TECHNICAL MANUAL

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL

INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

TEST SET, RADIO FREQUENCY AN/GRM-62

This copy is a reprint which includes current pages from Changes 1 through 3.

H E A D Q U A R T E R S , D E P A R T M E N T O F T H E A R M Y

OCTOBER 1967

TECHNICAL MANUAL
No. 11-6625-656-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *25 October 1967*

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL
TEST SET, RADIO FREQUENCY AN/GRM-62
(NSN 6625-00-935-4201)

Current as of August 1977

TABLE OF CONTENTS - Continued

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1-1. Scope

a. This manual describes Test Set, Radio Frequency AN/GRM-62 (fig. 1-1) and covers the installation, limited operation, and operator and organizational maintenance. It includes instructions for operation under normal conditions, cleaning and inspection of the equipment, and replacement of parts available to the operator and organizational repairman.

b. Operation of Test Set, Radio Frequency AN/GRM-62 in conjunction with other test equipment (para 1-10) to test components of the AN/GRC-50(*)(V) (para 1-5*a*) is covered in the maintenance manual for the AN/GRC-50A(*) (V) (TM 11-5820-461-35).

c. Official nomenclature followed by (*) is used to indicate all models of the equipment items covered in this manual.

(1) Radio Sets AN/GRC-50(*) (V) represents Radio Sets AN/GRC-50(V) 1, 2, 3, 4, and 5, and AN/GRC-50A (V) 1, 2, 3, 4, 5, 6, and 7.

(2) Amplifier-Oscillator AN/1958(*)/GRC represents AM-1958/GRC and AM-1958A/GRC (assemblies 2A2).

(3) Amplifier-Converter AN-1955(*)/GRC represents AM-1955/GRC and AM-1955A/GRC (assemblies 3A1).

(4) Amplifier-Converter AM-1956(*)/GRC represents AM-1956/GRC and AM-1956A/GRC (assemblies 3A2).

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/NAVSUPINST 4610.33A/AFR 75-18/MCO P4610.19B and DSAR 4500.15.

1-4. Reporting of Errors

You can help improve this manual by calling attention to errors and by recommending improvements and stating your reasons for the recommendations. Your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) should be mailed direct to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, New Jersey 07703. A reply will be furnished direct to you.

1-4.1. Reporting Equipment Improvement Recommendations (EIR)

EIR's 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 direct to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, New Jersey 07703. A reply will be furnished direct to you.

1-4.2. Administrative Storage

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

1-4.3. Destruction of Army Electronics Materiel

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

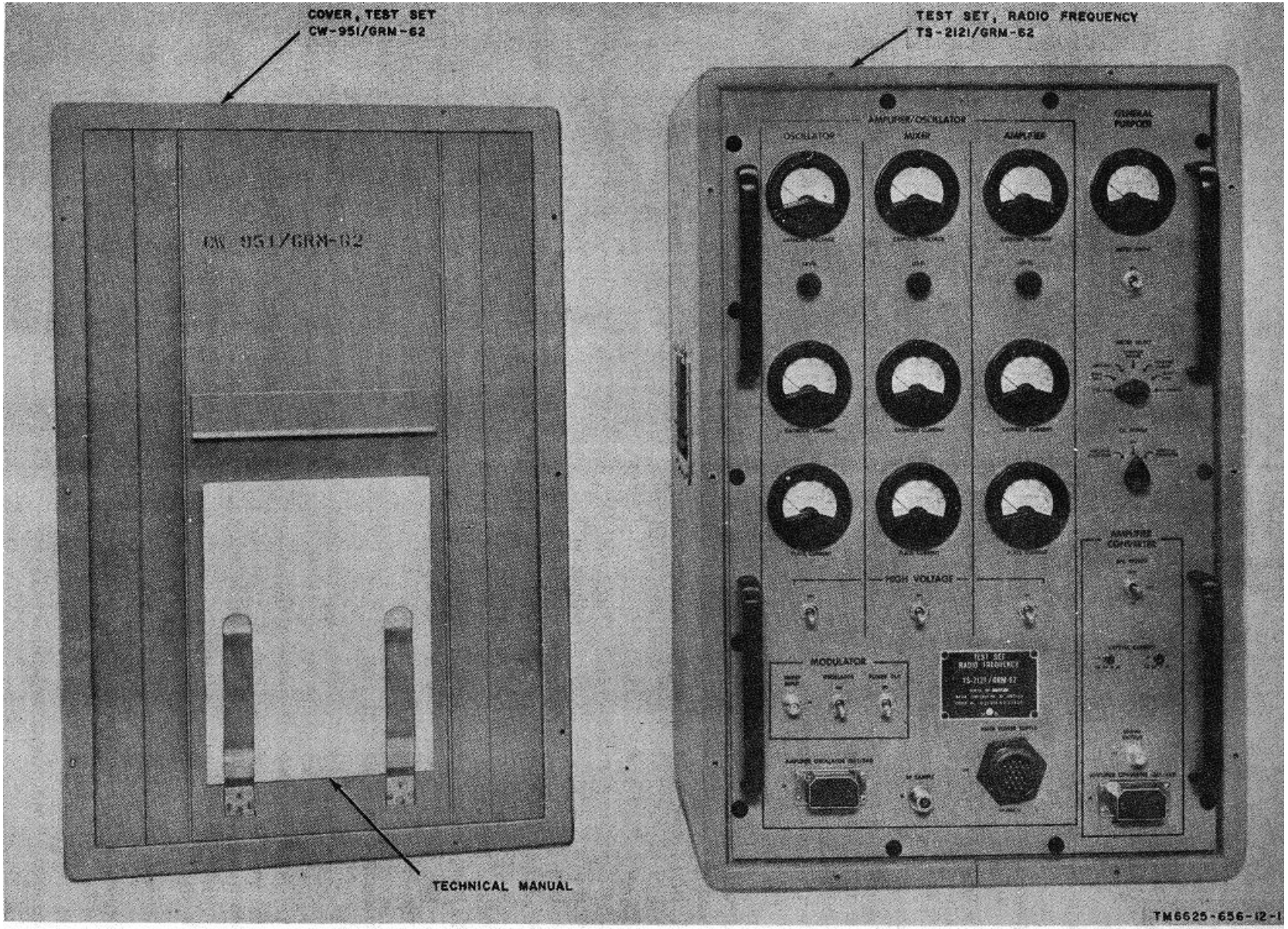

Figure 1-1. Test Set, Radio Frequency, AN/GRM-62, less Cable Assembly, Radio Frequency CG-3434/U (4 ft 2 in), and running spares.

Section II. DESCRIPTION AND DATA

1-5. Purpose and Use

NOTE

Throughout this manual, the AN/GRC-50(*) (V) assembly under test is referred to as AUT.

a. Test Set, Radio Frequency AN/GRM-62 (hereinafter referred to as *radiofrequency test set*) when used in conjunction with additional equipment (para 1-10) comprises a test set that enables the operator to check the alignment, operation, and performance, and to troubleshoot the following assemblies of Radio Set AN/GRC-50(*) (TM 11-5820-461-35):

(1) Amplifier-Oscillator AM-1957/GRC (2A1) and AM-1958(*)/GRC (2A2) (used in Transmitter, Radio T-893(P)/GRC).

(2) Amplifier-Converter AM-1955/GRC (3A1) and AM-1956(*)/GRC (3A2) (used in Receivers, Radio R-1148(P)/GRC and R-1331(P)/GRC).

b. The radiofrequency test set is inclosed in a metal cabinet which houses all the assemblies and components necessary for operation. The assemblies which comprise the test set are -

(1) Regulator assembly A1 (identical with regulator assembly 2A6 in T-893(P)/GRC).

(2) Modulator assembly A2 (identical with modulator assembly 2A5 in T-93(P)/GRC).

(3) Second intermediate frequency (IF) simulator A3.

c. Also, a number of panel meters are provided for monitoring the results of tests, switches for the application of power and various test setups, connectors and test jacks for the application of external signals and for monitoring test results, and multipin connectors for connecting the AUT's and the external power supply to the radiofrequency test set.

d. The front panel of the radiofrequency test set is divided into three discrete functional areas: amplifier-oscillator, amplifier-converter, and general purpose.

(1) The amplifier-oscillator area provides meters' for monitoring the cathode voltages, cathode currents, and plate currents of the oscillator, mixer, and amplifier circuits of the AUT units, AM-1957/GRC, and AM-1958(*)/GRC. This area also contains switches for applying and removing the high voltage supplies to the AUT, as well as for activating modulator assembly A2. Connectors are provided for connecting the AUT and the auxiliary high voltage power supply to the radiofrequency test set. Also, connectors are provided for applying test signals and for monitoring test results.

(2) The amplifier-converter area provides facilities to test AUT units, AM 1955(*)/GRC and AM-1956(*)/GRC. It contains test connectors for monitoring purposes, a switch which controls the automatic frequency control (afc) motor in the AUT, and a connector which provides the means to connect the AUT to the radiofrequency test set.

(3) The general purpose area has a meter for monitoring the status of various AUT functions. It also contains two multiposition rotary switches; one for selection of the circuit to be monitored by the meter, and the second for selecting the application of direct current (dc) power to either AUT.

e. The radiofrequency test set is used with auxiliary test equipment which provide test signals and additional monitoring facilities. The test setups and procedures for checking the associated AN/GRC-50(*) (V) assemblies are given in TM 11-5820-461-35. The functions tested by these setups are -

(1) *Amplifier-Oscillator AM-1957(*)/GRC and AM-1958(*)/GRC (2A1/2A2).* General alignment, frequency tracking, radiofrequency (RF) output, wavemeter accuracy, and duplexer alignment and insertion loss.

(2) *Amplifier-Converter AM-1955(*)/GRC and AM-1956(*)/GRC (3A1/3A2).* General alignment, frequency tracking, wavemeter accuracy, preselector alignment and insertion loss, and afc motor operation (when equipped with this motor).

1-6. Technical Characteristics

a. Current Regulator.

Oscillator current..... 83 ± 3 ma (10 to 40 vdc).
Mixer current..... 83 ± 3 ma (20 to 40 vdc).
Amplifier current..... 115 ± 4 ma (10 to 40 vdc).

b. Modulator. The modulator has an overall response as shown in figure 1-2, when its output is terminated with 100 ohms. The output is 17.0 volts root mean square (rms) minimum.