

**DEPARTMENT OF THE ARMY TECHNICAL MANUAL**

**General Support and Depot Maintenance Manual**

**TEST SET, RADIO AN/ARM-5A  
(NSN 6625-00-926-7768)**

This copy is a reprint which includes current pages from Change 1. Title was changed by Change 1.

**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**MARCH 1971**

## TECHNICAL MANUAL

No. 11-6625-828-45

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, D. C., 18 March 1971GENERAL SUPPORT AND DEPOT MAINTENANCE MANUAL  
TEST SET, RADIO AN/ARM-5A  
(NSN 6625-00-926-7768)

		Paragraph	Page
CHAPTER 1.	FUNCTIONING OF TEST SET, RADIO AN/ARM-SA		
	Scope .....	1-1	1-1
	Indexes of publications .....	1-2	1-1
	Block diagram analysis .....	1-3	1-1
	Stage analysis.....	1-4	1-2
CHAPTER 2.	TROUBLESHOOTING		
Section I.	General troubleshooting techniques		
	General instructions .....	2-1	2-1
	Organization of troubleshooting procedures .....	2-2	2-1
	Test equipment required .....	2-3	2-1
Section II.	Troubleshooting Test Set, Radio AN/ARM-SA		
	Test setup .....	2-4	2-2
	Localizing troubles .....	2-5	2-2
	Signal substitution.....	2-6	2-6
	Isolating trouble within stage.....	2-7	2-6
	Dc resistances of transformers and coils.....	2-8	2-6
CHAPTER 3.	REPAIRS AND ALIGNMENT		
Section I.	Repairs		
	General parts replacement techniques .....	3-1	3-1
	Removal of test set chassis from cabinet .....	3-2	3-1
	Removal and replacement of tone generator .....	3-3	3-1
	Removal and replacement of RF unit Z104 .....	3-4	3-4
	Removal and replacement of RF attenuator assembly.....	3-5	3-5
	Lubrication 8 .....	3-6	3-11
Section II.	Alignment		
	Test equipment required for alignment .....	3-7	3-11
	Characteristics of test equipment required for alignment .....	3-8	3-11
	%M and RF meter zero alignment .....	3-9	3-11
	RF unit alignment.....	3-10	3-12
	Modulation meter alignment.....	3-11	3-12
	30- phase angle adjustment.....	3-12	3-13
	90/150- phase adjustment .....	3-13	3-15
CHAPTER 4.	GENERAL SUPPORT TESTING PROCEDURES		
	General .....	4-1	4-1
	Test equipment and other equipment .....	4-2	4-1
	Special requirements .....	4-3	4-1
	Preliminary inspection.....	4-4	4-1
	Meter zero test .....	4-6	4-5
	RF unit test.....	4-6	4-5
	Power supply test.....	4-7	4-7
	RF meter adjustment test .....	4-8	4-9
	%M meter test.....	4-9	4-11
	30I phase angle test.....	4-10	4-13
	AMP LOCK level test .....	4-11	4-15
	1000 oscillator and identifier test .....	4-12	4-17
	Overall performance test .....	4-13	4-19
	Test data summary .....	4-14	4-23

This manual, together with TM 11252812, 11 September 1970, supersedes TM 1 1.2542.15, 21 July 1967.

Change 1 i

		Paragraph	Page
CHAPTER 5.	DEPOT OVERHAUL STANDARDS		
	General .....	5-1	5-1
	Test facilities required .....	5-2	5-1
	Test procedure .....	5-3	5-1
APPENDIX A.	REFERENCES .....		A-1
B.	(Deleted) .....		--

Change 1 ii

## CHAPTER 1 FUNCTIONING OF TEST SET, RADIO AN/ARM-5A

### 1-1. Scope

a. This manual covers general support (GS) and depot maintenance for Test Set, Radio AN/ ARM-5A. It includes instructions appropriate to GS and depot categories for troubleshooting, testing, aligning, and repairing the equipment, replacing maintenance parts, and repairing specified maintenance parts. It also lists tools, materials, and test equipment for GS and depot maintenance. Detailed functions of the equipment are covered in paragraph 1-4.

b. The complete technical manual for this equipment includes TM 11-6625-828-12.

c. The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded direct to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, NJ 07703.

#### NOTE

**For applicable forms and records,  
refer to paragraph 1-3, TM 11-6625-  
828-12.**

### 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. Block Diagram Analysis

The AN/ARM-5A is a signal generator which provides simulated omni and amplitude localizer signals for testing vhf navigational receiving equipment in the 108- to 132-

megacycle (me) frequency range. Signal paths are shown in the block diagram (fig. 4-10) and are discussed in a through m below. For complete circuit details, refer to the overall schematic diagram (fig. 4-11).

a. *Tone Generator*. Modulation frequencies in the SG-66B/ARM-5 are produced by tone generator MG101. The modulation frequencies are derived from two tone wheels (E101A and E101B) by means of five pickup coils (L101, L102, L103, L104, and L105).

b. *OMNI TRACK Switch*. OMNI TRACK switch S101 selects coil signal combinations of L101, L102, L104, and L105. The selected combinations are paired to determine phase results, capable of shifting the track angle through 3600 in increments of 30°.

c. *Reference and Variable Amplifiers*. Reference amplifier V101A and V101B and variable amplifier V103A and V103B increase the input signals from the tone generator to suitable out-put levels for limiting.

d. *Limiters*. Limiters CR101 and CR102 and CR103 and CR104 function identically within their respective channel circuits. They symmetrically limit the upper and lower peaks of the input signals.

e. *Detector Driver*. Detector driver V104A functions to amplify the output of limiter CR103, CR104 to drive the ratio detector-discriminator.

f. *Ratio Detector-Discriminator*. The ratio detector-discriminator consisting of discriminator network Z101 and diodes CR105 and CR106, demodulates the 30-cycle voltages for the omni signal circuit, and the 90- and 150-cycle voltages for the amplitude localizer circuit from the signals generated by the tone generator.

g. *90- and 150-Cycle Filter Networks*. The 90- and 160-cycle filter networks, Z102 and Z103, are bandpass filters for the amplitude localizer circuit and remove undesirable frequency components.

h. *30-Cycle Filter Network*. The 30-cycle filter