

URGENT

TB 1-1520-240-20-145

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INSPECTION OF FORWARD PIVOTING ACTUATOR TO SWASHPLATE ATTACHMENT HARDWARE FOR PROPER INSTALLATION ON ALL CH-47D, MH-47D AND MH-47E AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
12 February 2002

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NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. **Priority Classification.** Urgent

NOTE

In accordance with AR 95-1, paragraph 6-6A/6-14A, 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 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 the forward pivoting actuator upper attachment bearing in accordance with CH-47-02-04 (TB 1-1520-240-20-145) prior to next flight." Clear the red horizontal dash // - // entry when the procedures in accordance with paragraphs 8 and 9 are completed. 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 Maintenance -

(1) Aircraft in AVUM, AVIM, or Depot Level Maintenance - Commanders and Facility Managers will not issue aircraft until they are in compliance with this Technical Bulletin.

(2) Aircraft at Contractor Facility - Boeing will inspect DD 250 aircraft prior to those aircraft departing for ferry to final destination.

c. Aircraft in Transit -

NOTE

For aircraft away from home station: After visual inspection for residue, and/or swashplate damage, check for looseness with hydraulic power applied. Have helper move thrust control up and down and observe the actuator to swashplate connection for looseness or play. If residue, and/or swashplate damage, and/or looseness is detected, this safety of flight message procedure shall be performed at the aircraft's present location.

If residue, and/or swashplate damage, and/or looseness is not detected, this message authorizes a one time flight, with intermediate stops, to return to the nearest secured maintenance facility/home station.

- (1) Surface/Air Shipment - Same as paragraph 1 a.
- (2) Ferry Status - Same as paragraph 1 a.

d. Maintenance Trainers (Category A and B). Inspect the forward pivoting actuator upper attachment bearing in accordance with CH-47-02-04 (TB 1-1520-240-20-145) no later than 8 JUN 02.

e. Component/Parts in Stock at All Levels (Depot and Others) including War Reserves -

- (1) Wholesale Stock -N/A.
- (2) Retail Stock - Upon receipt of this Technical Bulletin, Commanders and Facility Managers maintaining retail stock at Installation level and below shall contact the supported aviation unit to perform the procedures required in accordance with paragraphs 8 and 9 on suspect materiel. Dispose of discrepant materiel in accordance with paragraph 10. Report compliance with this Technical Bulletin in accordance with 14c (2) no later than 22 FEB 02.

f. Components/Parts in Work (Depot Level and Others) - Depot and other Maintenance Activity Commanders will ensure items listed in paragraph 6 are not issued until they are in compliance with this Technical Bulletin.

2. Task/Inspection Suspense Date. Prior to next flight but no later than 22 FEB 02.

3. TAMMS Reporting Compliance Suspense Date. Report compliance in accordance with paragraph 14a (1) no later than 12 FEB 02.

4. Summary of the Problem.

a. A quality Deficiency Report has been received from the field documenting that the wrong bearing was installed in the forward pivoting actuator upper attachment. The apparent cause was an error in the parts manual; while this wrong bearing fits properly in the actuator, its inner diameter is too large for the mating bolt.

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

c. The purpose of this Technical Bulletin is to require a one time inspection of all H-47 forward pivoting actuator upper attachment bearings for the proper part.

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

6. Assembly Components to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
CYLINDER, FWD ACTUATING DUAL PIVOTING	145H6600-19	1650-01-304-9016

7. Parts to be Inspected. -

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
CYLINDER, ACTUATING DUAL PIVOTING:		
BEARING-PLAIN SELF-ALIGNING	145HS001-1	3120-01-111-0693
PIN, COTTER	MS24665-304	5315-00-241-7330
NUT, PLAIN	AN320-8	5310-00-176-8112
WASHER, PLAIN	NAS1149FO863P	5310-01-396-8392
BOLT ASSEMBLY	114R3650-3	1615-00-003-1146
RING ASSEMBLY, SWASH-PLATE:		
RING	414R3351-2	1650-01-438-5361
BUSHING	114R3116-54	3120-01-066-5380
BUSHING, SLEEVE	145R3116-1	3120-01-129-7648

8. Inspection Procedures.

- a. Prepare aircraft for safe ground maintenance.
- b. Per Task 7-124 of reference 13. B (CH- / MH-47D), and Task 7-146 of reference 13. C (MH-47E), remove forward pivoting actuator to swashplate bolt.

NOTE

Maintainers were installing AFT pivoting actuator bearing in the forward actuator. The suspected wrong part is bearing P/N 145HS001-2. Its outer diameter (OD) is the same as P/N 145HS001-1, but the inner diameter (ID) is different. The -2 inner diameter is 0.6250 + .0000 /- .0005; the correct -1 inner diameter is 0.5000 + .0000 /- .0005.

- c. Measure inner diameter of bearing on pivoting actuator at swashplate attachment point.
 - (1) If bearing ID equals .625 inches, proceed to paragraph 8d.
 - (2) If bearing equals ID .5 inches reconnect forward pivoting servo cylinder per Task 7-131 of reference 13.B (CH-/MH-47D), and Task 7-154 of reference 13.C (MH-47E). Inspection is complete. Proceed to paragraph 9d.

NOTE

For reference 13. D, Figure 244, Item No. 95, and reference E, Figure 7-48, Item No. 95, the part number listing is incomplete and the Usable On Code (UOC) is incorrect. The part number (s) and description and UOC, for both references, should read:

ITEM NUMBER	PART NUMBER	DESCRIPTION AND UOC
95	145HS001-1	BEARING, PLAIN, SELF U/W FWD PIVOTING ACTUATOR PN 145H6600-19
95	145HS001-2	BEARING, PLAIN, SELF U/W AFT PIVOTING ACTUATOR PN 145H6600-20

- d. Remove forward pivoting servo cylinder per Task 7-124 of reference 13.B (CH-/MH-47D), and Task 7-146 of reference 13.C (MH-47E).

e. Inspect the following swashplate parts for condition in accordance with Task 5-126, reference 13.B (CH-47D/MH-47D), and Task 5-180, reference 13. C, (MH-47E);

NOMENCLATURE	PART NUMBER
RING	414R3351-2
BUSHING	114R3116-54
BUSHING, SLEEVE	114R3116-1

(1) If any of the parts in 8e above do not pass inspection, proceed to paragraph 9a.

(2) If parts pass inspection, proceed to paragraph 9b.

9. Correction Procedures.

a. If any of the parts in paragraph 8e above do not pass inspection:

(1) Remove the forward swashplate assembly per Task 5-116, Ref. 13.B (CH-47D/MH-47D), and Task 5-168, Ref. 13.C (MH-47E).

(2) Install a replacement swashplate assembly per Tasks 5-131 and 5-132, Ref. 13.B (CH-47D/MH-47D), and Tasks 5-186 and 5-187, Ref. 13.C (MH-47E).

b. Remove and discard P/N 145HS001-2 bearing per Task 7-129 of Ref. B and Task 7-151 of Ref. C.

c. Using a 10X magnifying glass, visually inspect the forward pivoting actuator to include housing and bearing retainers for damage and abnormal wear. Also, check specifically for rod end hole elongation. Diameter should not exceed 1.1868 inches.

(1) If no damage or abnormal wear is noted, install new 145HS001-1 bearing (inspect bearing ID for proper dimension) per Task 7-129 of reference B and Task 7-151 of reference C. Reinstall forward pivoting actuator (P/N 145H6600-19) per Task 7-131 of Ref. B. (CH-47D/MH-47D), and Task 7-154 of Ref. C (MH-47E). Proceed to paragraph 9.D.

(2) If damage or abnormal wear exists, replace actuator and install new forward pivoting actuator (P/N 145H6600-19) per Task 7-131 of reference B. (CH-47D, MH-47D), and Task 7-154 of reference C. (MH-47E).

WARNING

DO NOT REUSE THE UPPER ATTACHMENT FASTENING HARDWARE REMOVED IN STEP 9C (1) AND (2) ABOVE.

USE NEW FASTENER HARDWARE:

PIN, COTTER	MS24665-304
NUT, PLAIN	AN320-8
WASHER, PLAIN	NAS1149F0863P
BOLT ASSEMBLY	114R3650-3

NOTE

For TM 55-1520-240-23P, Figure 177, Item No. 94, the Part Number listing is incorrect. The Part Number should read:
 ITEM NO. 94 PART NUMBER 414R3351-3

d. The red horizontal dash // - // entry per paragraph 1a will be cleared.

10. Supply/Parts and Disposition.

NOTE

HQDA-ODCSOPS will prioritize units and repair parts distribution in a separate, follow on message.

- a. Parts Required - Items cited in paragraph 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) "X1 N", (X-RAY-ONE-NOVEMBER).

NOTE

Project code "X1 N", is required to track and establish a data base of stock fund expenditures incurred by the field as a result of ASAM/SOF actions.

- c. Bulk and Consumable Materials -

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
PIN, COTTER	MS224665-304	5315-00-241-7330
NUT, PLAIN	AN320-8	5310-00-176-8112
WASHER, PLAIN	NAS1149F0863P	5310-01-396-8392
BUSHING	114R3116-54	3120-01-066-5380
BUSHING, SLEEVE	145R3116-1	3120-01-129-7648

- d. Disposition - Dispose of removed parts/components using normal supply procedures. All turn-in documents must include project code (CC 57-59) "X 1 N" (X-RAY-ONE-NOVEMBER).
- e. Disposition of Hazardous Material - N/A.

11. Special Tools and Fixtures Required. N/A.

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 Technical Bulletin. Report aircraft non-mission capable supply (NMCS) while waiting for parts in accordance with this Technical Bulletin.

- b. Estimated Time Required-
 - (1) Time to complete Inspection -
 - (a) Total of 9 man-hours using 3 persons.
 - (b) Total of 3 hours downtime for one end item
 - (2) Time for Repair/Replacement -
 - (a) Total of 60 man-hours using 6 persons.
 - (b) Total of 10 hours downtime for one end item.

NOTE

MOC and Test Flight required.

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c. Estimated Cost Impact to the Field.

NOMENCLATURE	PN/NSN	QUANTITY	COST EACH	TOTAL
BEARING-PLAIN SELF-ALIGNING	145HS001-1/ 3120-01-111-0693	1	\$28.36	\$28.36
BOLT ASSEMBLY	114R3650-3 1615-00-003-1146	1	\$72.95	\$72.95
SERVO CYLINDER	145H6600-19 1650-01-304-9016	1	\$8603.08	\$8603.08
SWASHPLATE FWD	145R3551-19 1615-01-473-4376	1	\$133,378.00	\$133,378.00

TOTAL COST PER AIRCRAFT = \$142,082.39

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 - 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.

(1) TM 55-1520-240-23P, Figure 244, Item No. 95, the part number listing is incomplete and the usable on code (UOC) is incorrect. The part number (s) and description and UOC, should read:

ITEM NO.	PART NUMBER	DESCRIPTION AND UOC
95	145HS001-1	BEARING, PLAIN, SELF U/W FWD P/N 145H6600-19
95	145HS001-2	BEARING, PLAIN, SELF U/W AFT P/N 145H6600-20

(2) TM 1-1520-252-23P, Figure 7-48, Item No. 95, the part number listing is incorrect The part number (s) and description and UOC, should read:

ITEM NO.	PART NUMBER	DESCRIPTION AND UOC
95	145HS001-1	BEARING, PLAIN, SELF U/W FWD P/N 145H6600-19
95	145HS001-2	BEARING, PLAIN, SELF U/W AFT P/N 145H6600-20

(3) Reference 13.D, Figure 177, Item No. 94, the part number listing will be changed to 414R3351-3.

13. References.

- a. DA PAM 738-751, 15 MAR 99..
- b. TM 55-1520-240-23.
- c. TM 55-1520-240-23P.
- d. TM 1-1520-252-23.
- e. TM 1-1520-252-23P.

14. Recording and Reporting Requirements.

a. Aircraft –

(1) TAMMS Reporting Compliance Suspense Date – Upon entering requirements of this Technical Bulletin on DA Form 2408-13-1 for all effected 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, no later than date specified in paragraph 3. 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 (CH-47-02-04, TB 1-1520-240-20-145), 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 - Upon completion of inspection, Commanders will forward a priority message to the Logistical point of contact listed in paragraph 16b. The report will cite this message and TB number (CH-47-02-04, TB 1-1520-240-20-145), date of inspection, aircraft serial number, aircraft and component hours, and results of the inspection. Inspection and reports will be completed no later than date specified in paragraph 2.

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

c. Retail Spare Parts/Assemblies – N/A.

(1) Reporting Message Receipt – N/A.

(2) Task/Inspection Reporting Suspense – Commanders and Facility Managers will report inspection results to the Logistical point of contact in paragraph 16b no later than date specified in paragraph 1e (2). Report the quantity inspected by condition code and the resulting condition code. Report by email or datafax and provide local point of contact.

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 (FWD Pivoting Actuator).

(2) DA Form 2408-13, Aircraft Status Information Record.

(3) DA Form 2408-13-1, Aircraft Inspection and Maintenance Record.

(4) DA Form 2408-16, Aircraft Component Historical Record. (Only if swashplate assembly or pivoting actuator is removed/replaced).

(5) DA Form 2410, Component Removal and Repair/Overhaul Record. (Only if swashplate assembly or pivoting actuator is removed/replaced).

(6) DD Form 1577-2/DD Form 1577-3, Unserviceable (reparable) Tag/Label – Materiel (color green). Annotate remarks block with “Unserviceable in accordance with CH-47-02-04, (TB 1-1520-240-20-145).

15. Weight and Balance. N/A.**16. Points of Contact.**

a. Technical point of contact for this Technical Bulletin is Mr. Mike Moore, AMSAM-RD-AE-I-P-C, DSN 897-3359 or commercial (256) 313-3359, datafax is DSN 897-4348 or commercial (256) 313-4348. E-mail is “mike.moore@peoavn.redstone.army.mil”.

b. Logistical point of contact for this Technical Bulletin is Mr. Bill Olson, SFAE-AV-CH-L, DSN 897-3379 or commercial (256) 313-3379, datafax is 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 for this Technical Bulletin 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”.

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e. Safety Points of Contact are -

(1) Primary - Mr. Frank Rosebery (SAIC), AMSAM-SF-A, DSN 788-8631 or commercial (256) 842-8631, datafax is DSN 897-2111 or commercial (256) 313-2111. E-mail is "frank.rosebery@redstone.army.mil".

(2) Alternate - Mr. Russell 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 "russell.peusch@redstone.army.mil".

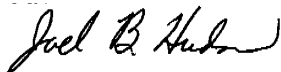
f. Foreign Military Sales recipients requiring clarification of action advised by this Technical Bulletin should contact Mr. Ronnie Sammons, AMSAM-SA-CS-NF, DSN 897-6856 or commercial (256) 313-6856, datafax is DSN 897-6630 or commercial (256) 313-6630. E-mail is "ronnie.sammons@redstone.army.mil".

g. After hours contact the AMCOM COMMAND OPERATIONS CENTER (COC) DSN 897-2066/7 or commercial (256) 313-2066/7.

By Order of the Secretary of the Army:

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

Official:



JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
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DISTRIBUTION:

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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.