

URGENT

* TB 1-1520-248-20-55

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INITIAL AND RECURRING INSPECTION OF T703-AD-700B ENGINE FOR SPECIFICATION POWER, COMPRESSOR STALL, AND INSTABILITY DURING POWER TRANSIENTS

Headquarters, Department of the Army, Washington, D. C.
1 August 2000

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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UNTIL RESCINDED OR SUPERSEDED.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 dash — symbol with the following statement: "Inspect all OH-58D aircraft for installation of a T703-AD-700B (Rolls Royce Allison Model 250-C30R/1) engine prior to the next flight, in accordance with TB 1-1520-248-20-55. Clear the red dash entry when procedures in paragraph 8 are completed. The affected aircraft shall be inspected prior to the next flight, but no later than 17 July 2000. Commanders who are unable to comply with requirements of this TB within the time frame specified will upgrade affected aircraft status symbol to a red X.

b. Aircraft in Depot Maintenance. Same as paragraph 1. a.

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

d. Aircraft in Transit. Same as paragraph 1. a.

e. Maintenance Trainers. Not applicable.

f. Component/Parts in Stock Including War Reserves at All Levels (Depot and Others). Not applicable.

2. Task/Inspection Suspense Date. Complete inspection in accordance with paragraph 8 prior to next flight, but no later than 17 July 2000 and report in accordance with paragraph 14. b.

3. Reporting Compliance Suspense Date. Report compliance in accordance with paragraph 14. a. no later than 27 July 2000.

4. Summary of Problem

a. There have been two recent Class C incidents resulting from compressor stall which occurred while operating OH-58D aircraft configured with T703-AD-700B (Rolls Royce Allison model 250-C30R/1) engines. The Army initiated an accident investigation on one of the engines and a quality deficiency report investigation on three of the engines. Engine testing conducted at Rolls Royce Allison demonstrated that subject engines experienced rapid and undetectable stall margin deterioration when engine compressors and turbines ingested sand or erosive particles. The observed Class C events combined with deterioration levels observed in testing and typical OH-58D mission environment indicate that a critical failure could occur due to reduced stall margin.

*This TB Supersedes OH-58-00-ASAM-01 062225Z Jul. 00

TB 1-1520-248-20-55

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

c. The purpose of this TB is to provide an initial and recurring inspection to determine operational status of the T703-AD-700B engine, National Stock Number (NSN) 2840-01-391-4397.

5. **End Items to be Inspected.** Not applicable.

6. **Assembly Components to be Inspected.** Not applicable.

7. **Parts to be Inspected.** Not applicable.

8. **Inspection Procedures.**

NOTE

In accordance with Interim Statement of Airworthiness Qualification (ISAO), improved OH-58D helicopters (2427RO), dated 7 June 2000, operation of aircraft with T703-AD-700B/C30R/1 engine installed is prohibited in desert/sand environment where operation of aircraft causes sand particles to become airborne and be ingested by the engine.

a. Inspect aircraft DA Form 2408-16 to determine if subject T703-AD-700B, NSN 2840-01 391-4397 engine is installed.

(1) If subject engine is not installed, inspection and correction procedures are complete. Clear red dash — entry.

(2) If subject engine is installed, proceed to paragraph 8. b.

b. The initial inspection will be conducted as follows:

(1) If engine has previously experienced compressor stalls and/or exhibited instability during power transients; proceed to paragraph 9.

(2) Perform a one time flight to conduct a power assurance check and determine engine torque factor. If engine is operating below specification power, less than 1.0% engine torque factor as indicated by power assurance check; proceed to paragraph 9.

c. The recurring inspection will consist of a power assurance check prior to first flight of the day in accordance with the following: if engine is operating below specification power, 1.0% engine torque factor as indicated by power assurance check; proceed to paragraph 9.

9. **Correction Procedures.** Subject to findings in accordance with paragraph 8.

a. Change aircraft condition status symbol on DA Form 2408-13 to red X.

b. Enter red X status symbol and the following statement on DA Form 2408-13-1: T703-AD-700B engine is unserviceable in accordance with TB 1-1520-248-20-55.

c. Replace engine. Use TB 1-1520-248-20-42 dated 20 July 2000, "Instructions for Replacing OH-58D Helicopter T703-AD-700B Engine With T703-AD-700A engine, to complete this task.

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

NOTE

HQDA-ODCSOPS will prioritize units and repair parts distribution in a separate follow on message.

a. **Parts Required.** Replacement of T700-AD-700B (250-C30R/1) engine, P/N 23056117, NSN 2840-01-391-4397 with T703-AD-700A engine, P/N 23055439, NSN 2840-01-333-2064 may be required.

b. **Requisitioning Instructions.** Contact Logistical Point of Contact in paragraph 16. b. for requisition instructions. All requisitions shall use project code (CC 57-59) "XD7" (Xray Delta Seven).

NOTE

Project code "XD7" is required to track and establish a data base of stock fund expenditures incurred by the field as a result of Safety of Flight actions.

c. **Bulk and Consumable Materials.** Not applicable.

- d. Disposition. Dispose of removed engine using normal supply procedures.
- e. Disposition of Hazardous Material. Not applicable.

11. Special Tools, Jigs, and Fixtures. Not applicable.

12. Applications

- a. Category of Maintenance. AVUM. Aircraft downtime will be charged to AVUM.
- b. Estimated Time Required.
 - (1) For Inspection:
 - (a) Total of 0.5 man-hours using 1 person.
 - (b) Total of 0.0 hours downtime for one end item.
 - (2) For Replacement:
 - (a) Total of 4.0 man-hours using 3 person.
 - (b) Total of 12.0 hours downtime for one end item.
- c. Estimated Cost Impact of Stock Fund Items to the Field. To be determined.
- 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 Inspection. Not applicable.

13. References.

- a. TB 1-1520-248-20-42, dated 20 July 2000.
- b. TM 55-2840-256-23, dated 2 June 1986 including Change 9 dated, 21 October 1998.
- c. DA PAM 738-751, dated 15 March 1999.

14. Recording and Reporting Requirements.

- a. Reporting Compliance Date (Aircraft). Upon entering requirements of this TB on DA Form 2408-13-1 on all subject Mission Design Series (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, in accordance with AR 95-1. Datafax number DSN 897-2111 or 256-313-2111. E-Mail safeadm@redstone.army.mil. Report will cite this TB number, date of entry on DA Form 2408-13-1, aircraft MDS and serial number of aircraft in numerical order.
- b. Task/Inspection Reporting Suspense Date (Aircraft). Not applicable.
- c. Reporting TB Receipt (Spares). Not applicable.
- d. Task/Inspection Reporting Suspense Date (Spares). Not applicable.
- e. The following forms are applicable and are to be completed in accordance with DA PAM 738-751, 15 March 1999:

NOTE

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

- (1) DA Form 2408-5-1, Equipment Modification Record (Engine).
- (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.
- (5) DA Form 2408-16, Aircraft Component Historical Record.
- (6) DA Form 2410, Component Removal and Repair/Overhaul Record (Only if engine is removed/replaced).
- (7) DD Form 1577-2/DD Form 1577-3, Unserviceable (Repairable) Tag/Label Materiel (color green). Annotate remarks block with "Unserviceable in accordance with TB 1-1520-248-20-55".

TB 1-1520-248-20-55

15. **Weight and Balance.** Not applicable.

16. **Points of Contact.**

a. Technical point of contact is Mr. Skip Jackson, AMSAM-AR-E-I-D-O, DSN 645-9625 or commercial 256-955-9625, datafax DSN 645-9536. E-Mail skip.jackson@redstone.army.mil.

b. Logistical point of contact is Mr. Ray Hensley, AMSAM-DSA-AS-ASH-L, DSN 645-7441 or commercial 256-955-7441, datafax DSN 645-7125. E-Mail raymond.hensley@redstone.army.mil.

c. Wholesale Materials point of contact (Spares) is Mr. John Jensen, AMSAM-MMC-VS-AO, DSN 897-1390 or commercial 256-313-1390, datafax DSN 897-1557. E-Mail jensen-jo@redstone.army.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 DSN 746-4904. E-Mail waldeck-ab@redstone.army.mil.

e. Safety Points of contact are:

(1) Mr. Frank Rosebery, AMSAM-SF-A (SAIC), DSN 788-8631 or commercial 256-842-8631, datafax 256-313-2111. E-Mail frank.rosebery@redstone.army.mil.

(2) Mr. Ron Price, AMSAM-SF-A, DSN 788-8636 or commercial 256-842-8636, datafax 256-313-2111. E-Mail ron.price@redstone.army.mil.

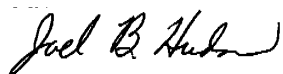
f. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact CW5 Joseph L. Wittstrom, Security Assistance Management, AMSAM-SA, DSN 897-0410 or commercial 256-313-0410. E-Mail wittstromjl@redstone.army.mil or Mr. Ronnie W. Samons, AMSAM-SA-CS-NF, DSN 897-0408 or commercial 256-313-0408. Datafax DSN 897-0411 or commercial 256-313-0411. E-Mail sammonsrw@redstone.army.mil. Huntsville, AL. is Greenwich Mean Time minus five hours.

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

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
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