URGENT

TB 1-1520-238-20-110

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INITIAL AND RECURRING INSPECTION AND REPLACEMENT OF AUXILLARY POWER UNIT (APU) FUEL SUPPLY HOSE ASSEMBLY FOR ALL AH–64 AIRCRAFT

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

17 November 2000

NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. Priority Classification. Urgent.

a. Aircraft in Use. Upon receipt of this technical bulletin (TB), make the following entry on the DA Form 2408–13–1. Enter a red horizontal dash //–// status symbol with the following statement: "Inspect the APU fuel supply hose assembly IAW AH–64–01–ASAM–01 (TB 1–1520–238–20–110) on or before the next 10 hour/14 day inspection." Clear the red horizontal dash //–// entry when the procedures IAW para 8 and 9 are completed. The affected aircraft shall be inspected as soon as practical but no later than the next 10 hour/14 day inspection. Commanders who are unable to comply with the requirements of this message within the time frame specified will upgrade the affected aircraft status symbol to a red //X//.

b. Aircraft in Depot Maintenance. Depot commanders will not issue aircraft until they are in compliance with this message.

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) Boeing will inspect DD 250 aircraft prior to those aircraft departing for ferry to final destination.

This TB supersedes USAAMCOM Message 111715Z Oct 00 (AH–64–01–ASAM–01)

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. Upon receipt of this message, 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: "AH–64–01–ASAM–01 (TB 1–1520–238–20–110) not complied with."

(1) Wholesale Stock. N/A.

(2) Retail Stock. Upon receipt of this message, 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.

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

2. **Task/Inspection Suspense Date.** Complete the inspection IAW paragraph 8 on or before the next 10 hour/14 day inspection but NLT 25 Oct 2000 and report IAW para 14b.

3. **Reporting Compliance Suspense Date**. Report compliance IAW para 14a NLT 1 Nov 2000.

4. **Summary of the Problem.**

a. APU fuel hose assembly part number (P/N) 7–211643064 (rubber inner tubing material) can rupture, spraying fuel into the APU compartment. The hose supplier discovered a problem with the material compound of specific groups of fuel hose assemblies. The affected hose assembly is subject to premature aging caused by exposure to elevated temperatures. There has been one recorded AH–64 incident of an APU compartment fire due to premature aging of the APU fuel hose assembly.

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

c. The purpose of this TB is to:

(1) Inspect the APU fuel hose assembly P/N 7–211643064 for leakage.

(2) Replace the APU fuel hose assembly P/N 7–211643064 with a new hose P/N 7–211643064–3 on or before 11 Apr 2001.

(3) Add AH–64A APU fuel solenoid valve inspections to TM 1–2835–213–23 IAW paragraph 12e of this TB.

(4) Add a warning to the AH–64D IETM, TM 1–1520– Longbow/Apache and the AH–64A TM 1–2835–213–23 IAW paragraph 12e of this TB.

(5) Implement recurring inspections of the APU fuel hose assembly P/N 7–211643064 for leakage.

5. **End Items To Be Inspected**. All AH–64 series aircraft.

6. **Assembly Components To Be Inspected.**

Nomenclature	Part Number	NSN
Auxiliary Power Unit	7–211651002–5	2835–01–172–6200
Auxiliary Power Unit	7–511651002–7	2835–01–475–0646

7. **Parts To Be Inspected**.

Nomenclature	Part Number	NSN
Hose Assembly	7–211643064	4720–01–186–4418

8. **Inspection Procedures**.

a. Safe the aircraft per TM 1–1520–238–23 or the IETM.

b. Remove APU upper center cover.

c. Inspect APU fuel hose assembly. Refer to TM 1–1520–238–23P, figure 687, item 24 for the AH–64A, or the IETM for the AH–64D.

(1) If the hose assembly is stamped with part number 7–211643064–3, the inspection is complete and the red horizontal dash //–// entry may be cleared.

(2) If the hose assembly is stamped with part number 7–211643064, or the part number cannot be determined, perform fuel leak inspection IAW para 8d.

d. Fuel leak inspection.

(1) Disconnect APU controller/ecu connectors (2 each) per TM 1–1520–238–23 paragraph 15.23.3.c and 15.23.3.d for the AH–64A or the IETM [APU system, APU installation, control unit, electronic (ECU) and the DAP 101C–1901–Series Interactive Electronic Technical Publication], steps 1 and 2 for the AH–64D.

(2) Station an observer at the APU enclosure. Simultaneously with the inspection procedures in para 8d(3) or 8d(4), the observer will inspect the APU fuel supply hose as follows –

(a) Visually inspect the hose and deck using an explosion proof flashlight.

(b) Observe for any increase in fuel odor once the hose is pressurized.

CAUTION

Broken stainless steel braiding may cause injury.

(c) Feel hose and surrounding area for fuel dampness.

(3) Inspection procedures for the AH–64A –

(a) Enter pilots crew station and locate the battery/external power switch. Place switch in the “battery” position.

(b) Locate APU start/run switch. Place switch in the “run” position. Hold run position for approximately 30 seconds to pressurize APU fuel system. Return APU start/run switch to the “off’ position.

(c) Return battery switch to the “off” position.

(4) Inspection procedures for the AH–64D –

(a) Enter pilot’s crew station and locate the battery/external power switch. Place switch in the “battery” position.

(b) Locate APU start/stop switch. Lift cover and depress switch.

(c) Allow APU boost pump to operate for approximately 30 seconds. Depress APU start/stop switch to turn off APU boost pump.

(d) Return battery switch to the “off” position.

(5) If fuel leakage/vapor or increase in odor is detected, proceed to paragraph 9a.

(6) If no leakage/vapor or increase in odor is detected –

(a) Reconnect APU controller/ECU per TM 1–1520–238–23 paragraph 15.23.6 or the IETM [APU System, APU Installation, Control Unit, Electronic (ECU) and the DAP 101C–1901–Series Interactive Electronic Technical Publication], steps 5 and 6.

(b) Reinstall APU cover.

(c) Proceed to para 9b.

e. Conduct a recurring inspection of the APU fuel hose assembly P/N 7–211643064, as follows –

(1) The inspection procedures IAW paragraph 8d of this message will be completed every 10 flight hours/14 days.

(2) ULLS–A units will use one of their 800 inspection numbers for this special inspection.

9. Correction Procedures.

a. If fuel leakage/vapor or increase in odor was detected, remove and replace the fuel hose assembly P/N 7–211643064 with a P/N 7–211643064–3 per TM 1–1520–238–23, paragraph 15.20 for the AH–64A or the IETM for the AH–64D.

b. If no fuel leakage/vapor or increase in odor was detected, make the following entry on the DA Form 2408–13–1. Enter a red horizontal dash //–// status symbol with the following statement: "Replace APU fuel supply hose assembly P/N 7–211643064 with a new hose P/N 7–211643064–3 on or before 11 Apr 2001 IAW AH–64–01–ASAM–01 (TB 1–1520–238–20–110).

c. If the fuel hose assembly is being replaced due to leakage and a fuel hose assembly P/N 7–211643064–3 is not available, a new P/N 7–211643064 hose may be used. However, all P/N 7–211643064 hoses must be replaced on or before 11 Apr 2001.

10. Supply/Parts and Disposition.

a. Parts Required – Items cited in paragraphs 6 and 7 may be required to replace defective items.

b. Requisitioning Instructions – Requisition replacement parts using normal supply procedures. For NMCS requisitions ensure "999" is in RDD blocks (CC 62–64). "AOG" is not a valid RDD entry for DLA managed items. All requisitions shall use project code (CC 57–59) "X04" (Xray–Zero–Four).

NOTE

Project code "X04" 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. Disposition of Hazardous Material. IAW Environmental Protection Agency directives as implemented by your servicing environmental coordinator (AR 200–1).

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

12. Application.

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

b. Estimated Time Required.

(1) Estimated time to perform inspections IAW para 8 – total of 2 manhours using 2 persons.

(2) Estimated time to perform corrections IAW para 9.

(a) Total of 4 manhours using 1 person.

(b) Total of 4 hours downtime for one end item.

c. Estimated Cost Impact to the Field.

Nomenclature	Part No/NSN	QTY	Cost Each
House Assembly	7–211643064–3/ 4720–01–473–3442	1	$65.03

Total cost per aircraft = $65.03

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. The following manuals shall be changed to reflect this TB. A copy of this TB shall be inserted in the appropriate TM as authority to implement the change until the printed change is received.

(1) TM 1–2835–213–23, APU fuel solenoid valve inspections to be added to the AH–64A –

(a) Under installation in paragraph 3–3 add – "Check fuel solenoid valve body for leaks. No leaks allowed."

(b) Under inspection in paragraph 3–3 add – "Inspect for gap between the coil assembly and valve body. None allowed."

(c) Under inspection in paragraph 3–3 add – "Inspect for yielded or deformed cover assembly especially near the four screw heads. None allowed."

(2) Add the following warning to the AH–64D IETM [Under APU System, APU Maintenance Operation Check (MOC) and APU Startup Procedure], and for the AH–64A, TM 1–1520–238–T–8 [at the start of paragraph 15–10 and 15–12] –

WARNING

When the APU drive shaft is rotating, maintenance personnel should stay clear of the APU drive shaft and PTO clutch catwalk area while performing maintenance due to potential catastrophic failure of the PTO clutch. Catastrophic failure of the PTO clutch can cause extensive damage to the catwalk area.

13. **References**. –

a. DA Pam 738–751, 15 Mar 1999.

b. Interactive Electronic Technical Manual (IETM) – TM 1–1520– Longbow/Apache IETM, CD No. 1, version 3.1.2, data 19 Nov 1998, CD date 1 Dec 1998 or subsequent.

c. TM 1–1520–238–23 – Aviation Unit and Intermediate Maintenance Manual for AH–64A Apache Attack Helicopter, 16 May 1994.

d. TM 1–2835–213–23 – Aviation Unit and Aviation Intermediate Maintenance Manual, Engine Assembly Gas Turbine (GTCP36–55(H)), 29 February 1996.

e. TM 1–1520–238–23P–3 – Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List for AH–64A Apache, 28 May 1996.

f. TM 1–1500–328–23 – Aeronautical Equipment Maintenance Management Policies and Procedures, 30 July 1999.

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, commanders will forward a priority message, datafax or email to: CDR, AMCOM, ATTN: AMSAM–SF–A (SOF Compliance Officer), Redstone Arsenal, AL 35898–5000, IAW AR 95–1. Datafax number is DSN 897–2111 or (256) 313–2111. E–mail address is "SAFEADM@redstone.army.mil." The report will cite this message and 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 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 IAW DA PAM 738–751, 15 Mar 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 2408–14–1, Uncorrected Fault Record.

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

(5) DD Form 1574/DD Form 1574–1, Serviceable Tag/Label – Materiel (Color Yellow). Annotate remarks block with "Inspected Serviceable IAW AH–64–01–ASAM–01 (TB 1–1520–238–20–110)."

(6) DD Form 1577/DD Form 1577–1, Unserviceable (Condemned) Tag/Label – Materiel (Color Red). Annotate remarks block wiith "Comdemned IAW AH–64–01–ASAM–01 (TB 1–1520–238–20–110) 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 Mr. Andy Fabery, AMSAM-RD–AE–I–P–A, DSN 897-4802 or commercial (256) 313-4802. Datafax is DSN 897-4923 or commercial (256) 313-4923. E-mail is "Andrew.Fabery@redstone.army.mil".

b. Logistical point of contact is Mr. Jim Mason, SFAE-AV-AAH-LF, DSN 897-4242 or commercial (256) 313-4242. Datafax is DSN 897-4343 or commercial (256) 313-4343. E–mail is "MasonJ@peoavn.redstone.army.mil".

c. Wholesale materiel point of contact (spares) is Mr. Paul Hughes, DSCR–XBD, DSN 695–6328 or commercial (804) 279–6328. Datafax is DSN 695–5695 or commercial (804) 279–5695. Email is "PHughes@dcsr.dla.mil".

d. Forms and records point of contact 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 "Ann.Waldeck@redstone.army.mil" .

e. Safety points of contact are –

(1) Primary – Mr. Randall Rushing (SAIC), AMSAM–SF–A, DSN 897–2092 or commercial (256) 313–2092. Datafax is DSN 897–2111 or commercial (256) 313–2111. E–mail is "Randall.Rushing@redstone.army.mil".

(2) Alternate – Mr. Howard Chilton, AMSAM-SF-A, DSN 897-2068 or commercial (256) 313-2068. Datafax is DSN 897-2111 or commercial (256) 313-2111. E-mail is "Howard.Chilton@redstone.army.mil".

f. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact one of the following (Huntsville, AL, time is GMT minus 5 hours):

(1) CW5 Joseph L. Wittstrom, Security Assistance Management, AMSAM-SA, DSN 897-0410 or commercial (256) 313-0410. E-mail is "Joseph.Wittstrom@redstone.army.mil".

(2) Mr. Ronnie W. Sammons, AMSAM-SA-CS-NF, DSN 897-0408 or commercial (256) 313-0408. Datafax is DSN 897–0411 or commercial (256) 313–0411. E-mail is "Ronnie.Sammons@redstone.army.mil".

g. After hours, contact the 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 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-lp@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
0032002

DISTRIBUTION:
To be distributed in accordance with Initial Distribution Number (IDN) 313945 requirements for TB 1-1520-238-20-110.

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:*** 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).

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

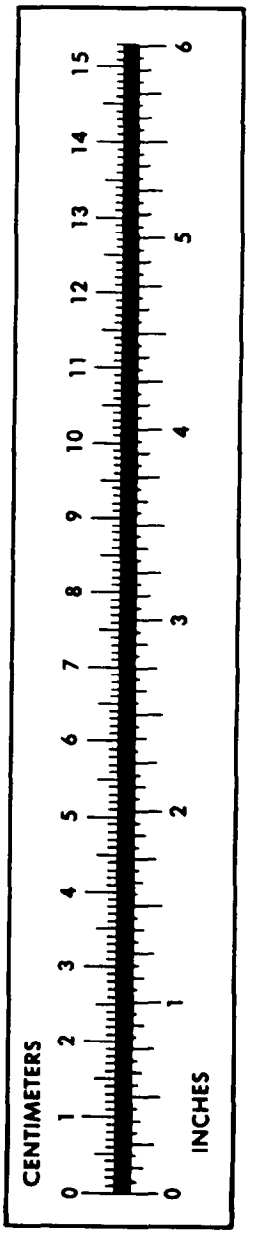
TEMPERATURE

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



PIN: 078679-000