

**TECHNICAL MANUAL
OPERATOR'S MANUAL
FOR
LAUNDRY ADVANCED SYSTEM (LADS)
(NSN: 3510-01-463-0114)**

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

*This manual supercedes TM 10-3510-221-10 dated 01 October 2000.

HEADQUARTERS, DEPARTMENT OF THE ARMY

31 OCTOBER 2003

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 31 OCTOBER 2003

TECHNICAL MANUAL

OPERATOR'S MANUAL FOR LAUNDRY ADVANCED SYSTEM (LADS)

(NSN: 3510-01-463-0114)

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 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 directly to: Commander, US Army Soldier and Biological Chemical Command, ATTN: AMSSB-RIM-L(N), Kansas St., Natick, MA 01760. You may also submit your recommended changes by E-mail directly to: <amssbriml@natick.army.mil>. A reply will be furnished directly to you. Instructions for sending electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

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

*This manual supercedes TM 10-3510-221-10 dated 01 October 2000.

TM 10-3510-221-10
TABLE OF CONTENTS

WP Sequence No.

WARNING SUMMARY	a
HOW TO USE THIS MANUAL	iv
General Information	0001 00
CHAPTER 1 INTRODUCTORY INFORMATION WITH THEORY OF OPERATION	
Equipment Description and Data	0002 00
Washing/Drying System Theory of Operation	0003 00
Water Recycle System Theory of Operation	0004 00
Heating System Theory of Operation	0005 00
Air System Theory of Operation	0006 00
Control System Theory of Operation	0007 00
CHAPTER 2 – OPERATOR INSTRUCTIONS	
Description and Use of Operator Controls and Indicators	0008 00
Operation Under Usual Conditions General Information	0009 00
Operation Under Usual Conditions Assembly and Preparation for Use	0010 00
Operation Under Usual Conditions Initial Adjustments, Before Use, and Self-Test	0011 00
Operation Under Usual Conditions Daily Operating Procedures	0012 00
Operation Under Usual Conditions Draining Procedures	0013 00
Operation Under Usual Conditions Preparation for Movement	0014 00
Operation Under Usual Conditions Decals and Instruction Plates	0015 00
Operation Under Unusual Conditions	0016 00
CHAPTER 3 OPERATOR TROUBLESHOOTING PROCEDURES	
Introduction to Troubleshooting	0017 00
Troubleshooting Index	0018 00
Operational Checkout and Troubleshooting Procedures – Washing/Drying System Observed Faults	0019 00
Operational Checkout and Troubleshooting Procedures – Washing/Drying System Displayed Faults	0020 00
Operational Checkout and Troubleshooting Procedures – Water Recycle System Observed Faults	0021 00
Operational Checkout and Troubleshooting Procedures – Water Recycle System Displayed Faults	0022 00
Operational Checkout and Troubleshooting Procedures – Heating System Observed Faults	0023 00
Operational Checkout and Troubleshooting Procedures – Heating System Displayed Faults	0024 00
Operational Checkout and Troubleshooting Procedures – Air System Observed Faults	0025 00
Operational Checkout and Troubleshooting Procedures – Air System Displayed Faults	0026 00
Operational Checkout and Troubleshooting Procedures – Main Control Enclosure Indications ...	0027 00
Operational Checkout and Troubleshooting Procedures – Operator Panel Indications	0028 00
Operational Checkout and Troubleshooting Procedures – Control System Displayed Faults	0029 00
Operational Checkout and Troubleshooting Procedures – Auxiliary Equipment	0030 00

CHAPTER 4 OPERATOR MAINTENANCE INSTRUCTIONS

Preventive Maintenance Checks And Services (PMCS) Introduction	0031 00
PMCS – Before Operation	0032 00
PMCS – During Operation	0033 00
PMCS – After Operation	0034 00
PMCS – Other Intervals	0035 00
Lubrication Instructions	0036 00
Dryer Inlet Screen Servicing	0037 00
Dryer Outlet Guard Servicing	0038 00
Dryer Lint Filter Servicing	0039 00
Dryer Lint Filter Replacement	0040 00
Water Pump Servicing	0041 00
Water Tank Servicing	0042 00
Still Servicing	0043 00
Heat Exchanger Inlet Screen Servicing	0044 00
Subcooler Air Inlet Screen Servicing	0045 00
Pre-Filter Bag Replacement	0046 00
Coalescer Filter Cartridge Replacement	0047 00
Still Door Gasket Replacement	0048 00
Heater Air Inlet Filter Servicing	0049 00
Air Inlet Filter Servicing	0050 00
Air Outlet Filter Element Replacement	0051 00
Air Outlet Filter Automatic Drain Replacement	0052 00
LED Lamp Replacement	0053 00
12 VDC Lamp Replacement	0054 00
LADS Servicing	0055 00

CHAPTER 5 SUPPORTING INFORMATION

References	0056 00
Components of End Item (COEI) and Basic Issue Items (BII) Lists	0057 00
Additional Authorization List (AAL)	0058 00
Expendable and Durable Items List	0059 00

REAR MATTER

Alphabetical Index	I-1
--------------------------	-----

TM 10-3510-221-10
HOW TO USE THIS MANUAL

In this manual, primary chapters appear in upper case/capital letters; work packages are presented in numeric sequence, e.g., 0001 00; paragraphs within a work package are not numbered and are presented in a titles format. For a first level paragraph title all upper case/capital letters , e.g., INTRODUCTION, the next subordinate paragraph title will have the first letter of the first word and of each principle word all upper case/capital letters , e.g., Still Operation. The location of additional material that must be referenced is clearly marked. Figures supporting maintenance procedures/text are located as close as possible to their references.

FRONT MATTER. Front matter consists of front cover, warning summary, title block, table of contents, and how to use this manual page.

CHAPTER 1 – INTRODUCTION. Chapter 1 contains general information, equipment description, and theory of operation.

CHAPTER 2 – OPERATOR INSTRUCTIONS. Chapter 2 contains a description and use of operator controls and indicators, operating procedures under usual conditions, and operating procedures under unusual conditions.

CHAPTER 3 – TROUBLESHOOTING PROCEDURES. Chapter 3 contains general troubleshooting information, a troubleshooting index, and troubleshooting procedures authorized at operator level.

CHAPTER 4 – MAINTENANCE INSTRUCTIONS. Chapter 4 provides preventive maintenance checks and services (PMCS), lubrication instructions, and maintenance procedures authorized at operator level.

CHAPTER 5 – SUPPORTING INFORMATION. Chapter 5 contains references, components of end item (COEI) list, basic issue items list (BII) list, additional authorization list (AAL), and expendable and durable items list.

REAR MATTER – Rear matter consists of alphabetical index, DA Form 2028, authentication page, and back cover.

LAUNDRY ADVANCED SYSTEM
(NSN 3510-01-463-0114)
GENERAL INFORMATION

SCOPE

This manual contains instructions for operation, troubleshooting, PMCS and maintenance procedures for the Laundry Advanced System (LADS).

Type of Manual: Operator.

Model Number and Equipment Names: Laundry Advanced System.

Purpose of Equipment: The system is used to perform field laundering of Army clothing and equipment.

Maintenance Forms, Records and Reports.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 738-750, The Army Maintenance Management System (TAMMS), DA PAM 738-751, The Army Maintenance Management System-Aviation (TAMMS-A); or AR 700-138, The Army Logistics Readiness and Sustainability.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your Laundry Advanced System 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 an SF 368 (Product Quality Deficiency Report). Mail it to the address specified in DA PAM 738-750, The Army Maintenance Management System (TAMMS), or as specified by the contracting activity. 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 this item 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 and 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 Standard Form SF 368, Product Quality Deficiency Report. Use of keywords such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem.

The form should be submitted to the address specified in DA PAM 738-750, The Army Maintenance Management System (TAMMS).

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

References to "destruction of Army materiel to prevent enemy use" are contained in TM 750-244-3.

PREPARATION FOR STORAGE AND SHIPMENT

Refer to PREPARATION FOR MOVEMENT (WP 0014 00).

WARRANTY INFORMATION

The Laundry Advanced System does not contain warranty provisions.

NOMENCLATURE CROSS-REFERENCE LIST

Common Name	Official Nomenclature
LADS	Laundry Advanced System
Laundry Unit	Laundry Advanced System

LIST OF ABBREVIATIONS

ac	alternating current
C	Centigrade
CAGEC	Commercial and Government Entity Code
cm	centimeter
CCW	Counter-Clockwise
CW	Clockwise
CPC	Corrosion Prevention and Control
DA	Department of the Army
dc	direct current
EIR	Equipment Improvement Recommendation
ESD	Electrostatic Discharge Sensitive
F	Fahrenheit
FRS	Finish Reapplication System
ft	foot
Gal	gallon
GFI	Ground Fault Interrupt
hp	horsepower
h	hour
Hz	Hertz (frequency or cycles per second)
in	inches
I/O	Input/Output
ISO	International Organization for Standardization
kg	Kilogram
kW	Kilowatt
kPa	Kilopascal

LIST OF ABBREVIATIONS – Continued

l	liter
ltrs	liters
lbs	pounds
MAC	Maintenance Allocation Chart
NSN	National Stock Number
PCB	Printed Circuit Board
PMCS	Preventive Maintenance Checks and Services
psi	Pounds per square inch
psig	Pounds per square inch gage
RPM	Revolutions Per Minute
RPSTL	Repair Parts and Special Tools List
SCF	Standard Cubic Feet
SMR	Source, Maintenance, and Recoverability [Code]
SSR	Solid State Relays
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostics Equipment
VAC	Volts Alternating Current
VDC	Volts Direct Current

END OF WORK PACKAGE

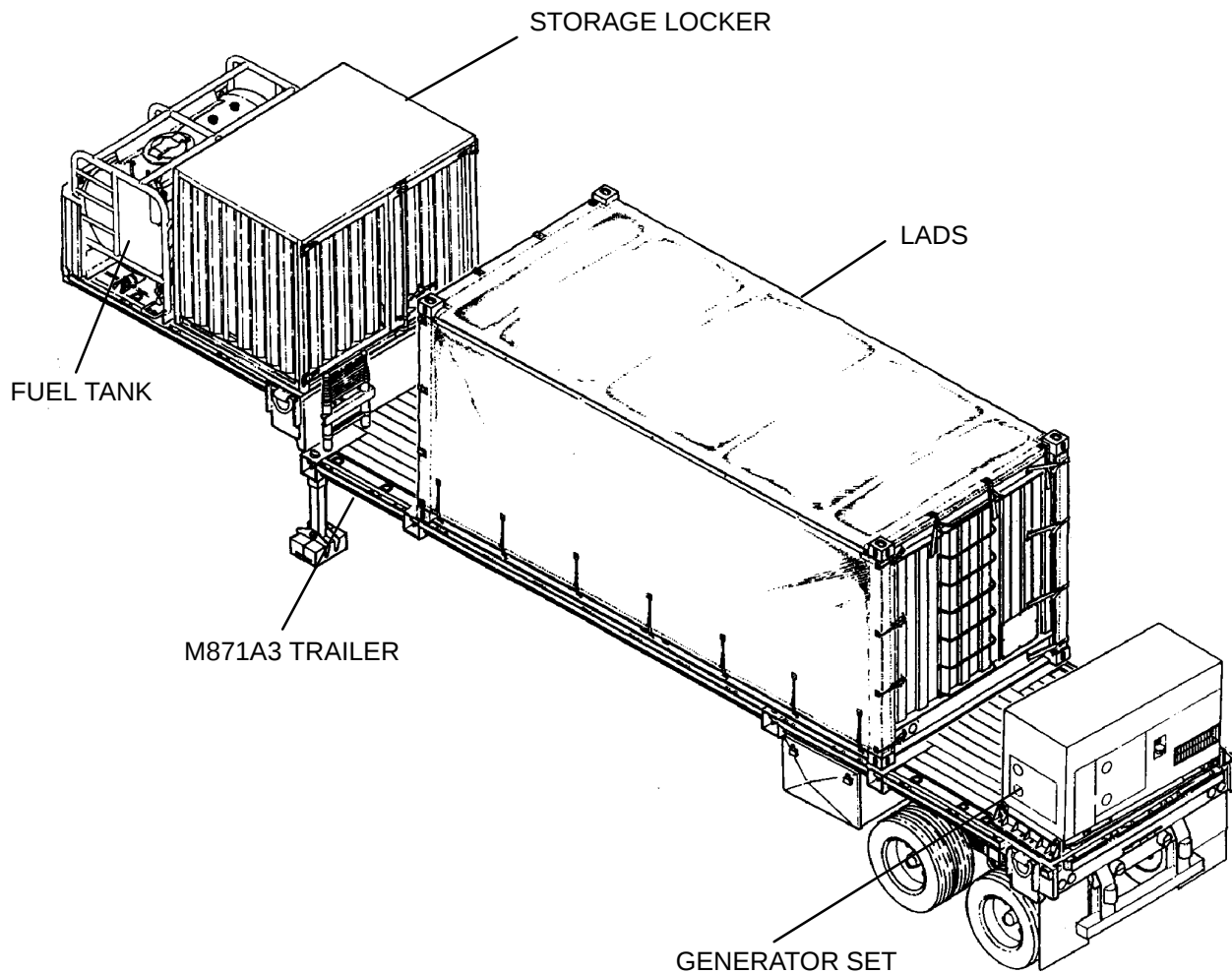
CHAPTER 1
INTRODUCTORY INFORMATION WITH
THEORY OF OPERATION
FOR
LAUNDRY ADVANCED SYSTEM

LAUNDRY ADVANCED SYSTEM**(NSN 3510-01-463-0114)**

EQUIPMENT DESCRIPTION AND DATA

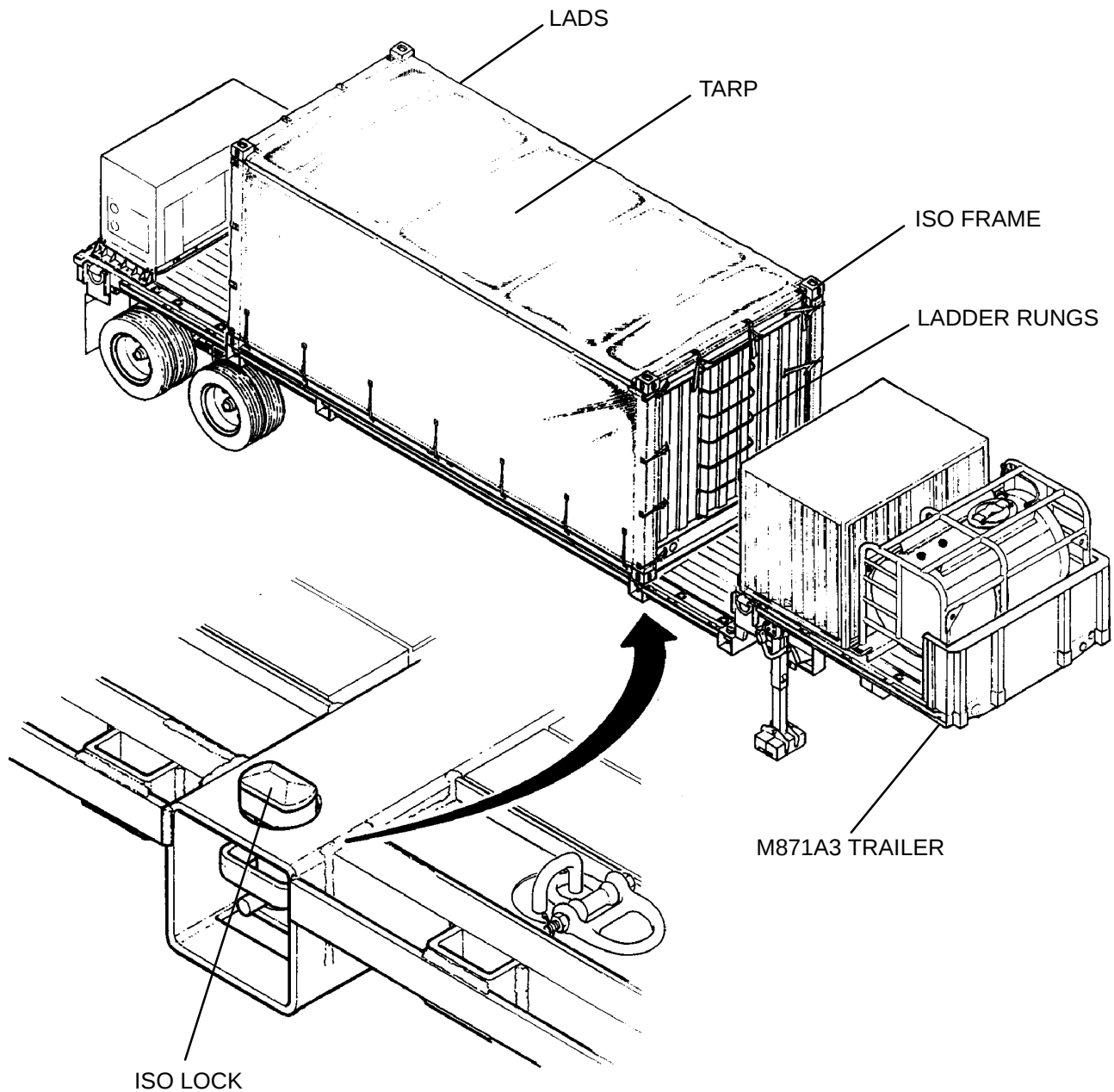
EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

The Laundry Advanced System (LADS) consists of two washing/drying systems. The LADS also includes a water recycle system, heating system, air system, and control system. These systems support the operation of both washing/drying systems. The LADS components are mounted on an International Organization for Standardization (ISO) frame which is mounted on a 22-1/2 ton M871A3 semi-trailer. The LADS uses external electrical power. This power is normally provided by a 30 kilowatt (kW), MEP-805A Tactical Quiet Generator Set. The LADS can also be operated with other field generators or commercial power. The LADS requires an external supply of potable water and an external supply of JP-8 fuel. Fuel is normally provided from a 400-gallon fuel tank. A storage locker is provided to store accessories, auxiliary equipment, and consumables.



LOCATION AND DESCRIPTION OF MAJOR COMPONENTS**ISO FRAME**

The LADS components are mounted to an 8 foot (ft) wide X 8 ft high X 20 ft long ISO frame. The frame mounts to the M871A3 Trailer via ISO locks. Ladder rungs are provided at both ends of the frame to access the top of the LADS. A protective tarp is provided to cover the front, rear, and top of the LADS during transport.



PLATFORM

A work platform is provided at the curbside of the LADS to facilitate laundry and maintenance operations. A hand winch is used to raise and lower the platform. Two adjustable legs are provided to support the front of the platform. Hand rails are provided at the platform sides to prevent personnel from falling. Stairs are located on the side of the platform for ground-level access. The protective tarp used to cover the LADS during transport converts into an awning to protect personnel on the platform from exposure to rain, sun, and wind.

