# URGENT

***TB 1-2840-248-20-20**

# DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

# PERIODIC INSPECTION AND REPLACEMENT, OF YELLOW AND BLUE ENGINE HARNESS, RCS CSGLD-1860 (R1), ON ALL AH-64 HELICOPTERS EQUIPPED WITH T700-GE-701 ENGINES

**Headquarters, Department of the Army, Washington, D. C.**
**23 December 1997**



**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THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.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 in paragraph 8 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. Same as paragraph 1a.

c. Aircraft Undergoing Maintenance. Same as paragraph 1a.

d. Aircraft in Transit.

(1) Surface/Air Shipment. Prior to first flight.

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

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

f. Component/Parts in Stock at all Levels (Depot and Others) Including War Reserves. Upon receipt of this TB the material condition tags of all phase 0, I, and II items in all condition codes listed in paragraphs 6 and 7 shall be annotated to read "TB 1-2840-248-20-20, T700-GE-701, Yellow and Blue Engine Harness Periodic Inspection and Replacement Procedures Not Complied With".

*This TB supersedes USAAMCOM Message 201556Z, October 1997 (AH-64-98-ASAM-01).

(1) Wholesale Stock. N/A.

(2) Retail Stock. Report receipt of this TB in accordance with paragraph 14c(2). Upon receipt of this TB. commanders and others maintaining retail stock at installation level and below shall contact the supported aviation unit to perform the Inspection required by paragraph 8 and the correction procedures of paragraph 9 on discrepant materiel. Disposition of discrepant materiel will be in accordance with paragraph 10. Report compliance with this TB in accordance with paragraph 14d(2).

g. Components/Parts in Work (Depot Level and Others). Items listed in paragraphs 6 and 7 in work will not be issued until compliance with this TB.

**2. Task/Inspection Suspense Date.** Phase III yellow and blue engine harnesses do not require Inspection in accordance with this TB. Megger/test box inspection of phase 0, I, and II yellow and blue engine harnesses shall be accomplished as follows:

a. Aircraft with less than 50 hours to next 250 hour phase inspection may be inspected at next phase.

b. Aircraft with greater than 50 hours to next 250 hour phase inspection shall be inspected within 60 days.

c. Thereafter. this inspection shall be completed at every 250 hour phase lnspection interval until phase III harneses are Installed.

**3. Reporting Compliance Suspense Date.** No later than 7 November 1997 per paragraph 14a of this TB.

**4. Summary of the Problem.**

a. The yellow and blue engine harnesses have been redesigned to make them moisture/fault resistant. Implementation of this TB will minimize engine electrical system anomalies. The objective of identifying and testing the phase 0, I. and II harnesses **ıs** to replace them as quickly as practicable with the moisture resistant phase III harnesses. Inspection of phase III harnesses is not required.

b. For manpower/downtime and funding impacts refer to paragraph 12.

c. The purpose of this TB is to:

(1) Provide Inspection criteria for yellow and blue engine harnesses for electrical insulation resistance.

(2) Establish an inspection interval until phase 0, I, and II harnesses have been removed from service.

(3) Provide guidance for identification and replacement of phase 0, I, and II design harnesses.

**5. End Items to be inspected.** All AH-64 aircraft with T700-GE-701 engines installed.

**6. Assembly Components to be Inspected.**

| NOMENCLATURE | PART NUMBER | NATIONAL STOCK NUMBER |
|---|---|---|
| Engine Assembly | 6044T06G01 | 2840-01-114-2211 |

**7. Parts to be Inspected.**

| NOMENCLATURE | PART NUMBER | NATIONAL STOCK NUMBER |
|---|---|---|
| Power Cable Assembly/ | 6044T60P01 | 6150-01-144-0102 |
| (Yellow Harness) | 6044T60P03 | 6150-01-321-3078 |

| 6044T6P01 SERIAL/PHASE NUMBERS | 6044T60P03 SERIAL/PHASE NUMBERS |
|---|---|
| CJWU 0001 through CJWU 1999 (Phase 0)<br>CJWU 2000 through CJWU 2472 (Phase I)<br>CJWU 2500 through CJWU 2832 (Phase II)<br>CJWU 2900 through CJWU 3370, CJWY 0001 through CJWY 0067, GJA PG340 through GJA PG349, GJA PK799 through GJA PK800, and GJA PB001 through GJA PB499 (Phase III - Provided for information purposes only). | All serial numbers are Phase III - Provided for information only. |

| NOMENCLATURE | PART NUMBER | NATIONAL STOCK NUMBER |
|---|---|---|
| Power Cable Assembly/ | 6044T83P02 | 2925-01-143-7341 |
| (Blue Harness) | 6044T83P05 | 2925-01-143-7341 |

| 6044T83P02 SERIAL/PHASE NUMBERS | 6044T83P05 SERIAL/PHASE NUMBERS |
|---|---|
| CJWP 0001 through CJWP 3199 (Phase 0)<br>CJWP 3200 through CJWP 3399 (Phase I)<br>CJWP 3400 through CJWP 9999 (Phase I)<br>CJWJ 0001 through CJWJ 9999, GJA PG390 through GJA PG399. and GJA PH303 through GJA PH399 (Phase III- Provided for information purposes only). | All serial numbers are Phase III - Provided for Information only. |

**8. Inspection Procedures.**

a. Utilizing inspection mirror and flashlight, inspect the yellow and blue engine harnesses for phase 0, I, II, or III serial numbers listed in para 7. Serial numbers are located on the rubber boots on the W4P1 and W5P1 cable connectors. If a yellow or blue engine harness is identified as a phase 0, I, or II harness serial number continue with the inspection. If a yellow or blue engine harness is identified as a phase III harness, the inspection is complete for that harness. For phase 0, I, and II harnesses in stores, locate and provide the phase 0, I, or II harness for testing. If the part number/serial number is illegible, the harness is assumed to be phase 0, I, or II.

b. Remove the phase 0, I, or II yellow or blue engine harness from the engine in accordance with TM 55-2840-248-23. Chapter 7 and mark appropriately in order to identify upon reinstallation. Record harness serial numbers for phase Identification, refer to paragraph 7, and reporting purposes.

**NOTE**

Prior to harness testing, ensure megger is operating correctly by performing the zero and infinity operational check provided with the test equipment. If megger fails the operational test, have megger calibrated before beginning this inspection.

c. Using AVIM/megger test box, P/N LEX 5621-10 and megger, P/N 212159, inspect each phase 0, I, and II harness in accordance with reference 13a for electrical insulation resistance.

d. Repeat the test for phase 0, I, and II harnesses at every 250 hour phase inspection until replaced by phase III harnesses. Phase III harnesses do not require periodic inspections.

**9. Correction Procedures.**

a. Phase 0, I, and II Yellow Engine Harnesses: If resistance is 10 megohms or greater. continue harness in service. requisition new phase III harness within 60 days and make appropriate entry **(red diagonal** status condition) on the DA Form 2408-13-1. If resistance is less than 10 megohms **(red** //x//status condition). reject the harness and requisition a new phase III harness. lmmediately replace harness when phase III harness is received.

b. Phase 0, I, and II Blue Engine Harnesses: If resistance is one megohm or greater, continue harness in service. If resistance is less than one megohm. contact the TB technical point of contact for further instructions. Requisition new phase III harness within 60 days regardless of phase 0, I, and II harness resistance and make appropriate entry **(red diagonal** status condition) on the DA Form 2408-13-1.

c. Phase III Yellow and Blue Engine Harnesses: Only identification is required.

d. installation of yellow and blue engine harnesses shall be in accordance with reference 13b, Chapter 7 and repot hot end connectors in accordance with reference 13b, Appendix H-9.

e. Perform maintenance operational check and limited maintenance test flight as required per TM 55-2840-248-23.

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

a. Parts Required. Phase III harnesses cited in para 7 (yellow engine harness P/N 6044T60P03 or blue engine harness P/N 6044T83P05) will be required to replace defective items.

b. Requisitioning Instructions. Requisition replacement parts using normal supply procedures. All requisitions shall use project code (CC 57-59) “XDJ” (X-ray, Delta, Juliet).

**NOTE**

Project code “XDJ” 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.

| NOMENCLATURE | PART NUMBER | NATIONAL STOCK NUMBER |
|---|---|---|
| Alcohol, isopropyl Grade B, 8 oz. | TT-I-735 | 6810-00-753-4993 |

d. Disposition. Dispose of removed parts/components using normal supply procedures, A QDR is not recurred.

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, Jigs and Fixtures Required.**

a. Test Box. P/N LEX 5621-10, manufactured by Serv-Air, Inc.

b. Megger, P/N 212159, NSN 6625-00-141-3558, manufactured by Biddle Co.

**12. Application.**

a. Category of Maintenance - AVIM/AVUM. Aircraft downtime for harness megger test will be charged to AVIM. Aircraft downtime for removal of harness, re-installation of harness, MOC, and MTF will be charged to AVIM.

b. Estimated Time Required.

(1) Total of 8 man-hours using two persons.

2) Total of 4 hours downtime for one end item.

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

| NOMENCLATURE | PART NUMBER | NATIONAL STOCK NUMBER | QTY | COST EA. | TOTAL $ |
|---|---|---|---|---|---|
| Harness, Yellow | 6044T60P03 | 6150-01-321-3078 | 2 | $3,414 | $6,828 |
| Harness, Blue | 6044T83P05 | 2925-01-143-7341 | 2 | $1,313 | $2,626 |
| Maximum total cost per aircraft = $9.454 | | | | | |

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. TB 1-2840-248-20-3, Yellow and Blue Harness Insulation Resistance Check for All AH-64A Aircraft with T700-GE-701 Engines.

b. TM 55-2840-248-23, basic, 28 April 1982, with Change 32, 14 October 1996, Engine, Aircraft Turboshaft, Models T700-GE-700, T700-GE-701, and T700-GE-701C.

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 MDS aircraft, forward a priority message, datafax or E-Mail to Commander, AMCOM, ATTN: AMSAM-SF-A (SOF Compliance Officer), in accordance with AR 95-3. Datafax number is DSN 897-2111 or Commercial (205) 313-2111. E-Mail address is "SAFEADM@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). Upon completion of inspection, units will forward a priority message to Commander, AMCOM, ATTN: AMSAM-AR-El-P. The report will cite this TB, date of inspection, aircraft serial number, aircraft and component hours, and results of the inspection including spares. Provide quantity by phase number (0, I, and II) which passed inspection and quantity by phase number (0, I, and II) which failed inspection. Inspection reports will be completed no later than 10 days after task/inspection suspense date.

c. Reporting TB Receipt (Spares).

(1) Materiel in Wholesale Depot Storage. N/A.

(2) Materiel in Retail Storage. N/A.

d. Task/inspection Reporting Suspense Date (Spares).

(1) Materiel in Wholesale Depot Storage. N/A.

(2) Materiel in Retail Storage. Report compliance with this TB to the logistical point of contact in paragraph 16b within 14 days of the date of this TB. Report the quantity inspected by condition code and the resulting condition code, quantity by phase number (0, I, -II, and III) which passed inspection, and quantity by phase number (0, I, II, and III) which failed inspection. Report by E-Mail or datafax and provide local point of contact.

e. 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 (Engine).

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

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

(4) DA Form 2408-14, Uncorrected Fault Record.

(5) DA Form 2408-18. Equipment Inspection List. (ULLS-A users will use an 800 Inspection number).

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

**16. Points of Contact.**

a. Technical points of contact for this TB are Mr. Matt Benzek, AMSAM-AR-El-P, DSN 897-1862 or Commercial (205) 313-1862; E-Mail address is “benzekm@redstone.army.mil”; datafax is DSN 746-3356 or Commercial (205) 876-3356. Mr. Greg Portmann, AMSAM-AR-EPE, DSN 693-0317 or Commercial (314) 263-0317; E-Mail is “portmanng@redstone.army.mil"; datafax is DSN 897-1874 or Commercial (205) 313-1874.

b. Logistical point of contact for this TB is Mr. Jim Mason. SFAE-AV-AAH-LF, DSN 897-4242 or Commercial (205) 313-4242, datafax is DSN 897-4343 or Commercial (2051 313-4343 E-Mail address is “mason@peoavn.redstone.army.mil”.

c. Forms and Records point of contact for this TB is Ms. Ann Waldeck, AMSAM-MMC-RE-FD, DSN 746-5564 or Commercial (205) 876-5564, datafax is DSN 746-4904 or Commercial (205) 876-4904. E-Mail address is “waldeck-ab@redstone.army.mil”.

d. Safety point of contact for this TB is Mr. Howard Chilton. AMSAM-SF-A. DSN 746-7271 or Commercial (205) 876-7271, datafax is DSN 897-2111 or Commercial (205) 313-2111. E-Mail address is “chilton-hl@redstone.army.mil”.

e. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact Mr. Ronnie W. Sammons, AMSAM-SA-CS-NF, DSN 897-0869 or Commercial (205) 313-0869. Datafax is DSN 897-0916 or Commercial (205) 313-0916. (Huntsville, AL is GMT minus 6 hrs).

f. After hours contact AMCOM Command Operations Center (COC) DSN 897-2066/7 or Commercial (205) 313-2066/7.

**17. 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 Missile Command, ATTN: AMSAM-MMC-LS-LP, Redstone Arsenal. AL 35898-5000. A reply will be furnished to you. You may also submit your recommended changes by E-mall directly to “ls-lp@redstone.army.mil”. A reply will be furnished directly to you.

By Order of the Secretary of the Army:

DENNIS J. REIMER
*General, United States Army*
*Chief of Staff*

Official:

JOEL B. HUDSON
*Administrative Assistant to the Secretary of the Army*
03863

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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

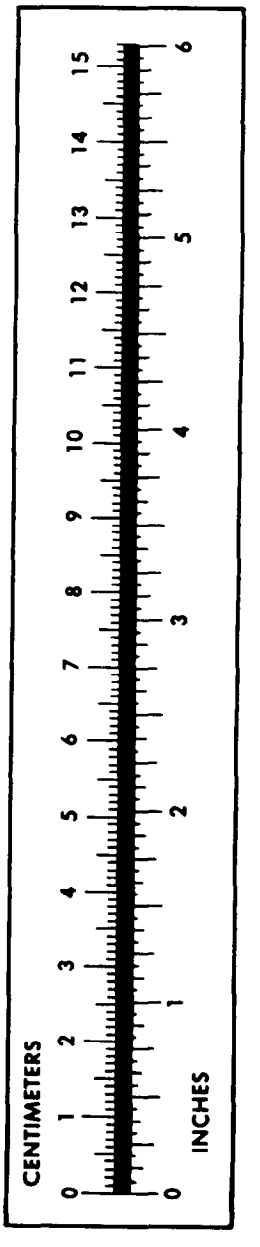
## TEMPERATURE

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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