

URGENT

*TB 1-1520-240-20-105

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

FLIGHT RESTRICTIONS FOR AIRCRAFT WITH MWO 1-1520-240-50-67, NON-METALLIC SPLINE ADAPTERS FOR COMBINING TRANSMISSION COOLING FAN DRIVE SHAFT APPLIED ALL CH-47D, MH-47D, AND MH-47E AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
24 July 1998

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NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. Priority Classification.

- a. Aircraft in Use. Upon receipt of this Technical Bulletin (TB) change the condition status symbol of the cited aircraft with MWO 1-1520-240-50-67, transmission part number 145D5300-16 will be changed to a **circle red x**. Entry shall state "aircraft restricted to flight restrictions and maintenance inspections IAW TB 1-1520-240-50-105". Additionally, enter a **red** - status symbol and entry shall state initial compliance "aft combining transmission cooling fan spline inspection IAW TB 1-1520-240-50-105 completed. Inspect the aircraft prior to the next flight. Change the status symbol for the aircraft not inspected within the time frame to a **red x**. Report the aircraft on **circle red x** condition as fully mission capable (FMC).
- b. Aircraft in Depot Maintenance. Same as paragraph 1a.
- c. Aircraft Undergoing Maintenance. Same as paragraph 1a.
- d. Aircraft in Transit.
 - (1) Surface/Air Shipment. Same as paragraph 1a.
 - (2) Ferry Status. Same as paragraph 1a.
- e. Maintenance Trainers (Category A and B). N/A
- f. Component/Parts in Stock Including War Reserves at All Levels (Depot and Others). N/A
 - (1) Wholesale Stock. N/A

*This TB supersedes USAAMCOM Message 161231Z JUL 98 CH-47-98-02 (SOF)

(2) Retail Stock. N/A

g. Component/Parts in Work (All Levels). N/A

2. **Task/Inspection Suspense Date.** Prior to next flight.

3. **Reporting Compliance Suspense Date.** No later than 5 August 1998 per paragraph 14a of this TB.

4. **Summary of the Problem.**

a. Recently, three Chinook combining transmission cooling fan drive shafts have sheared. All three of these shafts were the new combining transmission cooling fan shafts (P/N 145D5319-7) which were installed as part of MWO 1-1520-240-50-67. Failure of these shafts was contained by the "stove pipe" retaining shield, therefore eliminating any collateral damage. But since the cooling fan was no longer operating, the temperature of the combining transmission and both engine transmissions exceeded 140 degree centigrade. This high temperature condition required landing of the aircraft as soon as possible without delay and replacement of all transmissions which exceeded the 140 degree centigrade temperature limit. Currently there is an ongoing investigation as to the cause of the three fan shaft failures.

b. For manpower/downtime and funding impacts. N/A

c. The purpose of this TB is to implement flight restrictions, additional preflight inspection procedures, and a recurring inspection every four flight hours of the combining transmission cooling fan drive shaft for all Chinook aircraft which have MWO 1-1520-240-50-67 applied. The flight restrictions and inspections will continue until the cause of the combining transmission cooling fan drive shaft failures have been determined and corrective actions have been implemented.

5. **End Items to be inspected.** All CH-47D, MH-47D, and MH-47E aircraft which have MWO 1-1520-240-50-67 applied. MWO 1-1520-240-50-67 is titled Non-Metallic Spline Adapters for Combining Transmission Cooling Fan Drive Shaft.

6. **Assembly Components to be Inspected.**

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Combining Transmission	14505300-16	1615-01-397-9921
Combining Transmission	145D5300-17	

7. **Parts to be Inspected.**

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Cooling Fan Drive Shaft	145D5319-7	3040-01-412-9558
Splined Adapter	145DS524-1	3040-01-4114869

8. **Inspection Procedures.** Prior to each flight, the flight crew will inspect the combining transmission cooling fan drive shaft for axial (up and down) movement. As part of the PMD and at every fourth flight hour, the combining transmission cooling fan drive shaft will be inspected for axial (up and down) movement.

WARNING

The transmission and fan drive shaft could be extremely hot following engine runs or after flight.

a. Insert fingers through the holes in the “stove pipe” retaining shield and check to see that the shaft can move freely up and down. Axial movement should be approximately one-fourth (1/4) inch.

b. Annotate the requirement for and the results of the recurring four hour inspection on the DA Form 2408-13-1.

9. Correction Procedures.

a. If the combining transmission cooling fan drive shaft cannot be freely moved, then the fan shaft shall be removed IAW TM 55-1520-240-23, Task Number 6-182 (for MH-47E use TM 1-1520-252-23, Task Number 6-220) and the non-metallic splined adapter at the combining transmission inspected. Inspect as follows:

(1) Ensure the upper and lower adapter splines are seated. Some splines have been found not seated thereby restricting the up and down movement of the shaft. Reseat adapter then continue with inspection.

(2) Visually inspect the adapter splines for cracks, breaks, and any abnormalities. Use a borescope if available.

(3) Visually inspect the drive shaft for wear, cracks or any abnormal signs.

(4) Contact the technical and logistical POC listed in para 16 if any of the above conditions are found.

(5) Submit a QDR IAW established procedures immediately.

b. All aircraft with MWO 1-1520-240-50-67 applied are subject to the following restrictions:

(1) Conduct the paragraph 8 inspection prior to each flight.

(2) Flights are restricted to 4 flight hours between inspections.

(3) Missions are restricted to VMC only, no intentional flight into IMC.

(4) Night aided and night unaided missions are authorized.

(5) No operations in areas where “land as soon as possible” could not be accomplished (extensive swamps, forests, etc).

(6) Maximum flight attitude is 2000 ft. AGL.

NOTE

Maintenance Test Flight procedures are authorized above 2000 ft. AGL.

(7) If any xmsn oil hot caution capsule illuminates, land the aircraft as soon as possible.

(8) No flights over water when another land route is available, even if the land route is longer in distance.

WARNING

Over water flights are considered high risk missions

(9) A copy of this TB will be posted in the logbook of each affected aircraft,

c. If a preliminary fault such as a combining transmission chip light or latch is tripped, a50 hour vibration check of the combining transmission fan shaft shall be accomplished. The combining transmission fan shaft and the splined adapters shall be inspected for serviceability. If the fan shaft is above 0.3 IPS or has increased by 0.15 IPS as compared to the previous reading, contact the technical POC in paragraph 16a.

10. Supply/Parts and Disposition.

- a. Parts Required. N/A.
- b. Requisitioning Instructions. N/A.
- c. Bulk and Consumable Materials. N/A.
- d. Disposition. N/A.
- e. Disposition of Hazardous Material. N/A.

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

12. Application.

- a. Category of Maintenance. N/A.
- b. Estimated Time Required. N/A.
- c. Estimated Cost Impact of Stock Fund Items to the Field. N/A.
- d. TB/MWOs to be Applied with This Inspection. N/A.
- e. Publications Which Require Change as a Result of This Inspection. N/A.

13. References.

- a. TM 55-1520-240-23, 10 MAY 83.
- b. TM 1-1520-252-23,28 JUN 95.

14. Recording and Reporting Requirements.

a. Reporting Compliance Suspense Date (Aircraft). IAW AR 95-1 Upon entering requirements of this message on DA Form 2408-13-1 on all subject MDS aircraft, forward a priority message, datafax or e-mail

to CDRAMCOM, ATTN: AMSAM-SF-A (sof compliance officer). datafax number is DSN 897-2111 or (256) 313-2111. e-mail address is "safeadm@redstone.army.mil". The report will cite this message 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 in accordance with DA PAM 738-751,15 June 1992:

NOTE

For units using ULLS-A, use applicable "E" forms.

- (1) DA Form 2408-5-1, Equipment Modification Record (Transmission).
- (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 (only if transmission is replaced).
- (6) DA Form 2410, Component Removal and Repair/Overhaul Record (Only if transmission is replaced).

15. Weight and Balance. N/A.

16. Points of Contact.

- a. Technical point of contact for this TB is Mr. Matt Wesselschmidt, AMSAM-AR-E-I-C-H, DSN 897-4286 or commercial (256) 313-4286. Datafax is (256) 313-4348. E-mail is "wesselschmidt-ml@avr-decr.redstone.army.mil".
- b. Logistical point of contact for this TB is Mr. Norm Huston, SFAE-AV-CH-L, DSN 897-4289 or commercial (256) 313-4289. Datafax is (256)313-4348. E-mail is "hustonn@peoavn.redstone.army.mil".
- c. Forms and Records point of contact for this TB is Ms. Ann Waldeck, AMSAM-MMC-RE-FF, DSN 746-5564 or commercial (256) 876-5564. Datafax is DSN 746-4904. E-mail is "waldeck-ab@exchange1.redstone.army.mil".
- d. Safety point of contact for this message is Mr. Teng Ooi, AMSAM-SF-A, DSN 897-2094 or commercial (256) 313-2094, e-mail is "ooi-tk@redstone.army.mil". The alternate Safety POC is Mr. Howard Chilton, AMSAM-SF-A, DSN 746-7271 or commercial (256) 876-7271. E-mail is "chilton-hl@redstone.army.mil." Datafax is DSN 897-2111 or commercial (256) 313-2111.
- e. 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 897-0681 or commercial (256) 313-0681. E-mail is "wittstrom-jl@redstone.army.mil" or Mr. Ronnie W. Sammons, AMSAM-SA-CS-NF, DSN 897-0869 or (256) 313-0869. Datafax is DSN 897-0411 or commercial (256) 313-0411. E-mail is "sammons-rw@redstone.army.mil". (Huntsville, AL is GMT minus 6 hours.)
- f. 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: Commander, US Army Aviation

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and Missile Command, ATTN: AMSAM-MMC-LS-LP, Redstone Arsenal, AL 35898-5230. You may also submit your recommended changes by e-mail directly to ls-lp@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:

Official:



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Secretary of the Army

04651

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From: Whomever" <whomever@avma27.army.mil>

To: ls-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.

