



SCHWEIZER SERVICE NOTICE

DATE 3 October 1975

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*Cancels and supersedes Service Information Notice No. N-124, dated 4 December 1974

MANDATORY

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SUBJECT: INSPECTION - MAIN ROTOR MAST LEFT AND RIGHT MAST SUPPORT TUBES; AND REPLACEMENT OF ALL ATTACHING HARDWARE FOR ALL MAST TUBES AND TAILBOOM SUPPORT STRUTS, PN 269A2015-(), 269A2170, 269A2171 AND 269A2172-()

MODELS AFFECTED: 269A Helicopter Serial No. 0011 and Subsequent
269A-1 Helicopter Serial No. 0004 through 0041
269B Helicopter Serial No. 0001 and Subsequent
269C Helicopter Serial No. 0004 through 0337

TIME OF COMPLIANCE: Shall be accomplished at next scheduled 100-hour periodic inspection on helicopter with 300 or more total hours of operating time.

PREFACE: Part I of this Service Information Notice furnishes procedures for a one-time inspection of the left and right mast support tubes. Part I also provides instructions for checking and ensuring that correct length bolts are installed at lower end fittings of the tubes, and upper end fitting of aft mast support tube, to prevent excessive wear of bolts and tube end fittings at bolt attachment holes. New torquing requirements, nuts and bolts are specified for increased clamping of the struts.

Part II provides instructions for replacement of specific attachment hardware for the same purposes as Part I, except at the aft end fitting of the aft mast support tube and the forward and aft end fittings of the tailboom support struts.

If prior Service Information Notice No. N-124 has previously been complied with, Part I is not applicable. In such case, only Part II applies. Otherwise, both Parts I and II apply.

() Denotes portion of text added or revised

REFERENCES

269 Series - Basic HMI, Issued 1 April 1973; Revision No. 3, 15 March 1975

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PARTS LIST - PART I

| <u>Nomenclature</u> | <u>Part Number</u> | <u>Quantity</u> | <u>Manufacturer</u> |
|---------------------|--------------------|-----------------|---------------------|
| Washer | #AN960PD416 | 6 | Commercial |
| Washer | #AN960PD516 | 2 | Commercial |
| Washer | AN960PD516L | 2 | Commercial |
| Bolt | *NAS1304-15 | 3 | Commercial |
| Bolt | **NAS1304-17 | 3 | Commercial |
| Bolt | ***NAS1305-17 | 2 | Commercial |
| Bolt | ††NAS1305-20 | 2 | Commercial |
| Nut | MS21042-4 | 3 | Commercial |
| Nut | MS21042-5 | 2 | Commercial |
| Rivet | As required | As required | Commercial |

PARTS LIST - PART II

| | | | |
|--------|---------------|---|------------|
| Washer | #AN960PD416 | 2 | Commercial |
| Washer | #AN960PD516 | 2 | Commercial |
| Washer | #NAS1197-416 | 2 | Commercial |
| Bolt | ***#AN174-11A | 2 | Commercial |
| Bolt | #†AN174-12A | 2 | Commercial |
| Bolt | **#AN174-13A | 2 | Commercial |
| Bolt | #AN176-22A | 1 | Commercial |
| Bolt | NAS1305-7 | 2 | Commercial |
| Nut | MS21042-4 | 2 | Commercial |
| Nut | MS21042-5 | 2 | Commercial |
| Nut | MS21042-6 | 1 | Commercial |

| | |
|-------------------------|---|
| *269A, 269A-1, and 269B | †269B only |
| **269C only | †† 269B and 269C |
| ***269A and 269A-1 | #Any existing item reusable, if serviceable |

MATERIALS

| | |
|------------------------------|--------------------------------|
| Cement, Rubber Base Contact | "Grip", or equivalent |
| Sealant, Fuel Proof Silastic | "Sta Bond HT'4", or equivalent |
| Primer | Zinc Chromate |

TOOLS AND EQUIPMENT

| | |
|---|------------|
| Magnifying Glass, Minimum 10 Power (10X) | Commercial |
| Gage, Ball (for 0.2495 - 0.2505 + 0.003 inch measurement), or equivalent tool | Commercial |
| Gage, Ball (for 0.3120 - 0.3130 + 0.003 inch measurement), or equivalent tool | Commercial |
| Jack - Hydraulic 2-Ton Minimum | Commercial |
| †Dye Penetrant Inspection Kit | Commercial |

†As required

PART I - PROCEDURE

a. As required, remove trim and upholstery from forward left and right sides of seat structure below pilot's and copilot's seats.

NOTE

Displacement of upholstery exposes holes for access to hardware attaching lower ends of fittings for left and right mast support tubes.

b. If installed, remove the optional auxiliary fuel tank. (Refer to Sections 2 and 5, Basic HMI for defueling and fuel tank removal procedures.)

NOTE

Support engine and transmission using jack and cribbing prior to proceeding with step c.

c. Using socket wrench with extension, insert socket through seat structure access holes and remove nuts, washers and bolts securing lower end fittings of left and right mast support tubes to strut attachment fittings of center frame section. (Access to bolt for left tube fitting is through hole in left side seat rib.)

d. Remove nuts, washers and bolts securing upper end fittings of left and right mast support tubes to mast.

NOTE

This frees both upper and lower end fittings to allow sufficient movement of tubes at aft side of seat structure to positions required for end fitting inspections and checks that follow.

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e. Check and inspect lower and upper end fittings of left and right mast support tubes as follows:

(1) Using a ball gage (or equivalent measuring tool), check that bolt hole diameter in upper fitting is 0.2495 - 0.2505 inch, hole diameter in lower fitting is 0.3120 - 0.3130 inch, with maximum of plus 0.003 inch out-of-roundness for all the holes.

(2) Visually inspect bolt hole surfaces and edges for wear and fretting. Any wear or fretting must not exceed out-of-round limitations.

(3) Using a 10 power magnifying glass, inspect fittings for cracks, with particular attention to the area of the fitting with reduced thickness. No crack is allowed.

(4) If a crack in the fitting is suspected, inspect the fitting using the dye penetrant method.

CAUTION

If a crack exists in a fitting, contact the Field Service Representative for Hughes Helicopters for allowable repair information. Any fitting damage exceeding the limitations listed above requires removal from service and replacement of that tube. Contact Hughes Field Service Representative for information on how to remove tubes.

NOTE

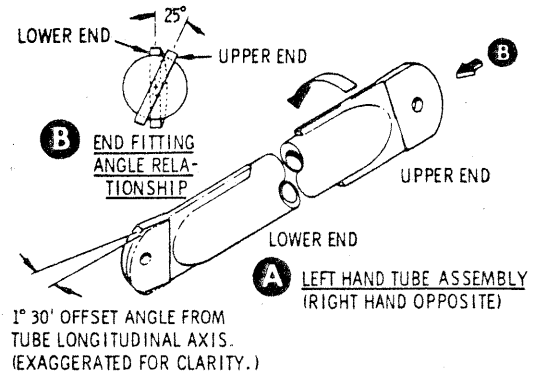
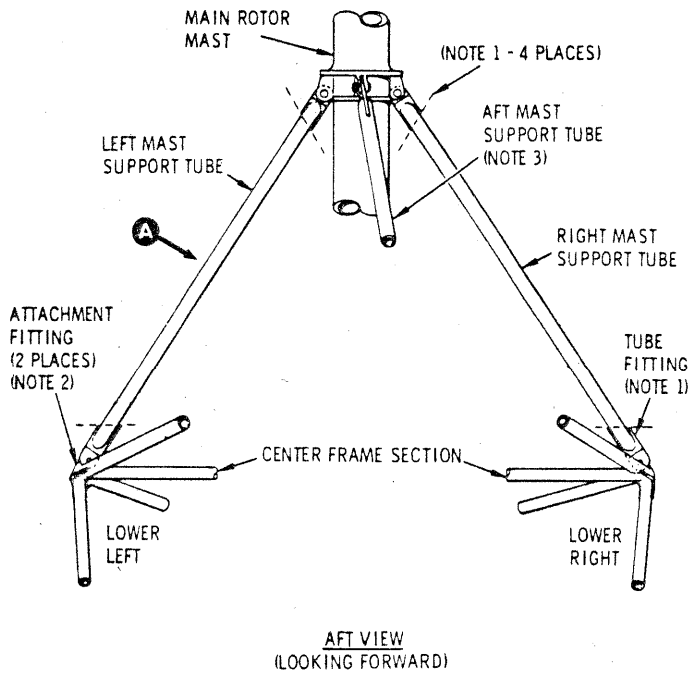
When performing following procedures, replace any removed hardware having a different part number with the specific part number indicated.

f. Reattach lower end fittings of left and right mast support tubes to tube attachment fittings of center frame section, with tubes positioned in place as shown in Figure 1. Secure the lower end fittings as follows:

(1) With zinc chromate primer applied, install NAS1305-20 bolt for 269B and 269C (or NAS1305-17 bolt for 269A and 269A-1), with AN960PD516L (thin) washer under bolt head and MS21042-5 nut with AN960PD516 (thick) washer under nut. Bolt head is to face forward.

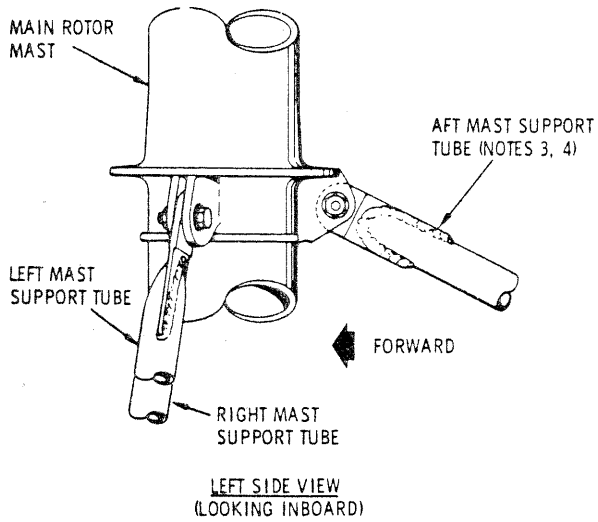
(2) Torque bolt to 180 - 225 inch-pounds, plus nut friction drag torque value.

(3) Repeat steps (1) and (2) above for opposite remaining fitting.



CAUTION:

TUBE IS TO BE INSTALLED WITH 1° 30' ANGLE POSITIONED AFT REGARDLESS OF MARKING ON TUBE TO PREVENT PRELOADING.



NOTES:

1. FOR CORRECT INSTALLATION, SUPPORT TUBES MUST BE INSTALLED WITH SCARF ANGLES OF FITTINGS POSITIONED AS SHOWN.
2. PART OF CENTER FRAME SECTION.
3. TUBE TO MAST ATTACHMENT LOCATION SHOWN IS FOR 269B. VERTICAL ATTACHMENT LOCATION FOR 269C DIFFERS.
4. CENTERLINE OF AFT MAST SUPPORT TUBE ALIGNS WITH MIDPOINT BETWEEN MAST ATTACHMENT LUGS.

Figure 1. Positioning of left and right mast support tubes

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g. With lower fittings of tubes secured and upper fittings free from attachment lugs on main rotor mast, check and make sure there is no contact between tubes and edge of cutout in seat structure rib. If contact exists, perform the following:

(1) Detach lower fitting and check that angle of lower fitting is positioned aft. (See Figure 1.)

(2) If necessary, rotate support tube to position fitting with angle aft.

(3) Reattach and secure tube lower end fitting as described above and recheck for tube contact with rib.

(4) If contact with structure still exists, contact Field Service Representative of Hughes Helicopters for information on necessary corrective action.

h. Reattach upper end fittings of left and right mast support tubes to attachment lugs of main rotor mast with tubes positioned in place as shown in Figure 1. Secure the upper end fittings as follows:

(1) With zinc chromate applied, install NAS1304-17 bolt for 269C (or NAS1304-15 bolt for 269A, A-1 & B) with AN960PD416 washer under bolt head and MS21042-4 nut with AN960PD416 washer under nut. Bolt head is to face aft.

(2) Torque bolts to 80 - 100 inch-pounds, plus nut friction drag torque value.

(3) Repeat steps (1) and (2) above for opposite remaining fitting.

i. Remove attaching hardware securing upper fitting of aft mast support tube to main rotor mast and resecure upper fitting to mast as follows:

(1) Remove existing bolt, nut and washers.

(2) Reattach and secure fitting to mast using hardware as described in step h. above, except bolt head is to face outboard to the left.

j. Inspect installed left and right mast support tubes for discrepancies; tubes should not contact fuselage seat structure.

k. Reinstall all removed or detached components. (Refer to applicable section of Basic HMI.)

NOTE

Use fuel proof sealant to reseal fuel tank to firewall pan, and rubber base cement to secure unholstery to seat structure.

PART II - PROCEDURE

a. Replace existing nut securing aft end fitting of aft mast support tube to center frame aft cluster fitting with new MS21042-6 nut. (Standard torque for new nut is 160 - 190 inch-pounds.)

NOTE

Attachment AN176-22A bolt head is to be outboard to the right with AN960PD616 washer under nut at left side.

b. Replace existing nuts and bolts attaching forward end fittings of left and right tailboom support struts inside lugs of cluster fittings on center frame fittings with two new NAS1305-7 bolts and MS21042-5 nuts. Torque nuts to 180 - 225 inch-pounds.

NOTE

Bolt head is to be at underside of cluster fitting lug with AN960PD516 washer under nut.

c. Replace existing nuts securing aft end fittings of left and right tailboom support struts inside lugs of tailboom center attachment fitting with two new MS21042-4 nuts. (Standard torque for new nut is 50 - 70 inch-pounds.)

NOTE

An AN174-13A bolt is used when 269A2324-7 tailboom center attachment fitting is installed. Use AN174-12A bolt for early 269B, or AN174-11A bolt for 269A/A-1 and early TH-55A helicopters, if original 269A2324 saddle fitting is installed. Install NAS1197-416 washer under bolt head and AN960PD416 washer under nut. Bolt head is to be at underside of lug on center attachment fitting.

d. In the 269 Series - Basic Handbook of Maintenance Instructions, Revision No. 3 dated 15 March 1975, make the following pen and ink changes.

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| <u>Section</u> | <u>Page</u> | <u>Location</u> | <u>Change</u> | |
|----------------|-------------|---------------------------|---------------|-----------|
| | | | <u>From</u> | <u>To</u> |
| 13 | 13-12 | Right side column, line 7 | 180 - 225 | 80 - 100 |

e. Record compliance with this Service Information Notice in Compliance record of Helicopter Log Book.

WEIGHT AND BALANCE DATA

Weight and balance not affected.