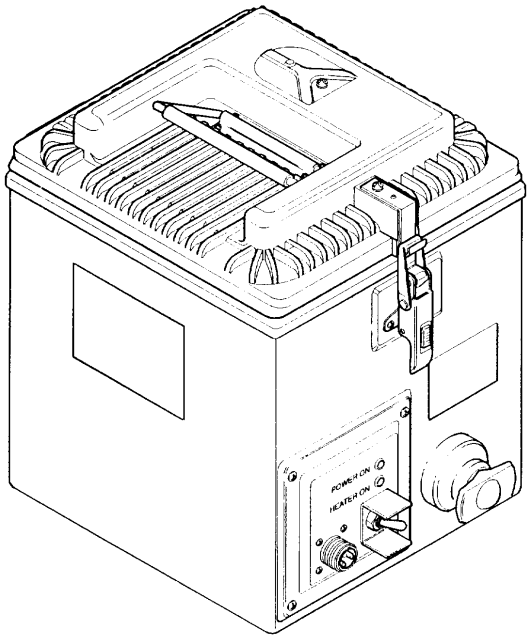
TECHNICAL MANUAL

OPERATOR'S AND UNIT MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST FOR HEATER, WATER AND RATION (HWR)

NSN 7310-01-387-1305



Model RAK-15

Model 471012

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HEADQUARTERS, DEPARTMENT OF THE ARMY
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TECHNICAL MANUAL
No. TM 10-7310-241-12&P

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NSN 7310-01-387-1305
For
Models RAK-15 and 471012

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. 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), or DA Form 2028-2 located in the back of this manual directly to: Commander, U.S. Army Soldier and Biological Command, ATTN: ASSB-RIM-L(N), Kansas Street Natick, Ma. 01760-5052.

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HOW TO USE THIS MANUAL

Depending upon the particular requirement, the information contained in this manual can be accessed by using any one of the following three methods:

a. Front Cover Index. Use the front cover index and corresponding page locator "bleeds" to access the required chapter or appendix. The first page of each chapter contains an index, which provides a listing of the chapter contents. The first section or paragraph in each appendix provides a description of the purpose and contents of the appendix.

b. List of Contents. Use the Table of Contents to obtain the page number associated with the required chapter, section or appendix.

c. Index. Use the Index to obtain the alphabetical location of the subject matter of interest.

The following brief descriptions of the major divisions of the manual are provided as a general guide to where information can be found:

Chapter 1 - Introduction.

This chapter provides general information and gives a brief description of the Heater, Water and Ration (HWR) and its purpose.

Chapter 2 - Operating Instructions.

This chapter describes the operator's controls and indicators, operator's PMCS and operation of the HWR under usual/unusual conditions.

Chapter 3 - Operator Maintenance Instructions.

This chapter contains the lubrication instructions, troubleshooting procedures and maintenance procedures, which can be performed by operating personnel.

Chapter 4 - Unit Maintenance Instructions.

This chapter contains the repair, service upon receipt, check procedures, unit PMCS, troubleshooting procedures, maintenance procedures and preparation for storage or shipment, performed by unit maintenance personnel.

Appendix A - References.

This appendix lists the Forms, Field Manuals, Technical Manuals, Army Regulations, Department of the Army Pamphlets and Miscellaneous Publications referenced in this manual.

Appendix B - Maintenance Allocation Chart (MAC).

This appendix includes the Maintenance Allocation Chart, which designates the overall authority and responsibility for the performance of maintenance functions on end items or components.

Appendix C - Repair Parts and Special Tools List (RPSTL).

HOW TO USE THIS MANUAL (Continued)

This appendix illustrates and lists the authorized replacement parts for the HWR.

Appendix D - Components of End Items (COEI) and Basic Issue Items (BII) Lists.

This appendix illustrates and lists the COEI and BII for the HWR.

Appendix E - Expendable and Durable Items List.

This appendix lists items that are used to operate and maintain the HWR.

Appendix F - Operators Lubrication Instructions.

This appendix contains the statement "Lubrication Not Required".

Glossary - Defines abbreviations and unusual terms found in this manual and not listed in AR 310-25 (Dictionary of United States Army Terms)

Index - Alphabetically lists the names and paragraph numbers of subjects found in this manual.

Metric Conversion Chart - Printed on the inside of the rear cover. All measurements in this manual are given in U.S. standard units with the equivalent metric units in parentheses.

CHAPTER 1

INTRODUCTION

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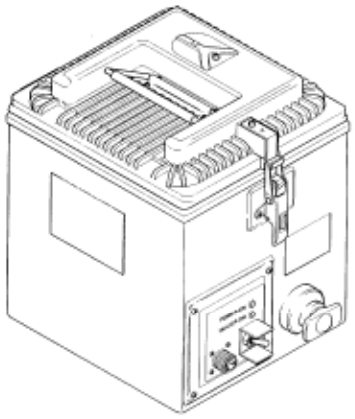

**Figure 1-0. Heater, Water and Ration (HWR)
(Model RAK-15)**

**Figure 1-0.1 Heater, Water and Ration (HWR)
(Model 471012)**

Section I. GENERAL INFORMATION

1-1. SCOPE

a. Type of Manual. Operator's and Unit Maintenance Manual including Repair Parts and Special Tools List.

b. Model Number and Equipment Name. Heater, Water and Ration (HWR): 7310-01-387-1305 for Models RAK-15 and 471012.

NOTE

This technical manual, TM 10-7310-241-12&P, contains two distinctly different models of the HWR each with their own separate model numbers. Please be aware that when performing maintenance procedures or ordering replacement parts you will need to find the corresponding information for either Model RAK-15 or Model 471012. The current NSN for both models is 7310-01-387-1305.

c. Purpose of Equipment.

(1) The HWR provides a mounted potable water and prepackaged rations heating facility for the crew of any military vehicle, which has a 22 - 28 V dc (24 V dc nominal) electrical system. Operation is possible at any time (including full battle conditions) in any climate while stationary or mobile.

(2) When used for water only, the HWR heats approximately one gallon of potable water for beverages, hygiene or medical Purposes.

(3) When used for rations the HWR heat up to five unopened MRE entrees together with 40 fluid ounces of potable water.

(4) With the cover closed and locked the HWR can keep the contents hot for as long as operationally required.

1-2. MAINTENANCE FORMS AND PROCEDURES

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750 (The Army Maintenance Management System (TAMMS)) as contained in the Maintenance Management Update.

1-3. SAFETY, CARE AND HANDLING

a. For artificial respiration procedures, refer to FM 21 -11 (First Aid for Soldiers).

b. The HWR uses a power supply of 22 - 28 V dc (24 V dc nominal). Ensure that the power supply is turned off whenever the HWR is not being operated. Use extreme care if performing troubleshooting or maintenance procedures with the power supply connected.

c. The maximum temperature in the HWR is 160 ^{O}F (71 ^{O}C) or 190 ^{O}F (88 ^{O}C) during normal operation and can reach 205 ^{O}F (96 ^{O}C) (Model RAK-15), or 239 ^{O}F (Model 471012) during overheat conditions before automatic shutdown occurs. Take care to avoid burns if the cover is opened immediately after the HWR has been in operation and be aware that internal heat is retained for long periods when the cover is kept closed.