

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

TEST SETS TS-538/U, TS-538A/U, TS-538B/U, AND TS-538C/U

Headquarters, Department of the Army, Washington 25, D.C.

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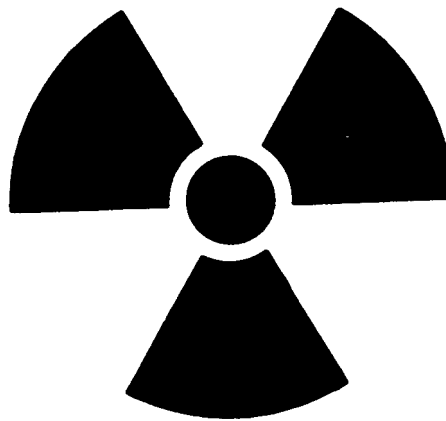
WARNING

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Be careful when working on the 160-volt cathode follower, rectifier, and amplifier circuits, or on the 117-volt ac line connections.

DON'T TAKE CHANCES!

RADIATION HAZARD



Ni 63 or Co 60

Tube type OB2WA used in this equipment contains radioactive material (para 4). This tube is potentially hazardous when broken; see qualified medical personnel and the Safety Director if you are exposed to or cut by a broken tube. Use extreme care in replacing this tube (para 31) and follow safe procedures in its handling, storage, and disposal (para 35).

Never place a radioactive tube in your pocket.

Use extreme care not to break a radioactive tube while handling it.

Never remove a radioactive tube from its carton until you are ready to use it.

Refer to paragraph 35 on handling, storage, and disposal of radioactive material.

*This manual supersedes so much of TM 11-5014, dated 3 May 1957, including C1, 16 September 1957, and C4, 22 March 1962, as is applicable to operation and organizational maintenance of this equipment.

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

			Paragraph	P a g e
CHAPTER	1.	INTRODUCTION		
Section	I.	General		
		Scope	1	5
		Forms and records	2	5
	II.	Description and data		
		Purpose and use	3	5
		Technical characteristics.	4	6
		Components	5	7
		Common names	6	7
		Description	7	7
		Differences in models	8	7
CHAPTER	2.	OPERATION		
Section	I.	Service upon receipt of equipment		
		Unpacking	9	10
		Checking unpacked equipment	10	11
		Operating instructions		
		Operating controls and indicators	11	11
		Types of operation	12	11
		Starting procedure	13	12
		Checking Radiosonde Transmitters T-304(*)/AMT-4A and T-435/AMT-4B	14	13
		Checking Rawin Set AN/GMD-1(*)	15	13
		Stopping procedure	16	16
CHAPTER	3.	MAINTENANCE INSTRUCTIONS		
Section	I.	Operator's maintenance		
		Scope of maintenance	17	17
		Operator's preventive maintenance.	18	17
		Preventive maintenance checks and service periods.	19	17
		Daily preventive maintenance checks and services chart.	20	17
		Weekly preventive maintenance checks and services chart	21	18
		Cleaning	22	18
		Replacement of fuses	23	18
	II.	organizational maintenance		
		Scope of organizational maintenance	24	18
		Organizational preventive maintenance	25	19

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual describes Test Sets TS-538/U, TS-538A/U, TS-538B/U, and TS-538C/U (fig. 1) and covers their installation, operation, and operator's and organizational maintenance. It includes cleaning and inspection of the equipment, and replacement of parts available to first and second echelon maintenance.

b. Official nomenclature that includes (*) is used to designate all models of the equipment covered in this manual. Thus, Test Set TS-538(*)/U represents Test Set TS-538/U, Test Set TS-538A/U, Test Set TS-538B/U, and Test Set TS-538C/U; Radiosonde AN/AMT-4(*) represents Radiosonde AN/AMT-4, Radiosonde AN/AMT-4A, Radiosonde AN/AMT-4B, Radiosonde AN/AMT-4C, and Radiosonde Set AN/AMT-4D; Rawin Set AN/GMD-1(*) represents Rawin Set AN/GMD-1A and Rawin Set AN/GMD-1B; Rawin Receiver R-301(*)/GMD-1 represents Rawin Receiver R-301A/GMD-1, Rawin Receiver R-301B/GMD-1, Rawin Receiver R-301C/GMD-1, and Rawin Receiver R-301D/GMD-1; and Radiosonde Transmitter T-304(*)/AMT-4A represents Radiosonde Transmitter T-304/AMT-4A and Radiosonde Transmitter T-304A/AMT-4A.

2. Forms and Records

a. *Reports of Maintenance and Unsatisfactory Equipment.* Use equipment forms and records in accordance with instructions in TM 38-750.

b. *Report of Damaged or Improper Ship-*

ment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSANDA Publication 378 (Navy), and AFR 71-4 (Air Force).

c. *Reporting of Equipment Manual Improvements.* The direct reporting by the individual user of errors, omissions, and recommendations for improving this equipment manual is authorized and encouraged. DA Form 2028 will be used for reporting these improvements. This form may be completed using pencil, pen, or typewriter. DA Form 2028 will be completed in triplicate and forwarded by the individual using the manual. The original and one copy will be forwarded direct to: Commanding Officer, U.S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, New Jersey, 07703. One information copy will be furnished to the individual's immediate supervisor (officer, noncommissioned officer, supervisor, etc).

d. *Index of Publications.* Refer to the later issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to your equipment. Department of the Army Pamphlet 310-4 is an index of current technical manuals, technical bulletins, supply bulletins, lubrication orders, and modification work orders which are available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc) and the latest changes and revisions of each equipment publication.

Section II. DESCRIPTION AND DATA

3. Purpose and Use</

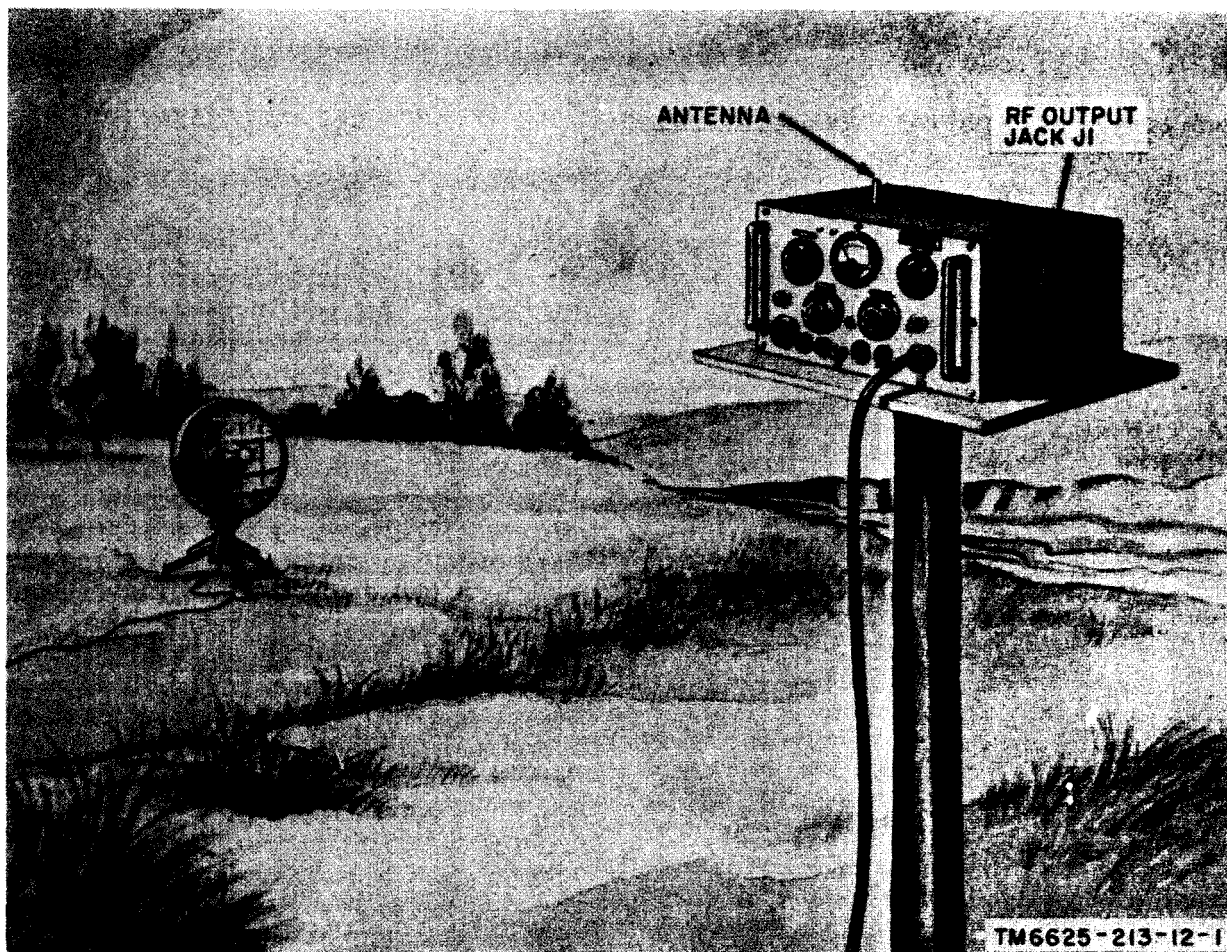


Figure 2. Test Set TS-538(*)/U in use.

output of Radiosonde Transmitters T-304(*)/AMT-4A and T-435/AMT-4B.

(2) Measure the sensitivity, bandwidth, and tracking accuracy of Rawin Set AN/GMD-1(*).

b. Test Set TS-538(*)/U may also be used for similar purposes with any transmitter and/or receiver that operates within its frequency range (para 4). Figure 2 shows a typical application.

4. Technical Characteristics

Rf oscillator frequency range . . . 1,630 to 1,730 mc in TS-538/U, TS-538A/U, and TS-538B/U; 1,615 to 1,715 mc in TS-

538C/U.

Types of rf output Cw or interrupted cw.

Duration of interruption 45 microseconds $\pm$ 5.

Frequency of interruption 5 to 200 cycles per second.

Maximum voltage standing wave ratio 1.45 to 1.

Output power -107 to -20 dbm.

Output Impedance 50 ohms.

Attenuator accuracy $\pm$ 1 dbm from -20 to -70 dbm; $\pm$ 3 dbm from -70 to -107 dbm.