DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

REMOVAL AND REPLACEMENT OF MAIN ROTOR BLADE TIP WEIGHT RETENTION NUTS ON ALL AH-64 HELICOPTERS

Headquarters, Department of the Army, Washington, D. C.

24 June 1996

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 correction procedures of paragraph 9 below are 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 paragraph 1 a. above.

d. Aircraft in Transit.

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

(2) Ferry Status. Inspect at final destination. Same as paragraph 1 a. above.

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

f. Component/Parts in Stock Including War reserves at all levels (depot and others). Upon receipt of this message the material condition tags of all items in all condition codes listed in paragraph 6 below shall be annotated to read, "TB 1 -1520-238-20-77, replacement of tip weight retention nuts not complied with."

(1) Material located in all wholesale depots including all satellite wholesale depots and war reserve depots. Report receipt of this TB in accordance with paragraph 14b(1). Upon receipt of this TB depot commanders and others maintaining wholesale stock shell ensure that serviceable material (condition codes A, B. and C) is placed in condition code J and tagged with a suspended tag/label - material DO Form 1576/1576-1. Annotate the remarks block with UTB 1-1520-238-20-77, replacement of tip weight retention nuts, not complied with." Do not remove existing material condition tags. Report compliance with this TB in accordance with paragraph 14c(1).

This TB supersedes USMSAATCOM Aviation Safety Action Message 291 90Z May 96 AH-64-96-ASAM-07.

(2) Material located in installation/unit storage. Report receipt of this TB paragraph 14b(2). Upon receipt of this message commanders and others maintaining retail stock shall contact the supported aviation organization to perform the correction procedures of paragraph 9 on discrepant material. Report compliance with this message in accordance with paragraph 14c(2).

g. Components/parts in work. Assembly components listed in paragraph 6 will not be issued until compliance with this message.

2. Task/Inspection Suspense Date. No later than the next Phased Inspection. This publication is effective until 24 June 1998 unless sooner rescinded or superseded.

3. Reporting Compliance Suspense Date. No later than 15 days after receipt of this TB per paragraph 14.a of this TB.

4. Summary of the Problem.

a. After removing the main rotor blade tip cap, inspection revealed that one of the nuts securing the aft weight support fitting was cracked.

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

c. The purpose of this TB is to replace the nuts that secure both the forward and aft main rotor blade tip weight fittings and to reduce the torque on these nuts.

5. End Items to be inspected. All Army AH-64 aircraft and all spare main rotor blades listed in paragraph 6 below.

6. Assembly Components to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Main Rotor Blade	7-311412000	1615-01-147-4873
Main Rotor Blade	7-311412000-3	1615-01-310-4978
Main Rotor Blade	7-311412000-5	1615-01 -332-0702
Main Rotor Blade	7-311412000-A	1615-01 -331 -2483
Main Rotor Blade	7-311412000-3A	1615-01-330-5098
Main Rotor Blade	7-311412000-5A	1615-01 -415-6397

7. Parts to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Screw, Close Tolerance	HS4396-3T4	5305-01-224-6693
Screw, Close Tolerance	HS4396-3T5	5305-01 -219-8718
Stud, FWD	7-211412030-3	5307-01 -163-4675
Stud, AFT	7-211412030-7	5307-01 -167-1968

8. Inspection Procedures. NIA

9. Correction Procedures.

a. Safe Helicopter per paragraph 1.57 of reference 13.a.

NOTE

To prevent unnecessary damage to screw, use of proper procedures and tools is required during removal of tip cap. After removing tip cap screws, visually inspect for any cracks, thread damage, obvious wear or physical damage. Apply thread anti-seize compound, MIL-T-83483, to screw threads before reinstalling tip cap.

b. Remove main rotor blade leading edge tip cap per paragraph 5.13 of reference 13.a. Retain all undamaged screws for reuse during re-assembly. Replace all damaged screws using standard ordering procedures.

NOTE

Task is to be completed for each individual weight assembly before beginning task on next weight assembly. Visually inspect studs for cracks, thread damage, obvious wear, or physical damage. Do not remove weights from blade assembly.

c. Remove the two (2) nuts (MS21042-6) that secure the aft weight support fitting and discard. Apply corrosion preventative compound (CPC) MIL-C-16173, Class 1, Grade 2 (soft film) to the threaded as well as shank portion of both AFT studs during assembly. Reuse the existing washers (AN960C616L). Install two (2) new nuts (NAS1 291 C6M) listed in paragraph 10 and torque the nuts to 205-225 inch-pounds. Use torque wrench.

d. Remove the three (3) nuts (MS21042L5) that secure the forward weight support fitting and discard. Apply corrosion preventative compound (CPC) MIL-C-16173, Class 1, Grade 2 (soft film) to the threaded as well as shank portion of the three FWD studs during assembly. Reuse the two (2) existing washers (AN960C516L) and the one (1) washer (HS5415-0001) on the leading edge stud. Position the HS5415-0001 washer to match the contour of the leading edge. Install three (3) new nuts (NAS1291 C5M) listed in paragraph 10. Torque the nuts to 160-180 inch-pounds. Use torque wrench.

NOTE

The HS541 5-0001 washer may be trimmed, if necessary, to match the contour of the leading edge. This is to ensure proper fit of the leading edge tip cap.

e. Reinstall the leading edge tip cap per paragraph 5.13 of reference 13.a.

10. Supply/Pans and Disposition.

a. Parts Required.

NOMENCLATURE	PART NUMBER	NSN
Nut, Self-Locking, AFT Fitting	NAS1291 C6M	5310-00-879-0669
Nut, Self-Locking, FWD Fitting	NAS1291C5M	5310-00-882-6479
Screw, Close Tolerance	HS4396-3T4	5305-01-224-6693
Screw, Close Tolerance	HS4396-3T5	5305-01 -219-8718

b. Requisitioning Instructions. Requisition replacement parts through normal supply channels using normal supply procedures. All requisitions shall use project code " XB8 " per this TB.

NOTE

Project code - XB8 - 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.

NOMENCLATURE	PART NUMBER	NSN
Thread Anti-Seize Compound, Molybdenum Disulfide-Petrola turn (8 oz. Tube)	MIL-T-83483	8030-00-243-3285
Thread Anti-Seize Compound, Monybdenum Disulfide-Petrola tum (1 lb. can)	MIL-T-83483	8030-00-087-8630
Corrosion Preventative Com-pound, Class 1, Grade 2 (Soft Film), 11 oz. Tube	MIL-C-16173	8030-00-118-0666
Corrosion Preventative Com-pound, Class 1, Grade 2 (Soft Film), 1 qt.	MIL-C-16173	8030-01 -149-1731
Corrosion Preventative Com-pound, Class 1, Grade 2 (Soft Film), 1 gal.	MIL-C-16173	8030-00-244-1297

d. Disposition. Dispose of removed parts/components in accordance with normal supply procedures. A QDR is not required.

e. Disposition of Hazardous Material. N/A.

11. Special Tools, Jigs and Fixtures Required. Wrench, Torque, 3/8 Drive, 0-300 Inch-Pounds, NSN 5120-00-776-1 841.

12. Application.

a. Category of Maintenance. AVUM. Aircraft downtime will be charged to AVUM.

b. Time Required.

(1) Total of one and one-half (1 1 /2) man-hours using one (1) person for each Main Rotor Blade.
(2) Total of six (6) hours downtime per Aircraft.

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

NOMENCLATURE	PART NUMBER/ NATIONAL STOCK NUMBER	QUANTITY	COST EACH	TOTAL$
Nut, Self-locking, Aft Fitting	**NAS1291C6M 5310-00-879-0669**	**2**	**$.88**	**$ 1.76**
Nut, Self-locking, Fwd Fitting	**NAS1291C5M 5310-00-882-6479**	**3**	**$.58**	**$ 1.74**
Screw, Close Tolerance	**HS4396-3T4 5305-01-224-6693**	**5**	**$.78**	**$3.90**
Screw, Close Tolerance	**HS4396-3T5 5305-01-219-8718**	**AR (Max. 42)**	**$ .99**	**$ .99**
Maximum total cost per Blade = $8.39				

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

e. Publications Which Require Change as a Result of This Inspection. DMWR 55-1 615-313. 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 1-1520-238-23, Aviation Unit and Intermediate Maintenance Manual, dated 16 May 1994.

b. DMWR 55-1615-313, Blade, Rotary Wing, Change 1 dated 26 February 1993.

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 MDHS aircraft, forward a priority message, data fax or E-Mail to Commander, ATCOM, ATTN: AMSAT-R-X (SOF Compliance Officer), per AR 95-3. Data fax number is DSN 693-2064 or commercial (314) 263-2064. E-Mail address is "AMSATRXS@EMH4.STL.ARMY.MIL". The report will cite this TB number, date of entry in DA Form 2408-13-1, the air craR mission design series and serial numbers of aircraft in numerical order.

b. Reporting Compliance Suspense Date (Spares)

(1) Material in wholesale depot storage. Report receipt of this message to the wholesale material (spares) point of contact listed in paragraph 16c within 3 working days from the date of this message.

(2) Material in retail storage. Report receipt of this message to the logistical point of contact listed in paragraph 16b within 7 days from the date of this message.

c. Task/Inspection Reporting Suspense Date (Spares).

(1) Material in wholesale depot storage. Report compliance with this message to the Wholesale Material Point of Contact (Spares) listed in paragraph 16c within 7 days of the date of this message. Provide an estimate of the cost reimbursable funding required to move the items listed in paragraph 6 to a work area, unpack the material, repack the material after inspection by ATCOM inspectors, and return the material to storage, report the serial numbers by original serviceable condition code, of all material placed in condition code J.

(2) Material in retail storage. Report compliance with this message to the Logistical Point of Contact in paragraph 16b within 1 4 days of the date of this message. Report the quantity inspected by condition code and the resulting condition code. Report the serial numbers of all material (Main Rotor Blades) requiring correction.

d. The following forms are applicable and are to be completed in accordance with DA PAM 738-751,15 June 1992:

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

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

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

(4) DA Form 2408-13-2. Related Maintenance Actions Record.

(5) 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. Lawrence Powitzky, AMSAT-R-EIA, DSN 693-9869 or commercial (314)263-9869.

b. Logistical point of contact for this TB is Mr. Jim Mason, SFAE-AV-MH-LF, DSN 693-1947 or commercial (314)263-1947.

c. Wholesale Material point of contact (Spares) for this TB is Mr. TullusSamples, AMSAT-I-SAAA, DSN 693-5969 or commercial (314)263-5969 and fax (314)263-5936.

d. Forms and records point of contact for this TB is Ms. Ann Waldeck, AMSAT-I-MDM, DSN 490-2318 or commercial (314)260-2318.

e. Safety point of contact for this TB is Mr. Lyell Myers. AMSAT-R-X, DSN 693-2438 or commercial (314)263-2438.

f. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact Mr. Ron Van Rees or CW5 Jay Nance, AMSAT-D-SAF, DSN 693-3659/7844 or commercial (314)263-7844/3659.

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

1 7. Reporting of Errors and Recommending Improvements. You can help 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 Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished to you. You may also submit your recommended changes by E-mail directly to <mpmt°/Oavma28@st-louis-emh7.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.

By Order of the Secretary of the Army:

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

Official:

JOEL B. HUDSON
Acting Administrative Assistant to the
Secretary of the Army
01877

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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

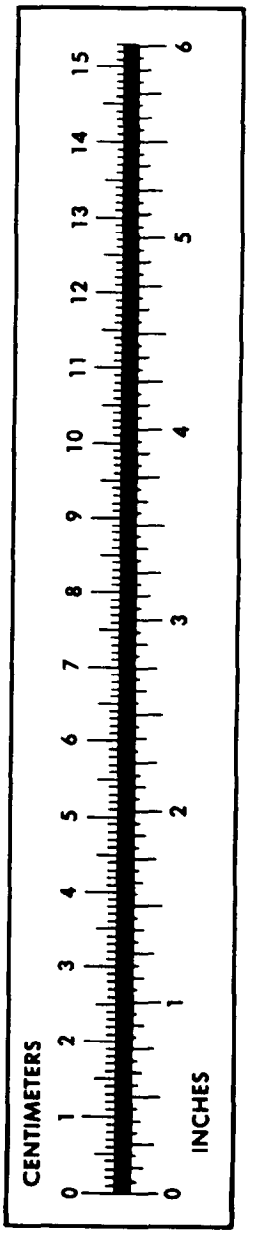
TEMPERATURE

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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