HUGHES SERVICE INFORMATION NOTICE

NOTICE NO. HN-140
DATE 6 July 1979

MANDATORY MANDATORY MANDATORY

SUBJECT: PN 369A1100-501 AND PN 369A1100-503 MAIN ROTOR BLADES - INSPECTION OF PN 369A1113 UPPER ROOT FITTING AND PN 369A1114 LOWER ROOT FITTING ASSEMBLIES; INSPECTION OF PN 369H1203 OR 369A1203 SERIES MAIN ROTOR HUB LEAD-LAG LINK ASSEMBLIES

MODELS AFFECTED: All 500 Model 369H Series Helicopters
All PN 369A1100-501 and PN 369A1100-503 Main Rotor Blades in Spares Inventory

TIME OF COMPLIANCE:

Part I Initial Inspection - Shall be accomplished within next 10 hours of helicopter operation for installed blades. Shall be accomplished prior to installation of subject blades in spares inventory.

Part II Periodic Inspection - Shall be accomplished within 25 hours of operation after initial inspection, and at each 25-hour interval of operation until the main rotor blades are retired from service.

PREFACE: After experiencing main rotor vibration, a pilot performed a post flight inspection which revealed cracking in the main rotor blade root fitting attach lug. Tests conducted at Hughes Helicopters determined that the cracking initiated at the attach lug bushing hole which was corroded and fretted. An improved design for the main rotor blade root fitting is now undergoing fatigue tests. The new design utilizes a fitting with a smaller OD to increase the press fit along with improved corrosion protection. These changes will be incorporated in new production main rotor blades.

Part I of this Notice lists a procedure for a one-time removal and/or inspection of the main rotor blades to ensure the structural integrity of the blade root fitting attach lugs, and hub lead-lag link attach lugs; and to apply a protective coating to seal the junctions between the steel bushings and attach lugs. Removal of bushings is not required.

Part II of this Notice provides instructions for a periodic visual inspection of the root fitting attach lugs, and hub lead-lag link attach lugs, to check for cracked or broken lugs. It also emphasizes the importance of corrosion prevention and inspection measures.

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It is to be noted that fatigue tests were also conducted at HH to determine the probable life of the main rotor blade retention system after one root fitting lug was broken. The tests were successful, affirming the load capability, redundant design and failsafe concept of the blade retention system.

Reference

500 Series - Basic HMI, Issued 1 October 1972; Revision No. 7, 15 December 1976

500 Series - Basic HMI, Issued 1 October 1972; Revision No. 6, 1 August 1976

MATERIALS

Sealer, corrosion inhibiting	MIL-S-81733, Type II-2	PR-1436G, Class B-2	Product Research 2919 Empire Ave Burbank, CA 91504
	OR		
	MIL-S-81733, Type II-2	870-B2	Coast ProSeal 19451 Susana Rd Compton, CA 90221
	OR		
		PR-1422G, Class B	Product Research 2919 Empire Ave Burbank, CA 91504
OR			
Primer, zinc chromate	MIL-P-8585		Commercial

TOOLS AND EQUIPMENT

Magnifying glass - 5X		Commercial
Kit, dye penetrant	"Spot check"	Peabody Testing-Magnaflux Los Angeles, CA
		or
	"Tracer-Tech"	Uresco, Inc, Downey, CA
		or
		Equivalent Kit conforming to MIL-I-25135

PART I - INITIAL (ONE-TIME) INSPECTION

a. Remove main rotor blades, as applicable, per Basic HMI.

b. Visually inspect the attach lugs of PN 369A1113 main rotor blade upper root fitting and PN 369A1114 blade lower root fitting for broken or cracked lugs corrosion or other damage to the lug areas. Do not remove bushings. Also visually inspect attach lugs of all main rotor hub lead-lag links. Pay particular attention to area around attach pin holes in the lugs. Use a bright light and 5x magnifying glass. (See Figure 1.)

CAUTION

1. If broken or cracked lugs are noted in main rotor blade upper or lower root fittings, replace main rotor blade before further flight.

2. If broken or cracked lugs are noted in main rotor vertical hinge (lead-lag) links, replace main rotor hub before further flight.

3. If cracking is suspected in any attach lug, perform dye penetrant inspection of lug. Perform dye penetrant inspection per manufacturer's instructions. If cracking is noted, replace main rotor blade or main rotor rotor hub assembly, as applicable, before further flight.

c. Clean and then seal all junctions between all the steel bushings and the attach lugs with a film of zinc chromate primer or corrosion inhibiting sealer (preferred), without removing the bushings.

d. Install main rotor blades.

e. Record compliance with Part I of this Notice in Compliance Record of helicopter Log Book.

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PART II - PERIODIC (25 HOUR) INSPECTION

NOTE

Main rotor blades installed on helicopters operating in a salt water or corrosive environment should be cleaned and washed on a daily basis as a preventive measure to arrest corrosion. Refer to basic HMI, Section 2, para 2-54 and 2-66A.

a. Visually inspect exposed portion of all main rotor blade upper and lower root fitting attach lugs, and main rotor hub lead-lag link attach lugs, for broken or cracked lugs, corrosion or other damage to the lug areas. (See Figure 1.) Removal of main rotor blade is not required.

CAUTION

1. If broken or cracked lugs are noted in main rotor blade upper or lower root fittings, replace main rotor blade before further flight.

2. If broken or cracked lugs are noted in main rotor vertical hinge (lead-lag) links, replace main rotor hub before further flight.

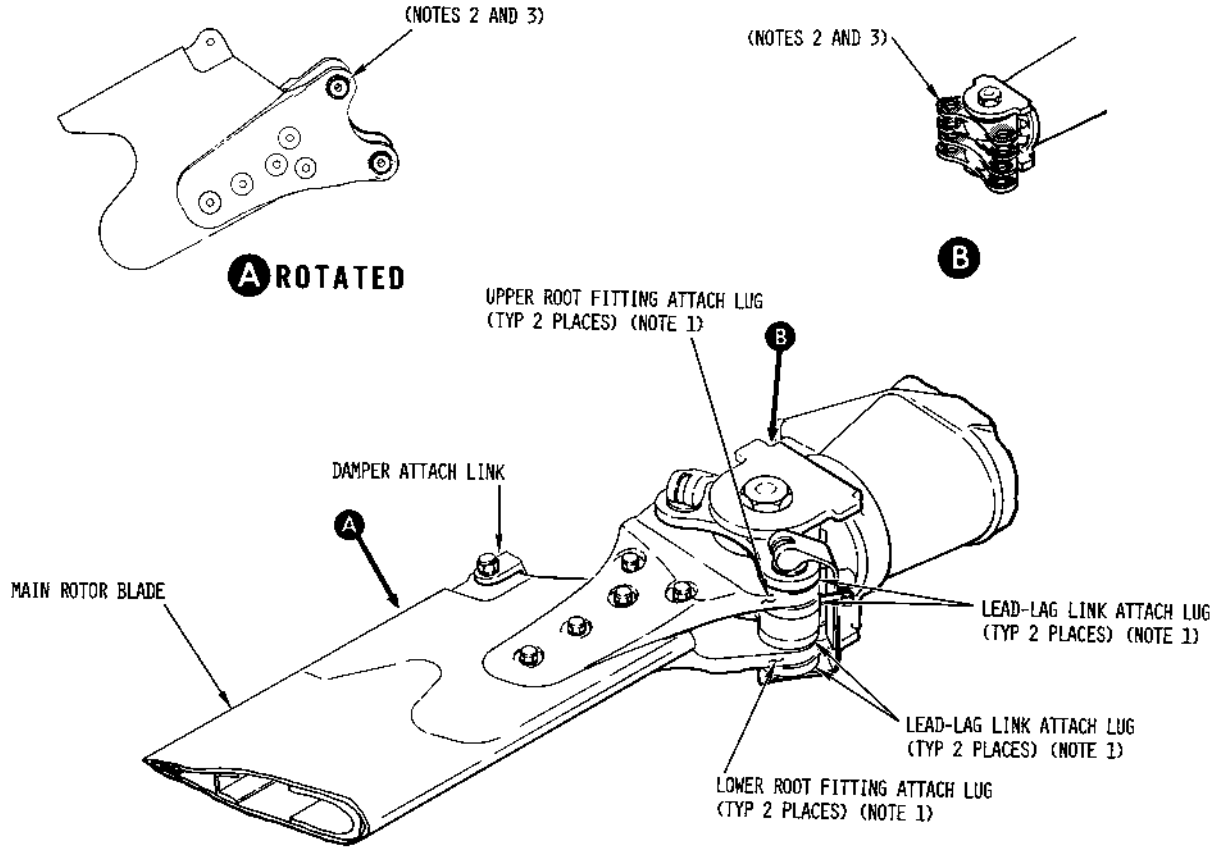
3. If cracking is suspected in any attach lug, perform dye penetrant inspection of lug. Perform dye penetrant inspection per manufacturer's instructions. If cracking is noted, replace main rotor blade or main rotor hub assembly, as applicable, before further flight. Do not remove bushings.

b. Record compliance with Part II of this Notice in Compliance Record of helicopter Log Book.

WEIGHT AND BALANCE DATA

Weight and balance not affected.

FAA APPROVED



NOTES:

1. VISUALLY INSPECT AREAS OF ALL ROOT FITTING AND LEAD-LAG ATTACH LUGS FOR CRACKS OR BREAKS.
2. PAY PARTICULAR ATTENTION TO AREA AROUND ATTACH PIN HOLES IN LUGS.
3. SEAL ALL JUNCTIONS BETWEEN BUSHINGS AND ATTACH LUGS WITH ZINC CHROMATE PRIMER.

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Figure 1. Inspection of main rotor blade root fitting attach lugs and main rotor hub lead-lag link attach lugs

REFERENCE SHEET

SERVICE INFORMATION NOTICES AND LETTERS

Action Reference: When performing 25-hour inspection or performing maintenance of main rotor blade, refer to Service Information Notice, No. HN-140.

HMI Reference: Insert this sheet in 500 Series - Basic HMI, Section 2, Table B-3, Special Inspection, Page 2-18.

This reference sheet shall be kept as a part of the manual until the date is incorporated at the next revision of the Basic HMI. (Refer to Service Information Summary, Basic HMI, page i.)

REFERENCE SHEET

SERVICE INFORMATION NOTICES AND LETTERS

Action Reference: When performing maintenance or inspection of main rotor blade, refer to Service Information Notice No. HN-140.

HMI Reference: Insert this sheet in 500 Series - Basic HMI, Section 7, page 7-17.

This reference sheet shall be kept as a part of the manual until the data is incorporated at the next revision of the Basic HMI. (Refer to Service Information Summary, Basic HMI, page i.)