

TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL  
MAINTENANCE MANUAL  
FOR  
INDICATOR, STANDING WAVE RATIO AN/USM-37A  
(NSN 6625-00-814-8357)

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HEADQUARTERS, DEPARTMENT OF THE ARMY

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**OPERATOR AND ORGANIZATIONAL  
MAINTENANCE MANUAL  
INDICATOR, STANDING WAVE RATIO AN/USM-37A  
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**REPORTING OF ERRORS**

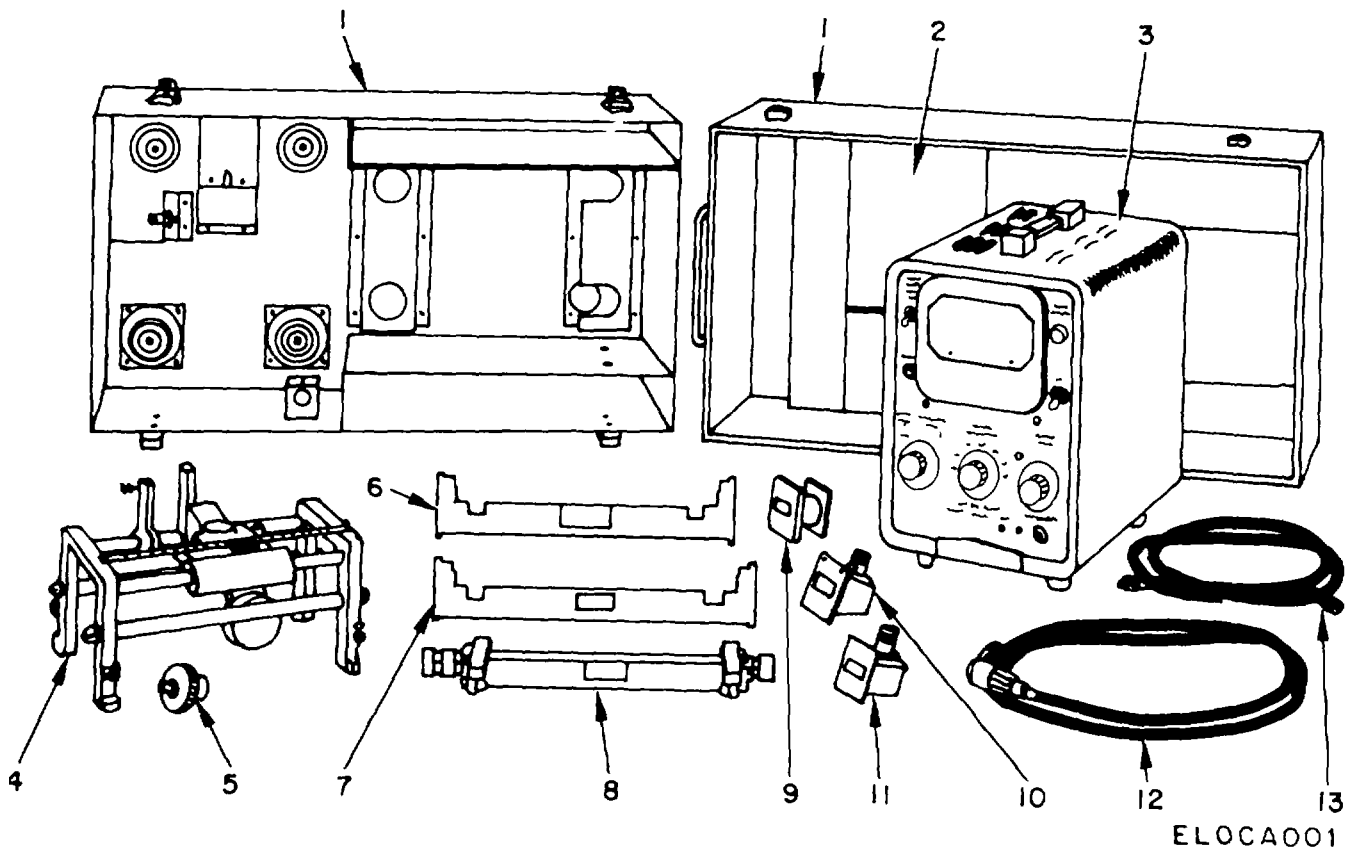
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1. Case, Indicator CY-2964/USM-37A
- 2 Technical Manual
- 3 Indicator, Standing Wave Ratio IM- 157/USM-37
- 4 Carriage, Probe MS-1545/USM-37
- 5 Probe, waveguide MX-1546/USM-37
- 6 waveguide Assembly CG-1106/USM-37
- 7 Waveguide Assembly CG-1107/USM-37
- 8 Slotted Line IM-100/USM-37
- 9 Adapter UG-1398/U
- 10 Adapter, Coaxial UG-10541U
- 11 Adapter, Coaxial to Waveguide UG-1053[U
- 12 Cord CG-92D/U
- 13 Cord CG-409/U

Figure 1-1. Indicator, Standing Wave Ratio AN/USM-37A with Equipment Supplied

## CHAPTER 1

## INTRODUCTION

## Section I. GENERAL

**1-1. Scope**

This manual describes the operation of Indicator, Standing Wave Ratio AN/USM-37A as well as the operator and organizational maintenance required. A Maintenance Allocation Chart will be found in Appendix C.

**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. *Report 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 4145.8.

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/NAPSUPINST 4610 33AIAFR 75-181MCO P4610.19B and DSAR 4500 15

**1-4. Destruction of Army Materiel**

Destruction of Army materiel to prevent enemy use shall be as prescribed in TM 750-244-2.

**1-5. Administrative Storage**

For procedures, forms and records, and inspections required during administrative storage of this equipment refer to TM 740-90-1

**1-6. Reporting Equipment Improvement Recommendations (EIR)**

EIR's will be prepared using EA 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 direct to Commander, US Army Electronics Command, ATTN DRSEL-MA-Q, Fort Monmouth, NJ 07703 A reply will be furnished directly to you

## Section II. Description and Data

**1-7. Purpose and Use**

a. Indicator, Standing Wave Ratio AN/USM-37A is a laboratory quality test set for use in making accurate standing-wave measurements in waveguide and coaxial systems over the frequency range from 3.0 to 12.4 GHz.

b. Standing-wave measurements are the customary means of investigating the impedance and/or impedance match of transmission systems, various types of terminations such as antennas and loads, and other devices such as attenuators, connectors, transitions, etc.

**1-8. Description** Indicator, Standing Wave Ratio AN/USM-37A (fig 1-1) consists of a standing wave ratio indicator, two precision slotted waveguide sections, a slotted coaxial section, a voltage sampling probe, a probe holder, adapters and cables. The equipment is housed in a

metal transit case, CY-2964/USM-37A

a. Standing Wave Ratio Indicator IM-157/USM-57, the major component of the AN/USM-37A, is a high-gain, selective amplifier which has an indicating meter as its output. The meter is calibrated both in voltage-standing-wave ratio and in decibels.

b. The two slotted waveguide sections are designated as Waveguide Assemblies CG-1106/USM-37 and CG-1107/USM-37. The former is designed for use over the frequency range from 7.05 to 10.0 gigahertz and mates with UG-51/U (RG-51/U size waveguide). The CG-1107/USM-37 is designed for use from 8.2 to 12.4 gigahertz and mates with UG-39/U (RG-52 size waveguide).

c. The IM-100/USM-37 slotted coaxial section is designed for use over the frequency range from 3 to 12 GHz. Impedance is 50 ohms to match flexible coaxial