ROUTINE

TB 1–1520–238–20–95

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INITIAL AND RECURRING INSPECTION OF MAIN ROTOR RETENTION NUTS, AH–64 HELICOPTERS

Headquarters, Department of the Army, Washington, D. C.
4 June 1999

NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. Priority Classification. Routine

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 this 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 until compliance with this TB has been completed.

d. Aircraft in Transit.

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

(2) Ferry Status.

(a) Inspect at final destination.

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

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

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

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

This TB supersedes USAAMCOM Aviation Safety Action Message 121910Z MAY 99, AH-64-99-ASAM-06.

2. **Task/Inspection Suspense Date.** Within next 20 flight hours/30 days.

3. **Reporting Compliance Suspense Date**. N/A.

4. **Summary of the Problem**.

a. During a recent 250 hour phase maintenance inspection, a main rotor retention nut was found to be cracked. The failure of this nut was attributed to stress corrosion cracking. The basic and –3 configuration main rotor retention nuts are of a harder material than the –5 and are more susceptible to this type of failure.

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

c. The purpose of this TB is to direct initial and recurring inspection of AH–64 main rotor retention nuts.

5. **End Items to be inspected**. All AH–64 aircraft.

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

7. **Parts to be Inspected**.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Main Rotor Retention Nut	7–311411102	5310–01–160–6767
Main Rotor Retention Nut	7–311411102–3	5310–01–160–6767
Main Rotor Retention Nut	7–311411102–5	5310–01–350–1346

8. **Inspection Procedures**.

a. On or before the next 20 flight hours/30 days, review the DA Form 2408–16 entry to determine the configuration of the main rotor retention nut installed.

b. If P/N 7–311411102–5 is installed, this inspection is complete. Continue with current 250 hour phase magnetic particle inspections. Physically verify part number on removal. If you cannot positively identify the part number, measure outer diameter (OD) of the nut. If the OD measurement is 8.120 inches, it is a –3 or basic configuration nut. If the OD measurement is 8.350 inches, it is a –5 nut.

c. If P/N 7–311411102 or 7–311411102–3 main rotor retention nut is installed, do the following:

(1) Review the DA Form 2408–15 entries to determine completion date of last phase inspection.

(a) If completion date of last phase inspection is within the last six (6) months, schedule a magnetic particle inspection of the main rotor nut––to be complied with no later than the end of the 6 month period that the last phase inspection was accomplished or next phase inspection, whichever comes first.

(b) If the last phase inspection was not accomplished within the last 6 months, perform a magnetic particle inspection of the main rotor retention nut prior to the task inspection suspense date of this message. Physically verify part number on removal.

(c) If part number cannot be positively identified, measure outer diameter (OD) of nut. If the OD measurement is 8.120 inches, it is a –3 or basic configuration nut. If the OD measurement is 8.350 inches, it is a –5 configuration nut.

(2) Perform a magnetic particle inspection every 6 months or 250 hour phase maintenance inspection, whichever comes first.

(3) Annotate the DA Form 2408–18 with the following recurring inspection requirement, “Main Rotor Retention Nut P/N 7–311411102/7–311411102–3 Magnetic Particle Inspection” for every 6 months or 250 hour phase. ULLS–A units will use their 800 inspection numbers for these inspections. Exceptions to this timeline are authorized in accordance with TM 1–1500–328–23 DTD 28 February 1995 paragraph 2–10, scheduling of recurring special inspections, page 2–8.

(4) Perform magnetic particle inspection on all basic and –3 nuts each time they are removed. Submit a set of completed DA Form 2410 each time.

(5) If you cannot positively identify the part number of the main rotor retention nut, perform measurement in paragraphs 8.b. and 8.c. If still unsure, treat as a basic or –3 part.

(6) All newly acquired nuts must be inspected prior to installation.

9. Correction Procedures.

a. If any cracks are detected in the main rotor retention nut, notify the technical point of contact at paragraph 16.a. immediately and submit a Category I Deficiency Report.

b. Replace cracked retention nuts with P/N 7–311411102–5 nuts.

10. Supply/Parts and Disposition.

a. Parts Required. Retention nut P/N 7–311411102–5 NSN 5310–01–350–1346.

b. Requisitioning Instructions. Requisition replacement parts for cracked nuts only. Submit AOG requisitions verified by the cognizant AMCOM Aviation Logistics Assistant Representative (LAR) for replacement parts using normal supply procedures. All requisitions shall use project code (CC 57–59) “XFN”, “X–RAY–FOXTROT–NOVEMBER”.

NOTE

Project code “XFN”, “X–RAY–FOXTROT–NOVEMBER” is required to track and establish a database 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
Nut, Self–Locking	P/N HS5489–9	NSN 5310–00–395–4643
Nut, Self–Locking	P/N HS5489–9	NSN 5310–01–456–1525

d. Disposition. Hold any discrepant part/component pending disposition instructions from logistical point of contact in paragraph 16.b.

e. Disposition of Hazardous Material. In accordance with environmental protection agency directives as implemented by your servicing environmental coordinator (AR 200–1).

11. Special Tools and Fixtures Required. As required.

12. Application.

a. Category of Maintenance. AVUM to remove and replace. AVIM or above for inspection. Aircraft downtime will be charged to AVIM maintenance.

b. Estimated Time Required.

(1) For Removal/Replacement.

(a) Total of 20 man–hours using 2 persons.

(b) Total of 10 hours downtime for one end time.

(2) For Inspection.

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

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

c. Estimated Cost Impact to the Field. $1,100.00

d. TB/MWOs to be Applied Prior to or Concurrently with this Inspection. N/A.

e. Publications Which Require a Change as a Result of This Inspection. TM 1–1520–238–23, Aviation Unit and Aviation Intermediate Maintenance Manual, AH–64AA, dated 16 May 1994, with changes, and interactive electronic technical manual (IETM), TM 1–1520–LONGBOW/APACHE IETM, CD No. 1 Version 3.1.2, Data 19 November 1998, CD Dated 6 December 1998 shall be changed to reflect this message. A copy of this message shall be inserted into the appropriate TM until a printed change is received.

13. **References**.

a. TM 1–1520–238–23, Aviation Unit and Aviation Intermediate Maintenance Manual, AH–64A, dated 16 May 1994, with changes.

b. Interactive Electronic Technical Manual (IETM), TM 1–1520–LONGBOW/APACHE IETM, CD No. 1 Version 3.1.2, Data 19 November 1998, CD dated 6 December 1998.

c. TM 1–1520–238–PM, Phased Maintenance Inspection Checklist for AH–64A, dated 30 June 1994, with changes.

14. **Recording and Reporting Requirements**.

a. Reporting Compliance Suspense Date (Aircraft). Upon entering requirements of this message on DA Form 2408–13–1 on all subject MDS Aircraft, forward a priority message, Datafax or e–mail to CDR, 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 (256) 313–2111. E–mail address is “SAFEADM@REDSTONE.ARMY.MIL”. This report will cite this message 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). No special report of the results of this inspection is required.

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 March 1999.

NOTE

ULLS–A Users will use applicable “E” forms.

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

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

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

(4) DA Form 2408–15, Historical Record for Aircraft.

(5) DA Form 2408–16, Aircraft Component Historical Record (only if the main rotor retention nut is replaced).

(6) DA Form 2408–18, Equipment Inspection List (ULLS–A units will use their 800 inspection numbers).

(7) DA Form 2410, Component Removal and Repair/Overhaul Record.

(8) DD Form 1575/DD Form 1575–1, Suspended Tag/Label – Materiel (Color Brown). Annotate remarks block with “SUSPENDED IAW AH–64–99–ASAM–06, TB 1–1520–238–20–95.”

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

16. **Points of Contact**.

a. Technical point of contact for this TB is Ken Muzzo, AMSAM–AR–E–I–P–A, DSN 897–4812 or commercial (256) 313–4812. Datafax is DSN 897–49493 or commercial (256) 313–4923; e–mail is “MUZZO–DW@REDSTONE.ARMY.MIL”.

b. Logistical point of contact for this TB is John Patton, SFAE-AV-AAH–LF, DSN 897–4190 or commercial (256) 313–4190. Datafax is DSN 897–4343 or commercial (256) 313–4343; e–mail is "PATTONJ@REDSTONE.ARMY.MIL".

c. Wholesale Materiel point of contact (SPARES) for this TB is Leafus Thomas, AMSAM–MMC–VS–AA, DSN 897–1352 or commercial (256) 313–1352. Datafax is DSN 897–897–1556 or commercial (256) 313–1556; e–mail is "THOMAS–LE@REDSTONE.ARMY.MIL".

d. Forms and records point of contact for this TB is 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 Howard Chilton, AMSAM–SF–A, DSN 897–2068 or commercial (256) 313–2068. Datafax is DSN 897–2111 or commercial (256) 313–2111; e–mail is "HOWARD.CHILTON@REDSTONE.ARMY.MIL".

f. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact either CW5 Joseph L. Wittstrom, Security Assistance Management, AMSAM–SA, DSN 897–0681 or commercial 313–0681, e–mail "WITTSTROMJL@REDSTONE.ARMY.MIL" or Ronnie W. Sammons, AMSAM–SA–CS–NF, DSN 897–0869 or commercial (256) 313–0869, e–mail "SAMMONSRW@REDSTONE.ARMY.MIL". Huntsville, AL, time is GMT minus 6 hours.

g. After hours contact the 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". A reply will be furnished directly to you. Instructions for sending an electronic 2028 may be found at the back of this manual.

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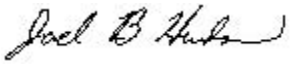

JOEL B. HUDSON
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General, United States Army
Chief of Staff

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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.

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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.

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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

'NEAR MEASURE

. 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

'VEIGHTS

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

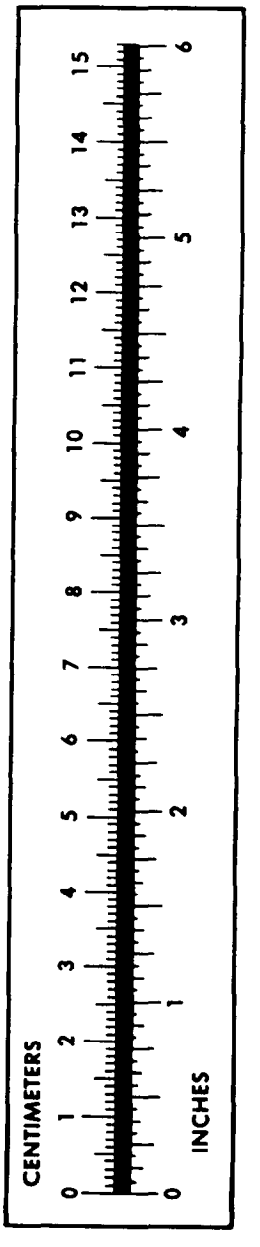
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°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
ıts	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
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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