URGENT

***TB 1-1520-237-20-181**

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INSPECTION OF ALL MAIN ROTOR HUB ASSEMBLIES FOR ALL H-60 AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
15 October 1996

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THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.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 requirements of paragraph 8 below are completed. The affected aircraft shall be inspected as soon as practical but no later than the task/inspection suspense date. Failure to comply with all the requirements of this TB within the applicable time frame will cause the status symbol to be upgraded to a red "X".

b. Aircraft in Depot Maintenance. 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. Same as paragraph 1 .a.

(2) Ferry Status. Same as paragraph 1.a.

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

f. Component/Parts in Stock Including War Reserves at All Levels (Depot and Others).

(1) Retail Stock. Upon receipt of this TB all items listed in paragraph 6. below shall be placed in condition code "D" and retagged with a Test/Modification Tag/Label Material (blue color) DD Form 1576/1576-1. The authority block must reference inspection required per this TB. Items identified as serviceable IAW paragraph 8. shall be retagged with a Serviceable Tag/Label Material DD Form 1574/1574-1 (yellow color), and reclassified to condition code "A". Indicate compliance with this TB in the remarks block. Items identified as discrepant IAW paragraph 8. below will be retagged with Unserviceable (Repairable) Tag/Label DD Form 1577-2/1577-3 (green color). Annotate remarks block to indicate that the item is unserviceable IAW this TB. Discrepant items will be corrected IAW paragraph 9.

* This TB supersedes UH-60-97-ASAM-01 (071958Z Oct 96)

(2) Wholesale Stock. Upon receipt of this TB, depot commanders shall ensure inspection of all items listed in paragraph 6. All items listed in paragraph 6. below shall be placed in conditions code “D" and retagged with a Test/Modification Tag/Label Material (blue color) DD Form 157611576-1. The authority block must reference inspections required per this TB.

2. Task/Inspection Suspense Date. Within 100 flight hours/180 days whichever comes first.

3. Reporting Compliance Suspense Date. No later than 29 October 1996 per paragraph 14.a. of this TB.

4. Summary of the Problem.

a. During manufacturing of some main rotor hub assemblies, the proper edge break was not applied to the inside edge of one of the damper bracket attachment holes. Stress risers can result from this condition, which increases the opportunity for cracks to develop.

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

c. The purpose of this TB is to:

(1) Inspect all main rotor hub assemblies for proper edge break.

(2) NDI inspect and edge break all assemblies found deficient.

(3) Perform a NDI inspection on all main rotor hubs for cracks during the 500 hour phase inspection.

5. End Items to be Inspected. All H-60 aircraft. Serial Numbers 95-26645, 95-26650 through 95-26655 and 95-26660 and subsequent will be inspected and corrected for proper edge break by the contractor during production. However, these hubs will require the NDI inspection at the 500 hour phase IAW paragraph 9.d.

6. Assembly Components to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Main Rotor Hub Assembly	70103-08112-041	1615-01-096-5427
Main Rotor Hub Assembly	70103-08112-045	

7. Parts to be Inspected. N/A.

8. Inspection Procedures. A visual inspection of all main rotor hub assemblies will be performed by a Sikorsky Aircraft representative. The Sikorsky Aircraft representative will be scheduled in accordance with paragraph 9.a. The Sikorsky representative will visually inspect all hub assemblies at the damper bracket 11 O'Clock bolt hole for proper edge break If the edge break is found deficient on Sikorsky manufactured assemblies, a Sikorsky team will perform the required rework and NDI inspections as described in paragraph 9.b. If the assembly was manufactured by Purdy Manufacturing, a Purdy team will perform the required rework as described in paragraph 9.b. All hub assemblies that remain in service will require a minimum of one NDI inspection as described in paragraph 9.d.

9. Correction Procedures.

a. One-Time Inspection for Proper Edge Break Scheduling of the one-time inspection for edge break will be controlled by the logistical point of contact (POC). Units will be notified of the date when the inspection is scheduled for their aircraft. No disassembly is required for the inspection. The inspection will be conducted by Sikorsky representatives.

b. If a hub assembly is found deficient, a Sikorsky team or Purdy team will perform the necessary rework including:

(1) Initial NDI inspection for cracks.

(2) Break sharp edge around 11 O'Clock hole.

(3) Final NDI inspection for cracks. I cracks are found the hub assembly will be removed from service and scrapped. The unit will assist in removing the blade, damper and spindle and will follow TM procedures during installation (including a main rotor blade track and balance). After completion of the inspection, the NDI requirements of paragraph 9.d. shall be annotated on DA Form 2408-5-1 for the main rotor hub assembly.

c. If edge break rework is required and a contractor team is not immediately available and the hub is required for service, a reoccurring NDI inspection can be implemented to allow use of the hub assembly. The inspection procedures are described in paragraph 9.d.(2). The NDI inspection is required immediately and then every 125 flight hours. If a crack is detected, the hub will be removed from service and scrapped. If necessary, contact the logistical POC to arrange for a rework team.

d. A NDI inspection for cracks is required on all hub assemblies. The inspection area is where the 11 O'Clock damper bracket hole pierces the internal hub wall. Note, the 11 O'Clock hole does not cleanly exit through the internal hub wall. Removal of the blade and spindle is required and shall be performed IAW reference 13.a. and 13.b.

(1) The following criteria shall be used to determine how many NDI inspections are required.

(a) If the hub had the edge break rework performed, a repetitive NDI inspection is required at the next and subsequent 500 hour phase inspection until the hub has a final NDI inspection at over 1000 flight hours since rework. Annotate the DA Form 2408-5-1 for the main rotor hub assembly.

(b) If the hub had no rework required from the edge break inspection and has over 1000 flight hours, a repetitive NDI inspection is required at the next 500 hour phase inspection. Annotate the DA Form 2408-5-1 for the main rotor hub assembly.

(c) If the hub had no rework required from the edge break inspection and has under 1000 flight hours, a repetitive NDI inspection is required at the next and subsequent 500 hour phase inspection until the hub has final NDI inspection at over 1000 flight hours. Annotate the DA Form 2408-5-1 for the main rotor hub assembly.

(2) Perform fluorescent penetrant inspection of hub as follows: (a) Remove main rotor blade(s) and spindle(s) IAW reference 13.a. and 13.b.

(b) Remove paint, primer, and other surface contaminates from inside hub arms in the area of the 11 O'Clock damper bracket mounting hole.

(c) Mask off areas adjacent to area being inspected with pressure sensitive tape, fed. spec.

PP-T-60, or equivalent.

(d) Place rags under area(s) to be inspected to catch any chemicals during surface coating removal.

(e) Apply epoxy paint remover, MIL-R-81294, Type 1, Class 1, or equivalent, to area to be stripped, using a small paint brush.

(f) After surface coating bubbles, remove coating using a nonmetallic scraper.

(g) Remove all remains of stripper using a rag saturated with water. Repeat as necessary to thoroughly clean area.

(h) Perform fluorescent penetrant inspection per MIL-STD-6866 and TM 55-1500-335-23, NDI inspection method. Use penetrant material type I, method B, C, or D, sensitivity level 3 or 4 and solvent remover and non-aqueous developer shall be the non-halogenic type.

(i) Inspect inside of hub arms around each 11 O'Clock hole. Pay particular attention to presence of any cracks which originate out of the 11 O'Clock damper bracket attachment holes. There will be some continuing level of penetrate bleedout from inserts which may require wiping.

(j) If any cracks are found, replace hub.

(k) Clean part to remove penetrant inspection material.

(l) Reinstall damper, spindle and blade iaw reference 13.a. and 13.b.

10. Supply/Parts and Disposition.

a. Parts Required. Items cited in paragraph 6. may be required to replace defective items.

b. Requisitioning Instructions. Requisition replacement parts through normal supply channels using normal supply procedures. All requisitions shall use project code "XCP" per this TB.

NOTE

Project code "XCP" is required to track and establish a data base of stock fund expenditures incurred by the field as a result of ASAM/SOF actions.

c. Bulk and Consumable Materials. N/A.

d. Disposition. Dispose of removed parts/components in accordance with normal supply procedures.

A QDR is not required.

e. Disposition of Hazardous Material. N/A.

11. Special Tools, Jigs and Fixtures Required. N/A.

12. Application.

a. Category of Maintenance. Contractor team. Aircraft downtime will be charged to AVUM or depot rework maintenance.

b. Estimated Time Required for Visual Inspection.

(1) Total of 0.5 man-hours using 1 person.

(2) No downtime for one end item.

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

NOMENCLATURE	PART NUMBER/ NATIONAL STOCK NUMBER	QUANTITY	COST EACH	TOTAL $
Main Rotor Hub Assembly	70103-08112-041/ 1615-01-096-5427		$43,892.00	
Main Rotor Hub Assembly	70103-08112-045 (Applicable MH-60K)		$43,892.00	
Maximum total cost per aircraft = $43,892.00				

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. TM 1-1520-237-PMS-2 and TM 1-1520-237-23 shall be changed to reflect this TB. A copy of this TB shall be inserted in the appropriate TM as authority to implement the change until the printed change is received.

13. References.

a. TM 1-1520-237-23.

b. TM 1-1520-250-23.

c. TM 55-1500-335-23.

14. Recording and Reporting Requirements.

a. Reporting Compliance Suspense Date (Aircraft). Upon entering requirements of this TB on DA Form 2408-13-1 on all subject MDS aircraft, forward a priority message, datafax or E-Mail to Commander, ATCOM, ATTN: AMSAT-R-X (SOF Compliance Officer), per AR 95-3. Datafax number is DSN 693-2064 or commercial (314) 263-2064. E-Mail

address is "AMSATRXS@EMH4.STL.ARMY.MIL". The report will cite this TB number, date of entry in DA Form 2408-13-1, the aircraft mission design series and serial numbers of aircraft in numerical order.

b. Task/Inspection Reporting Suspense Date (Aircraft). Upon entering the requirements of this TB on a DA Form 2408-13-1 on all subject MDS aircraft, forward a priority message, datafax or E-mail to the logistical POC listed in paragraph 16.b. The report will cite this TB number, date of entry in DA Form 2408-13-1, the aircraft mission design series, aircraft total time to date. This must be accomplished to assure scheduling of aircraft for inspection.

c. Reporting Compliance Suspense Date (Spares). N/A.

d. Task/Inspection Reporting Suspense Date (Spares). Upon completion of the inspection depot commanders and others holding stock shall forward a priority message report of results of this inspection to logistical POC below NLT 10 days after receipts of this TB. The report shall include quantity on hand, quantity which passed inspection and quantity which failed inspection.

e. The following forms are applicable and are to be completed in accordance with DA PAM 738-751,15 June 1992:

(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 2408-13-2, Related Maintenance Actions Record.

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

(6) DA Form 2408-16, Aircraft Component Historical Record (only if main rotor hub is replaced).

(7) DA Form 2408-18, Equipment Inspection List. The requirement for the 500 hour NDI inspection at the PMS-2 inspection will be carried on this form until it is included in the TM 1 -1520-237-PMS-2, then the inspection will be deleted from the -18. ULLS-A users add the inspection as an 800 inspection in the master inspection file.

(8) DA Form 2410, Component Removal and Repair/Overhaul Record (if main rotor hub is replaced).

(9) DD Form 1574 (yellow tag) for in stock items that are determined to be serviceable. (Mark inspected serviceable in accordance with this TB).

(10) DD Form 1575 (brown tag) for in stock items in suspended status awaiting inspection. (Mark suspended in accordance with this TB).

(11) DD Form 1577 (red tag) Unserviceable (Condemned) for in stock items that are determined to be unserviceable. (Mark unserviceable in accordance with this TB).

(12) DD Form 1577-2 (green tag) Unserviceable (Repairable) for in stock items that are determined to be repairable. (Mark unserviceable in accordance with this TB).

15. Weight and Balance. N/A.

16. Points of Contact.

a. Technical point of contact for this TB is Mr. Curtis Stevens, AMSAT-R-ECU, DSN 693-0435 or commercial (314)263-0435.

b. Logistical point of contact for this TB is Mr. Joe Hoover, SFAE-AV-BH-L, DSN 693-0484 or commercial (314)263-0484, data fax DSN 693-1898 or commercial (314) 263-1898, E-mail: hooverj@peo2.stl.army.mil.

c. Forms and records point of contact for this TB is Ms. Ann Waldeck, AMSAT-I-MDM, DSN 490-2318 or commercial (314)260-2318.

d. Point of contact for this TB is Mr. Jim Wilkins. AMSAT-R-X, DSN 693-2258 or commercial (314)263-2258.

e. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact Mr. Ron Van Rees, AMSAT-D-SAF, DSN 693-7844/3216 or commercial (314)263-7844/3216. Data-fax is X2917.

f. After hours contact ATCOM Command Operations Center (COC) DSN 693-2066/7 or commercial (314)263-2066/17.

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 Army
02685

DISTRIBUTION:
To be distributed in accordance with DA Form 12-31-E, block no. 3625, requirements for TB 1-1520-237-20-181.

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: <mpmt%avma28st-louis-emh7.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.

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

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

SOMETHING WRONG WITH PUBLICATION

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

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

PIN: 075135-000