

# URGENT

TB 1-1520-240-20-126

## DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

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### ONE TIME INSPECTION FOR DEFECTIVE FULL AUTHORITY DIGITAL ELECTRONIC CONTROL (FADEC) P3 DRAIN CARTRIDGE ON ALL CH-47D, MH-47D AND MH-47E AIRCRAFT

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Headquarters, Department of the Army, Washington, D. C.  
25 September 2000

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

#### NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. **Priority Classification. Urgent**

#### NOTE

In accordance with AR 95-1, paragraph 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 Technical Bulletin, the condition status symbol of the cited aircraft will be changed to a red horizontal dash // - //. The red horizontal dash // - // entry shall state: "Inspect for defective FADEC P3 Drain Cartridge prior to next flight but no later than 5 October 2000." The red horizontal dash // - // may be cleared when the procedures in accordance with paragraphs 8 and 9 are completed. The affected aircraft shall be inspected prior to the next flight, but no later than 5 October 2000. Commanders who are unable to comply with the requirements of this Technical Bulletin within the time frame specified will upgrade the affected aircraft status symbol to a red // X //.

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). Comply no later than 3 October 2000.

This TB supersedes USAAMCOM Message 211316Z SEP 00 CH-47-00-ASAM-06.

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- f. Component/Parts in Stock at All Levels (Depot and Others). N/A.
- g. Components/Parts in Work (Depot Level and Others). Items listed in paragraphs 6 and 7 in work will not be issued until compliance with this Technical Bulletin.

**2. Task/Inspection Suspense Date.** Prior to next flight but no later than 5 October 2000.

**3. Reporting Compliance Suspense Date.** Report compliance in accordance with paragraph 14a no later than 13 October 2000.

**4. Summary of the Problem.**

a. Modification Work Order (MWO) 1-1520-240-50-83 installs T55-GA-714A engines on the H-47 aircraft. Part of the installation is a P3 signal line from the engine hydro-mechanical assembly (HMA) to the digital electronic control unit (DECU). This line has a water drain cartridge. The drain cartridge incorporates a plastic sight tube for detecting water that may accumulate in the line. The plastic sight tubes have not been stress relieved and minute axial cracks develop easily which can cause P3 air leaks. In primary mode, the P3 signal is used to calculate a fuel flow limit. If the cartridge leaks, the P3 signal to the DECU may decrease enough to cause a lowering of fuel flow but not enough to engage the software fault detection logic. This will result in a partial or complete loss of engine power while in primary mode.

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

c. The purpose of this Technical Bulletin is to –

- (1) Inspect for defective P3 water drain cartridges.
- (2) Replace defective cartridges as required.

**5. End Items to be Inspected.** All H-47 series aircraft.

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

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
FADEC TOP KIT	145PK010-1	1680-01-459-9029

**7. Parts to be Inspected.**

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
DRAIN CARTRIDGE	L84230	4820-01-471-3259

**8. Inspection Procedures.**

a. Determine if the aircraft has a FADEC system installed –

(1) If the FADEC system is not installed, the inspection is complete and the red horizontal dash // – // entry may be cleared.

(2) If the aircraft is equipped with a FADEC system, proceed to paragraph 8b.

b. Locate the P3 line drain cartridges, part number L84230, TM 55-1520-240-23P-3, Figure 367, Item 79, and Figure 357, Item 75. There is one on each side of the aft cabin wall at approximately station 490.

(1) If the P3 line drain cartridge has the letter "C" after the serial number, no further action is required and the red horizontal dash // – // entry may be cleared.

(2) If there is no "C" after the serial number replace the P3 line drain cartridge in accordance with paragraph 9.

**9. Correction Procedures.**

a. Remove the P3 line drain cartridge.

- b. Replace with a reworked P3 line drain cartridge (one with a "C" after the serial number). The red horizontal dash // - // entry may be cleared.
- c. If a reworked P3 line drain cartridge (one with a "C" after the serial number) is not available -
  - (1) Install an interim plug, part number AN806D4, and o-ring, part number MS29512-04.
  - (2) While the interim plug is installed, the aircraft shall be placed on a red diagonal \ / \ status. The red diagonal \ / \ entry shall state: "Remove the interim P3 drain plug during engine compressor washes to drain any accumulated water from the P3 line."
  - (3) When the interim plug is replaced with a reworked P3 line drain cartridge (one with a "C" after the serial number), the red diagonal \ / \ entry may be cleared.
- d. If a reworked P3 line drain cartridge (one with a "C" after the serial number), or an appropriate interim plug is not immediately available for both engines -
  - (1) Change the aircraft status to red // X //. The red // X // entry shall state: "Aircraft not in compliance with CH-47-00-ASAM-06 (TB 1-1520-240-20-126)."
  - (2) When both engines have either a reworked P3 line drain cartridge (one with a "C" after the serial number), or the interim plug installed, the red // X // entry may be cleared.

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

- a. Parts Required. Items cited in paragraph 7 may be required to replace defective items.
- b. Requisitioning Instructions. N/A.
- c. Bulk and Consumable Materials. N/A.
- d. Disposition. Send the removed P3 line drain cartridges to the manufacturer - Lourdes Industries, ATTN: Mr. Rocky Cavalluzzi, 65 Hoffman Avenue, Hauppauge, NY 11788-4798. Parts will be repaired and returned.
- e. Disposition of Hazardous Material. N/A.

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

**12. Application.**

- a. Category of Maintenance. AVUM. Aircraft downtime will be charged to AVUM.
- b. Estimated Time Required-
  - (1) Total of 1 man-hour using 1 person.
  - (2) Total of 1 hour downtime for one end item.
- c. Estimated Cost Impact to the Field.

NOMENCLATURE	PART NO./ NSN	QUANTITY	COST EACH	TOTAL
PLUG	AN806D4/ 4730-00-287-0110	2	\$0.37	\$0.74
O-RING	MS29512-04/ 5331-00-263-8028	2	\$0.14	\$0.28

**TOTAL COST PER AIRCRAFT = \$1.02**

- d. TB/MWOs to be Applied Prior to or Concurrently with this Inspection. MWO 1-1520-240-50-83.
- e. Publications Which Require Change as a result of this Inspection - N/A

**13. References.**

- a. MWO 1-1520-240-50-83.

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- b. DA PAM 738-751
- c. TM 55-1520-240-23P-3.

### 14. Recording and Reporting Requirements.

- a. Reporting Compliance Suspense Date (Aircraft). Upon entering requirements of this Technical Bulletin 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 (ASAM Compliance Officer), Redstone Arsenal, AL 35898-5000, in accordance with AR 95-1. Datafax number is DSN 897-2111 or commercial (256) 313-2111. E-Mail address is "safeadm@redstone.army.mil". The report will cite this Technical Bulletin 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). No special report of the results of this inspection is required.
- 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 2408-5, Equipment Modification Record (Reference only for application of MWO 1-1520-240-50-83).
- (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) DD Form 1577-2/DD Form 1577-3, Unserviceable (repairable) Tag/Label - Materiel (color green). Annotate remarks block with "Unserviceable in accordance with CH-47-00-ASAM-06 (TB 1-1520-240-20-126)."

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

### 16. Points of Contact.

- a. Technical point of contact for this TB is Mr. Larry Wieschhaus, AMSAM-RD-AE-I-P-C, DSN 897-3341 or commercial (256) 313-3341, datafax is DSN 897-4348 or commercial (256) 313-4348. E-mail is "larry.wieschhaus@redstone.army.mil".
- b. Logistical point of contact for this TB is Mr. Bill Olson, SFAE-AV-CH-L, DSN 897-3379 or commercial (256) 313-3379, datafax is (256) 313-4348. E-mail is "olsonw@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@redstone.army.mil".
- d. Safety points of contact are –
  - (1) Primary – Mr. Harry Trumbull (SAIC), AMSAM-SF-A, DSN 897-2095 or commercial (256) 313-2095, datafax is DSN 895-2111 or commercial (256) 313-2111. E-mail is "harry.trumbull@redstone.army.mil".
  - (2) Alternate – Mr. Russ Peusch, AMSAM-SF-A, DSN 788-8632 or commercial (256) 313-8632, datafax is DSN 897-2111 or commercial (256) 313-2111. E-mail is "russel.peusch@redstone.army.mil".
- e. Foreign Military Sales recipients requiring clarification of action advised by this Technical Bulletin should contact CW5 Joseph L. Wittstrom, Security Assistance Management, AMSAM-SA, DSN 897-0410 or commercial (256) 313-0410. E-mail is "wittstromjl@redstone.army.mil" or Mr. Ronnie W. Sammons, AM-

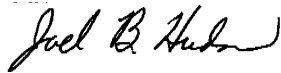
SAM-SA-CS-NF, DSN 897-0408 or commercial (256) 313-0408, datafax is DSN 897-0411 or commercial (256) 313-0411. E-mail is "sammonsrw@redstone.army.mil". Huntsville, AL is GMT minus 5 hours.

f. After hours contact the AMCOMCOMMAND 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*  
0026904

**DISTRIBUTION:**

To be distributed in accordance with Initial Distribution Number (IDN) 313932, requirements for TB 1-1520-240-20-126.

**TB 1-1520-240-20-126**

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: <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.

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN...JOT DOWN THE  
DOPE ABOUT IT ON THIS FORM.  
CAREFULLY TEAR IT OUT, FOLD IT  
AND DROP IT IN THE MAIL.

SOMETHING WRONG WITH PUBLICATION

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER

PUBLICATION DATE

PUBLICATION TITLE

BE EXACT PIN-POINT WHERE IT IS

PAGE  
NO.

PARA-  
GRAPH

FIGURE  
NO.

TABLE  
NO.

IN THIS SPACE, TELL WHAT IS WRONG  
AND WHAT SHOULD BE DONE ABOUT IT.

TEAR ALONG PERFORATED LINE

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SIGN HERE

# The Metric System and Equivalents

## Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

## Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 dekagram = 10 grams = .35 ounce  
 1 hectogram = 10 dekagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

## Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

## Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

## Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

## Temperature (Exact)

°F	Fahrenheit	5/9 (after	Celsius	°C
	temperature	subtracting 32)	temperature	



**PIN: 078502-000**