

URGENT

TB 1-1520-240-20-131

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

MANDATORY INSPECTION OF FORWARD AND AFT ROTOR HUB LIGHTENING HOLES ON ALL CH-47D, MH-47D AND MH-47E AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
9 November 2000

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

NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. **Priority Classification. Urgent**

NOTE

In accordance with AR 95-1, paragraph 6-6A, MACOM Commanders may authorize temporary exception from ASAM 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 Technical Bulletin, make the following entry on the DA Form 2408-13-1. Enter a red horizontal dash // - // status symbol with the following statement: "Inspect for rotor hub lightening holes in accordance with CH-47-01-ASAM-03 (TB 1-1520-240-20-131) within the next 10 flight hours, but no later than 23 NOV 00." Clear the red horizontal dash // - // entry when the procedures in accordance with paragraphs 8 and 9 are completed. The affected aircraft shall be inspected as soon as practical but no later than 23 NOV 00. Commanders who are unable to comply with the requirements of this Technical Bulletin within the time frame specified will upgrade the affected aircraft status symbol to a red // X //.

b. **Aircraft in Depot Maintenance.** Depot Commanders will not issue aircraft until they are in compliance with this message.

c. **Aircraft Undergoing Maintenance.** Commanders and Facility Managers will not issue aircraft until they are in compliance with this message.

d. **Aircraft in Transit.**

This TB supersedes USAAMCOM Message 082250Z NOV 00 CH-47-01-ASAM-03.

TB 1-1520-240-20-131

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

(2) Ferry Status.

(a) Inspect at final destination within 10 flight hours or 14 days of arrival.

(b) Boeing will inspect DD250 aircraft prior to those aircraft departing for ferry to final destination.

e. Maintenance Trainers (Category A and B). Comply no later than 8 March 2001.

f. Component/Parts in Stock at All Levels (Depot and Others). Including War Reserves – Upon receipt of this message, Depot and Materiel Activity Commanders will ensure the materiel condition tags of all items in all condition codes listed in paragraphs 6 and 7 are annotated to read: “CH-47-01-ASAM-03, (TB 1-1520-240-20-131), rotor hub lightening hole inspections not complied with.”

g. Components/Parts in Work (Depot Level and Others). Depot and other Maintenance Activity Commanders will ensure items listed in paragraphs 6 and 7 are not issued until they are in compliance with this message.

2. Task/Inspection Suspense Date. Complete the inspection in accordance with paragraph 8 within the next 10 flight hours but no later than 23 NOV 00 and report in accordance with paragraph 14b.

3. Reporting Compliance Suspense Date. Report compliance in accordance with paragraph 14a no later than 5 DEC 00.

4. Summary of the Problem.

a. A category I deficiency report was received which revealed cracks extending from the lightening holes in the vertical web area of the rotor head center hub. When discovered, these cracks were greater than one inch in length. Further investigation revealed the cracks went undiscovered during several phased maintenance visual inspections. Research revealed three other rotor hubs that have been found with similar cracks.

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

c. The purpose of this Technical Bulletin is to require an initial visual, recurring visual, and recurring eddy current inspection of the vertical web lightening hole areas of all rotor hubs identified in paragraph 7 of this message.

5. End Items to be Inspected. All H-47 series aircraft.

6. Assembly Components to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Head, Rotary Wing, Forward	145R2003-1	1615-01-118-5634
Head, Rotary Wing, Forward	145R2003-3	1615-01-198-7555
Head, Rotary Wing, Forward	145R2003-4	1615-01-184-3875
Head, Rotary Wing, Forward	145R2003-5	1615-01-345-0477
Head, Rotary Wing, Forward	145R2003-6	1615-01-296-9503
Head, Rotary Wing, Forward	145R2003-9	1615-01-314-8863
Head, Rotary Wing, Forward	145R2003-10	1615-01-391-4398
Head, Rotary Wing, AFT	145R2004-2	1615-01-115-3607
Head, Rotary Wing, AFT	145R2004-6	1615-01-199-1814
Head, Rotary Wing, AFT	145R2004-8	1615-01-184-3874
Head, Rotary Wing, AFT	145R2004-10	1615-01-312-6833

Head, Rotary Wing, AFT	145R2004-12	1615-01-298-0763
Head, Rotary Wing, AFT	145R2004-18	1615-01-315-3972
Head, Rotary Wing, AFT	145R2004-20	1615-01-391-4399

7. Parts to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Forward Rotor Hub	114R2050-19	N/A
Forward Rotor Hub	114R2050-21	1615-00-004-8891
Forward Rotor Hub	114R2050-39	1615-01-246-1341
Forward Rotor Hub	114R2050-41	1615-01-246-1342
Aft Rotor Hub	114R2050-20	N/A
Aft Rotor Hub	114R2050-22	1615-00-004-8889
Aft Rotor Hub	114R2050-40	1615-01-246-1345
Aft Rotor Hub	114R2050-42	1615-01-246-1346

8. Inspection Procedures.

NOTE

Only hubs that contain lightening holes in the vertical web areas require these inspections. Not all rotor hubs contain these lightening holes. See paragraph 7 for the part numbers of affected rotor hubs.

- a. Perform records check and visual inspection of main rotor hubs to determine the part numbers of hubs installed. If the hub is not affected, the inspection is complete for that aircraft. Clear the DA Form 2408-13-1 entry and report compliance.
- b. Prepare aircraft for safe ground maintenance.
- c. Remove the locking beams from the horizontal hinge pin caps in accordance with TM 55-1520-240-23, Task 5-40 (CH-47D), or TM 1-1520-252-23, Task 5-50 (MH-47E).
- d. Completely clean the area around the lightening holes using Acetone 0-4-51 or equivalent.
- e. Visually inspect the area surrounding the lightening holes for cracks. Rotor hubs that are found to have cracks are non-serviceable. If cracks are found proceed to paragraph 9a.
- f. If no cracks are found, reinstall the locking beams in accordance with TM 55-1520-240-23, Task 5-41 (CH-47D), or TM 1-1520-252-223, Task 5-52 (MH-47E). Proceed to paragraph 9b for recurring inspection.

9. Correction Procedures.

- a. If any cracks are found in the hub, the rotor head assembly must be replaced with a rotor head assembly that is in compliance with this ASAM.
 - (1) Prepare aircraft for safe ground maintenance.
 - (2) Remove the rotor head assembly in accordance with TM 55-1520-240-23, Task 5-8 (CH-47D), or TM 1-1520-252-23, Task 5-9 (MH-47E).
 - (3) Refer to paragraph 10b for requisition instructions for replacement parts.

NOTE

Ensure that the replacement rotor head is in compliance with this ASAM prior to installation.

- (4) Install the replacement rotor head assembly in accordance with TM 55-1520-240-23, Task 5-9, (CH-47D), or TM 1-1520-252-23, Task 5-10 (MH-47E).

- (5) Refer to paragraph 10d for disposition instructions for non-compliant parts.

NOTE

Completion of eddy current inspections depend on the availability of probes. The probes are being sent to NDI personnel who actually support CH-47 aircraft only. Contact your NDI support technician. The 50 hour visual inspections will continue until probes are available.

- b. If no cracks are found, perform the inspection procedure described in paragraph 8 every 50 flight hours. An EDDY current inspection is required prior to installation and at next phased inspection interval and every phased inspection interval thereafter. Once the aircraft reaches a phased inspection interval and the EDDY current inspection is performed, the 50 hour visual inspection is no longer required.

10. Supply/Parts and Disposition.

- a. Parts Required. Items cited in paragraphs 6 and 7 may be required to replace defective items.
- b. Requisitioning Instructions. Requisition replacement parts using normal supply procedures. All requisitions shall use project code (CC 57-59) "X0D" (XRAY-ZERO-DELTA).

NOTE

Project code "X0D" 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. Acetone, technical, P/N 00-A-51, NSN 6810-00-184-4796.
- d. Disposition. Dispose of removed parts/components using normal supply procedures. All turn-in documents must include project code (CC 57-59) "X0D" (X-RAY-ZERO-DELTA). Non-compliant hubs will be scrapped at Depot level only.
- e. Disposition of Hazardous Material. N/A.

11. Special Tools and Fixtures Required. As required.

12. Application.

- a. Category of Maintenance. AVUM. Aircraft downtime will be charged to AVUM maintenance. Report aircraft non-mission capable maintenance (NMCM) while undergoing inspection and correction in accordance with this message.

b. Estimated Time Required-

- (1) For initial and recurring 50 hour visual inspection -
 - (a) Total of 2 man-hours using 1 person.
 - (b) Total of 2 hours downtime for one end item.
- (2) For EDDY current inspection -
 - (a) Total of 2 man-hours using 1 person.
 - (b) Total of 2 hours downtime for one end item.
- (3) For rotor head replacement -
 - (a) Total of 80 man-hours using 8 persons.
 - (b) Total of 10 hours downtime for one end time.

c. Estimated Cost Impact to the Field.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER	COST EACH
Head, Rotary Wing, FWD	145R2003-10	1615-01-391-4398	\$167,729
Head, Rotary Wing, AFT	145R2004-20	1615-01-391-4399	\$167,729

TOTAL COST PER AIRCRAFT (IF BOTH HUBS HAVE CRACKS) = \$335,458

- 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 – The following publications shall be changed as noted below to reflect this message. A copy of this message shall be inserted in the appropriate TM as authority to implement the change until the printed change is received.
 - (1) TM 55-1520-240-23, Aviation Unit and Aviation Intermediate Maintenance Manual, CH-47D Helicopter – Add the following requirement to conditional inspections – “Eddy current inspection of hubs with lightening holes is required. Prior to installation, inspect the area surrounding the vertical web”.
 - (2) TM 1-1520-252-23 Aviation Unit and Aviation Intermediate Maintenance Manual, MH-47E Helicopter – Add the following requirement to conditional inspections – “Eddy current inspection of hubs with lightening holes is required. Prior to installation, inspect the area surrounding the vertical web”.
 - (3) TM 55-1520-240-PM, CH-47D Helicopter Phased Maintenance Checklist. The following statement shall be added to area #6, aft rotor and pylon and area #7, forward rotor, crown, and tunnel, “Perform eddy current inspection of area surrounding the vertical web lightening holes on rotor hubs that contain such lightening holes”. This inspection shall be required at each phased maintenance interval.
 - (4) TM 1-1520-252-PM, MH-47E/AWC Helicopter Phased Maintenance Checklist. The following statement shall be added to area #6, aft rotor and pylon and area #7, forward rotor, crown, and tunnel, “Perform eddy current inspection of area surrounding the vertical web lightening holes on rotor hubs that contain such lightening holes”. This inspection shall be required at each phased maintenance interval.

13. References.

- a. DA PAM 738-751, 15 MAR 99.
- b. TM 55-1520-240-23, Aviation Unit and Aviation Intermediate Maintenance Manual, CH-47D Helicopter.
- c. TM 1-1520-252-23, Aviation Unit and Aviation Intermediate Maintenance Manual, MH-47E Helicopter.
- d. TM 55-1520-240-PM, CH-47D Helicopter Phased Maintenance checklist.
- e. TM 1-1520-252-PM, MH-47E/AWC Helicopter Phased Maintenance Checklist.

14. Recording and Reporting Requirements.

- a. Reporting Compliance Suspense Date (Aircraft). Upon entering requirements of this Technical Bulletin on DA Form 2408-13-1 on all subject mission design series (MDS) aircraft, Commanders will forward a priority message, datafax or e-mail to Commander, AMCOM, ATTN: AMSAM-SF-A (SOF Compliance Officer), Redstone Arsenal, AL 35898-5000, in accordance with 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 message and TB number, date of entry in DA Form 2408-13-1, the aircraft MDS and serial numbers of aircraft in numerical order.
- b. Task/Inspection Reporting Suspense Date (Aircraft). Upon completion of inspection, Commanders will forward a priority message to logistic point of contact in paragraph 16b. The report will cite this message and TB number, date of inspection, aircraft serial number, aircraft and component hours, and results of the inspection. Inspection and reports will be completed no later than 23 NOV 00.
 - c. Reporting Message Receipt (SPARES). N/A.
 - d. Task/Inspection Reporting Suspense Date (SPARES). N/A
 - (1) Materiel in Wholesale Depot Storage – N/A.
 - (2) Materiel in Retail Storage – N/A.
 - e. 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 (main rotor head, 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.

NOTE

ULLS-A units will use an "800" inspection number for the 50 hour main rotor head visual inspection.

(7) DA Form 2410, Component Removal and Repair/Overhaul Record. (Only if main rotor head is removed/replaced).

(8) DD Form 1574/DD Form 1574-1, Serviceable Tag/Label - Materiel (color yellow). Annotate remarks block with "Inspected serviceable in accordance with CH-47-01-ASAM-03 (TB 1-1520-240-20-131)."

(9) DD Form 1577-2/DD Form 1577-3, Unserviceable (repairable) Tag/Label - Materiel (color green). Annotate remarks block with "Unserviceable in accordance with CH-47-01-ASAM-03 (TB 1-1520-240-20-131)."

15. Weight and Balance. N/A.

16. Points of Contact.

a. Technical point of contact for this message is Mr. Steve Prosize, AMSAM-RD-AE-I-P-C, DSN 897-3377 or (256) 313-3377, datafax is DSN 897-4348 or (256) 313-4348. E-mail is "steve.prosize@redstone.army.mil".

b. Logistical point of contact for this message is Mr. Bill Olson, SFAE-AV-CH-L, DSN 897-3379 or commercial (256) 313-3379, datafax is ext 4348. E-mail is "william.olson@peoavn.redstone.army.mil".

c. Wholesale Materiel Point of contact (SPARES) - N/A.

d. Forms and Records point of contact is Ms. Ann Waldeck, AMSAM-MMC-RE-FF, DSN 746-5564 or commercial (256) 876-5564, datafax is DSN 746-4904. E-mail is "ann.waldeck@redstone.army.mil".

e. Safety points of contact are -

(1) Primary - Mr. Randall Rushing (SAIC), AMSAM-SF-A, DSN 897-2092 or commercial (256) 313-2092, datafax is DSN 895-2111 or commercial (256) 313-2111. E-mail is "randall.rushing@redstone.army.mil".

(2) Alternate - Mr. Russ Peusch, AMSAM-SF-A, DSN 788-8632 or commercial (256) 313-8632, datafax is DSN 897-2111 or commercial (256) 313-2111. E-mail is "russel.peusch@redstone.army.mil".

f. Foreign Military Sales recipients requiring clarification of action advised by this Technical Bulletin should contact -

(1) CW5 Joseph L. Wittstrom, Security Assistance Management, AMSAM-SA, DSN 897-0410 or commercial (256) 313-0410. E-mail is "wittstromjl@redstone.army.mil"

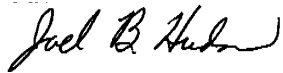
(2) Mr. Ronnie W. Sammons, AMSAM-SA-CS-NF, DSN 897-0408 or commercial (256) 313-0408, datafax is DSN 897-0411 or commercial (256) 313-0411. E-mail is "sammonsrw@redstone.army.mil".

g. After hours contact the AMCOM COMMAND OPERATIONS CENTER (COC) DSN 897-2066/7 or commercial (256) 313-2066/7. Huntsville, AL is GMT minus 6 hours.

By Order of the Secretary of the Army:

Official:

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



JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0031908

DISTRIBUTION:

To be distributed in accordance with Initial Distribution Number (IDN) 313953, requirements for TB 1-1520-240-20-131.

TB 1-1520-240-20-131

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: <ls-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.

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.

TEAR ALONG PERFORATED LINE

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SIGN HERE

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 decigrams = .035 ounce
 1 dekagram = 10 grams = .35 ounce
 1 hectogram = 10 dekagrams = 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 milliliters = .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: 078674-000