

TECHNICAL MANUAL

**OPERATOR'S ORGANIZATIONAL
DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL**

FOR

FM/AM MODULATION METER

ME-505 / U

(NSN 6625-00-480-8706)

HEADQUARTERS, DEPARTMENT OF THE ARMY

SEPTEMBER 1981

**OPERATORS, ORGANIZATIONAL, DIRECT SUPPORT,
 AND GENERAL SUPPORT MAINTENANCE MANUAL
 FOR
 MODULATION METER ME-505/U
 (NSN 6625-00-480-8706)**

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 procedure, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA-2028-2 located in back of this manual direct to: Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, New Jersey, 07703.

A reply will be furnished direct to you.

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SECTION 0**INTRODUCTION**

0-1. SCOPE

This manual describes F.M./A.M. Modulation Meter ME-505/U (Marconi Model TF 2300A) (fig. 1-1) and provides operation and maintenance instructions. Throughout this manual, ME-505/U is referred to as Modulation Meter type 2300A.

0-2. 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, additional publications or modification work orders pertaining to the equipment.

0-3. 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 levels of maintenance are listed in and prescribed by TM 38-750.

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73/AFR 400-54/MCO 4430.3E

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 4610.33B/AFR 75 - 18/MCO P4610.19C and DIAR 4500.15.

0-4. REPORTING OF EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

EIR's will be prepared using DA Form 2407, Maintenance Request Form. 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 Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, New Jersey, 07703. A reply will be furnished directly to you.

0-5. ADMINISTRATIVE STORAGE

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

0-6. DESTRUCTION OF ARMY ELECTRONICS MATERIEL

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2 Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).

SECTION 1

GENERAL INFORMATION

1.1 INTRODUCTION

The TF 2300A Modulation Meter is primarily for measurement of f.m. deviation but it also measures a.m. depth. With its wide range of deviation frequency, modulation bandwidth and carrier frequency, this instrument is suitable for application to fixed and mobile point-to-point communications, broadcasting, telemetry and multi-channel link equipment in the h. f., v. h. f. and u. h. f. bands. Distortion and channel separation tests on f.m. stereo receivers and transmitters can also be made.

Positive and negative f.m. deviation can be measured in ranges from 1.5 kHz to 500 kHz full-scale at modulation frequencies between 30 Hz and 3.4 kHz on the 1.5 kHz deviation range, and 30 Hz and 200 kHz on all other deviation ranges. A.M. depth can be measured up to 95% in a 30 Hz to 15 kHz modulation bandwidth. Either f.m. or a.m. can be measured in the presence of the other. Although measurements are

normally made by means of the meter readout, i. f. and demodulated outputs are available at the front panel for examination or analysis.

Spurious a.m. and f.m. due to hum and noise are kept to a level insignificant for most applications but, where required, crystals can be switched in to control the local oscillator, or an external local oscillator may be used. The instrument can be operated without a local oscillator for measurements in the 1-2 MHz range.

The instrument can be operated from mains power or a nominal 24 V battery. Voltage regulation eliminates transformer tap changing except between 115 V and 230 V ranges. On battery, the regulation compensates for battery voltage variations between 21.5 and 30 V. Transistorized circuits consuming little current give reasonable length of operation on battery for mobile purposes.

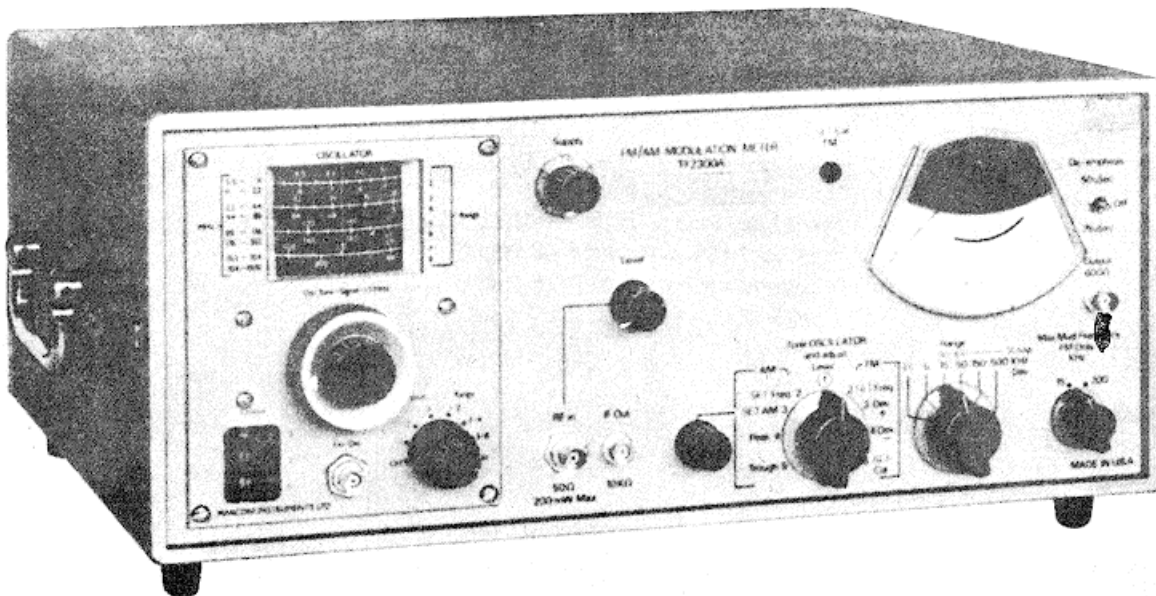


Fig. 1-1. FM/AM Modulation Meter ME-505/U