

URGENT

\* TB 1-1520-240-20-97

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DEPARTMENT OF THE ARMY TECHNICAL BULLETIN  
INSPECTION AND LUBRICATION OF THE FLIGHT  
CONTROL ROD END BEARINGS IN THE FLIGHT  
CONTROL CLOSET AREA  
FOR  
ALL CH-47D, MH-47D, AND MH-47E AIRCRAFT

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Headquarters, Department of the Army, Washington, D. C.  
12 May 1997

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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THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.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**

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 is completed. The affected aircraft shall be inspected as soon as practical but no later than the task/inspection suspense date.

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 1a.

d. Aircraft in Transit. Same as paragraph 1a.

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

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

e. Maintenance Trainers (Category A and B). N/A.

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

(1) Retail Stock N/A

(2) Wholesale Stock. N/A

g. Components/Parts in Work. N/A

**2. Task/Inspection Suspense Date.** Next scheduled phase inspection.

\* This TB supersedes USAATCOM Message 221759Z APR 97 (CH-47-97-ASAM-08)

**3. Reporting Compliance Suspense Date.** No later than 14 May 1997 per paragraph 14a of this TB.

**4. Summary of the Problem.**

a. TB 1-1520-240-20-77 was issued to have specific rod end bearings inspected and lubricated at the next phase and every 1st and 3rd phase thereafter. Since this TB, several bearings in the closet area have been identified as also requiring lubrication.

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

c. The purpose of this TB is to inform the user of the requirement to inspect and lubricate the rod end bearing grease fittings in the flight control closet area. The bearings shall be lubricated at the next phase and then at every 1 st and 3rd phase interval for the CH-47D. The MH-47E and MH-47D shall inspect and lubricate the bearings at every phase inspection.

**5. End Items to be Inspected.** All CH-47D, MH-47D, and MH-47E aircraft.

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

a. CH-47D and MH-47D, TM 55-1520-240-23P-3, FIGURE 364:

NOMENCLATURE	PART NUMBER	NSN	ITEM
Connecting Link, RIG	145CS360-1	3040-01-118-6277	12
Actuator Electro-Mech	145CS100-5	1680-01-118-5607	16
Connecting Link, RIG	145C1415-1	3040-01-117-7369	17

b. MH-47E, TM 1-1520-252-23P-1, FIGURE 11-2:

NOMENCLATURE	PART NUMBER	NSN	ITEM
Connecting Link, RIG	145CS360-1	3040-01-118-6227	13
Actuator Electro-Mech	45CS100-5	1680-01-118-5607	17
Connecting Link, RIG	145C1415-1	3040-01-117-7369	18

**7. Parts to be Inspected.**

a. CH-47D and MH-47D, TM 55-1520-240-23P-3:

NOMENCLATURE	PART NUMBER	NSN	FIGURE	ITEM
Bearing, Rod End	114CS103-4	3110-01-096-0895	364	14
Bearing, Roller, Rod End	SM4-4C	3110-01-025-0853	364	19
Bearing, Rod End	114CS103-4	3110-01-096-0895	367	6

b. MH-47E, TM 1-1520-252-23P-1:

NOMENCLATURE	PART NUMBER	NSN	FIGURE	ITEM
Bearing, Rod End	114CS103-4	3110-01-096-0895	11-4	15
Bearing, Roller, Rod End	SM4-4C	3110-01-025-0853	11-4	20
Bearing, Rod End	114CS103-4	3110-01-096-0895	11-7	6

**8. Inspection Procedures.**

a. At the next phase inspection, inspect and lubricate rod end bearings in the closet area in accordance with TM 55-1520-240-23-9, Task 11-9 and 11-3.

b. The MH-47E and MH-47D shall also incorporate the inspection and lubrication requirements for bearings listed in TM 1-1520-252-23-12, Task 11-12.

**NOTE**

**The MH-47E and MH-47D shall perform the inspection and lubrication every phase.**

**9. Correction Procedures.** Annotate on DA Form 2408-18 that the paragraph 8 inspection procedures are due at the next phase inspection. Carry this information on the DA Form 2408-18 until the PM phase manuals carry the inspection.

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

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

**12. Application.**

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

b. Estimated Time Required.

(1) Total of .5 manhours using one person.

(2) Total of .5 manhours downtime for one end item.

c. Estimated Cost Impact of Stock Fund Items 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.

(1) TM 55-1520-240-PM will be changed to add the following inspection as 10.xx: Inspect and Lubricate Rod End Bearings Located in the Flight Control Closet Area.

(2) TM 55-1502-240-23-9, Task 11-3, Step 2 will be changed to read: Rod end bearings located in the flight control closet area, forward pylon, mixing complex, ...every 1st and 3rd phase inspection.

(3) TM 55-1520-240-23-9, Task 11-9, Change the note between step 1b and 1c as follows:

Rolling element bearings are located in the 1st and 2nd stage mixing units, flight control closet area, forward pylon...only.

(4) The following additions will be made in the MH-47E phase manual; aft rotor and pylon, Area #6: Inspect and lubricate rod end bearings located in the aft pylon and aft fuselage IAW TM 1-1520-252-23-12, Task 11-12 and 11-2.1.; forward pylon, crown and tunnel, Area #7: Inspect and lubricate rod end bearings located in the forward rotor, crown, and tunnel area IAW TM1-1520-252-23-12, Task 11-12 and 11-2.1., Cockpit Area 10: Inspect and lubricate rod end bearings located in the flight closet area IAW TM 1-1520-252-23-12, Task 11-12 and 11-2.1.

(5) Change TM 1-1520-252-23-12 as follows: Add a new task that is identical (except for task references) to Task 11-3 from TM 55-1520-240-23-9 titled, Lubricate Flight Control System Rod End Bearing (Antifriction).

**13. References.**

a. TM 55-1520-240-23 series.

b. TM 1-1520-252-23 series.

**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). N/A.
- c. Reporting Compliance Suspense Date (Spares). N/A.
- d. Task/Inspection Reporting Suspense Date (Spares). N/A.
- e. The following forms are applicable and are to be completed in accordance with DA PAM 738-751, 15 June 1992:
  - (1) DA Form 2408-13, Aircraft Status Information Record.
  - (2) DA Form 2408-13-1, Aircraft Inspection and Maintenance Record.
  - (3) DA Form 2408-15, Historical Record for Aircraft.
  - (4) DA Form 2408-18, Equipment Inspection List (ULLS-A users will use an 800 inspection number until the inspections are included in the PM phase manuals.

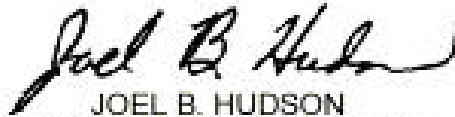
**15. Weight and Balance.** N/A.

**16. Points of Contact.**

- a. Technical point of contact for this TB is Mr. Curtis Stevens, AMSAT-R-ECC, DSN 693-6679 or commercial (314)263-6679. His data fax number is DSN 693-1485 or commercial (314)263-1485.
- b. Logistical point of contact for this TB is Mr. Norm Huston, AMCPM-CH-L, DSN 693-1415 or commercial (314)263-1415. His data fax number is DSN 693-1485 or commercial (314)263-1485.
- 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. Safety point of contact for this TB is Mr. Dave Scott. AMSAT-R-X, DSN 693-2045/2085 or commercial (314)263-2045/2085.
- e. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact CW5 Jay Nance or Mr. Ron Van Rees, AMSAT-D-S, DSN 693-7844/3216 or commercial (314)263-7844/3216. Datafax is DSN 693-2917. (St. Louis is GMT minus 6 hrs.)
- f. After hours contact ATCOM Command Operations Center (COC) DSN 693-2066/7 or commercial (314)263-2066/7.

By Order of the Secretary of the Army:

Official:



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**IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.**

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## 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 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 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

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
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
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