URGENT

***TB 1–1520–210–20–54**

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INSPECTION OF TURNBUCKLE BODY (PART NUMBER 204–011–137–1) FOR ALL UH–1 SERIES AIRCRAFT

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

22 June 2001

1. Priority Classification. URGENT

NOTE

IAW AR 95–1, paragraph 6–6a, MACOM commanders may authorize temporary exception from SOF message/TB requirements. Exception may only occur when combat operations or matter of life or death in civil disasters or other emergencies are so urgent that they override the consequences of continued aircraft operation.

a. Aircraft in Use. Upon receipt of this TB, make the following entry on the DA Form 2408–13–1. Enter a **Red Horizontal Dash (–)** status symbol with the following statement: "Inspect Turnbuckle IAW TB 1–1520–210–20–54 (UH–1–01–05) within the next 25 flight hours, but NLT 01 July 2001." Clear the **Red Horizontal Dash (–)** entry when the procedures IAW paragraphs 8. and 9. are completed. Commanders who are unable to comply with the requirements of this TB within the time frame specified will upgrade the affected aircraft status symbol to a **Red (X)**.

b. Aircraft in Maintenance.

(1) Aircraft in AVUM, AVIM or Depot Maintenance. Same as paragraph 1.a.

(2) Aircraft at Contractor Facility. U.S. Helicopter will inspect DD Form 250 aircraft prior to those aircraft departing for ferry to final destination.

c. Aircraft in Transit.

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

(2) Ferry Status. Inspect at final destination.

***This TB supersedes USAAMCOM Safety of Flight (SOF) Message UH–1–01–05, 011334Z JUN 01.**

d. Maintenance Trainers (Category A and B). N/A.

e. Component/Parts in Stock at All Levels (Depot and Others) Including War Reserves. Upon receipt of this TB, depot and materiel activity commanders will ensure the materiel condition tags of all items in all condition codes listed in paragraphs 6. and 7. are annotated to read: "TB 1–1520–210–20–54 (UH–1–01–05) Inspection of Turnbuckle Body, not complied with.".

(1) Wholesale Stock. Upon receipt of this TB, depot and materiel activity commanders will ensure all items in condition codes A, B, C, D, E, and L, as listed in paragraphs 6. and 7., are placed in condition code J and tagged with a Suspended Tag/Label – Materiel, DD Form 1575/DD Form 1575–1. Do not remove original condition tags.

(2) Retail Stock. Upon receipt of this TB, commanders and facility managers maintaining retail stock at installation level and below shall contact the supported aviation unit to perform the procedures required IAW paragraphs 8. and 9. on suspect materiel. Dispose of discrepant materiel IAW paragraph 10.

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

2. Task/Inspection Suspense Date. Complete the inspection IAW paragraph 8. within the next 25 flight hours, but NLT 01 July 2001.

3. Reporting Compliance Suspense Date. Report compliance IAW paragraph 14.a. NLT 22 June 2001.

4. Summary of the Problem.

a. Conformance testing on part number 204–011–137–1 Turnbuckles has revealed that several manufacturers have non–conforming threads. The Turnbuckle is a flight safety part, and the thread maximum minor diameter is a critical characteristic. Although these parts did pass fatigue testing, the long–term effects of the non–conformances cannot be ascertained. Therefore, inspection of the two critical thread diameters is required to remove the discrepant parts from service. Also, AMCOM has been unable to locate parts from an old contract for conformance testing. Since it is unlikely that sufficient quantities exist to justify test, parts from this manufacturer shall be removed from service. The thread inspection requires two pin gauges that are not available in supply. Initial inspection capability (special pin gauges) will be established at several Project OLR sites and at the National Guard aviation and classification repair activity depots. Others desiring the inspection capability can local purchase the pin gauges IAW paragraph 11.

b. For Manpower/Downtime and Funding Impacts, see paragraph 12.

c. The purpose of this TB is to inspect and remove from service all Turnbuckles with non–conforming threads and any Turnbuckle that cannot be identified.

5. End Items to be inspected. All UH–1 series aircraft.

6. Assembly Components to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Main Link Assembly	204–011–127–1	1615–00–830–9731

7. Parts to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Turnbuckle Body	204–011–137–1	5340–00–865–7927

8. Inspection Procedures.

CAUTION

When removing the pitch change links, do not allow the main rotor blades to rotate on the pitch–change axis. Use grip positioning links (T41, TM 55–1520–210–23–1) to prevent rotation of blades and damage to TT straps.

NOTE

To possibly save time rotor smoothing, measure and record length (hole of clevis to hole in rod end) of pitch link assembly and NOTE what side (red versus white) dimension applies to. After thread inspection, when re–assembling the pitch change link assembly, use the recorded length as initial setting. Be sure dimensions A and B are equal within 0.030 inch, in accordance with Figure 5–9, TM 55–1520–210–23.

NOTE

Parts received under contract #DAAH2398G0042TZV7 are good and do not require this inspection, replacement or etching.

a. Remove main rotor pitch change link assembly (P/N 204– 011–127–1) IAW TM 55–1520–210–23 procedures. Gain access to the Turnbuckle body, part number 204–011–137–1 (TM 55–1520–210–23P, Figure 131, Item 23).

CAUTION

Due to the extremely close tolerances involved, temperature could be a factor when performing the thread diameter inspection. Therefore, the inspection should be performed at temperatures between 65 and 75 degrees Fahrenheit, with the gauge and parts at approximately the same temperature.

CAUTION

There is not a large difference in the size of the two pin gauges. Be sure to properly match the correct gauge pin with the appropriate end of the Turnbuckle body.

b. Inspect thread minor diameter (both ends) for maximum allowable condition as follows: Gently attempt to insert pin gauge marked ".5725+" into the left hand threaded (mates with rod end bearing) end of the Turnbuckle body. Repeat procedure on right hand threaded end of Turnbuckle body (mates with clevis) using pin gauge marked ".5785+".

c. If either pin gauge can be inserted into its respective end (gauge end goes past first thread) of the Turnbuckle body, the Turnbuckle exceeds the maximum allowable minor–thread diameter and is unserviceable. Go to paragraph 9.a.

d. If neither pin gauge can be inserted into its respective end of the Turnbuckle body, the Turnbuckle does not exceed the maximum allowable minor–thread diameter.

NOTE

It may be necessary to remove paint in order to read the vibro–etched serial number and/or cage code. Recoat/retreat bare steel surface as necessary.

e. Identify the serial number or cage code of the Turnbuckle. If the serial number or cage code cannot be found on the wrenching flats (either end), carefully inspect the tubular barrel for these markings.

NOTE

Do not confuse the AMCOM designation 81996 with the contractor cage code. Parts manufactured to a government technical data package may contain both the AMCOM code 81996 and a contractor cage code. The presence (or lack thereof) of 81996 on the part does not impact serviceability as determined by this TB.

NOTE

The actual cage code markings on Turnbuckle bodies made by contractors 05056 and 8U768 were made with ink stamping on the body of the part. Parts from contractor 05056 have a vibro–etch serial number on the wrench flats. However, these markings (both ink cage code and vibro–etch S/N) may not be readable over time due to paint and/or external wear on the wrench flats. An ink stamp "MS" number on Turnbuckle body is not the serial number, but will serve as identification of a part manufactured by cage code 05056.

f. If the cage code is 97499, 58822, 8U768, 05056, or if the serial number prefix is "KE" or MSFS", go to paragraph 9.b.

g. If the cage code or serial number prefix is anything other than that specified in paragraph 8.f., go to paragraph 9.c.

9. Correction Procedures.

a. Immediately remove from service and demilitarize any Turnbuckle body that exceeds the maximum allowable thread diameter.

b. For parts that do not exceed the maximum allowable thread diameter and that can be positively identified IAW paragraph 8.f., the part is serviceable and can remain in service. Carefully vibro etch (depth not to exceed 0.005 in) two adjacent flats (either end) with the following: "Pass, SOF 01–05", after the inspection and etching are complete the **Red Horizontal Dash (–)** entry on DA Form 2408–13–1 may be cleared. Recoat/retreat bare steel surface as necessary.

c. For parts that do not exceed the maximum allowable thread diameter and cannot be identified (or are identified from a source not shown in paragraph 8.f.), the part is serviceable until 31 December 2001. Carefully vibro etch (depth not to exceed 0.005 in) two adjacent flats (either end) with the following: "OK, Remove by 12/31/01". After the inspection and etching are complete, the original **Red Horizontal Dash (–)** entry on the DA Form 2408–13–1 will be cleared. Enter a **Red Diagonal (/)** entry with the following statement: "Turnbuckle body requires replacement NLT 31 December 01 IAW TB 1–1520–210–20–54 (SOF UH–1–01–05).". Recoat/retreat bare steel surface as necessary.

10. Supply/Parts and Disposition.

NOTE

HQDA–ODCSOPS will prioritize units and repair parts distribution.

a. Parts Required. Item in paragraph 6. is assembled at organization level and is identified for reference purposes only. Items cited in paragraph 7. may be required to replace defective items.

b. Requisitioning Instructions. The Turnbuckle barrel is a flight safety part. Local purchase is not authorized. Requisition replacement parts using normal supply procedures. All requisitions shall use project code (CC 57–59) "X1C".

NOTE

Project code "X1C" 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. N/A.

d. Disposition. Demilitarize/mutilate IAW TM 1–1500–328–23 any part/component which does not meet inspection criteria.

e. Distribution of Hazardous Material. N/A.

11. Special Tools, Jigs and Fixtures Required. Two pin gauges are required for this inspection.

a. The pin gauges may be obtained by calling Meyer Gauges at 1–800–243–7087 or 1–860–528–6526. Cost per gauge is $2.75; minimum order is $10. Shipping is extra, and gauges will ship generally one week after order. When ordering specify the following: Class ZZ pin gauge diameter ".5725+", and class ZZ pin gauge diameter ".5785+".

b. Grip positioning tool (T41, TM 55–1520–210–23) required to support grip and blade assembly when pitch link assembly is removed.

12. Application.

a. Category of Maintenance. AVUM. Aircraft downtime will be charged to AVUM. Report aircraft non–mission capable maintenance (NMCM) while undergoing inspection and correction IAW this TB.

b. Estimated Time Required.

(1) Total of 6 man–hours using 2 persons.

(2) Total of 6 hours downtime for one end item.

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

NOMENCLATURE	P/N	NSN	QTY.	COST EA.	TOTAL $
Turnbuckle Body	204–011–137–1	5340–00–865–7927	2	$117.40	$234.80

Total Cost per Aircraft = $234.80

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. DA PAM 738–751, 15 MAR 99.

b. TM 1–1500–328–23.

c. TM 55–1520–210–23

d. TM 55–1520–210–23P.

14. Recording and Reporting Requirements.

a. Aircraft.

(1) Reporting Compliance Suspense Date (Aircraft). Upon entering requirements of this TB on DA Form 2408–13–1 for all effected aircraft, commanders will forward a priority message, datafax or e–mail to CDR AMCOM, ATTN: AMSAM–SF–A (SOF compliance officer), Redstone Arsenal, AL 35898–5000, IAW AR 95–1, NLT date specified in paragraph 3. Datafax number is DSN 897–2111 or (256) 313–2111. E–mail address is <safeadm@redstone.army.mil>. The report will cite this TB and SOF message number, date

of entry in DA Form 2408–13–1, the aircraft mission design series and serial numbers of aircraft in numerical order.

(2) Task/Inspection Reporting Suspense Date (Aircraft). N/A.

b. Wholesale Spare Parts/Assemblies. N/A.

c. Retail Spare Parts/Assemblies. N/A.

d. 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 2408–13, Aircraft Status Information Record.

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

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

(4) DD Form 1574/DD Form 1574–1, Serviceable Tag/Label–Materiel (color yellow). Annotate remarks block with "Inspected serviceable TB 1–1520–210–20–54 (UH–1–01–05).".

(5) DD Form 1575/DD Form 1575–1, Suspended Tag/Label–Materiel (color brown). Annotate remarks block with "Suspended IAW TB 1–1520–210–20–54 (UH–1–01–05).".

(6) DD Form 1577/DD Form 1577–1, Unserviceable (Condemned) Tag/Label – Materiel (Color Red). Annotate remarks block with "Condemned IAW TB 1–1520–210–20–54 (UH–1–01–05) 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 Steve Monaco, AMSAM–RD–AE–I–D–U, DSN 645–0078 or (256) 955–0078. Datafax is 645–6590. E–mail is <steve.monaco@UH.redstone.army.mil>.

b. Logistical point of contact for this TB is Mike Haragan, AMSAM–DSA–UH–U, DSN 645–0211 or (256) 955–0211. Datafax is (256)313–3770. E–mail is <mike.haragan@UH.redstone.army.mil>.

c. Wholesale materiel point of contact (spares) is MAJ Scott Waggoner, DSCR–XBD, DSN 695–6389 or (804)279–6389. Datafax is DSN 695–5695. E–mail is <swaggoner@dscr.dla.mil>.

d. Forms and records point of contact for this TB is Ms. Ann Waldeck, AMSAM–MMC–MA–NM DSN 746–5564 or (256) 876–5564. Datafax is DSN 746–4904. E–mail is <ann.waldeck@redstone.army.mil>.

e. Safety points of contact for this TB are:

(1) Primary: Mr. Frank Rosebery (SAIC), AMSAM–SF–A, DSN 788–8631 or (256) 842–8631. Datafax is DSN 897–2111 or (256) 313–2111. E–mail is <frank.rosebery@redstone.army.mil>.

(2) Alternate: Mr. Signey Hernandez, AMSAM–SF–A, DSN 897–2094 or (256) 313–2094. Datafax is DSN 897–2111 or (256) 313–2111. E–mail is <signey.hernandez@redstone.army.mil>.

f. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact:

(1) Mr. Ronnie W. Sammons, Security Assistance Management, AMSAM–SA–CS–NF, DSN 897–6856 or (256) 313–6856. Datafax is DSN 897–6630 or (256) 313–6630. E–mail is <sammonsrw@redstone.army.mil>.

(2) Mr. Paul W. Tarr, Security Assistance Management, AMSAM−SA−CS−NF, DSN 897−6861 or (256) 313−6861. E−mail is <tarrpw@redstone.army.mil>.

g. After hours contact AMCOM Command Operations Center (COC) DSN 897−2066/2067 or commercial (256) 313−2066/2067. Huntsville, AL. is GMT minus 6 hrs.

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-MA-NP, Redstone Arsenal, Alabama 35898-5000. A reply will be furnished to you. You may also send in your comments electronically to our E−mail address: <2028@redstone.army.mil> or by datafax: DSN 788−6546 or commercial (256) 842−6546. Instructions fo sending a 2028 by E−mail may be found at the back of most TMs.

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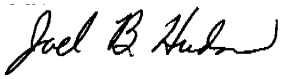

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THE METRIC SYSTEM AND EQUIVALENTS

'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

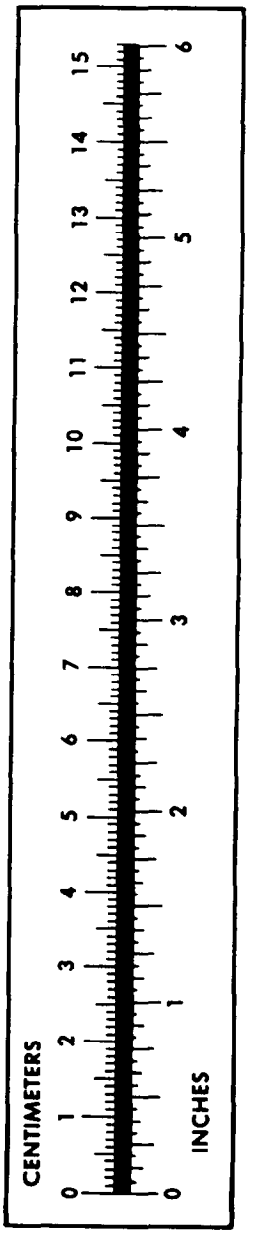
TEMPERATURE

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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