URGENT

***TB 1-1520-237-20-184**

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

ONE TIME INSPECTION OF TAIL DRIVE FLEXIBLE COUPLING CONNECTIONS UH-60A, EH-60A, UH-60L, MH-60K AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
31 October 1996

NOTE
THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED

1. Priority Classification.

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 inspection 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. Failure to comply with the requirements of this message within the time frame will cause the status symbol to be upgraded to a red X'".

b. Aircraft in Depot Maintenance. Aircraft will not be issued until compliance with this TB has been completed.

c. Aircraft Undergoing Maintenance. Aircraft will not be released for operational use until compliance with this TB has been completed.

d. Aircraft in Transit. Inspect within 10 hours /14 days or at final destination whichever occurs first.

e. Maintenance Trainers (Category A and B). Comply within 30 days of receipt of this TB.

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

2. Task/inspection Suspense Date. Within 10 hours/14 days.

3. Reporting Compliance Suspense Date. No later than 14 November 1996, per paragraph 14a of this TB.

'This TB supersedes USAATCOM Message 231535Z Oct 96, (UH-60-97-ASAM-02).

4. Summary of the Problem.

a. A Black Hawk experienced a loss of tail rotor drive due to failure of the section I tail drive shaft. The drive shaft was incorrectly attached directly to the main transmission tail takeoff flange. The failed drive shaft was bolted directly to the tail takeoff flange, instead of the flexible coupling which is then bolted (using three different bolts) to the tail takeoff flange. The installation procedures for the section I tail rotor drive shaft references the wrong paragraph for removing and replacing the flex coupling. This is not believed to be a contributing factor, but manual changes are being made to reference the correct paragraph.

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

c. The purpose of this TB is to:

(1) Perform a one time inspection of all tail rotor driveshaft flexible coupling connections to insure proper installation.

(2) To make manual changes to correct an erroneous reference.

5. End Items to be Inspected. All UH-60A/EH-60AIUH-60LIMH-60K aircraft. Serial Numbers 77-22716 through 96-26680. Aircraft serial numbers 96-26681 and subsequent will be inspected/corrected by contractor during production and therefore records for aircraft serial numbers 96-26681 and subsequent will not require identification of this action.

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

7. Parts to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Flexible Coupling	70361-05011-101	5365-01-092-7491
Bolt (Flange/Coupling)	NAS626H8	5306-00-947-2178
	SS5111-06-008	5306-01-097-4948
Bolt (Shaft/Coupling)	SS5111-06-006	5306-01-097-4947
	SS5111 -H06-006	5306-01-159-5725

8. Inspection Procedures.

a. Open oil cooler and APU access doors and open tail drive shaft covers as needed to gain access to the entire tail drive shaft system. See reference 1 3a, figure 6-62 and reference 1 3b, figure 6-64 for location of drive shafts.

b. Visually inspect each flexible coupling to ensure it is properly connected to the shafts/flanges on either side. A shaft/flange on one side of the coupling is connected using three bolts/washers/nuts. The shaft/flange on the other side of the coupling is connected using three different bolts/washers/nuts. Ensure the same bolt/ washer/nut does not connect shafts/flanges on both sides of the coupling.

c. Visually inspect each connection to insure the proper hardware and stack-up is used. See reference 13, paragraph 6.13.1 through 6.13.4, for proper hardware configurations.

d. If no discrepancies are found, the inspection is complete.

9. Correction Procedures. If discrepancies are found during the inspection of paragraph 8 above, perform the following actions.

a. If the same bolt/washer/nut was used to connect shafts/flanges on both sides of the coupling, replace the shafts and flanges on both sides of the flexible coupling, the flexible coupling, and all connecting hardware.

b. If the same bolt/washer/nut was not used to connect shafts/flanges on both sides of the coupling, but improper hardware or stackup was used, replace the flexible coupling, and all connecting hardware.

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 through normal supply channels using normal supply procedures. All requisitions shall use project code "XCR" per this TB.

NOTE

Project code "XCR" 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. N/A.

d. Disposition. Dispose of removed parts/components in accordance with normal supply procedures. A QDR is required.

e. Disposition of Hazardous Material. 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 4 man-hours using 1 person.
(2) Total of 4 hours downtime for one end item.

c. Estimated Cost Impact of Stock Fund Items to the Field.

NOMENCLATURE	PART NUMBER/ NATIONAL STOCK NUMBER	QUANTITY	COST EACH	TOTAL $
Shim	70361-05011-101/ 5365-01-092-7491	9	$36.00	$324.54
Shaft Assembly Drive	70361-03001-045/ 1615-01-081-2775	1	$1,943.00	$ 1,943.00
Shaft Assembly Tail	70361-05002-045/ 3040-01-083-2953	4	$2,965.00	$11,860.00
Shaft Assembly	70361-06002-047/ 1615-01-158-5788	1	$5,109.00	$5,109.00
Shaft Assembly Fan	70361-03009-047/ 1615-01-158-9517	1	$2,878.00	$2,878.00
Shaft Assembly Drive	70361-06002-047/ 1615-01-158-9522	3	$3,122.00	$9,366.00
Total cost per aircraft = $31480.54				

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. TM1-1520-237-23-4 shall be changed as follows: Paragraph 6.13.1.3, step a. references paragraph 6.18 for removing and replacing the flexible couplings. This is incorrect and shall be changed to paragraph 6.13.6. The following warning will also be added before paragraphs 6.13.1.3c, 6.13.2.3e, 6.13.3.3c, 6.13.4.3c.

WARNING

Injury to personnel and damage to equipment may result if any drive shaft flange is bolted directly to its mating flange. Ensure each drive shaft flange is bolted only to the flexible coupling and not bolted directly through the flexible coupling to the mating flange.

2. TM1-1520-250-23-4 shall be changed as follows: The following warning will be added before paragraphs 6.13.1.2e, 6.13.2.2g, 6.13.3.1 e, 6.13.4.2e.

WARNING

Injury to personnel and damage to equipment may result if any drive shaft flange is bolted directly to its mating flange. Ensure each drive shaft flange is bolted only to the flexible coupling and not bolted directly through the flexible coupling to the mating flange.

3. A copy of this TB shall be inserted in the appropriate TM as authority to implement the change until the printed change is received.

13. References.

a. TM 1-1520-237-23.4.
b. TM 1-1520-250-23-4.

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 mission design series (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 "amsatrx@emh4.stl.army.milr. The report will cite this 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, units will forward a priority message to the logistics POC identified in paragraph 16b. The report will cite this TB number, date of inspection, aircraft serial number, aircraft hours and results of the inspection. Reports will be forwarded no later than 10 days after task/inspection date.

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.

15. Weight and Balance. N/A.

16. Points of Contact.

a. Technical point of contact for this TB is Mr. Mark Juede, AMSAT-R-EPD, DSN 693-0308 or commercial (314) 263-0308, E-mail jeudem@avrdec.army.mil.

b. Logistical point of contact forthis TB is Mr. Joe Hoover, SFAE-AV-BH-L, DSN 693-0484 or commercial (314) 263-0484. Fax is 314/263-1898, E-mail hooverj @peo2.stl.army.mil.

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. Materiel Management (Spares) point of contact is Lisa Peek, AMSAT-I-SABA. DSN 693-6042 or commercial (314) 263-6042.

e. Safety point of contact for this message is Jim Wilkns, AMSAT-R-X, DSN 693-2258 or commercial (314) 263-2258.

f. 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.

g. After hours contact ATCOM Command Operations Center (COC) DSN 693-2066/7 or commercial (314) 263-206617.

By Order of the Secretary of the Army:

DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
02690

DISTRIBUTION:

To be distributed in accordance with DA Form 12-31-E, block no. 3628, requirements for TB 1-1520-237-20-184.

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: <mpmt%avma28@st-louis-emh7.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

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 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 milliters = .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: 075179-000