URGENT

TB 1–1520–238–20–96

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

ONE TIME AND RECURRING INSPECTION OF THE MAIN ROTOR STRAP PACK OUTBOARD BOLT ALL AH–64 AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
12 November 1999

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THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.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 1a.

d. Aircraft in Transit.

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

(2) Ferry Status.

(a) Same as Para 1a.

(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, B, and Others). Same as paragraph 1.a above.

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

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.

This TB supersedes USAAMCOM Message 01740Z Oct 99 (AH–64–00–ASAM–01).

2. **Task/Inspection Suspense Date.** Not later than the next scheduled 125 hour strap pack inspection IAW TB 1–1520–238–20–89 and AH–64–98–ASAM–04.

3. **Reporting Compliance Suspense Date**. IAW paragraph 14.a of this TB.

4. **Summary of the Problem**.

a. While performing the Flourecent Penetrant Inspection of the Strap Pack Outboard Bolt IAW TB 1–1520–238–20–89 (AH–64–98–ASAM–04), a second failure mode originating on the outer diameter (OD) of the bolt was discovered. The current Fluorescent Penetrant Inspection is unable to detect this failure until the crack propagates through the wall of the bolt to the Inner Diameter (ID). An ultrasound inspection capable of detecting cracks originating on OD surfaces has been developed. Probe kits compatible with existing AVIM ultrasound equipment are being fielded.

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

c. The purpose of this TB is to provide direction to conduct ultrasonic inspection of the Strap Pack Outboard Bolt in addition to the Fluorescent Penetrant Inspection currently being accomplished IAW TB 1–1520–238–20–89 and AH–64–98–ASAM–04.

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
Strap Assembly	7–311411146–5	1615–01–154–7076
	7–311411146–7	1615–01–154–7076

8. **Inspection Procedures**.

NOTE

Civilian personnel performing this inspection shall be level 2 or higher ultrasound qualified. Military performing this inspection must have successfully completed the non–destructive testing and training course at Millington, TN or Pensacola, FL and have an additional skill identifier (ASI) of N2, have been trained at the Fort Rucker Special Trainining Session for this inspection, or have been trained by a certified/qualified NDT specialist IAW the above requirements, with support from the training CD–ROM.

a. At the next scheduled 125 hour Strap Pack Outboard Bolt Inspection, perform an ultrasound inspection in addition to the currently required Fluorescent Penetrant Inspection. Strap Pack Outboard Bolt Inspection (UT) procedures are contained in the Ultrasound Probe Kits previously fielded. Contact the NDI point of contact in para 16c if these procedures are not available.

b. Reinspect every 125 Flight Hours. ULLS–A Units will incorporate this inspection with the 125 Flight Hour Strap Pack Bolt Inspection and use the same inspection number (inspection number 225).

9. **Correction Procedures.**

a. If any cracks are detected, replace the Strap Pack Assembly per TM 1–1520–238–23 or TM 1–1520 Longbow/ Apache IETM.

b. Tag with DA Form 1577 and 1577–1 condemned/label tag, and submit a Category 1 Deficiency Report (DR)

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

a. Parts Required. Items cited in paragraph 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 (CC 57–59) "**XFZ**" (XRay–Foxtrot–Zulu) per this TB.

NOTE

Project code "**XFZ**" 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. N/A.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Isopropyl Alcohol	2200200	6810–00–753–4993
Dry Cleaning Solvent	PD–680–A	6850–01–331–3350
Lint Free Cloth	Mil–C–85043	7920–00–044–9281
Cotton Swabs	N/A	N/A
Anti–Seize Compound	Mil–T–83483	83030–00–243–3285

d. Submit a category 1 DR and hold any discrepant part/component pending disposition instructions form technical point of contact in para 16A.

e. Disposition of Hazardous Material.IAW Environmental Protection Agency directives as implemented by you servicing environmental coordinator (AR 200–1).

11. **Special Tools, Jigs and Fixtures Required**. .

a. Ultrasonic Inspection Unit, USD 15S/AF or equivalent.

b. Transducer, 15.0 MHz, Longitudinal Wave, 1/8 in. x 1/8 in. element.

c. Transducer Positioner.

d. Cable Assembly, BNC to Microdot.

12. **Application**.

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

b. Estimated Time Required.

(1) Total of 1 man-hours using 1 person.

(2) Total of 1 hours downtime for one end item.

NOTE

When conducting the ultrasound uinspection concurrently with the fluorescent penetrant Inspection IAW TB 1–1520–238–20–89 (AH–64–98–ASAM–04), calculate the total man–hours downtime for one End Item IAW TB 1–1520–238–20–89 (para 12, AH–64–98–ASAM–04).

c. Potential Cost Impact to the Field.

NOMENCLATURE	PART NO.	NSN	QTY.	COST EACH $	TOTAL $
Lead Lag Link	7–3114155–11	3040–01–352–1531	4	5,351.00	21,404.00
Housing Assembly	7–311411146–7	1615–01–235–5845	4	3,726.00	14,904.00
Strap Assembly, Main Rotor	7–3114111154–1	1615–01–154–7076	4	5,403.00	21,612.00
Bushing, Sleeve	7–311411154–1	3120–01–352–0217	8	135.00	1,080.00
Pin, Blade M/R	7–211411185–3	1615–01–164–3917	8	187.00	1,496.00
Pin Assembly	7–211411199–3	1615–01–163–4514	4	333.00	1,332.00
Bolt, Shear	HS4924–14D48	5306–01–179–0901	8	127.93	1,023.44
Nut, Self Lock	NAS679A5	5310–00–807–1476	8	19.90	159.20
Nut, Self Lock	HS262–1216	5310–01–164–5854	24	5.92	142.08
Retainer, Bearing	7–211411207	1615–01–170–5230	8	23.59	188.72
Bearing Sleeve	7–311411164	3120–01–156–3671	8	93.31	746.48
Nut, Self Lock	HS4133–14	5310–01–179–0862	8	89.75	718.00
Washer, Flat	HS4742–14G635A	5310–01–176–7026	8	27.41	219.28
Washer, Flat	NAS1149D0563J	5301–01–123–0913	16	1.59	25.44
Bolt , Shear	NAS6612H38	5306–01–313–9194	8	9.61	76.88
Bushing, Sleeve	7–211411198–7	3120–01–170–5298	8	7.60	60.80
Washer, Flat	NAS 143–12	5310–00–595–6612	8	3.38	27.04
Washer, Flat	AN960JD516	5310–01–123–0913	8	1.59	12.72
Nut, Self Lock	MS21042L4	5310–00–807–1475	4	8.04	32.16
Bolt, Shear	NAS1304–120D	5306–01–068–0483	4	8.94	35.76
Bracket, Angle	7–211411208	5340–01–170–7455	4	4.03	16.12
Bearing, Sleeve	7–211411200	3120–01–170–5295	8	3.37	26.96
Shim	7–211411204–5	5365–01–172–5205	4	11.92	47.68
Washer, Flat	7–311411220	5310–01–254–7278	16	1.86	29.76
Bolt, Shear	NAS6605–3	5306–01–150–3993	8	.37	2.96
Bolt, Shear	NAS1305–4H	5306–00–806–7698	8	.85	6.80

NOMENCLATURE	PART NO.	NSN	QTY.	COST EACH $	TOTAL $
Bolt, Shear	NAS1305–2H	5306–01–027–8103	8	.77	6.16
Washer, Flat	AN960KD416	5310–01–145–3153	4	2.28	9.12
Washer, Flat	HS4244–14	5310–01–179–0860	8	.54	4.32
Washer, Flat	AN960KD516L	5310–01–135–2886	8	.03	.24
Washer, Flat	MS9549–17	5310–00–013–9992	8	.10	.80
Shim	7–211411207	5365–01–170–7000	Var.	5.17	Variable
				Total potential cost per aircraft = $65,446.92	

d. TB/MWOs to be Applied Prior to or Concurrently with this Inspection. TB 1–1520–238–20–89.

e. Publications Which Require Change as a Result of This Inspection.

(1) TM 1–1520–238–23

(2) TM–1520–Longbow/Apache IETM

(3) TM1–1520–264–23

(4) A copy of this TB shall be inserted in the appropriate publication as authority to implement the change until the printed change is received.

13. **References**.

a. TM 55–1500–335–23, Nondestructive Inspection Methods, 1 Mar 90.

b. TM 1–1520–238–23, Aviation Unit and Intermediate Maintenance Manual for AH–64A Apache Attack Helicopter, 16 May 94.

c. 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.

d. TM 1–1520–264–23, Aviation Unit Maintenance (AVUM) Manual and Aviation Intermediate Maintenance (AVIM) Manual Nondestructive Inspection Procedures for AH–64A Helicopter, 30 Nov 96.

e. TB 1–1520–238–20–89, One Time and Recurring Inspection of Main Rotor Strap Pack Outboard Bolts and Lead Lag Link Teflon Sleeve Bearing for all AH–64A Aircraft, 30 Mar 98

f. AH–64–99–ASAM–04, One Time and Recurring Inspection of Main Rotor Strap Pack Outboard Bolts and Lead Lag Link Teflon Sleeve Bearing for all AH–64A Aircraft, 24 Feb 98

g. Strap Pack Outboard Bolt Inspection (UT) Procedures included with Probe Kit.

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, Al 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)– 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 (Strap Assembly).

(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 Removal and Repair/Overhaul Record (if the Strap Assembly is Replaced).

(6) DA Form 2410, Component Removal and Repair/Overhaul Record (if the Strap Pack Assembly is Replaced).

(7) DA Form 1574/ DD Form 1574–1 Serviceable Tag/Label–Material (Color Yellow). Annotate remarks block with “Inspected Serviceable IAW AH–64–00–ASAM–01.”

(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/DD Form 1577–1, Unserviceable (Condemned) Tag/Label– Material (Color Red). Annotate remarks block with “Comdemned IAW TB 1–1520–238–20–96 and mutilated IAW TM 1–1500–328–23.”

(10)DD Form 1577–2/ DD Forrn 1575–3, Unserviceable (Reparable) Tag/Label– Material (Color Green). Annotate remarks block with “ Unserviceable IAW AH–64–00–ASAM–01.”

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

16. **Points of Contact**.

a. Technical point of contact for this TB is Mr. Ken Muzzo, AMSAM-AR-E–I–P–A, DSN 897-4812 or commercial (256) 313-4812. data fax is DSN 897–4923 or (256) 313–4923 E–Mail is Kenneth.Muzzo@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. NDI Materiel/Training Point of contact Ms. Sandra Ratley, (AMSAM–DSA–AS–AG), DSN 746-6553 or commercial (256) 876-6553, datafax is DSN 788–0572 or (256) 842–0572. E–Mail is “Sandra.Ratley@redstone.army.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 alsoubmit 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.

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>

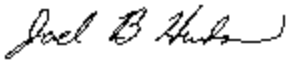
Subject: DA Form 2028

1. ***From:*** Joe Smith
2. *Unit:* home
3. ***Address:*** 4300 Park
4. ***City:*** Hometown
5. ***St:*** Al
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.

By Order of the Secretary of the Army:

Official:



JOEL B. HUDSON
Administrative Assistant to the Secretary of the Army
9932813

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

Distribution:

To be distributed in accordance with Initial Distribution Number (IDN) 313857 requirements for TB 1-1520-238-20-96.

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

TEAR ALONG PERFORATED LINE

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

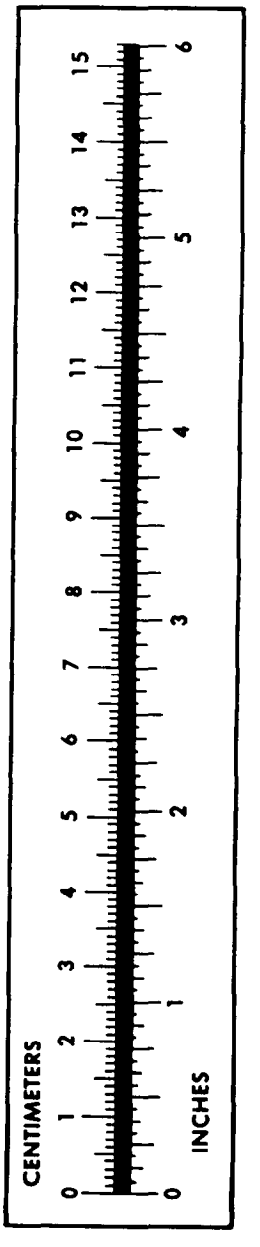
TEMPERATURE

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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