

URGENT

TB 1-1520-238-20-97

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INSPECTION OF MAIN ROTOR HUB D R W PLATE BOLT HOLES AND MAIN ROTOR DRIVE PLATE BOLTS ALL AH-64 AIRCRAFT P/N HS5531-9-14 NSN 5306-01-305-6065

Headquarters, Department of the Army, Washington, D. C.
7 JANUARY 2000

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THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.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 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 TB 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. Same as **Para 1 a.**

d. Aircraft in **Transit.**

(1) Surface/Air Shipment. Same as **Para 1 a.**

(2) Ferry Status.

(a) Same as **Para 1a.**

(b) Those aircraft that have a DD 250 and are at Boeing will be inspected IAW para 8 a, prior to ferry to final destination.

e. Maintenance Trainers (Category A, B, and Others). Same as paragraph 1.a above.

f. Component/Parts in Stock Including War Reserves at All Levels (Depot and Others). Upon receipt of this TB the Commanders will ensure that all stock on hand of NSN 5306-01-305-6065 is inspected for "AGM" or "AGC" on the bolt heads. If any are found, remove from stock and demilitarized prior to disposal.

- (1) Wholesale Stock.- Same as para 1 f.
- (2) Retail Stock.- Same as para 1 f.

g. Component/Parts in work (Depot level and Others)- Items listed in Paragraphs 6 and 7 in work will not be issued until compliance with this message.

- 2. **Task/Inspection Suspense Date.** Within the next 50 flight hours or 60 days.
- 3. **Reporting Compliance Suspense Date.** N/A.
- 4. **Summary of the Problem.**

a. Field Reports indicate that the Main Rotor Drive Plate Bolts, NSN 5306-01-305-6065, P/N HS5531-9-14 are breaking off where the bolt shank meets the head of the bolt. Investigation has revealed that the subject bolts were procured from a non qualified source, ACE Grinding Machine (AGM). Recent qualification testing has determined the need to remove these bolts from use. The bolts are identified with the letters "AGM" on the top of the head. Field reports also indicate that Main Rotor Drive Plate Bolts identified with the letters "AGC" have a grip length of 0.375 inch. It should be 0.875 inch. These bolts also need to be removed from use.

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

c. The purpose of this TB is to direct the inspection of all AH 64 series Main Rotor Drive Plate Bolts and the Main Rotor Hub Drive plate Bolt Holes, at or prior to the next phase inspection. Bolts with the letter "AGM" or "AGC" on the top of the head are to be replaced.

- 5. **End Items to be Inspected.** All AH-64 series aircraft.
- 6. **Assembly Components to be Inspected.**

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Head Rotary Wing	7-311411003-607	1615-01-245-3148
	7-311411003-609	1615-01-249-3989
	7-311411003-611	1615-01-306-6948
	7-311411003-613(FSP)	1615-01-306-6948
	7-311411003-615	1615-01-334-4933
	7-311411003-619(FSP)	1615-01-306-6948
	7-311411003-621(FSP)	1615-01-461-6127
	7-311411003-623	1615-01-461-6126

- 7. **Parts to be Inspected.**

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Bolt, Shear	HS5531-9-14	5306-01-305-6065

- 8. **Inspection Procedures.**

a. On or before the next 50 hour or 60 day inspection, inspect the top of the 12 M/R Drive Plate Bolts for the letters "AGM" or "AGC".

NOTE

It may be necessary to remove the sealant from the top of the bolt head.

(1) Any bolts found for which the vendor can not be identified or that have the letters "AGM" or "AGC" stamped on the bolt head are to be removed and demilitarized/ mutilated IAW paragraph 10D, and replaced with approved hardware. Replace the bolts IAW paragraph 9A.

NOTE

The following markings, from approved vendors, may be found on bolt heads, and are suitable for use: A, AIC, S, SLI, SPS, B, BB, BI, B+, VS, FT, FTC or 804-9. The "SLI" bolts may also have a "SLB278-9-14" marking, and the "804-9" bolts may have the letter "A" in the markings. Any other markings, or lack thereof, constitutes a need to remove, demil and replace the discrepant bolt with a bolt from an approved vendor.

(2) If no bolts are found with the letter "AGM" or "AGC" on the bolt head, bolt inspection is complete. The inspection in of paragraph 8b is required.

b. On or before the next 250 hour phase inspection, inspect for damage inside of the M/R Hub Bolt Holes where the Drive Plate Bolts are installed. This inspection is required to insure that any damage caused by the use of improper bolts is repaired. The M/R Drive Plate must be removed to perform this inspection.

(1) Inspect inside the Hub bolt holes for corrosion, nicks, scratches, scoring and pitting. If any damage is found repair IAW paragraph 9B.

(2) If no damage is found reinstall Drive Plate IAW TM 1-1520-238-23, paragraph 6.96 or the Longbow IETM.

9. Correction Procedures.

a. M/R Drive Plate Single Bolt replacement (Drive Plate not removed).

(1) Remove and Replace any "AGM" or "AGC" bolt as follows

CAUTION

If there is no requirement to remove the M/R Drive Plate, remove and replace one bolt, two washers and nut at a time. If the Drive Plate is not being removed and no more than one bolt is being replaced at a time, the Mast Mounted Assembly (MMA) the Air Data System (ADS) Mast, Main Rotor Drive Plate Cover, Main Rotor Flexible Support, ADS Stand Pipe, Main Rotor Gear Shaft and Main Rotor Drive Plate do not have to be removed.

(a) Remove Nut, Washer, Bolt and Countersunk Washer.

(b) Discard Nut.

(c) Demilitarize Bolt IAW para 10 d.

(d) Apply thin coat of Lubricant (Mil-L-23398) on the threads of the new bolt.

(e) Allow Threads to air dry for 6 hours or air dry for 30 minutes cure for 30 minutes at 150 Degrees F (65.6 Degrees C).

(f) Install Countersunk Washer (with countersunk toward the head of the Bolt) and bolt on Plate.

(g) Install Washer and new Nut on bolt.

(h) Hold Bolt. Torque to 125 foot-pounds. Use proper torque wrench adapter and torque wrench.

(2) Repeat para 9A1. For each "AGM", "AGC" or unidentifiable bolts found.

(3) Recheck torque of all bolts and nuts replaced in the order provided by TM1-1520-238-23, para 6.96 for the AH-64A and the IETM for the AH-64D. Torque shall be 125 foot-pounds.

(4) Coat Heads of the 12 bolts with sealing compound (Mil-S-81733) after installation is complete.

b. Main Rotor Hub Bolt Hole Repair

NOTE

Repair of damage holes is allowed if the maximum inside diameter (ID) of the bolt hole does not exceed 0.566 inch.

(1) To repair damage holes, lightly sand damaged area until surface is smooth. Insure hole diameter does not exceed 0.566 inch. If exceeded replace M/R Head.

(2) If hole diameter is less than 0.566 inch chemically re-treat any surface where base metal has been exposed or corrosion resistant coating has been penetrated. Wipe surface with a clean rag, dampened by Naphtha Aliphatic. Apply corrosion resistant coating, Alodine, until surface color becomes bright shiny yellow or gold to light brown. Keep surface wet for at least 1 minute. rinse with cold tap water after color is obtained. Let dry.

(3) Reinstall Drive Plate IAW TM 1-1520-238-23, paragraph 6.96 or the Longbow IETM.

10. Supply/Parts and Disposition.

a. Parts Required. Items cited in paragraph 6 or 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 (CC 57-59) "XF1" (X-Ray Fox-trot One) per this TB.

NOTE

Project code "XF1" 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.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Lubricant	Mil-L-23398	9150-00-754-0064
Sealing Compound	Mil-S-81733	8030-00-008-7200
Nut, Self Locking	HS5489-9	5310-01-456-1524
	HS5489-9V	5310-00-395-4643
Bolt, Shear	HS5531-9-14	5306-01-305-6065
Naphtha Aliphatic	TT-N-95	6810-00-238-8119
Alodine	Mil-C-81706	8030-00-065-0957

d. Disposition- Demilitarize/Mutilate any "AGM", "AGC" or unidentifiable bolts IAW TM 1-1500-328-23.

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) M/R Drive Plate Bolt Phase Inspection- Total of 1.0 man-hours using 1 person.
 - (2) M/R Drive Plate Bolt Replacement.
 - (a) Total of .25 man-hours using 1 person for each bolt replaced.
 - (b) Total of Hours Downtime for one End Item, worst case estimate is 3 hours.
- c. Potential Cost Impact to the Field.

NOMENCLATURE	PART NO.	NSN	QTY.	COST EACH \$	TOTAL \$
Bolt, Shear	HS5531-9-14	5306-01-305-6065	12	36.08	432.96
Nut, Self-Locking	HS5489-9	5319-00-395-4643	12	12.09	145.08
	HS5489-9V	5310-01-456-1525	12		
Total potential cost per aircraft = \$ 578.04					

- 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. N/A.

13. References.

- a. Interactive Electronic Technical Manual (IETM): TM 1-1520-Longbow/Apache IETM, CD No. 1, Version 3.1.2, Data 19 Nov 98, CD Date 1 Dec 98 or subsequent.
- b. TM 1-1520-238-23, Aviation Unit and Intermediate Maintenance Manual for AH-64A Apache Attack Helicopter, 16 May 94.
- c. TM 1-1500-328-23, Aeronautical Equipment Maintenance Policies ABD Procedures, 30 July 1999

14. Recording and Reporting Requirements.

a. 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, AMCOM, ATTN: AMSAM-SF-A (SOF Compliance Officer), Redstone Arsenal, AI 35898-5000 IAW AR 95-1. Datafax number is DSN 897-2111 or commercial (256) 313-2111. E-Mail address is "SAFEADMS@REDSTONE.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)-

(1) Materiel in Wholesale Depot Storage- Report receipt of this TB by E-mail or Datafax to the Wholesale Material (Spares) point of contact listed in para 16C within 3 working days from the date of this TB. Provide local Point of Contact.

(2) Materiel in Retail Storage- Report receipt of this TB by E-mail or Datafax to the Logistical Point of Contact listed in para 16B within 7 days from the date of this message. Provide local Point of Contact.

- d. Task/Inspection reporting suspense date (spares)-

(1) Materiel in Wholesale Depot Storage- Report compliance with this message to the Wholesale Material Point of Contact (Spares) listed in para 16C within 7 days of the date of this TB on DD form 1225. Provide the cost of compliance with this message to include an estimate of the Cost Reimbursable Funding.

required to move serviceable items on hand listed in para 6 and 7 to a work area, unpack the materiel, repack the materiel after inspection to return the materiel to storage, as appropriate.

(2) Materiel in Retail Storage- Report receipt of this TB by E-mail or Datafax to the Logistical Point of Contact listed in para 16B within 14 days from the date of this message. Report quantity inspected by condition code and the resulting condition code. Report by E-mail or datafax. Provide local Point of Contact.

e. The following forms are applicable and are to be completed in accordance with DA PAM 738-751, 15 March 1999:

NOTE

ULLS-A users will use applicable "E" forms

(1) DA Form 2408-5-1, Equipment Modification Record (Main Rotor Head).

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

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

(4) DA Form 2408-14, Uncorrected Fault Record.

(5) DA Form 2408-15, Historical Record for Aircraft.

(6) DA Form 2410, Component Removal and Repair Overhaul Record (Only if Main Rotor Head is replaced).

(7) DA Form 1574/ DD Form 1575-1 Serviceable Tag/Label-Material (Color Yellow). Annotate remarks block with "Inspected Serviceable IAW AH-64-00-ASAM-xx."

(8) DD Form 1575/ DD Form 1575-1, Suspended Tag/Label- Material (Color Brown). Annotate Remarks Block with "Suspended IAW AH-64-00-ASAM-01."

(9) DD Form 1577-2/ DD Form 1575-3, Unserviceable (Reparable) Tag/Label- Material (Color Green). Annotate remarks block with " Unserviceable IAW AH-64-00-ASAM-xx."

(10) DD Form 1577/ DD Form 1577-1, Unserviceable (Condemned) Tag/Label- Material (Color Red). Annotate remarks block with "Comdemned IAW TB 1-1520-238-20-97 and mutilated IAW 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. Andy Fabery, AMSAM-RD-AR-E-I-P-A, DSN 897-4802 or commercial (256) 313-4802. Datafax is DSN 897-4923 or (256) 313-4923 E-mail is Andre.Fabery@redstone.army.mil.

b. Logistical point of contact for this TB is Mr. Jim Mason, SFAE-AV-AAH-LF, DSN 897-4242 or commercial (256) 313-4343. E-mail is MasonJ@peoavn.redstone.army.mil.

c. Wholesale Materiel Point of contact Mr. Vernon Pobanz, (Office Symbol), USN 442-9337 or commercial (215) 737-9337, Datafax is DSN or (215) . E-mail is "VPobanz@dla.mil".

d. 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 or commercial (256) 876-4904, E-mail is waldeck-ab@redstone.army.mil.

e. Safety point of contact for this TB is Mr. Howard Chilton, AMSAM-R-X, DSN 897-2068 or commercial (256) 313-2068, Datafax is DSN 897-2111 or commercial (256) 313-2111, E-mail is chilton-hl@redstone.army.mil.

f. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact CW5 Joseph L. Wittstrom, Security Assistance Management, AMSAM-SA, DSN 897-0681 or commercial (256) 313-0681, E-mail is wittstrom-jl@redstone.army.mil. or Mr. Ronnie W. Sammons, AMSAM-

SA-CS-NF, DSN 897-0869 or commercial (256) 313-0869, Datafax is DSN 897-0411 or commercial (256) 313-0411, E-mail is sammons-rw@redstone.army.mil. Huntsville, Al is GMT minus 6 hours.


g. After hours contact AMCOM Command Operations Center (COC) DSN 897-2066/7 or commercial (256) 313-2066/7.

17. Reporting of Errors and Recommending Improvements. You can improve this TB. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, US Army Aviation and Missile Command, ATTN.: AMSAM-MMC-LS-LP, Redstone Arsenal, AL 35898-5230. You may also submit your recommended changes by E-mail directly to ls-lp@Redstone.Army.Mil. Instructions for sending an electronic 2028 may be found at the back of this manual. A reply will be furnished directly to you.

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
9934302

DISTRIBUTION:

To be distributed in accordance with Initial Distribution Number (IDN) 313868, requirements for TB 1-1520-238-20-97.

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: "Whoever", <whoever@avma27.army.mil>

To: <mpmt%avma28@st-louis-ernh7.army.mil>

Subject: DA Form 2028

1. **From:** Joe Smith
2. **Unit:** home
3. **Address:** 4300 Park
4. **City:** Hometown
5. **St:** AI
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: 077738-000