URGENT

TB 1-1520-240-20-128

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

MANDATORY INSPECTION OF FORWARD YOKE SHAFT, PART NUMBER 145C3051–1 FOR CORROSION, ON ALL CH–47D, MH–47D AND MH–47E AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
5 October 2000

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THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.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 forward yoke shaft in accordance with CH–47–00–ASAM–08 (TB 1–1520–240–20–128) within the next 10 flight hours, but no later than 13 OCT 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 13 OCT 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 Technical Bulletin.

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

d. Aircraft in Transit.

(1) Surface/Air Shipment. Inspect at final destination within 10 flight hours or 14 days of arrival.

This TB supersedes USAAMCOM Message 281332Z SEP 00 CH–47–00–ASAM–08.

(2) Ferry Status.

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

(b) Boeing will inspect DD 250 aircraft prior to those aircraft departing for ferry to final destination.

e. Maintenance Trainers (Category A and B). Comply no later than 12 JAN 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 paragraph 7 is annotated to read "CH–47–00–ASAM–08 (TB 1–1520–240–20–128), Inspection of Forward Yoke Shaft, Not Complied With".

(1) Wholesale Stock . N/A.

(2) Retail Stock. N/A.

g. Components/Parts in Work (Depot Level and Others). N/A.

2. **Task/Inspection Suspense Date.** Complete the inspection in accordance with paragraph 8 within the next 10 flight hours but no later than 13 OCT 00 and report in accordance with paragraph 14b.

3. **Reporting Compliance Suspense Date**. Report compliance in accordance with paragraph 14a no later than 20 OCT 00.

4. **Summary of the Problem**.

a. A category I deficiency report was received which reported corrosion on the inside surface of the forward yoke shaft, part number 145C3051–1. The inside surface is required to be painted with primer. Inspection revealed that the primer only covered the first 3 or 4 inches of the inside bore with the unpainted portion exhibiting corrosion.

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 forward yoke shafts, part number 145C3051–1.

(2) Apply CPC to shafts found to have corrosion.

(3) Add forward yoke shaft inspection to phase maintenance manual.

(4) Replace forward yoke shafts that exhibit signs of corrosion no later than 31 DEC 01.

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

6. **Assembly Components to be Inspected**. N/A.

7. **Parts to be Inspected**.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Forward Yoke shaft	145C3051–1	3040–01–116–4323

8. **Inspection Procedures**.

a. Use a borescope, if available, to determine if the entire inside surface of the shaft is painted or if there is evidence of corrosion. The paint will be yellow/green in color. Use of a borescope should allow this inspection to be performed without removing the shaft from the aircraft. If a borescope is not available, use a small flashlight to perform the inspection. To properly inspect the shaft, you must view all of the interior surfaces including the bottom of the inside diameter. If unable to properly inspect the shaft while installed on the aircraft, remove the shaft in accordance with TM 55–1520–240–23, Task 11–212 or TM 1–1520–252–23, Task 11–230 to perform inspection.

(1) If the entire inside surface of the shaft is painted and there is no evidence of corrosion, no further inspections are required until phase inspection. If the shaft was removed from the aircraft to facilitate

inspection, reassemble in accordance with TM 55–1520–240–23, Task 11–217 or TM 1–1520–252–23, Task 11–235. Clear the red horizontal dash // **–** // status symbol for the aircraft.

(2) If the entire inside surface of the shaft is not completely painted or there is evidence of corrosion, the shaft will have to be treated with a corrosion preventive compound (CPC) and replaced in accordance with paragraph 9.

9. **Correction Procedures.**

a. If the entire inside surface of the shaft is not painted or there is evidence of corrosion, the shaft internal diameter shall be treated with a CPC in accordance with MIL–C–16173 Grade 4 or MIL–C–81309 Type II. These CPCs are thin transparent films which can be applied by pressurized spray or pump bottle. Follow the application of these sprayed on CPCs with the application of MIL–C–16173 Grade 2 which is more durable. This CPC has a grease like consistency and needs to be applied by using a small brush with a long handle.

b. After the corection procedures in paragraph 9a are completed, make the following entry on the DA Form 2408–13–1. Enter a red Diagonal\\ **/** \\ status symbol with the following entry:"Replace forward yoke shaft in accordance with CH–47–00–ASAM–08 (TB 1–1520–240–20–128) no later than 31 DEC 2001." The red horizontal dash // **–** // entry "Inspect forward yoke shaft in accordance with CH–47–00–ASAM–08 (TB 1–1520–240–20–128)" may then be cleared.

c. Requisition a new forward yoke shaft per paragraph 10 for each shaft in which the CPCs were applied.

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

a. Parts Required. Items cited in paragraph 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) "X05", (X-RAY-ZERO-FIVE).

NOTE

Project code "X05", 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.

(1) Corrosion–preventive compound, water displacing, ultra–thin film, type II, class 2, 16 oz. aerosol spray, MIL–C–81309, NSN 8030–00–938–1947 or corrosion–preventive compound, solvent cutback, cold application, grade 4, gallon, MIL–C–16173, NSN 8030–00–062–5866.

(2) Corrosion–preventive compound, cold application, grade 2, MIL–C–16173, 8030–00–244–1297.

d. Disposition. Demilitarize/mutilate in accordance with TM 1–1500–328–23 any part/component which does not meet inspection criteria.

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.

b. Estimated Time Required-

(1) For on–aircraft inspection/CPC application:

(a) Total of 1 man–hours using 1 person.

(b) Total of 1 hour downtime for one end item.

(2) For off–aircraft inspection/CPC application:

(a) Total of 36 man–hours using 3 persons.

(b) Total of 12 hours downtime for one end item.

(3) For shaft replacemnt:

(a) Total of 36 man–hours using 3 persons.

(b) Total of 12 hours downtime for one end item.

c. Estimated Cost Impact to the Field.

NOMENCLATURE	PN/NSN	QUANTITY	COST EACH	TOTAL
SHAFT, SHOULDERED	145C3051-1/ 3040-01-116-4323	1	$636.00	$636.00
PIN, COTTER	MS24665-376/ 5315-00-236-8362	1	$.04	$.04
NUT, SELF–LOCKING	MS17826-12/ 5310-00-047-2965	1	$2.86	$2.86
WASHER, FLAT	NAS1149D1290K/ 5310-01-137-8983	1	$.38	$.38
WASHER, RE-CESSED	NAS143-20C/ 5310-00-149-9123	1	$.62	$.62
BUSHING, SLEEVE	NAS75-20-206/ 3120-01-156-7812	1	$12.02	$12.02

TOTAL COST PER AIRCRAFT = $651.92

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 thisTechnical 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.

(1) TM 55-1520-240-PM, CH–47D Helicopter Phase Maintenance Checklist. Add a requirement to area #7, forward rotor, crown, and tunnel, to inspect for corrosion on the inside diameter of the forward yoke shaft. This inspection shall be required at each phase maintenance inspection.

(2) TM 1-1520-252-PM, MH–47E/AWC Helicopter Phase Maintenance Checklist. Add a requirement to area #7, forward rotor, crown, and tunnel, to inspect for corrosion on the inside diameter of the forward yoke shaft. This inspection shall be required at each phase maintenance inspection.

(3) TM 55-1520-240-23, Aviation Unit and Aviation Intermediate Maintenance Manual, CH–47D Helicopter. Add a Task describing the visual inspection of the inside diameter of the forward yoke shaft. No corrosion is allowed.

(4) TM 1-1520-252-23, Aviation Unit and Aviation Intermediate Maintenance Manual, MH–47E Helicopter. Add a Task describing the visual inspection of the inside diameter of the forward yoke shaft. No corrosion is allowed.

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 1–1500–328–23, Aeronautical Equipment Maintenance Policies and Procedures, 30 JUl 99.

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, 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 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, Commanders will forward a priority message to the logistics point of contact in paragraph 16b. The report will cite this message Technical Bulletin number, date of inspection, aircraft serial number, aircraft hours, and results of the inspection. Inspection and reports will be completed no later than 20 OCT 00.

c. Reporting Message Receipt (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 Mar 99.

NOTE

ULLS–A users will use applicable "E" Forms.

(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) DD Form 1577/DD Form 1577-1, Unserviceable (condemned) Tag/Label – Materiel (color red). Annotate remarks block with "Condemned in accordance with CH-47-00-ASAM-08 (TB 1-1520-240-20-128) 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 for this TB is Mr. Larry 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 for this TB is Mr. William 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. Forms and Records point of contact for this TB 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".

d. 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. Russell Peusch, AMSAM-SF-A, DSN 788–8632 or 897–2091, commercial (256) 842-8632 or (256) 313–2091, datafax is DSN 897-2111 or commercial (256) 313–2111. E–mail is "russell.peusch@redstone.army.mil".

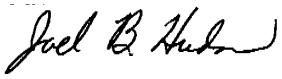
e. Foreign Military Sales recipients requiring clarification of action advised by this message should contact CW5 Joseph L. Wittstrom, Security Assistance Management, AMSAM-SA, DSN 897-0410 or commercial (256) 313-0410. E–mail is "wittstromjl@redstone.army.mil" or Mr. Ronnie W. Sammons, AMSAM-SA-CS-NF, 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". Huntsville, AL is GMT minus 5 hours.

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

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
0027804

DISTRIBUTION:

To be distributed in accordance with Initial Distribution Number (IDN) 313944, requirements for TB 1-1520-240-20-128.

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.

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER	SIGN HERE

TEAR ALONG PERFORATED LINE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

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 decigram = .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: 078530-000