[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0283; Product Identifier 2018-SW-045-AD]

RIN 2120-AA64

Airworthiness Directives; Leonardo S.p.A. Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Leonardo S.p.A. (Leonardo) Model AB139 and AW139 helicopters. This proposed AD would require various inspections of the main rotor (M/R) damper, and depending on the inspection results, removing from service or replacing certain parts. This proposed AD would also require reducing the torque of the M/R damper hub attachment bolts, marking parts, installing a special washer, and installing a certain part-numbered M/R damper and prohibit installing other part-numbered M/R dampers. This proposed AD is prompted by reports of failed M/R dampers. The proposed actions are intended to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Docket: Go to https://www.regulations.gov. Follow the online instructions for sending your comments electronically.

- Fax: 202-493-2251.

- Mail: Send comments to the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590-0001.

- Hand Delivery: Deliver to the "Mail" address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2020-0283; 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 proposed AD, the European Union Aviation Safety Agency (previously European Aviation Safety Agency) (EASA) AD, any comments received, and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

For service information identified in this proposed rule, contact Leonardo S.p.A. Helicopters, Emanuele Bufano, Head of Airworthiness, Viale G.Agusta 520, 21017 C.Costa di Samarate (Va) Italy; telephone +39-0331-225074; fax +39-0331-229046; or at https://www.leonardocompany.com/en/home. You may view the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

FOR FURTHER INFORMATION CONTACT: Matt Fuller, Senior Aviation Safety Engineer, Safety Management Section,, Rotorcraft Standards Branch,, FAA, 10101

Hillwood Pkwy, Fort Worth, TX 76177; telephone 817-222-5110; email matthew.fuller@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to participate in this rulemaking by submitting written comments, data, or views. The FAA also invites comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

The FAA will file in the docket all comments received, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, the FAA will consider all comments received on or before the closing date for comments. The FAA will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. The FAA may change this proposal in light of the comments received.

Discussion

EASA, which is the Technical Agent for the Member States of the European Union, has issued a series of superseded and revised ADs to correct an unsafe condition for Leonardo S.p.A. Helicopters (formerly Finmeccanica S.p.A., Helicopter Division

(FHD), AgustaWestland S.p.A., Agusta S.p.A.), AgustaWestland Philadelphia Corporation (formerly Agusta Aerospace Corporation), Model AB139 and AW139 helicopters, all serial numbers (S/Ns) except S/Ns 31004, 31007, and 41237. EASA advises of multiple failures of M/R dampers part number (P/N) 3G6220V01351 and 3G6220V01352. EASA states that in some cases these failures occurred at the eye end and body lugs resulting in disconnection of the M/R damper in-flight. EASA further states that a combination of factors, including cracks on the M/R damper rod end and body end and in-service failure of the eye end and body lugs may have contributed to the M/R damper disconnections. Information issued by Leonardo advises of M/R damper cracking, loose rod ends, bearing rotation in the damper seat, and damage, incorrect engagement, and misalignment of the lag damper broached ring nut, particularly the broached ring teeth and the damper piston slots.

EASA states that this condition could result in loss of the lead-lag damping function of the M/R blade, damage to adjacent critical rotor components, and subsequent reduced control of the helicopter. EASA AD No. 2018-0112R1, dated June 4, 2018 (EASA AD 2018-0112R1), which is the most recent EASA AD, requires various one-time and repetitive inspections of the M/R damper, a torque check of the damper body end, and replacing any M/R damper with a crack or that fails the torque check. EASA AD 2018-0112R1 also requires replacing M/R damper P/N 3G6220V01351 and 3G6220V01352 with P/N 3G220V01353, as additional tests determined that M/R damper P/N 3G220V01353 does not need to be subject to inspections for cracks, provided it is removed from service before it reaches its retirement life.

FAA's Determination

These helicopters have been approved by EASA and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the European Union, EASA has notified the FAA about the unsafe condition described in its AD. The FAA is proposing this AD after evaluating all known relevant information and determining that an unsafe condition is likely to exist or develop on other helicopters of the same type designs.

Related Service Information Under 1 CFR part 51

The FAA reviewed Leonardo Helicopters Alert Service Bulletin No. 139-450, Revision C, dated April 10, 2018, which contains procedures for visual and dye penetrant inspections of the M/R damper for cracks and for verifying the torque of the M/R damper body ends (body ends).

The FAA also reviewed Leonardo Helicopters Alert Service Bulletin No. 139-452, Revision B, dated April 10, 2018, which contains procedures for reducing the body end nut torque.

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.

Proposed AD Requirements

This proposed AD would require compliance with certain procedures described in the manufacturer's service bulletin. Based on the helicopter's S/N and the M/R damper P/N installed, this proposed AD would require within 5 hours time-in-service (TIS) and thereafter before the first flight of each day:

• A repetitive visual inspection using a magnifying glass of the M/R damper rod end (rod end) and body ends for a crack, and depending on the inspection results, removing the rod end from service or replacing the M/R damper.

• A repetitive inspection of the rod and body end bearings for rotation in the damper seat and for misaligned slippage marks, and depending on the inspection results, removing from service the rod end or replacing the M/R damper.

This proposed AD would also require within 10 hours TIS:

• Reducing the installation torque of each hub attachment bolt for each M/R damper.

This proposed AD would also require within 30 hours TIS, before the M/R damper accumulates 300 hours TIS, or within 300 hours TIS since last overhaul, whichever occurs later:

• A dye penetrant inspection using a magnifying glass or eddy current inspection of the rod and body ends for a crack, and depending on the inspection results, removing from service the rod end and replacing the M/R damper, or marking the rod and body ends.

This proposed AD would require within 30 hours TIS and thereafter at intervals not to exceed 20 hours TIS until the M/R damper has accumulated 600 hours TIS:

• A repetitive visual inspection of the rod end broached ring nut for broken teeth, improper engagement, and misalignment, and depending on the inspection results, removing from service the broached ring nut.

This AD would require within 50 hours TIS and thereafter at intervals not to exceed 100 hours TIS:

• A repetitive inspection of the bearing friction torque value of the body and rod ends, and depending on the inspection results, removing from service the rod end or replacing the M/R damper.

• A repetitive inspection the M/R damper anti-rotation block (block), and depending on the inspection results, removing the block from service.

This AD would also require, within 50 hours TIS:

• If special washer P/N 3G6220A05052 is installed, aligning the rod ends and broached rings, and replacing any broached ring that cannot be aligned.

• If special washer P/N 3G6220A05052 is not installed, inspecting the broached rings for wear and damage, and depending on the inspection results, replacing the broached ring and installing a special washer.

This proposed AD would also require installing M/R damper P/N 3G220V01353, prohibit installing M/R damper P/N 3G6220V01351 and P/N 3G6220V01352 on any helicopter, and allow the installation of M/R damper P/N 3G220V01353 to serve as terminating action for all the repetitive requirements of this proposed AD.

Differences between this Proposed AD and the EASA AD

The EASA AD requires contacting the manufacturer under certain conditions, while this proposed AD would not.

Costs of Compliance

The FAA estimates that this proposed AD would affect 123 helicopters of U.S. Registry. The FAA estimates that operators may incur the following costs in order to comply with this proposed AD. Labor costs are estimated at $85 per work-hour.

Performing the M/R damper inspections would take about 24 work-hours, for an estimated cost of $2,040 per helicopter and $250,920 for the U.S. fleet, per inspection cycle.

Replacing a rod end would take about 3 work-hours and parts would cost about $500, for an estimated cost of $755 per rod end.

Replacing a broached ring and broached ring nut would take about 3 work-hours and parts would cost about $125, for an estimated cost of $380 per broached ring and broached ring nut.

Replacing an anti-rotation block would take about 3 work-hours and parts would cost about $50, for an estimated cost of $305 per anti-rotation block.

Replacing an M/R damper would take about 2 work-hours and parts would cost about $18,000, for an estimated cost of $18,170 per M/R damper.

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.

The FAA is 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.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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, I certify this proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866,

2. Will not affect intrastate aviation in Alaska, and

3. 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.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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):

Leonardo S.p.A. Docket No. FAA-2020-0283; Product Identifier 2018-SW-045-AD.

(a) Applicability

This AD applies to Leonardo S.p.A. Model AB139 and AW139 helicopters, certificated in any category, all serial numbers (S/Ns) except S/Ns 31004, 31007, and 41237, with a main rotor (M/R) damper part number (P/N) 3G6220V01351, 3G6220V01352, or 3G6220V01353 installed.

(b) Unsafe Condition

This AD defines the unsafe condition as a crack in an M/R damper, which if not detected and corrected, could result in seizure of the M/R damper, detachment of the M/R damper in-flight, and subsequent loss of control of the helicopter.

(c) Comments Due Date

The FAA must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(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

(1) For helicopters with M/R damper P/N 3G6220V01351 or 3G6220V01352, within 5 hours time-in-service (TIS) and thereafter before the first flight of each day:

(i) For helicopters with an M/R damper rod end (rod end) that has accumulated 300 or more hours TIS since new or since the last overhaul, using a mirror and a 5X or higher power magnifying glass, visually inspect each rod end for a crack in the areas shown in Figure 19 of Leonardo Helicopters Alert Service Bulletin No. 139-450, Revision C, dated April 10, 2018 (ASB 139-450). If there is a crack, before further flight, remove from service the rod end.

(ii) For helicopters with an M/R damper body end (body end) that have accumulated more than 1,200 hours TIS since new, before further flight, remove from service the body end.

(iii) For helicopters with a body end that has accumulated 300 or more hours TIS and less than 1,200 hours TIS since new or since the last overhaul, using a mirror and a 5X or higher power magnifying glass, inspect each body end for a crack in the areas shown in Figure 19 of ASB 139-450. If there is a crack, before further flight, replace the M/R damper.

(2) For all helicopters, within 10 hours TIS, reduce the torque of the nut on the bolt attaching each M/R damper to the M/R hub. Using as a reference Figure 1 of Leonardo Helicopters Alert Service Bulletin No. 139-452, Revision B, dated April 10, 2018 (ASB 139-452), on the body end of each M/R damper, remove the cotter pin from service, remove the nut from the bolt, and clean the threads of the bolt. Install the nut and

apply a torque of 74.6 Nm to 88 Nm (55 lbf ft to 64.9 lbf ft). Install a new cotter pin and apply corrosion inhibitor (C002 or equivalent) to the cotter pin, nut, and washer.

(3) For helicopters with M/R damper P/N 3G6220V01351 or 3G6220V01352, within 30 hours TIS, before the M/R damper accumulates 300 hours TIS, or within 300 hours TIS since the last overhaul, whichever occurs later, inspect each rod end and body end for a crack in the areas shown in Figures 1 through 6 of ASB 139-450 by either performing a dye penetrant inspection using a 5X or higher power magnifying glass or using an eddy current inspection method performed by personnel qualified to at least Level 2 per the National Aerospace Standard 410 or equivalent requirements.

(i) If there is a crack on the body end, before further flight, replace the M/R damper.

(ii) If there is a crack on the rod end, before further flight, remove from service the rod end.

(iii) If there is no crack, before further flight, mark the rod end and body end with a dot of black polyurethane paint as depicted in Figure 7 of ASB 139-450.

(4) For helicopters with M/R damper P/N 3G6220V01351 or 3G6220V01352, perform the inspection in paragraph (e)(4)(iii) of this AD within the compliance times listed in paragraphs (e)(4)(i) and (ii) of this AD:

(i) For M/R dampers that have accumulated less than 300 hours TIS since new or since the last overhaul, within 30 hours TIS and thereafter at intervals not to exceed 10 hours TIS until the M/R damper accumulates up to 300 hours TIS; or

(ii) For M/R dampers that have accumulated 300 or more hours TIS since new or since the last overhaul, within 5 hours TIS and thereafter before the first flight of each day:

(iii) Inspect each rod end bearing and body end bearing for rotation in the damper seat and for misaligned slippage marks as shown in Figure 9 of ASB 139-450. If there is any bearing seat rotation or misaligned slippage mark in the rod end, before further flight, remove from service the rod end. If there is any bearing seat rotation or misaligned slippage mark in the body end, before further flight, replace the M/R damper.

(5) For helicopters with M/R damper P/N 3G6220V01351 or 3G6220V01352, within 30 hours TIS and thereafter at intervals not to exceed 20 hours TIS until the M/R damper has accumulated 600 hours TIS, visually inspect each rod end broached ring nut for broken teeth, proper engagement, and alignment as depicted in Figure 11 and shown in Figure 12 of ASB 139-450. If there is a broken tooth, improper engagement, or misalignment of the broached ring nut, before next flight, remove from service the broached ring nut.

(6) For helicopters with M/R damper P/N 3G6220V01351 or 3G6220V01352, within 50 hours TIS and thereafter at intervals not to exceed 100 hours TIS:

(i) Inspect the bearing friction torque value of each body end as depicted in "View G" of Figure 18 of ASB 139-450.

(A) If the torque value of the body end is more than 30.0 Nm (265.5 in lb), before further flight, replace the M/R damper.

(B) If the torque value of the body end is 30.0 Nm (265.5 in lb) or less, inspect the bearing friction torque value of the rod end as depicted in "View H" of Figure 18 of ASB

139-450. If the torque value of the rod end is more than 30.0 Nm (265.5 in lb), before further flight, remove from service the rod end.

(ii) Inspect each M/R damper anti-rotation block for wear by following paragraphs 4.3 through 4.3.7 of the Accomplishment Instructions, Part VI, of ASB 139-450. If there is wear, before further flight, remove from service the M/R damper anti-rotation block.

(7) For helicopters with M/R damper P/N 3G6220V01351 or 3G6220V01352, within 50 hours TIS, inspect each rod end to determine if special washer P/N 3G6220A05052 is installed:

(i) If special washer P/N 3G6220A05052 is installed, align each rod end and broached ring by applying a torque of 63 Nm (558 in lb) to 80 Nm (708 in lb). If the rod end and broached ring cannot be aligned, before further flight, replace the broached ring.

(ii) If special washer P/N 3G6220A05052 is not installed:

(A) Inspect each broached ring for wear and damage. Pay particular attention to the four pins that engage the piston grooves. If there is any wear or damage to the broached ring, before further flight, remove from service the broached ring. An example of an acceptable broached ring is shown in Figure 4, Annex A, of ASB 139-450.

(B) Install special washer P/N 3G6220A05052 before further flight.

(8) For helicopters with M/R damper P/N 3G6220V01351 or 3G6220V01352, and with M/R body end P/N M006-01H002-041or P/N M006-01H002-047 installed, within 30 hours TIS, or before the body end accumulates 1,200 hours TIS, whichever occurs later, replace the M/R damper with M/R damper P/N 3G6220V01353.

(9) After the effective date of this AD, do not install an M/R damper P/N 3G6220V01351 or P/N 3G6220V01352 on any helicopter.

(10) Replacing each M/R damper P/N 3G6220V01351 or P/N 3G6220V01352 with an M/R damper P/N 3G6220V01353 in accordance with the instructions of Part II of ASB 139-452, constitutes terminating action for all repetitive actions required by this AD for that helicopter.

(f) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Safety Management Section, Rotorcraft Standards Branch FAA, may approve AMOCs for this AD. Send your proposal to: Matt Fuller, Senior Aviation Safety Engineer, Safety Management Section, Rotorcraft Standards Branch, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 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, the FAA suggests 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 Union Aviation Safety Agency (previously European Aviation Safety Agency) (EASA) AD No. 2018-0112R1, dated June 4, 2018. You may view the EASA AD on the Internet at https://www.regulations.gov in the AD Docket.

(h) Subject

Joint Aircraft Service Component (JASC) Code: 6200, Main Rotor System.

Issued on March 25, 2020.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,
Compliance & Airworthiness Division,
Aircraft Certification Service.
[FR Doc. 2020-06633 Filed: 3/30/2020 8:45 am; Publication Date: 3/31/2020]