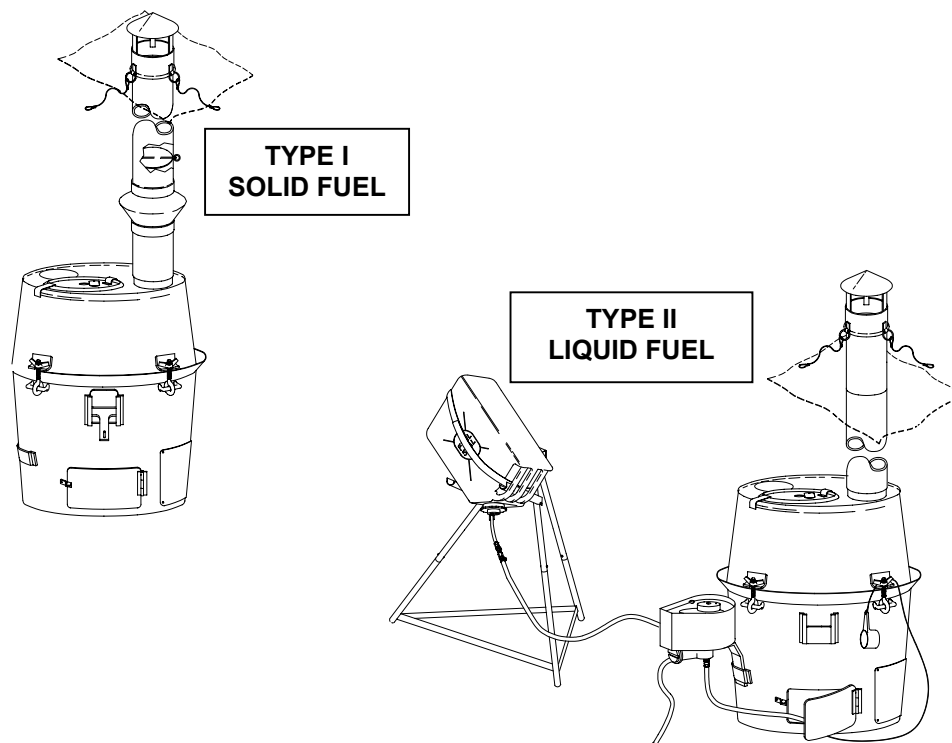


TECHNICAL MANUAL

**OPERATOR'S AND UNIT MAINTENANCE
MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)
FOR
HEATER, SPACE, RADIANT, LARGE (H-45)
(TYPE I, SOLID FUEL)
NSN 4520-01-354-1191
(TYPE II, LIQUID FUEL)
NSN 4520-01-329-3451**



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*This manual supersedes Army TM 9-4520-257-12&P, dated 17 September 1992.

**HEADQUARTERS, DEPARTMENT OF THE ARMY
30 SEPTEMBER 2003**

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HEADQUARTERS,
DEPARTMENTS OF THE ARMY & NAVY
WASHINGTON, D.C., 30 SEPTEMBER 2003

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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 together with DA Form 2028 (Recommended Changes to Publications and Blank Forms), located in the back of this manual, directly to: Commander, U.S. Army Soldier and Biological Chemical Command, ATTN: AMSSB-RIM-L(N), Kansas Street, Natick, MA 01760-5052. You may also send in your recommended changes via electronic mail directly to amssbriml@natick.army.mil. A reply will be furnished to you. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

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TM 9-4520-257-12&P

HOW TO USE THIS MANUAL

This Manual contains General Information, Operating Instructions, Operator Preventive Maintenance Checks and Services (PCMS), Troubleshooting, and Maintenance/Repair instructions for the Large Radiant Space Heater (H-45).

Chapter 1 contains introductory information on the H-45 and its associated equipment as well as a Theory of Operation. Chapter 2 includes operating instructions under usual and unusual conditions. Chapter 3 contents include operator troubleshooting, PMCS, and service procedures. Chapter 4 contains Unit Maintenance instructions. Chapter 6 contains references and other supporting information. Chapter 6 also includes the Repair Parts and Special Tools List (RPSTL) which identifies those parts or tools which are unique to the operation and maintenance of this equipment.

Manual Organization and Page Numbering System. The Manual is divided into six major chapters that detail the topics mentioned above. Within each chapter are work packages covering a wide range of topics. Each work package is numbered sequentially starting at page 1. The work package has its own page numbering scheme and is independent of the page numbering used by other work packages. Each page of a work package has a page number of the form XXXX YY-ZZ where XXXX is the work package number (e.g. 0010 is work package 10) and YY is the revision number for that work package and ZZ represents the number of the page within that work package. A page number such as 0010 00-1/2 blank means that page 1 contains information but page 2 of that work package has been intentionally left blank.

Finding Information. The Table of Contents permits the reader to find information in the manual quickly. The reader should start here first when looking for a specific topic. The Table of Contents lists the topics contained within each chapter and the Work Package Sequence Number where it can be found.

Example: If the reader were looking for instructions on "Preventive Maintenance Checks and Services", which is a Operator Maintenance topic, the Table of Contents indicates that Operator Maintenance information can be found in Chapter 3. Scanning down the listings for Chapter 3, "Preventive Maintenance Checks and Services" information can be found in WP 0010 00 (i.e. Work Package 10).

An Alphabetical Index can be found at the back of the Manual, and lists specific topics with the corresponding work package.

**OPERATOR AND UNIT MAINTENANCE
H-45 LARGE RADIANT SPACE HEATER
(TYPE I, SOLID FUEL)
NSN 4520-01-354-1191
(TYPE II, LIQUID FUEL)
NSN 4520-01-329-3451
GENERAL INFORMATION**

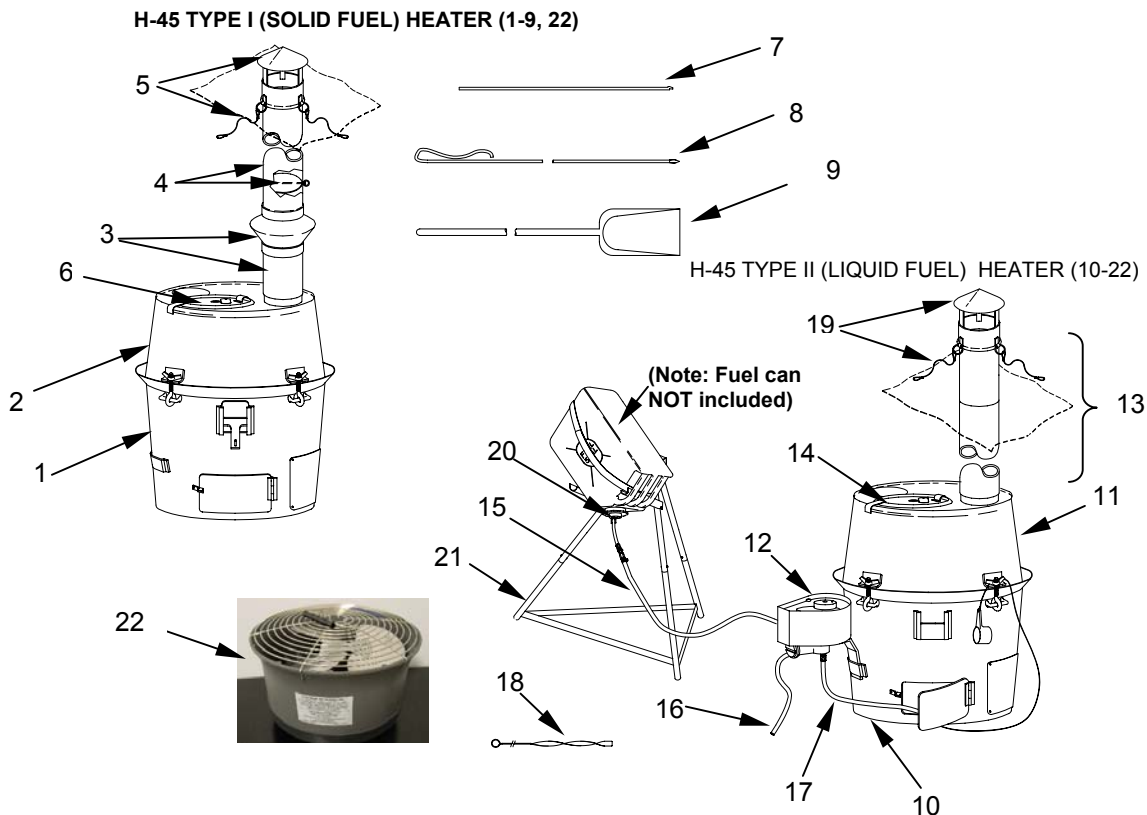
SCOPE

This manual covers the operation of, as well as operator and unit maintenance procedures for, the H-45 Type I (Solid Fuel) and Type II (Liquid Fuel) Large Radiant Space Heaters. They are designed to heat personnel tents and are capable of operating on a variety of fuels as specified in Work Package (WP) 0002 00. Both types are fielded as safe and versatile heat sources for Army field operations.

The H-45 Type I (Solid Fuel) Heater components include the heater body base (1), top heater shell (2), stack pipe with spark arrester (3), stack pipe with flue damper (4), stack cap with guy lines (5), heater lid (6), shaker (7), poker (8), and shovel (9).

The H-45 Type II (Liquid Fuel) Heater components include the heater body base (10), top heater shell (11), a fuel flow control valve (12), stack pipe (13), heater lid (14), fuel supply hose (15), fuel overflow hose (16), flow control burner hose (17), reaming tool (18), stack cap with guy lines (19), gravity feed adaptor (20), and fuel can stand (21).

Both types accommodate the use of the optional Thermoelectric Fan (TEF) (22).



TYPE OF MANUAL: Operator and Unit Maintenance.

MODEL NUMBER AND EQUIPMENT NAME: Heater, Space, Radiant, Large (H-45) - Type I (Solid Fuel), NSN 4520-01-354-1191 and Type II (Liquid Fuel), NSN 4520-01-329-3451.

PURPOSE OF EQUIPMENT: Both types of the H-45 Large Radiant Space Heaters provide heat output in a range from 20,000 to 45,000 British thermal units per hour (BTU/hr). Both types are designed to be used in medium- to large-sized shelters in moderate to arctic conditions. The Type I version of the H-45 is designed to operate with solid fuel while the Type II operates with liquid fuel.

MAINTENANCE FORMS RECORDS AND REPORTS

Department of the Army (DA) forms and procedures used for equipment maintenance will be those prescribed by DA Pamphlet (DA PAM) 738-750, Functional Users Manual for the Army Maintenance Management System (TAMMS); DA PAM 738-751, Functional Users Manual for the Army Maintenance Management System-Aviation (TAMMS-A); or Army Regulation (AR) 700-138, Army Logistics Readiness and Sustainability. Marine Corps users refer to the current edition of Technical Manual (TM) 4700-15/1F.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs)

If your H-45 needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on a Standard Form (SF) 368, Product Quality Deficiency Report. Mail it to: Commander; U.S. Army Soldier and Biological Chemical Command; ATTN: AMSSC-I-LO; Kansas St.; Natick, MA 01760-5052. Marine Corps users should use an SF 368. Submit the completed SF 368 to: Commander; Marine Corps Logistics Bases (Code 856); Albany, GA 31704-5000. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion prevention and control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with the H-45 be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber or plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

If a corrosion problem is identified, it can be reported using an SF 368, Product Quality Deficiency Report. Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem. This form should be submitted to the address specified in DA Pam 738-750.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

For procedures to destroy this equipment to prevent its use by the enemy refer to TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use. Marine Corps users refer to Office of the Chief of Naval Instruction (OPNAVINST) 5510.1H.

PREPARATION FOR STORAGE AND SHIPMENT

Prepare the equipment for storage or shipment as described in WP 0005 00.

Placement of equipment in administrative storage should be for short periods of time when a shortage of maintenance resources exists. Items should be mission-ready within 24 hours or within the time factors as determined by the directing authority. During the storage period appropriate maintenance records will be kept.

Before placing equipment in administrative storage, scheduled lubrication and preventive maintenance checks and services (PMCS) should be performed, shortcomings and deficiencies should be corrected, and all modification work orders (MWOs) should be applied.

Inside storage is preferred for items selected for administrative storage. If inside storage is not available, trucks, vans, shipping containers, and other containers may be used.

NOMENCLATURE CROSS-REFERENCE LIST

Common Name	Official Name
Flow Adjustment Knob	Metering Knob
Flow Control Burner Hose	Hose Assembly, Flow Control-Burner
Fuel Can	Can, Gasoline, Military
Fuel Flow Control Valve	Control, Multifuel Flow, Oil Burner Assembly
Fuel Overflow Hose	H45 Overflow Hose
Fuel Supply Hose	Hose Assembly Supply to Flow Control
Heater Body Base	Baseplate, Space Heater
H-45 Type I (Solid Fuel) Heater	Heater, Space, Radiant, Large, (H-45) (Type I, Solid Fuel)
H-45 Type II (Liquid Fuel) Heater	Heater, Space, Radiant, Large, (H-45) (Type II, Liquid Fuel)
Petroleum Absorbent Mat	Absorbent Material, Oil and Water
Thermoelectric Fan (TEF)	Heater Fan

LIST OF ABBREVIATIONS/ACRONYMS

°C	degrees Celsius
°F	degrees Fahrenheit
AAL	additional authorization list
AR	Army regulation
BII	basic issue items
BOI	basis of issue
BTU/hr	British thermal units per hour
CAGEC	commercial and Government entity code
cm	centimeter
COEI	component of end item
CPC	corrosion prevention and control
CTA	common table of allowance
DA	Department of the Army
DF	diesel fuel
DMWR	depot maintenance work requirement
EIR	equipment improvement recommendations
EMP	electromagnetic pulse
FIG	figure

LIST OF ABBREVIATIONS/ACRONYMS - Continued

FM	field manual
HCI	hardness critical item
JP	jet propulsion
JTA	joint table of allowances
kg	kilogram
MAC	maintenance allocation chart
MSDS	material safety data sheet
MTOE	modified table of organization and equipment
MWO	modification work order
NBC	nuclear, biological, and chemical
NIIN	national item identification number
NSN	national stock number
OPNAVINST	Office of the Chief of Naval Operations Instruction
P/N	part number
PAM	pamphlet
PMCS	preventive maintenance checks and services
QD	quick disconnect
RPSTL	repair parts and special tools list
SF	standard form
SHA	Space Heater, Arctic
SMR	source, maintenance, and recoverability
SRA	specialized repair activity
TAMMS	The Army Maintenance Management System
TAMMS-A	The Army Maintenance Management System-Aviation
TB	technical bulletin
TDA	table of distribution and allowances
TEF	Thermoelectric Fan
TM	technical manual
TMDE	test, measurement, and diagnostic equipment
TOE	table of organization and equipment
U/M	unit of measure
UI	unit of issue
UOC	usable on code
UUT	unit under test
WP	work package

SAFETY, CARE AND HANDLING, WARNINGS, CAUTIONS, AND NOTES

Always pay attention to Warnings, Cautions, and Notes appearing throughout the manual. They will appear prior to applicable procedures. Ensure you read and understand their content to prevent serious injury to yourself and others or damage to equipment.

END OF WORK PACKAGE