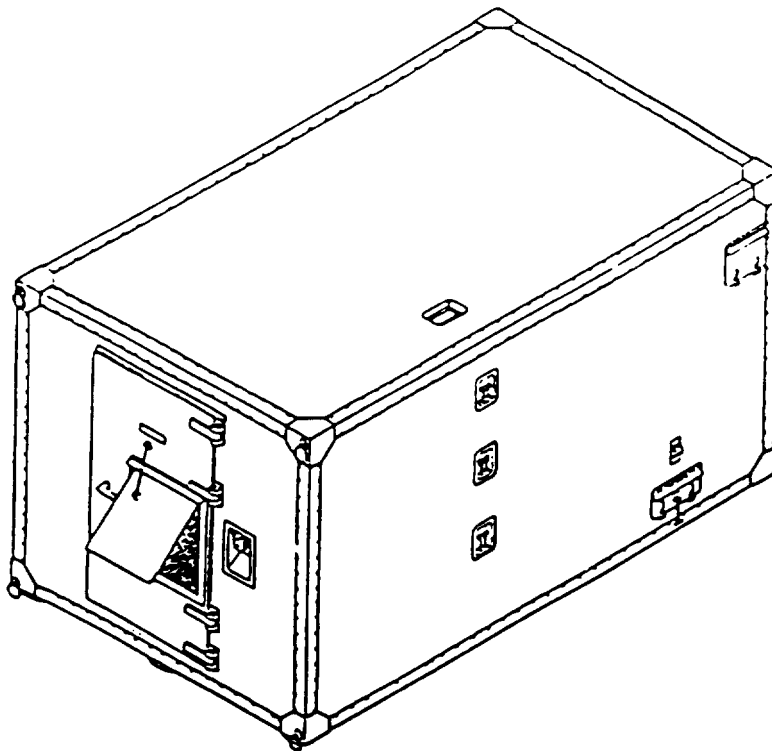


TECHNICAL MANUAL

**OPERATOR'S, UNIT, AND DIRECT SUPPORT  
MAINTENANCE MANUAL  
(INCLUDING REPAIR PARTS  
AND SPECIAL TOOLS LIST)**



**AIRMOBILE AVIATION FUEL  
LABORATORY  
(NSN 6640-00-902-9711)**

Approved for public release; Distribution is unlimited.

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**HEADQUARTERS, DEPARTMENT OF THE ARMY  
24 OCTOBER 1990**

Operator's, Unit and Direct Support Maintenance Manual  
(Including Repair Parts and Special Tools List)

AIRMOBILE AVIATION FUEL LABORATORY  
(NSN 6640(M)902-9711)

Current as of 18 June 1991

**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, US Army Aviation Troop Command, ATTN AMSAT-I-MP, 4300 Goodfellow Blvd.. St. Louis, MO 63120-1798 You may also submit your recommended changes by E-mail directly to <mpmt%cavma28@st-louis-mh7 army mil> A reply will be furnished directly to you Instructions for sending an electronic 20(28 may be found at the back of this manual immediately preceding the hard copy 202.8.

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## **HOW TO USE THIS MANUAL**

The manual has been divided into chapters, sections, and paragraphs which are all numbered sequentially; figures and tables have also been numbered in the same manner. The operator's portion of the manual identifies major components and their location which will aid you, the operator, in performing your PMCS. Detail lubrication instructions which are mandatory are included within the operator's maintenance section.

Use the front cover locators and "marked/tabbed" pages to quickly find the parts of the manual shown on the cover. The "blocked" titles in the table of contents are the titles for these locators. These portions of the manual were chosen because they are used most often.

Maintenance procedures used by Unit, and Direct Support personnel are described in a step by step manner, ensuring the correct, and safe removal or repair of equipment. An alphabetical index at the back of the manual is referenced to the appropriate paragraph in the manual for ease of locating a specific task or procedure.

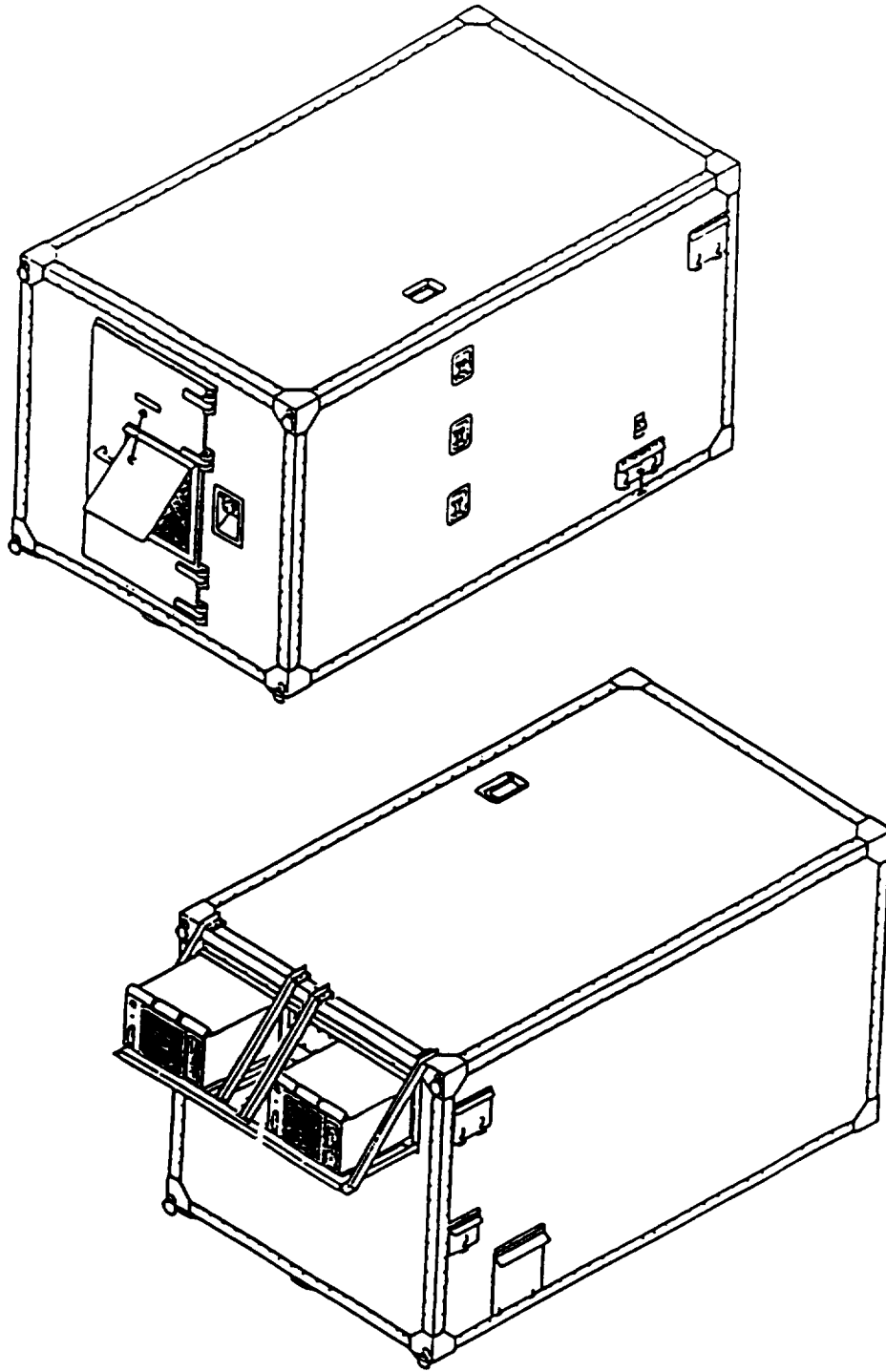


Figure 1-0. Airmobile Laboratory

**CHAPTER 1**  
**INTRODUCTION**

**Section I. GENERAL INFORMATION**

**Alphabetical Index**

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Hand Receipt (-HR) Manual . . . . .	1-3
Maintenance Forms, Records, and Reports . . . . .	1-2
Nomenclature Cross-Reference List . . . . .	1-9
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Quality Assurance/Quality Control (QA/QC) . . . . .	1-6
Reporting Equipment Improvement Recommendations (EIRs) . . . . .	1-7
Safety, Care, and Handling . . . . .	1-8
Scope . . . . .	1-1

**1-1. SCOPE**

- a. Type of Manual. This manual contains operation, maintenance instructions and repair parts and special tool list (RPSTL) for the operator, unit, and direct support maintenance personnel of the Airmobile Aviation Fuel Laboratory.
- b. Equipment Name. Laboratory, Airmobile, Aviation Fuel (NSN 6640-00-902-9711).
- c. Purpose of Equipment. To conduct aviation fuel and diesel fuel quality testing in the field.

**1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS.**

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 736-750, The Army Maintenance Management System (TAMMS).

**1-3. HAND RECEIPT (-HR) MANUALS.**

This manual has a companion document with a TM number followed by "-HR" (Hand Receipt). The TM 10-6640-216-10-HR consists of preprinted hand receipts (DA Form 2062) that list end item related equipment (i. e., COEI, BII, and AAL) you must account for. As an aid to property account-

**1-3. HAND RECEIPT (-HR) MANUALS - continued.**

ability, additional -HR manuals may be requisitioned from the following source In accordance with procedures in AR 25-30:  
Commander  
U.S. Army Publications Distribution Center - St. Louis  
ATTN: SFIS-APC-OC  
1655 Woodson Road  
St. Louis, MO 63114-6181

**1-4. DESTRUCTION OF ARMY MATERIAL TO PREVENT ENEMY USE.**

Destruction of Army materials to prevent enemy use shall be in accordance with TM 750-244-3.

**1-5. PREPARATION FOR STORAGE OR SHIPMENT.**

Refer to Section IV of Chapter 3 for requirements concerning these preparations

**1-6. QUALITY ASSURANCE/QUALITY CONTROL (QA/QC).**

The quality of the Airmobile Laboratory must at all times be in compliance with the requirements set forth in MIL-L-0051050C(ME), paragraph 4 If a discrepancy is found to exist between your laboratory and MIL-L-0051050C(ME), notify your supervisor.

**1-7. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs).**

If your Airmobile Laboratory 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 us at Commander, U S Army Aviation and Troop Command. ATTN A.MSAT-I-MDO, 4300 Goodfellow Boulevard, St. Louis. Missouri 63120-1798 We'll send you a reply

**1-8. SAFETY, CARE, AND HANDLING.**

Safe and efficient aviation fuel laboratory operations depend on the observance of well established safety practices and a thorough knowledge of testing procedures The testing procedures often involve using equipment and materials that are potentially hazardous. Injury to personnel and damage to equipment by fire, chemicals, dangerous pressures and vacuums, or misuse of equipment can be avoided by alert and responsible laboratory technicians. Strict observance of established safety, care and handling procedures will allow laboratory personnel to perform their duties in a safe and hazard-free environment

**1-8. SAFETY, CARE, AND HANDLING - continued.**

a. General Precautions. The following are general safety precautions that need to be observed by all operators of the Airmobile Laboratory.

- Always be mindful of tests in progress. Never allow horseplay or loud talking that would divert the attention of laboratory technicians. If it is necessary to leave the laboratory or to leave a test in progress, make certain no safety hazard will result from your absence.
- Do not attempt to perform tests simultaneously unless each test can be given the required attention.
- Whenever in doubt concerning any operation, consult qualified authority for advice.
- Do not attempt unauthorized shortcuts to save time, as they generally are not in accordance with safe laboratory procedures.
- Be prepared for any emergencies which may arise, and be familiar with the proper action to take in event of emergencies.
- When ending daily operations, make a thorough and orderly check of laboratory, equipment and facilities to ensure that no hazards may develop during the time the laboratory is unattended.

b. Preventing Fires. The following fire prevention rules must be observed in all laboratory procedures:

- Do not smoke in the airmobile laboratory.
- Never leave open flames or heating elements unattended.
- Never pour hot liquids into drains. Set aside hot liquids to cool thoroughly in covered containers before discarding.
- Make sure that chemicals which may react to produce dangerous fumes, fires, or explosion are stored in their proper places.
- Make sure that volatile liquids and flammable products are kept away from heat sources, open flames, direct sunlight, and electrical switches.
- Make certain that there is no open flame or exposed heating element nearby when pouring highly volatile liquids.
- Clean up chemical and liquid spills immediately.
- Always pour acid into water; never pour water into acid.
- Keep oily rags in a metal, airtight, closed container. Do not store oily rags in cabinets or drawers.
- Make certain laboratory is adequately ventilated.

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**1-8. SAFETY, CARE, AND HANDLING - continued.**

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- Check fire fighting equipment periodically to make certain it is properly serviced and ready for use. This is done by checking seals, tags, pressure gages, and hoses.
- c. Extinguishing Fires. Be familiar with the nature of petroleum fires; with procedures for fighting fires; and with the fire extinguishing equipment in the laboratory. Do not use water for extinguishing oil fires because it will spread the fire. Water is a conductor of electricity and should not be used on electrical fires.
- d. Handling Chemicals. The following safety precautions need to be observed by all personnel while handling chemicals.
- Store heavy and large containers of chemicals on or as near the floor as possible.
  - Never fill a container with material other than that indicated on the label. Make sure that every container is properly labeled.
  - Never place bottles containing acids or alkalis on high shelves or on top of equipment.
  - Always wear goggles when breaking up solid chemicals which might chip, or when handling quantities of corrosive liquids such as strong acids and strong bases.
  - When opening new bottles of acid, always wear goggles.
  - When pouring a sample from a container, hold the container cap or stopper in the hand. Never place the cap or stopper on a counter where it may come in contact with a contaminating agent.
  - Always wipe up any acid that spills or splashes on benches, tables, or floors.
  - If any chemical is spilled or splashed on the body, immediately wash the contaminated area thoroughly with water.
  - Keep all sample containers that are in use capped or stoppered at all times except when pouring out test portions. Always replace the same cap or stopper in the container from which it was removed.
  - Never handle mercury with bare hands; never heat mercury in an open container; and never shake more than 20 milliliters of mercury in a glass container.
  - Never taste laboratory chemicals. Smell a chemical only when necessary and then only by wafting a small amount of vapor with the hand toward the nose.
  - Dispose of all unlabeled chemicals.
- e. Controlling Pressure and Vacuum. The following safety precautions should be observed by all personnel while operating the air/vacuum systems.
- Do not use faulty copper, plastic, or rubber tubing when performing operations requiring pressure or vacuum.

**1-8. SAFETY, CARE, AND HANDLING - continued.**

- Make sure that glass vacuum apparatus is properly shielded when it is in use.
- Always wear goggles when opening air valves that are close to the face.
- Make sure that chemical containers having vent caps are inspected, and that containers which do not have vent caps are vented periodically.
- Keep containers of volatile liquids as cool as possible. Exercise caution in releasing any pressure which may have formed in the container; always release the pressure gradually. Remove caps or stoppers periodically to vent the vapor. The practice of venting containers of volatile liquids does not apply to those samples collected for vapor pressure tests.
- Vent separator funnels frequently when shaking volatile liquids. Always wrap the funnel with a rag when shaking an extremely volatile liquid.
- Store propane cylinders in the propane stowage locker, away from heat or ignition sources.

f. Controlling Fumes. The following safety precautions are presented to aid operators of the Airmobile Laboratory in controlling toxic fumes.

- Make certain the laboratory is properly ventilated at all times.
- Perform all gas alarm system tests and calibrations as specified to ensure proper operation of system.
- If any material is spilled which gives off toxic fumes, all personnel should leave the area immediately and return only after the area has been adequately purged.

g. Electrical Safety. The following electrical safety precautions apply to all operators and maintenance personnel for the Airmobile Laboratory.

- Equipment producing a tingle sensation will be reported promptly for repair.
- Keep the use of extension cords to a minimum and the cords as short as possible. Be sure insulation and wire size are adequate for the voltage and current to be carried.
- Work on electrical devices should be done after the power has been disconnected or shut off, and suitable precautions taken to keep the power off during the work.
- Never use metallic pencils or rulers, or wear rings or watches when working on electrical equipment.
- Avoid using or storing flammable liquids near electrical equipment.