
TECHNICAL MANUAL

**OPERATOR, ORGANIZATIONAL AND DIRECT SUPPORT MAINTENANCE
MANUAL**

INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

TEST SET, ELECTRICAL (LOAD BANK,) 0-30 KW,

AC; PORTABLE SKID-MOUNTED

(ESSEX ELECTRO ENGINEERS, INC. MODEL A427)

NSN 6625-00-730-4368

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OPERATOR, ORGANIZATIONAL AND DIRECT SUPPORT
MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

TEST SET, ELECTRICAL (LOAD BANK), 0-30KW,
NSN 6625-00-730-4368 (MODEL A427)
NSN 6625-01-106-9373 (MODEL A427B)

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, US Army Troop Support and Aviation Materiel Readiness Command, ATTN: DRSTS-MPSD, 4300 Goodfellow Blvd., St. Louis, MO 63120. A reply will be furnished directly to you.

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This manual supersedes TM 5-6115-453-12,7 March 1969, including all changes, TM 5-6115-453-23P, 20 February 1970 and TM. 5-6115-453-35, 15 May 1969.

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CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

This manual is for your use in operating and maintaining the electrical test set (load bank).

1-2. Maintenance Forms and Records

Maintenance forms and records that you are required to use are as follows:

- a. DA Form 2404 (Equipment Inspection and Maintenance Worksheet).
- b. DA Form 2407 (Maintenance Request Used for Requesting Support Maintenance).
- c. DA Form 2407-1 (Continuation Sheet Used for Requesting Support Maintenance).
- d. For further information, refer to TM 38-750, The Army Maintenance Management System (TAMMS).

1-3. Equipment Serviceability Criteria (ESC)

This equipment is not covered by an ESC.

1-4. Destruction of Army Material to Prevent Enemy Use

a. General

(1) When capture or abandonment of the test set to an enemy is imminent, the responsible unit commander must make the decision either to destroy the equipment or render it inoperative. Based on the decision, orders are issued which cover the desired extent of destruction. Whatever method of demolition is employed, it is essential to destroy the same vital parts of all test sets and all corresponding spare parts.

(2) When the lack of time or personnel prevents complete destruction of the equipment, the following

priorities will be used in the destruction of essential parts.

- (a) Control panel assembly.
- (b) Power absorbers.
- (c) Variable transformer.
- (d) Contactor.
- (e) Rectifier.
- (f) Frame.

b. *Demolition to Render the Equipment Inoperative.* Use sledge hammers, crowbars, picks, axes or any other heavy tools which are available to destroy the unit.

c. *Demolition by Explosive or Weapons Fire.*

(1) *Explosives.* Place 3 one-pound (.45 kg) charges in the interior of the unit and detonate simultaneously.

(2) *Weapons fire.* Fire on the test set with the heaviest practical weapons available.

d. *Other Demolition Methods.*

(1) *Scattering and concealment.* Remove all easily accessible parts and scatter them through dense foliage, bury them in the ground or submerge them in a lake, stream, or other body of water.

(2) *Burning.* Pack rags, clothing, or canvas inside, under and around the test set. Saturate this packing with gasoline, oil or diesel fuel and ignite it.

(3) *Submersion.* Totally submerge the equipment in a deep body of water to provide water damage and concealment. Salt water does greater damage to metal parts than fresh water.

(4) For further information, refer to TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use.

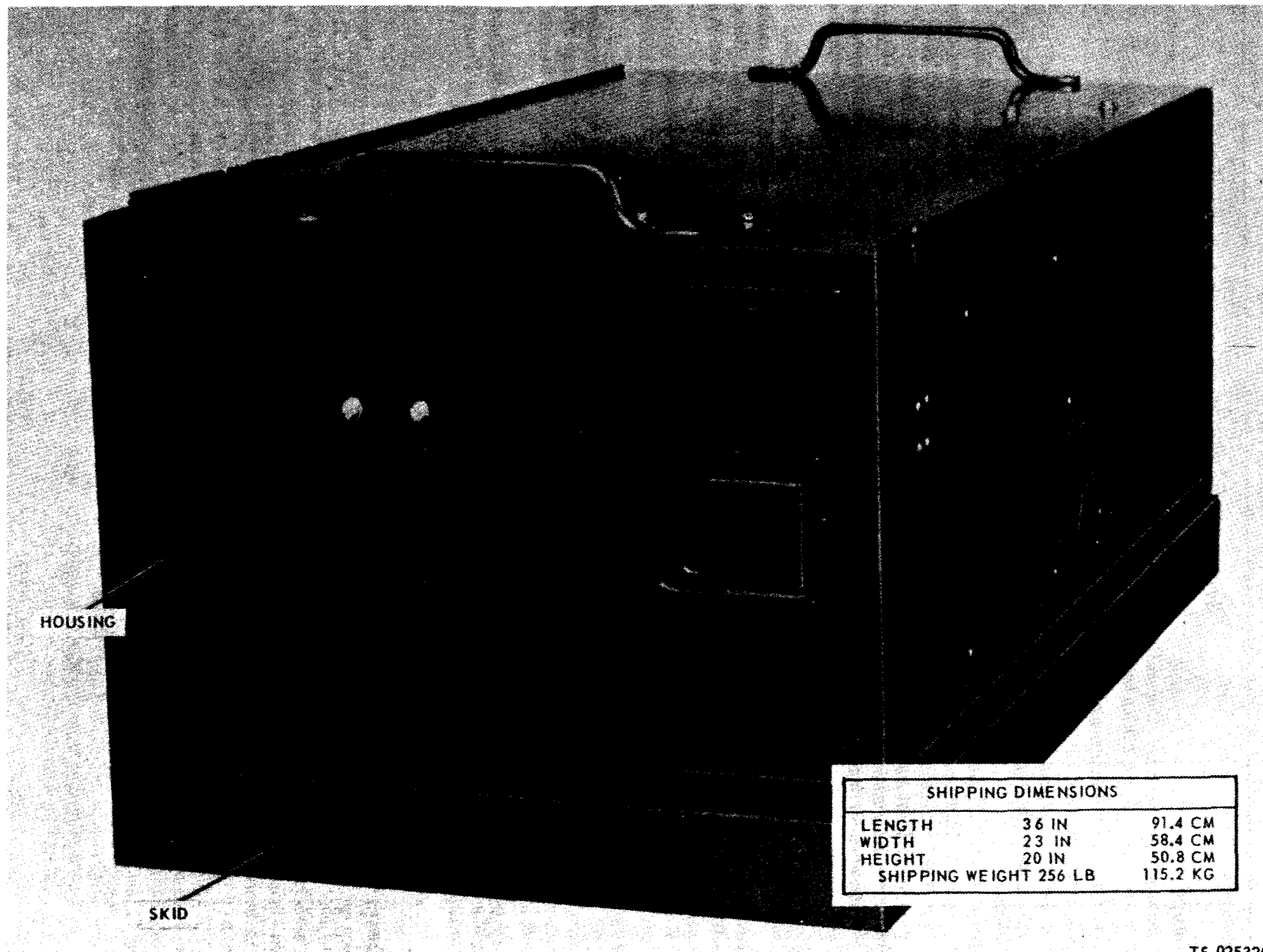
Section II. DESCRIPTION AND DATA

1-5. Description

a. **General.** The electrical test set, either Model A427 or Model A427B, is a portable, skid mounted resistive load unit. It is a completely self-contained unit mounted within a weather resistant enclosure. Models A427 and A427B are electrically, operationally and functionally identical to each other. Physically, the overall envelop of the two models differ only to the extent that Model A427B is provided with specially designed skids and hand lifting bars. Model A427B stands 5" taller than Model A427 for this reason. Many of the internal components are different and not physically interchangeable.

b. **Capabilities.** The electrical test set, either Model A427 (fig. 1-1) or Model A427B, operates as a loading and testing device for electrical gener-

ating equipment. This is accomplished by applying various combinations of the resistive load increments to simulate any output load. The load bank is designed to test the output characteristics of generating plants rated at 120/208 and 240/416 volts, three phase, 4 wire; 120 or 240 volts single phase, 2 wire. The load bank can operate at frequencies between 50 and 100 cycles per second. Input power terminals are supplied for connection of power cables. Power cables are not supplied with the equipment. The load bank can apply 0.5 to 33 kilowatts variable load and 3, 6, 9, 12 KW fixed loads. When fixed and variable loads are applied in combination, the load bank can supply any load from 0.5 to 33 kilowatts on either single or balanced three phase operation.



TS 025320

Figure 1-1. Test set, right front, three quarter view with shipping dimensions.

c. *Major Assemblies and Components.* The major assemblies and components of the test set include a housing, control panel assembly, 3 power absorbers, variable transformer, contactor, rectifier, output terminals,

and a voltage sensing module illustrated in figures 1-1 through 1-3. The maintenance paragraphs of this manual contain detailed descriptions of its components.

TS 025321

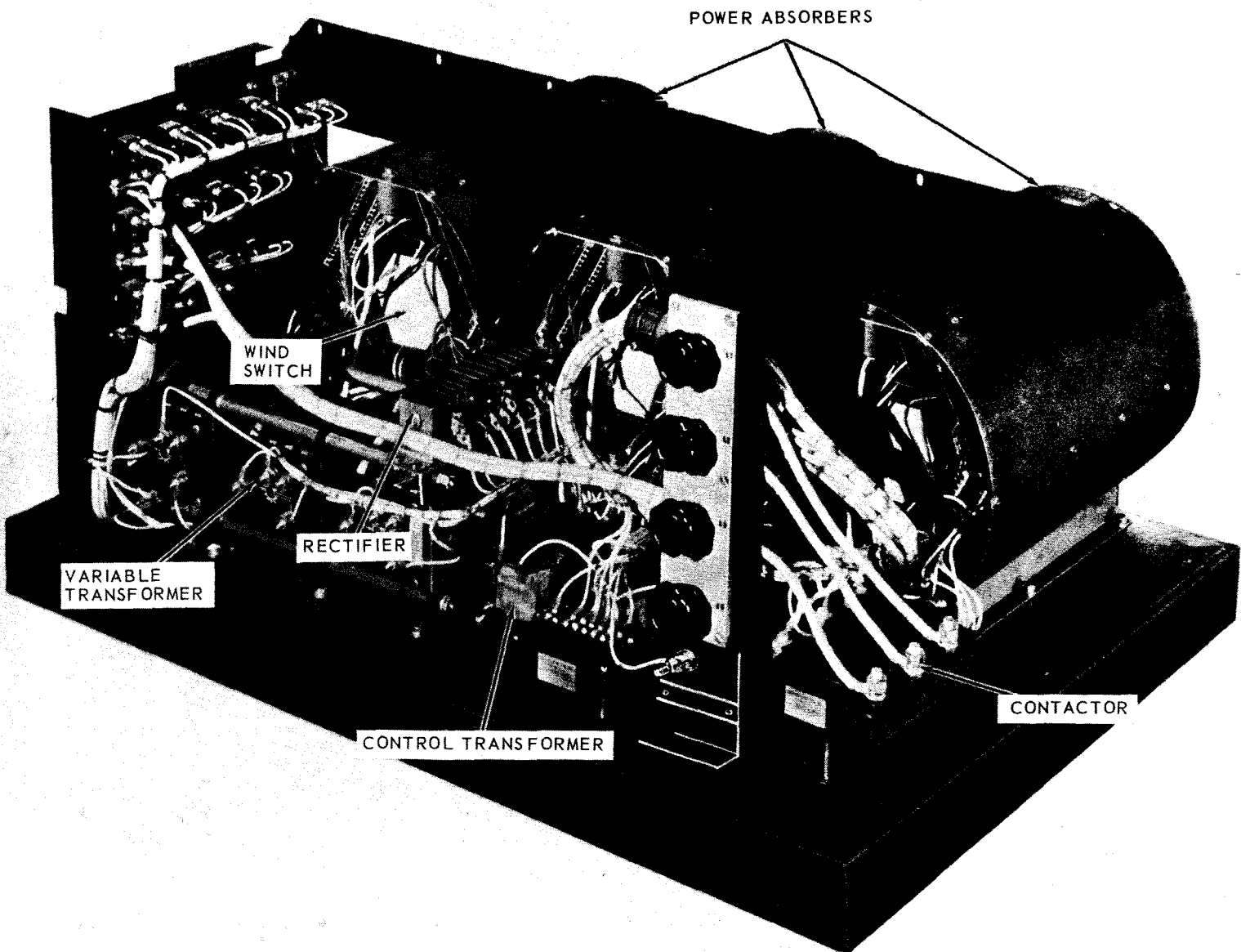


Figure 1-2. Test set, top view.