

URGENT

TB 1-1520-238-20-128

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INSTALLATION AND INTERIM MAINTENANCE PROCEDURES FOR RAPID DEPLOYMENT INITIATIVE HORIZONTAL STABILATOR FOR ALL AH-64 AIRCRAFT

Headquarters, Department of the Army, Washington, D.C.
30 August 2002

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NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. **Priority Classification. Urgent.**
 - a. Aircraft in Use. Not applicable.
 - b. Aircraft in Maintenance. Not applicable.
 - c. Aircraft in Transit. Not applicable.
 - d. Maintenance Trainers (Category A and B). Not applicable.
 - e. Component/Parts in Stock at All Levels (Depot and Others) Including War Reserves. Not applicable.
 - (1) Wholesale Stock. Not applicable.
 - (2) Retail Stock. Not applicable.
 - f. Components/Parts in Work (Depot Level and Others). Not applicable.
2. **Task/Inspection Suspense Date.** Not applicable.
3. **Reporting Compliance Suspense Date.** Not applicable.
4. **Summary.** The purpose of this technical bulletin (TB) is to provide installation procedures for the horizontal stabilator rapid deployment improvement, and to provide interim maintenance procedures until changes are published in the AH-64A TMs and the AH-64D Interactive Electronic Technical Manual (IETM).
5. **End Items To Be Inspected.** Not applicable.
6. **Assembly Components To Be Inspected.** Not applicable.

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7. **Parts To Be Inspected.** Not applicable.
8. **Inspection Procedures.** Not applicable.
9. **Installation Procedures for Horizontal Stabilator Rapid Deployment Initiative.**

NOTE

Ensure a foreign object damage (FOD) prevention program is implemented during application of these procedures in accordance with AR 385-95, Chapter 4.

To prevent damage or loss, items removed to gain access to work areas shall be tagged for identification and protected from damage.

The following procedures are to be performed in accordance with TM 1-1520-238-23 series and Interactive Electronic Technical Manual (IETM) - TM 1-1520- Longbow/ Apache IETM.

NOTE

Measure gap where the existing 7-311120606-3 peel shims are located. Measure the left and right side between the 7-311120608-3 spacer, sleeve, and the 7-211123605-7 spar, inboard with a feeler gauge. Record measurements into appropriate logbook for later use during re-installation of horizontal stabilator. Save the removed peel shims, P/N 7-311120606-3, for re-installation if required.

- a. Equipment conditions: Helicopter safed (ref paragraph 1.57).
- b. Apply power, position the stabilator in the full down position and remove power.
- c. Remove stabilator access panels LS1, RS1, A545 or L545 and R545 for A model.

CAUTION

When disconnecting the stabilator actuator from the stabilator place padding between the stabilator, stabilator actuator, frame and the tail landing gear strut to avoid damage to the stabilator or actuator.

- d. Disconnect the stabilator actuator from the stabilator mount bracket and retain all hardware for reinstallation, cotter pin should be discarded and replaced per existing TM and IETM requirements.
- e. Install a -9 rig pin in the brackets on the topside of the stabilator before removing the stabilator mount bolts.
- f. Remove the two NAS623-3-4 screws and two NAS1149C0363B washers attaching the 7-311120607 retainer plate located on the left and right side, inside the lower stabilator access panels. (Retain all hardware and parts for reinstallation).
- g. Remove the two cotter pins, washers, and nuts securing the stabilator mount bolts, retain the washer for reinstallation.
- h. Do not remove the bolts at this time; remove only the spacers and shims.
- i. Remove the -9 rig pin while four persons support the stabilator.
- j. Stabilator mount bolts must be allowed to turn freely while removing them, insure that all weight is removed on the mount bolts during removal.

- k. Remove each bolt one at a time and perform the following inspections using an inspection mirror:
- (1) Visually inspect P/N 7-311123630-7 spherical bearing for damage IAW with the TM 1-1520-238-23 series manuals and the AH-64D IETM. Replace as required.
 - (2) Visually inspect P/N 7-311120608-3 spacer sleeve IAW the TM 1-1520-238-23 series manuals and the AH-64D IETM. Verify that the keys are in good condition. Replace as required.
 - (3) Visually inspect P/N 7-311120609 pivot spacers for pits or scratches IAW the TM 1-1520-238-23 series manuals and the AH-64D IETM. Replace as required.
- l. Using P/N 7-311120608-3 sleeve spacer, insert keys into P/N 7-311123630-7 spherical bearing and visually set slots in bearings at 6 o'clock and 12 o'clock.
- m. Refer to the appropriate logbook for the required gap measurement taken for the shim stack up. Use the 7-5M1120600-5 shim and the -7, -9, or -11 shim as required per side to reach measurement recorded. (If necessary, you may use previously installed peel shims to obtain the proper gap)
- n. Lubricate the two 7-5M1120600-3 shoulder bolts with MIL-G-81322 grease. Apply to the underside of the bolt head and contact surfaces.

WARNING

MIL-G-81322 is toxic to skin, eyes, and respiratory tract. Avoid repeated or prolonged contact. Good general ventilation is normally adequate.

NOTE

Four people shall support the stabilator during installation of the shoulder bolts. Stabilator support must be adjusted to allow No Load Installation of the shoulder bolts. Hold stabilator in the position until pivot lug hardware is installed.

- o. Install the two 7-5M1120600-3 shoulder bolts, insert bolts through the pivot spacer, P/N 7-311120609, the spherical bearing, P/N 7-311123630-7, and pivot lug.
- p. Place the new 7-5M1120600-5 shim and the required stack up of -7, -9 or -11 and the 7-311120606-3 peel shims if required to obtain a gap of .001 to .003 (reference log book for gap dimension) onto the 7-311120608-3 spacer sleeve. Install as one unit on each of the 7-5M1120600-3 shoulder bolts.

NOTE

Install the shims with the peel shims, if required, sandwiched between the solid shims.

To achieve one unit, permissible to use A-A-3097 Cyanoacrylate Adhesive to keep alignment of flat edges together. Apply to the outer edges only; do not apply to the flat surface of the shims.

- q. Lift stabilator to align rig pin holes. Install -9 rig pin in the bracket on the top side of the stabilator.
- r. Install the AN960XC1416L washers and HS6099-14 nut on each of the 7-5M1120600-3 shoulder bolts. Perform a drag torque check to insure that the minimum drag torque is 70 inch-pounds. If the minimum drag torque is less than 70 in lbs, replace the nut.
- s. Torque the HS6099-14 nut to 1400 - 1600 in lbs plus the drag torque.
- t. To ensure preload was correctly applied to the horizontal stabilator pivot joint, check the gap between the sleeve spacer, P/N 7-311120608-3 and the shim stack 7-5M1120600-5, -7, -9, -11, and 7-311120606-3 if required, with a feeler gauge. Gap should be 0.001 to 0.003 inches. If gap does not meet this criteria, bolt must be removed and shim stack adjusted to achieve required gap. Re-install bolt per previous instructions.

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- u. Reinstall the retainer plates inside the stabilator using the NAS623-3-4 screws and NAS1149C0363B washers.
- v. Remove -9 rig pin from the brackets on the top side of the stabilator.
- w. Align the stabilator actuator with the fitting on the stabilator. Install the HS5542-06002 bushing in the actuator clevis and fitting, and install the NAS6606D18 bolt, MS20002C6 washer, and AN310-6 nut previously removed.
- x. Torque the nut 95-110 inch-pounds, and install a new MS24665-300 cotter pin.
- y. Apply corrosion preventative to the stabilator as follows:

NOTE

Make application in single short duration squirts to the following areas: between the nut and the vertical stabilizer ear, between vertical stabilizer ears and horizontal stabilator ears (three places on each hinge assembly).

- (1) Wait two minutes; wipe off excess corrosion preventative compound from applied area.
- (2) Wait one hour and re-apply a second coat of corrosion preventative compound to the stabilator hinge assemblies.
- z. Move the stabilator to the full down "ND" (Nose Down) position.
- aa. Install stabilator access panels LS1, RS1, and A545 or L545 and r545 for A model.
- ab. For AH-64A, perform stabilator maintenance operational check (MOC) and DASE MOC per TM 1-1520-238-T-7. For AH-64D, perform stabilator position transducer/flight management computer MOC per Longbow AH-64D Interactive Electronic Technical Manual (IETM).
- ac. Perform maintenance test flight.

10. Correction Procedures. AH64A Apache TM 1-1520-238-23-2, dated 16 May 1994, with Change 8, dated 15 May 2002.

NOTE

These procedures must be used with the current TMs, including the latest changes, until all applicable TMs have been updated with the enclosed technical information. These procedures represent an additional configuration in accordance with the installation in paragraph 9. For aircraft which have not had the installation in paragraph 9, use existing TM procedures.

NOTE

As a result of the application in paragraph 9, part numbers for callout items in TM paragraph 2.113 will change. Cotter pin (30) is P/N MS24665-300, nut (31) is P/N HS6099-14, and shoulder bolt (32) is P/N 7-5M1120600-3.

- a. Paragraph 2.113.2 Materials/Parts, change cotter pin quantity to read (1), add Adhesive (Item 13 App F).
- b. Paragraph 2.113.3.e Delete (1) and renumber remaining paragraphs.
- c. After paragraph 2.113.6.a(4) change to read: "Lubricate two bolts (32). Use grease (item 87, App F). Apply grease to the underside of the bolt head and contact surfaces."
- d. After paragraph 2.113.6.a(9) add "(10) Perform a drag torque check to insure that the minimum drag torque is 70 inch-pounds. If the minimum drag torque is less than 70 inch-pounds, replace the nut." Renumber remaining paragraphs.

e. Paragraph 2.113.6.a(13) change to read: “Measure thickness of two shims (35). Required shim (35) thickness is **0.001 INCH to 0.003 INCH** less than measured gap in step a.(11). Peel shim leaves or replace shims to meet gap requirement, if needed. Install as one unit on each of the shoulder bolts (32).

NOTE

Install the shims with the peel shims sandwiched between the solid shims. To achieve one unit, it is permissible to use adhesive (item 13, APP F) to keep alignment of flat edges together. Apply to outer edges only; do not apply to the flat surface of the shims.”

f. Paragraph 2.113.6.b change to read “**Apply torque to bolt heads (32) 1400 to 1600 INCH-POUNDS plus the drag torque.**”

g. Paragraph 2.113.6.b(1) change to read “Hold two nuts (31). Use open end wrench.”

h. Paragraph 2.113.6.b(2) change to read “Torque two bolts (32) to 1400 to 1600 INCH-POUNDS, plus drag torque. Use torque wrench, crowfoot, and adapter.”

i. Paragraph 2.113.6.b(3) and paragraph 2.113.6.b(4) Delete.

j. Correction procedures for the **Longbow AH-64D Interactive Electronic Technical Manual (IETM)** apply to task **Horizontal Stabilator Remove and Install** . Procedures are similar to paragraphs 10.a through 10.h above, but the AH-64A TM paragraph references do not apply.

11. Supply/Parts and Disposition.

a. Parts Required.

Part Number	Nomenclature	Quantity
7-5M1120600-3	SHOULDER BOLT	2 EA.
7-5M1120600-5	SHIM (THK .115)	2 EA.
7-5M1120600-7	SHIM (THK .010)	4 EA.
7-5M1120600-9	SHIM (THK .015)	4 EA.
7-5M1120600-11	SHIM (THK .020)	4 EA.
7-311120606-3	SHIM PEEL	As required
HS6099-14	NUT	2 EA.
NAS1149C1432B	WASHER	2 EA.
MS24665-300	COTTER PIN	1 EA.

b. Requisitioning Instructions. See paragraph 17.b below

c. Bulk and Consumable Materials.

Part Number	Nomenclature	Quantity
MIL-C-81309 Type III, Class II	Corrosion preventative compound	5 oz.
A-A-3097	Cyanoacrylate Adhesive	5 oz.

d. Disposition. Not applicable.

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

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12. Special Tools and Fixtures Required.

Tool kit, aircraft mechanic's	5180-00-323-4692	P/N SC518099CLA01
Tool kit, aircraft Inspector's	5180-00-323-5114	P/N SC518099CCA09
Wrench, torque, dial indicator, 3/8 drive, 0-600 inch-pounds	5120-00-288-8865	P/N A-A-2411
Wrench, torque, 1000-1800 inch-pounds minimum		

13. Application.

- a. Category of Maintenance. AVUM.
- b. Estimated Time Required. 4 hours using 5 persons.
- c. Estimated Cost Impact to the Field. Not applicable.
- d. TB/MWOs To Be Applied Prior To Or Concurrently With This Inspection. Not applicable.

e. Publications Which Require Change As a Result of This TB. The following publications shall be changed to reflect this TB. A copy of this TB shall be inserted in the appropriate publications as authority to implement the change until the published change is received.

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

(2) Interactive Electronic Technical Manual (IETM) - TM 1-1520- Longbow/Apache IETM, CD No. 1, version 3.1.2, dated Jan 2002, CD date 1 Dec 2001 or subsequent.

14. References. -

- a. Interactive Electronic Technical Manual (IETM) - TM 1-1520- Longbow/Apache IETM, CD No. 1, version 3.1.2, dated Jan 2002, CD date 1 Dec 2001 or subsequent.
- b. TM 1-1520-238-23 - Aviation Unit and Intermediate Maintenance Manual for AH-64A Apache Attack Helicopter, 16 May 1994.
- c. TM 1-1520-238-T-7 - Aviation Unit and Intermediate Troubleshooting Manual for AH-64A Apache Attack Helicopter, Volume 7, 30 April 1992.

15. Recording and Reporting Requirements.

a. Records and Reports.

(1) The following forms are applicable and are to be completed in accordance with DA Pam 738-751, TAMMS-A.

NOTE

ULLS-A users will use applicable "E" Forms.

- (a) DA Form 2407. Maintenance Request.
- (b) DA Form 2408-13, Aircraft Inspection and Maintenance Record.
- (c) DA Form 2408-13-1, Aircraft Inspection and Maintenance Record.
- (d) DA Form 2408-13-2, Related Maintenance Actions Record.
- (e) DA Form 2408-15, Historical Record for Aircraft.

16. Weight and Balance. Not applicable.

17. Points of Contact.

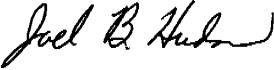
a. Technical point of contact for this TB is Ms. Yen Fuqua, AMSAM-RD-AE-I-P-A, (256) 705-9827. Datafax is (256) 705-9827. E-mail is "yen.fuqua@rdec.redstone.army.mil".

b. Logistical point of contact is: Mr. Lloyd Hopkins, SFAE-AV-AAH-LF, (256) 313-4072, Datafax is (256) 313-4374. E-mail is "lloyd.hopkins@peoavn.redstone.army.mil".

18. 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-MA-NP, Redstone Arsenal, AL 35898-5230. You may also submit your recommended changes by e-mail directly to "2028@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:

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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: <2028@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).