# URGENT

***TB1-1520-237-20-212**

# DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

# ONE TIME INSPECTION OF MAIN ROTOR HUB ASSEMBLY ALL H-60 AIRCRAFT

**Headquarters, Department of the Army, Washington, D. C.**
**5 April 1999**



**NOTE**

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

**1. Priority Classification. Urgent**

**a.** Aircraft in Use. Upon receipt of this Technical Bulletin (TB) the condition status symbol of the cited aircraft will be changed to a red horizontal dash // - //. The red horizontal dash // - // may be cleared when the inspection of paragraph 8 below is completed. The affected aircraft shall be inspected as soon as possible but no later than the task/inspection suspense date. Failure to comply with the requirements of this TB within the time frame will cause the status symbol to be upgraded to a red "X".

b. Aircraft in Depot Maintenance. Same as paragraph 1 .a. Aircraft will not be issued until compliance with this TB has been completed.

c. Aircraft Undergoing Maintenance. Same as paragraph 1 .a.

d. Aircraft in Transit.

(1) Surface/Air Shipment. Prior to first flight or within 14 days of arrival.

(2) Ferry Status. Inspect at final destination.

e. Maintenance Trainers (Category A, and B). Same as paragraph 1 .a.

1. Component/Parts in Stock at All Levels (Depot and Others) Including War Reserves. Upon receipt of this TB, the material condition tags of all items in all condition codes listed in paragraph 6 shall be annotated to read UH-60-99-07 Main Rotor Hub Inspection not complied with.

(1) Wholesale Stock. Upon receipt of this message all serviceable items (condition codes "A", "B", "C", "D", and "E"), identified in paragraph 6, located in wholesale depot storage shall be placed in condition code "J" and tagged with a suspended tag/label-materiel, DD Form 1575/DD Form 1575-1. Do not remove original condition tags. Report compliance with this TB in accordance with paragraph 14.d.(1).

(2) Retail Stock. Upon receipt of this TB Commanders and others maintaining retail stock at installation level and below shall contact the supported Aviation Unit to perform the inspection required by paragraph 8. Report compliance with this TB IAW paragraph 14.d.(2).

***This TB supersedes USAAMCOM Aviation Safety Action Message 111827Z MAR 99, UH-60-99-ASAM-07**

g. Component/Parts In Work (Depot Levels and Others). N/A.

**2. Task/Inspection Suspense Date.** Within next 20 flight hours/ 30 days whichever occurs first.

**3. Reporting Compliance Suspense Date.** No later than 1 April 1999 per paragraph 14.a of this TB.

**4. Summary of the Problem.**

a. TB 1-1520-237-20-181 and TB 1-1520-250-20-6 (UH-60-97-ASAM-01) imposed a visual inspection for an edge break (deburred) condition and fluorescent penetrant inspection (FPI) for cracks on the inside surface of the hub where the eleven o'clock dampner bracket attaching bolt extrudes through the interior surface. Recently a hub, that had been previously inspected, was found to have a crack in the same location in a more critical direction, during a subsequent inspection when using more aggressive non-destructive inspection (NDI) techniques which are reflected in paragraph 8. The UH PMO is pursuing a long term fix that will eliminate the need for the recurring inspection required by this ASAM.

b. For manpower/downtime and funding impacts, see paragraph 12.

c. The purpose of this TB is to implement a recurring inspection of P/N 70103-08112-041/-045 Main Rotor Hub Assembly for cracks in specified areas. This TB supercedes the paragraph 9.d. inspection of TB 1-1520-237-20-181 and TB 1-1520-250-20-6 (UH-60-97-ASAM-01). This TB does not apply to the 70103-08112-047 Rotary Hub Assembly.

**5. End Items to be Inspected.** All H-60 aircraft.

**6. Assembly Components to be Inspected.**

| NOMENCLATURE | PART NUMBER | NATIONAL STOCK NUMBER |
|---|---|---|
| Hub, Rotor, Assembly | 70103-08112-041 | 1615-01-096-5427 |
| Hub, Rotor, Assembly | 70103-081112-045 | (MH-60) |

**7. Parts to be Inspected.** N/A.

**8. Inspection Procedures.**

a. Inspect the aircraft time change DA Form 2408-16 for the paragraph 6 assembly. If a P/N 70103-08112-047 Main Rotor Hub is installed the inspection is complete.

b. If the Main Rotor Hub time since new (TSN) is less than 1,000 hours, annotate the DA Form 2408-5-1 for the Main Rotor hub and schedule the inspection on the DA Form 2408-18 to accomplish the inspection IAW paragraph 8.e. or 8.f. (as appropriate) at each subsequent PMS II phase inspection up to 1,000 hours TSN. Upon reaching 1,000 hours; TSN, perform the inspection IAW paragraph 8.e. or 8.f. (as appropriate) at each schedule 100 hour special inspection.

c. If the Main Rotor Hub TSN is more than 1,000 hours and it has been less than 100 hours since the last Main Rotor Hub NDI inspection (reference paragraph 4.8.) was performed, annotate the DA Form 2408-5-1 for the Main Rotor Hub and schedule the inspection on the DA Form 2408-18 to accomplish the inspection IAW paragraph 8-e. or 8.f. (as appropriate) at the next scheduled 100 hour special inspection and every 100 hour special inspection thereafter. Under no circumstance will the time between the last NDI per TB 1-15120-237-20-181 and TM 1-1520-237-20-6 (UH-60-ASAM-01) and the first recurring inspection per this ASAM than 150 hours.

d. If the Main Rotor Hub TSN is more than 1,000 hours and it has been 100 hours or more since the last Main Rotor Hub NDI inspection (reference paragraph 4.a.) was performed, or no NDI inspection has been perform, perform the inspection IAW paragraph 8.e. or 8.f. (as appropriate). Annotate the DA Form 2408-5-1 for the Main Rotor Hub and schedule the inspection on the DA Form 2408-18 to accomplish the inspection IAW paragraph 8.e. or 8.f. (as appropriate) at the next scheduled 100 hour special inspection and every 100 hour special inspection thereafter.

e. Eddy Current Inspection,

(1) If the facilities or qualified personnel to accomplish the inspection using the Eddy Current NDI are not available, a fluorescent penetrant inspection (FPI) must be accomplished IAW paragraph 8.f. Eddy Current NDI is preferred over the FPI procedures, as it will require fewer man hours to accomplish this task.

(2) The Eddy Current Inspection requires the SPCK-107A probe kit, detailed AVIM level instructions are included in the kit. The UH PMO is fielding one probe kit to each AVIM site that were previously provided Eddy Current test sets issued by the Aviation Ground Support Equipment Directorate of the Deputy for Systems Acquisition. The probe kits are expected to be available within 21 days. The instructions will be published in TB 1-1520-237-20-212 and are also available on the safety page of the UH PMO website (http:/www.uhpo.redstone.army.mil).

f. Fluorescent Penetrant Inspection (FPI):

**WARNING**

Each step of the cleaning process must be accomplished as described in this procedure using the materials specified every time the inspection is accomplished. Not following these procedures may result in a crack not being detected by the FPI. These procedures take precedence in the event of any conflict with TM 1-1500-335-23.

**CAUTION**

**Do** not allow the epoxy paint remover to come in contact with elastomeric bearings or other helicopter components/surfaces. Do not allow epoxy paint remover to enter threads of insert in bolt hole.

**NOTE**

This inspection requires the use of a type 1, method C, level 4 sensitivity penetrant system. Personnel performing this inspection must be certified level II penetrant inspections or military equivalent.

(1) Remove all four Main Rotor Damper Assemblies P/N 70106-08100-46 and Dampener Bracket P/N 70103-08100-048 from the Hub Assembly,

(2) Mask off an area on the inside surface of the Main Rotor Hub extending& least one-half inch in all directions from the hole where the eleven o'clock dampener bracket attaching bolt extrudes through the interior surface.

(3) Pack rags into the cavity of the hub arm around the elastomeric bearings of spindle and underneath the arm to be cleaned to prevent epoxy paint remover from damaging components. Also place rags or protective rubber mat under Hub Arm to prevent damage to the swashplate or related airframe surfaces.

(4) Using a small paint brush, clean area to be inspected manually applying epoxy paint remover, MIL-R-81294, Type 1, Class 1. If paint is present allow paint remover to remain on surface until paint bubbles, Gently remove paint coatings using rags, wooden or plastic scrapper. Remove all remaining epoxy paint remover using a rag saturated with water. Repeat as necessary to thoroughly clean inspection area.

(5) Re-clean inspection area and threads of insert with dry cleaning solvent. Clean insert with cotton swabs. Allow to dry 15 minutes. Re-clean inspection area and threads of insert with acetone. Clean insert with cotton swabs.

(6) Perform fluorescent penetrant inspection on the inside surface of the Main Rotor Hub where the eleven o'clock dampner bracket attaching bolt extrudes through the interior surface. The FPI is to be accomplished IAW TM 1-1560-335-23 except where modified by the following steps.

**NOTE**

Temperature of the part and surrounding area must be stable and between 40 degrees F and 120 degrees F. When performing inspection at or near the minimum temperature use a dwell time 120 minutes.

**NOTE**

Use a dark cloth or plastic sheet to exclude as much ambient white light from the inspection area when doing the inspection.

(a) Spray the soluble penetrant onto a soft bristle brush or cotton swab. Throughly paint the area to be inspected.

(b) When performing FPI at temperatures between 60-100 degrees F allow a 60 minute dwell time. When performing FPI at temperatures from 40-60 degrees F the dwell time shall be 120 minutes. Re-wet the surface with penetrant if necessary during the dwell time to prevent drying of the penetrant on the inspection surface.

(c) A black light shall be used to examine the part surface during the removal of the penetrant. Verify black light intensity prior to performing the FPI. Minimum intensity shall be 1000 microwatts per centimeter squared at 15 inches from the blub face IAW TM 1-1500-335-23.

(d) Remove penetrant IAW TM 1-1500-335-23. Apply the non-aqueous developer and watch for any indication of cracking originating out of the hole. Continued bleedout from the insert may mask indication of small cracks. The developer dwell time shall be 30 minutes. Using the black light, monitor developer progress throughout the developer cycle.

**NOTE**

Excessive application of developer will mask cracks and will require complete cleaning and reprocessing. Due to limited space, extreme care should be used when applying the developer.

(7) No cracks allowed. If there is any indication of cracking, wipe the indication with solvent dampened rag or cotton swab and when dry reapply developer to verify indication. Any recurring bleedout is sufficient for rejection and correct IAW para 9. If there is no recurrence of the crack indication after specified developer dwell time, the initial indication Is deemed not relevant.

(8) If no cracks are found, clean and re-assemble IAW normal TM procedures. Inspection is complete. Annotate task completion on the Main Rotor Hub DA Form 2408-8-5-1 and annotate DA Form 2408-18 to schedule recurring inspections. Report completion of initial inspection IAW 14b. Reports of recurring inspections are not required.

9. Correction Procedures.

a. Replace cracked hub immediately. Refer to paragraph 10d for disposition. Report IAW 14b.

b. A copy of this TB shall be inserted in the appropriate publications as authority to implement the inspection.

**10. Supply/Parts and Disposition.**

a. Parts Required. If the inspected assembly must be replaced, the following items will be required.

| NOMENCLATURE | PART NUMBER | NATIONAL STOCK NUMBER |
|---|---|---|
| Hub, Rotor, Assembly | 70103-08112-041 | 1615-01-096-5427 |
| Hub, Rotor, Assembly | 70103-08112-045 | (MH-60K) |

b. Requisitioning Instructions. Requisition replacement parts using normal **supply procedures.** All requisitions shall use project code “CC 57-59” “XFJ”.

**NOTE**

Project code “XFJ” is required to track and establish a data base of stock fund expenditures incurred by the field as a result of ASAM actions.

c. Bulk and Consumable Materials.

| NOMENCLATURE | PART NUMBER |
|---|---|
| Acetone | FED SPEC Q-A-51 (OR EQUIV) |
| **Dry Clean** Solvent | FED-SPEC P-D-680 (OR EQUIV) |
| Epoxy Paint Remover | MIL-R-81294, Type 1, Class 1 |

d. Disposition. Document the failure through the category 1 deficiency reporting system and hold exhibit pending disposition instructions from AMCOM.

e. Disposition of Hazardous Material. IAW Environmental protective agency directives as implemented by your servicing environmental coordination (AR 200-1).

**11. Special Tools, Jigs and Fixtures Required.**

| NOMENCLATURE | PART NUMBER |
|---|---|
| Eddy Current Kit | 19ELL |
| Eddy Current Probe Kit | SPCK-107A |

**12. Application.**

a. Category of Maintenance. AVUM/AVIM. Aircraft downtime will be charged to AVUM/AVIM. Eddy current inspection is only authorized at AVIM level.

b. Estimated lime Required.

(1) For Eddy Current Inspection.

(a) Total of 3 man-hours using 2 persons.

(b) Total of 2 hours downtime for one end item

(2) For FPI Procedure.

(a) Total of 6 man-hours using 1 person.

(b) Total of 30 hours downtime for one end item.

(3) For Removal/Replacement.

(a) Total of 52 man-hours using 4 person.

(b) Total of 72 hours downtime for one end item.

c. Estimated Cost Impact of Stock Fund Items to the Field.

| NOMENCLATURE | PART NUMBER | NATIONAL STOCK NUMBER | COST EACH |
|---|---|---|---|
| Hub, Rotor, Assembly | 70103-08112-041 | 1615-01-096-5427 | $11,109.38 |

d. TB/MWOs to be Applied Prior to or Concurrently with this Inspection. N/A.

e. Publications Which Require Change as a Result of This Inspection. N/A.

**13. References.**

a. TM 1-1520-237-23

b. TM 1-1520-250-23

c. TM 1-1500-328-23

d. TM 1-1500-335-23

e. TB 1-1520-237-20-181

f. TB 1-1520-250-20-6

g. UH-60-97-ASAM-01

**14. Recording and Reporting Requirements.**

a. Reporting compliance Suspense Date (Aircraft). Upon entering requirements of this TB on DA Form 2498-13-1 on all subject MDS aircraft, forward a priority message, datafax or E-Mail to Commander, AMCOM, ATTN: AMSAM-SF-A (SOF Compliance Officer), Redstone Arsenal, AL 35898-5000, IAW AR 95-1. Datafax number is DSN 897-2111 or commercial (256) 313-2111. E-Mail address is "SAFEADM@REDSTONE.ARMY.MIL". The report will cite this TB number, date of entry in DA Form 2498-13-1, the aircraft mission design series and serial numbers of aircraft in numerical order,

b. Task/Inspection reporting suspense date (Aircraft) - Upon completion of inspection, units forward a priority message to the logistical POC listed in paragraph 16b. The report will cite this TB number, date of inspection, aircraft serial number and hours, assembly serial number and hours, and results of the inspection. Inspection reports will be received no later than 14 days after task/inspection suspense date. Negative reports are required.

c. Reporting Message Receipt (Spares).

(1) Materiel In Wholesale Depot Storage. Report receipt of this TB to the wholesale material POC (spares) listed in para 16c NLT 7 days after receipt of TB on DD Form 1225. Report by email or datafax and provide local POC.

(2) Materiel in Retail Storage. Report receipt of this TB by email or datafax to the logistical POC listed in paragraph 16b NLT 7 days after receipt of TB. Provide local point of contact.

d. Task/Inspection Reporting Suspense Date (Spares).

(1) Materiel In Wholesale Depot Storage. Report compliance with this TB to the wholesale materiel POC (SPARES) listed in paragraphs 16c NLT 1 April 1999 on DD Form 1225. Provide the cost of compliance with this TB to include an estimate of the cost reimbursable funding required to move serviceable items on hand listed in paragraph 6 to a work area, unpack the materiel, repack the materiel after inspection by AMCOM inspectors, annotate material code tag to read "UH-60-99-ASAM-07 Main Rotor Hub complied with", and to return the materiel to storage, as appropriate. Report, by original serviceable condition, the quantity of materiel placed in condition code "J". Report by e-mail or datafax and local point contact. In the report include the serial number of each paragraph 6 assembly and the total in-service time accumulated. A negative report is required.

(2) Materiel In Retail Storage. Report compliance with this TB to the logistical POC in paragraph 16b NLT 1 April 1999. Report the quantity inspected by condition code and the resulting condition code. In the report include the serial number of each paragraph 6 assembly inspected and their TSN. Report by email or datafax and provide local POC.

e. The following forms are applicable and are to be completed in accordance with DA Pam 738-751, 15 Jun 92.

**NOTE**

ULLS-A Users will use the applicable "E" Forms.

(1) DA Form 2408-5-1, Equipment Modification Record (Main Rotor Hub).

(2) DA Form 2408-13, Aircraft Status Information Record.

(3) DA Form 2408-13-1., Aircraft Inspection and Maintenance Record.

(4) DA Form 2408-15, Historical Record for Aircraft.

(5) DA Form 2408-16, Aircraft Component Historical Record.

(6) DA Form 2408-18, Equipment Inspection List. ULLS-A Users will use 800 inspection numbers for the inspection.

(7) DA Form 2410, Component Removal and Repair Overhaul Record (Only if the Main Rotor Hub has to be replaced).

(8) DD Form 1574/DD Form 1574-1, Serviceable Tag/Label - Materiel (Color Yellow). Annotate remarks Mock with inspected serviceable IAW UH-60-99-ASAM-07."

(9) DD Form 1575/DD Form 1575-1, Suspended Tag/Label - Materiel (Color Brown). Annotate remarks block with "suspended" IAW UH-60-99-ASAM-07,"

(10)DD Form 1577-2/DD Form 1577-3, Unserviceable (reparable) Tag/Label - Materiel (Color Green). Annotate remarks block with unserviceable IAW UH-60-99-ASAM-07."

**15. Weight and Balance.** N/A.

**16. Points of Contact.**

a. Technical point of contact for this TB is Mr. Jay Merkel, AMSAM-AR-E-I-C-U, DSN 897-4914 or commercial (256) 313-4914, E-Mail is "AMSAM-AR-EICU@redstone.army.mil. Datafax is DSN 897-4923 or (256) 313-4923. Alternate phone number is DSN 645-0750 or (256) 955-0750. Nondestructive inspection POC for thisTB is AMSAM-DSA-WAG, DSN 746-2228 or commercial (256) 876-2228, Alternate 1-888-832-7817, E-mail suchmam-wa@redstone.army.mil. Datafax DSN 746-5507 or commercial (256) 876-5507.

b. Logistical point of contact for this TB is Mr. Joe Hoover, AMSAM-DSA-UH-L, DSN 645-7898 or commercial (256) 955-7898, Datafax is DSN 645-6590. E-mail is "hoover-jl@redstone.army.mil".

c. Wholesale materiel POC (Spares) is Mr. Dan Delao, AMSAM-MMC-VS-UB, DSN 897-1303 or (256) 313-1303, Datafax is DSN 897-1572. E-mail Is "delao-dt@redstone.army.mil".

d. Forms and records point of contact for this TB is Ms. Ann Waldelk, AMSAM-MMC-RE-FF, DSN 746-5564 or (256) 876-5564, Datafax is DSN 746-4904. E-mail is waldeck-ab@redstone.army.mil.

e. Safety point of contact for this TB is Mr. Ron Price, AMSAM-SF-A, DSN 788-8636 or commercial (256) 842-8636, Datafax is (256) 313-2111, E-mail is "ron.price@redstone.army.mil".

f. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact CW5 Joseph L. Wittstrom, security assistance management, AMSAM-SA, DSN 8978-0681 or (256) 313-0681. E-mail is "wittstrom-jl@redstone.army.mil or Mr. Ronnie W. Sammons, AMSAM-SA-CS-NF, DSN 897-0869 or (256) 313-0869. Datafax is DSN 897-0411 or (256) 313-0411. E-mail "sammons-rs@redstone.army.mil". Huntsville, Alabama is GMT minus 6 hours.

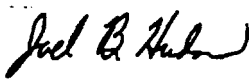
g. After hours contact AMCOM Command Operations Center (COC) DSN 897-2066/7 or (256) 313-2066/7. or commercial (314)263-2066/7.

**17. Reporting of Errors and Recommending Improvements.** You can improve this TB. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and blank Forms) directly to: Commander, US Army Aviation and Missile Command, ATTN: AMSAM-MMC-LS-LP, Redstone Arsenal, AL 35898-5000. You may also submit your recommended changes by E-Mail directly to LS-LP@redstone.army.mil. A reply will be furnished directly to you.

By Order of the Secretary of the Army:

**DENNIS J. REIMER**
**General, United States Army**
**Chief of Staff**

Official:



**JOEL B. HUDSON**
**Administrative Assistant to the Secretary of the Amy**
**05713**

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The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: Whomever" <whomever@avma27.army.mil>
To: Is-lp@redstone.army.mil

Subject: DA Form 2028

1. **From:** Joe Smith
2. Unit: home
3. **Address:** 4300 Park
4. **City:** Hometown
5. **St:** MO
6. **Zip:** 77777
7. **Date Sent:** 19-OCT-93
8. **Pub no:** 55-2840-229-23
9. **Pub Title:** TM
10. **Publication Date:** 04-JUL-85
11. Change Number: 7
12. Submitter Rank: MSG
13. **Submitter FName:** Joe
14. Submitter MName: T
15. **Submitter LName:** Smith
16. **Submitter Phone:** 123-123-1234
17. **Problem: 1**
18. Page: 2
19. Paragraph: 3
20. Line: 4
21. NSN: 5
22. Reference: 6
23. Figure: 7
24. Table: 8
25. Item: 9
26. Total: 123
27. **Text:**

This is the text for the problem below line 27.

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*THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL.*

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FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

| PUBLICATION NUMBER | PUBLICATION DATE | PUBLICATION TITLE |
|---|---|---|
| | | |

BE EXACT PIN-POINT WHERE IT IS

| PAGE NO. | PARA-GRAPH | FIGURE NO. | TABLE NO. |
|---|---|---|---|
| | | | |

IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.

| PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER | SIGN HERE |
|---|---|
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DA FORM 1 JUL 79 2028-2

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