

TECHNICAL MANUAL

AVIATION UNIT AND
AVIATION INTERMEDIATE
TROUBLESHOOTING MANUAL
CH-47D HELICOPTER

This copy is a reprint which includes current
pages from Changes 1 through 17.

HEADQUARTERS, DEPARTMENT OF THE ARMY

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Aviation Unit and Aviation Intermediate
Troubleshooting Manual
CH-47D HELICOPTER

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-LS-LP, Redstone Arsenal, AL 35898-5230. A reply will be furnished to you. You may also send your comments electronically to our e-mail address: ls-lp@redstone.army.mil or by fax 205-842-6546/DSN 788-6546. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

TABLE OF CONTENTS

	Page		Page
HOW TO USE THIS MANUAL	v	CHAPTER 4. Powerplant Systems Troubleshooting (Continued)	
CHAPTER 1. Troubleshooting Terminology.....	1-1	4-8. Engine Performance Check (With 74)	4-195
1-1. Failure Symptoms List.....	1-3	4-9. Engine Low Oil Level Warning System (With 74).....	4-213
1-2. Electrical Symbols	1-16	4-10. Engine Start and Ignition System (With 74).....	4-221
1-2.1. Mechanical Symbols	1-17	4-11. Gas Producer Control System (With 74).....	4-247
1-3. Station, Water, and Butt Lines	1-18	4-12. Full Authority Digital Engine Control (FADEC) (With 74).....	4-255
1-4. 300 Series Connector Plug and Receptacle Wiring Data.....	1-19	4-13. Engine Accessory Gearbox Chip Detectors (With 74).....	4-313
1-5. Terminal Board Wiring Data.....	1-65	CHAPTER 5. Rotor Blade Tracking and Balancing System Troubleshooting	5-1
1-6. Ground Devices Wiring Data	1-79	Chapter Overview.....	5-2.1
1-7. Glossary.....	1-87	5-1. Centrifugal Droop Stop.....	5-2.5
CHAPTER 2. Vibration Analysis and Dynamic Absorber System Troubleshooting	2-1	5-2. Rotor Blade Tracking and Balancing System	5-5
Chapter Overview.....	2-2.1	CHAPTER 6. Drive System Troubleshooting.....	6-1
2-1. Vibration Analysis	2-5	Chapter Overview.....	6-2.1
2-2. Dynamic Absorber System	2-19	6-1. Transmission Lubrication Systems.....	6-2.7
CHAPTER 3. Alighting Gear	3-1	6-2. Transmission Chip Detectors and Debris Screen.....	6-25
Chapter Overview.....	3-2	6-3. Transmission Chip Detector Fuzz Burn Off Module	6-85
3-1. Proximity Switch.....	3-3	CHAPTER 7. Hydraulic “AIRFRAME” Systems Troubleshooting	7-1
CHAPTER 4. Powerplant Systems Troubleshooting	4-1	Chapter Overview	7-2.1
Chapter Overview.....	4-2.1	7-1. Flight Control Hydraulic System.....	7-2.1.1
4-1. Engine Performance Check (Without 74).....	4-2.9	7-2. Utility Hydraulic System.....	7-71
4-2. Engine Anti-Icing System (Without 74).....	4-31	7-3. Cargo Ramp and Door	7-119
4-3. Engine Low Oil Level Warning System (Without 74).....	4-43	7-4. Swivel Locks System	7-139
4-4. Engine Start and Ignition System (Without 74).....	4-51	7-5. Power Steering System.....	7-153
4-5. Gas Producer Control System (N1) (Without 74).....	4-91	7-6. Wheel Brakes System.....	7-175
4-6. Power Turbine Control System (N2) (Without 74).....	4-115	7-7. Engine Hydraulic Starting System.....	7-199
4-7. Engine Accessory Gearbox Chip Detectors (Without 74)	4-177	7-8. APU Hydraulic Starting System	7-207
		7-9. Integrated Lower Control Actuator (ILCA)	7-221

	Page
CHAPTER 7. Hydraulic "AIRFRAME" Systems Troubleshooting (Continued)	
7-10. Hydraulic Hand Pump	7-235
INDEX	Index-1
CHAPTER 8. Instrument Systems Troubleshooting	8-1
Chapter Overview	8-2.1
8-1. Pitot Static System	8-2.11
8-2. Gas Producer Tachometer System	8-29
8-3. Engine Oil Pressure Indicating System	8-43
8-4. Engine Oil Temperature Indicating System	8-61
8-5. Power Turbine Inlet Temperature System	8-73
8-6. Torque Indicating System	8-101
8-7. Hydraulic Pressure Indicating System	8-121
8-8. Hydraulic Oil Temperature Indicating System	8-135
8-9. Transmission Oil Pressure Indicating and Warning System	8-149
8-10. Transmission Oil Temperature Indicating and Warning System	8-213
8-11. Fuel Quantity Indicating System	8-259
8-12. Cruise Guide Indicating System	8-295
8-13. Turn and Slip Indicators	8-309
8-14. Maintenance Panel Power Distribution	8-319
8-15. Rotor Tachometer	8-333
8-16. Engine Fuel Flow Indicating System	8-343
CHAPTER 9. Electrical System Troubleshooting	9-1
Chapter Overview	9-2.1
9-1. DC Power System	9-2.17
9-2. AC Power System	9-53
9-3. Position Lights	9-99
9-4. Landing Lights (Search Lights)	9-107
9-5. Formation Lights	9-139
9-6. Anticollision Lights	9-151
9-7. Forward Transmission Oil Level Check Light	9-159
9-8. Pilot Flight Instrument Panel Lights	9-167
9-9. Center Flight Instrument Panel Lights	9-179
9-10. Copilot Flight Instrument Panel Lights	9-187
9-11. Overhead Panel Lights	9-199
9-12. Console Panel Lights	9-213
9-13. Secondary Cockpit Light	9-229
9-14. Cockpit Dome and Utility Lights	9-247

	Page
CHAPTER 9. Electrical System Troubleshooting (Continued)	
9-15. Cabin and Ramp Lights	9-259
9-16. Troop Warning System	9-277
9-17. Utility Receptacles	9-303
9-18. Master Caution Lights	9-321
9-19. Avionics Cooling Fan	9-341
9-20. Anticollision Light (AVIM)	9-351
9-21. Master Caution Panel (AVIM)	9-359
9-22. Clock	9-365
9-23. Cargo Hook Lights	9-375
INDEX	Index-1
CHAPTER 10. Fuel System Troubleshooting	10-1
Chapter Overview	10-2.1
10-1. Engine Fuel Shutoff and Crossfeed Valves	10-2.9
10-2. Fuel Boost Pumps	10-35
10-3. Single Point Pressure Refueling System	10-123
10-4. Extended Range Fuel System (ERFS II) (With 84)	10-179
CHAPTER 11. Flight Control Systems Troubleshooting	11-1
Chapter Overview	11-2.1
11-1. Flight Control System	11-2.9
11-2. Artificial Feel - Magnetic Brakes	11-9
11-3. AFCS	11-35
11-4. AFCS Control Panel	11-191
11-5. AFCS Computer	11-203
11-6. Cockpit Control Drive Actuator (CCDA)	11-229
CHAPTER 12. Utility System Troubleshooting	12-1
Chapter Overview	12-2.1
12-1. Windshield Anti-Icing System	12-2.7
12-2. Fire Detection System	12-29
12-3. Fire Extinguisher System	12-53
12-4. Windshield Wipers	12-71
CHAPTER 13. Environmental Control System Troubleshooting	13-1
Chapter Overview	13-2.1
13-1. Heating and Ventilating System	13-2.7
CHAPTER 14. Hoist and Winch Troubleshooting	14-1
Chapter Overview	14-2.1
14-1. Cargo/Rescue Winch System	14-2.5

	<i>Page</i>
CHAPTER 15. Auxiliary Power Unit Troubleshooting	15-1
Chapter Overview	15-3
15-1. APU to Airframe Interface	15-5
15-2. APU Electrical System	15-19
15-3. APU Fuel System	15-49
15-4. APU Hydraulic System	15-65
15-5. APU/Engine Hydraulic Starter System	15-89
15-6. APU Microprocessor Electronic Sequence Unit (ESU)	15-103
15-7. APU Tester	15-139
 CHAPTER 16. Mission Equipment Troubleshooting	16-1
Chapter Overview	16-2.1
16-1. External Cargo Hook System	16-2.7
16-2. Flare Dispenser System	16-75

	<i>Page</i>
CHAPTER 16. Mission Equipment Troubleshooting (Continued)	
16-3. Engine Air Particle Separator System	16-109
16-4. Heads Up Display System	16-143
16-5. Countermeasures Dispenser System	16-181
 CHAPTER 17. Emergency Equipment Troubleshooting	17-1
Chapter Overview	17-2.1
17-1. Emergency Exit Lights	17-2.5
 CHAPTER 18. Installed Avionics Equipment	18-1
Chapter Overview	18-3
18-1. Global Positioning System	18-7
18-2. Audio Voice Warning System (Radar Altimeter)	18-47
18-3. Doppler/GPS Navigation System	18-61
18-4. HF Liaison Facility	18-97
 INDEX	Index-1

TASK PREPARATION

Each Troubleshooting procedure begins with INITIAL SETUP information. Read it carefully before starting. It tells you what you need and what you have to know before you begin the job.

1. **Applicable Configurations.** Tells you what configurations or effectivity the task applies to.
2. **Tools.** If any tools from your tool kit are needed, just the kit is listed. Tools needed that are not in the kit are called for by name. Special ground support tools, containers, and test equipment are listed by tool number (Txx). Find these items in TM 55-1520-240-23.
3. **Materials.** Materials needed are listed by expendable number (EXX). Find these Items in TM 55-1520-240-23.
4. **Parts.** New parts required, such as gaskets, packings, and washers, are listed by name only. If parts are not needed, you will not see this heading.
5. **Personnel Required.** Each MOS needed to do the task is listed. When more than one of any MOS is needed, the number is shown in parentheses.
6. **References.** Lists references such as TM 55-1520-240-23. These references will provide where information can be found when you need to repair or replace a part or component. When more than one reference is listed, the Fault Isolation Procedure blocks will contain a refer to statement for all references other than TM 55-1520-240-23.
7. **Equipment Condition.** Procedures which must be done before starting the task are listed and task or TM number is given. Tasks that are not indented under a TM manual can be found in this manual. Refer to the TM manual listed above the indented tasks.
8. **General Safety Instructions.** These are safety precautions that must be observed throughout task. Warnings Include basic first aid instructions.
9. **Locator Figure.** The area of the helicopter where the task will be performed is shown, with components to be worked on called out.

1. Visual Checks are performed to determine if the cause of the system fault is visually apparent.
2. Operational Checks are performed step by step on the system to determine the system fault. Continue the operational check TASK until the symptom is confirmed in the RESULT column.
3. Fault Isolation Procedures are performed to identify the specific trouble in the system. Start with the first block. Read it through and answer the question, The questions will always have a YES or NO answer. If you answer the question YES, follow the direction of the YES arrow to the next block. If you answer the question NO, follow the direction of the NO arrow to the next block. Continue troubleshooting until the symptom cause is identified.
4. Use the integrated schematic during troubleshooting for a view of system component connections and system interfaces.
5. Use the wiring diagram when the troubleshooting instructions require wire tests to isolate the symptom cause.

- GO TO NEXT PAGE
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TM 55-1520-240-T-3

6. Before starting, read the entire task. Familiarize yourself with the entire procedure before beginning the task.
7. As you read, pay attention to **WARNINGS, CAUTIONS,** and **NOTES.**
8. **When the word INSPECT** is in your procedures, an inspector must ok the completed step(s).
9. Major steps and key words are printed in boldface for experienced repairers.
10. A glossary is on page 1-87. It lists the abbreviations, special words and terms used in this manual and gives their meaning.
11. When a special tool is used or a common tool is used in an unusual way, the use of the tool will be shown.
12. When a block states, "Repair or replace wire as required.", refer to TM 55-1500-323-24 for recommended maintenance practices.
13. Voltages specified in blocks are nominal values unless a range is given. These nominal values and their acceptable ranges are as follows:

Nominal voltage	Range
28 VDC	24 to 30
26 VAC	24 to 28
24 VDCV (Battery)	20 to 74
5 VAC	4 to 6
115 VAC	110 to 120

14. in the event of the necessity to add or replace electrical wiring, the colors of wire received from supply may not be the same as the original wire colors. Use wire numbers only for identification of wires. Tag or identify wires by proper number when disconnecting or replacing.

AIRCRAFT MODIFICATION (ECP/MWO) RETROFIT INFORMATION

Throughout this manual, black squares containing white numerals are used to distinguish information relating to helicopters modified by an MWO or ECP. Refer to Helicopter Configuration Legend on the following pages for specific modification and effectivities relating to each numeral. A list of delivered helicopters serial numbers is included with the legend.

information pertaining only to unmodified helicopters is identified by the appropriate effectivity symbol preceded by WITHOUT. For example, WITHOUT 4 indicates that the information that follows is applicable only to helicopters not modified by ECP DO18. Information pertaining only to helicopters that have been modified by ECP DO18 is preceded by WITH 4. . All information not preceded by an effectivity symbol is common to all helicopters.

The following helicopter Designation Legend pages are solely for user convenience. They have no official status.

DELIVERED HELICOPTER SERIAL NUMBERS

81-23382	82-23762	83-24102	84-24152	85-24322
through	through	through	through	through
81-23389	82-23780	83-24125	84-24187	85-24336