

# ROUTINE

\*TB 1-1520-237-20-219

## DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

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### MANDATORY, RCS CSGLD-1-1860(R1), ALL H-60 SERIES AIRCRAFT, TAIL NUMBERS 77-22715 THROUGH 90-26367, INSPECTION OF FIRE EXTINGUISHER WIRING

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Headquarters, Department of the Army, Washington, D. C.  
24 July 2000

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**DISTRIBUTION STATEMENT A:** Approved for public release; distribution is unlimited.

#### NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

**1. Priority Classification. Routine**

#### NOTE

IAW AR95-1, para 6-6A, MACOM Commanders may authorize temporary exception from ASAM message 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 the condition status symbol of the cited aircraft will be changed to a red horizontal dash //-. The red horizontal dash //- entry shall state "inspect fire extinguisher wiring IAW UH-60-00-ASAM-05 (TB 1-1520-237-20-219) within the next 10 flight hours, but NLT 31 May 2000. The red horizontal dash //- may be cleared when the inspection of para 8 is completed. The affected aircraft shall be inspected as soon as practical but on later than 31 May 2000. 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 para 1a.

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

d. Aircraft in Transit.

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

(2) Ferry Status.

\*This TB supersedes USAAMCOM Aviation Safety Action Message 161414Z MAY 00, UH-60-00-ASAM-05

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(a) Same as para 1a.

(b) Those aircraft that have a DD 250 and are at Sikorsky will be inspected prior to ferry to final designation.

e. Maintenance Trainers (Category A, and B). Same as para 1a.

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

g. Component/Parts In Work (Depot Levels and Others). N/A.

**2. Task/Inspection Suspense Date.** Within the next 10 flight hours but NLT 31 May 2000 and report IAW para 14b.

**3. Reporting Compliance Suspense Date.** Report compliance IAW para 14a NLT 7 June 2000.

**4. Summary of the Problem.**

a. Modification Work Order (MWO) 1-1520-237-50-66 is being applied to all H-60 aircraft with tail numbers 77-22715 through 90-26367. Subsequent numbered aircraft had the Modification applied during production and are not effected by this TB. During scheduled replacement of the engine fire extinguisher cartridges on a UH-60 aircraft, it was discovered that the fire extinguisher system was mis-wired. The wiring for the no. 1 engine reserve squib was connected to the no. 2 engine primary squib, and the wiring for the no. 2 engine primary squib was connected to the no. 1 engine reserve squib. A subsequent survey of fifteen additional aircraft at various locations found that on one aircraft, the wiring was connected correctly but mislabeled, marking it appear to be mis-wired when inspected visually. These conditions pose an obvious safety risk. Attempting to activate the fire extinguisher system for one engine would actually result in the firing of the extinguisher for the other engine. Mislabeled wire bundles is also a concern as it could lead to inadvertent mis-wiring of the system during future maintenance operations.

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

c. The purpose of this TB is to:

(1) Inspect the fire extinguisher wiring in order to identify all instances of misrouting and/or mislabeling of wires.

(2) Perform an electrical continuity check of the fire extinguisher wire assembly.

**5. End Items to be inspected.** All H-60 series aircraft, tail numbers 77-22715 through 90-26367.

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

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
HARN ASSEMBLY, TRNSN RH	70552-03100-041	NA
HARN ASSEMBLY, TRNSN RH	70552-03100-042	NA
HARN ASSEMBLY, TRNSN RH	70552-03100-043	NA

**7. Parts to be Inspected.** N/A.

**8. Inspection Procedures.**

a. For all H-60 series aircraft with tail numbers 77-22715 through 90-26367, inspect the historical records (DA Form 2408-5) to determine if the aircraft has been modified in accordance with MWO 1-1520-237-50-66.

(1) If modified IAW MWO 1-1520-237-50-66, proceed to para 8b.

(2) For aircraft that have not been modified IAW MWO 1-1520-237-50-66, the inspection is complete. The red horizontal dash//--// status symbol will be cleared and compliance with this message and TB 1-1520-237-20-219 will be noted.

b. Visually inspect the fire bottle wiring connections to verify that the colored marker sleeves and wire numbers on the wires connected to each for bottle squib match the wire number and color sequences shown in TM 1-1520-237-23-7, figure 12-2-2-2, sheet 4.

(1) If all fire bottle wire connections are marked correctly, proceed to para 8c.

(2) If there is a discrepancy in the wire marker sleeves.

(a) Enter a red diagonal // \ // status symbol on the DA Form 2408-13. The red diagonal // \ // entry shall state "fire extinguisher wiring not marked IAW TM 1-1520-237-23".

(b) Proceed to para 8c.

c. Wiring continuity inspection.

**NOTE**

If any of the following inspection procedures indicate a discrepancy, annotate each discrepancy and continue with the inspection procedure.

**NOTE**

Paragraph references in the following steps refer to TM 1-1520-237-23.

(1) Setup.

(a) Turn on electrical power (para 1-6-13).

(b) Disconnect battery by removing cover and disconnecting both electrical connectors (para 9-4-34).

**NOTE**

Ensure wiring terminals are inside rubber boots and do not allow bare wires to contact airframe.

(c) Disconnect all wire terminals from main and reserve fire extinguishing bottles (para 12-4-1).

(d) Ensure fire extinguishing circuit breaker on lower console circuit breaker panel is pushed in.

(2) No. 1 main fire extinguishing bottle.

(a) Connect multimeter leads to wires marked W3163A16 and W3162A16N.

(b) Connect battery (para 9-4-34).

(c) Turn on electrical power (para 1-6-13).

(d) Pull engine controls quadrant #1 ENG EMER OFF lever (T-Handle) back.

(e) Place upper console fire extinguisher switch to main, then release to OFF.

**NOTE**

Multimeter should indicate 28 VDC when switch is placed to main.

(f) Push #1 ENG EMER OFF lever forward.

**NOTE**

When performing operational check, move engine (T-Handle) back or pull APU (T-Handle) down as indicated by order, then place fire extinguisher switch to position indicated. After completing each step, return all levers (T-Handles) to the off position.

(g) Pull upper console APU (T-Handle) down. Visually check directional control valve.

**NOTE**

Sound of directional control valve being energized should be heard and position indicator should pivot.

- (h) Place fire extinguisher switch to main, then release to OFF.

**NOTE**

Multimeter should indicate 28 VDC when switch is placed to main.

- (i) Push APU (T-Handle) up while a second individual is observing directional control valve.

**NOTE**

Sound of directional control valve de-energizing should be heard and position indicator should return to initial position.

- (j) Turn off all electrical power and disconnect battery (para 1-6-13).
- (k) At left hand relay panel, located and disconnect P243 and P902. Install and insulated jumper wire between P243-Z and P902-G (lower case "G" ) to simulate actuation of impact switch.
- (l) Connect battery (para 9-4-34).

**NOTE**

Multimeter should read 28 VDC.

- (m) Disconnect battery (para 9-4-34), remove jumper wire from P243 and P902, then reconnect P243 and P902 to left hand relay panel.
- (n) Disconnect multimeter leads from no. 1 main wires W3163A16 and W3162A16N.
- (3) No. 2 main fire extinguishing bottle.
  - (a) Connect multimeter leads to wires labeled W3164A20 and W3165A20N.
  - (b) Connect battery (para 9-4-34).
  - (c) Turn on electrical power (para 1-6-13).
  - (d) pull engine controls quadrant #2 ENG EMER OFF level (T-Handle) back.
  - (e) Place fire extinguisher switch to main, then release to OFF.

**NOTE**

Multimeter should indicate 28 VDC when switch is placed to main.

- (f) Push #2 ENG EMER OFF lever forward.
- (g) Turn off all electrical power and disconnect battery (para 1-6-13).
- (h) Disconnect multimeter leads from no. 2 main wires W3164A20 and W3165A20N.
- (4) No.1 reserve fire extinguishing bottle.
  - (a) Connect multimeter leads to wires labeled W3167A20 and W3166A20N.
  - (b) Pull engine controls quadrant #1 ENG EMER OFF lever (T-Handle) back).
  - (c) Place fire extinguisher switch to reserve, then release to OFF.

**NOTE**

Multimeter should indicate 28 VDC when switch is place to reserve.

- (d) Push #1 ENG EMER OFF lever (T-Handle) forward.
- (e) Pull upper console APU (T-Handle) down. Visually check directional control valve.

**NOTE**

Sound of directional control valve being energized should be heard and position indicator should pivot.

- (f) Place fire extinguisher switch to reserve, then release to OFF.

**NOTE**

Multimeter should indicate 28 VDC when switch is placed to reserve.

- (g) Push APU (T-Handle up while second individual is observing directional control valve.

**NOTE**

Sound of directional control valve de-energizing should be heard and position indicator should return to initial position.

- (h) Turn off all electrical power and disconnect battery (para 1-6-13.)  
 (i) Disconnect multimeter leads from no. 1 reserve wires w3167A20 and W3166A20N.  
 (5) No. 2 reserve fire extinguishing bottle.  
 (a) Connect multimeter leads to wires W3168A16 and W3169A16N.  
 (b) Pull engine controls quadrant #2 ENG EMER OFF lever (T-Handle) back.  
 (c) Place fire extinguisher switch to reserve, then release to OFF.

**NOTE**

Multimeter should indicate 28 VDC when switch is placed to reserve.

- (d) Push #2 ENG EMER OFF lever (T-Handle) forward.  
 (e) Turn off all electrical power (para 1-6-13).  
 (f) Disconnect P243 and P902 from left hand relay panel.  
 (g) Install an insulated jumper wire across P243-Z and P902-G (lower case "G").  
 (h) Connect battery (para 9-4-34).

**NOTE**

Multimeter should indicate 28 VDC.

- (i) Connect battery (para 9-4-34).  
 (j) Remove jumper wire from P243 and P902, then reconnect to left hand relay panel.  
 (k) Disconnect multimeter leads from no. 2 reserve wires W3168A16 and W3169A16N.  
 (l) Go to shutdown.  
 (6) Shutdown.  
 (a) Connect electrical wiring to squib terminals (figure 12-2-2-1 and figure 12-2-2-2, sheet 4).  
 4). Torque screws and nuts to 9 inch-pounds.  
 (b) Connect battery (para 9-4-34).  
 (c) Make sure area is clean and free of foreign material.  
 (d) Close and latch APU door.  
 d. Upon the completion of all inspections IAW para 8.  
 (1) If completion of all inspections IAW para 8b. and 8c reveal the wires are mislabeled, proceed to para 9a.  
 (2) If completion of the inspections IAW para 8b and 8c reveal thee wires are misrouted, proceed to para 9b.

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(3) If there were no discrepancies noted during the inspections IAW para 8b and 8c, the inspection is complete. Compliance with this message and TB 1-1520-237-20-219 will be noted.

### 9. Correction Procedures.

a. If the inspection IAW para 8b and 8c reveals that the fire extinguisher wires have been mislabeled complete the following.

- (1) Remove the discrepant marker sleeves.
- (2) Remove the robber boot from each discrepant pair of wires by carefully sliding it off over the lug.
- (3) Procure new marker sleeve material, MIL-I-23053, MIL-DTL-23053, or SAE-AMS-DTL-23053.
- (4) Install new marker sleeves, ensuring that colors match the color scheme shown in Tm 1-1520-237-23-7, figure 12-2-2-2, sheet 4.
- (5) Reinstall rubber boot.
- (6) Reconnect wires to squib terminals IAW TM 1-1520-237-23-7, figure 12-2-2-1 and figure 12-2-2-2. Torque screws and nuts to 9 inch-pounds.
- (7) Upon completion of the remarking of the wires, the red diagonal // \ // status symbol will be cleared and compliance with this message and TB 1-1520-237-23-20-219 will be noted.

b. If the inspections IAW para 8b and 8c reveals the wires had been misrouted.

- (1) Enter a red //X// status symbol on the DA Form 2408-13. The red //X// entry shall state "fire extinguisher wiring not connected IAW TM 1-1520-237-23".
- (2) Re-route all wires IAW TM 1-1520-237-23.
  - (a) Loosen or remove the wire clamps for the misrouted wires as required.
  - (b) Re-route the wires as shown in TM 1-1520-237-23-7, figures 12-2-2-1 and 12-2-2-2.
  - (c) Reattach the wire clamps.
  - (d) Reconnect the wiring and test the fire extinguisher system IAW TM 1-1520-237-23-7, section 12-2-2.

(3) Upon completion of the re-routing and inspection IAW TM 1-1520-237-23, the red //x// status symbol will be cleared and compliance with this message and TB 1-1520-237-20-219 will be noted.

c. Regardless of the aircraft status, report all inspection results IAW para 14b.

### 10. Supply/Parts and Disposition.

- a. Parts Required. N/A.
- b. Requisitioning Instructions. N/A.
- c. Bulk and Consumable Materials. N/A.
- d. Disposition. N/A.
- e. Disposition of Hazardous Material. N/A.

### 11. Special Tools, Jigs and Fixtures Required. N/A.

### 12. Application.

- a. Category of Maintenance. AVUM. Aircraft downtime will be charged to AVUM maintenance.
- b. Estimated Time Required.
  - (1) Total of 6 man-hours using 2 persons (one ea MOS 68F and MOS 68T).

- (2) Total of 3 hours downtime for one end item.
- c. Estimated Cost Impact of Stock Fund Items to the Field. N/A.
- 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. TM 1-1520-237-23.
- b. MWO 1-1520-237-50-66.
- c. DA PAM 738-751.

**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), Redstone Arsenal, AL 35898-5000, IAW AR 95-1. Datafax number is DSN 897-2111 or commercial (256) 313-2111. E-Mail address is "SAFEADM@REDS-TONE.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 CDR, AMCOM, ATTN: AMSAM-DSA-UH-L (Mr. Joe Hoover), Redstone Arsenal, AL 35898-5000. DSN is 645-7898 or comm (256) 955-7898, datafax is DSN 897-3778 or comm (256) 313-3778. E-Mail is "joe.hoover@uh.redstone.army.mil". The report will cite UH-60-00-ASAM-05 (TB 1-1520-237-20-219), date of inspection, aircraft serial number, aircraft hours, and results of the inspection. inspection and report will be completed no later than 7 days after Task/Inspection suspense date.

- c. Reporting Message Receipt (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 Mar 99.

**NOTE**

ULLS-A unites will use applicable "E" forms.

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

**NOTE**

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

**16. Points of Contact.**

a. Technical point of contact for this TB is Mr. Darrell Hutson, AMSAM-AR-E-I-C-U, DSN 897-3887 or commercial (256) 313-3887, E-Mail is "darrell-hutson@uh.redstone.army.mil. Datafax is DSN 897-4961.

b. Logistical point of contact for this TB is Mr. Joe Hoover, AMSAM-DSA-UH-L, DSN 645-7898 or commercial (256) 955-7898, Datafax is DSN 897-3778. E-mail is "hoover-jl@redstone.army.mil".

c. Wholesale materiel POC (Spares) is Mr. Dan Delao, AMSAM-MMC-VS-UB, DSN 897-1303 or (256) 313-1303, Datafax is DSN 897-1572. E-mail is "delao-dt@redstone.army.mil".

d. Forms and records point of contact for this TB is Ms. Ann Waldelk, AMSAM-MMC-RE-FF, DSN 746-5564 or (256) 876-5564, Datafax is DSN 746-4904. E-mail is waldeck-ab@redstone.army.mil.

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e. Safety point of contact for this TB is Mr. Ron Price, AMSAM-SF-A, DSN 788-8636 or commercial (256) 842-8636, Datafax is (256) 313-2111. E-mail is "ron.price@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 897-0410 or (256) 313-0410. E-mail is "wittstrom-jl@redstone.army.mil or Mr. Ronnie W. Sammons, AMSAM-SA-CS-NF, DSN 897-0408 or (256) 313-0408. Datafax is DSN 897-0411 or (256) 313-0411. E-mail "sammons-rs@redstone.army.mil". Huntsville, Alabama is GMT minus 5 hours.

g. After hours contact AMCOM Command Operations Center (COC) DSN 897-2066/7 or (256) 313-2066/7. or commercial (314)263-2066/7.


**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 35898-5000. You may also submit your recommended changes by E-Mail directly to LS-LP@redstone.army.mil. A reply will be furnished directly to you.



**By Order of the Secretary of the Army:**

**Official:**

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



JOEL B. HUDSON  
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*Secretary of the Army*  
0015302

**DISTRIBUTION:**

To be distributed in accordance with Initial Distribution No. (IDN) 313910, requirements for TB 1-1520-237-20-219.

**TB 1-1520-237-20-219**

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: ls-lp@redstone.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.