

FAA Airworthiness Directive

91-08-02 MCDONNELL DOUGLAS HELICOPTER COMPANY (MDHC) (HUGHES): Amendment 39-6963. Docket No. 90-ASW-53.

Applicability: All MDHC Model 369 series helicopters, certificated in any category.

Compliance: Required as indicated, unless already accomplished.

To detect or prevent cracks in the tail rotor blade root fitting, which could result in tail rotor blade failure and subsequent loss of the tail rotor blade, accomplish the following:

(a) Within 8 hours time in service after the effective date of this AD, or upon installing replacement tail rotor blades, determine if any aluminum tail rotor blades are installed which--

(1) Have any of the following part numbers (P/N's) and serial number (S/N's):

- (i) P/N 369A1613 (all dash numbers) with S/N less than 7959,
- (ii) P/N 369D21613 (all dash numbers) with S/N less than 6482,
- (iii) P/N 369D21615 (all dash numbers) with S/N less than 1358,
- (iv) P/N 369D21606 (all dash numbers) with S/N less than 0538,
- (v) P/N 421-088 (all dash numbers) with S/N less than 0218; and

(2) Do not have a yellow dot applied to the aft (trailing) edge of the root fitting.

(b) Record the tail rotor blade P/N's and S/N's from the determinations of paragraph (a) in the aircraft log.

NOTE: Only tail rotor blades which meet the criteria of paragraphs (a)(1) and (a)(2) are affected by the remaining inspections of this AD.

(c) Within 8 hours time in service, after the effective date of this AD and, thereafter, prior to the first flight of each day, conduct a check of each tail rotor blade that fits the criteria outlined in paragraph (a). Visually check both sides of the tail rotor fitting for cracks in the area shown in Figure 1, Detail A. Replace any cracked blades with airworthy parts before further flight.

(d) Within 100 hours time in service, after the effective date of this AD unless previously accomplished, for the blades that fit the criteria outlined in paragraph (a), accomplish the following checks and inspections:

(1) Conduct a visual check for cracks in accordance with the instructions of paragraph (c).

(2) Conduct a dimensional inspection of the tail rotor blade fitting as follows:

(i) Mark the tail rotor blades, crush washers, and bushings so they can be reinstalled in the exact location and orientation from which they are removed.

(ii) Remove the tail rotor blades in accordance with the applicable maintenance manual.

NOTE: CAUTION: Do not remove the feathering bearings.

(iii) With HS610C6244R375X375 bushing (Qty. 1) (369A1624-BSC root fitting) or 369H5308 bushings (Qty. 2) and 369H5309 crush washers (369A1624-3 root fitting) installed, ensure there are no foreign objects inside the bore of the tail rotor blade root fitting. With root fitting vertical, inboard end up, insert the 369D21633-1-40201 Part 1 inspection tool into the inner diameter (I.D.) of the root fitting. Align root fitting strap retention holes with tool hole. (See Figure 1, Detail B.) Attempt to install the retention bolt through the root fitting and tool holes. The tail rotor blade is airworthy if the tail rotor blade retention bolt cannot be inserted through the root fitting and inspection tool (Part 1) holes.

(iv) With HS610C6244R375X375 bushing (Qty.1) (369A1624-BSC root fitting) or 369H5308 bushings (Qty.2) and 369H5309 crush washers (369A1624-3 root fitting) installed, position the 369D21633-1-40201 Part 2 inspection tool (tab end outboard) over one side of the root fitting. Align the holes in the inspection tool with the blade attach holes in the root fitting. For the 369A1624-BSC root fitting, use washers on each side of the root fitting (equal amounts) to center the inspection tool on the root fitting (See Figure 1, Detail C). Attempt to install the retention bolt through the tool and the root fitting. Do not attempt to bend or force the inspection tool to install the retention bolt. The tail rotor blade is airworthy when the tail rotor blade attachment bolt cannot be inserted through the root fitting holes and both sides of the inspection tool (Part 2).

(v) Repeat step (iv) with the inspection tool positioned on the opposite side of the blade.

(vi) Replace unairworthy blades with airworthy blades. Replacement blades must comply with this AD.

(vii) Install tail rotor blades, crush washers and bushings in the exact location and orientation from which they were removed to ensure proper blade attachment.

(viii) Apply a yellow dot to airworthy tail rotor blades on the trailing edge of the root fitting approximately one-half inch outboard from the bushing. (See Figure 1, Detail A.) Record compliance by part number and serial number in the helicopter log book.

(ix) Install airworthy tail rotor blades in accordance with the applicable maintenance manual.

(x) Verify that the tail rotor assembly is correctly balanced in accordance with the applicable maintenance manual.

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NOTE: MDHC SIN Nos. HN-230.1, DN-177.1, EN-68.1, and FN-55.1, dated March 1, 1991, pertain to these inspections. A copy of the service bulletins may be obtained from MDHC Technical Publications, Building 543/D214, McDonnell Douglas Helicopter Company, 5000 E. McDonnell Road, Mesa, Arizona 85205-9797, telephone (602) 891-6342. The MDHC local field service representative or the field service department has inspection tools available for loan and requests that unairworthy tail rotor blades be removed from service and returned to the MDHC Warranty and Repair Department.

(e) In accordance with FAR Sections 21.197 and 21.199, the helicopter may be flown to a base where compliance with the AD may be accomplished.

(f) The checks of this AD may be accomplished by a trained pilot.

(g) An alternate method of compliance or adjustment of the compliance times, which provides an equivalent level of safety, may be approved by the Manager, Los Angeles Aircraft Certification Office, FAA, 3229 E. Spring Street, Long Beach, California.

This Amendment (39-6963, 91-08-02) becomes effective on May 3, 1991.

91-08-02

Figure 1. Inspection of Tail Rotor Blade Root Fitting.

