

# URGENT

TB 1-1520-240-20-134

## DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

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### ONE TIME INSPECTION OF AFT ROTOR HEAD ASSEMBLIES AND ENGINE CROSS SHAFT ADAPTER ASSEMBLIES ON ALL CH-47D AND MH-47D AIRCRAFT

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Headquarters, Department of the Army, Washington, D. C.  
9 January 2001

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**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THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.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 Aft Rotor Head Assemblies and Engine Cross Shaft Adapter Assemblies for MH-47E closed loop escapements in accordance with SOF CH-47-01-01, TB 1-1520-240-20-134 prior to next flight, but no later than 29 DEC 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 prior to next flight but no later than 29 DEC 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. Same as paragraph 1a.

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

d. Aircraft in Transit.

(1) Surface/Air Shipment. Same as paragraph 1a.

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

This TB supersedes USAAMCOM Message 221330Z DEC 00 SOF CH-47-01-01.

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e. Maintenance Trainers (Category A and B). Comply no later than 20 FEB 01.

f. Component/Parts in Stock at All Levels (Depot and Others). Including War Reserves – Upon receipt of this Technical Bulletin, 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 “SOF CH-47-01-01 (TB 1-1520-240-20-134), One Time Inspection of Aft Rotor Head Assemblies and Engine Cross Shaft Adapter Assemblies, Not Complied With.”

g. Components/Parts in Work: Depot and other Manitenance 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 prior to next flight but no later than 29 DEC 00.

**3. Reporting Compliance Suspense Date.** Report compliance in accordance with paragraph 14a no later than 12 JAN 01.

**4. Summary of the Problem.**

a. Two deficiency reports were received which indicated that a CH-47D unit was issued MH-47E closed loop items through the normal supply system. Certain MH-47E items are placed on the closed loop list because there is a reduction in finite life due to the MH-47E flight spectrum. A thorough review of all closed loop items has revealed that 36 engine cross shaft adapter assemblies (P/N 145D3500-16/ -17) and one aft rotor hub (P/N 114R2050-36) could have excaped into the CH-47D supply system.

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

c. The purpose of this Technical Bulletin is to:

(1) Require a one time inspection of all CH/HM-47D aircraft and stock for specific serial number aft rotor hub.

(2) Require a one time inspection of all CH/MH-47D aircraft and stock for specific serial numbered engine cross shaft adapter assemblies.

(3) Update records to reflect reduced MH-47E life.

(4) Verify correct life for adapters used for CH/MH-47D aircraft.

**5. End Items to be inspected.** All CH/MH-47D aircraft.

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

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Aft Rotor Head Assy	145R2004--(All)	All
Cross Shaft Adapter Assy	145D3500-16	1615-01-319-5091
Cross Shaft Adapter Assy	145D3500-17	1615-01-319-5092

**7. Parts to be Inspected.**

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Hub, Rotary Wing Head	114R2050-36	1615-01-198-7753

**8. Inspection Procedures.** If any of the discrepant parts listed in paragraph 8a, 8b, or 8c are identified, proceed to inspection procedures in paragraph 9.

a. Inspect aft rotor head assembly's DA Form 2408-16 and conduct visual inspection to determine if rotor hub P/N 114R2050-36, serial number UW3018 is installed. If installed, complete correction procedures in paragraph 9.

**NOTE**

While reviewing records, ensure the CH/MH-47D addapters life is properly indicated as 4581 hours.

b. Inspect aircraft DA Form 2408-16 and conduct visual inspection to determine if the following serial numbered cross shaft addapter assemblies, P/N 145D3500-16, which have been used on the MH-47E aircraft, are installed –

A-6055	A-6080	A-6088	A-6111	A-6117	A-6456
A-6487	A-6508	A-6550	A-6571	A-6592	A-6657
A-6664	A-669	A-6708	A-6732	A-6775	A-6786

c. Inspect aircraft DA Form 2408-16 and conduct visual inspection to determine if the following serial numbered cross shaft adapter assemblies, P/N 145D3500-17, which have been used on the MH-47E aircraft, are installed –

A-2705	A-3049	A-4001	A-4370	A-466	A-4731
A-4734	A-6098	A-6420	A-6421	A-6522	A-6566
A-6607	A-6611	A-6614	A-6631	A-6688	A-6692

d. If none of the discrepant parts identified in paragraph 8 above are installed, inspection is complete and red horizontal dash //--// may be cleared.

**9. Correction Procedures.**

a. If hub part number 114R2050-36, serial number UW3018 is installed, upgrade aircraft status to red "X" and contact technical point of contact in paragraph 16a for further instructions.

b. If any of the cross shaft adapter assemblies identified in paragraph 8 are installed, perform the following –

(1) Assign a new finite life of 3048 hours on the DA Form 2408-16, block 6J and recalculate replacement due time. If part exceeds this life, replace part.

(2) Annotate DA Form 2408-5-1 for this part stating "Finite Life (MOAT) has been reduced in accordance with SOF CH-47-01-01, TB 1-1520-240-20-134".

(3) Once the above correction procedures for adapter assemblies are completed, the red horizontal dash // – // will be cleared and compliance with this SOF will be noted.

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

a. Parts Required. Items cited in paragraphs 7 and 8 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) "X0I" (XRAY-ZERO-INDIA).

**NOTE**

Project code "X0I" (X-RAY-ZERO-INDIA) 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. N/A.

d. Disposition. Demilitarize/mutilate any part/component which does not meet inspection criteria.

e. Disposition of Hazardous Material. N/A.

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

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**12. Application.**

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

b. Estimated Time Required-

- (1) Inspection:
  - (a) Total of 6 man-hour using 2 persons.
  - (b) Total of 3 hours downtime for one end item.
- (2) Rotor Head Replacement:
  - (a) Total of 40 man-hours using 5 persons.
  - (b) Total of 8 hours downtime for one end item.
- (3) Adapter Replacement Each:
  - (a) Total of 9 man-hours using 3 people.
  - (b) Total of 3 hours down time per end item.

c. Estimated Cost Impact to the Field.

NOMENCLATURE	PART NO./ NSN	QUANTITY	COST EACH	TOTAL
Rotor Head, Aft	145R2004-20/ 1615-01-391-4399	1	\$167729.00	\$167729.00
Coupling, Drive Shaft	145D3500-16/ 1615-01-319-5091	2	\$8494.59	\$16989.18
Coupling, Drive Shaft	145D3500-17 1615-01-319-5092	2	\$3809.01	\$7618.02

**TOTAL COST PER AIRCRAFT = \$192336.02**

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 55-1520-240-23 shall be changed to reflect this Technical Bulletin. A copy of this Technical Bulletin shall be inserted in the appropriate TM as authority to implement the change until the printed change is received.

**13. References.**

- a. DA PAM 738-751, 15 MAR 99.
- b. TM 55-1520-240-23.
- c. TM 1-1500-328-23

**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 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, 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 Technical Bulletin 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 completion of inspection, units will forward a priority message to the logistics point of contact in paragraph 16b. The report will cite this Technical Bulletin 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 5 JAN 01.

- c. Reporting Message Receipt (SPARES).
  - (1) Materiel in Wholesale Depot Storage – N/A.
  - (2) Materiel in Retail Storage – Commanders and Facility Managers will report receipt of this Technical Bulletin by e-mail or datafax to the logistical point of contact listed in paragraph 16b no later than 29 DEC 00. Provide local point of contact.
- d. Task/Inspection Reporting Suspense Date (SPARES).
  - (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 (Aft Rotor Head Assy and Cross Shaft Adapter Assembly).
- (2) DA Form 2408-13, Aircraft Status Information Record.
- (3) DA Form 2408-13-1, Aircraft Inspection and Maintenance Record.
- (4) DA Form 2408-15, Historical Record For Aircraft.
- (5) DA Form 22408-16, Aircraft Component Historical Record.
- (6) DA Form 2410, Component Removal and Repair/Overhaul Record (if Aft Rotor Head or Cross Shaft Adapter is removed or replaced).
- (7) DD Form 1574/DD Form 1574-1, Serviceable Tag/Label – Materiel (color yellow). Annotate remarks block with "Inspected serviceable in accordance with SOF CH-47-01-01, TB 1-1520-240-20-134."
- (8) DD Form 1577/DD Form 1577-1, Unserviceable (Condemned) Tag/Label – Materiel (color red). Annotate remarks block with "Condemned in accordance with SOF CH-47-01-01, TB 1-1520-240-20-134 and mutilated in accordance with TM 1-1500-328-23."

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

**16. Points of Contact.**

- a. Technical point of contact is Mr. Larry T. Wieschhaus, AMSAM-RD-AE-I-P-C, DSN 897-3341 or commercial (256) 313-3341, datafax is DSN 897-4348 or commercial (256) 313-4348. E-mail is "larry.wieschhaus@redstone.army.mil".
- b. Logistical point of contact is Mr. Bill Olson, SFAE-AV-CH-L, DSN 897-3379 or commercial (256) 313-3379, datafax is DSN 897-4348. 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 897-2111 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) 842-8632, datafax is DSN 897-2111 or commercial (256) 313-2111. E-mail is "russel.peusch@redstone.army.mil".

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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 "joseph.wittstrom@redstone.army.mil"

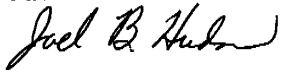
(2) Mr. Ronnie W. Sammons, AMSAM-SA-CS-NF, DSN 897-0408 or commercial (256) 313-0408, datafax is DSN 897-0411 or commercial (256) 313-0411. E-mail is "sammonsrw@redstone.army.mil".

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*  
0101005

**DISTRIBUTION:**

To be distributed in accordance with Initial Distribution Number (IDN) 313963, requirements for TB 1-1520-240-20-134.

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

## WEIGHT MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches  
 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches  
 1 Kilometer = 1000 Meters = 0.621 Miles

## WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces  
 1 Kilogram = 1000 Grams = 2.2 lb.  
 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

## LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces  
 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

## SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches  
 1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet  
 1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

## CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches  
 1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

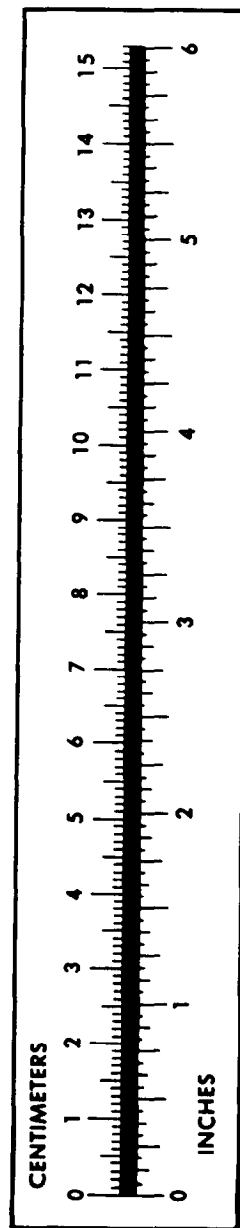
## TEMPERATURE

$5/9(^{\circ}\text{F} - 32) = ^{\circ}\text{C}$   
 212° Fahrenheit is equivalent to 100° Celsius  
 90° Fahrenheit is equivalent to 32.2° Celsius  
 32° Fahrenheit is equivalent to 0° Celsius  
 $9/5^{\circ}\text{C} + 32 = ^{\circ}\text{F}$

## APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
its	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
ometers per Liter	Miles per Gallon	2.354
ometers per Hour	Miles per Hour	0.621



**PIN: 078764-000**