URGENT

TB 1-1520-238-20-109

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INSPECTION AND INTERIM MAINTENANCE PROCEDURES FOR ECP 1315 IMPROVED TAILBOOM DESIGN, AH-64A

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

15 December 2000

NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. **Priority Classification. URGENT.**
   a. Aircraft in Use. N/A.
   b. Aircraft in Depot Maintenance. N/A.
   c. Aircraft Undergoing Maintenance. N/A.
   d. Aircraft in Transit.
      (1) Surface/Air Shipment. N/A.
      (2) Ferry Status. N/A.
   e. Maintenance Trainers (Category A and B). N/A.
   f. Component/Parts in Stock at All Levels (Depot and Others) Including War Reserves. N/A.
      (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.** N/A.
3. **Reporting Compliance Suspense Date**. N/A.

4. **Summary of the Problem.**

a. The tailbooms of some AH-64A aircraft have been modified as part of ECP 1315. Part of this modification consists of the addition of elastomeric mounts for the vertical stabilizer. Currently, there are no published inspection or maintenance procedures in the AH-64A technical manuals supporting this modification.

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

c. The purpose of this TB is to provide interim critical inspection and maintenance procedures until changes are published in the AH-64A technical manuals.

5. **End Items To Be Inspected**. N/A.

6. **Assembly Components To Be Inspected.** N/A.

7. **Parts To Be Inspected**. N/A.

8. **Inspection Procedures**.

NOTE

These inspection procedures must be used with the current TMs, including the latest changes, until all applicable TMs have been updated with the enclosed technical information.

a. Change TM 1-1520-238-PM as described below.

(1) Add Inspection 6A.

(a) In the Inspect Phase Nos. column, add "2,4 **C**".

(b) In the Inspection requirements column, add the following text:

6A. **VERTICAL STABILIZER ELASTOMERIC MOUNTS FOR CRACKS OR DISTORTION. MOUNTING BOLTS AND BARREL NUTS FOR DAMAGE AND SECURITY. DRAIN CAVITY FOR DEBRIS AND OBSTRUCTIONS.**

Access L510, R510

b. Change TM 1-1520-238-23-2, paragraph 2.102.6. as described below. (Renumber the current version of 2.102.6.; its new number will be 2.102.7.)

(1) Add the following heading, paragraphs, subparagraphs, and notes:

Tailboom Elastomeric Mounts Inspection

a. **Remove fairings L545 and R545 (paragraph 2.2).**

b. **Check four elastomeric mounts cavity drain holes for debris or plugged-up condition.**

(1) Remove debris shield from elastomeric mount.

(a) Remove two screws from two retaining clip debris shield and mount. Remove shield. Retain hardware for reinstallation.

(2) Inspect all four mounts cavity drain holes for debris or plugged-up condition.

NOTE

- Do not use alcohol or MEK to clean mount cavity drain.
- Do not pour solvents into mount cavity drain.

(a) If debris or plugged-up condition exists, clean cavity with compressed air (paragraph 1.47).

NOTE

When checking for cracks, pay special attention to left forward mount areas adjacent to where the two mounting bolts are installed.

c. Check four elastomeric mounts for cracks. Use 10-power magnifier.

(1) If cracks are suspected, perform nondestructive inspection (TM 1-1520-264-23).

(2) If crack is found, replace mount.

(3) Submit a CAT I Deficiency Report to AMCOM, AMSAM-RD-AE-I-P-A.

d. Check four elastomeric mounts for distortion, corrosion, and dirt. Use 10-power magnifier.

e. Check four elastomeric mounts for exposed bare metal on visible edge of rubber sandwiched in mount.

(1) If bare metal is found, touch up bare metal (paragraph 1.49).

f. Install drain cavity debris shield on elastomeric mount.

(1) Install debris shield on elastomeric mount.

(a) Install two screws through retaining clip, debris shield, and mount.

(b) Apply petrolatum jelly to expose surface of shields. Use petrolatum (item 138, App F).

g. Check outboard visible edge of rubber sandwiched in elastomeric mounts for gaps and voids.

(1) Inspect rubber for gaps or voids of **0.2 INCH** or greater. If gaps or voids exceed limits, replace mount.

(2) Inspect rubber for gaps or voids totaling **0.5 INCH** or greater. If gaps or voids exceed limits, replace mount.

(3) Inspect rubber for gaps or voids more than **1/8 INCH** deep below metal edge. If gaps or voids exceed limits, replace mount.

h. Install fairings R545 and L545 (paragraph 2.2).

9. **Correction Procedures.** TM 1-1520-238-23-2.

NOTE

These inspection procedures must be used with the current TMs, including the latest changes, until all applicable TMs have been updated with the enclosed technical information.

a. Paragraph 2.102.2. Add torque wrench to “Initial Setup Tools” list as follows:

30 - 150 inch-pound 3/8-inch drive click type torque wrench (item 441, App H)

b. Paragraph 2.102.4.g. Add note, to read as follows:

NOTE

• To check torque on aircraft without elastomeric mounts, perform steps (1), (2), (3), and (4).

• To check torque on aircraft with elastomeric mounts, perform steps (2), (3), and (4).

c. Paragraph 2.102.4.g.(1). Change CAUTION to read as follows:

CAUTION

• For non-elastomeric mounts, ensure no more than one bolt is out at the same time and that the installed bolts are torqued to breakaway torque plus **50 INCH-POUNDS** prior to removing another bolt.

• For elastomeric mounts, ensure no more than one bolt is out at the same time and that the installed bolts are torqued to breakaway torque plus **75 INCH-POUNDS** prior to removing another bolt.

d. Paragraph 2.102.4.g.(3).

(1) Change subparagraph (3) to read as follows:

(3) Check torque by applying **1385 INCH-POUNDS** torque to all vertical stabilizer bolts. Use torque wrench and adapter.

(2) Add subparagraph (4), to read as follows:

(4) Replace the defective hardware (para 2.107).

e. Add paragraph 2.102.4.h. to read as follows:

h. **Check tailboom vertical stabilizer elastomeric mounts for cracks, corrosion, grease, and foreign objects.**

(1) Check four elastomeric mounts for distortion, corrosion, and dirt. Use 10-power magnifier.

(2) Check four elastomeric mounts for cracks. Use 10-power magnifier.

(a) If cracks are suspected, perform nondestructive inspection (TM 1-1520-264-23).

(b) If crack is found, aircraft is non-operational until mount is replaced. Submit a CAT I DR to AMCOM, AMSAM-RD-AE-I-P-A.

(3) Check all four mounts at the exposed outboard ends by removing the flap shield to visibly inspect the cavity drain hole for debris or plugged-up condition.

NOTE

- Do not use alcohol or MEK to clean mount cavity drain.
- Do not pour solvents into mount cavity drain.

(a) Clean cavity drain hole with compressed air (paragraph 1.47).

(4) Check four elastomeric mounts for exposed bare metal on visible edge of rubber sandwiched in mount.

(a) If bare metal is found, touch up bare metal (paragraph 1.49).

f. Paragraph 2.107.2. Add the following tool to the “Initial Setup Tools” list:

30 - 150 inch-pound 3/8-inch drive click type torque wrench (item 441, App H)

g. Paragraph 2.107.3.d. Add note as follows:

NOTE

- On aircraft modified with elastomeric mounts, the two vertical stabilizer hydraulic line assemblies are installed with the 45° and 90° elbows at the back of the vertical stabilizer hard lines.
- On aircraft that have not been modified with elastomeric mounts, the two vertical stabilizer hydraulic line assemblies are installed with the 45° and 90° elbows at the bracket on the F.S. 547 frame.

h. Paragraph 2.107.3.i.(4). Add note as follows:

NOTE

- If tailboom has non-elastomeric mounts, perform steps (5) and (8) through (9).
- If tailboom has elastomeric mounts, perform steps (6) through (9).

i. Paragraph 2.107.3.i.

(1) Change subparagraphs (6) and (7) to read as follows:

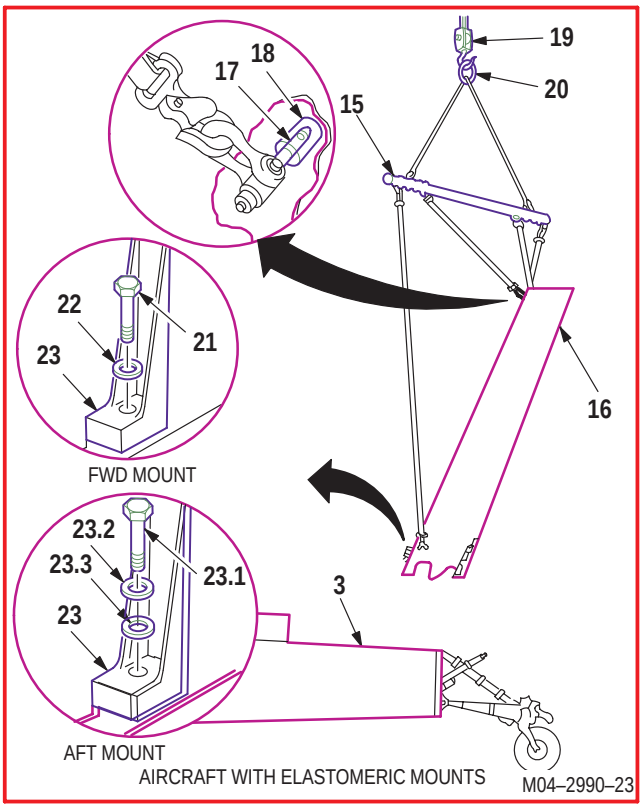
(6) Remove two shear bolts (21) and recessed washers (22) from forward stabilizer lugs (23).

(7) Remove two shear bolts (23.1) and recessed washers (23.2) and washers (23.3) from aft stabilizer lugs (23).

(2) Add subparagraphs (8) and (9), to read as follows:

(8) Two persons support and guide stabilizer (16).

(9) Lift stabilizer (16) clear of tailboom (3).



j. Paragraph 2.107.5.e. Add subparagraph (e), to read as follows:

(e) **If tailboom has elastomeric mounts, check mounts for damage (paragraph 2.102).**

k. Paragraph 2.107.6. Change subparagraphs (b), (c), and (d), to read as follows:

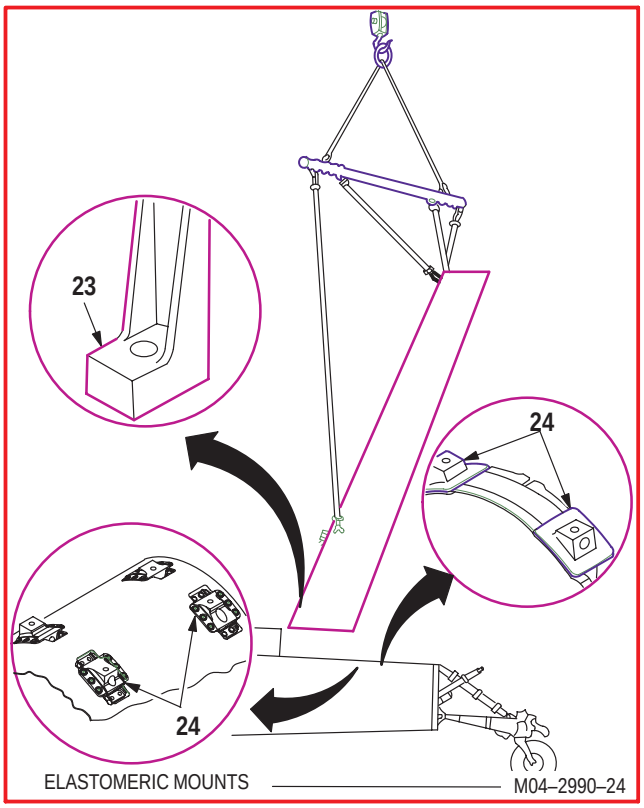
(b) **Strip bottom of lugs (23) and top of tailboom pads or elastomeric mounts (24) to bare metal** (TM 55-1500-345-23)**.**

(c) **Chemically treat lugs (23) and top of pads or elastomeric mounts (24)** (TM 55-1500-345-23)**.**

(d) **Perform electrical bond check on stabilizer pads (23) and tailboom pads or elastomeric mounts (24)** (TM 55-1500-323-24)**.**

l. Paragraph 2.107.6.(d)(1). Keep paragraph as follows:

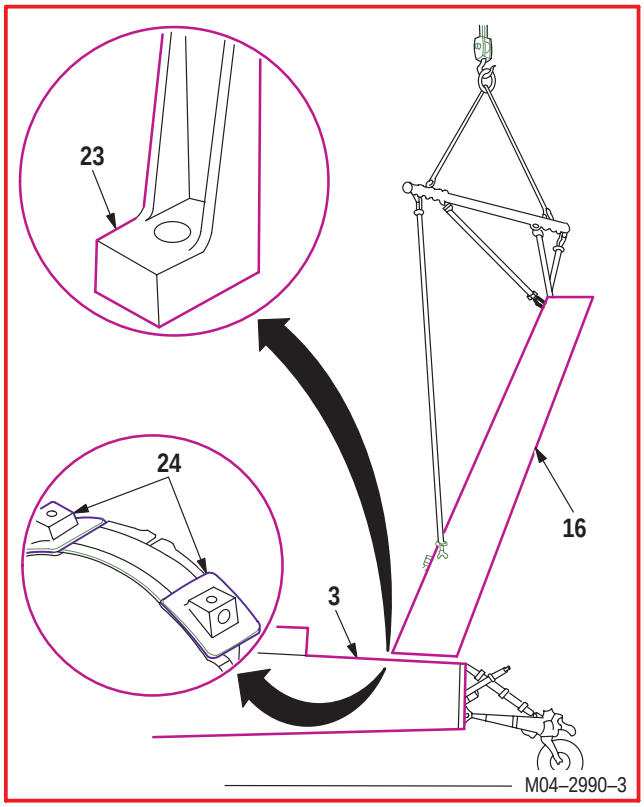
(1) Bond shall be **0.1 OHM** or less. Use ohmmeter.



m. Paragraph 2.107.6.e. Change e. and subparagraph (1), to read as follows:

e. Install stabilizer (16) on tailboom (3). Torque four bolts (21) in sequence. Ensure to identify type of mounts installed (elastomeric or non-elastomeric mounts).

(1) Align four stabilizer lugs (23) over tailboom pads or elastomeric mounts (24).

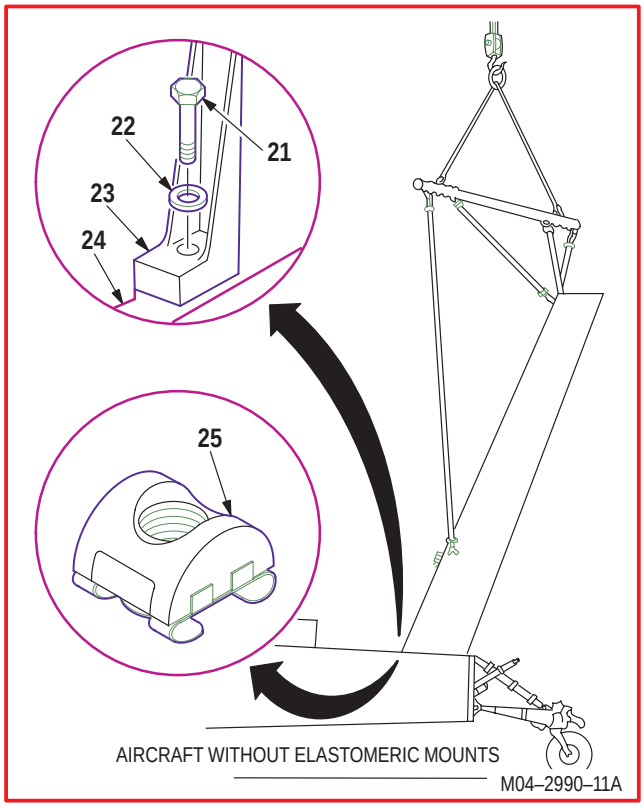


n. Paragraph 2.107.6.e.(4). Add note as follows:

NOTE

- For aircraft without elastomeric mounts, perform steps (5) through (7).
- For aircraft with elastomeric mounts, perform steps (8) through (11).

o. Paragraph 2.107.6.e.(5). Delete the note which follows subparagraph (5).



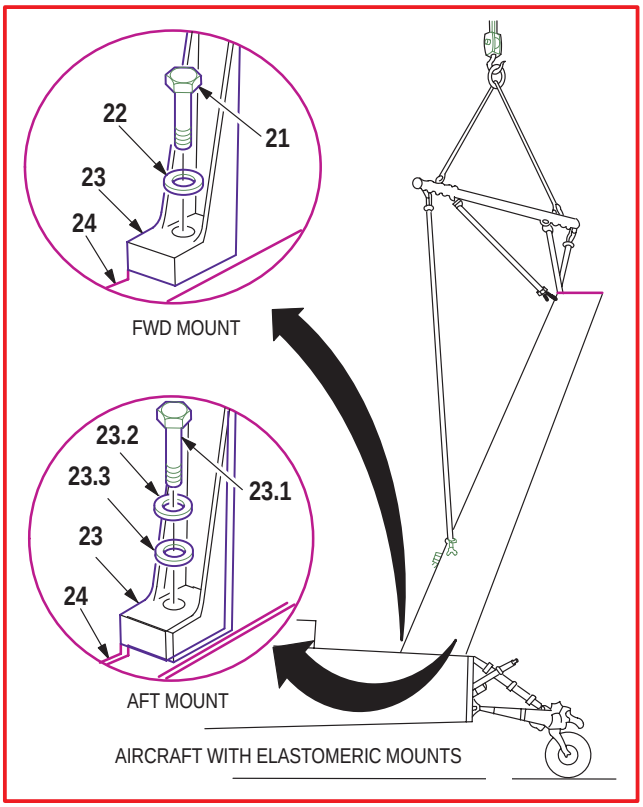
p. Paragraph 2.107.6.e. Add subparagraphs (8) through (11), to read as follows:

(8) Install two shear bolts (21) through recessed washers (22) and lugs (23) in forward tailboom elastomeric mounts (24). Ensure recessed side of washer (22) is installed against bolt head (21).

(9) Install two shear bolts (23.1) through recessed washers (23.2) and washers (23.3) and lugs (23) in aft tailboom elastomeric mounts (24). Ensure recessed side of recessed washer (23.2) is installed against bolt head (23.1).

(10) Torque four bolts (21) in sequence to **75 INCH-POUNDS**. Use torque wrench.

(11) Torque two bolts (21) and two bolts (23.1) in sequence and in increments of **350 INCH-POUNDS** up to **1385 INCH-POUNDS**. Use adapter and applicable torque wrench.



q. Paragraph 2.107.6.g.(1). Change note to read as follows:

NOTE

- If bond check exceeds **0.1 OHM**, remove vertical stabilizer and repeat steps a. through g.
- Step h. applies only to aircraft with non-elastomeric mounts.

r. Paragraph 2.107.6.l. Add note, to read as follows:

NOTE

- On aircraft modified with elastomeric mounts, the two vertical stabilizer hydraulic line assemblies are installed with the 45° and 90° elbows at the back of the vertical stabilizer hard lines.
- On aircraft modified with elastomeric mounts, ensure that the quick disconnect fittings are attached to the straight end of the hoses.
- On aircraft that have not been modified with elastomeric mounts, the two vertical stabilizer hydraulic line assemblies are installed with the 45° and 90° elbows at the bracket on the F.S. 547 frame.

s. Add new procedure 2.107A., to read as follows:

2.107A. VERTICAL STABILIZER ELASTOMERIC MOUNT REMOVAL/INSTALLATION

2.107A.1. Description

This task covers: Removal. Cleaning. Inspection. Installation. Corrosion Prevention.

2.107A.2. Initial Setup

Tools:

Aircraft mechanic's tool kit (item 376, App H)
Electrical tool kit (item 378, App H)
Light duty laboratory apron (item 27, App H)
Ohmmeter (item 218, App H)
150 - 750 inch-pound 3/8-inch drive click type torque wrench (item 442, App H)

Materials/Parts:

Antiseize compound (item 26, App F)

Personnel Required:

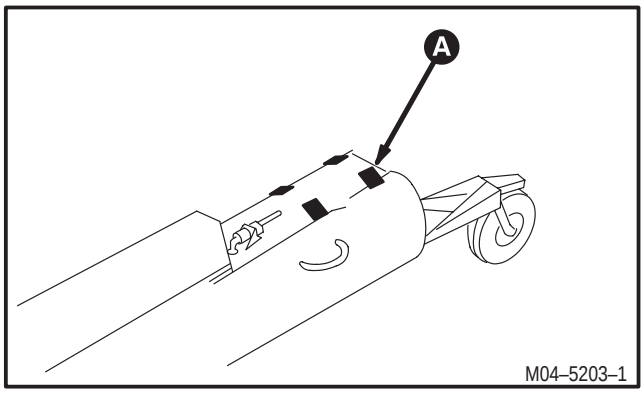
67R	Attack Helicopter Repairer
68X	Armament/Electrical System Repairer
67R3F	Attack Helicopter Repairer/Technical Inspector

Equipment Conditions:

Ref	Condition
1.57	Helicopter safed
2.107	Vertical stabilizer removed

NOTE

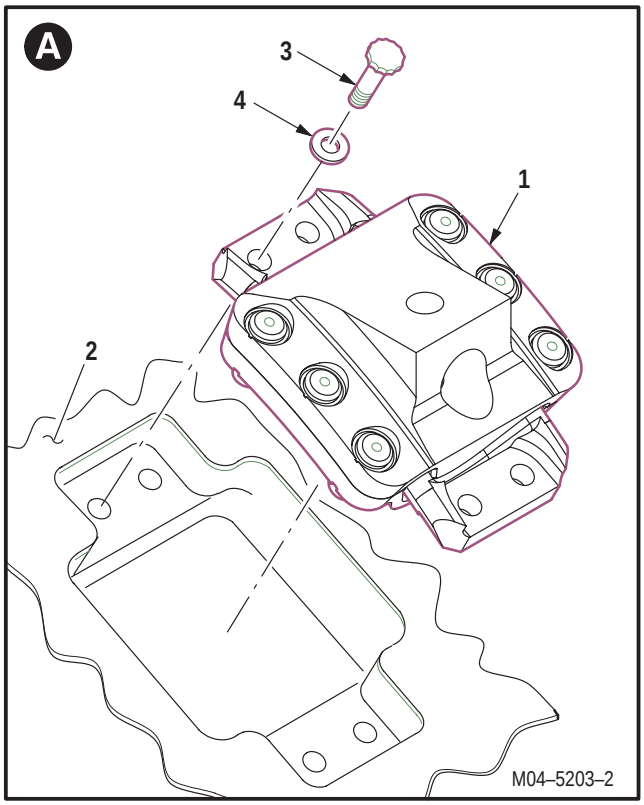
This task is typical for the removal and installation of all four elastomeric mounts.



2.107A.3. Removal

NOTE

If removing more than one elastomeric mount, the attaching hardware must be kept with removed mount.



a. **Remove vertical stabilizer elastomeric mount (1) from tailboom (2).**

(1) Remove four shear bolts (3) and recessed washers (4) from mount (1).

(2) Remove mount (1) from tailboom (2).

2.107A.4. Cleaning

a. **Clean removed and attaching parts** (paragraph 1.47)**.**

2.107A.5. Inspection

a. **Check removed and attaching parts for damage** (paragraph 2.102)**.**

b. **Check removed and attaching parts for corrosion** (paragraph 2.102)**.**

c. **Check mounting surfaces for cracks and corrosion** (paragraph 2.102)**.**

d. **Check barrel nuts for cracks, warpage, or stripped threads.** None allowed.

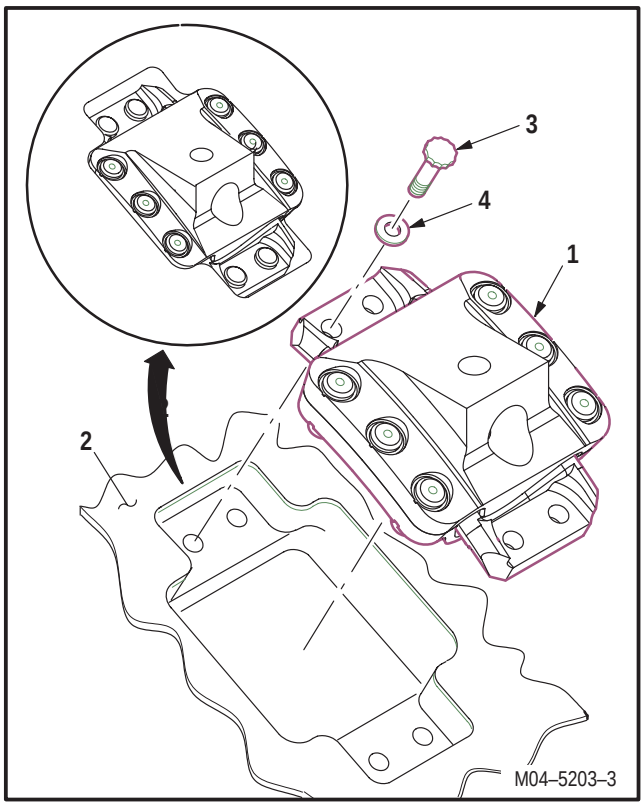
e. **Check visible edge of rubber sandwiched in elastomeric mounts for gaps and voids.**

(1) Inspect rubber for gaps or voids of **0.2 INCH** or greater. If gaps for voids exceed limits, replace mount.

(2) Inspect rubber for gaps or voids totaling **0.5 INCH** or greater. If gaps or voids exceed limits, replace mount.

(3) Inspect rubber for gaps or voids more than **1/8 INCH** deep below metal edge. If gaps or voids exceed limits, replace mount.

2.107A.6. Installation



NOTE

Elastomeric mounts are specific to their positions and are not interchangeable. The aft mounts use different attaching hardware than the forward mounts.

a. **Install mount (1) on tailboom (2).** Torque four bolts (3) to **420 INCH-POUNDS**.

(1) Apply a coating of lubricant to bolt (3) and washer (4). Use antiseize compound (item 26, App F).

(2) Install four bolts (3) through washers (4), mount (1), and tailboom (2). Ensure recessed side of washer (4) is installed against bolt (3) head.

(3) Torque four bolts (3) to **420 INCH-POUNDS**. Use torque wrench.

b. **Perform electrical bond check on elastomeric mounts (1)** (TM 55-1500-323-24).

(1) Bond shall be **0.1 OHM** or less. Use ohmmeter.

c. **Inspect (QA).**

d. **Install vertical stabilizer** (paragraph 2.107)**.**

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

Part Number and/or NSN	Nomenclature	QTY
7-511350014-11 1615-01-467-9439	Anti-Flail Assembly	1 EA
HS5798-9-24 5306-01-465-8474	Bolt	4 EA
HS5813-9 5310-01-463-1730	Nut, Barrel	4 EA
HS6030-01	Washer	4 EA
HS6030P01	Washer	2 EA
NAS578-9B 5340-00-853-9862	Retainer	4 EA
7-311114253-1 1560-01-471-0947	Mount Fwd L/H	1 EA
7-31114253-3 5340-01-472-7900	Mount Fwd R/H	1 EA
7-311114253-5 1560-01-471-2793	Mount Aft L/H	1 EA
7-311114253-7 1560-01-471-2797	Mount Aft R/H	1 EA

Part Number and/or NSN	Nomenclature	QTY
7-311830103-13 4720-01-469-0000	Hose Assembly	1 EA
7-311830111-7 4720-01-469-1330	Hose Assembly	1 EA
7-51150147-3 1560-01-465-7805	Close Out Fairing	1 EA
HS5813-6 5310-01-470-9587	Nut, Barrel	16 EA
NAS578-6B 5342-00-884-3925	Retainer	16 EA
HS6033-6-42 5306-01-473-2452	Bolt	8 EA
HS6033-6-26 5306-01-472-5160	Bolt	8 EA
HS5899-04-110 5940-01-471-8045	Terminal Stud	4 EA
MS25083-6BB15	Jumper Assembly	1 EA
MS25083-6BB11	Jumper Assembly	1 EA
MS35489-14 5325-00-276-6100	Grommet	1 EA

11. **Special Tools and Fixtures Required.** N/A.

12. **Application.**

a. Category of Maintenance. AVUM.

b. Estimated Time Required. N/A.

c. Estimated Cost Impact To the Field. N/A.

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 and TM 1-1520-238-PM, with changes, shall be changed to reflect this TB. A copy of this TB shall be inserted in each of the appropriate TMs as authority to use these procedures until a future printed change (addressing these procedures) is received.

13. **References**.

a. TM 1-1520-238-23, Aviation Unit and Intermediate Manual, dated 16 May 1994, with changes.

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

14. **Recording and Reporting Requirements**. N/A.

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

16. **Points of Contact**.

a. Technical point of contact for this TB is Lee Bumbicka, AMSAM-RD-AE-I-P-A, DSN 897-4925 or commercial (256) 313-4925. Datafax is DSN 897-4923 or commercial (256) 313-4923; e-mail is "lee.bumbicka@redstone.army.mil".

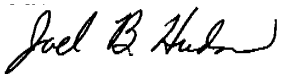
b. Logistical points of contact for this TB is Jim Mason, SFAE-AV-AAH-L, DSN 897-4242 or commercial (256) 313-4242. Datafax is DSN 897-4343 or commercial (256) 313-4343; e-mail is "jim.mason@peoavn.redstone.army.mil".

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 the following address: Commander, US Army Aviation and Missile Command, ATTN: AMSAM-MMC-LS-SP, Redstone Arsenal, AL 35898-5230. You may also submit your recommended changes by e-mail directly to "ls-sp@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.

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
0033603

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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).

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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

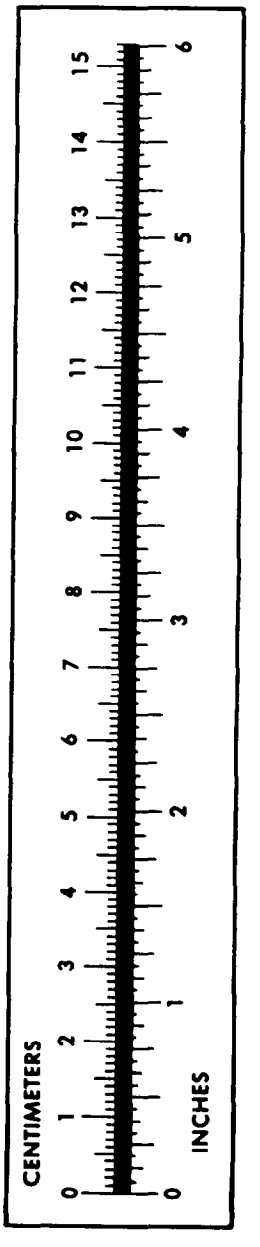
TEMPERATURE

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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