

TM 11-6125-256-20

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**TECHNICAL MANUAL**

**ORGANIZATIONAL MAINTENANCE MANUAL**

**MOTOR-GENERATOR**

**PU-750( )/A**

**(NSN 6125-00-101-9720)**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**1977**

**WARNING**

**Dangerous voltages exist in this equipment. Always deenergize the inverter before working with ac output circuit. Serious injury or death may result from contact with these points when energized.**

**All maintenance and maintenance facilities must conform to TB 385-4, Safety Precautions for Maintenance of Electrical/Electronic Equipment.**

**DON'T TAKE CHANCES!**

TECHNICAL MANUAL  
 No. 11-6125-256-20

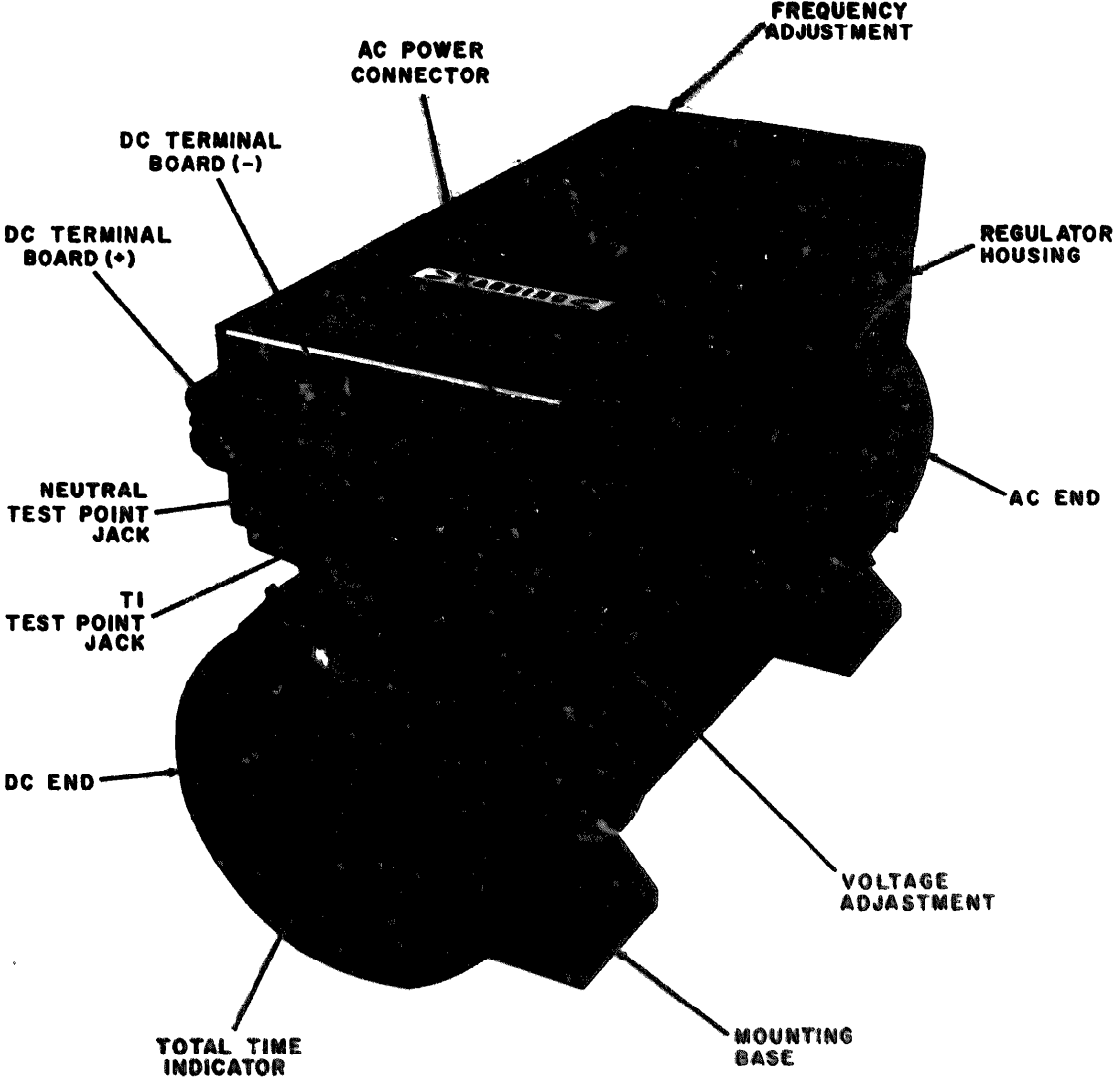
HEADQUARTERS  
 DEPARTMENT OF THE ARMY  
 WASHINGTON, D.C., 6 June 1977

**ORGANIZATIONAL MAINTENANCE MANUAL  
 MOTOR-GENERATOR PU-750( )/A  
 (NSN 6125-00-101-9720)**

**REPORTING OF ERRORS**

You can improve this manual by recommending improvements using DA Form 2028-2 (Test) located in the back of the manual. Simply tear out the self-addressed form, fill it out as shown on the sample, fold it where shown, and drop it in the mail. If there are no blank DA Form 2028-2 (Test) in the back of your manual, use the standard DA Form 2028 (Recommended Changes to Publication and Blank Forms) and forward to the Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, NJ 07703.  
 In either case a reply will be furnished direct to you.

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EL2TF001

Figure 1-0. Motor-generator PU-750(A)

## CHAPTER 1 INTRODUCTION

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### Section I. GENERAL

#### 1-1. Scope

This **manual** provides organizational maintenance instructions for Motor-Generator PU-750( )/A. Appendix A contains references to additional documents to support the procedures contained in this manual. **Appendix B** contains a maintenance allocation chart (**MAC**) for this equipment.

#### 1-2. Indexes of Publications

a. DA Pam 310-4. Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. DA Pam 310-7. Refer to DA Pam 310-7 to determine whether there are modification work orders (**MWO's**) **pertaining to the equipment.**

#### 1-3. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM **38-750.**

**b. Reports of Packaging and Handling Deficiencies.** Fill out and forward DD form 6 (Packaging Improvement Report) as prescribed in AR 700-58/

NAVSUPINST 4030.29/AFR 71-13/MCO P4030.29A, and DSAR 41518.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33A/AFR 75-18/MCO P4610.19B, and DSAR 4500.15.

#### 1-4. Reporting Equipment Improvement Recommendations (EIR)

EIR will be prepared using DA Form 2407 (Maintenance Request). Instructions for preparing EIR's are provided in TM 38-750, The Army Maintenance Management System. EIR's should be mailed directly to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, NJ 07703. A reply will be furnished direct to you.

#### 1-5. Administrative Storage

Administrative storage of equipment issued to and used by Army activities shall be in accordance with TM 740-90-1.

#### 1-6. Destruction of Army Electronics Materiel

**Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.**

### Section II. DESCRIPTION AND DATA

#### 1-7. Purpose and Use

**a. Motor-Generator PU-750( )/A (hereinafter referred to as the motor-generator) is a motor-driven inverter designed to convert the 28V direct current (dc) from an aircraft power supply to 115V, 400 Hz alternating current (ac) (single phase) or 115/200 volt, 3-phase ac. The output can be either single-phase or three-phase, but not both simultaneously.**

**b. The motor-generator is used to supply ac to those items of an aircraft configuration which require it for operation.**

#### 1-8. Description

**The motor-generator (fig. 1-1) is a self-contained unit**

**consisting of the dc motor and ac generator, which are located in the mounting base, and the regulator, which is located in the regulator housing.**

**a. Dc Motor and Ac Generator.** These rotating components of the motor-generator are contained in a heavy metal frame housing portion of the mounting base. The lower portion of this base contains four mounting feet used to attach the motor-generator to the aircraft mounts.

**b. Regulator Components.** The regulator components are housed in a rectangular metal box attached to the top of the mounting base of the motor-generator. The dc power input is connected to the motor-generator through 2 terminal boards (+ and -) located

on the front of the regulator. The ac power output of the motor-generator is taken from the ac power connector at the front of the regulator. Also provided on the front of the regulator are two test jacks, A (T1) and G (T4), used for checking ac power output. An external increase volts adjustment resistor permits manual setting of the output voltage. A frequency adjustment resistor (accessible through a hole in the rear of the regulator housing), permitting manual setting of the output frequency, should only be adjusted by proper maintenance category personnel (direct support or higher).

c. Additional Equipment Required. A 28V dc power source is required to supply input power to the motor-generator.

1-9. Tabulated Data

|               |              |
|---------------|--------------|
| Input voltage | 26 to 29V dc |
| Current input | 285A dc      |

|                                     |   |
|-------------------------------------|---|
| <b>Voltage output, three-phase</b>  | <b>115/200V ac</b>                        |
| <b>Voltage output, single-phase</b> | <b>115V ac</b>                            |
| <b>Power output</b>                 | <b>5000VA</b>                             |
| <b>Frequency output</b>             | <b>400 Hz</b>                             |
| <b>Power factor</b>                 | <b>0.90 lag to 0.95 lead</b>              |
| <b>Altitude range</b>               | <b>0 to 65,000 feet</b>                   |
| <b>Input phase rotation</b>         | <b>A-B-C</b>                              |
| <b>Ambient temperature range</b>    | <b>14.7°F (-10°C) to<br/>66°F (+20°C)</b> |
| <b>Length</b>                       | <b>20-9/32 inches</b>                     |
| <b>Width</b>                        | <b>7-11/16 inches</b>                     |
| <b>Depth</b>                        | <b>11-5/8 inches</b>                      |
| <b>Weight</b>                       | <b>76 pounds</b>                          |

1-10. Items Comprising An Operable Equipment

The motor-generator in itself comprises an operable equipment.

CHAPTER 2  
SERVICE UPON RECEIPT AND INSTALLATION

Section I. SERVICE UPON RECEIPT OF MATERIEL

2-1. Unpacking.

a. Packaging Data. When packed for shipment, the motor-generator is mounted on a board and placed in a cardboard carton. It is further protected with a side and top liner. The motor-generator consists of a single unit that is 11-5/8 inches high, 20-9/32 inches deep, and 7-11/16 inches wide, weighting 76 pounds.

b. Removing Contents. Perform the steps outlined below when unpacking the equipment.

- (1) Open the cardboard carton (fig. 2-1).
- (2) Remove the top and side liners.
- (3) Lift the motor-generator and mounting base from the cardboard carton.
- (4) Remove the four stove bolts and nuts that attach the motor-generator to the mounting board and remove the motor-generator.

2-2. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred dur-

ing shipment. If the equipment has been damaged, report the damage on DD Form 6 (para 1-3).

b. Check the equipment against the component listing in the packing slip to see if the shipment is complete. Report all discrepancies in accordance with paragraph 1-3. The equipment should be placed in service even though a minor assembly or part that does not affect proper functioning is missing.

c. Check to see whether the equipment has been modified. (Equipment which has been modified with have the MWO number on the front panel, near the nomenclature plate.) Check also to see whether all currently applicable MWO's have been applied. (Current MWO's applicable to the equipment are listed in DA Pam 310-7.)

d. For dimensions, weights, and volume of packaged items, see SB 700-20.

Section II. INSTALLATION INSTRUCTIONS

2-3. Tools and Test Equipment

Table 2-1 lists all tools and test equipment required to install the motor-generator.

2-4. Installation Instructions

**a. Cleaning Shockmounts and Ground Straps. Be sure shockmounts and ground straps are thoroughly cleaned before attempting to install motor-generator.**

**b. Mounting of Motor Generator. Position and secure the motor-generator to the aircraft shockmounts using the hardware provided with the shockmounts. Be sure ground straps are properly positioned before tightening hardware.**

2-5. Electrical Connections

CAUTION

**The motor-generator contains transistors and other solid-state devices which will be dam-**

aged if the input dc voltage is reversed accidentally.

a. Dc Input Power. Connect the positive dc input to the + terminal (fig. 1-1) and the negative dc input to the - terminal.

b. Ac Output Power. Connect the aircraft power cable to the connector on the front of the regulator (fig. 1-1).

Table 2-1. Installation Tools and Test Equipment.

| Tools                                      | Purpose                                       | Applicable publications |
|--|---|-------------------------|
| Tool Kit, Electronic Equipment<br>TK-101/G | Used to install the motor-generator.          | —————                   |
| Multimeter<br>AN/URM-106(*)                | Used to measure dc input voltage.             | TM 11-6625-308-12       |
| Electrical Power, Test Set<br>AN/UPM-98    | Used to measure output voltage and frequency. | —————                   |

Section III. VOLTAGE AND FREQUENCY CHECKS

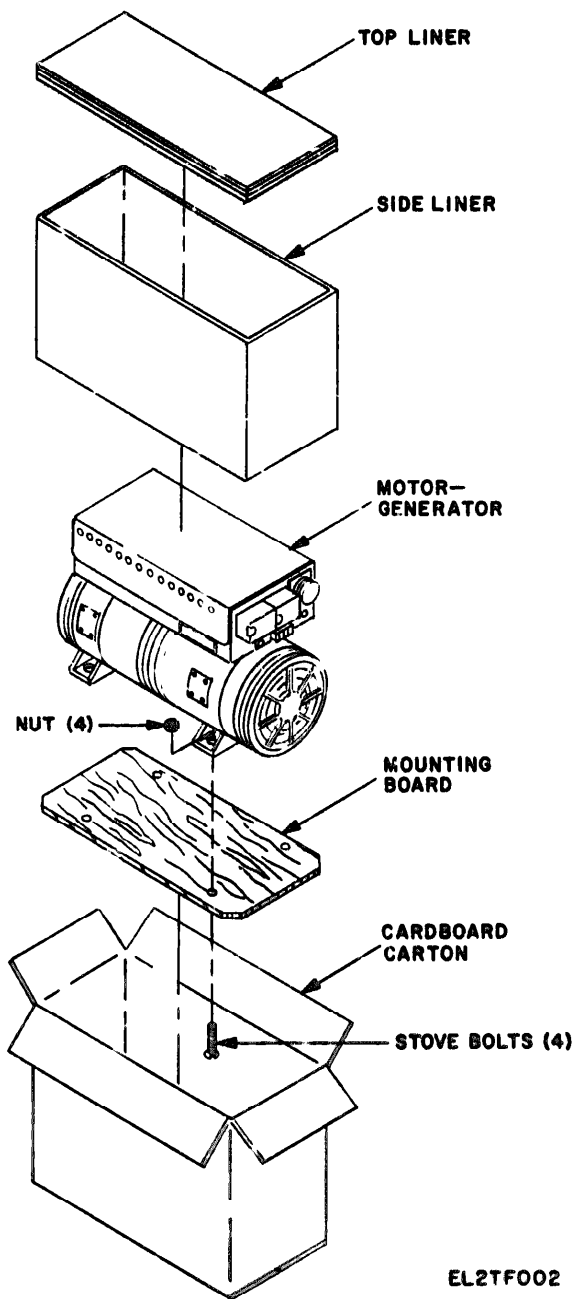


Figure 2-1. Packaging Diagram, PU-780( )/A.

2-6. Test Connections

- a. Dc Input Voltage. Connect the multimeter across the + and - dc input terminals.
- b. Ac Output Voltage and Frequency. Connect the electrical power test set across the A (T1) and G (T4) test jacks (fig. 1-1).

2-7. Application of Dc Power

Turn on the necessary aircraft switches to apply the 28 volts dc (nominal) to energize the motor-generator.

CAUTION

After starting the motor-generator, check for smoke or other signs of malfunction. If any malfunction is noted, immediately remove the 28 volt dc power.

2-8. Ac Voltage and Frequency Measurements

- a. **Application of Load.** Turn on some of the aircraft ac equipment to provide a load for the motor-generator.
- b. **AC Voltage Check.** The electrical power test set should indicate 115 volts ac. Dc input, as indicated on the multimeter, should be between 26 and 29 volts dc. If the dc input voltage is correct, use voltage adjust resistor located on the front of the regulator panel to reset ac output voltage at 115 volts. Then tighten locknut to secure adjustment.
- c. **Frequency Check.** The output frequency, as indicated on the electrical power test set, is a nominal 400 Hz and should be between 390 and 410 Hz. If the frequency is outside these limits, remove the motor-generator and send it to higher category maintenance. Do not attempt to readjust frequency.

2-9. Final Connections

- a. **Shutdown** Turn off aircraft electrical equipment. Then turn off aircraft dc power.
- b. **Removal of Test Equipment** Disconnect multimeter and electrical power test set from the motor-generator.
- c. **Aircraft Log Entry.** Record the motor-generator serial number and reading on the total time indicator (fig. 1-1) in the aircraft log.



## CHAPTER 3

### ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

#### WARNING

All maintenance and maintenance facilities must conform to TB 385-4, Safety Precautions for Maintenance of Electrical/Electronic Equipment.

#### 3-1. Tools and Test Equipment

Tools and test equipment required for organizational maintenance for the motor-generator are listed in table 1 of appendix B of this manual.

#### 3-2. Points and Finishes

When the motor-generator requires repainting, re-finishing, or touchup painting refer to Federal Standard No. 595A for matching color. SB 11-573 lists the tools and miscellaneous supplies required for painting.

#### 3-3. Touchup Painting Instructions

**a. Apply zinc chromate primer coating, Federal Specification TT-P-1757, in accordance with Military Specification, MIL-P-6808.**

**b. Use Navy blue enamel, Federal Specification TT-E-489, Class B, Color No. 15123 of FED STD-595. Apply paint in accordance with Military Specification MIL-F-18264.**

**c. Refer to SB 11-573, Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment for a list of tools and miscellaneous supplies required for painting.**

**d. Refer to TB 43-0118, Field Instructions for Painting and Preserving Electronics Command Equipment Including Camouflage Pattern Painting of Electrical Equipment Shelters for painting procedures.**

**e. Do not paint over any decals or instruction or warning plates.**

#### 3-4. Lubrication

**There are no lubrication requirements at the organizational level.**

#### 3-5. Intermediate Preventive Maintenance Checks and Services

**a. To insure that the motor-generator is always ready for operation, it must be inspected systematically so that defects may be discovered before they result in serious damage or failure. The necessary preventive maintenance checks and services (PMCS) are**

listed and described in table 3-1. The sequence numbers indicate the sequence of the minimum inspection requirements. Record all deficiencies together with the corrective action taken in accordance with TM 38-750.

**b. Perform the maintenance functions in table 3-1 once each intermediate interval. An intermediate interval is defined as approximately 75 flying hours. The intermediate PMCS on the motor-generator should be performed concurrently with the intermediate PMCS scheduled on the aircraft in which the equipment is installed. Adjustments of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment maintained in a standby (ready for immediate operation) condition must have intermediate maintenance performed on it at least once every 30 days. Equipment in limited storage (requires service before operation) does not require intermediate maintenance.**

#### 3-6. Periodic Preventive Maintenance Checks and Services

Perform the maintenance functions in table 3-2 once each periodic interval (approximately 200 flying hours) in addition to the intermediate PMCS in table 3-1. Periodic preventive maintenance will be scheduled in accordance with the requirements of TM 38-750. The periodic preventive maintenance inspection should be scheduled concurrently with the periodic maintenance service schedule of the aircraft in which the motor-generator is installed to reduce out-of-service time. Refer to the applicable aircraft technical manual for the hours between service periods.

#### 3-7. Cleaning

**All exterior surfaces of the motor-generator should be free of dirt, grease, and fungus. Perform the following procedures as specified in the preventive maintenance checks and services table 3-1.**

**a. Remove moisture and loose dirt with a clean soft cloth.**

#### WARNING

The fumes of trichloroethane are toxic. Pro-

vide thorough ventilation whenever used. DO NOT USE NEAR AN OPEN FLAME. Trichloroethane is not flammable, but exposure of the fumes to an open flame or hot metal surface forms highly toxic phosgene gas.

b. Remove grease, fungus, and ground-in dirt from the exterior surfaces with a clean cloth dampened (not wet) with trichloroethane. Wipe dry with a clean, dry, lint-free cloth.

c. Remove dust or dirt from the ac power connector and dc terminals with a soft-bristle brush.

3-8. Troubleshooting Technique

Troubleshooting procedures are based on symptoms noted while the motor-generator is in operation (reported by the aircraft crew).

3-9. Troubleshooting Chart

The troubleshooting procedures are provided in tabular form (table 3-3). If a malfunction occurs which is not included in this section, remove motor-generator and send to higher category maintenance.

3-10. Parts Replacement

No parts replacement is authorized at organizational

maintenance. If the motor-generator fails to function properly, and adjustment of output voltage (para 2-6 through 2-9) does not correct the problem, remove and replace the motor-generator (para 3-12).

3-11. Output Voltage Adjustment

Perform the procedures of paragraphs 2-6 through 2-9.

3-12. Removal and Replacement of Motor-Generator

a. Removal.

(1) Turn off all dc power to the motor-generator.

(2) Disconnect dc leads and ac connector.

(3) Unscrew bolts that secure the motor-generator to the aircraft shockmounts and remove the motor-generator from the aircraft. Retain the mounting hardware for installation of motor-generator.

(4) Pack the motor-generator as described in paragraph 2-1a, and send motor-generator to higher category maintenance.

b. Installation and Testing.

Install and test the motor-generator as described in paragraphs 2-3 through 2-9.

Table 3-1. Intermediate PMCS

**Total task-hours required: 0.2**

| Sequence No | Items to be inspected and procedure  | Worktime (T/H) |
|-------------|--|----------------|
| 1           | <b>EXTERNAL WIRING:</b><br>Inspect external wires and cable for damaged insulation of jacketing.   | 0.1            |
| 2           | <b>AIR VENTS:</b><br>Check the airflow intake and exhaust vents for obstructions.  |                |
| 3           | <b>EXTERIOR SURFACES:</b><br>Remove dirt and moisture, and inspect for rust, corrosion, and chipped paint.                                   | 0.1            |
| 4           | <b>MOUNTING:</b><br>Check for cleanliness, stability, and loose or missing hardware.   |                |
| 5           | <b>CONNECTIONS:</b><br>Check connections at dc input terminal boards and ac power connector and see that they are clean, intact, and secure. |                |

Table 3-2. Periodic PMCS

**Total task-hours required: 0.2**

| Sequence No | Items to be inspected and procedure  | Worktime (T/H) |
|-------------|--|----------------|
| 1           | <b>PUBLICATIONS:</b><br>Check to see that all publications pertinent to this equipment are on hand, complete, and usable. Check DA Pam 310-4 for recent changes to publications. | 0.1            |
| 2           | <b>MODIFICATIONS:</b><br>Check DA Pam 310-7 to see that all urgent MWO's have been applied, and that all normal MWO's have been scheduled.                                       |                |
| 3           | <b>INSTALLATION:</b><br>Check to see that the motor-generator is secured properly with safety wire attached.   | 0.1            |

Table 3-3. Troubleshooting

| Malfunction   | Probable cause   | Corrective action  |
|---|--|--|
| 1. Motor-generator vibrates.  | <ul style="list-style-type: none"> <li>a. Loose or missing hardware.</li> <li>b. Motor-generator improperly seated.</li> </ul>   | <ul style="list-style-type: none"> <li>a. Tighten or replace hardware.</li> <li>b. check to see that mounting surface is clean and free of foreign objects. If trouble is not corrected, higher category maintenance is required.</li> </ul>   |
| 2. Motor-generator fails to start   | <ul style="list-style-type: none"> <li>a. Loose or blown fuses or open circuit breaker in dc line.</li> <li>b. Short circuit in dc line.</li> <li>c. Dc brushes not making contact with commutator.</li> <li>d. Dc input circuit open.</li> <li>e. Armature jammed.</li> </ul> | <ul style="list-style-type: none"> <li>a. Check and replace or reset as required.</li> <li>b. Check aircraft line fuses or circuit breakers. If blown, inspect wiring between fuses or circuit breakers and motor-generator. Repair wiring as necessary.</li> <li>c. Remove motor-generator and send to higher category maintenance.</li> <li>d. Check wiring and connection to the motor-generator for an open circuit. Repair or replace as necessary.</li> <li>e. Remove motor-generator and send to higher category maintenance.</li> </ul>  |
| 3. Motor-generator runs but fails to deliver proper voltage or frequency. | <ul style="list-style-type: none"> <li>a. Ac circuit open.</li> <li>b. Slipping brushes not making contact with slipring.</li> <li>c. Regulator failure.</li> </ul>  | <ul style="list-style-type: none"> <li>a. Connect the multimeter to the test point jacks on the front of the regulator (fig. 1-1). Connect the electrical power test set to the ac connector on the front of the regulator. Start the motor-generator. If indication is between 109 and 121 vac, 390 and 410 Hz, check exterior wiring and connections for an open circuit and repair. If indication is not as specified, remove motor-generator and send to higher category maintenance.</li> <li>b. Remove motor-generator and send to higher category maintenance.</li> <li>c. Remove motor-generator and send to higher category maintenance.</li> </ul> |
| 4. Ac output voltage is low.  | <ul style="list-style-type: none"> <li>a. Dc input voltage is low.</li> <li>b. Misadjustment of increase volts adjustment resistor.</li> </ul>   | <ul style="list-style-type: none"> <li>a. Check dc voltage at power supply and correct.</li> <li>b. Readjust increase volts adjustment resistor as described in paragraph 2-6 through 2-9.</li> </ul>  |
| 5. Ac output voltage is high.   | <ul style="list-style-type: none"> <li>a. Dc input voltage is higher than 30V.</li> <li>b. Misadjustment of voltage adjustment resistor.</li> <li>c. Regulator failure.</li> </ul>   | <ul style="list-style-type: none"> <li>a. Check dc voltage at power supply and correct.</li> <li>b. Readjust as described in paragraph 2-6 through 2-9.</li> <li>c. Remove motor-generator and send to higher category maintenance.</li> </ul>   |
| 6. Speed (frequency) is too high or too low.                              | <p>Misadjustment of internal frequency adjustment resistor or faulty regulator</p>   | <p>Remove motor-generator and send to higher category maintenance.</p>   |
| 7. Output voltage unstable.   | <ul style="list-style-type: none"> <li>a. Loose connections.</li> <li>b. Poor commutation or poor brush contact at sliprings.</li> </ul>   | <ul style="list-style-type: none"> <li>a. Check and tighten connections as necessary. If trouble persists, remove motor-generator and send to higher category maintenance.</li> <li>b. Remove motor-generator and send to higher category maintenance.</li> </ul>  |

APPENDIX A  
REFERENCES

|                         |  |
|-------------------------|--|
| <b>DA Pam 310-4</b>     | Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.                       |
| <b>DA Pam 310-7</b>     | US Army Index of Equipment Modification Work Orders.   |
| <b>SB 11-573</b>        | painting and Preservation Supplies Available for Field Use for Electronic Command Equipment.   |
| <b>SB 700-20</b>        | Army Adopted/Other Items Selected for Authorization/List of Reportable Items.  |
| <b>TB 43-0118</b>       | Field Instructions for Painting and Preserving Electronics command Equipment Including Camouflage Pattern Painting of Electrical Equipment Shelters. |
| <b>TB 385-4</b>         | Safety Precautions for Maintenance of Electrical/Electronic Equipment  |
| <b>TM 11-6625-654-4</b> | Operator's, Organizational, Direct Support, and General Support Maintenance: <b>Mul-</b> timeter AN/USM-223.   |
| <b>TM 38-750</b>        | The Army Maintenance Management System (TAMMS).  |
| <b>TM 740-90-1</b>      | Administrative Storage of Equipment.   |
| <b>TM 750-244-2</b>     | Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).   |

## APPENDIX C

### MAINTENANCE ALLOCATION

#### Section I. INTRODUCTION

##### C-1. General

This appendix provides a summary of the maintenance operations for PU-750( )/A. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

##### C-2. Maintenance Function

**Maintenance** functions will be limited to and defined as follows:

- a. **Inspect.** To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.
- b. **Test.** To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.
- c. **Service.** Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.
- d. **Adjust.** To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.
- e. **Align.** To adjust specified variable elements of an item to bring about optimum or desired **performance**.
- f. **Calibrate.** To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known **accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.**
- g. **Install.** The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.
- h. **Replace.** The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

- i. **Repair.** The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system. This function does not include the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

- j. **Overhaul.** That maintenance effort (service/action) necessary to store an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

- k. **Rebuild.** Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc) considered in classifying Army equipments/components.

##### C-3. Column Entries

- a. **Column 1, Group Number.** Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.
- b. **Column 2, Component/Assembly.** Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.
- c. **Column 3, Maintenance Functions.** Column 3 lists the functions to be performed on the items listed in column 2. When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC and RPSTL coincide.
- d. **Column 4, Maintenance Category.** Column 4 specifies, by the listing of a "worktime" figure in the appropriate subcolumn(s), the lowest level of maintenance.

nance authorized to perform the function listed in column 3. This figure represents the active Lime required to perform that maintenance function at the indicated category of maintenance. If the number of complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "worktime" figures will be shown for each category. The number of task-hours specified by the "worktime" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance allocation chart. Subcolumns of column 4 are as follows:

- C-Operator/Crew
- O-Organizational
- F-Direct Support
- H-General Support
- D - Dept

e. Column 5, Tools and Equipment. Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. Column 6, Remarks. Column 6 contains an alphabetic code which leads to the remark in section IV, Remarks, which is pertinent to the item opposite the particular code.

#### C-4. Tool and Test Equipment Requirements (Sec III).

a. Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5-digit) in parentheses.

#### C-5. Remark (Sec IV)

a. Reference Code. This code refers to the appropriate item in section II, column 6.

b. Remarks. This column provides the required explanatory information necessary to clarify items appearing in section II.

(Next printed page is C-3.)

SECTION II. MAINTENANCE ALLOCATION CHART  
FOR  
MOTOR-GENERATOR PU-750( )/A

| (1)<br>GROUP<br>NUMBER | (2)<br>COMPONENT/ASSEMBLY | (3)<br>MAINTENANCE<br>FUNCTION | (4)<br>MAINTENANCE CATEGORY |     |     |     |   | (5)<br>TOOLS<br>AND<br>EQPT. | (6)<br>REMARKS |
|------------------------|---------------------------|--------------------------------|-----------------------------|-----|-----|-----|---|------------------------------|----------------|
|                        |                           |                                | C                           | O   | F   | H   | D |                              |                |
| 00                     | MOTOR-GENERATOR           | Inspect                        |                             | 0.1 |     |     |   | 1                            | A              |
|                        |                           | Service                        |                             | 0.1 |     |     |   | 1,2,3                        | B              |
|                        |                           | Test                           |                             | 0.3 |     |     |   | 1,2                          | C              |
|                        |                           | Adjust                         |                             | 0.1 |     |     |   | 1                            |                |
|                        |                           | Replace                        |                             | 0.5 |     |     |   | 12                           |                |
|                        |                           | Overhaul                       |                             |     |     |     |   | 3 thru 32                    |                |
| 01                     | REGULATOR SECTION         | Test                           |                             |     | 0.2 |     |   | 3 thru 10                    |                |
|                        |                           | Adjust                         |                             |     | 0.2 |     |   | 3 thru 5                     | B              |
|                        |                           | Replace                        |                             |     | 1.0 |     |   | 4                            |                |
|                        |                           | Repair                         |                             |     |     | 1.5 |   | 3 thru 12                    |                |
| 02                     | GENERATOR SECTION         | Inspect                        |                             |     | 0.2 |     |   | 4                            |                |
|                        |                           | Replace                        |                             |     | 1.0 |     |   | 4,7,8                        | D              |
|                        |                           | Service                        |                             |     | 0.5 |     |   | 4                            | E              |
|                        |                           | Adjust                         |                             |     |     | 0.3 |   | 4,7,8                        | F              |
|                        |                           | Replace                        |                             |     |     | 2.0 |   | 4,17, thru 21                | G              |
|                        |                           | Test                           |                             |     |     | 1.5 |   | 3 thru 16                    | H              |

SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS  
FOR  
MOTOR-GENERATOR PU-750( )/A

| TOOL OR TEST EQUIPMENT REF CODE | MAINTENANCE CATEGORY | NOMENCLATURE  | NATIONAL/NATO STOCK NUMBER | TOOL NUMBER |
|---------------------------------|----------------------|---|----------------------------|-------------|
| 1                               | O                    | TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G                                     | 5180-00-064-5178           |             |
| 2                               | O                    | MULTIMETER, AN/URM-105( )   | 6625-00-581-2036           |             |
| 3                               | O,F,H,D              | TEST SET, ELECTRICAL POWER AN/UPM-93  | 6625-00-581-2097           |             |
| 4                               | F,H,D                | TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G                                     | 5180-00-605-0079           |             |
| 5                               | F,H,D                | MULTIMETER AN/USM-223/U (RS TS-352B/U)                                      | 6625-00-999-7465           |             |
| 6                               | F,H,D                | MULTIMETER ME-26( )   | 6625-00-913-9781           |             |
| 7                               | F,H,D                | TEST SET, MOTOR-GENERATOR AN/GSM-65   | 4920-00-348-5793           |             |
| 8                               | F,H                  | POWER SUPPLY, PP-4606/G OR EQUAL  | 6130-00-504-0327           |             |
| 9                               | H,D                  | LOAD RESISTANCE, ZM-4B/U  | 6625-00-500-0937           |             |
| 10                              | H,D                  | TEST SET, CAPACITOR ZM-3( )/U   | 6625-00-229-1060           |             |
| 11                              | H,D                  | TEST SET, TRANSISTOR TS-1836( )/U   | 6625-00-893-2628           |             |
| 12                              | H,D                  | MOTOR-GENERATOR PU-750  | 6125-00-                   |             |
| 13                              | H,D                  | OHMMETER ZM-21A/U   | 6625-00-581-2466           |             |
| 14                              | H,D                  | OSCILLOSCOPE AN/USM-281A  | 6625-00-228-2201           |             |
| 15                              | H,D                  | TEST SET, ARMATURE TS-965( )/U  | 6625-00-828-5810           |             |
| 16                              | H,D                  | TEST SET, INSULATION BREAKDOWN AN/GSM-6                                     | 6625-00-542-1331           |             |
| 17                              | H,D                  | PLIERS, RETAINING   | 5120-00-288-9717           |             |
| 18                              | H,D                  | WRENCH, TORQUE  | 5120-00-541-3001           |             |
| 19                              | H,D                  | ARBOR PRESS, GREENFRD MODEL #3 OR EQUAL                                     |                            |             |
| 20                              | H,D                  | BEARING PUSHER, BASE AND TOP  |                            |             |
| 21                              | H,D                  | BEARING RETAINER FULLER ASSEMBLY  |                            |             |
| 22                              | D                    | BALANCING MACHINE, GISHOLT TYPE 1S  |                            |             |
| 23                              | D                    | DIAL INDICATOR, LUFKIN MODEL 2-B25-5 (DIAL CALIBRATED TO READ 0.001 INCH)   |                            |             |
| 24                              | D                    | PHASE SEQUENCE INDICATOR ASSOCIATED RESEARCH INC (MODEL 44 400 Hz) OR EQUAL |                            |             |
| 25                              | D                    | MODULAR PRECISIONAIRE COLUMN, SHEFFIELD 9" MODEL                            |                            |             |
| 26                              | D                    | CIRCUIT BREAKER, 120 AMPS   | 5925-00-257-7072           |             |
| 27                              | D                    | DIAMOND-TIPPED OR CARBOLOY-TIPPED CUTTING TOOL                              |                            |             |
| 28                              | D                    | POWER SUPPLY, SORENSON MODEL DCR40-500A OR EQUAL                            |                            |             |
| 29                              | D                    | OVEN  |                            |             |
| 30                              | D                    | PAINT BOOTH   |                            |             |
| 31                              | D                    | SPRING SCALE  | 6670-00-291-8721           |             |
| 32                              | D                    | ULTRASONIC CLEANER  |                            |             |



## SECTION IV. REMARKS

TM 11-6125-256-20

| <b>REFERENCE<br/>CODE</b> | <b>REMARKS</b>                        |
|---------------------------|---------------------------------------|
| <b>A</b>                  | EXTERIOR                              |
| <b>B</b>                  | OUTPUT VOLTAGE & FREQUENCY            |
| <b>C</b>                  | OUTPUT VOLTAGE ONLY                   |
| <b>D</b>                  | BRUSHES, INCLUDING RUN-IN             |
| <b>E</b>                  | REMOVE INTERIOR BRUSH CARBON AND DUST |
| <b>F</b>                  | BRUSH NEUTRAL                         |
| <b>G</b>                  | BEARINGS                              |
| <b>H</b>                  | COMPREHENSIVE TESTS                   |

By Order of the Secretary of the Army:

**BERNARD W. ROGERS**  
*General, United States Army*  
*Chief of Staff*

Official:

**PAUL T. SMITH**  
*Major General, United States Army*  
*The Adjutant General*

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**END**

**7-25-83**

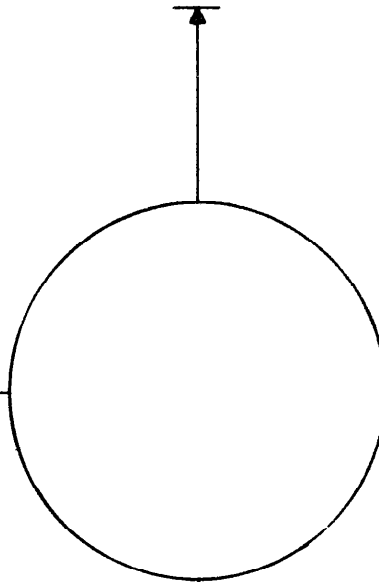
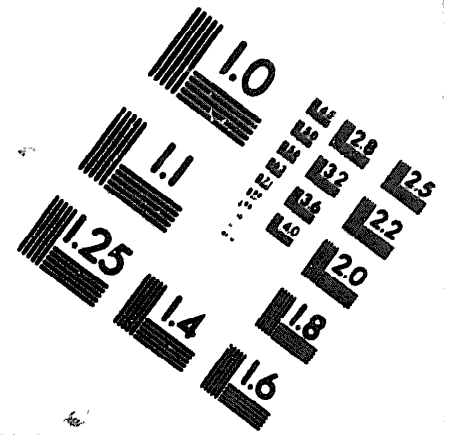
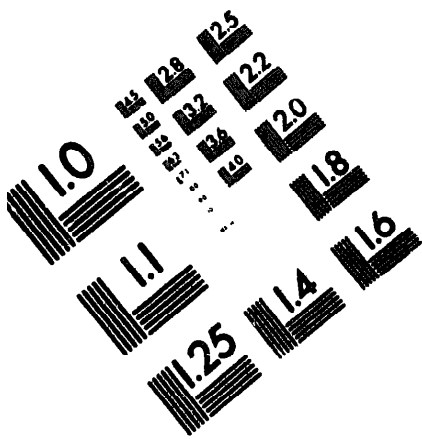
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DEPARTMENT OF THE ARMY

MICROFORM  
TEST TARGET



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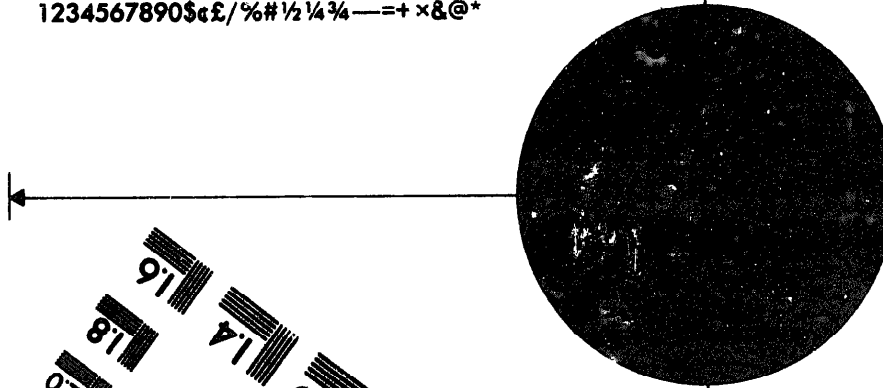
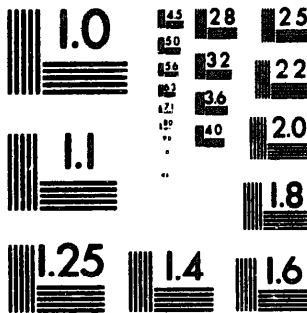
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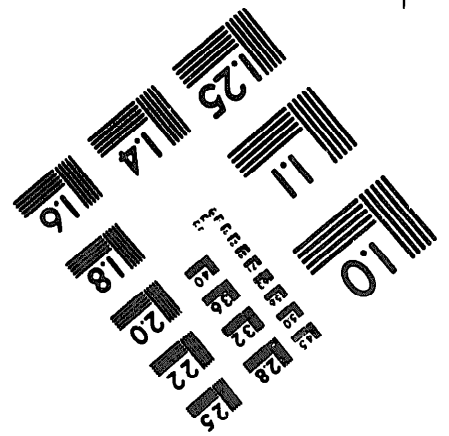
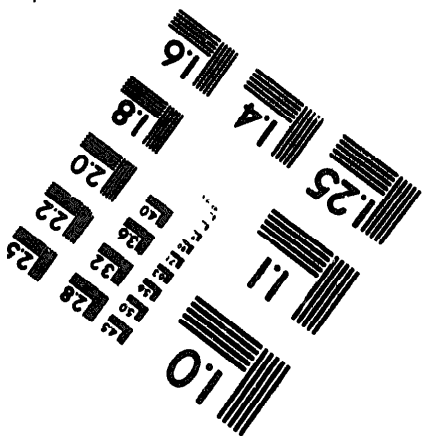
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HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, DC *January 1978*

**ORGANIZATIONAL MAINTENANCE MANUAL  
MOTJR — GENERATOR PU — 750( )/A  
(NSN 6125-00-101-9720)**

TM 11-6125-256-20, 6 June 1977, is changed as follows.

Page 1-0, figure 1-1. Change "VOLTAGE ADJUSTMENT" to "VOLTAGE ADJUSTMENT."

Page 1-1, Paragraph 1-1. Paragraph 1-1 is superseded as follows:

1-1. Scope

a. This manual provides organizational maintenance instructions for Motor-Generator PU-750( )/A. Appendix A contains references to additional documents to support the procedures contained in this manual. Appendix B contains a maintenance allocation chart (MAC) for this equipment.

b. Maintenance of Army aircraft is transitioning to three categories of maintenance. These maintenance categories are aviation unit maintenance (AVUM); aviation intermediate maintenance (AVIM); and depot maintenance. AVUM and

AVIM will replace organizational, direct support, and general support maintenance. In the interim, as maintenance units are reorganized into three categories of maintenance activities, this publication will be used by AVUM or organizational maintenance personnel for the maintenance of Motor-Generator PU-750( )/A. The maintenance allocation chart (app B) is configured to the three-category maintenance concept where the code 0 represents AVUM; the codes F and H represents AVIM; and D represents depot maintenance. Those organizations not yet assigned complete AVUM responsibilities should be cautious when using the publication. Whatever maintenance is performed must consider available skills, tools, test equipment, and the time required to perform the maintenance.

**Paragraph 1-3b, last line. Change "41518" to: "4145.8."**

**Page C-1, appendix C. Appendix C is superseded as follows:**

APPENDIX C  
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C-1. General

**This appendix provides a summary of the maintenance operations for PU-750( )/A. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.**

C-2. Maintenance Function

**Maintenance functions will be limited to and defined as follows:**

*a. Inspect.* To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

*b. Test.* To verify serviceability and to detect in-

cient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

h. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, re-machining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

*j Overhaul.* That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

*k. Rebuild.* Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those measurements (hours, miles, etc) considered in

classifying Army equipment/components.

### C-3. Column Entries

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in column 2. When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC RPSTL coincide.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "worktime" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "worktime" figures will be shown for each category. The number of task hours specified by the "worktime" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance allocation chart. Army aircraft field maintenance levels are transitioning to Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM). Subcolumns of column 4 are as follows:

C—Operator/Crew

O—Organizational (AVUM)

F—Direct Support (AVIM)

H—General Support (AVIM)

D—Depot

*e. Column 5, Tools and Equipment.* Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

*f. Column 6, Remarks.* Column 6 contains an alphabetic code which leads to the remark in section IV, Remarks, which is pertinent to the item opposite the particular code.

C-4. Tool and Test Equipment Requirements (sec 111)

a. Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5-digit) in parentheses.

C-5. Remarks (Sec IV)

a. Reference Code. This code refers to the appropriate item in section II, column 6.

b. Remarks. This column provides the required explanatory information necessary to clarify items appearing in section II.



SECTION II. MAINTENANCE ALLOCATION CHART  
 FOR  
 MOTOR-GENERATOR PU-750( )A

| (1)<br>GROUP<br>NUMBER | (2)<br>COMPONENT/ASSEMBLY | (3)<br>MAINTENANCE<br>FUNCTION                                 | (4)<br>MAINTENANCE CATEGORY |                          |                   |   |                   | (5)<br>TOOLS<br>AND<br>EQPT.                                  | (6)<br>REMARKS        |
|------------------------|---------------------------|--|-----------------------------|--------------------------|-------------------|---|-------------------|---|-----------------------|
|                        |                           |  | C                           | O                        | F                 | H | D                 |   |                       |
| 00                     | MOTOR-GENERATOR           | Inspect<br>Service<br>Test<br>Adjust<br>Replace<br>Overhaul    |                             | 0.1<br>0.1<br>0.1<br>0.1 |                   |   |                   | 1<br>1, 2, 3<br>1, 2<br>1<br>3 thru 32                        | A<br>B<br>C           |
| 01                     | REGULATOR SECTION         | Test<br>Adjust<br>Replace<br>Repair                            |                             |                          | 0.2<br>0.2<br>1.0 |   | 1.5               | 3 thru 10<br>3, 4, 5<br>4<br>4                                | B                     |
| 02                     | CONTROL BOX SECTION       | Test<br>Replace<br>Repair                                      |                             |                          |                   |   | 0.5<br>0.5<br>1.0 | 3 thru 11<br>4<br>4   |                       |
| 03                     | GENERATOR SECTION         | Inspect<br>Replace<br>Service<br>Adjust<br>Replace<br><br>Test |                             |                          | 0.2<br>3.0<br>0.5 |   |                   | 4<br>4, 7, 8<br>4<br>4, 7, 8<br>4, 17 thru<br>21<br>3 thru 16 | D<br>E<br>F<br>G<br>H |
|                        |                           | NOTE<br>O represents AVUM<br>F/H represents AVIM               |                             |                          |                   |   |                   |   |                       |

SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS  
FOR  
MOTOR-GENERATOR PU-750( )/A

| TOOL OR TEST EQUIPMENT REF CODE  | MAINTENANCE CATEGORY | NOMENCLATURE   | NATIONAL/NATC STOCK NUMBER | TOOL NUMBER |
|--|----------------------|--|----------------------------|-------------|
| 1  | O                    | TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G                                      | 5180-00-064-5178           |             |
| 2  | O                    | MULTIMETER AN/URM-105( )   | 6625-00-581-2036           |             |
| 3  | O,F,H,D              | TEST SET, ELECTRICAL POWER AN/UPM-93   | 6625-00-581-2097           |             |
| 4  | F,H,D                | TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G                                      | 5180-605-0079              |             |
| 5  | F,H,D                | MULTI METER AN/USM-223/U (RS TS-352B/U)                                      | 6625-999-7465              |             |
| 6  | F,H,D                | MULTI METER ME-26( )   | 6625-00-913-9781           |             |
| 7  | F,H,D                | TEST SET, MOTOR-GENERATOR AN/GSM-65  | 4920-00-348-5793           |             |
| 8  | F,H                  | POWER SUPPLY PP-4606/G OR EQUAL  | 6130-00-504-0327           |             |
| 9  | H,D                  | BRIDGE RESISTANCE ZM-4B/U  | 6625-00-500-0937           |             |
| 10   | H,D                  | TEST SET, CAPACITOR ZM-3( )/U  | 6625-00-229-1060           |             |
| 11   | H,D                  | TEST SET, TRANSISTOR TS-1836( )/U  | 6625-00-893-2628           |             |
| 12   | H,D                  | MOTOR-GENERATOR PU-750( )/A  | 6125-00-101-9720           |             |
| 13   | H,D                  | OHMMETER ZM-21A/U  | 6625-00-643-1030           |             |
| 14   | H,D                  | OSCILLOSCOPE AN/USM-281A   | 6625-00-228-2201           |             |
| 15   | H,D                  | TEST SET, ARMATURE TS-965( )/U   | 6625-00-828-5810           |             |
| 16   | H,D                  | TEST SET, INSULATION BREAKDOWN AN/GSM-6                                      | 6625-00-542-1331           |             |
| 17   | H,D                  | PLIERS, RETAINING  | 5120-00-288-9717           |             |
| 18   | H,D                  | WRENCH, TORQUE   | 5120-00-541-3002           |             |
| 19   | H,D                  | ARBOR PRESS, GREENBERG MODEL #3 OR EQUAL                                     | *                          |             |
| 20   | H,D                  | BEARING PUSHER, BASE AND TOP   | *                          |             |
| 21   | H,D                  | BEARING RETAINER PULLER ASSEMBLY   | *                          |             |
| 22   | H,D                  | OVEN   | *                          |             |
| 23   | D                    | BALANCING MACHINE, GISHOLT TYPE 1S   |                            |             |
| 24   | D                    | DIAL INDICATOR, LUFKIN MODEL 2-825-5<br>(DIAL CALIBRATED TO READ 0.001 INCH) |                            |             |
| 25   | D                    | PHASE SEQUENCE INDICATOR, ASSOCIATED RESEARCH INC.<br>MODEL 44400Z OR EQUAL  |                            |             |
| 26   | D                    | MODULAR PRECISIONAIRE COLUMN, SHEFFIELD 9" MODEL                             |                            |             |
| 27   | D                    | CIRCUIT BREAKER, 180 AMPS  | 5925-00-257-7072           |             |
| 28   | D                    | DIAMOND-TIPPED OR CARBOLYT-TIPPED CUTTING TOOL                               |                            |             |
| 29   | D                    | POWER SUPPLY, SORENSON MODEL DCR40-500A OR EQUAL                             |                            |             |
| 30   | D                    | PAINT BOOTH  |                            |             |
| 31   | D                    | SPRING SCALE   | 6635-00-791-5915           |             |
| 32   | D                    | ULTRASONIC CLEANER   |                            |             |
| <p>*The National Stock numbers that are missing from this list have been requested and will be added by a change to the list upon receipt.</p> |                      |  |                            |             |

SECTION IV. REMARKS

| REFERENCE<br>CODE | REMARKS                                |
|-------------------|--|
| A                 | EXTERIOR.                              |
| B                 | OUTPUT VOLTAGE AND FREQUENCY.          |
| C                 | OUTPUT VOLTAGE ONLY.                   |
| D                 | BRUSHES, INCLUDING RUN-IN.             |
| E                 | REMOVE INTERIOR BRUSH CARBON AND DUST. |
| F                 | BRUSH NEUTRAL.                         |
| G                 | BEARINGS AND ASSOCIATED COMPONENTS.    |
| H                 | COMPREHENSIVE TESTS.                   |

By Order of the Secretary of the Army:

**BERNARD W. ROGERS**  
*General, United States Army*  
*Chief of Staff*

Official:

**J. C. PENNINGTON**  
*Brigadier General, United States Army*  
*The Adjutant General*

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To be distributed in accordance with DA Form 12-31, Organizational Maintenance requirements for OV-1A, B, C and OV-ID aircraft.

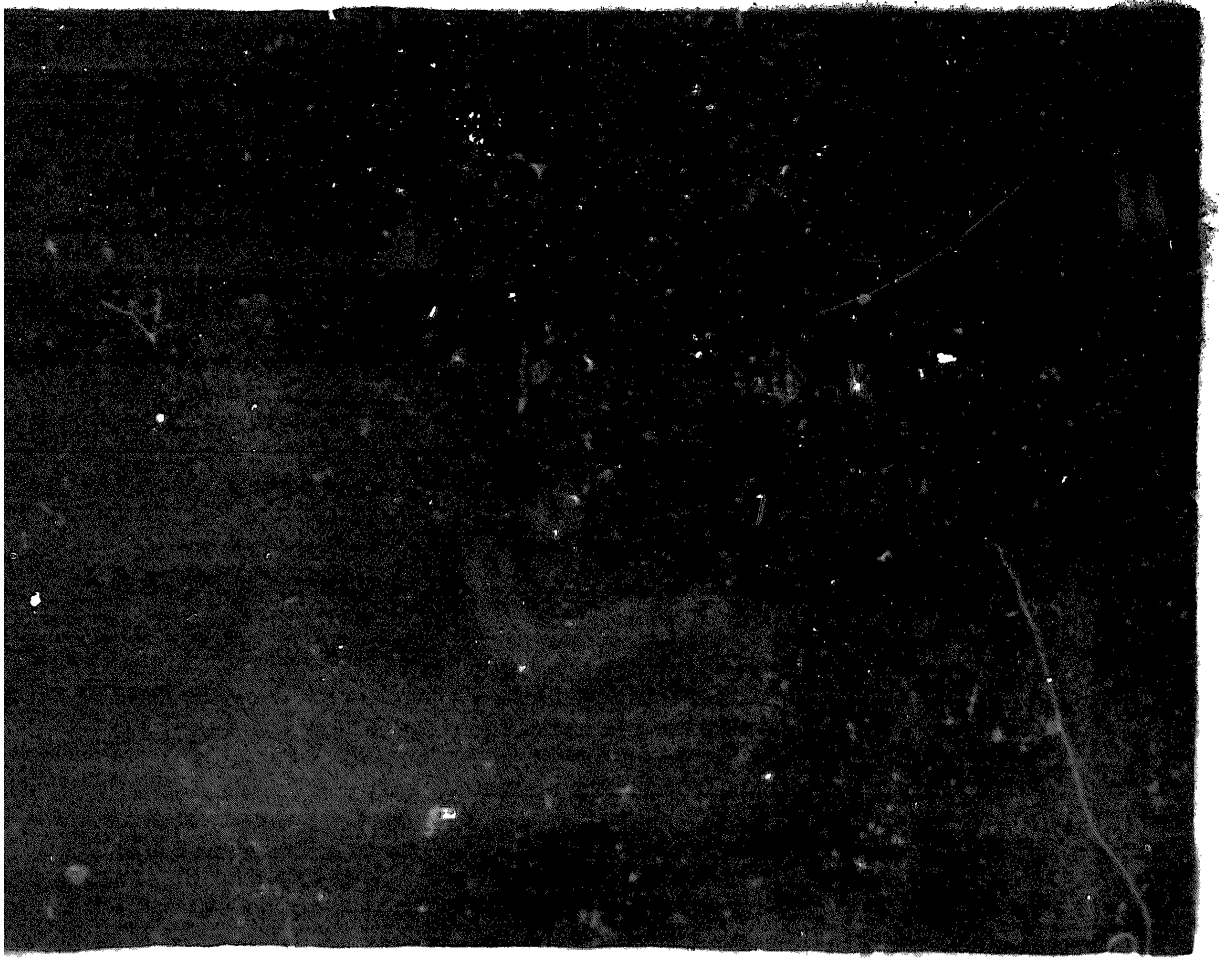
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**END**

**7-25-83**

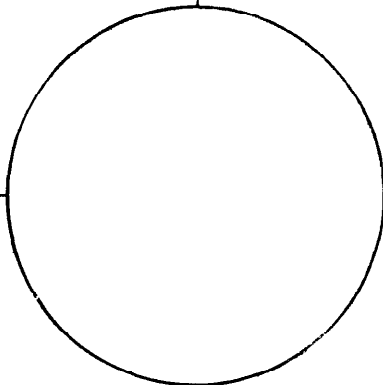
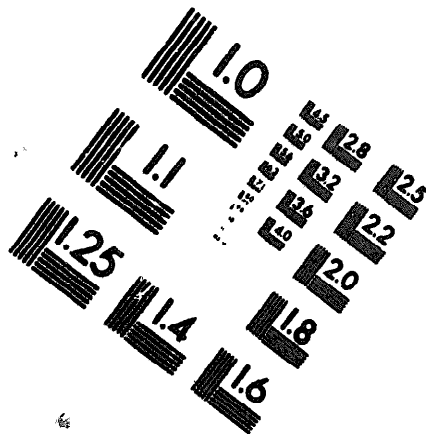
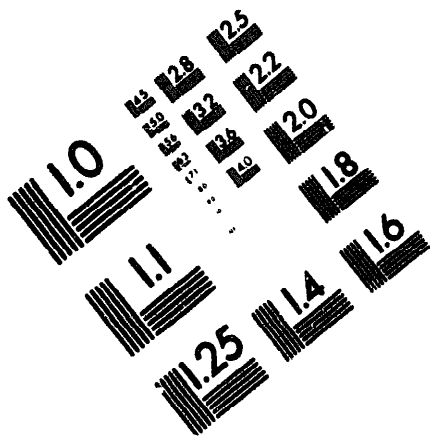
**DATE**





DEPARTMENT OF THE ARMY

MICROFORM  
TEST TARGET



150 MM

1.0 mm (e= .81 mm)

ABCDEFGHIJKLMN OPQRSTUVWXYZ 1 234567890  
abcdefghijklmnopqrstuvwxyz \$%&' /%# 1/2 1/4 1/8 ---+ x&@\*

1.5 mm (e= 1.09 mm)

ABCDEFGHIJKLMN OPQRSTUVWXYZ 1234567890  
abcdefghijklmnopqrstuvwxyz \$%&' /%# 1/2 1/4 1/8 ---+ x&@\*

2.0 mm (e= 1.37 mm)

ABCDEFGHIJKLMN OPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz  
1234567890 \$%&' /%# 1/2 1/4 1/8 ---+ x&@\*

2.5 mm (e= 1.77 mm)

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abcdefghijklmnopqrstuvwxyz  
1234567890 \$%&' /%# 1/2 1/4 1/8 ---+ x&@\*

1.0 mm (e= .81 mm)

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abcdefghijklmnopqrstuvwxyz \$%&' /%# 1/2 1/4 1/8 ---+ x&@\*

1.5 mm (e= 1.09 mm)

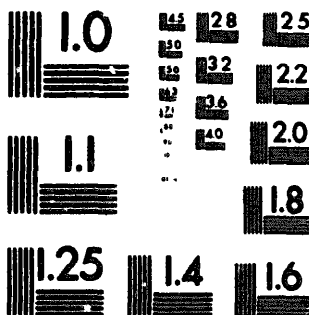
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abcdefghijklmnopqrstuvwxyz \$%&' /%# 1/2 1/4 1/8 ---+ x&@\*

2.0 mm (e= 1.37 mm)

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1234567890 \$%&' /%# 1/2 1/4 1/8 ---+ x&@\*

2.5 mm (e= 1.77 mm)

ABCDEFGHIJKLMN OPQRSTUVWXYZ  
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1234567890 \$%&' /%# 1/2 1/4 1/8 ---+ x&@\*



200 MM

250 MM

