NOTICE NO. HN-83
DATE April 15, 1975

HUGHES SERVICE INFORMATION NOTICE

FAA APPROVED

SUBJECT: INSPECTION - ROOT FITTINGS OF METAL TAIL ROTOR BLADES PN 369A1613-BASIC and -3

MODELS AFFECTED: All 369 Series Helicopters having 369A1613-Basic or -3 metal tail rotor blades with Serial No. prior to blade Serial No. 1310 installed.

All 369A1613-Basic and -3 metal tail rotor blades in Spares Inventory.

TIME OF COMPLIANCE: For blades installed on helicopter:

Part I - Within next 50 hours of helicopter operation.

Part II - Prior to next Daily inspection.

Part III - Daily. (Part III is to be accomplished as part of the Daily Inspection specified in Section 2, HMI Appendix B.)

For blades in spares inventory, including blades on spare tail rotor assemblies - Parts I and II are to be accomplished at or before installation on helicopter.

PREFACE: This Service Information Notice provides instructions for inspection of root fittings on blades and corrosion prevention procedures in three parts as follows:

Part I - Provides instructions for a one-time inspection of root fittings, treatment of blade mounting holes and adjacent flat surfaces and replacement of blade attachment hardware for blades installed on tail rotor assemblies. This part is applicable to blades WITHOUT A WHITE DOT ADJACENT to Serial No. plate.

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Part II - Provides instructions for a one-time removal of paint from flat surfaces of root fitting around blade attachment holes and application of clear lacquer. This part is applicable to blades WITH A WHITE DOT adjacent to Serial No. plate, and on which paint exists on the flat surfaces.

Part III - This Part provides instructions for a required daily inspection of root fittings on the blade and is applicable to all blades installed on helicopters.

References

369 Series - Basic HMI, Issued 1 October 1972, Revision No. 4, 15 December 1974

369 Series - HMI Appendix B, Issued 1 October 1972, Revision No. 3, 1 August 1974

369 Series - HMI Appendix C, Issued 1 October 1972, Revision No. 2, 1 January 1974

PARTS LIST

Nomenclature	Part Number	Qty	Mfr
Bolt	MS21250-06032	1	Hughes
Sleeve Bushing	HS610SP6244R375X675	1	Hughes
Nut	FN22M-624	1	Hughes

NOTE: Listed parts are required for each installed blade for performance of Part I or Part II of this Notice.

TOOLS AND EQUIPMENT

Dye penetrant inspection kit	1	Commercial
3 - 5X (power) magnifying glass	1	Commercial
Bristle brush (Non-metal bristles), 3/4-inch diameter	1	Commercial
Bristle brush (Non-metal bristles), 1/2-inch diameter	1	Commercial
*Flashlight	1	Commercial
**Cleaning Cloth	1	Commercial

*Flashlight with adjustable extension recommended

**Cleaning cloth is alternate to bristle brushes

MATERIALS

Nomenclature	Part Number	Qty	Mfr
Methyl-ethyl-keytone (MEK)	TT-M-261	A/R	Commercial
Solvent, Stoddard		A/R	Commercial
Chemical conversion film solution (Iridite, Alodine or equivalent)	Iridite 14-2 Al-Coat Alodine		Richardson Co. Allied-Kelite Product Div. 2400 E Devon Ave. Des Plaines, Ill.
*Zinc chromate primer		A/R	Commercial
Paint, white		A/R	Commercial
Lacquer, clear, aluminum clad al alloy surfaces	MIL-L-6806	A/R	Commercial

*Low moisture sensitive type recommended (MIL-SPEC NO. TT-P-1757).

PART I - INSPECTION OF ROOT FITTING AND REPLACEMENT OF ATTACHMENT HARDWARE ON BLADES OF TAIL ROTOR ASSEMBLY

PROCEDURE

NOTE

Part I is to be accomplished on all blades WITHOUT A WHITE DOT adjacent to Serial number plate on the blade.

The following procedures provide instructions for removal and reinstallation of metal blades on a tail rotor assembly, in addition to the required inspection and surface treatment. For blades not installed, disregard instructions for removal and installation of blades.

a. Remove metal tail rotor blade as follows:

(1) Disconnect outboard end of pitch control link from blade arm, remove blade attachment bolt, sleeve bushing and attachment hardware, and metal blade from tail rotor (Section 8, Basic HMI).

CAUTION

Two feathering (root) bearings remain inside blade root fitting; be careful not to damage root bearings.

(2) Scrap removed blade attachment bolt, sleeve bushing and nut.

b. Inspect blade root fitting as follows:

(1) Using flashlight on inside diameter of root fitting, inspect bore of root fitting, in area of holes, for visible gouges and cracks.

(2) Inspect inside diameter (ID) surfaces of both large and small bolt mounting holes for visible corrosion and corrosion products.

(3) Using bristle brushes and Stoddard solvent and or cloth, remove zinc chromate from ID surfaces of bolt mounting holes and hole edges; dry hole surfaces thoroughly. Using MEK, remove paint and paint primer from the surfaces on root fitting around the bolt mounting holes as shown in Figure 1.

CAUTION

Using solvent, remove all evidence of paint that may have entered the bolt attachment holes in the root fitting.

GENERAL CAUTION

General cleaning of oil and dirt deposits from the helicopter and its components at any time should only be accomplished by using one of the following solvents:

Stoddard Solvent	Standard Oil 200 Solvent
VM and P Naptha	Kerosene

Some commercial cleaning agents, such as readily available houshold cleaners, contain chemicals that can cause corrosive action and/or leave residue that can result in corrosion.

Examples of cleaning agents that are not to be used are "Fantastic" and "409" type cleaners, or locally made strong soap cleaners. Be careful to prevent entry of solvent into any bearings.

(4) Using flashlight, inspect ID surfaces of bolt mounting holes for cracks, scratches or corrosion; use 3 or 5 power magnifying glass as practical. Using 3 or 5 power magnifying glass, inspect edges of mounting holes and flat surfaces around holes for cracks. Any crack requires scrapping of blade.

WARNING

If any crack is visible, the blade is not serviceable. Any such blade must be removed from service and replaced. Repairable damage to the root fitting may be repaired according to repair limits and procedures in Part VIII, HMI Appendix C.

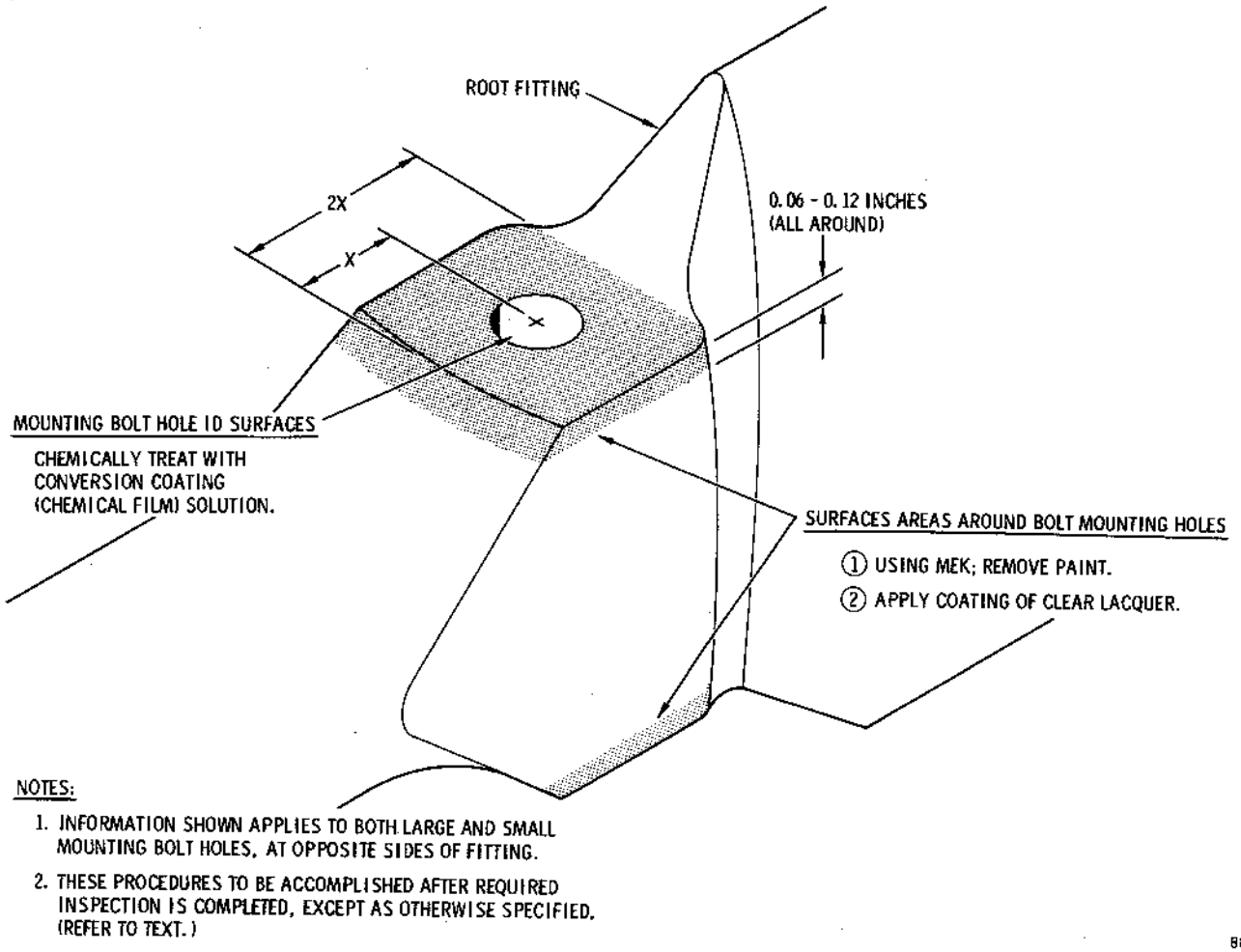


Figure 1. Paint removal and lacquer areas - root fitting of metal tail rotor blade

(5) If no cracks are visible, dye penetrant inspect ID surfaces of mounting bolt holes, and flat surfaces around the holes for cracks. If any crack exists the blade is not serviceable.

NOTE

For blade inspections or questionable items, refer to Section 8, Basic HMI; and to Part VIII, HMI Appendix C for all other blade inspection and repair information.

c. After determining that no cracks are visible, prepare ID surfaces of mounting holes and surfaces on root fitting (Figure 1) as follows:

(1) Remove dye penetrant coating.

(2) Chemically treat ID surfaces and edges of mounting holes with conversion coating (chemical film) solution (Iridite, Alodine or equivalent) and allow to dry.

(3) Apply a coating of clear lacquer on surfaces around both bolt holes; allow to thoroughly dry.

d. Adjacent to serial number plate on the blade root fitting, apply a dot of white paint, approximately 3/16 inch diameter.

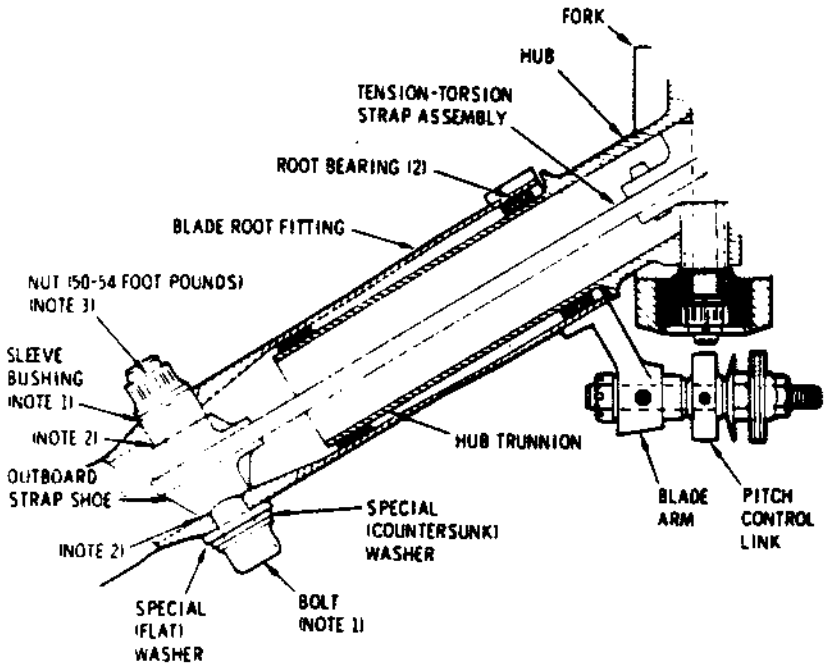
e. Reintall serviceable blade on tail rotor assembly as follows:

NOTE

Section 8, Basic HMI provides blade replacement instructions, including information on requirement that must be complied with if a replacement blade is installed.

(1) Coat surfaces of outboard strap shoe on tension-torsion strap assembly of tail rotor hub with zinc chomate primer. (See Figure 2.)

(2) Apply a coating of zinc chromate primer to ID surfaces of both mounting holes in root fitting of blade.



NOTES:

1. AT INSTALLATION, COAT OD OF BUSHING AND SHANK OF BOLT WITH ZINC CHROMATE PRIMER. DO NOT PERMIT PRIMER TO CONTACT OR REMAIN ON THREADS OF BOLT OR NUT.
2. AT INSTALLATION OF BLADE, COAT MATING SURFACES OF SHOE WITH ZINC CHROMATE PRIMER.
3. TORQUE NUT WHILE ZINC CHROMATE PRIMER IS WET.
4. AFTER TORQUING NUT, COAT ASSEMBLED BUSHING, NUT AND BOLTHEAD WITH CLEAR LACQUER.
5. FOR COMPLETE BLADE REMOVAL, REPLACEMENT, AND BALANCING INSTRUCTIONS, REFER TO SECTION 8, BASIC HMI.

Figure 2. Corrosion protection precautions - tail rotor blade attachment

(3) Slide blade on hub of tail rotor and position blade at mounting position according to Section 8, Basic HMI.

(4) Coat OD of new MS21250-06032 blade attachment bolt and new HS610SP6244R375X675 sleeve bushing with zinc chromate primer.

NOTE

Do not permit primer to contact or remain on threads of bolt or nut.

(5) Secure blade to tension-torsion strap assembly of hub with the new sleeve bushing, blade attachment bolt and nut, and required attachment hardware; torque nut to 50-54 foot-pounds while zinc chromate primer on all parts is still wet.

CAUTION

Do not force fit the sleeve bushing or attachment bolt. The sleeve bushing should fit into the blade root fitting with a push of the finger. Also, the blade attachment bolt is to have a finger push fit through the sleeve bushing and shoe of the tension-torsion strap. In addition, the attachment bolt should have an easy snug fit through smaller bolt hole of root fitting.

(6) Coat exposed areas of assembled bushing, nut, bolthead and washers with clear lacquer.

(7) Reattach outboard end of pitch control link to arm of blade (Section 8, Basic HMI).

f. Repeat above procedures for opposite blade on tail rotor assembly.

g. Perform a balance check of and rebalance the tail rotor assembly (Section 8, Basic HMI).

h. Perform Part III of this notice daily.

i. Record compliance with Part I of this Service Information Notice in Compliance Record of helicopter Log Book.

j. Make a complete report on all parts replaced as a result of this inspection, and send any blade found defective with its sleeve bushing and all attachment hardware, to Customer Service, Hughes Helicopters, Centinela and Teale Streets, Culver City, California 90230 for evaluation.

PART II - REMOVAL OF PAINT FROM ROOT FITTING SURFACES AND APPLICATION OF CLEAR LACQUER

PROCEDURE

NOTE

Hughes has delivered a few metal tail rotor blade assemblies and tail rotors, WITH A WHITE DOT near the Serial number plate on the blades, which do not have the paint and paint primer removed and clear lacquer applied in the area of the bolthead and nut. Part II is to be accomplished prior to the next Daily inspection for any of these blades installed on helicopters, or prior to installation on helicopter for any such blades in spares inventory.

a. For an installed blade, remove blade according to Part I of this Notice. Scrap removed bolt, nut and sleeve bushing.

b. Using MEK, remove any paint from surfaces on root fitting around mounting bolt holes as shown in Figure 1 of Part I.

CAUTION

Using solvent, remove any evidence of paint that may have entered the bolt attachment holes in the root fitting.

c. Apply a coating of clear lacquer on surfaces around bolt holes as shown in Figure 1; allow to thoroughly dry.

d. If the blade is to be reinstalled, reinstall the blade on the tail rotor assembly as instructed in Part I, using new MS 21250-06032 blade attachment bolt, new HS610PS6244R375X675 sleeve bushing, new FN22M-624 nut and required attachment hardware.

e. As applicable, repeat above procedures for remaining blade on tail rotor assembly.

f. Perform a balance check of and rebalance the tail rotor assembly (Section 8, Basic HMI).

g. Record compliance with Part II of this Service Information Notice in Compliance Record of helicopter Log Book.

PART III - DAILY INSPECTION OF ROOT FITTING ON BLADES OF TAIL ROTORS ON HELICOPTERS

PROCEDURE

NOTE

Performance of the following inspection procedures are required daily as part of the routine Daily Inspection specified in Section 2, HMI Appendix B, prior to the first flight of the day.

a. Inspect areas of root fitting at attachment bolthead, washers, sleeve bushing and nut for cracks.

NOTE

As necessary, use cloth to wipe areas clean for good visibility of surface areas.

b. On areas of root fitting around attachment hardware, and especially on flat surfaces, adjacent to hardware, use a 3 or 5 power magnifying glass to inspect for visible cracks.

WARNING

No cracks are allowed; any crack requires blade replacement. For any suspected crack or areas, perform Part I of this notice prior to operation of the helicopter.

c. Record compliance with Part III of this Service Information Notice in Compliance Record of helicopter Log Book.

WEIGHT AND BALANCE DATA

Weight and balance not affected.