ROUTINE

***TB 1–1520–237–20–225**

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

MAINTENANCE MANDATORY, RCS CSGLD–1–1860(R1), ALL H–60 AIRCRAFT, INITIAL AND RECURRING INSPECTION OF THE MAIN LANDING GEAR DRAG BEAM ASSEMBLY AND DECREASED TORQUE ON THE JACKPAD NUT

Headquarters, Department of the Army, Washington, D. C.
8 December 2000

1. Priority Classification. ROUTINE

NOTE

IAW AR 95–1, 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 message make the following entry on the DA Form 2408–13–1. Enter a Red Horizontal Dash //–// status symbol with the following statement: "Inspect main landing gear drag beam assembly IAW TB 1–1520–237–20–225 prior to the next flight but NLT 21 Nov 00." Clear the Red Horizontal Dash //–// entry when the procedures IAW para 8 and 9 are completed. The affected aircraft shall be inspected prior to the next flight but no later than 21 Nov 00. 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 be issue aircraft until they are in compliance with this TB.

c. Aircraft Undergoing Maintenance – Commanders and facility managers will not issue aircraft until they are in compliance with this TB.

d. Aircraft in Transit.

(1) Surface/Air Shipment – Prior to first flight after arrival at final destination.

* This TB supersedes USAAMCOM Aviation Safety of Flight Message (AMSAM), UH–60–01–01, 052150Z Nov 00.

(2) Ferry Status –

(a) Prior to first flight after arrival at final destination.

(b) Sikorsky will inspect DD 250 aircraft prior to those aircraft departing for ferry to final destinations

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. Components/Parts in Work (Depot Level and Others). Depot and other maintenance activity Commanders will ensure items listed in paragraph 7 are not issued until they are in compliance with this message.

2. Task/Inspection Suspense Date.

a. Complete the initial inspection of the main landing gear drag beam assembly IAW paragraph 8a prior to the next flight but NLT 21 Nov 00.

b. Inspect the main landing gear drag beam assembly IAW paragraph 8b as soon as practicable but NLT 6 Dec 00 and report IAW para 14b.

3. Reporting Compliance Suspense Date. Report compliance IAW para 14a NLT 1 Dec 00.

4. Summary of the Problem.

a. Background.

(1) Since 1988, 60 drag beam failures have been reported. The primary failure mode has been stress corrosion cracking followed by tensile overload. Stress corrosion cracking results when a stress corrosion cracking prone material is subjected to a sustained tensile stress in the presence of moisture. One contributor to the tensile stress is the 71–79 foot pounds (855–945 inch–pound) torque currently required on the jackpad retention nut. Reducing that preload will reduce the amount of persistent stress around the jackpad bolt hole thus reducing, but not eliminating, the likelihood of crack initiation. Analysis indicates that the crack growth rate can be as fast as 8 clock hours from crack initiation to full fracture. A visual inspection of the jackpad bolt hole area before every flight will identify most beams that are in the process of breaking thereby reducing the likelihood of an operational incident or damage to other structure. To do this inspection effectively, the surface areas being checked must be reasonably clean.

(2) Failure of either right or left drag beam assembly is usually accompanied by a loud cracking sound. If this failure occurs while the aircraft is on the ground, the aircraft will immediately settle in the direction of the failed beam. The main rotor blades could drop 4 to 5 feet on the side of the failed drag beam. If the failure occurs with the rotors static, minimize ground handling of the aircraft with a cracked or failed drag beam. Attempting to move the aircraft with weight on the wheels and a cracked/broken drag beam is likely to result in additional airframe damage and possibly personal injury. If the failure occurs while rotors are turning, the possibility of dynamic rollover exists. Do not attempt to ground taxi the aircraft. On board personnel will remain inside the aircraft and the rotor disk will be kept clear until engine shutdown. Failure of the drag beam during flight does not require any immediate corrective action by the pilot on the controls. If possible, prior to each landing, a crewmember should visually check the drag beam for security. Every effort should be made to prevent collateral damage to the landing gear and airframe by limiting any loading of the main landing gear strut on the side of the failed drag beam during the landing.

WARNING

A failure of a main landing gear drag beam with the rotors turning creates an immediate hazard to personnel under the rotor system. This hazard will be minimized by limiting the exposure time of personnel operating under the rotor system.

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

c. The purpose of this TB is to:

(1) Establish an initial and recurring check of the main landing gear drag beam jackpad bolthole area for cracks.

(2) Inspect the drag beam, reduce the torque required on the main landing gear drag beam jackpad retention nut, and apply a torque stripe to the retention nut.

(3) Update the appropriate technical manuals to reflect the maintenance inspection and operational changes required IAW this message

5. **End Items to be inspected**. All H–60 series aircraft.

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

7. **Parts to be Inspected.**

NOMENCLATURE	PART NUMBER	NSN
Drag Beam/Axle Assy	70250–12105–043	1620–01–207–7482
Drag Beam/Axle Assy	70250–10257–043	1620–01–113–8134
Drag Beam/Axle Assy	70250–10257–045	1620–01–113–0816
Drag Beam/Axle Assy	70250–10257–046	1620–01–113–0187
Drag Beam/Axle Assy	70250–10257–047	1620–01–157–6482
Drag Beam/Axle Assy	70250–10257–049	1620–01–148–8972

8. **Inspection Procedures.**.

NOTE

If cracks are found in the drag beam, minimize ground handling of the aircraft.

a. Prior to beginning the initial inspection of the drag beam/axle assembly, determine the availability of items listed in paragraph 10a of this message. Availability of these items will determine the procedures to be followed during the initial inspection of each main landing gear drag beam assembly.

(1) If the items in paragraph 10a are not available:

(a) Wipe clean the top and bottom of left and right main landing gear drag beams within 2 inch radius of drag beam jackpad bolt/tie down.

NOTE

Use only a non–metallic scrapper when removing sealant from around the jackpad bolt, washers and nut.

(b) Remove sealant as applicable, from the jackpad retention nut and upper surface of the drag beam IAW TM 1–1520–237–23, para 3–4–5.1.1, and TM 1–1520–250–23, para 3.1.6.1.

(c) Check for cracks radiating from the jackpad bolt/tie down holes. If a crack is found or suspected, proceed to paragraph 8c.

NOTE

No cracks allowed.

(d) If no cracks are found, restrain the jackpad and rotate the retention nut (MS21245L12) counterclockwise to release the torque on the nut.

NOTE

Do not remove the nut from the jackpad bolt.

NOTE

If movement of the jackpad occurs, sealant must be removed from lower surface of the jackpad/drag beam interface and replaced after the nut is retorqued.

(e) Retorque the retention nut to 45–50 foot–pounds (540–600 inch–pounds).

(f) Apply sealant to nut and immediate area IAW TM 1–1520–237–23, para 3–4–5.1, and TM 1–1520–250–23, para 3.1.6.1.

NOTE

For this inspection only PR1436GB–2 is permitted as an alternative sealant.

(g) As soon as practicable, but NLT 6 Dec 00, perform the inspection required IAW paragraph 8a(2) of this message.

(2) If the items listed in paragraph 10a are available:

(a) Remove jackpad bolt from drag beam IAW TM 1–1520–237–23, para 3–4–5, and TM 1–1520–250–23, para 3.1.6. Remove the top and bottom sealing washers using extreme care to avoid damaging the washers to allow for reuse. Removal of tie down ring from the jackpad bolts is not necessary.

NOTE

TM 1–1520–237–23 and TM 1–1520–23 refer to the sealing washer as a “Washer” the FEDLOG and TM 1–1520–237–23P and TM 1–1520–23P refer to the sealing washer as “Packing with Retainer”.

(b) Inspect sealing washer for serviceability. Replace if the seal is damaged.

(c) Discard the jackpad bolt retention nut.

(d) Clean the drag beam surface within a 2 inch radius of the jackpad bolt holes, top and bottom IAW TM 1–1520–237–23, para 3–4–5.1.1.e and TM 1–1520–250–23, para 3.1.6.1.e. Using a 10X magnifier inspect the cleaned area and the inside diameter of the jackpad bolt holes for:

(1) Inspect for any evidence of cracks. If a crack is found or suspected, proceed to paragraph 8c.

NOTE

No cracks allowed.

(2) Inspect for corrosion IAW TM 1–1520–237–23, para 3–3–1, and TM 1–1520–250–23, para 3.1.3. If corrosion is found, proceed to paragraph 9b.

(e) If no cracks or corrosion are found, reinstall the jackpad bolt as follows:

CAUTION

Do not apply touchup paint to the sealant.

NOTE

PR1775 is the required sealant for this inspection.

(1) Using a reduced torque of 45–50 foot–pounds (540–600 inch–pounds), reinstall the jackpad bolt and washers with a new nut IAW TM 1–1520–237–23, para 3–4–5, and TM 1–1520–250–23, para 3.1.6.

(2) After covering the dust plug with seal compound IAW TM 1–1520–237–23, para 3–4–5.1, and TM 1–1520–250–23, para 3.1.6.1, apply torque stripe to the dust cap and retention nut.

b. The recurring inspections of each main landing gear drag beam will occur as follows:

(1) Prior to each flight, to include pre–flight, through flights, and post flight, wipe clean the top and bottom of left and right main landing gear drag beams within a 2 inch radius of drag beam jackpad bolt/tie down.

(2) Check for cracks radiating from the jackpad bolt/tie down holes.

NOTE

No cracks allowed.

(3) f a crack is found or suspected:

(a) Enter a Red Horizontal Dash //–// status symbol on the DA Form 2408–13–1 with the following statement: "Fluorescent penetrant inspection required IAW TB 1–1520–237–20–225."

(b) Proceed to paragraph 8c.

c. f a crack is found or suspected:

(1) Perform a fluorescent penetrant inspection to confirm the existence of the crack.

(2) If the crack is confirmed, proceed to paragraph 9a.

(3) If a crack is not found after application of the fluorescent penetrant inspection, continue with the inspection procedures IAW paragraph 8a or 8b as applicable.

d. At the next scheduled and each subsequent 90 day corrosion prevention inspection, apply corrosion prevention compound (CPC) over the sealant.

9. Correction Procedures.

a. If cracks are found:

(1) Change status of aircraft to a Red //X//.

(2) Immediately remove aircraft weight off of that main landing gear.

(3) Replace discrepant drag beam IAW with normal TM procedures as modified IAW this message.

b. If corrosion is found, clean/repair IAW TM 1–1520–237–23, para 3–3–1, or TM 1–1520–250–23, para 3.1.3.

10. Supply/Parts and Disposition.

a. Parts required. In addition to the items listed in paragraph 7, the following may be required to replace defective items.

NOMENCLATURE	PART NUMBER	NSN
Nut, Self–Locking	MS 21245L12	5310–00–419–0876
Packing with Retainer	NAS1523C12Y	5330–01–227–0458

b. Requisitioning instructions. Requisition replacement parts using normal supply procedures. All requisitions shall use project code (CC 57–59) "X0C" (Xray–Zero–Charlie)

NOTE

Project code "X0C" 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	NSN
Corrosion Prevention Compound		8030–01–381–6357
Sealing Compound	PR1775	8030–01–370–2161

NOTE

The storage life of PR–1775 Class B is at least 9 months when stored at temperatures below 80F (27C) in original unopened containers.

When requisitioning the sealing compound process a “999” requisition using “02” or “03” priority to ensure immediate delivery.

d. Disposition. Contact the technical POC IAW paragraph 16a prior to disposition of any discrepant drag beam.

e. Disposition of Hazardous Material. IAW Environmental Protection Agency directives as implemented by your servicing environment 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 maintenance.

b. Estimated Time Required.

(1) To perform the initial and recurring inspections: Estimated 5 minutes per end item.

(2) To decrease the torque of the jackpad nut:

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

(b) Total of 2 hours downtime for 1 end item.

c. Estimated cost impact to the field.

NOMENCLATURE	PART NO./NSN	QTY	COST EACH	TOTAL COST
Drag Beam/Axle Assy	70250–12105–043 1620–01–207–7482	2	$8,055.00	$16,110.00
Nut, Self–Locking	MS21245L12 5310–00–419–0876	2	$5.03	$10.06
Packing with Retainer	NAS1523C12Y 5330–01–227–0458	4	$1.22	$4.88

Total Cost Per End Item – $16,124.94

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 publications shall be changed to reflect this message. A copy of this message shall be inserted in the appropriate TM as authority to implement the change until the changes to the following TMs are received:

(1) Add to TM 1–1520–237–10, 29 May 1998, paragraphs 8.14.f and 8.20.f, Check Drag Beam.

(2) Add paragraph 8b, Inspection, to TM 1–1520–237–23–1, Para 1.7.14.

(3) Change TM 1–1520–237–23–3, 29 May 1998, para 3–4–5.1.3, change 4, to read

(a) Change step d to read – Install new nut on jackpad. Torque to 540–600 inch pounds (45–50 foot pounds).

(b) Add step h as follows – Apply torque stripe to the jackpad retention nut (para 2–6–5).

(4) Change TM 1–1520–237–23, para 1–7–17.2.2, and TM 1–1520–250–23, para 1.45.15.2.2, add new steps as follows–

(a) Check the jackpad retention nut for the presence and alignment of a torque stripe.

(b) During each 90 day corrosion prevention inspection cover the sealant with corrosion prevention compound.

(5) TM 1–1520–237–PMS–2, para 2.5, add new step as follows – Check the jackpad retention nut for the presence and alignment of a torque stripe.

(6) Add to TM 1–1520–250–10, 28 Jul 00, Change 6, para 8–13.g and para 8–19.g – Check drag beam.

(7) Add paragraph 8b, Inspection, to TM 1–1520–250–23–1, 28 Jul 00, para 1–7–14, and TM 1–1520–250–23, para 1.45.14.

(8) Change TM 1–1520–250–23, 28 Jul 00, para 3.1.6.3, as follows –

(a) Step d to read – Install new nut on jackpad. Torque nut 540–600 inch pounds (45–50 foot pounds).

(b) Add new step h to read – Apply torque stripe to the jackpad retention nut (para 2–6–6).

(9) TM 1–1520–250–PMS–1, para 2.19, add new step as follows – Check the jackpad retention nut for the presence and alignment of a torque stripe.

(10) TM 1–1520–250–PMS–2, 28 Jul 00, step 2.8, add new step as follows – Check the jackpad retention nut for the presence and alignment of a torque stripe.

(11) Add to TM 1–1520–253–10, 29 Jan 99, para 8.13.1.f and 8.19.2.e– Check drag beam.

(12) Add to TM 1–1520–269–10, 30 Jul 99, Change 2, para 8.13.1.e and 8.19.2.f – Check Drag Beam.

13. **References**.

a. TM 1–1520–237–10.

b. TM 1–1520–237–23.

c. TM 1–1520–237–23–PMS–1.

d. TM 1–1520–237–23–PMS–2

e. TM 1–1520–250–10.

f. TM 1–1520–250–23.

g. TM 1–1520–250–23–PMS–1.

h. TM 1–1520–250–23–PMS–2.

i. TM 1–1520–253–10.

j. TM 1–1520–269–10.

k. DMWR 1–1620–244.

l. 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 "SAFE-ADM@REDSTONE.ARMY.MIL". The report will cite TB 1–1520–237–20–225, 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 the logistical POC listed in para 16c. The report will cite TB 1–1520–237–20–225, date of inspection, aircraft serial number, aircraft hours, and results of the inspection. Inspection report will be completed NLT 13 Dec 00.

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 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.

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

16. **Points of Contact**.

a. Technical point of contact for this TB is Mr. Darrell Hutson, AMSAM–RD–AE–I–D–U, DSN 897–2413 or (256) 313–2413. E–mail is "darrell.hutson@redstone.army.mil". Datafax is DSN 897–3844 or (256) 313–3844. Alternate phone number is DSN 897–5198 or (256) 313–5198.

b. The AMCOM War Room POC is Mr. Alan McCandless, AMSAM–MMC–VS–US, DSN 788–8179 or commercial (256) 842–8179. E–mail is "allan.mccandless@redstone.army.mil".

c. Logistical point of contact for this TB is Mr. Joe Hoover, AMSAM–DSA–UH–L, DSN 645–7898 or (256) 955–7898, datafax is DSN 897–3778 or (256) 313–3778. E–mail is "joe.hoover@uh.redstone.army.mil".

d. Wholesale materiel point of contact (Spares) is Mr. Dan Delao, AMSAM–MMC–VS–UB, DSN 897–1303 or (256) 313–1303, datafax is DSN 897–4769. E–mail is "daniel.delao@redstone.army.mil".

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

f. Safety points of contact are

(1) Primary – Mr. Harry Trumbull, (SAIC), AMSAM–SF–A, DSN 788–2095 or commercial (256) 313–2095, Datafax is (256) 313–2111. E–mail is "harry.trumbull@redstone.army.mil".

(2) Alternate – Mr. Ron Price, AMSAM–SF–A, DSN 788–8636 or (256) 842–8636, datafax is (256) 313–2111. E–mail is "ron.price@redstone.army.mil".

g. Foreign Military Sales recipients requiring clarification of action advised by this TB should contact:

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

(2) 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 "sammonssrw@redstone.army.mil".

h. After hours contact AMCOM Command Operations Center (COC) DSN 897–2066/7 or (256) 313–2066/7. Huntsville, AL is GMT minus 6 hrs.

17. **Reporting of Errors and Recommended 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 you 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
Administrative Assistant to the
Secretary of the Army
0033319

DISTRIBUTION:
To be distributed in accordance with Initial Distribution Number (IDN) 313954, requirements for TB 1-1520-237-20-225.

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: Is–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.