adopting the AD requirements as proposed.

### **Differences Between This AD and the EASA AD**

The EASA AD requires reporting the results of the operational checks to Agusta, while this AD does not. The EASA AD also requires compliance within 50 flight-hours or 2 months, while this AD requires compliance within 50 hours TIS.

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

We reviewed BT 139-269 for Model AB139 and AW139 helicopters. BT 139-269 contains procedures for conducting operational checks of both hydraulic systems to confirm correct functionality.

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 this AD will affect 102 helicopters of U.S. Registry.

Based on an average labor rate of \$85 per hour, we estimate that operators may incur the following costs in order to comply with this AD. Performing the operational checks of the hydraulic systems requires about 2 work-hours for a total cost per helicopter of \$170 and a total cost to U.S. operators of \$17,340.

If required, replacing a PCM will require about 3 work-hours and required parts will cost about \$87,136, for a cost per helicopter of \$87,391.

If required, replacing a tail or flight control shut-off valve will require about 2 work-hours, and required parts will cost about \$7,512, for a cost per helicopter of \$7,682. If required, replacing the number 2 hydraulic control panel will require about 2 work-hours, and required parts will cost about \$8,165, for a cost per helicopter of \$8,335.

If required, replacing the number 1 hydraulic module will require about 4 work-hours, and required parts will cost about \$87,137, for a cost per helicopter of \$87,477.

If required, replacing a PCM pressure switch will require about 2 work-hours, and required parts will cost about \$6,974, for a cost per helicopter of \$7,144.

If required, repairing the electrical wiring will require about 2 work-hours, and required parts will cost about \$45, for a cost per helicopter of \$215.

### **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 helicopters identified in this rulemaking action.

### **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 DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction; 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.

We prepared an economic evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

### **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):



**2016-26-01 AGUSTAWESTLAND S.P.A. (AGUSTA):** Amendment 39-18758; Docket No. FAA-2016-4278; Directorate Identifier 2012-SW-022-AD.

**(a) Applicability**

This AD applies to Agusta Model AB139 and AW139 helicopters, all serial numbers except serial number 31007, 31094, 31293, 31301, 31303, 31313, and 31329, certificated in any category.

**(b) Unsafe Condition**

This AD defines the unsafe condition as an inoperative hydraulic shut-off valve, which could result in loss of hydraulic power and subsequent loss of control of the helicopter.

**(c) Effective Date**

This AD becomes effective January 31, 2017.

**(d) Compliance**

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

**(e) Required Actions**

Within 50 hours time-in service:

(1) Perform an operational test of each Number 1 and Number 2 power control module (PCM). If the fluid level in the reservoir changes more than 5mm (0.196 in) in an hour, replace the affected PCM.

(2) Perform an operational test of each tail shut-off valve. If the 2 SERVO caution message is not illuminated and the UTIL SOV2 and TR SOV indications are in the open position:

(i) Disconnect the Tail Shutoff valve connector, HP4P1.

(ii) Disconnect the PCM2 connectors, A44P3 and A44P12.

(iii) Disconnect the TB38 terminal board connector, TB38P1.

(iv) Perform a continuity test from HP4P1-1 to A44P12-16, from HP4P1-2 to TB38P1-D, and from HP4P1-4 to A44P3-6.

(v) If there is no continuity, repair or replace the defective wiring.

(vi) If there is continuity, release the test lever of the PCM2 to the DOWN NORM position.

(vii) If the TRSVO indication stays in the closed position, replace the tail shutoff valve.

(3) Perform an operational test of the PCM 2 flight control shut-off valve as described in the Compliance Instructions, paragraphs 5.1. through 5.5., of Agusta Bollettino Tecnico No. 139-269, dated September 30, 2011 (BT 139-269).

(i) If the 2 SERVO caution message is illuminated:

(A) On the hydraulic control panel, lift the guard of the SOV1/SOV2 switch and set it to SOV2 (closed position). Make sure that the 2 HYD PRESS caution message and the HYD 2 PRESS warning light on the hydraulic control panel are illuminated.

- (B) Reset the SOV1/SOV2 switch to the open position.
- (C) If the 2 HYD PRESS and 2 SERVO caution messages remain illuminated:
  - (1) Disconnect the PL14P1 and PL14P2 connectors from the hydraulic control panel.
  - (2) Disconnect the A1-1P4 connector from the MAU1.
  - (3) Disconnect the A2-1P3 connector from the MAU2.
  - (4) Disconnect the A44P3 connector from the Number 2 PCM.
  - (5) Disconnect the PL1P3 connector from the circuit breaker panel.
  - (6) Perform a continuity test from PL14P1-J to A1-1P4-18, from PL14P1-D to PL1P3-q, from PL14P2-J to A44P3-5, and from PL14P2-T to A2-1P3-34. If there is no continuity, repair or replace the defective wiring.
  - (7) If the HYD PRESS and 2 SERVO caution messages remain illuminated, replace the number 2 hydraulic power module.
    - (ii) If the 2 HYD PRESS caution message is illuminated, the HYD 2 pressure indication is more than 190 bar (2,755 lbf/sq in), and the SOV2 shutoff valve is in the open position, replace the pressure switch on the Number 2 PCM.
    - (iii) If the closure of SOV 2 is indicated on the MFD hydraulic synoptic page, before further flight, replace the Number 2 PCM.
  - (4) Perform an operational test of the PCM 1 flight control shut-off valve as described in the Compliance Instructions, paragraphs 6.1. through 6.4., of BT 139-269.
    - (i) If the 1 SERVO caution message is illuminated:
      - (A) On the hydraulic control panel, lift the guard of the SOV1/SOV2 switch and set it to SOV1 (closed position). Make sure that the 1 HYD PRESS caution message and the HYD 1 PRESS warning light on the hydraulic control panel are illuminated.
      - (B) Reset the SOV1/SOV2 switch to the open position. If the 1 HYD PRESS and 1 SERVO caution messages remain illuminated:
        - (1) Disconnect the PL14P1 and PL14P2 connectors from the hydraulic control panel.
        - (2) Disconnect the A1-1P4 connector from the MAU1.
        - (3) Disconnect the A2-1P3 connector from the MAU2.
        - (4) Disconnect the A45P3 connector from the Number 1 PCM.
        - (5) Disconnect the PL1P3 connector from the circuit breaker panel.
        - (6) Perform a continuity test from PL14P1-J to A1-1P4-18, from PL14P1-E to A45P3-5, from PL14P1-D to PL1P3-q, and from PL14P2-T to A2-1P3-34. If there is no continuity, repair or replace the defective wiring.
        - (7) If the HYD PRESS and 1 SERVO caution messages remain illuminated, replace the Number 1 hydraulic control panel.
          - (ii) If the 1 HYD PRESS caution message is illuminated, the HYD 1 pressure indication is more than 190 bar (2,755 lbf/sq in), and the SOV1 shutoff valve is in the open position, replace the pressure switch on the Number 1 PCM.
          - (iii) If the closure of SOV 1 is indicated on the MFD hydraulic synoptic page, before further flight, replace the Number 1 PCM.
        - (4) Perform an operational test of the emergency landing gear shutoff valve as described in the Compliance Instructions, paragraphs 7.1. through 7.4., of BT 139-269.
          - (i) If the EMERG L/G PRESS caution message is illuminated, the HYD 1 pressure indication is more than 190 bar (2,755 lbf/sq in), and the UTIL SOV1 (LDG GEAR EMER) shutoff valve is in the open position, replace the pressure switch on the Number 1 PCM.
          - (ii) If the 1 HYD MIN caution message is illuminated, inspect the fluid level on the Number 1 PCM and inspect the Number 1 main hydraulic system for leaks.
            - (A) If the fluid level is between the FULL and ADD marks, or if there are no hydraulic fluid leaks, perform an operational test of the level switches. If the 1 HYD MIN caution message is illuminated, replace the Number 1 PCM.
            - (B) If there is a hydraulic fluid leak:
              - (1) Replace all leaking parts and lines or repair the leak.

(2) If the 1 HYD MIN caution message remains illuminated, perform an operational test of the level switches.

(3) If the 1 HYD MIN caution message remains illuminated, replace the Number 1 PCM.

**(f) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Safety Management Group, FAA, may approve AMOCs for this AD. Send your proposal to: Matt Wilbanks, Aviation Safety Engineer, Safety Management Group, Rotorcraft Directorate, FAA, 10101 Hillwood Parkway, Fort Worth, Texas 76177; telephone (817) 222-5110; email 9-ASW-FTW-AMOC-Requests@faa.gov.

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office, before operating any aircraft complying with this AD through an AMOC.

**(g) Additional Information**

The subject of this AD is addressed in European Aviation Safety Agency (EASA) AD No. 2011-0207, dated October 20, 2011. You may view the EASA AD on the Internet at <http://www.regulations.gov> in Docket No. FAA[hyphen]2016-4278.

**(h) Subject**

Joint Aircraft Service Component (JASC) Code: 2900: Hydraulic Power.

**(i) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference 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 the AD specifies otherwise.

(i) Agusta Bollettino Tecnico No. 139-269, dated September 30, 2011.

(ii) Reserved.

(3) For Agusta service information identified in this final rule, contact AgustaWestland, Product Support Engineering, Via del Gregge, 100, 21015 Lonate Pozzolo (VA) Italy, ATTN: Maurizio D'Angelo; telephone 39-0331-664757; fax 39 0331-664680; or at <http://www.agustawestland.com/technical-bulletins>.

(4) You may view this service information at FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

(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 Fort Worth, Texas, on December 9, 2016.

Scott A. Horn,  
Acting Manager, Rotorcraft Directorate,  
Aircraft Certification Service.