URGENT

TB 1–1520–238–20–129

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INSPECTION OF AUXILIARY POWER UNIT (APU) CLUTCH FOR ALL AH–64 SERIES AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
4 September 2002

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

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THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.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 DA Form 2408–13–1. Enter a red horizontal dash "–" with the following statement: "Comply with TB1–1520–238–20–129 prior to next flight." The red horizontal dash "–" may be cleared when the inspection of paragraph 8 and 9 are completed. The affected aircraft shall be inspected as soon as practical but no later than (NLT) the next 50 flight hours. Failure to comply with the requirements of this message within the time frame will cause the status symbol to be upgraded to a red "x".

b. Aircraft in maintenance facility. Aircraft will not be issued until compliance with this TB has been completed.

(1) Aircraft in AVUM/AVIM, and Depot. Commanders and Facility managers will not issue aircraft until the are in compliance with this TB.

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

c. Aircraft in Transit. For aircraft away from home station, this message authorizes a one time flight, with intermediate stops, to return to the nearest secured maintenance facility/home station.

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

(2) Ferry Status. Same as para 1a.

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

e. Component/Parts in Stock at All Levels (Depot and Others)Including War Reserves– Upon receipt of this TB 1–1520–238–20–129, the materiel condition tags of all items in all condition codes listed in paragraph 6 and 7 shall be annotated to read (TB 1–1520–238–20–129), "Inspection of APU clutch not complied with".

(1) Wholesale Stock – N/A.

This TB supersedes USAAMCOM Safety of Flight Message 261700Z Aug 02

(2) Retail Stock – N/A.

f. Component/Parts in Stock Including War Reserves at All Levels (Depot and Others). Items listed in paragraphs 6 and 7 in work will not be issued until compliance with this TB..

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

2. **Task/Inspection Suspense Date.** Complete the inspection IAW paragraph 8 at next 50 flight hour or 125 hour special inspection, which ever occurs first.

3. **TAMMS Reporting Compliance Suspense Date**. Report compliance IAW 14a(1) NLT 3 Sep 02**.**

4. **Summary of the Problem**.

a. History– TB 1–2835–216–20–2 (AH–64–99–03) was issued to require special 50 and 125 hour recurring inspections of the APU clutch. Since the issue of that TB, an APU clutch failed in flight causing a fire in the transmission bay. The aircraft was safely landed but was destroyed by fire.

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

c. The purpose of this TB is to:

(1) To supersede the requirements for the 50 hour and 125 hour recurring inspections IAW TB 1–2835–216–20–2 (AH–64–99–03).

(2) Rescind the information provided in AH–64 MIM 01–015.

(3) Prior to next flight, conduct a records check to determine when the next 50hour or 125 hour special inspection is due.

(4) Require a new 50 hour recurring APU clutch inspection to be implemented at the next 50 hour or 125 hour special inspection, whichever occurs first. This inspection will replace the current 50 and 125 hour special clutch inspections.

(5) Add a 10 hour/ 14 day preventive maintenance service (PMS) inspection for the APU anti–flail and driveshaft.

5. **End Items to be inspected**. All AH–64 series aircraft.

6. **Assembly Components to be Inspected**. N/A

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Auxiliary Power Unit	7–211651002–5	2835–01–172–6200
Auxiliary Power Unit	7–511651002	TBD

7. **Parts to be Inspected**.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Clutch Assembly, APU	3886000–5	2835–01–164–5786

8. **Inspection Procedures**.

a. Initial Inspection–

(1) Prior to the next flight– inspect the DA Form 2408–18 to determine when the next 50/125 hour inspection is due.

NOTE

For ULLS–A units the inspection numbers are:

AH–64A– Inspection number A223.

AH–64D– Inspection number A131.

(2) All AH–64 aircraft will be inspected as required IAW paragraph 8b of this TB at the next scheduled 50 hour special inspection or scheduled 125 hour special inspection which ever occurs first.

(3) Upon completion of the next 50/125 hour special inspection, ULLS–A units will make the following changes to their inspection master files–

(a) AH–64D– Delete inspection numbers A132 and A229. Modify inspection number A131 (APU clutch inspection and reference).

(b) AH–64A– Delete inspection numbers A229 and A223. Modify inspection number A131 (APU clutch inspection and reference), and the next due date if applicable.

b. APU clutch 50 hour recurring inspection. This inspection will supersedes the current APU clutch 50 and 125 hour clutch inspections in the AH–64A TM and AH–64D IETM and will be performed every 50 flight hours.

(1) Inspect APU mounts for cracks, dents, distortion, loose bolts and corrosion. None allowed.

NOTE

Particular attention must be given to the welded joints.

(a) Inspect the entire length of each weld line for crack and any other abnormalities (TM 1–1520–238–23, paragraph 15.1 and the IETM).

(b) Inspect all attachment lugs for cracks and looseness. None allowed.

(c) Inspect all attachment points for loose or missing hardware. All bushings must be in place and hardware must be properly torqued.

(2) Remove anti–flail support and APU drive shaft IAW with the TM or IETM.

(3) Check APU power take off (PTO) clutch for external oil or grease leaks.

NOTE

It is normal for grease to appear within 15 to 25 hours of operation after installation of a new clutch. If grease is noted after two consecutive 50 flight hour inspection following the initial finding, remove and replace the PTO clutch.

(a) Inspect duplex vent and forward lip seal for grease. If present, remove grease and clean PTO clutch exterior, record findings on DA Form 2408–13–1.

(b) Inspect duplex vent and forward lip seal for oil None allowed.

NOTE

Some wetness from the duplex vent is acceptable. Oil leaking from the APU at the duplex vent is not acceptable.

(c) Check APU PTO clutch for grease discharge from the covered port. None allowed.

NOTE

External grease leakage is most likely to be at the forward lip seal and duplex vent. Do not confuse grease at the covered port with grease coming from the duplex vent. Grease from the duplex vent will migrate to the covered port area. Grease may vent through the duplex vent under certain conditions such as overfilling or operating under high temperatures.

NOTE

Grease discharge from the covered port at the bottom of the PTO clutch housing is not acceptable. This is an indication of internal leakage which will contaminate clutch surfaces. If grease discharge is noted at the covered port, the clutch assembly shall be replaced. Wetness from oil seepage at the covered port is acceptable as long as the oil leakage rate does not exceed one drop per minute from the covered port with the APU running.

WARNING

When the APU driveshaft is rotating, maintenance personnel should stay clear of the APU driveshaft 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 and personnel injury.

(4) Clean debris from the covered port .

(a) Remove one screw from the clutch nameplate and loosen the remaining screw.

(b) Using a small probe, clean debris form the covered port area.

(c) Reinstall removed screw into the nameplate and tighten both screws.

NOTE

Insure that the covered port is not clogged with friction disk material and oil. A clogged covered port will cause oil from the APU to build up in the friction disk area and may seep into the duplex bearing area causing damage to the duplex bearing.

(5) Check friction disk area for oil.

(a) Remove one screw from the clutch nameplate and loosen the remaining screw.

(b) Carefully rotate name plate and gasket upward.

(c) If oil is seen inside friction disk area replace clutch IAW paragraph 9a.

(d) If no oil is noted carefully rotate nameplate and gasket back into position.

(e) Reinstall removed screw into the nameplate and tighten both screws.

(6) Check APU PTO clutch for heat discoloration. None allowed. Heat discoloration is usually confined to the duplex bearing housing area.

(7) Check APU PTO clutch for cracks. If cracks are suspected, perform nondestructive inspection (TM 1–1520–264–23).

(8) Check APU PTO clutch for corrosion. None allowed.

(9) Visually inspect clutch mounting pad (with PTO clutch installed) for cracks and corrosion. None allowed.

(10) Visually inspect the duplex bearing area.

(a) Check the output bearing grease seal for damage and or metal contamination. None allowed.

(b) Manually rotate the clutch output shaft in both directions. The rotating motion should be smooth with no roughness or binding. A light amount of drag, cause by the shaft forward lip seal is to be expected.

(11) Using flashlight visually inspect the needle bearing area.

(a) Remove the spiral retaining ring (P/N M274263112D) from the inside of the clutch output drive shaft.

(b) Remove the aluminum plug (P/N 3886028–1) from the output shaft by inserting suitable tool (Allen wrench or equivalent) into the inner grove of the plug, and pull the plug straight out. Discard packing. Ensure plug is not damaged and retain for re–installation.

(c) Inspect the inside of the bearing cavity for burnt, dry, or blacken grease. None allowed.

(d) Inspect for the presence of metal particles or other combination in the needle bearing cavity. None allowed.

(e) Inspect for damage to the visible portion of the needle bearing and/or shaft. None allowed.

(f) Rotate the output drive on the clutch while observing the needle bearing with a flashlight. If the output shaft does not rotate smoothly and the needle bearing and/or pilot shaft does not remain centered during rotation, replace the clutch assembly.

(g) Inspect for signs of overheating, characterized by bluing or yellowing of the metal surface. None allowed.

CAUTION

Contamination of the bearings or failure to follow the prescribed procedures may cause premature failure of the needle bearings.

(h) Verify bearing cavity is properly packed with grease (MIL–G–81322). Pack grease approximately one half cubic inch (1/2 cubic inch) around inside diameter.

(i) Lightly lubricate new packing (P/N M83248/1–113) with grease (MIL–G–81322) and install on plug (P/N 3886028–1).

(j) Install plug into the clutch output drive shaft.

(k) Install the spiral lock ring (M27426–3112D) and ensure that it has good positive engagement.

(l) Install anti–flail bracket and APU drive shaft IAW TM or IETM. Check circumferential clearance.

(12)Check clutch housing bolts for proper torque of 50 inch pounds.

(13)Perform an APU MOC (Maintenance Operational Check) TM 1–1520–238–T or the IETM. Check for oil leakage from the covered port with the APU running. Replace clutch if the oil leakage rate exceeds one drop per minute.

9. Correction Procedures.

a. If any problems are noted when performing the inspection required IAW paragraph 8b of this message– remove and replace the APU clutch IAW the TM or IETM.

b. The following inspection will be added the AH–64A TM special inspection number 11 and the AH–64D IETM for a hard landing– check the APU mounts for cracks and distortion.

c. The following inspection will be added to the AH–64A TM special inspection number 21 and AH–64D IETM sudden stoppage.

(1) Check APU drive shaft and couplings for damage.

(2) Check APU mounts for cracks.

d. The following inspection will be added to the AH–64A TM and AH–64D IETM 10 hour/14 day PMS inspections– Inspect anti–flail for contact with the APU drive shaft (indicates drive shaft misalignment). Make a recurring write–up on a DA Form 2408–13–1 until this PMS inspection is incorporated into the TM and IETM.

e. The following inspection will be added to the AH–64A TM and the AH–64D IETM 250 hour phase inspection requirements.

(1) Inspect the APU mounts for damage during every 250 hour phase inspection.

(a) Remove APU IAW TM or IETM.

(b) Inspect APU mounts for cracks, dents, distortion, loose bolts, and corrosion. None allowed.

(c) Reinstall APU IAW the TM or IETM.

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

a. Parts Required. Items cited in paragraph 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) “X20” (X–Ray Two Zero) per this TB.

NOTE

Project code “X20” 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
Grease, Aircraft	MIL–G–81322	9150–01–378–0559
Petrolatum	VV–P–236	9150–00–250–0933
Lockwire 0.020	MS20995C20	9505–00–221–2650
Packing	M83248/1–113	5331–00–166–1062
Packing	M83248/1–241	5331–00–165–1959
Packing	M83248/1–036	5331–00–172–7187
Aluminum Plug	3886028–1	2835–01–177–9982

d. Disposition. Dispose of removed parts/components IAW normal supply procedures. All turn–in documents must include project code “X20” (X–Ray Two Zero) A CAT1 QDR will only be submitted for PTO clutch P/N 3886000–5 that have been removed as a result of failure. An “information only” CAT 2 QDR will be submitted for all PTO clutch P/N 3886000–5 that have been removed as a result of the inspection in paragraph 8 if this message.

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

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

12. **Application**.

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

b. Estimated time required.

(1) To inspect the APU clutch–

(a) Total of 3 man-hours using 1 person.

(b) Total of 3 hours downtime for one end item.

(2) To remove and install the APU clutch

(a) Total of 2 man-hours using 1 person.

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

(3) To perform an APU MOC

(a) Total of 2 man-hours using 2 persons.

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

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

NOMENCLATURE	PART NUMBER/ NATIONAL STOCK NUMBER	QUANTITY	COST EACH	TOTAL $
Clutch Assembly, APU	3886000–5 2835–01–164–5786	1	$25582.39	$25582.39
Maximum total cost per aircraft = $25582.39				

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.

(1) Interactive Electronic Technical Manual (IETM): TM 1–1520–Longbow/Apache IETM, CD No. 1, Version 3.1.2, Dated 19 Jan 02, CD Date 1 Dec 01 or subsequent.

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

(3) TM 1–1520–238–PM, Phased Maintenance Inspection Checklist for AH–64A Apache Attack Helicopter, 28 Feb 02.

(4) TM 1–1520–238–PMS, AH–64A 10 Hour/14 Day Inspection Checklist, 30 Jun 94.

(5) TM 1–1520–238–T, Aviation Unit and Intermediate Troubleshooting Manual for AH–64A Apache Attack Helicopter, 30 Apr 92.

(6) TM 1–1520–251–PM, Phased Maintenance Inspection Checklist for AH–64D Helicopter, 24 May 2002

13. **References**.

a. AR 95–1, 1 Sep 1997, Aviation Flight Regulations.

b. DA PAM 738–751, 15 Mar 99, Functional users manual for The Army Maintenance Management System– Aviation (TAMMS–A).

c. Interactive Electronic Technical Manual (IETM): TM 1–1520–Longbow/Apache IETM, CD No. 1, Version 3.1.2, Dated 29 May 02, CD Date 1 Dec 01 or subsequent..

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

e. TM 1–1520–238–23P, Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List for AH–64A Apache Attack Helicopter, 28 May 96.

f. TM 1–1520–238–PM, Phased Maintenance Inspection Checklist for AH–64A Apache Attack Helicopter, 28 Feb 02.

g. TM 1–1520–238–PMS, AH–64A 10 Hour/14 Day Inspection Checklist, 30 Jun 94.

h. TM 1–1520–238–T, Aviation Unit and Intermediate Troubleshooting Manual for AH–64A Apache Attack Helicopter, 30 Apr 92.

i. TM 1–1520–251–PM, Phased Maintenance Inspection Checklist for AH–64D Helicopter, 24 May 2002

14. **Recording and Reporting Requirements**.

a. Aircraft–

(1) TAMMS reporting compliance suspense – Upon entering requirements of this TB 1–1520–238–20–121 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, NLT date specified in paragraph 3. Datafax number is DSN 897-2111 or commercial (256) 313-2111. E-Mail address is "SAFEADM@REDSTONE.ARMY.MIL". The report will cite this TB number (1–1520–238–20–129) , 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– Upon completion of inspection, commanders will forward a priority message to the logistical point of contact in paragraph 16b. The report will cite this TB number, date of inspection, aircraft serial number, aircraft component hours, and results of the inspection. Inspection and reports will be completed NLT date specified in paragraph 2.

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

c. Materiel in Retail Storage– N/A.

d. The following forms are applicable and are to be completed in accordance with DA PAM 738-751,15 Mar 99:

NOTE

ULLS–A users will use applicable "E" forms

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

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

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

(4) DA Form 2408-16, Aircraft Component Historical Record.

(5) DA Form 2408-18, Equipment Inspection List.

(6) DA Form 2410, Component Removal and Repair Overhaul Record (Only if clutch is removed/ replaced).

(7) DD Form 1577–2/ DD Form 1575–3, Unserviceable (Reparable) Tag/Label – Materiel (Color Green). Annotate remarks block with " Unserviceable IAW SOF AH–64–02–ASAM– (TB 1–1520–238–20–129)."

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 897-2350 ext. 9825 or commercial (256) 705-9825. Datafax is DSN 897–2350 ext. 9918 or (256) 705–9918. E–mail is Andrew.Fabery@rdec.redstone.army.mil.

b. Logistical point of contact for this TB is:

(1) Primary – Mr. Mike Sharp, SFAE-AV-AAH-LF, DSN 897-4044 or commercial (256) 313-4044. Datafax is DSN 897–4374 or (256) 313–4374. E–mail is Mike.Sharp@peoavn.redstone.army.mil.

(2) Alternate – Mr. Steve Hayes, SFAE-AV-AAH-LF, DSN 897-4245 or commercial (256) 313-4245. Datafax is DSN 897–4374 or (256) 313–4374. E–mail is Steve.Hayes@peoavn.redstone.army.mil.

c. Wholesale material point of contact (spares) is Mr. Paul Hughes, DSXR–XBD, DSN 695–6328 or commercial (804) 279–6328, datafax is DSN 695–5695, E–Mail is phughes@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 commercial (256) 876-5564. Datafax is DSN 746–4904 or commercial (256) 876–4904, E–mail is Ann.Waldeck@redstone.army .mil.

e. Safety point of contact for this TB is:

(1) Primary – Mr. Harry Trumball, AMSAM-SF–A, DSN 897-2095 or commercial (256) 313-2095. Datafax is DSN 897–2111 or commercial (256) 313–2111. E–mail is Harry.Trumball@redstone.army.mil.

(2) Alternate – Mr. Joseph Creekmore AMSAM-SF-A, DSN 897-2090 or commercial (256) 313-2090. Datafax is DSN 897–2111 or commercial (256) 313–2111. E–mail is Joseph.Creekmore@redstone.army.mil.

f. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact – (Huntsville, AL is GMT minus 6 hours.) Mr. Ronnie W. Sammons, AMSAM–SA–AS–UT, DSN 897–0407 or commercial (256) 313–0407. Datafax is DSN 897–0411 or commercial (256) 313–0411. E–mail is Ronnie.Sammons@redstone.army.mil.

g. After hours contact AMCOM Operations Center (AOC) 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–MA–NP, Redstone Arsenal, AL 35898–5230. You may also submit your recommended changes by E–mail directly to 2028@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.

By Order of the Secretary of the Army:

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

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0224705

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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.