

URGENT

*TB 1-1520-237-20-237

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

SAFETY OF FLIGHT, TECHNICAL RCS CSGLD-1860 (R1), H-60 MAIN ROTOR HUB SUBASSEMBLY REWORK

Headquarters, Department of the Army, Washington, D. C.
27 DECEMBER 2001

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

1. Priority Classification. URGENT

NOTE

IAW AR 95-1, para 6-6a, MACOM Commanders may authorize temporary exception from message requirements. Exception may only occur when combat operations or matter of life or death in civil disasters or other emergencies are so urgent that they override the consequences of continued aircraft operation.

a. Aircraft in Use. Upon receipt of this TB make the following entry on the DA Form 2408-13-1. Enter a Red Horizontal Dash // - // status symbol with the following statement: "Inspect Main Rotor Hub, IAW TB 1-1520-237-20-237 within the next 10 flight hours, but NLT than 21 December, 2001." Clear the Red Horizontal Dash // - // entry when the procedures IAW para 8 are completed. The affected aircraft shall be inspected as soon as practical, but NLT 21 December, 2001. Commanders who are unable to comply with the requirements of this TB within the time frame specified will upgrade the affected aircraft status symbol to a Red // X //.

b. Aircraft in Maintenance.

(1) Aircraft in AVUM, AVIM or Depot. Same as Paragraph 1.a..

(2) Aircraft at Contractor Facility. N/A

c. Aircraft in Transit.

(1) Surface/Air Shipment - Within 10 flight hours/14 days of arrival.

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

* This TB supersedes USAAMCOM Safety Of Flight Message (SOF), 06015Z DEC 01, UH-60-02-02.

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

e. Component/Parts in Stock at All Levels (Depot Level and Others), including War Reserves. Upon receipt of this TB, Depot and Materiel Activity Commanders will ensure the materiel condition tags of all items in all condition codes listed in paragraph 6 are annotated to read "TB 1-1520-237-20-237 Main Rotor Subassembly Rework not complied with".

(1) Wholesale Stock - N/A.

(2) Retail Stock – Report receipt of this TB IAW 14.c.(1) NLT 14 December, 2001. Upon receipt of this TB, Commanders and Facility managers maintaining retail stock at installation level and below shall contact the supported aviation unit to perform the procedures required in paragraph 8. on items in paragraph 6. . Report compliance with this TB IAW paragraph 14.c.(2) NLT 21 December, 2001.

f. Components/Parts in Work (Depot Level and Others). N/A.

2. Task/Inspection Suspense Date. Complete the inspection IAW paragraph 8.b. within the next 10 flight hours but NLT 21 December, 2001 and report IAW para 14.a.(2).

3. TAMMS Reporting Compliance Suspense Date. Report compliance IAW paragraph 14.a.(1), NLT 14 December 2001.

4. Summary of Problem.

a. History - UH-60-01 (TB 1-1520-237-20-235) was issued 23 August, 2001 to notify the field that hubs with part numbers 70103-08112-047/ -048/ -049/ -050 and 70070-10046-055/ -056 have been redesigned or reworked to eliminate the feature that makes them susceptible to cracking at the 11 O'Clock bolt hole. That SOF also reduced the 200 hour recurring non-destructive inspection (NDI) inspection established by TB 1-1520-237-20-215 (UH-60-00-ASAM-01), to every 100 hours, and implemented a before the first flight of the day visual inspection of the hub near the 11 O'Clock bolt hole.

b. Manpower/downtime and funding impacts - See paragraph 12.

c. The purpose of this TB is to:

(1) Identify all main rotor head hubs that qualify for the hub modification program at Sikorsky Aircraft.

(2) Establish a rotatable pool to provide replacement hubs for those which qualify for modification/ rework.

(3) Identify changes to the Technical Manuals as a result of this configuration change.

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

6. Assembly Components to be Inspected. -

NOMENCLATURE	PART NUMBER	NSN
Hub, Rotor Assembly	70103-08112-041	1615-01-096-5427
Hub, and Liner, Rotor Assembly	70103-08112-042	1615-01-432-9268
Hub, Rotor Assembly	70103-08112-045	(MH-60K)
Hub, and Liner, Rotor Assembly	70103-08112-046	(MH-60K)

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

8. Inspection Procedures.

a. Inspect the main rotor head assembly to identify the part number located on the data plate (silver color) on the #1 hub arm. If the data plate is missing, check records for hub assembly part number and verify matching serial numbers on the hub.

(1) If the hub assembly is identified as either part number 70103-08112-047/ -048/ -049/ -050 (new production hubs), or it has been re-identified to part number 70070-10046-055/ -056, no modification is required and the inspection is complete and the red horizontal dash // - // entry will be cleared.

(2) If a part number other than those listed in paragraph 8.a.(1) is installed, proceed to paragraph 8.b..

b. Conduct a records/visual inspection of the hub for the following;

(1) Determine the time remaining until retirement of the hub. Only hubs with more than 1000 hours are eligible for rework.

(2) Determine if an impression stamp "RS-033-2K" is in the data block of the data plate indicating a damper bore has been reworked. If the stamp is not present, or if the data plate is missing, the hub will remain a candidate for rework.

(3) Determine if an impression stamp "RS70100-33G-5" or "RS-033-3H" is in the data block (unpainted area) of the data plate. If the stamp is present, or if the data plate is missing, conduct the following inspection for an oversized bolt hole at the 11 O'Clock position.

(a) Remove the damper brackets from all four hub arms per normal TM procedure.

(b) Inspect each of the four 11 O'Clock position bolt holes for an over size insert by measuring the diameter of the chamfer (at the hub surface, not at bonded liner surface).

(c) If chamfer diameter measures greater than 0.530 inch, an oversize insert is installed and the hub is not eligible for the modification.

c. If the hub does not meet one or more of the criteria in paragraph 8.b., the hub is not eligible for rework. Proceed to paragraph 9.a..

d. If it is determined the hub is a candidate for rework proceed to paragraph 9.a..

e. For hubs eligible for rework:

(1) Report the initial inspection results IAW paragraph 14.a.(2).

(2) Clear the red horizontal dash // - // entry required IAW paragraph 1.a. of this TB . Enter a new red horizontal dash // - // status symbol with the following statement; "Inspect main rotor hub IAW para 8.f. TB 1-1520-237-20-237 prior to or during the next PMS 2, but NLT 30 September, 2004."

(3) When the aircraft is undergoing PMS 2 inspection, or other extensive maintenance which will allow replacement of the hub, contact the LOG point of contact in paragraph 16.b..

(4) Proceed to paragraph 8.f..

f. Following coordination with the LOG POC in paragraph 16.b., perform the following prior to or during the next PMS 2:

(1) Remove the hub assembly from the main rotor head assembly IAW normal procedures. Remove all sub-components and hardware from the hub IAW normal procedures. All serviceable hardware and sub-components shall be retained for reinstallation per existing maintenance procedures.

(2) Clean IAW TM 1-1520-237-23-1, paragraph 1-4-7(f)(g) or TM 1-1520-250-23-1, paragraph 1.39.6, all internal/external surfaces of the hub being turned in to remove any oil, grease, and/or engine soot residue.

(3) Inspect all four zones of the hub for cracks IAW TM 1-1520-237-23-3, paragraph 5-4-2 or TM 1-1520-237-23-3, paragraph 5.2.1, and TB 1-1520-237-20-235. If any cracks are found, the hub is not eligible for rework. Dispose of hub IAW paragraph 10.d.(2).

(4) Inspect the hub assembly for damage, wear, condition, and bonded liner integrity. Limit inspection of liner to ensuring the liners are held in place. If any condition is found that is beyond AVIM repair authority, the condition shall be recorded and reported to the LOG POC in paragraph 16.b. for determination of hub rework eligibility.

(5) If conditions are found that do not require depot repair, to include condition of the threaded inserts, proceed to paragraph 9.b..

(6) If no repair of the hub is required, proceed to paragraph 9.c..

9. Correction Procedures.

a. Serviceable hub assemblies that are not eligible for rework may continue in service under the following conditions;

(1) The recurring 100 hour Eddy Current inspection implemented by TB 1-1520-237-20-235 shall be continued until the hub is retired or removed from service.

(2) Record the inspection results on a DA Form 2408-5-1 rotor hub assembly.

(3) If not already implemented for this hub, unit level logistics system-aviation (ULLS-A) user's shall use this message as authority to use one of their 800 inspection numbers for the 100 hour Eddy Current inspection on the DA Form 2408-18.

NOTE

The UH-60 Project Management Office (PMO) will manage the rotatable pool of reworked hub assemblies. All coordination will be through the UH-60 PMO Logistics POC in paragraph 16.b.(2).

b. For conditions that do not require depot level repair;

(1) Rework the damaged areas IAW TM procedures and limits.

(2) Remove all corrosion, and replace all unserviceable threaded inserts.

(3) Record all discrepancies and maintenance actions on DA Forms 2408-13-3, and 2408-5-1. In addition to the part number, serial number, and other information required on the forms, include the final inspection results. Maintain one copy of each form locally and attach one copy to the hub assembly in a sealed plastic bag.

(4) Proceed to paragraph 9.c..

c. Prepare the hub for packing and shipping. a removed hub must be shipped within three working days of receipt of the replacement hub.



Use care in handling and packing hub subassembly so that hub surfaces and/or bonded liners are not damaged.

NOTE

Shipping instructions will be provided by the Sikorsky POC to be identified by the LOG POC in paragraph 16.b.(1).

d. For installation of a reworked hub assembly;

(1) Before installing the reworked hub assembly into the aircraft, verify documentation against the hub assembly for part number and serial number.

(2) Inspect assembly for condition IAW normal procedures.

(3) Notify the Logistics POC in paragraph 16.b.(2) immediately of any discrepancies.

(4) When the inspection is complete, the hub assembly may be installed IAW normal TM practices with configuration changes as specified in paragraph 12.e. of this TB.

(5) Record the requirement on the DA Form 2408-13-1 to accomplish a one time Eddy Current inspection of the modified hub at 100 flight hours IAW TB 1-1520-237-20-235.

10. Supply/Parts and Disposition.

a. Parts required;

(1) A modified hub assembly will be provided by the UH-60 PMO at no additional cost to the unit in a one for one exchange for a serviceable hub meeting all eligibility criteria IAW paragraph 8 of this TB.

(2) The items specified in paragraph 10.C. are required and must be on-hand for re-installation of the hub.

(3) A reworked hub will not be provided by the UH-60 PMO in exchange for an unreported or ineligible hub.

b. Requisitioning Instructions;

(1) Contact LOG POC in paragraph 16.b.(2) at pre-phase but NLT ten days prior to aircraft entering PMS 2, to arrange for shipment of modified hub.

(2) For hub replacements being done at times other than the PMS 2, notify the LOG POC in paragraph 16.b.(2) as soon as a requirement is known to ensure that a hub is available.

(3) All requisitions for paragraph 12.c. items shall use project code (CC-57-59) "X17" (X-ray one seven). Requisition all other replacement parts using normal supply procedures.

NOTE

Project code "X17" is required to track and establish a data base of stock fund expenditures incurred by the field as a result of SOF actions.

c. Bulk and Consumable Materials.

NOMENCLATURE	PART NUMBER	NSN
O-Ring	37362-1	5330-01-351-7621
O-Ring (K only)	29579-2	5330-01-113-5749
Bolt, Machine	An4-7A	5306-00-515-8064
Washer	AN960KD416	5310-01-145-3153
Bolt	MS21094-4012	5306-01-106-7505
Bolt	NAS632H26	5306-00-108-9981
Washer, Recessed	MS20002C12	5310-00-149-9119
Washer	MS9320-17	5310-00-953-8703
Spacer	70107-08401-102	5365-01-097-9219
Bolt	80489-5-7	5306-01-162-9708
Washer	SS5103D05	5310-01-102-8861
Washer	NAS1149C1290R	5310-01-279-8909
Bolt	S6110-21085-004	5306-00-687-6274
Bolt	80489-6-10	5306-01-162-9710
Washer	SS5103C06	5310-01-102-6105
Bolt	80489-8-12	5306-01-162-8521
Washer	SS5103C08	5310-01-092-8154
Washer	MS20002-12	5310-00-595-6612

Nut	70103-08802-103	5310-01-185-6232
Pin, Cotter	RS40-7	5315-00-241-7332
Bolt	70103-28702-101	5306-01-229-8000
Washer	SS4409-068	5310-01-279-8939
Washer	AN960C1216L	5310-00-595-6607
Washer	SS4409-067	5310-01-279-8909
Nut	MS9364-17	5310-00-946-8342
Bolt	80489-8-10	5306-01-162-8520
Pin, Cotter	MS24665-306	5315-00-236-8353
Nut, Self-Locking	MS2108312	5310-00-923-4219
Nut (H-60A/L only)	MS17826-12	5310-00-047-2965
Washer (MH-60K only)	SS4409-070	5310-01-167-0809
Bolt (MH-60K only)	NAS1305-2H	5306-00-027-8103
Bolt (MH-60K only)	NAS1955-2H	5306-01-408-9581

d. Disposition:

(1) Contact the LOG POC IAW paragraph 16.b. to determine disposition of defective/unserviceable hubs that meet the paragraph 8 eligibility requirements but may be repairable.

(2) Use normal supply procedures to dispose of all defective/unserviceable items, to include unserviceable hubs that do not meet paragraph 8 and 9 eligibility requirements.

e. Disposition of Hazardous Material. IAW Environmental Protection Agency directives as implemented by your servicing Environmental Coordinator (AR 200-1).

11. Special Tools, and Fixtures Required.. As required.

12. Application.

a. Category of Maintenance. AVUM . Aircraft downtime to accomplish the paragraph 8 inspection and paragraph 9 hub replacement will be charged to AVUM maintenance. Report aircraft non-mission capable maintenance (NMCM) while undergoing inspection and correction IAW this TB.

b. Estimated Time Required.

(1) Inspection; Total of 1 man-hour for one end item.

(2) Correction;

(a) Total of 100 man-hours using 3 persons.

(b) Total of 48 hours downtime for one end item.

c. Estimated cost impact to the field. N/A

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 1-1520-237-23 and TM 1-1520-250-23 shall be changed as follows: A copy of this TB shall be inserted in the appropriate Tm as authority to implement the change until the printed change is received. TM 1-1520-237-23P, TM 1-1520-250-23P and DMWR 1-1615-376 will be revised with changes to be determined.

(1) TM 1-1520-237-23-3, paragraph 5-4-14.1.3, add the following note at the beginning of the paragraph.

NOTE

On hub assemblies with part number beginning 70070-10046, a bolt is not installed at the 11 O'Clock position to attach the damper bracket.

(2) TM 1-1520-250-23-3, paragraph 5.8.4.3, add the following note at the beginning of the paragraph.

NOTE

On hub assemblies with part number beginning 70070-10046, a bolt is not installed at the 11 O'Clock position to attach the damper bracket.

13. References.

- a. DA PAM 738-751, 15 March 1999.
- b. TM 1-1520-237-23.
- c. TM 1-1520-250-23.
- d. TB 1-1520-237-20-235.
- e. AR 200-1.
- f. AR 95-1.

14. Recording and Reporting Requirements.

NOTE

If the reporting requirements below in paragraphs 14.a.(1),(2), and 14.c.(1), (2) have already been accomplished IAW UH-60-02-02, there are no further reporting requirements below.

a. Aircraft:

(1) TAMMS Reporting Compliance Suspense.

Upon entering requirements of this TB on DA Form 2408-13-1 for all affected aircraft, Commanders will forward a priority message, datafax or email to Commander, AMCOM, ATTN: AMSAM-SF-A (SOF Compliance Officer), Redstone Arsenal, AL 35898-5000, IAW AR 95-1, NLT date specified in paragraph 3. Datafax number is DSN 897-2111 or commercial (256) 313-2111. Email address is "safeadm@redstone.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.

(2) Task/Inspection Reporting Suspense Date .

Upon completion of inspection, Commanders will forward a priority message to the Logistical Point of Contact listed in paragraph 16.b.. The report will cite this TB number, date of the inspection, aircraft and component serial number, aircraft and component hours, and results of the inspection IAW Paragraph 8.b. (each hub will be identified as eligible or non-eligible). Assets not reported will not be eligible for rework. Provide an AVUM level POC to include name, telephone number (DSN and commercial), and email address. Inspection and reports will be completed NLT date specified in paragraph 2..

b. Wholesale Spare Parts/Assemblies. N/A.

c. Retail Spare Parts/Assemblies.

(1) Reporting Message Receipt.

Commanders and facility managers will report receipt of this TB by email or FAX to the LOG POC listed in paragraph 16.b. NLT the date specified in paragraph 1.e.(2). Provide local POC.

(2) Task Inspection Reporting Suspense.

Commanders and facility managers will report inspection results to the LOG POC listed in paragraph 16.b. NLT the date specified in paragraph 1.e.(2). Report by email or FAX and provide local POC.

d. The following forms are applicable and are to be completed in accordance with DA Pam 738-751, 15 Mar 99.

NOTE

ULLS-A users will use applicable "E" forms.

- (1) DA Form 2408-5-1, Equipment Modification Record (rotor hub assembly).
- (2) DA Form 2408-13, Aircraft Status Information Record.
- (3) DA Form 2408-13-1, Aircraft Inspection and Maintenance Record.
- (4) DA Form 2408-13-3, Aircraft Technical Inspection Worksheet.
- (5) DA Form 2408-16, Aircraft Component Historical Record.
- (6) DA Form 2408-18, Aircraft Inspection List (only if 100 hour recurring Eddy Current inspection is required).
- (7) DA Form 2410, Component Removal and Repair/Overhaul Record (only if rotor hub assembly is removed and/or replaced).
- (8) DD Form 1574/DD Form 1574-1, Serviceable Tag/Label - Materiel (color yellow). Annotate with "Inspected Serviceable IAW TB 1-1520-237-20-237."
- (9) DD Form 1577-2/DD Form 1577-3, Unserviceable (Repairable) Tag/Label - Materiel (color green). Annotate remarks block with "Unserviceable TB 1-1520-237-20-237."

15. Weight and Balance. N/A.

16. Points of Contact.

a. Technical POC's are:

(1) Primary - Mr. Roger Clark, AMSAM-RD-AE-I-D-U, DSN 897-2350 ext 9714, or (256) 705-9714. Datafax is 705-9714 or Commercial (256)313-6053, email is "roger.clark@redstone.army.mil".

(2) Alternate - Mr. John Kilcrease (Camber), AMSAM-RD-AE-I-D-U, DSN 897-2350 ext 9717 or (256) 705-9717. FAX is (256) 705-9896. Email is "john.kilcrease@rdec.redstone.army.mil".

b. Logistical point of contact is Mr. Joe Hoover, AMSAM-DSA-UH-L, DSN 645-7898 or (256) 955-7898, datafax is DSN 897-3778 or (256)313-3778. Email is "joe.hoover@uh.redstone.army.mil"

c. Wholesale materiel point of contact (Spares) is Ms. Julia Moore, AMSAM-MMC-VS-UB, DSN 897-1176 or (256) 313-1176, datafax is DSN 897-4769. Email is "julia.moore@redstone.army.mil".

d. Forms and records point of contact is Ms. Ann Waldeck, AMSAM-MMC-MA-NM, DSN 746-5564 or (256) 876-5564, Datafax is DSN 746-4904. Email is "ann.waldeck@redstone.army.mil".

e. Safety points of contact are:

(1) Primary - Mr. Harry Trumbull, (SAIC), AMSAM-SF-A, DSN 897-2095 or commercial (256) 313-2095, Datafax is DSN 897-2111 or (256) 313-2111. Email is "harry.trumbull@redstone.army.mil".

(2) Alternate - Mr. Ron Price, AMSAM-SF-A, DSN 788-8636 or (256) 842-8636, datafax is DSN 897-2111 or (256) 313-2111. Email is "ron.price@redstone.army.mil".

f. Foreign Military Sales recipients requiring clarification of action advised by this TB should contact

(1) Primary: Mr. Ronnie W. Sammons, AMSAM-SA-CS-NF, DSN 897-6856 or (256) 313-6856. Datafax is DSN 897-6630 or (256) 313-6630. Email "ronnie.sammons@redstone.army.mil".

(2) Alternate: MR. Paul W. Tarr, AMSAM-SA-CS-NF, DSN 897-6861 or (256) 313-6861. Datafax is DSN 897-6630 or (256) 313-6630. Email "tarrpw@redstone.army.mil".

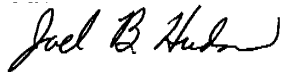
g. After hours contact AMCOM Command Operations Center (COC) DSN 897-2066/7 or (256) 313-2066/7.

17. Reporting of Errors and Recommended 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-MA-NP, Redstone Arsenal, AL 35898-5000. You may also submit your recommended changes by email directly to 2028@redstone.army.mil. A reply will be furnished directly to you.

TB 1-1520-237-20-237

By Order of the Secretary of the Army:

Official:



JOEL B. HUDSON
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ERIC K. SHINSEKI
General, United States Army
Chief of Staff

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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: 2028@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.