



**[4910-13-P]**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2017-0270; Directorate Identifier 2016-SW-032-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; MD Helicopters, Inc. Helicopters**

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

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede airworthiness directive (AD) 2014-16-01 for MD Helicopters, Inc. (MDHI) Model MD900 helicopters. AD 2014-16-01 requires an eddy current inspection of the main rotor upper hub assembly (upper hub) for a crack. Since we issued AD 2014-16-01, three additional upper hub cracks were reported. This proposed AD would require additional inspections and replacing the fillet seal. These proposed actions are intended to prevent an unsafe condition on these products.

**DATES:** We 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 <http://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 <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0270; 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 proposed AD, the economic evaluation, any comments received, and other information. The street address for the Docket Operations Office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

For service information identified in this proposed rule, contact MD Helicopters, Inc., Attn: Customer Support Division, 4555 E. McDowell Rd., Mail Stop M615, Mesa, AZ 85215-9734; telephone 1-800-388-3378; fax 480-346-6813; or at <http://www.mdhelicopters.com>. You may review 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:** Eric Schrieber, Aviation Safety Engineer, Los Angeles Aircraft Certification Office, Transport Airplane Directorate, FAA, 3960 Paramount Blvd., Lakewood, California 90712; telephone (562) 627-5348; email [eric.schrieber@faa.gov](mailto:eric.schrieber@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to participate in this rulemaking by submitting written comments, data, or views. We also invite 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.

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

### **Discussion**

On July 24, 2014, we issued AD 2014-16-01, Amendment 39-17925 (79 FR 45322, August 5, 2014), for MDHI Model MD900 helicopters, serial numbers 900-00008 through 900-00140, with an upper hub part number (P/N) 900R2101006-105, -107, -109, or -111 installed. AD 2014-16-01 requires, within 25 hours time-in-service (TIS), eddy current inspecting the upper hub for a crack and replacing the upper hub before further flight if there is a crack. AD 2014-16-01 was prompted by a report that

four cracks were found at the blade attach holes on a high-time upper hub. The actions in AD 2014-16-01 were intended to detect a crack on the upper hub, which if not corrected could result in failure of the upper hub and subsequent loss of control of the helicopter.

### **Actions Since AD 2014-16-01 Was Issued**

Since we issued AD 2014-16-01, we received reports of three additional cracks found in the MD900 fleet. These cracks were not discovered by the one-time eddy current inspection required by AD 2014-16-01, but were found during regular maintenance of the upper hub. MDHI determined that in addition to the repetitive inspections of the upper hub annually and at 100 and 1,000 hours TIS in its maintenance manual, inspections should be accomplished and a fillet seal should be installed to prevent moisture in the interface of the bushing and the flex beam retention bolt hole. MDHI also determined that these inspections should be accomplished on all P/N 900R2101006-105, -107, -109, and -111 upper hubs with 1,000 or more hours TIS, regardless of helicopter serial number.

These proposed actions are intended to detect a crack on the upper hub, which if not corrected could result in failure of the upper hub and subsequent loss of control of the helicopter.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other helicopters of the same type design.

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

MDHI has issued Service Bulletin SB900-125, dated February 19, 2016, which

describes procedures for repetitive visual and eddy current inspections of the upper hub upper and lower flexbeam bolthole areas and for applying a fillet seal on the interface of the bushing and the flex beam retention bolt hole.

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 for MDHI MD900 helicopters with an upper hub P/N 900R2101006-105, -107, -109, and -111:

Within 100 hours TIS and thereafter at intervals not exceeding 100 hours TIS, using a 10X or higher magnifying glass, inspecting the fillet seal and the areas around the flexbeam boltholes for a crack;

Within 12 months and thereafter at intervals not exceeding 12 months, removing the paint, primer, and fillet seal around the flexbeam boltholes and, using a 10X or higher magnifying glass, inspecting the area for a crack;

Within 12 months and thereafter at intervals not exceeding 12 months, inspecting the lead leg shims and bushings for corrosion around the flexbeam boltholes, and if there is corrosion, removing the lead leg shim and inspecting for a crack;

Within 1,000 hours TIS and thereafter at intervals not exceeding 1,000 hours TIS, eddy-current inspecting the areas adjacent to the flexbeam boltholes for a crack;

If during any inspection required by the proposed AD there is a crack, replacing the upper hub before further flight; and

Finally, after each inspection required by the proposed AD, installing a fillet seal to the bushing and upper hub interface.

### **Differences Between this Proposed AD and the Service Information**

The service information applies to upper hubs with 1,000 or more hours TIS. This proposed AD would apply to all upper hubs regardless of hours TIS. The service information applies to upper hub P/N 900R2101006-107 and -109; the proposed AD would also apply to upper hub P/N 900R2101006-105 and -111.

### **Costs of Compliance**

We estimate that this proposed AD would affect 23 helicopters of U.S. Registry. At an average labor rate of \$85 per hour, we estimate that operators may incur the following costs in order to comply with this AD. Inspecting the fillet seal around the flexbeam boltholes (100 hour TIS inspection) would require about 1 work-hour, for a cost per helicopter of \$85 and a cost of \$1,955 for the fleet, per inspection cycle. Inspecting the flexbeam area and lead leg shims and bushings (annual inspection) would require about 2 work-hours, for a cost per helicopter of \$170 and a cost of \$3,910 for the fleet, per inspection cycle. Eddy current inspecting (1,000 hour TIS inspection) the upper hub would require about 2 work-hours, for a cost per helicopter of \$170 and a cost of \$3,910 for the fleet.

If required, replacing the upper hub would require about 11 work-hours, and required parts would cost about \$15,998, for a cost per helicopter of \$16,933.

If required, replacing a missing or damaged fillet seal would require about .5 work-hour, and required parts cost would be minimal, for a cost per helicopter of \$43.

## **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.

## **Regulatory Findings**

We 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. 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 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 proposed 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.

#### **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 removing Airworthiness Directive (AD) 2014-16-01, Amendment 39-17925(79 FR 45322, August 5, 2014), and adding the following new AD:

**MD Helicopters, Inc. (MDHI):** Docket No. FAA-2017-0270; Directorate Identifier 2016-SW-032-AD.

**(a) Applicability**

This AD applies to Model MD900 helicopters with main rotor upper hub assembly (upper hub) part number 900R2101006-105, -107, -109, or -111 installed, certificated in any category.

**(b) Unsafe Condition**

This AD defines the unsafe condition as a cracked upper hub. This condition could result in failure of the upper hub and subsequent loss of control of the helicopter.

**(c) Affected ADs**

This AD supersedes AD 2014-16-01, Amendment 39-17925 (79 FR 45322, August 5, 2014).

**(d) Comments Due Date**

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

**(e) 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.

**(f) Required Actions**

(1) Within 100 hours time-in-service (TIS), and thereafter at intervals not to exceed 100 hours TIS:

(i) Inspect the fillet seal around each flexbeam bolthole to determine whether it adheres properly to the hub or bushing or is missing. Indications of an improperly adhered seal include lifting, bubbling, peeling away, drying out, or cracking. If the fillet seal is not properly adhered or is missing, before further flight, replace the fillet seal with

sealant C232 or equivalent by following the Accomplishment Instructions, paragraphs 2.D.(2) through 2.D.(5) and Figure 1, of MD Helicopters Service Bulletin SB900-125, dated February 19, 2016 (SB900-125).

(ii) Using a light and a 10X or higher power magnifying glass, inspect the area outside of the fillet seal around each flexbeam bolthole on the top of the upper hub assembly for a crack. If there is a crack, before further flight, replace the upper hub assembly.

(2) Within 12 months, and thereafter at intervals not to exceed 12 months:

(i) Remove the paint and primer from the area around each flexbeam bolthole on top of the upper hub. Remove the fillet seal from the mating surface of each bushing and the top of the upper hub.

(ii) Using a light and a 10X or higher power magnifying glass, inspect the area around each flexbeam bolthole for a crack. If there is a crack, before further flight, replace the upper hub assembly.

(iii) Inspect each lead leg shim and bushing for corrosion around the flexbeam boltholes on the bottom of the upper hub in the flexbeam pockets. If there is corrosion, before further flight:

(A) Remove the lead leg shim from the flexbeam pocket and clean the area adjacent to the flexbeam bolthole to remove any corrosion within maximum repair damage limits. If the corrosion exceeds maximum repair damage limits, replace the upper hub assembly.

(B) Using a light and a 10X or higher power magnifying glass, inspect the area around the flexbeam bolthole for a crack. If there is a crack, before further flight, replace the upper hub assembly.

(iv) Replace the fillet seal as described in paragraph (f)(1)(i) of this AD.

(3) Within 1,000 hours TIS, and thereafter at intervals not to exceed 1,000 hours TIS:

(i) Eddy current inspect the areas adjacent to each flexbeam bolthole, top and bottom, for a crack. This eddy current inspection must be performed by a Level II or higher technician with the American Society for Nondestructive Testing ASNT-TC-1A, European Committee for Standardization CEN EN 4179, Military Standard MIL-STD-410, National Aerospace Standard NAS410, or equivalent certification who has performed an eddy current inspection within the last 12 months. If there is a crack, before further flight, replace the upper hub assembly.

(ii) Replace the fillet seal as described in paragraph (f)(1)(i) of this AD.

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

(1) The Manager, Los Angeles Aircraft Certification Office, FAA, may approve AMOCs for this AD. Send your proposal to: Eric Schrieber, Aviation Safety Engineer, Los Angeles Aircraft Certification Office, Transport Airplane Directorate, FAA, 3960 Paramount Blvd., Lakewood, California 90712; telephone (562) 627-5348; email 9-ANM-LAACO-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.

**(h) Subject**

Joint Aircraft Service Component (JASC) Code: 6220 Main Rotor Head.

Issued in Fort Worth, Texas, on March 27, 2017.

Scott A. Horn,

Acting Manager, Rotorcraft Directorate,  
Aircraft Certification Service.

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