

URGENT

*TB 1-1520-240-20-96

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

ONE TIME VISUAL INSPECTION AND REPLACEMENT OF CERTAIN P/N 4C3074 CRISSAIR, INC., CHECK VALVE INSTALLED IN POWER CONTROL MODULE ASSEMBLIES IN THE PORT MARKED "FLT CONT PUMP" ONLY FOR ALL CH-47D, MH-47D, AND MH-47E AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
27 MARCH 1997

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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THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.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) the condition status symbol of the cited aircraft will be changed to a **red horizontal dash** "-". The **red horizontal dash** "-" may be cleared when the inspection of paragraph 8 below is completed. The affected aircraft shall be inspected as soon as practical but no later than the task/inspection suspense date. Failure to comply with the requirements of this TB within the time frame will cause the status symbol to be upgraded to a red "X". Ninety days order, ship, and replacement time is allowed once defective check valves are found. Pending availability, depots will replace defective check valves prior to unit acceptance.

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, 8). Same as paragraph 1a.

* This TB supersedes USAATCOM Message 1315142 MAR 97 (CH-47-97-ASAM-04)

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f. Component/Parts in Stock at All Levels (Depot and Others) including War Reserves. Upon receipt of this TB the materiel condition tags of all items listed in paragraphs 6 and 7 below in all condition codes shall be annotated to read "TB 1-1520-240-20-96, One Time Visual Inspection and Replacement of Certain P/N 463074 Crissair Check Value Installed in the Power Control Module Assemblies in the Port Marked "FLT CONT PUMP" only must be complied with prior to issue."

(1) Wholesale Stock. Upon receipt of this TB, depot commanders shall ensure inspection of all items listed in paragraphs 6 and 7 below located in all wholesale depots including all satellite wholesale depots and war reserve depot. Upon receipt of this TB, depot commanders and others maintaining wholesale stock shall ensure that serviceable materiel (condition codes "A", "B", and "C") is placed in condition code "J" and tagged with a suspended tag/label - DD Form 1575/1575-1 (brown color). The authority block must reference inspection required per this TB (TB 1-1520-240-20-96). Report compliance with this TB in accordance with paragraph 14d(1) below. Packages dated after 01 May 1991 do not need to be opened. They are acceptable.

(2) Retail Stock. Upon receipt of this TB, commanders and others maintaining retail stock of items listed in paragraphs 6 and 7 below shall contact their support aviation organization to perform the inspection required by paragraph 8 below and to perform the correction procedures of paragraph 9 below on discrepant materiel. All items listed in paragraphs 6 and 7 below shall be immediately placed in condition code "D" and retagged with a test/modification tag/label - DD Form 1576/1576-1 (blue color). The authority block must reference inspection required per this TB (TB 1-1520-240-20-96). Items identified as serviceable in accordance with paragraph 8 below shall be retagged with a serviceable tag/label - DD Form 1574/1574-1 (yellow color). Indicate compliance with this TB (TB 1-1520-240-20-96) in the remarks block. Items identified as discrepant in accordance with paragraph 8 below shall be retagged with unserviceable (reparable) tag/label - 1577-2/1577-3 (green color). Annotate remarks block to indicate that the item is unserviceable in accordance with this TB (TB 1-1520-240-20-96) discrepant items shall be corrected in accordance with paragraph 9 below. Report compliance with the TB in accordance with paragraph 14d(2) below. Packages dated after 01 May 1991 do not need to be opened. They are acceptable.

g. Components/Parts in Work. All items listed in paragraphs 6 and 7 below shall not be issued until compliance with this TB has been completed.

2. Task/Inspection Suspense Date. Within 10 hours/14 days.

3. Reporting Compliance Suspense Date. No later than 13 April 1997 per paragraph 14a of this TB.

4. Summary of the Problem.

a. Recent field reports revealed that the certain P/N 4C3074 hydraulic check valve, manufactured by Crissair, Inc. (CAGE 99240) in power control modules P/N AE-A620-14 (145H1201-5) or P/N AE-A620-15 (145H1201-6) is being found with a rivet missing from the valve's poppet. Failure of the valve during auxiliary power unit (APU) or external ground power unit (GPU) operation could cause the rotors to turn in the opposite direction of normal rotation during operation of the No. 1 or No. 2 power transfer units (PTU). The missing rivet can enter the hydraulic system causing damage to the flight control pump when the power source to the hydraulic system is either the APU or an external GPU.

b. The failure occurs when the drive system is shut down and the flight control systems are being powered by either the APU through the PTU pump or a ground power unit. Therefore, the failure poses no safety of flight conditions. After compliance with this TB, do not control substitute/cannibalize from the modules identified in paragraph 8c.

c. To eliminate the problem, the valve has been redesigned to replace the three-piece assembly (rivet, washer, and poppet) with a one-piece poppet. There are two locations where the power control module P/N AE-A620-14 (145H1201-5) or AE-A620-15 (145H1201-6) is used on the aircraft. Each power control module has three check valves. However, only the check valve that is installed into the port marked "FLT CONT PUMP" can cause the above problem. If any of the other four (4) check valves fail, the rivet becomes trapped or lodged in the hydraulic system without causing any damage or failure of other components.

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

e. The purpose of this TB is to replace the old three-piece configuration of the 4C3074 Crissair check valve with the current improved one-piece design, revision D. P/N 4C3074, revision D, can be identified by

four (4) shallow flat bottom holes that are filled with white paint. The holes are equally spaced 90 degrees apart around the body assembly. Also, "Rev D" is marked on the body assembly. The designs prior to revision D do not have four (4) shallow flat bottom holes filled with white paint on the body assembly, or the "REV D" marking.

5. **End Items to be Inspected.** All CH-47D, MH-47D, and MH-47E aircraft.

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

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Module Assembly, Power Control	145H1201-5 (AE-A620-14)	N/A
Module Assembly, Power Control	145H1201-6 (AE-A620-15)	N/A

7. **Parts to be Inspected.**

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Check Valve	4C3074	4820-01-118-3009

8. **Inspection Procedures.**

- a. Prepare aircraft for safe ground maintenance.
- b. Locate the No. 1 power control module assembly (refer to TM 55-1520-240-23P-2, Figure 206, Item 26 or TM 1-1520-252-23P-2, Figure 7-7, Item 28) and No. 2 power control module assembly (refer to TM 55-1520-240-23P-2, Figure 215, Index 19 or TM 1-1520-252-23P-2, Figure 7-16, Item 19).
- c. If necessary, remove the Crissair, Inc. P/N 4C3074 check valves from power control module assemblies from the ports marked "FLT CONT PUMP, only (refer TM 55-1520-240-23-6, Task 7-54.1 or TM 1-1520-252-23-7, Task 7-66).

NOTE

Only the Crissair, Inc. P/N 4C3074 check valve installed in the port marked "FLT CONT PUMP" of the power control module assemblies cited in paragraph 6 above need to be replaced. The other two valves in the assemblies are "on condition" replacement items.

NOTE

The Crissair, Inc. P/N 4C3074 check valves installed in the following components do not need to be replaced as they are "on condition" replacement items:

NOMENCLATURE	PART NUMBER
MODULE HOUSING ASSEMBLY	145HS551-4 (AE-A620-33D1A)
MODULE HOUSING ASSEMBLY	145HS601-4 (AE-A620-23D1A)

- d. Visually inspect the P/N 4C3074 check valve for four (4) shallow flat bottom holes filled with white paint. The holes are equally spaced 90 degrees apart around the valve base. Also, the marking "REV D" is marked on the body assembly.
- e. If there are four (4) holes filled with white paint and/or "REV D" is marked on the valve base, the valve is the improved revision D one-piece design and the inspection is complete. Reinstall the check valve (refer to TM 55-1520-240-23-6, Task 7-54.2 or TM 1-1520-252-23-7, Task 7-67) and record and report compliance with this TB in accordance with paragraph 14 below.
- f. If the valve is not the improved revision D one-piece design as described above, proceed to paragraph 9.

9. Correction Procedures.

- a. Requisition replacement P/N 4C3074, revision D, check valves.
- b. Install check valves in accordance with the instructions in TM 55-1520-240-23-6, Task 7-54.2 or TM 1-1520-252-23-7, Task 7-67.
- c. Report compliance with the above in accordance with paragraph 14b below.

10. Supply/Parts and Disposition.

- a. Parts Required. Items cited in paragraph 7 above may be required to comply with this TB.
- b. Requisition Instructions. Requisition replacement parts through normal supply channels using normal supply procedures. All requisitions shall use project code "XDC" per this TB.

NOTE

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

- c. Bulk and Consumable Materials. N/A.
- d. Disposition. Mutilate in accordance with TM 1-1500-328-23.
- e. Disposition of Hazardous Material. N/A.

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

12. Application.

- a. Category of Maintenance. AVIM. Aircraft downtime will be charged to AVIM.
- b. Time Required.
 - (1) Inspection: 1 man-hour using 1 person.
 - (2) Replacement: 6 man-hours using 2 persons.
 - (3) Total of 3 hours downtime for one end item.
- c. Estimated Cost Impact of Stock Fund Items to the Field. One hundred twenty-three dollar and five cents (\$123.05) for check valve P/N 4C3074, NSN 4820-01-118-3009.
- 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. N/A.

13. References.

- a. TM 55-1520-240-23-6.
- b. TM 55-1520-240-23P-2.
- c. TM 1-1520-252-23-7.
- d. TM 1-1520-252-23P-2.

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, ATCOM, ATTN: AMSAT-R-X (SOF Compliance Officer), per AR 95-3. Datafax number is DSN 693-2064 or commercial (314) 263-2064. E-Mail address is "AMSATRXS@EMH4.STL-.ARMY.MIL". The report will cite this TB 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). Inspection and reports will be completed no later than 7 days after task/inspection suspense date. Units have 90 days from time suspect check valves are located on aircraft to replace them. This allows order, ship and replacement time.

c. Reporting Compliance Suspense Date (Spares).

(1) Materiel in Retail Storage. Report receipt of this TB by e-mail or data fax to the logistical point of contact listed in paragraph 16b below within 5 working days from the date of this TB.

(2) Materiel in Wholesale Depot Storage. Report receipt of TB by e-mail or data fax to the wholesale materiel (spares) point of contact listed in paragraph 16c below within 5 working days from the date of this TB.

d. Task/Inspection Reporting Suspense Date (Spares).

(1) Materiel in Wholesale Depot Storage. Report compliance with this TB to the wholesale materiel point of contact (spares) listed in paragraph 16c within 5 working days from the date of this TB. If required, provide an estimate of the cost reimbursable funding required to move the items listed in paragraphs 6 and 7 above to a work area, unpack the materiel, repack the materiel after inspection by ATCOM inspectors, and to return the materiel to storage. Report the quantity, by original serviceable condition code "J". Report by e-mail or data fax and provide local point of contact.

(2) Materiel in Retail Storage. Report compliance with this TB by e-mail or data fax and provide local point of contact to the logistical point of contact in paragraph 16b within 5 working days from the date of this TB. Report the quantity inspected by condition code, and the resulting condition code. Report the quantity of all materiel requiring mutilation. Place these items in condition code "D" and provide copies of shipping documents to wholesale materiel point of contact listed in paragraph 16c.

e. The following forms are applicable and are to be completed in accordance with DA PAM 738-751, 15 June 1992:

(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. Robert A. Lawyer, AMSAT-R-ECC, DSN 693-3820 or commercial (314)263-3820. His data fax number is DSN 693-1485 or commercial (314)263-1485.

b. Logistical point of contact for this TB is Mr. Norm Huston, AMCPM-CH-L, DSN 693-1415 or commercial (314)263-1415. His data fax number is DSN 693-1485 or commercial (314)263-1485.

c. Wholesale materiel point of contact (Spares) for this TB is Mr. Hal Barnes, AMSAT-I-SACA, DSN 693-6031, commercial (314)263-6031, fax DSN 693-6022 or commercial (314)263-6022.

d. Forms and records point of contact for this TB is Ms. Ann Waldeck, AMSAT-I-MDM, DSN 693-2378 or commercial (314)263-2378.

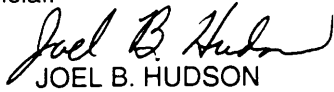
e. Safety point of contact for this TB is Mr. Jim Wilkins. AMSAT-R-X, DSN 693-2258 or commercial (314)263-2258.

f. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact CW5 Jay Nance/Mr. Ron Van Rees, AMSAT-D-S, DSN 693-7844/3216 or commercial (314)263-7844/3216.

g. After hours contact ATCOM Command Operations Center (COC) DSN 693-2066/7 or commercial (314)263-2066/7.

By Order of the Secretary of the Army:

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