

# URGENT

\*TB 1-1520-237-20-262

## DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

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### SAFETY OF FLIGHT, TECHNICAL, RCS CSGLD-1860 (R1), MAIN MODULE PLANETARY CARRIER ASSEMBLY, ALL UH-60A, EH-60A AND UH-60Q SERIES AIRCRAFT

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Headquarters, Department of the Army, Washington, D. C.  
20 December 2002

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

**1. Priority Classification. URGENT**

**NOTE**

MACOM Commanders may authorize temporary exception from message requirements IAW AR 95-1, Chapter 6. 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.

**2. Summary.**

a. Background - Two cracked planetary carriers were previously found which resulted in four SOFs requiring inspection of sump screens, filters and chip detectors for the presence of non-ferrous material, imposed flight restrictions on UH-60A, EH-60A and UH-60Q aircraft having main modules (transmission) above 2000 hours Time Since New (TSN) installed, and identified suspect carriers manufactured by RAF. An ultrasonic test (UT) inspection method has been developed to inspect for cracks in the planetary carrier. This inspection may identify additional RAF manufactured carriers still in service, which were not identified during the previous inspection.

**3. Message Purpose.**

- a. Require a planetary carrier UT inspection.
- b. Provide MACOM POCs and inspectors qualification requirements.
- c. Require additional inspection to identify planetary carriers manufactured by RAF.
- d. Delete inspection requirements imposed by UH-60-02-09 (TB 1-1520-237-20-258), supplemental instruction regarding periodic filter and screen inspection for debris.

\* This TB supersedes USAAMCOM Safety Of Flight message 201415Z Nov 02 and TB 1-1520-237-20-258 dated 12 June 2002.

- e. Modify flight restriction imposed by UH-60-02-09 (TB 1-1520-237-20-258)
  - (1) Update DA Form 2408-16 (main module) information for the planetary carrier assembly.

- 4. **End Items to be inspected.** All UH-60A, EH-60A and UH-60Q series aircraft
- 5. **Assembles/Components/Parts Affected.**

NOMENCLATURE	PART NO.	NSN
Planetary Carrier	70351-08175-045	1615-01-237-3685
Transmission Mech Module	70351-08100-053	1615-01-076-1260
Transmission Mech Module	70351-08100-054	1615-01-105-1450
Transmission Mech Module	70351-08100-055	1615-01-129-7330
Transmission Mech Module	70351-08100-056	1615-01-105-8713
Transmission Mech Module	70351-08100-057	1615-01-134-7274
Transmission Mech Module	70351-08100-058	1615-01-128-1749
Transmission Mech Module	70351-08100-059	1615-01-145-3928
Transmission Mech Module	70351-08100-060	1615-01-168-2983
Transmission Mech Module	70351-08100-061	1615-01-284-6419
Transmission Mech Module	70351-08100-069	1615-01-316-2658
Transmission Mech Module	70351-08100-070	1615-01-316-2659
Transmission Mech Module	70351-08100-071	1615-01-375-5846
Transmission Mech Module	70351-08100-072	1615-01-375-5847
Transmission Mech Module	70351-08100-073	1615-01-413-7786
Transmission Mech Module	70351-08100-074	1615-01-415-8387

**NOTE**

When complying with the requirements of this message, complete forms and records entries IAW DA PAM 738-751. ULLS-A units will use appropriate "E" forms.

**6. Initial TAMMS (The Army Maintenance Management System) Compliance Requirements..**

- a. Upon receipt of this message (TB), make the following entry on the DA Form 2408-13-1. Enter a Red Horizontal Dash //--// status symbol with the following statement: "Comply with requirements of UH-60-03-01 NLT 20 Jan 03." Commanders who are unable to comply with the requirements of this message within the time frame specified will upgrade the affected aircraft status symbol to a Red //X//.

**NOTE**

The TAMMS compliance reporting form is available at "[www.redstone.army.mil/sof/tamms.xls](http://www.redstone.army.mil/sof/tamms.xls) <<http://www.redstone.army.mil/sof/tamms.xls>>" (use lower case letters only) or may be obtained from the unit's service LAR. Alternate forms may be approved by the AMCOM SOF Compliance Officer.

The TAMMS Compliance Report only confirms the unit has made the initial logbook entry for assigned aircraft. TAMMS Compliance Reports will include aircraft serial numbers (in numerical order), date of entry on DA Form 2408-13-1, unit address, local POC name and phone number.

- b. TAMMS Compliance Report - Submit TAMMS Compliance Report via priority email to: "[safeadm@redstone.army.mil](mailto:safeadm@redstone.army.mil) <<mailto:safeadm@redstone.army.mil>>" NLT 27 Nov 02 IAW AR 95-1. If email is not available, the report may be faxed to SOF Compliance Officer at DSN 897-2111 or (256) 313-2111.

**7. Task/Inspection Compliance Reporting Requirements.****NOTE**

The Task/Inspection Reporting Form (developed specifically for this SOF) is available at:  
["http://www.redstone.army.mil/sof/utinspection.xls"](http://www.redstone.army.mil/sof/utinspection.xls)

- a. Aircraft - Submit Task/Inspection Compliance Report to this message to Log POC NLT 23 Jan 03. Compliance report will include qualification card number issued upon completion of Redstone Center of Excellence carrier assembly inspection training.
- b. Retail Stock (Installation level or below) - Submit Task/Inspection Compliance Report for this message to Log POC NLT 23 Jan 03.
- c. Wholesale Stock (Including Depot stock, Depot Maintenance and Single Stock Fund) - N/A.

**8. Special Provisions to Message Requirements (Aircraft).**

- a. Aircraft in Transit (Surface/air Shipment) - Comply with message requirements within 60 days of arrival.
- b. Aircraft on Red //X// status symbol for an RAF carrier installed (not suspect/cracked) will be maintained in flyable storage. Ground run-ups at normal operating rotor RPM are authorized.

**9. Technical Procedures/Instructions.**

- a. The requirements imposed by UH-60-02-09 (TB 1-1520-237-20-258), para 9i are rescinded. This includes the inspections of the sump chip detector screen and main transmission oil filters for aluminum foil-like debris.
- b. The requirements imposed by UH-60-02-09 (TB 1-1520-237-20-258) 9d/e are modified as follows:
  - (1) If the Main Module Planetary Carrier TSN is 2000 hours or greater, clear the entry required by UH-60-02-09, (TB 1-1520-237-20-258), para 9d and make the following entry on the DA Form 2408-13-1. Enter a Circled Red //X// status symbol with the following statement: "Operate aircraft IAW UH-60-03-01."
  - (2) If the Main Module Planetary Carrier TSN is 2000 hours or greater, the following flight restrictions apply.

**NOTE**

The briefing officer will brief the applicable restrictions for each mission.

The following restrictions do not apply to mission essential combat and urgent MEDEVAC flights if the mission is approved by Commanders, 0-5 or above, for Main Module Planetary Carriers at 2000 hours TSN or greater.

- (a) Operations in instrument meteorological conditions (IMC) are permitted if weather for the entire route being flown is equal to or greater than 1000 ft ceiling and 3 miles visibility. Operations where suitable forced landing areas are not available, are not authorized. This includes but is not limited to VMC, IMC, and over-water flights where a suitable forced landing area is beyond autorotational glide distance.
- (b) ERFs, internal auxiliary fuel and air volcano operations are not authorized.
- (c) Aircraft restricted to 120 KIAS or 80 percent dual engine torque, whichever occurs first, except actual maintenance test flights and emergencies.
- (d) Only mission essential crew/passengers will be transported.

**NOTE**

All planetary carriers with greater than 500 hours TSN, as of the DTG of this message, and all RAF carriers (regardless of TSN) will require the visual inspection and ultrasonic testing (UT). This includes carriers that are installed as well as RAF carriers identified by UH-60-02-10 or found during compliance with this inspection. Units that have already completed the visual inspection and ultra-

sonic test within the guidelines of this message will not require a reinspection. All main modules repaired by CCAD or Sikorsky Aircraft since 10 May 2002 had zero time, non-RAF carriers installed.

c. Review the main module DA Form 2408-16 for the carrier serial number, time since new when installed and the date the main module completed repairs.

(1) If the DA Form 2408-16 or the DA Form 2410 data indicates the planetary carrier was replaced by CCAD or Sikorsky since 10 May 02 and has less than 500 flight hours TSN, the visual inspection and the ultrasonic testing are not required. Proceed to para 9.g.

(2) If the DA Form 2408-16 or the DA Form 2410 data indicated the main module was not repaired by CCAD or Sikorsky since 10 May 02; or the carrier has more than 500 flight hours TSN; or if the carrier was previously identified as being manufactured by RAF, proceed to para 9.d.

d. Perform visual inspection of the planetary carrier. This inspection will be conducted in conjunction with the UT inspection.

**NOTE**

The unit may capture the lubricating fluid in a clean container for re-use in main modules that contain RAF carrier assemblies (identified by the Technical POC). This is to facilitate ground run-ups only.

Ground run-ups are authorized for aircraft that contain an RAF carrier if approved by the Technical POC. Suspect/cracked carriers will not be approved for ground run-ups.

(1) Remove the left hand main module oil pump IAW TM 1-1520-237-23-4, para 6-4-19 or TM 1-1520-250-23-4, para 6.7.2

(2) Look through the pump hole at the underside of the carrier while an assistant slowly rotates the main mast to ensure the entire circumference of the carrier plate has been inspected for all markings.

(3) If markings containing a serial number beginning with "E240" or a trademark/logo with the letters "RAF" are identified, contact the Technical POC listed in para 15.a.1. for further instructions. If Technical POC determines that the carrier assembly was manufactured by RAF Industries, the main module is un-serviceable. Proceed with UT inspection unless otherwise directed by Technical POC.

(4) If the markings stated above are not found, the visual inspection is complete. Proceed with UT inspection.

**NOTE**

The ultrasonic inspection procedure required by this message will ONLY be conducted by Non-destructive Test Specialist certified by the Redstone Arsenal NDT Center of Excellence (NDT COE). A UT training course is being conducted specifically for the XMSN carrier assembly.

Units without NDI trained and certified technician, ultrasonic test (UT) equipment, or carrier probe kits, shall contact their MACOM POC, (listed in para 15.c.) to schedule the inspection.

e. Perform UT inspection IAW "Planetary Gear Carrier (UT)" procedures provided by NDT COE. Inspection team will forward results of UT to the Technical POC if any cracks or other abnormalities are found.

f. Reassemble transmission IAW appropriate TM, as required. If the main module oil is reused (with RAF carrier), make the following entry on the DA Form 2408-13-1. Enter a Red Diagonal \\ / \\ status symbol with the following statement: "Main module oil contaminated, flush main module oil cooler and lines prior to installing replacement main module."

g. Clear the initial entry form para 6.a. and note compliance on DA Form 2408-5-1 (Main Module).

**10. Procedures/Instruction for Assemblies/Components/Parts in Work or in Stock (At All Levels including War Reserves). - N/A**

**11. Special Tools and Fixture Required.** - The following test equipment is required for accomplishment of the UT inspection.:

- a. Ultrasonic Inspection Unit, Krautkramer Branson USD 15S or equivalent. Contact NDI procedure POC in 15.b.(1) for determination of equivalent and suitable inspection apparatus

**NOTE**

Units that purchase additional kits directly from the manufacturer must contact NDI POC in para 15.b.(1) for calibration requirements.

- b. Ultrasonic Inspection Kit, NSN 6635-01-499-7177, P/N HF-5419, manufactured by Stavely Sensors, 91 Prestige Park Circle, East Hartford, CT., 06108. Phone (860) 289-5428.
- c. Ultrasonic Couplant, DOD-L-85734 or MIL-PRF-23699 Lubricating Oil.
- d. Nut, Self-Locking, Assembled Washer, NSN 5310-00-151-5431.
- e. Installation Tool, Oil Pump, 1420-BH-007, local manufacture, fig. H-45, TM 1-1520-237-23-11, Appendix H.

**12. Supply/Parts (Requisition/Disposition).**

- a. Parts Required -

NOMENCLATURE	PART NO./ NSN	QTY	COST EACH	TOTAL
Transmission	70351-08100-074/ 1615-01-415-8387	1	\$290,775.00	\$290,775.00
Nut	MS21043-4/ 5310-00-844-4872	4	\$0.21	\$0.84
Packing	M83248/1-036/ 5331-00-172-7187	2	\$0.34	\$0.68
Packing	M83248/1-037/ 5331-00-166-8396	2	\$0.35	\$0.70
Washer	MS9320-10/ 5310-00-194-0637	4	\$2.88 HD	\$2.88
Total Cost Per Aircraft				\$290,780.10

- b. Bulk and Consumable Materials -

NOMENCLATURE	PART NO.	NSN
Aircraft Marking Pencil	N/A	7510-00-537-6930 (or equivalent)
Ultrasonic Couplant	DOD-L-85734	
Assembly Fluid	N/A	9150-00-159-5012
Lubrication Oil	MIL-PRF-23699	9150-00-985-7099
Lubrication Oil	DOD-L-85734	9150-01-209-2684
Lubrication Oil	MIL-PRF-7808	9150-00-782-2627

c. Requisitioning Instructions - Requisition replacement parts using normal supply procedures. All requisitions shall use Project Code (CC 57-59) "XE1" (X-Ray-Echo-One).

**NOTE**

Project Code "XE1" is required to track and establish a data base of stock fund expenditures incurred by the field as a result of message actions.

d. Disposition of discrepant parts/components - Dispose of discrepant parts IAW procedures directed by Technical POC.

e. Disposition of hazardous material - IAW Environmental Protection Agency directives as implemented by your servicing environmental coordinator (AR 200-1).

**13. Maintenance Application.**

a. Category of Maintenance - AVUM/AVIM. Aircraft downtime will be charged to AVIM.

b. Estimated Time Required:

(1) Time to complete visual inspection - Total of 4 man-hours using 2 persons with 2 hours downtime per end item.

(2) Time to complete UT inspection - Total of 4 man-hours using 2 persons with 2 hours downtime per end item.

(3) Time for main module replacement (if required) - 144 man-hours using minimum of 4 persons with 36 hours downtime per end item, (does not include test flight requirements).

**14. Publication Requirements.-**

a. References -

(1) AR 95-1

(2) AR 200-1

(3) DA PAM 738-751

(4) TM 1-1520-265-23

(5) TM 1-1520-237-23-4, 29 May 1998

(6) TM 1-1520-237-23-6, 29 May 1998

(7) TM 1-1520-250-23-3, 28 Jul 2000

(8) TM 1-1520-250-23-5, 28 Jul 2000

b. Publication Changes - N/A

**15. Points of Contact..**

a. Technical (Engineering) POCs are -

(1) Primary - Mr. Scott Abernathy, AMSAM-RD-AE-P-S, DSN 897-2350, ext 5203 or (256) 319-5203. Fax is (256)705-9922, Email is "[scott.abernathy@rdec.redstone.army.mil](mailto:scott.abernathy@rdec.redstone.army.mil) <mailto:scott.abernathy@rdec.redstone.army.mil>".

(2) Alternate # 1 - Mr. Jim Conner, AMSAM-RD-AE-P-S, DSN 897-2350 ext 5219 OR (256) 319-5219. Email is "[jim.conner@rdec.redstone.army.mil](mailto:jim.conner@rdec.redstone.army.mil) <mailto:jim.conner@rdec.redstone.army.mil>".

(3) Alternate # 2 - Mr. Ralph Vemmer, (256) 705-9719. Fax is (256) 705-9896. Email is "[ralph.vemmer@rdec.redstone.army.mil](mailto:ralph.vemmer@rdec.redstone.army.mil) <mailto:ralph.vemmer@rdec.redstone.army.mil>".

b. NDI Procedures POCs are -

(1) Primary - Mr. Scott Huddleston, SFAE-AV-AS-AG, DSN 897-0211 or (256) 313-0211. Toll free 1-866-897-3249. Fax is DSN 897-0200 or (256) 313-0200. Email is "[scott.huddleston@redstone.army.mil](mailto:scott.huddleston@redstone.army.mil) <mailto:scott.huddleston@redstone.army.mil>".

(2) Alternate - Ms. Sandra Ratley, SFAE-AV-AS-AG, DSN 788-8043 or (256) 842-8043. Toll free 1-866-897-3249. Fax is DSN 897-0200 or (256) 313-0200. Email is "[sandra.ratley@redstone.army.mil](mailto:sandra.ratley@redstone.army.mil) <<mailto:scott.huddleston@redstone.army.mil>>

c. MACOM POCs for NDI Scheduling are -

(1) FORSCOM - CW5 Fred Hammerschlag, AFLG-FMMC-HT, DSN 367-6765 or (404) 464-6765. Fax is DSN 367-7745. Email is "[hammerschlagfj@forscom.army.mil](mailto:hammerschlagfj@forscom.army.mil) <<mailto:hammerschlagfj@forscom.army.mil>>

(2) NGB - Mr. Calvin Dick, NGB-AVS-A, DSN 327-7725 or (703) 607-7725. Fax is DSN 327-7788. Email is "[calvin.dick@ngb.army.mil](mailto:calvin.dick@ngb.army.mil) <<mailto:calvin.dick@ngb.army.mil>>".

(3) USAREUR - Mr. Alfred Martin, AEAGD-MD-AV, DSN 370-8532 or 011-49-622-157-8532. Fax is DSN 370-6249. Email is "[alfred.martin@hq.hqusareur.army.mil](mailto:alfred.martin@hq.hqusareur.army.mil) <<mailto:alfred.marting@hq.hqusareur.army.mil>>".

(4) USARSO - CW2 Chuck Hazeltine, SOAR-HHC, DSN 449-6566 or 011-504-234-4634/35/37 Ext. 6566. Fax is DSN 449-6563. Email is "[chuckhazeltine@jtfba.southcom.mil](mailto:chuckhazeltine@jtfba.southcom.mil) <<mailto:chuckhazeltine@jtfba.southcom.mil>>".

(5) USAARPAC - Mr. Cliff Richmond, PPLG-MMM, DSN 438-8623 or (808) 438-8623. Fax is DSN 438-1120. Email is "[richmandcj@shafter.army.mil](mailto:richmandcj@shafter.army.mil) <<mailto:richmandcj@shafter.army.mil>>".

(6) EUSA - MAJ Robert Brinson, EUSA G4, AV Branch, DSN 723-5717 or 011-822-7913-5717. Fax is DSN 723-7597. Email is "[brinsonr@usfk.korea.army.mil](mailto:brinsonr@usfk.korea.army.mil) <<mailto:brinsonr@usfk.korea.army.mil>>".

(7) HQAMC - Mr. John Savelli, DSN 767-9891, or (703) 617-9891. Fax is DSN 767-8477. Email is "[jsavelli@hqamc.army.mil](mailto:jsavelli@hqamc.army.mil) <<mailto:jsavelli@hqamc.army.mil>>".

d. Logistics POC is Mr. Joe Hoover, SFAE-AV-UH-L, DSN 645-7898 or (256) 955-7898. Fax is DSN 897-3778 or (256) 955-7898. Email is "[joe.hoover@uh.redstone.army.mil](mailto:joe.hoover@uh.redstone.army.mil) <<mailto:joe.hoover@uh.redstone.army.mil>>".

e. Wholesale POC is Ms. Mary Wingo, AMSAM-MMC-AV-UA/UB, DSN 897-1620 or (256) 313-1620. Fax is DSN 897-4769. Email is "[mary.wingo@redstone.army.mil](mailto:mary.wingo@redstone.army.mil) <<mailto:mary.wingo@redstone.army.mil>>".

f. Forms and Records point of contact is Ms. Ann Waldeck, AMSAM-MMC-MA-NM, DSN 746-5564 or (256) 897-5564. Fax is DSN 746-4904 or (256) 876-4904. Email is "[ann.waldeck@redstone.army.mil](mailto:ann.waldeck@redstone.army.mil) <<mailto:ann.waldeck@redstone.army.mil>>".

g. Safety points of contact are:

(1) Primary - Mr. Randall Rushing (SAIC), AMSAM-SF-A, DSN 897-2092 or (256) 313-2092, Fax is DSN 897-2111 or (256) 313-2111. Email is "[randall.rushing@redstone.army.mil](mailto:randall.rushing@redstone.army.mil) <<mailto:randall.rushing@redstone.army.mil>>".

(2) Alternate - Mr. Ron Price, AMSAM-SF-A, DSN 788-8636 or (256) 842-8636, fax is DSN 897-2111 or (256) 313-2111. Email is "[ron.price@redstone.army.mil](mailto:ron.price@redstone.army.mil) <<mailto:ron.price@redstone.army.mil>>".

h. Foreign Military Sales POC is Mr. Ronnie W. Sammons, AMSAM-SA-AS-UT, DSN 897-0407 or (256) 313-0407. Fax is DSN 897-0407 or (256) 313-0407. Fax is DSN 897-0411 or (256) 313-0411. Email "[ronnie.sammons@redstone.army.mil](mailto:ronnie.sammons@redstone.army.mil) <<mailto:ronnie.sammons@redstone.army.mil>>".

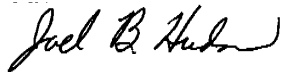
i. After hours contact AMCOM Command Operations Center (COC) DSN 897-2066/7 or (256) 313-2066/7.

**16. 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), or DA Form 2028-2 located in the back of this manual, directly to: Commander, US Army Aviation and Missile Command, ATTN: AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5000. A reply will be furnished to you. You may also provide DA Form 2028 information to AMCOM via e-mail, fax, or the World Wide Web. Our fax number is: DSN 788-6546 or Commercial 256-842-6546. Our e-mail address is: 2028@redstone.army.mil. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028. For the World Wide Web use: <https://amcom2028.redstone.army.mil>.



By Order of the Secretary of the Army:

Official:



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**ERIC K. SHINSEKI**  
General, United States Army  
Chief of Staff

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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.