DEPARTMENT OF THE ARMY
TECHNICAL MANUAL

TM 11-5017

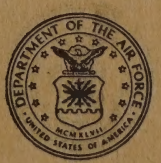
DEPARTMENT OF THE AIR
FORCE TECHNICAL ORDER

TO 33A1-7-23-1

OUTPUT METERS

TS-585A/U, TS-585B/U AND TS-585C/U





DEPARTMENTS OF THE ARMY AND THE AIR FORCE

SEPTEMBER 1956

TECHNICAL MANUAL No. 11-5017
TECHNICAL ORDER No. 33A1-7-23-1

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

WASHINGTON 25, D. C., *28 September 1956*

OUTPUT METERS TS-585A/U, TS-585B/U, AND TS-585C/U

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*This manual supersedes TM 11-5017/TO 16-35TS585-5, 6 December 1948, including C 1, 21 September 1951, and C 2, 23 April 1954.

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CHAPTER 1
INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual contains instructions for the operation, and the organizational and field maintenance of Output Meters TS–585A/U, TS–585B/U, and TS–585C/U (figs. 1 and 2).

b. Official nomenclature followed by (*) is used to indicate all models of the item of equipment included in this technical manual. Therefore, Output Meter TS–585(*)/U refers to Output Meters TS–585A/U, TS–585B/U, and TS–585C/U.

c. Forward comments on this manual to the Commanding Officer, The Signal Corps Publications Agency, Fort Monmouth, New Jersey.

2. Forms and Records

a. Unsatisfactory Equipment Reports.

(1) Fill out and forward DA Form 468 (Unsatisfactory Equipment Report) to Commanding Officer, Signal Equipment Support Agency, Fort Monmouth, N. J., as prescribed in AR 700–38.

(2) Fill out and forward DD Form 535 (Unsatisfactory Report) to Commander, Air Materiel Command, Wright-Patterson Air Force Base, Ohio, as prescribed in AF TO 00–35D–54.

b. Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700–58 (Army); Navy Shipping Guide, Article 1850–4 (Navy); and AFR 71–4 (Air Force).

c. Preventive Maintenance Forms.

(1) DA Form 11–238 (Operator First Echelon Maintenance Check List for Signal Corps Equipment (Radio Communication, Direction Finding, Carrier, Radar)) will be prepared in accordance with instructions on the back of the form (fig. 4).

(2) DA Form 11–239 (Second and Third Echelon Maintenance Check List for Signal Corps Equipment (Radio Communication, Direction Finding, Carrier, Radar)) will be prepared in accordance with instructions on the back of the form (fig. 5).

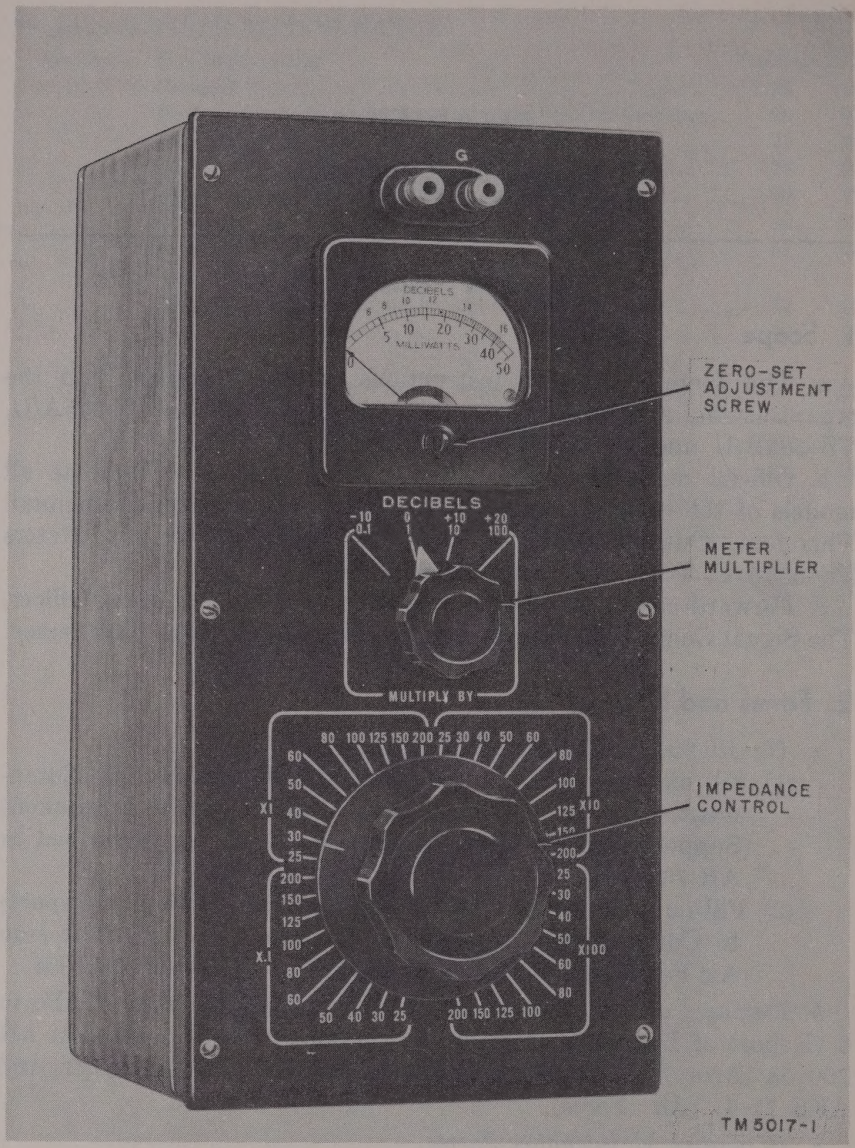


Figure 1. Output meter TS–585A/U.

Section II. DESCRIPTION AND DATA

3. Description and Use

(figs. 1 and 2)

a. Output Meter TS–585(*)/U is a direct reading output meter which indicates audio-frequency (af) power in milliwatts (mw), or in decibels referred to 1 milliwatt in 600 ohms (dbm).

b. Output Meter TS–585(*)/U is used to measure the output of audio amplifiers, filters, oscillators, and similar equipment. It also may be used to determine the characteristic impedance of equipment under test.

4. Technical Characteristics

Power ranges	0.1 to 5 mw, −10 to +7 dbm.; 1 to 50 mw, 0 to +17 dbm.; 10 to 500 mw, +10 to +27 dbm.; 100 to 5,000 mw, +20 to +37 dbm.
Input impedances	2.5; 3; 4; 5; 6; 8; 10; 12.5; 15; 20; 25; 30; 40; 50; 60; 80; 100; 125; 150; 200; 250; 300; 400; 500; 600; 800; 1,000; 1,250; 1,500; 2,000; 2,500; 3,000; 4,000; 5,000; 6,000; 8,000; 10,000; 12,500; 15,000; 20,000 ohms.
Accuracy (at 11-dbm position):	
Power	±5 percent (TS–585A/U) ±10 percent (TS–585B/U or TS–585C/U).
Impedance	±5 percent.
Frequency range:	
TS–585A/U	20 to 10,000 cycles per second.
TS–585B/U and TS–585C/U	30 to 10,000 cycles per second.

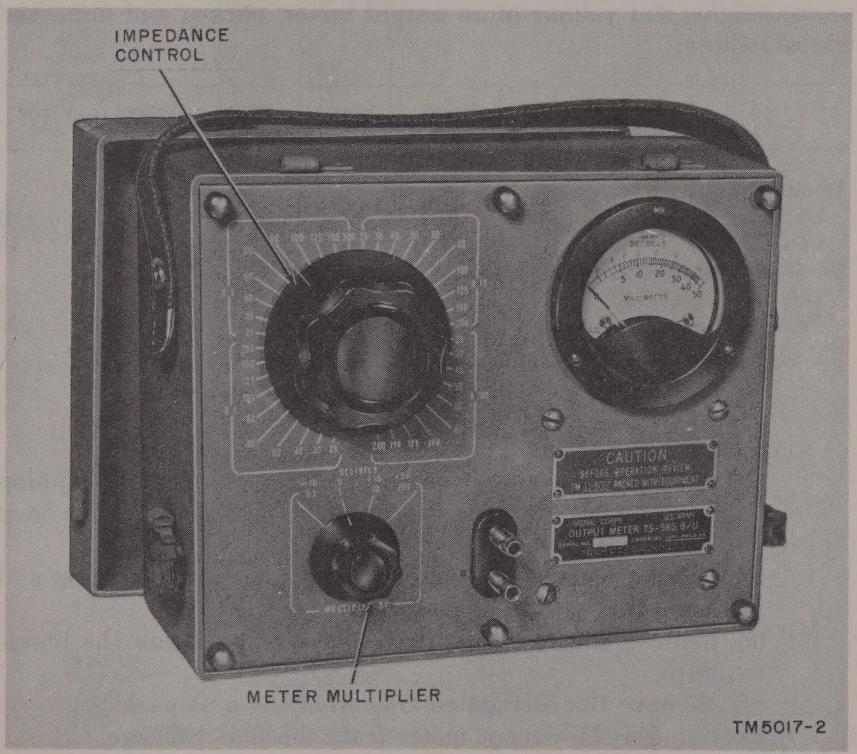


Figure 2. Output meter TS–585B/U or TS–585C/U.

CHAPTER 2

SERVICE UPON RECEIPT OF EQUIPMENT

5. Unpacking

(fig. 3)

a. Packaging Data.

(1) *Domestic shipment.* When packed for domestic shipment, four output meters, individually packed in water-resistant, corrugated cartons, are packed and sealed in a corrugated shipping carton.

(2) *Export shipment.* When packed for export shipment, six output meters, individually packed in water-resistant, corrugated cartons, are packed in a wooden packing case. Metal straps secure the wooden packing case and cover.

b. Dimensions, Weights, and Volumes. The approximate dimensions, weight, and volume of an output meter, packed and unpacked are as follows:

Item	Height (in.)	Width (in.)	Depth (in.)	Volume (cu ft)	Weight (lb)
TS–585A/U:					
Unpacked	12	6	7	0. 291	9
Packed	18	12. 25	12. 25	1. 563	16
TS–585B/U or TS–585C/U:					
Unpacked	8. 5	11	5. 5	. 297	14
Packed	13	15	10	1. 12	21

c. Unpacking.

(1) *Domestic packaging.*

(*a*) Slit the seam along the cover of the corrugated shipping carton that contains the four unit packages. Fold back the cover flaps.

(*b*) Slit the seam of the water-resistant corrugated carton and open it.

(*c*) Remove the waterproof envelopes that contain the literature.

(*d*) Remove the corrugated tray from the unit package.

(*e*) Remove the output meter from the unit package.

(2) *Export packaging.*

(*a*) Cut and fold back the metal straps.

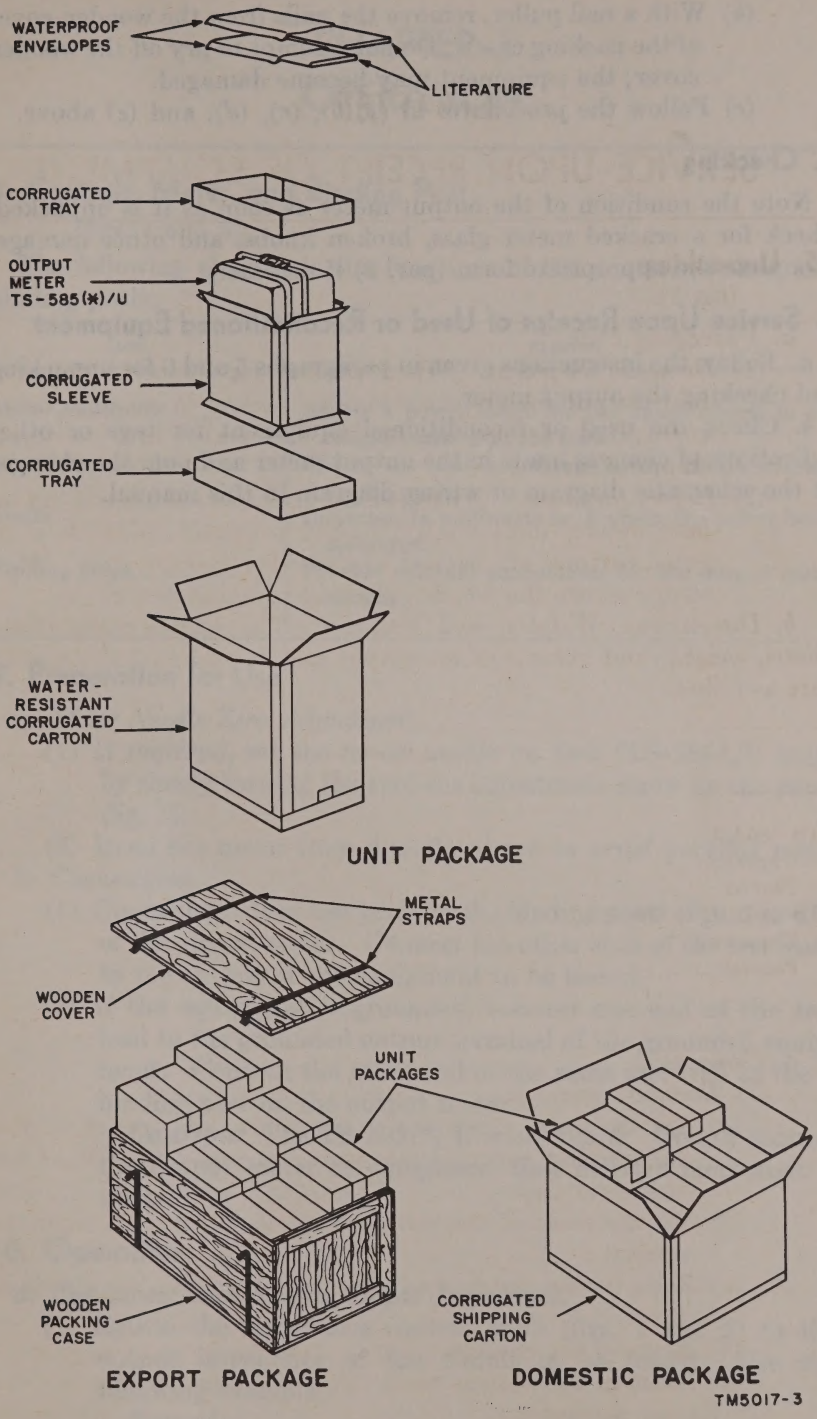


Figure 3. Packaging diagram.

(*b*) With a nail puller, remove the nails from the wooden cover of the packing case. Do not attempt to pry off the wooden cover; the equipment may become damaged.

(*c*) Follow the procedures in (1)(*b*), (*c*), (*d*), and (*e*) above.

6. Checking

Note the condition of the output meter as soon as it is unpacked. Check for a cracked meter glass, broken knobs, and other damage. Complete the appropriate form (par. 2) if necessary.

7. Service Upon Receipt of Used or Reconditioned Equipment

a. Follow the instructions given in paragraphs 5 and 6 for unpacking and checking the output meter.

b. Check the used or reconditioned equipment for tags or other indications of changes made in the output meter and note the changes on the schematic diagram or wiring diagram in this manual.

CHAPTER 3
OPERATION

8. Controls, Meter, and Binding Post

(figs. 1 and 2)

The following chart lists the functions of the controls, meter, and binding posts:

Item	Function
Meter multiplier	Selects a power range for the meter circuit in the ranges marked on the panel.
Impedance control	Selects the load impedance in the ranges marked on the panel.
Meter	Indicates, in milliwatts or decibels, the power being measured.
Binding posts	Provide external connections for the output meter circuits.

9. Preparation for Use

a. Meter Needle Zero Adjustment.

(1) If required, set the meter needle on zero (TS–585A/U only) by slowly turning the zero-set adjustment screw on the panel (fig. 1).

(2) Read the meter from directly above to avoid parallax error.

b. Connections.

(1) Connect a pair of test leads to the binding posts (figs. 1 and 2) of the output meter. Connect the other ends of the test leads to the output of the equipment to be tested.

(2) If the equipment is grounded, connect one end of the test lead to the grounded output terminal of the grounded equipment. Connect the other end of the same test lead to the *G* binding post on the output meter.

Caution: The TS–585(*)/U is not fused. Do not connect the output meter to equipment that delivers more than 5 watts.

10. Operation

a. Equipment with Known Output Impedance.

(1) Rotate the impedance control knob (figs. 1 and 2) to the output impedance of the circuit to be tested. Use the following example:

Example:

Equipment impedance is 30 ohms.

Impedance control knob rotated to 30 in the X1 bracket.

Therefore: $30 \times 1 = 30$ ohms.

(2) Rotate the meter multiplier knob to the 100 position.

(3) Turn on the equipment to be tested and proceed with its operation.

(4) Adjust the meter multiplier knob to bring the needle on the meter to the center, or slightly above the center, of the scale.

(5) Compute the power output in milliwatts. Use the following example:

Example:

Meter multiplier knob points to .1.
Meter indication is 15.
Therefore: $15 \times 0.1 = 1.5$ milliwatts.

(6) Read the power output in decibels by adding the decibels indication on the meter to the decibels figure for the meter multiplier knob position. Use the following examples:

Example 1:

Meter multiplier knob points to +10
Meter indication is 15
Therefore: $15 + 10 = 25$ decibles.

Example 2:

Meter multiplier knob points to −10
Meter indication is 15
Therefore: $15 - 10 = 5$ decibels.

b. Equipment with Unknown Output Impedance.

(1) Rotate the meter multiplier knob (figs. 1 and 2) to the 100 position.

(2) Rotate the impedance control knob clockwise to the 200 position in the X100 bracket.

(3) Turn on the equipment under test.

(4) Slowly rotate the impedance control knob counterclockwise until a maximum deflection of the output meter instrument is obtained.

(5) Rotate the meter multiplier knob to bring the meter needle near the center of the scale for maximum accuracy.

(6) Again rotate the impedance control knob *very slowly* to obtain an even greater deflection of the meter needle. Adjust the meter multiplier knob, if necessary, for midscale reading.

(7) The *lowest* impedance control knob position that produces the *greatest* meter needle deflection is the position at which the impedance of the output meter is equal (or matched) to the impedance of the equipment under test. Read the meter (*a*(5) or (6) above).

(8) If the meter indicates zero during the entire operation ((4)–(7) above), the output from the equipment under test may be insufficient to operate the output meter, or the impedance mismatch may be too great for the low output available.

CHAPTER 4
ORGANIZATIONAL MAINTENANCE

Section I. FIRST ECHELON MAINTENANCE (OPERATOR)

11. Scope of First Echelon Maintenance

The operator is responsible for the daily and weekly preventive maintenance of the output meter. General external cleaning, and tightening of the knob set screws must be performed at specified intervals. Refer deficiencies to the unit mechanic for correction.

12. Definition of Preventive Maintenance

Preventive maintenance consists of systematic equipment service performed at regular intervals in accordance with prescribed methods. It is intended to minimize breakdown by keeping the equipment in good operating condition.

13. Use of Preventive Maintenance Form
(fig. 4)

a. DA Form 11–238 is a preventive maintenance check list to be used by the operator as directed.

b. Items not applicable to the output meter are lined out in figure 4. Paragraph references in the item columns refer to information pertinent to the particular item.

14. Preventive Maintenance Procedures

a. Daily.

(1) Check the general condition of the output meter. Check to see that the test leads are not torn, frayed, or otherwise damaged. Check the meter glass for cracks and scratches. See that both knobs are securely attached to their respective shafts.

(2) Check the knobs for positive action by noting the springiness of the detent spring when the knob is rotated. The action must be positive and firm. Check for binding, scraping, and alignment of the knobs.

(3) Place the output meter into operation (par. 10) and check for normal operation. Use equipment, the power output of which is known. Try different impedance settings and note the output meter needle deflection. The needle movement must be free.

OPERATOR FIRST ECHELON MAINTENANCE CHECK LIST FOR SIGNAL CORPS EQUIPMENT
RADIO COMMUNICATION, DIRECTION FINDING, CARRIER, RADAR

INSTRUCTIONS: See other side

EQUIPMENT NOMENCLATURE: OUTPUT METER TS-585/U | EQUIPMENT SERIAL NO. 77

LEGEND FOR MARKING CONDITIONS: ✓ Satisfactory; X Adjustment, repair or replacement required; Ⓧ Defect corrected.
NOTE: Strike out items not applicable.

DAILY

NO.	ITEM	CONDITION S	M	T	W	T	F	S
1	COMPLETENESS AND GENERAL CONDITION OF EQUIPMENT (~~receiver, transmitter, carrying cases, wire and cable, microphones, tubes, spare parts, technical manuals and accessories~~). PAR. 14a (1)	✓						
2	~~LOCATION AND INSTALLATION SUITABLE FOR NORMAL OPERATION.~~							
3	~~CLEAN DIRT AND MOISTURE FROM ANTENNA, MICROPHONE, HEADSETS, CHESTSETS, KEYS, JACKS, PLUGS, TELEPHONES, CARRYING BAGS, COMPONENT PANELS.~~							
4	~~INSPECT SEATING OF READILY ACCESSIBLE "PLUG-IN" ITEMS: TUBES, LAMPS, CRYSTALS, FUSES, CONNECTORS, VIBRATORS, PLUG-IN COILS AND RESISTORS.~~							
5	INSPECT CONTROLS FOR BINDING, SCRAPING, EXCESSIVE LOOSENESS, ~~WORN OR CHIPPED GEARS~~, MISALIGNMENT, POSITIVE ACTION. PAR. 14a (2)	✓						
6	CHECK FOR NORMAL OPERATION. PAR. 14a (3)	✓						

WEEKLY

NO.	ITEM	CONDITION	NO	ITEM	CONDITION
7	CLEAN AND TIGHTEN EXTERIOR OF COMPONENTS AND CASES, ~~RACK MOUNTS, SHOCK MOUNTS, ANTENNA MOUNTS, COAXIAL TRANSMISSION LINES, WAVE GUIDES, AND CABLE CONNECTIONS.~~ PAR. 14b (1)(a)	✓	13	~~INSPECT STORAGE BATTERIES FOR DIRT, LOOSE TERMINALS, ELECTROLYTE LEVEL AND SPECIFIC GRAVITY, AND DAMAGED CASES.~~	
8	INSPECT CASES, ~~MOUNTINGS, ANTENNAS, TOWERS, AND EXPOSED METAL SURFACES,~~ FOR RUST, CORROSION, AND MOISTURE. PAR. 14b(1)(b)	✓	14	CLEAN ~~AIR FILTERS, DRAGG VANE PLATES, DIAL AND~~ METER WINDOWS, ~~JEWEL ASSEMBLIES.~~ PAR. 14b(1)(c)	✓
9	~~INSPECT CORD, CABLE, WIRE, AND SHOCK MOUNTS FOR CUTS, BREAKS, FRAYING, DETERIORATION, KINKS, AND STRAIN.~~		15	INSPECT METERS FOR DAMAGED GLASS AND CASES. PAR. 14b(1)(c)	✓
10	~~INSPECT ANTENNA FOR ECCENTRICITIES, CORROSION, LOOSE FIT, DAMAGED INSULATORS AND REFLECTORS.~~		16	~~INSPECT SHELTERS AND COVERS FOR ADEQUACY OF WEATHER-PROOFING.~~	
11	~~INSPECT CANVAS ITEMS, LEATHER, AND CABLING FOR MILDEW, TEARS, AND FRAYING.~~		17	~~CHECK ANTENNA GUY WIRES FOR LOOSENESS AND PROPER TENSION.~~	
12	INSPECT FOR LOOSENESS OF ACCESSIBLE ITEMS: SWITCHES, KNOBS, ~~JACKS, CONNECTORS, ELECTRICAL TRANSFORMERS, POWER STATS, RELAYS, SELSYNS, MOTORS, BLOWERS, CAPACITORS, GENERATORS, AND PILOT LIGHT ASSEMBLIES.~~ PAR. 14b(1)(c)	✓	18	~~CHECK TERMINAL BOX COVERS FOR CRACKS, LEAKS, DAMAGED GASKETS, DIRT AND GREASE.~~	

19 IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION.

DA FORM 1 MAY 51 11-238 REPLACES DA AGO FORM 419, 1 DEC 50, WHICH IS OBSOLETE.

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Figure 4. DA Form 11–238.

b. Weekly.

(1) Perform all daily checks (*a* above), but do not place the output meter into operation until the additional following checks are completed:

(*a*) Tighten, if necessary, all set screws and panel screws on the output meter panel. Use moderate hand-applied torque until resistance to turning is felt. Avoid overtightening.

(*b*) Check the output meter panel and case for corrosion, mildew, scaly paint, and other effects of climate and

handling. Clean the output meter panel with a lint-free cloth.

(*c*) Check for looseness of knobs. Clean the meter glass and examine the meter for damage. Report finding to the unit mechanic for correction.

(2) Place the output meter into operation (par. 10) and check for normal operation by using different impedance setting of the impedance control.

Section II. SECOND ECHELON MAINTENANCE (UNIT MECHANIC)

15. Scope of Second Echelon Maintenance

The unit mechanic is responsible for performing the same preventive maintenance procedures as the operator (pars. 11 and 14). In addition, the unit mechanic must trouble shoot the output meter and correct other faults, such as defective wiring that requires soldering, and also parts replacement. The unit mechanic is authorized tools and test equipment (par. 16) which will be used to locate and replace defective parts.

16. Tools and Test Equipment Required

a. The tools required are contained in Tool Equipment TE–41.

b. The test equipment required is Multimeter TS–297/U.

17. Use of Preventive Maintenance Form (fig. 5)

a. DA Form 11–239 is a preventive maintenance checklist to be used by the unit mechanic as directed.

b. Items not applicable to the output meter are lined out on figure 5. Paragraph references in the item columns refer to information pertinent to the particular item.

18. Preventive Maintenance Procedures

Perform the preventive maintenance procedures as outlined for the operator (par. 14); in addition, service the *inside* of the output meter as required. Proceed as follows:

a. Remove the *output meter* chassis from the case.

b. Check all mounting and retaining screws. Hand-tighten if necessary.

c. Check all parts, supports, and studs for firmness. Look for worn, cracked, or loose parts. Check the meter glass and case for damage. Check the moistureproofing and fungiproofing varnish for adequate surface seal.

d. If necessary, clean the output meter parts, chassis, and contacts with Cleaning Compound (Federal Stock No. 7930–395–9542). Dry thoroughly to remove the residue.

SECOND AND THIRD ECHELON MAINTENANCE CHECK LIST FOR SIGNAL CORPS EQUIPMENT

RADIO COMMUNICATION, DIRECTION FINDING, CARRIER, RADAR

INSTRUCTIONS: See other side

EQUIPMENT NOMENCLATURE: OUTPUT METER TS-585/U

EQUIPMENT SERIAL NO.: 77

LEGEND FOR MARKING CONDITIONS: ✓ Satisfactory; X Adjustment, repair or replacement required; (1) Defect corrected.
NOTE: Strike out items not applicable.

NO.	ITEM	CONDITION	NO.	ITEM	CONDITION
1	COMPLETENESS AND GENERAL CONDITION OF EQUIPMENT ~~(receivers, transmitters, carrying cases, wire and cable, microphones, tubes, spare parts, technical manuals and accessories)~~. PAR. 14a (1)	✓	19	~~ELECTRON TUBES — INSPECT FOR LOOSE ENVELOPES, BAD CONNECTIONS, CRACKED SOCKETS, INSUFFICIENT SOCKET SPRING TENSION, CLEAN DUST AND DIRT CAREFULLY; CHECK EMISSION OF RECEIVER TYPE TUBES.~~	
2	~~LOCATION AND INSTALLATION SUITABLE FOR NORMAL OPERATION.~~		20	~~INSPECT FUSE CUT-OUTS FOR LOOSE PARTS, DIRT, MISALIGNMENT AND CORROSION.~~	
3	~~CLEAN DIRT AND MOISTURE FROM ANTENNA, MICROPHONE, HEADSETS, CHESTSETS, KEYS, JACKS, PLUGS, TELEPHONES, CARRYING CASES, COMPONENT PANELS.~~		21	~~INSPECT FIXED CAPACITORS FOR LEAKS, BULGES, AND DISCOLORATION.~~	
4	~~INSPECT SEATING OF READILY ACCESSIBLE "PLUG-OUT" ITEMS: TUBES, LAMPS, CRYSTALS, FUSES, CONNECTORS, VIBRATORS, PLUG-IN COILS AND RESISTORS.~~		22	~~INSPECT RELAY AND CIRCUIT BREAKER ASSEMBLIES FOR LOOSE MOUNTINGS; BURNED, PITTED, CORRODED CONTACTS; MISALIGNMENT OF CONTACTS AND ARMATURE; INSUFFICIENT SPRING TENSION; BINDING OF PLUNGERS AND WIRING PARTS.~~	
5	INSPECT CONTROLS FOR BINDING, SCRAPING, EXCESSIVE LOOSENESS, ~~BURR OR CHIPPED GEARS,~~ MISALIGNMENT, POSITIVE ACTION. PAR. 14a (2)	✓	23	~~INSPECT VARIABLE CAPACITORS FOR DIRT, MOISTURE, MISALIGNMENT OF PLATES, AND LOOSE MOUNTINGS.~~	
6	CHECK FOR NORMAL OPERATION. PAR. 14a (3)	✓	24	~~INSPECT RESISTORS, BUSHINGS, AND INSULATORS, FOR CRACKS, CHIPPING, BLISTERING, DISCOLORATION AND MOISTURE.~~	
7	CLEAN AND TIGHTEN EXTERIOR OF COMPONENTS AND CASES, ~~RACK MOUNTS, SHOCK MOUNTS, ANTENNA MOUNTS, COAXIAL TRANSMISSION LINES, WAVE GUIDES, AND CABLE CONNECTIONS.~~ PAR. 14b (1) (a)	✓	25	~~INSPECT TERMINALS OF LARGE FIXED CAPACITORS AND RESISTORS FOR CORROSION, DIRT AND LOOSE CONTACTS.~~	
8	INSPECT CASES, ~~MOUNTINGS, ANTENNAS, TOWERS, AND EXPOSED METAL SURFACES,~~ FOR RUST, CORROSION, AND MOISTURE. PAR. 14b (1) (b)	✓	26	CLEAN AND TIGHTEN SWITCHES, TERMINAL BLOCKS, ~~BLOWERS, RELAY CASES,~~ AND INTERIORS OF CHASSIS ~~AND CABINETS~~ NOT READILY ACCESSIBLE. PAR. 18c	
9	~~INSPECT CORD, CABLE, WIRE, AND SHOCK MOUNTS FOR CUTS, BREAKS, FRAYING, DETERIORATION, KINKS, AND STRAIN.~~		27	INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS. PAR. 18c	✓
10	~~INSPECT ANTENNA FOR ECCENTRICITIES, CORROSION, LOOSE FIT, DAMAGED INSULATORS AND REFLECTORS.~~		28	~~CHECK SETTINGS OF ADJUSTABLE RELAYS.~~	
11	~~INSPECT CANVAS ITEMS, LEATHER, AND CABLING FOR MILDEW, TEARS, AND FRAYING.~~		29	~~LUBRICATE EQUIPMENT IN ACCORDANCE WITH APPLICABLE DEPARTMENT OF THE ARMY LUBRICATION ORDER.~~	
12	INSPECT FOR LOOSENESS OF ACCESSIBLE ITEMS: SWITCHES, KNOBS, ~~JACKS, CONNECTORS, ELECTRICAL TRANSFORMERS, POWERSTATS, RELAYS, SOCKETS, MOTORS, BLOWERS, CAPACITORS, GENERATORS, AND PILOT LIGHT ASSEMBLIES.~~ PAR. 18c	✓	30	~~INSPECT GENERATORS, AMPLIDYNES, DYNAMOTORS, FOR BRUSH WEAR, SPRING TENSION, ARCING, AND FITTING OF COMMUTATOR.~~	
13	~~INSPECT STORAGE BATTERIES FOR DIRT, LOOSE TERMINALS, ELECTROLYTE LEVEL AND SPECIFIC GRAVITY, AND DAMAGED CASES.~~		31	CLEAN AND TIGHTEN CONNECTIONS AND MOUNTINGS FOR TRANSFORMERS, ~~CHOKES, POTENTIOMETERS,~~ AND RHEOSTATS. PAR. 18d	✓
14	CLEAN ~~AIR FILTERS, BRASS NAME PLATES, DIAL AND~~ METER WINDOWS, ~~DRIVE ASSEMBLIES.~~ PAR. 18d	✓	32	~~INSPECT TRANSFORMERS, CHOKES, POTENTIOMETERS, AND RHEOSTATS FOR OVERHEATING AND OIL LEAKAGE.~~	
15	INSPECT METERS FOR DAMAGED GLASS AND CASES. PAR. 18c	✓	33	~~BEFORE SHIPPING OR STORING — REMOVE BATTERIES.~~	
16	~~INSPECT SHELTERS AND COVERS FOR ADEQUACY OF WEATHERPROOFING.~~		34	~~INSPECT CATHODE RAY TUBES FOR BURNT SCREEN SPOTS.~~	
17	~~CHECK ANTENNA GUY WIRES FOR LOOSENESS AND PROPER TENSION.~~		35	~~INSPECT BATTERIES FOR SHORTS AND DEAD CELLS.~~	
18	~~CHECK TERMINAL BOX COVERS FOR CRACKS, LEAKS, DAMAGED GASKETS, DIRT AND GREASE.~~		36	INSPECT FOR ~~LEAKING WATERPROOF GASKETS,~~ WORN OR LOOSE PARTS. PAR. 18c	✓
			37	MOISTURE AND FUNGIPROOF. PAR. 18c	✓
38	IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION.				

DA FORM 1 MAY 51 11-239 REPLACES DA AGO FORM 419, 1 DEC 50, WHICH IS OBSOLETE. 48-18-9483-1

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Figure 5. DA Form 11–239.

Warning: Prolonged breathing of Cleaning Compound fumes is dangerous. Make sure that adequate ventilation is provided. Cleaning Compound is flammable; do not use near a flame.

e. Replace the chassis in its case and secure it.

f. Operate the output meter (par. 10) and note the indications (par. 10*a*(5) and (6)).

g. If the output meter fails to operate, check to see that there is an output from the equipment being measured by using Multimeter TS–297/U. If the TS–297/U indicates an output voltage, turn the output meter in for repairs.

Note. Lubrication of the output meter is not required.

19. Troubleshooting by Using Equipment Performance Checklist

a. General. The equipment performance checklist will help the operator or unit mechanic to locate trouble in the output meter. The list gives the items to be checked, the condition under which the item is checked, the normal indications of correct operation, and the corrective measures which the operator can apply.

b. Equipment Performance Checklist.

	Item No.	Item	Action or condition	Normal indication	Corrective measures
PREPARATORY	1	Meter	Observe meter pointer	Pointer should rest at zero	Turn zero adjustment screw clockwise, TS–585A/U only (fig. 1), until the pointer rests at zero. Turn in TS–585B/U or TS–585C/U to field maintenance for recalibration.
	2	Binding posts	Connect with test leads to equipment under test (G post to grounded side, (par. 9)).		
	3	Meter multiplier knob	Rotate to 100 position.		
	4	Impedance control knob.	Turn impedance control knob to known impedance. If impedance is unknown refer to paragraph 10*b*.		
START	5	Power switch of equipment under test.	Turn on	Meter may or may not indicate.	

EQUIPMENT	6	Meter multiplier knob.	Rotate meter multiplier knob counterclockwise until a center indication is obtained.	The meter indication varies 10 db between each step.	If the meter indication does not vary 10 db between steps, turn in output meter for repairs.
	7	Impedance control knob.	For an unknown output impedance, adjust impedance control knob for maximum indication (par. 10*b*).	A maximum meter indication is obtained in one position only.	Turn in output meter for repairs.
STOP	8	Power switch of equipment under test.	Turn off	Meter needle returns to zero.	

CHAPTER 5
THEORY

20. General Theory of Operation

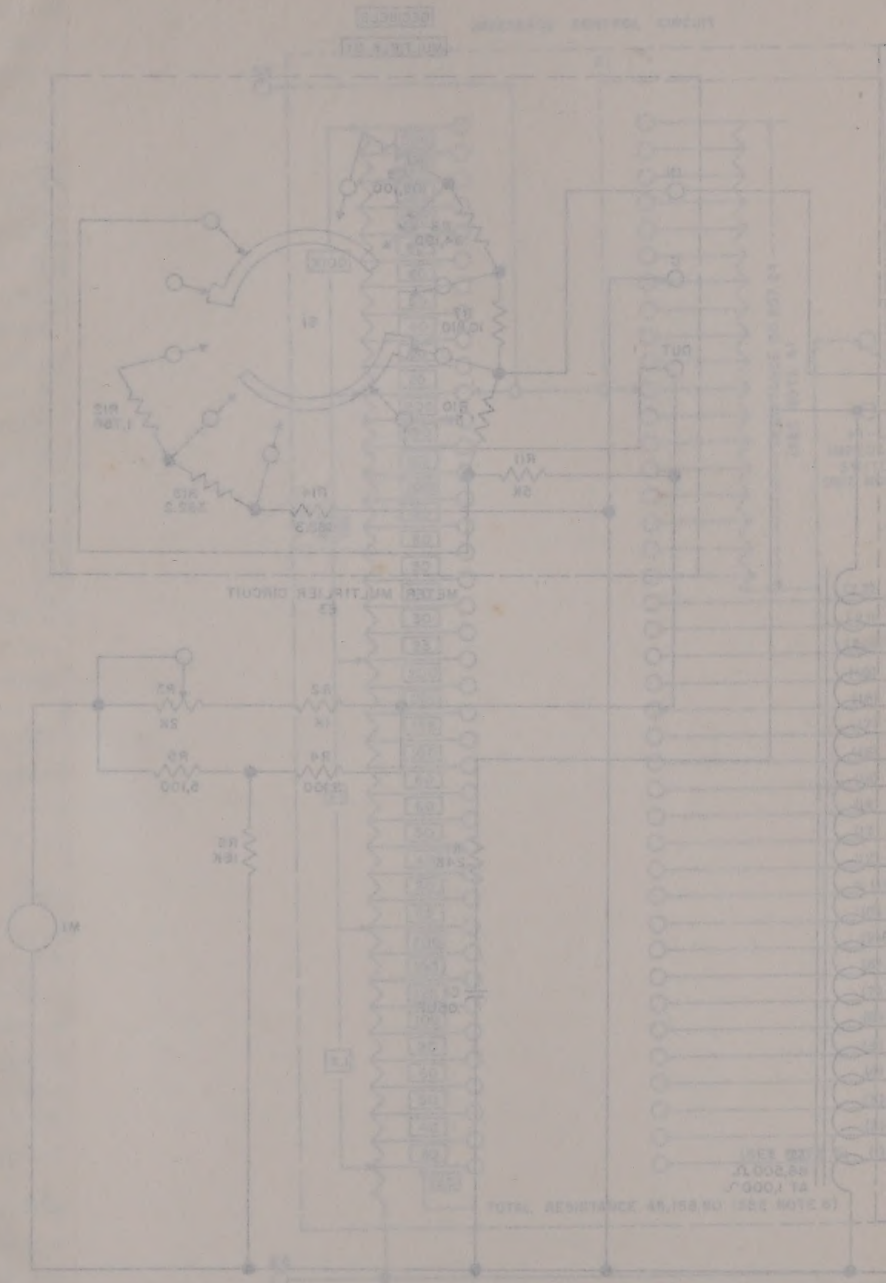
The TS–585(*)/U is an impedance and power measuring device. The signal voltage, from the equipment under test, applied to the output meter appears across the impedance-matching network. This ac voltage is then applied through the meter multiplier circuit to the rectifier-type audio level meter where it is measured in terms of power (milliwatts or decibels). For a more detailed theory of operation, refer to paragraphs 21 through 25.

21. Impedance Control Circuit

a. General. The impedance control circuit of the TS–585A/U or the TS–585B/U (fig. 6) consists of impedance-matching networks Z1 and Z2 (Z2 represents an autotransformer). The impedance control circuit of the TS–585C/U (fig. 7) is made up of impedance-matching network Z1 and autotransformer T1.

b. Impedance-matching Network Z1. Impedance-matching network Z1 contains two separate wire-wound resistors. Rotation of the impedance control knob causes the wiper arms to contact the required amount of resistance through contact studs. The larger of the two resistors is connected *across* the output meter binding posts; the smaller resistor is connected in *series* with the high side of the meter input circuit. The larger resistor shunts most of the input power to ground; the smaller resistor reduces the available voltage before it is fed to the meter multiplier circuit. (The voltage drop decreases with a decrease in impedance.) The impedance-matching network matches the impedance of the output circuit of the equipment whose power is being measured. The smaller resistor is in the impedance-matching network only when the impedance control knob is positioned above 300 ohms on the TS–585A/U and TS–585B/U or above 1,000 ohms on the TS–585C/U

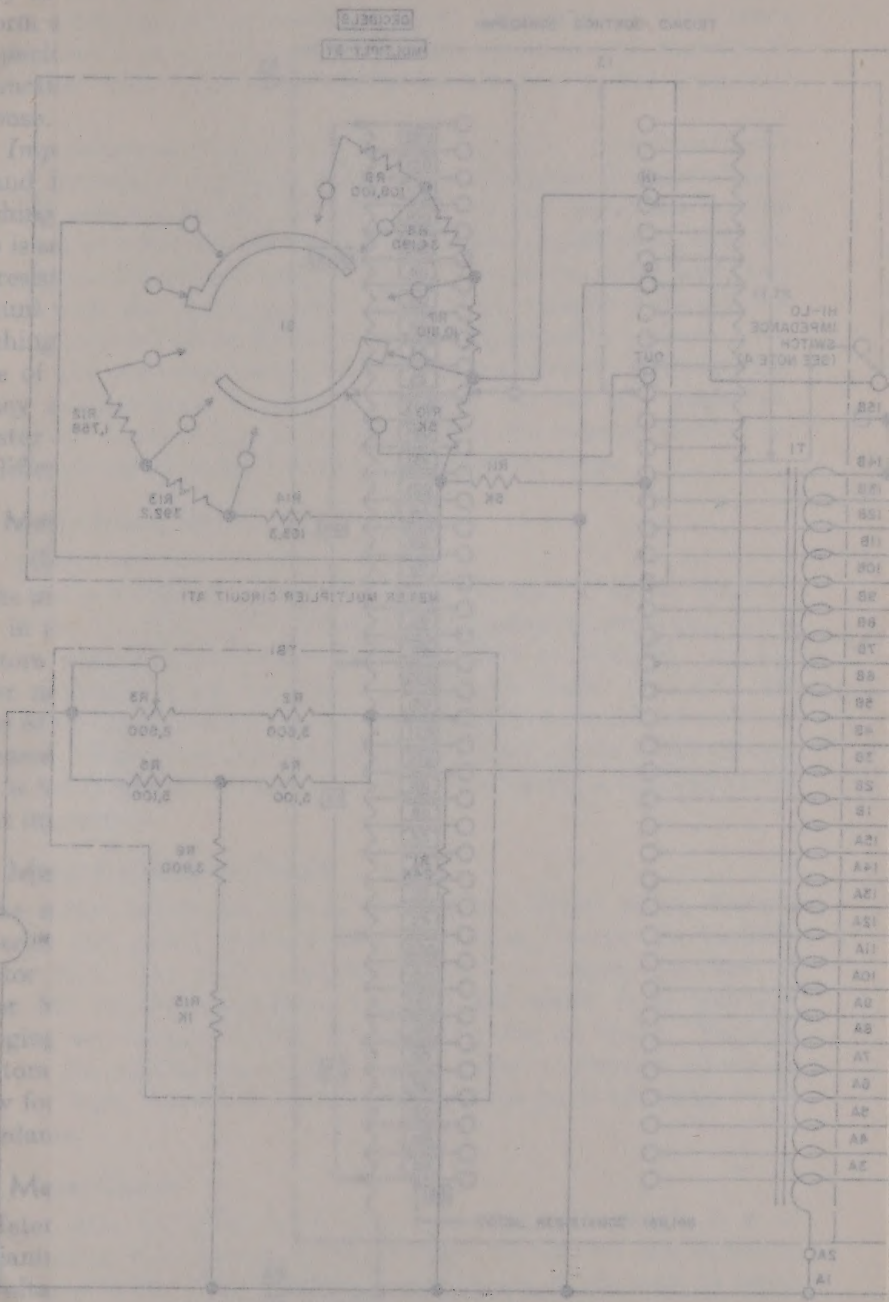
c. Impedance-matching Network Z2 (TS–585A/U or TS–585B/U). Impedance-matching network Z2 is a step-up autotransformer (fig 6). With the impedance control knob positioned at 300 ohms or less, the hi-lo impedance switch (actually a connection between the innermost ring and the split ring on top of the impedance control) places the autotransformer in shunt with the active portion of the larger resistor of imdepance-matching network Z1 (*b* above). With the imdepance control knob in a low-imdepance position, the value of the shunt resistor is lower, and the number of autotransformer turns between the wiper contact and ground is less. The autotransformer steps up the voltage

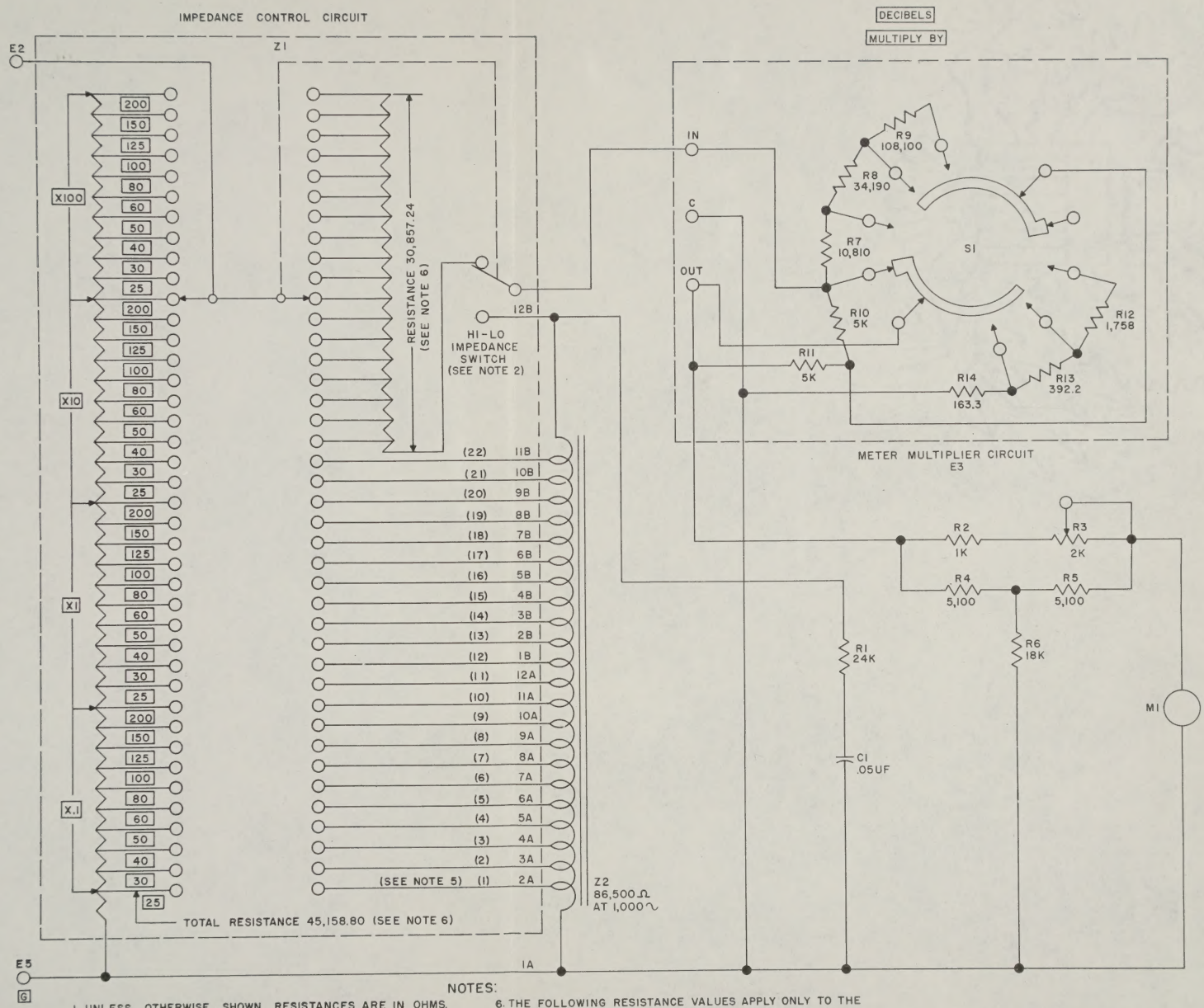




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) No. 1





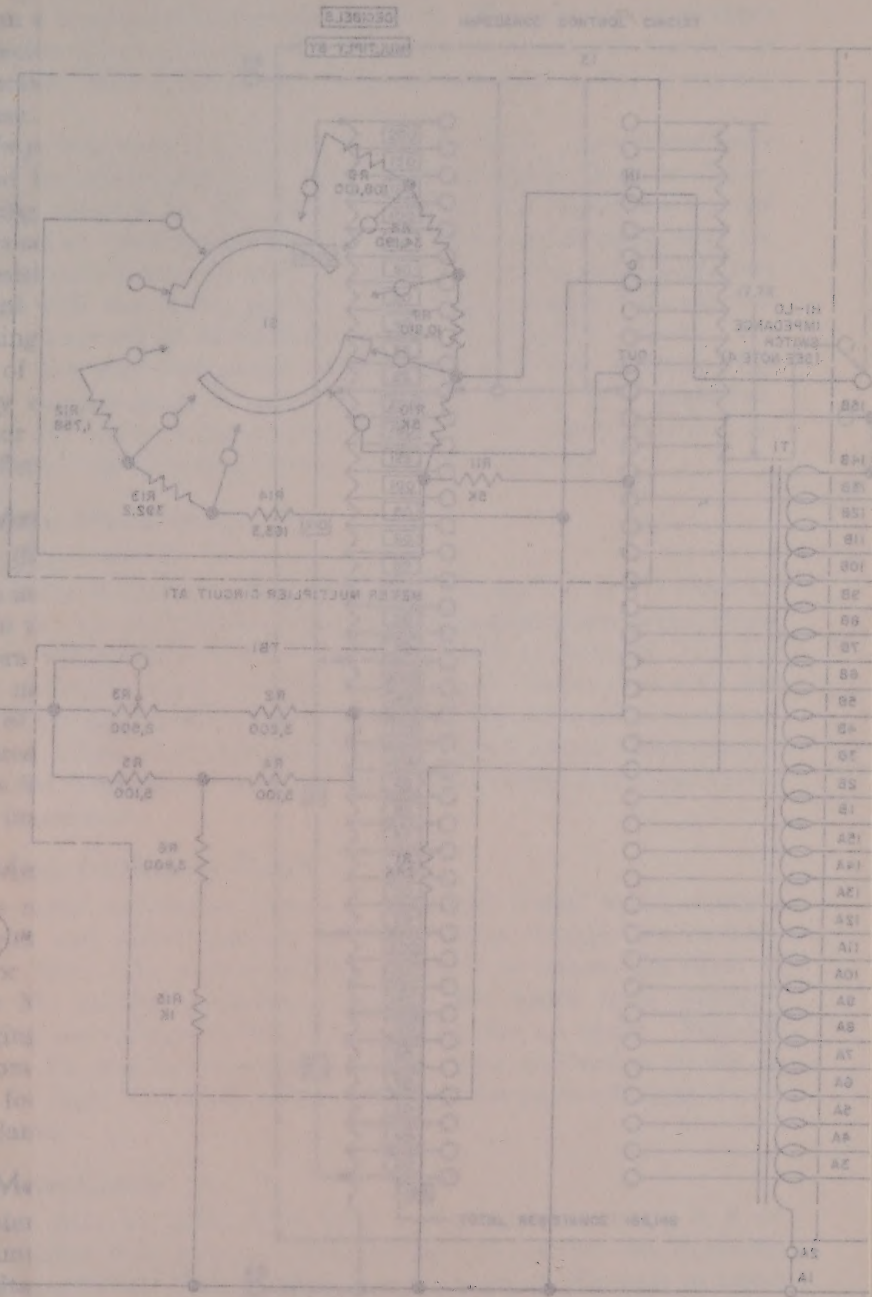
NOTES:

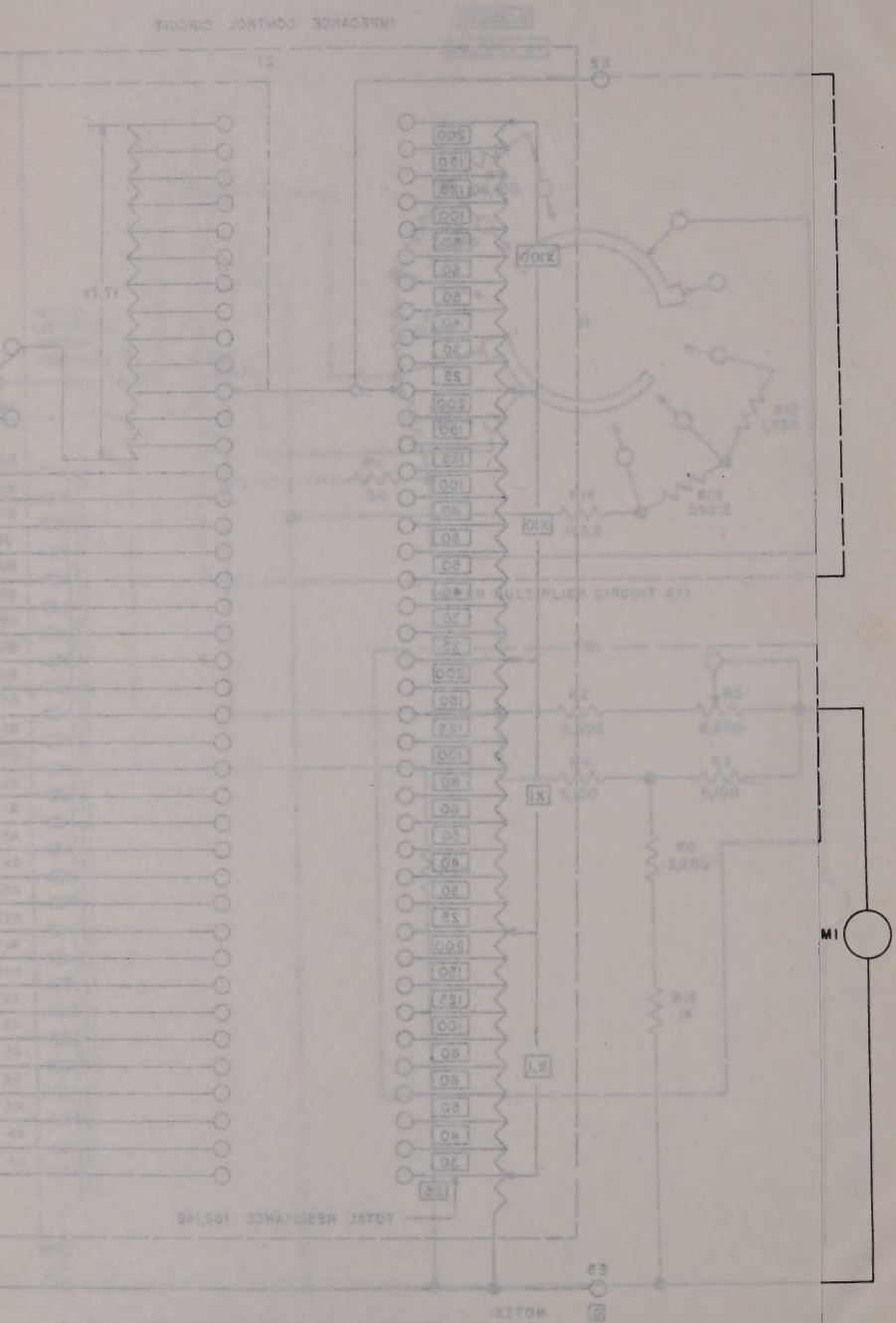
1. UNLESS OTHERWISE SHOWN, RESISTANCES ARE IN OHMS.
2. CONNECTION BETWEEN INNERMOST RING AND SEGMENTED RING.
3. ▭ INDICATES EQUIPMENT MARKING.
4. SWITCH S1 VIEWED FROM KNOB END.
5. TERMINAL NUMBERS IN PARENTHESES APPLY TO THE TS-585A/U ONLY.
6. THE FOLLOWING RESISTANCE VALUES APPLY ONLY TO THE TS-585B/U PROCURED ON ORDER NO. 21593-P-50.

TOTAL RESISTANCE	43,952 OHMS
RESISTANCE	31,700 OHMS
R2	510 OHMS
R3	2,500 OHMS
R6	30,000 OHMS

TM5017-10

Figure 6. Output Meters TS-585B/U, schematic diagram.





017-11

9) No. 2

and furnishes the required voltage input to the meter multiplier circuit at any of the impedance values selected. Resistor R1 and capacitor C1 form a frequency-compensating circuit. The capacitive reactance of capacitor C1 decreases as the frequency increases and thereby, in conjunction with resistor R1, tends to maintain a flat frequency response.

d. Impedance-matching Circuit T1 (TS–585C/U). Autotransformer T1 and impedance-matching network Z1 comprise the impedance-matching network for the TS–585C/U when the impedance control knob is set at 1,000 ohms or less (fig 7). (Above 1,000 ohms, only the two resistors (*b* above) are used.) The function of the autotransformer in shunt with the active portion of the larger resistor of impedance-matching network Z1 is the same as that explained in *c* above. Because of the improved design of the autotransformer, however, frequency compensation is achieved without the use of a capacitor. Resistor R1 tends to flatten the response of the autotransformer for the different signal voltage frequencies within its range.

22. Meter Multiplier Circuit

(figs. 6 and 7)

The meter multiplier circuit (E3 in the TS–585A/U or TS–585B/U; AT1 in the TS–585C/U) is a T-pad which consists of series and shunt resistors with predetermined values that can be selected. As the meter multiplier knob (switch S1) is rotated from .1 to 100, the value of the series resistors is *increased*, and that of the shunt resistors *decreased*. Thus, the meter multiplier provides a control of the voltage that is fed to the meter (par. 24) while maintaining a constant meter input impedance.

23. Meter Calibration Circuit

The meter calibration circuit is a bridged T-pad which consists of series and shunt resistors of fixed values (except for variable resistor R3). The purpose of the circuit is to reduce the effect of meter M1 rectifier impedance changes that result from normally changing ac voltages which occur during the ac cycle. Variable resistors R3 enables adjustment of the meter calibration circuit to allow for slight variations in meter M1 rectifier parts affecting circuit impedance.

24. Meter Circuit

Meter M1, an audio level type indicating instrument, is a dc milliammeter that uses a built-in rectifier to convert the incoming ac voltages to dc. The dc voltage is indicated on the scale in terms of decibels or milliwatts. Because of slight variations in meter rectifier characteristics, variable resistor R3 provides for adjustment of the meter calibration circuit immediately preceding the meter (par 23).

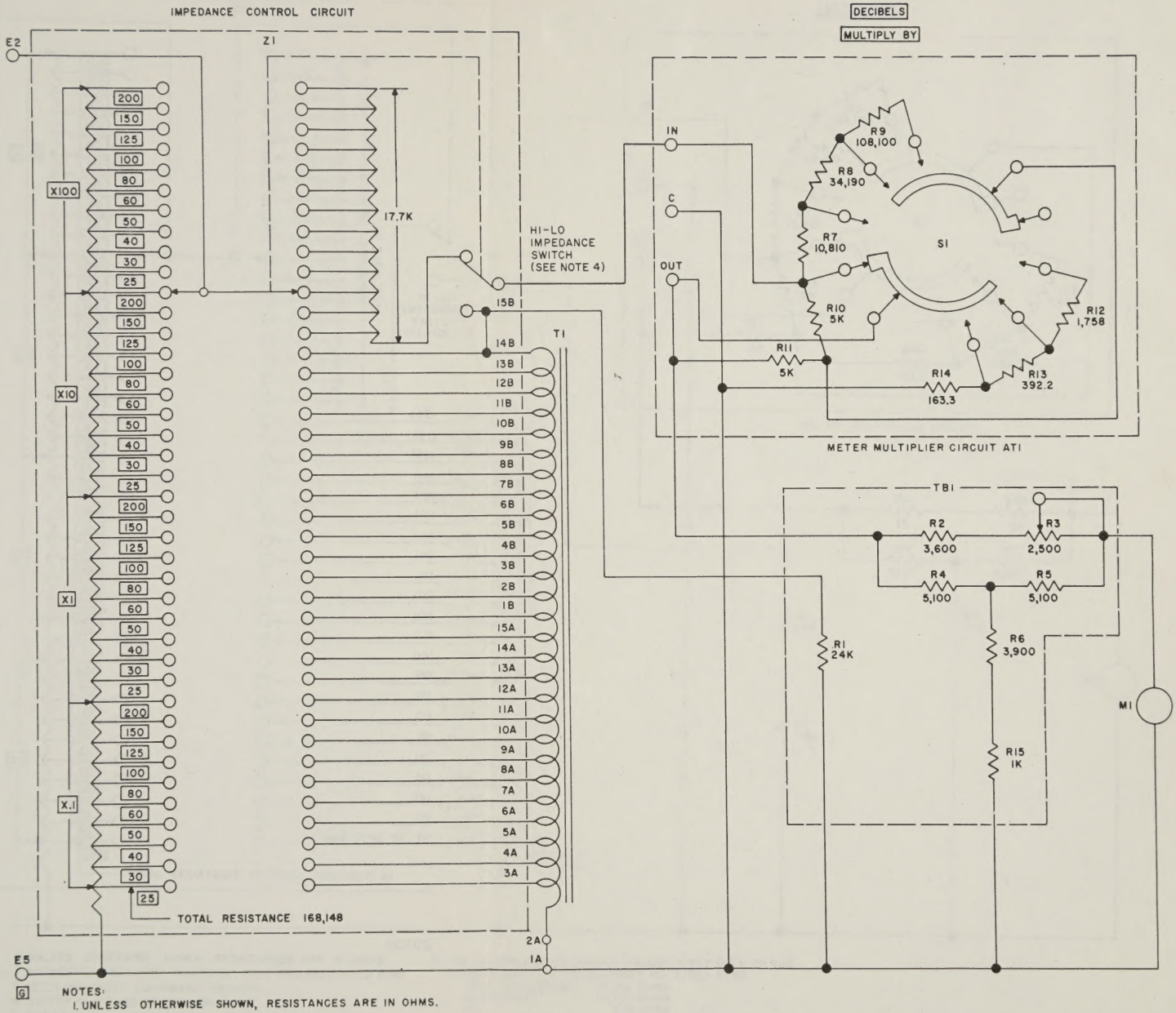


Figure 7. Output Meter TS-585C/U, schematic diagram.

and furnishes the required voltage input to the meter multiplier circuit at any of the impedance values selected. Resistor R1 and capacitor C1 form a frequency-compensating circuit. The capacitive reactance of capacitor C1 decreases as the frequency increases and thereby, in conjunction with resistor R1, tends to maintain a flat frequency response.

d. Impedance-matching Circuit T1 (TS–585C/U). Autotransformer T1 and impedance-matching network Z1 comprise the impedance-matching network for the TS–585C/U when the impedance control knob is set at 1,000 ohms or less (fig 7). (Above 1,000 ohms, only the two resistors (*b* above) are used.) The function of the autotransformer in shunt with the active portion of the larger resistor of impedance-matching network Z1 is the same as that explained in *c* above. Because of the improved design of the autotransformer, however, frequency compensation is achieved without the use of a capacitor. Resistor R1 tends to flatten the response of the autotransformer for the different signal voltage frequencies within its range.

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Meter M1, an audio level type indicating instrument, is a dc milliammeter that uses a built-in rectifier to convert the incoming ac voltages to dc. The dc voltage is indicated on the scale in terms of decibels or milliwatts. Because of slight variations in meter rectifier characteristics, variable resistor R3 provides for adjustment of the meter calibration circuit immediately preceding the meter (par 23).

CHAPTER 6

FIELD MAINTENANCE

Note. This chapter contains information for field maintenance. The type of repair that can be performed by units having field maintenance responsibility is limited only by the tools and test equipment available and by the skill of the repairman.

Section I. TROUBLESHOOTING

25. General

When trouble occurs, look for simple causes such as oxidation of contact surfaces on top of impedance control Z1 and loosened set screws. Avoid major disassembly of parts, and elaborate test equipment setups until failure, not due to simple malfunction is established. Use the continuity and testing information in paragraphs 27 through 30. Consult the symptoms listed in the troubleshooting chart (par. 31) for similarity with those observed by the operator; apply the information in the *Probable trouble* column in conjunction with the schematic diagrams (figs. 6 and 7) and the chassis views of the output meter (figs. 8, 9, and 10). The wiring diagrams (figs. 13, 14, and 15) are useful in tracing the wiring between autotransformer T1 and Z2 to impedance control Z1 rings and contacts for purposes of making the continuity tests.

26. Tools and Test Equipment Required for Troubleshooting

The following tool and test equipments are required for troubleshooting the output meter:

Tools and test equipment	Technical manual
Tool Equipment TE–113	
Tool Kit TK–21/G	
Meter Test Equipment AN/GSM–1 including:	
Decade Resistor ZM–16/U	
Decade Resistor TS–679/U	
Multimeter TS–352/U	
Meter Test Set TS–682/GSM–1	TM 11–2535
Audio Oscillator TS–382A/U	TM 11–2684
Voltmeter Meter ME–30A/U (vacuum tube voltmeter)	

27. Continuity Testing of Impedance Control Z1

(figs. 6 and 7)

a. Remove the output meter chassis from the case.

b. Rotate the impedance control knob to the X100 x 200 position (20,000 ohms).

c. Gently lift the wiper arm that makes contact with the innermost ring and the split ring (figs. 8, 9, and 10) and insert a piece of paper or some other insulating material between them.

d. Use Multimeter TS–352/U as an ohmmeter and connect one of its test leads to the G binding post of the output meter and the other test lead to the following points in succession:

Connection point	Ohmmeter indications (ohms)
Split ring (TS–585A/U or TS–585B/U).	
Segment 1	0
Segment 2	75,000 ± 1 percent
Split ring (TS–585C/U).	
Segment 1	0
Segment 2	185,000 ± 1 percent
Outer ring (TS–585A/U) or center ring (TS–585B/U)	45,000 ± 1 percent
Center ring	168,000 ± 1 percent

28. Continuity Testing of Meter Multiplier Circuit

The following information covers the continuity testing of the T-pad (E3 on the TS–585A/U or TS–585B/U and AT1 on the TS–585C/U).

a. Repeat the procedures in paragraph 27*a* through *c*.

b. Connect one test lead of the ohmmeter to the G binding post of the output meter and the other test lead to the innermost ring. Vary the positions of the meter multiplier knob. The ohmmeter indication should be 5,000 ohms, ±50 ohms, for all positions.

29. Checking Impedance-Matching Network Z2

a. Set the impedance control knob to the X.1 x 25 position (2.5 ohms).

b. Carefully lift all the wiper arms on impedance control Z1 and insulate them from their respective contacts and rings; use dry paper or other insulating material.

c. Connect the output of Audio Oscillator TS–382A/U to the output meter binding posts as follows:

(1) Connect the grounded oscillator lead to the G binding post of the output meter.

(2) Connect the other oscillator lead to the contact in the inside row from which the wiper arm is now insulated (*b* above).

d. Connect Voltmeter Meter ME–30A/U across the oscillator output. Turn on the ME–30A/U.

e. Turn on and adjust the oscillator frequency to 10 kc. Adjust the oscillator output until the ME–30A/U reads 1 volt.

f. Remove the ME–30A/U lead that is connected to the ungrounded side of the oscillator output and connect this lead to the segment of the split ring from which the wiper arm is now insulated (*b* above). Normal readings on the ME–30A/U are as follows:

Output Meter	Reading (volts)
TS–585A/U	13. 1±0. 65
TS–585B/U	12. 5± . 63
TS–585C/U*	24 ±1. 2

*The higher voltage induced in the windings of the TS–585C/U transformer results from the higher turns ratio.

g. In the TS–585A/U and TS–585B/U, if the ME–30A/U indication is not within the tolerance indicated in the chart (*f* above), disconnect capacitor C1 and recheck the voltage. If the ME–30A/U indication is normal after the capacitor is disconnected, replace the capacitor. If the ME–30A/U indication remains abnormal after the capacitor is disconnected, replace the autotransformer.

h. In the TS–585C/U, if the ME–30A/U indication is abnormal, replace the autotransformer.

30. Checking Meter M1

(figs. 8, 9, 10)

a. Remove the output meter chassis from its case.

b. Disconnect both leads from the rear of meter M1.

c. Connect one side of Audio Oscillator TS–382A/U output to one of the binding posts of Decade Resistor ZM–16/U (part of Meter Test Equipment AN/GSM–1). Connect the other binding post of the ZM–16/U to one of the meter terminals.

d. Connect the other side of the TS–382A/U output to the other meter terminal.

e. Connect Voltmeter Meter ME–30A/U across the output of the TS–382A/U.

f. Adjust the ZM–16/U controls for 5,000 ohms and turn on the TS–382A/U and the ME–30A/U.

g. Set the TS–382A/U frequency to 10 kc, and adjust the output until the ME–30A/U indicates 1.094 volts.

h. Meter M1 should indicate 11 volts ±.55 volts. If the meter indicates otherwise, replace it.

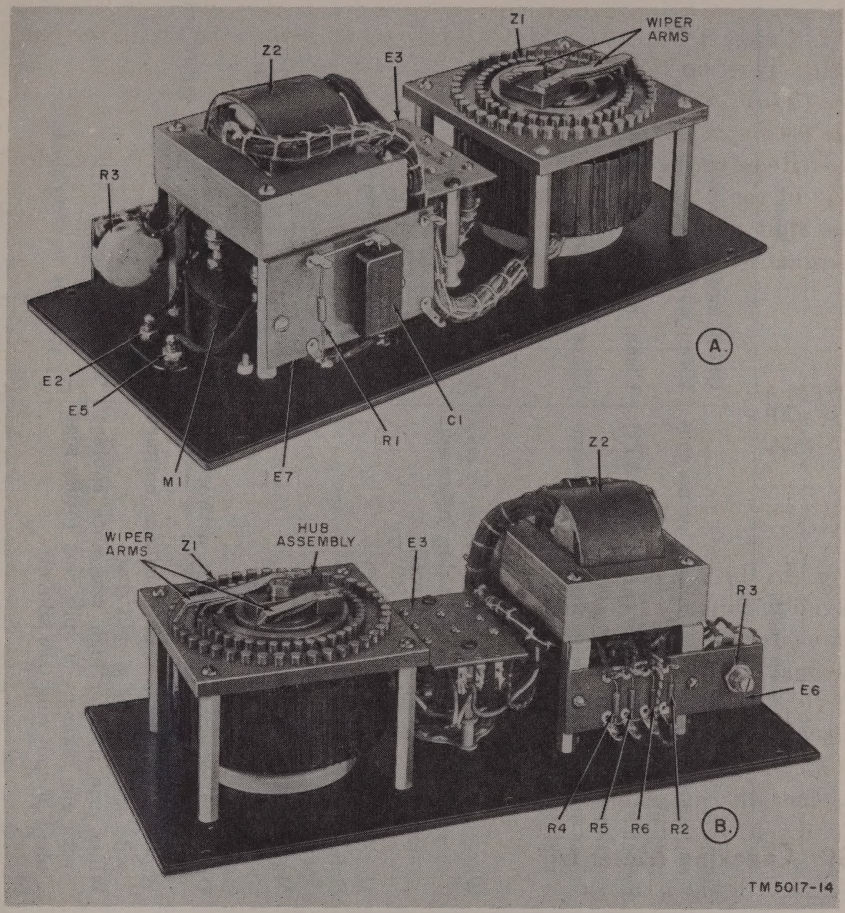


Figure 8. Output meter TS–585A/U, bottom view of chassis.

31. Troubleshooting Chart

Symptom	Probable trouble	Remedy
No meter indication at all positions of impedance control knob (all models).	Meter M1 defective	Check meter (par. 30).
	Wiper arms making poor contact or no contact on rings.	Clean and adjust.
	Switch S1 (meter multiplier circuit E3 or AT1) making poor contact or no contact.	Clean, adjust, or replace switch.
Meter indication only when impedance control knob is at 300 and below (TS–585A/U or TS–585B/U) (at 1,000 and below on the TS–585C/U).	Wiper arms making poor contact or no contact on one segment of split ring.	Clean segment.
Meter indication only when impedance control knob is at 400 and above (TS–585A/U or TS–585B/U) (at 1,250 and above on the TS–585C/U).	Wiper arms making poor contact or no contact on one segment of split ring (other segment of split ring (see above)).	Clean segment.
Meter indication too low at all positions of impedance control knob (all models).	Meter calibration required	Calibrate meter (par. 33).
	Defective meter rectifier	Replace meter.
	Open resistor R2 or R3	Replace resistors.
	Meter movement defective	Replace meter.
	Change in resistor values	Check resistor values (par. 27).
	Capacitor C1 shorted or leaky	Replace capacitor.
Meter indication too low only at 300 and lower positions on impedance control knob (TS–585A/U and TS–585B/U).	Defective impedance-matching network Z2 (autotransformer).	Replace autotransformer.
	Wiper arm making high resistance contact with one segment of split ring.	Clean segment.
Meter indication too low only at 400 and higher positions on impedance control knob (TS–585A/U and TS–585B/U).	Wiper arm making high resistance contact with one segment of split ring (other segment of split ring (see above)).	Clean segment.

Meter indication too low at 1,000 and lower positions of impedance control knob (TS–585C/U).	High resistance wiper arm contact on one segment of split ring.	Clean segment.
	Defective autotransformer T1	Replace autotransformer.
Meter indication too low at 1,250 and higher positions of impedance control knob (TS–585C/U).	High resistance wiper arm contact on one segment of split ring (other segment (see above)).	Clean segment.
Meter indication too high at all positions of impedance control knob (all models).	Meter calibration required	Calibrate meter (par. 33).
	Meter multiplier circuit values off tolerance; switch S1 contacts poor.	Check resistor values. Clean contacts.
	Open resistors R12, R13, or R14	Replace resistors.
	Open resistors R4, R5, or R6	Replace resistors.
	Meter defective	Check meter (par. 30).

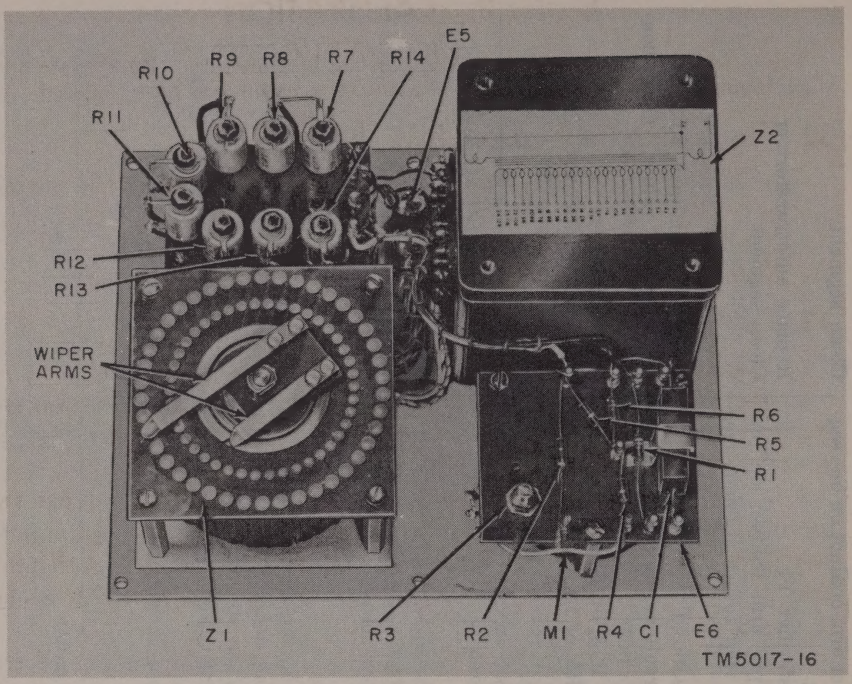


Figure 9. Output meter TS–585B/U, bottom view of chassis.

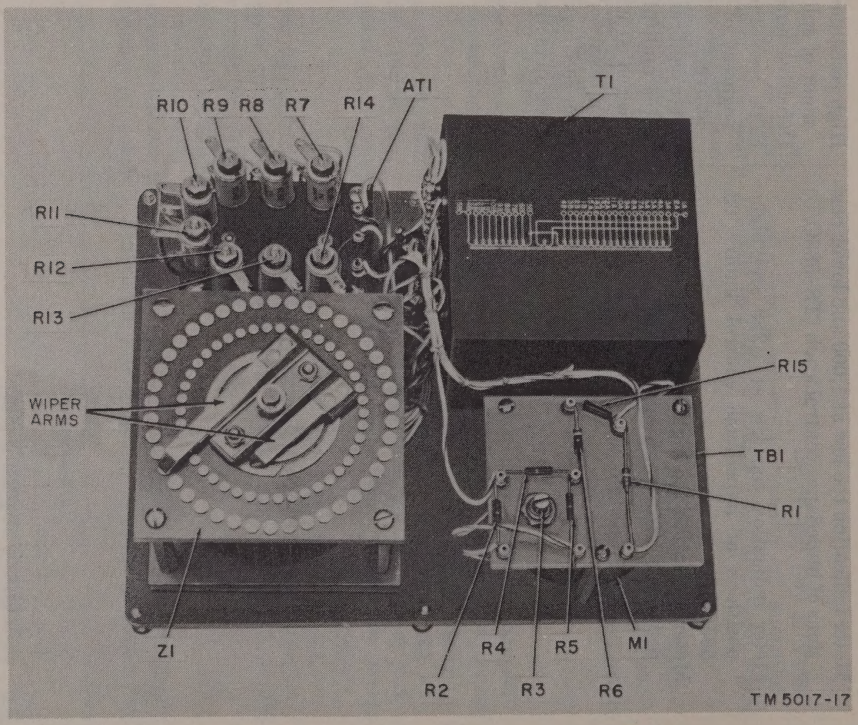


Figure 10. Output meter TS–585C/U, bottom view of chassis.

Section II. CALIBRATION

Note. The output meter is calibrated during manufacture. Recalibrate only when required or when a resistor in the calibration circuit has been replaced.

32. Test Equipment Required for Calibration

The following test equipment is required for calibrating the output meter:

Audio Oscillator TS–382A/U (TM 11–2684)
Voltmeter Meter ME–30A/U

33. Calibration Procedure

Calibrate meter M1 as follows:

a. Remove the output meter chassis from its case and position the chassis so that meter M1 faces the operator and resistor R3 (figs. 8, 9, and 10) faces away from the operator.

b. Connect the output of Audio Oscillator TS–382A/U across the input of the output meter. Rotate the impedance control knob to the X10 100 position (1,000 ohms). Rotate the meter multiplier knob to 10. Adjust the TS–382A/U for an output of 1,000 cycles per second.

c. Connect Voltmeter Meter ME–30A/U across the output of the TS–382A/U. Turn on the TS–382A/U and adjust its output until the ME–30A/U indicates 10 volts.

d. Adjust variable resistor R3 until meter M1 indicates *full scale.*

Section III. FINAL TESTING

34. Percent Accuracy and Meter Scale Divisions

Output Meter TS–585A/U is accurate to within ±10 percent at half scale; Output Meter TS–585B/U or TS–585C/U is accurate to within ±5 percent at half scale. (Ten percent is the equivalent of approximately 2½ scale divisions, and 5 percent is the equivalent of approximately 1½ scale divisions on the MILLIWATTS scale.)

35. Test Equipment Required

The following test equipment is required for final testing of Output Meter TS–585(*)/U:

Test equipment	Technical manual
Meter Test Set TS–682/GSM–1	TM 11–2535
Decade Resistor TS–679/U	TM 11–5520
Decade Resistor ZM–16/U	TM 11–5102
Audio Oscillator TS–382A/U	TM 11–2684
Multimeter TS–352/U	TM 11–5527
Voltmeter Meter ME–30A/U	

36. Testing Impedance Control Circuit

a. Connections. Connect Decade Resistor ZM–16/U, Decade Resistor TS–679/U, and the output meter in series and across the output of Audio Oscillator TS–382A/U (fig. 11).

b. Procedure.

(1) Turn on the TS–382A/U and adjust its output frequency to 10 kilocycles. Adjust for maximum output.

(2) Rotate the impedance control knob on the output meter to the X.1 x 25 position (2.5 ohms) and adjust the TS–679/U to 2.5 ohms.

(3) Connect Voltmeter Meter ME–30A/U across the output of the TS–382A/U.

(4) Vary the resistance of the ZM–16/U until the ME–30A/U indicates 10 volts (fig. 11).

(5) Disconnect the ME–30A/U from across the TS–382A/U and connect it in turn across the TS–679/U and the TS–585(*)/U. Read Es and Ex values. The voltage drops across the TS–679/U and the output meter should be the same. Adjust the TS–679/U controls, if necessary, until the voltage drops are the same.

(6) The panel indication of the TS–679/U should agree with the output meter impedance control indication to within ±5 percent.

(7) Check the remainder of the impedances of the impedance control circuit by increasing, successively, the impedance control knob settings and also the settings on the ZM–16/U. Then proceed as indicated in (5) and (6) above.

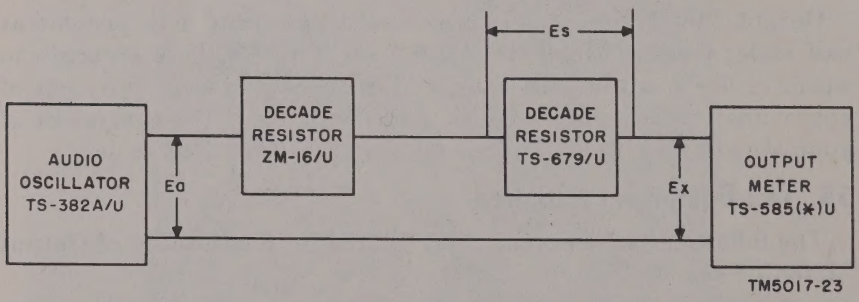


Figure 11. Equipment setup for testing output meter impedance control circuit.

37. Testing Meter Multiplier Circuit

a. Rotate the impedance control knob of the output meter to the X100 x 200 position (20,000 ohms).

b. Set up Meter Test Set TS–682/GSM–1 to deliver the voltages listed in the second column of the chart below to the output meter binding posts.

c. If the meter multiplier circuit is functioning normally, meter M1 indication should be full scale for the meter multiplier knob positions corresponding to the ac voltages.

d. Table of voltage versus meter multiplier knob position follows:

Meter multiplier knob position	Ac voltage applied to output meter
0. 1	10±. 5
1	31. 6±. 8
10	100±5
100	316±8

CHAPTER 7

SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

38. Repacking for Shipment and Limited Storage

a. Repack the equipment as shown in figure 3. The original packing materials may be used.

b. Pack the equipment securely to prevent damage during transit or limited storage. Be sure that the equipment is protected from rain or snow.

39. Methods of Destruction

Some or all of the following demolition procedures will be used to prevent the enemy from using or salvaging the output meter and will be accomplished only upon the order of the commander.

a. Smash. Smash the carrying case, the meter, the binding posts, the knobs and electrical and mechanical parts; use sledges, axes, hammer or other heavy tools.

b. Cut. Cut the cables and wires; use axes, hand axes, and machetes.

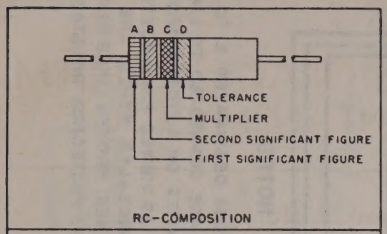
c. Burn. Burn all cables, wires, diagrams, and technical manuals; use gasoline, kerosene, flame throwers, or incendiary grenades.

d. Explode. If explosives are necessary, use firearms, grenades, or TNT.

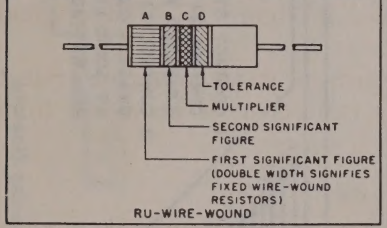
e. Dispose. Bury or scatter the destroyed parts in slit trenches, foxholes, or throw them into streams.

RESISTOR COLOR CODE MARKING
(MIL-STD RESISTORS)

AXIAL-LEAD RESISTORS
(INSULATED)

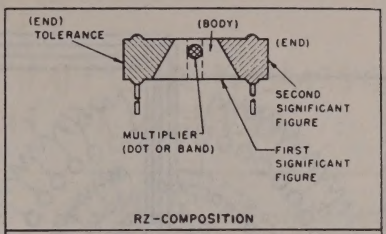


RC-COMPOSITION

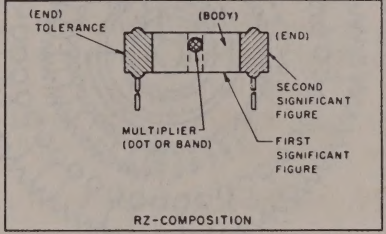


RU-WIRE-WOUND

RADIAL-LEAD RESISTORS
(UNINSULATED)



RZ-COMPOSITION



RZ-COMPOSITION

RESISTOR COLOR CODE

BAND A OR BODY*		BAND B OR END*		BAND C OR DOT OR BAND*		BAND D OR END*	
COLOR	FIRST SIGNIFICANT FIGURE	COLOR	SECOND SIGNIFICANT FIGURE	COLOR	MULTIPLIER	COLOR	RESISTANCE TOLERANCE (PERCENT)
BLACK	0	BLACK	0	BLACK	1	BODY	± 20
BROWN	1	BROWN	1	BROWN	10	SILVER	± 10
RED	2	RED	2	RED	100	GOLD	± 5
ORANGE	3	ORANGE	3	ORANGE	1,000		
YELLOW	4	YELLOW	4	YELLOW	10,000		
GREEN	5	GREEN	5	GREEN	100,000		
BLUE	6	BLUE	6	BLUE	1,000,000		
PURPLE (VIOLET)	7	PURPLE (VIOLET)	7				
GRAY	8	GRAY	8	GOLD	0.1		
WHITE	9	WHITE	9	SILVER	0.01		

* FOR WIRE-WOUND-TYPE RESISTORS, BAND A SHALL BE DOUBLE-WIDTH WHEN BODY COLOR IS THE SAME AS THE DOT (OR BAND) OR END COLOR, THE COLORS ARE DIFFERENTIATED BY SHADE, GLOSS, OR OTHER MEANS.

EXAMPLES (BAND MARKING):
10 OHMS ±20 PERCENT: BROWN BAND A; BLACK BAND B, BLACK BAND C; NO BAND D.
4.7 OHMS ±5 PERCENT. YELLOW BAND A, PURPLE BAND B; GOLD BAND C; GOLD BAND D.

EXAMPLES (BODY MARKING).
10 OHMS ±20 PERCENT. BROWN BODY, BLACK END, BLACK DOT OR BAND, BODY COLOR ON TOLERANCE END.
3,000 OHMS ±10 PERCENT. ORANGE BODY, BLACK END, RED DOT OR BAND, SILVER END

STD-R1

Figure 12. MIL-STD resistor color codes.

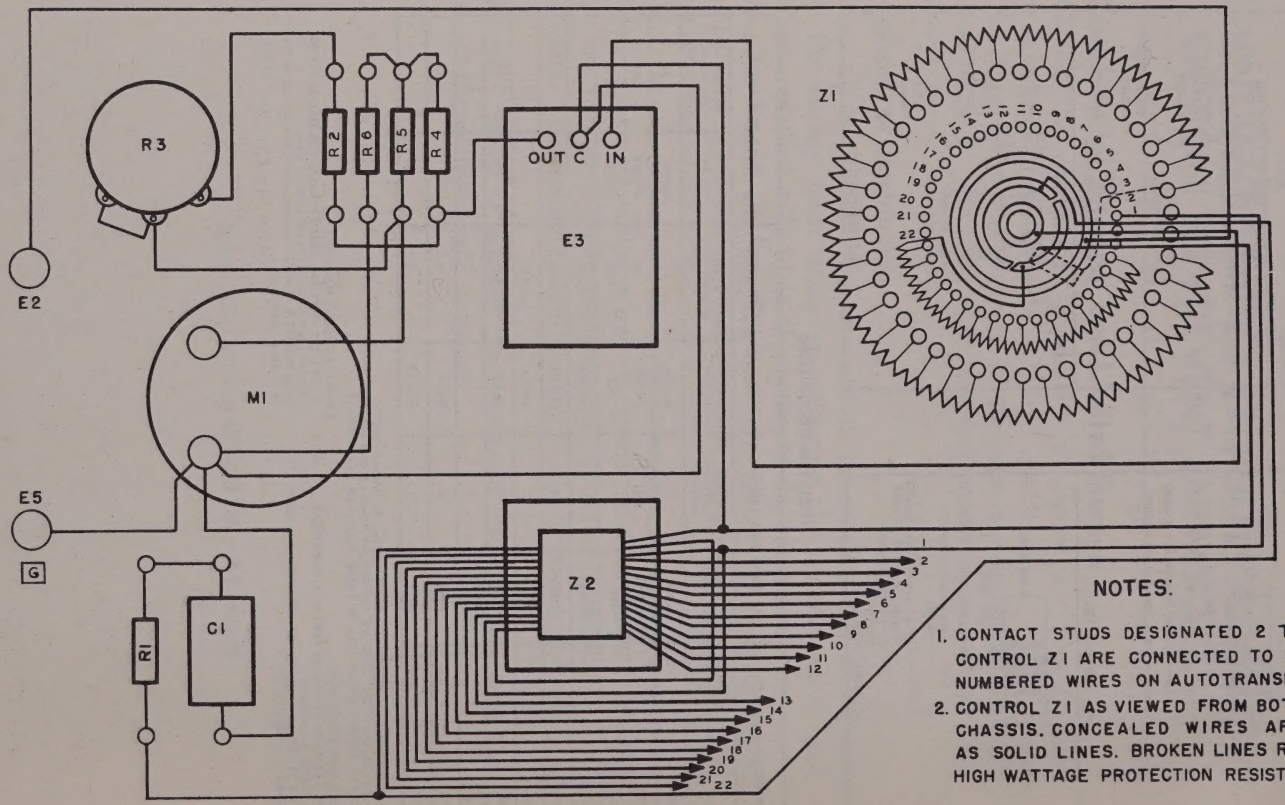
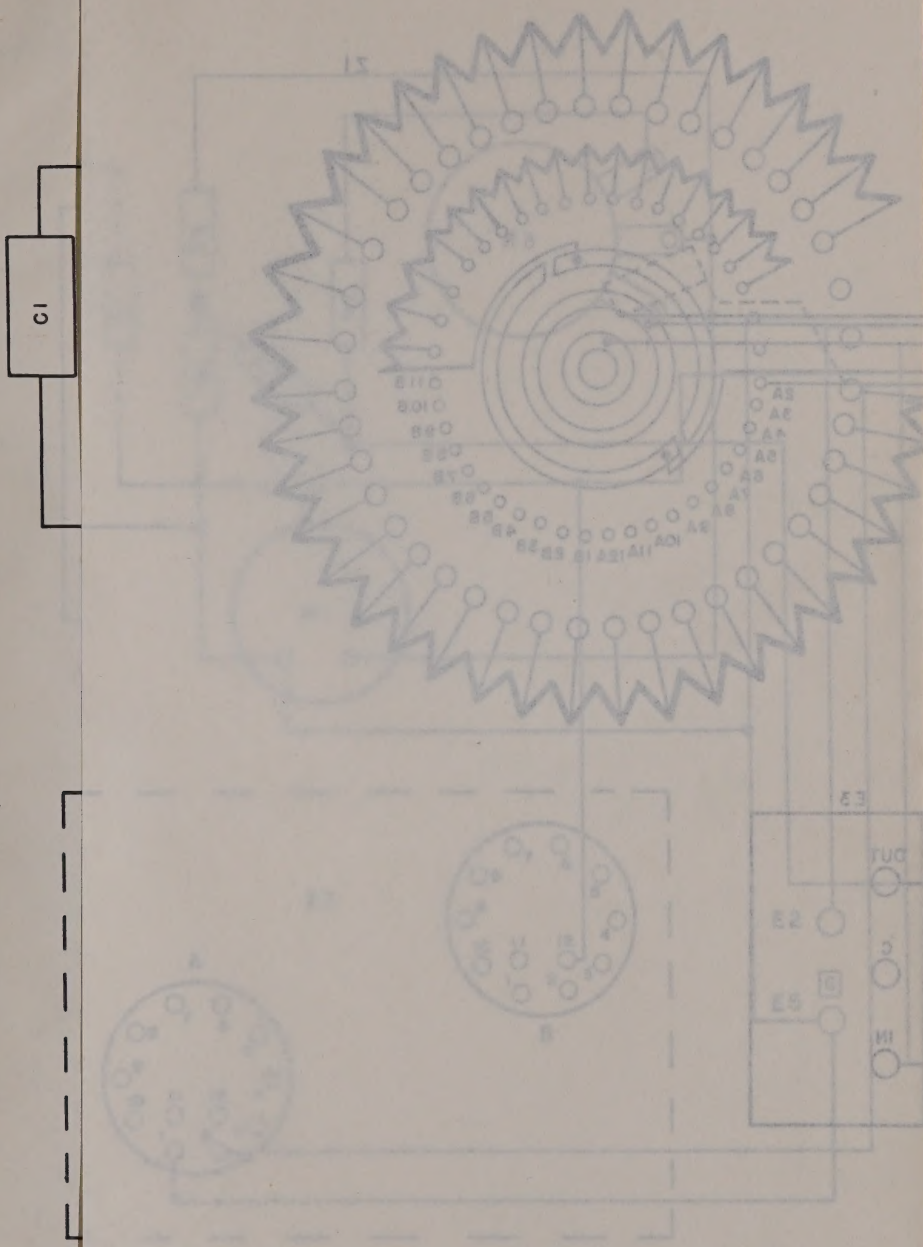


Figure 13. Output meter TS–585A/U, wiring diagram.

*GPO : 1958 O - 440483 (P.O. 3792B)


C1

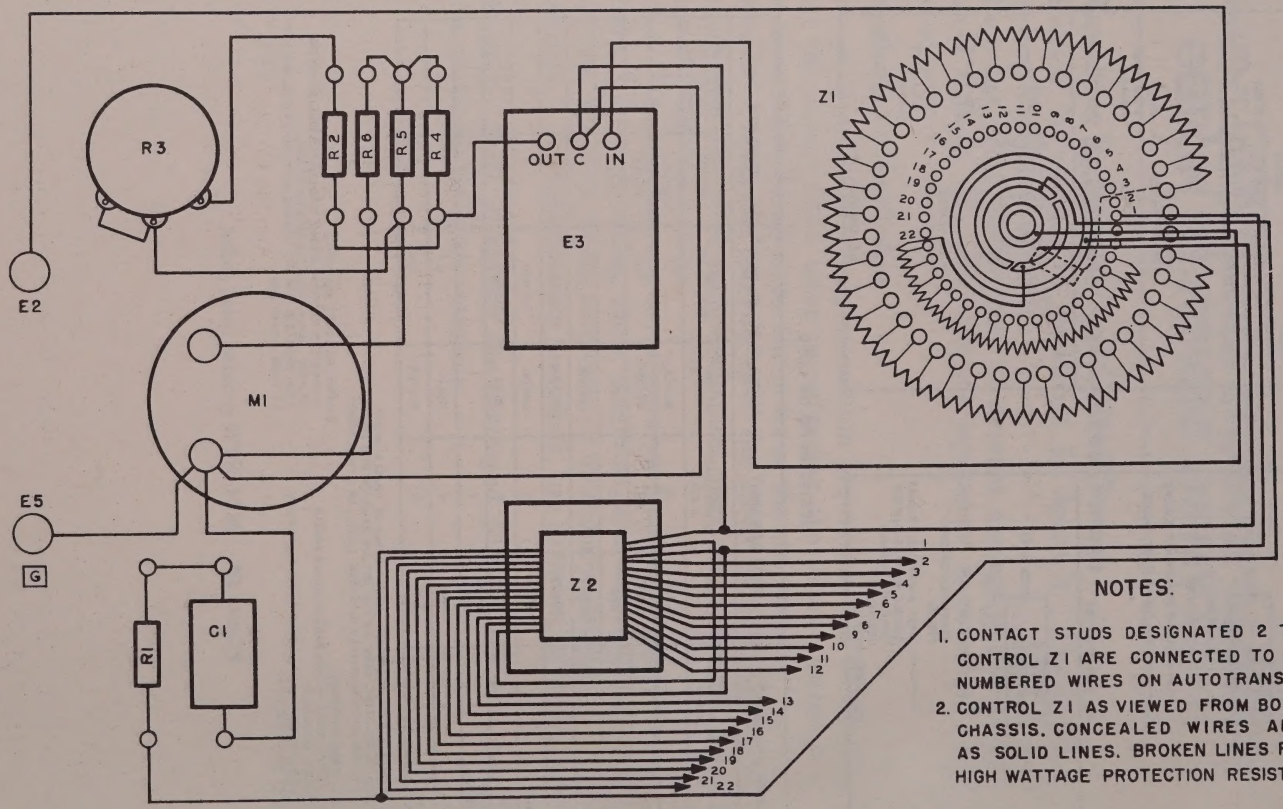
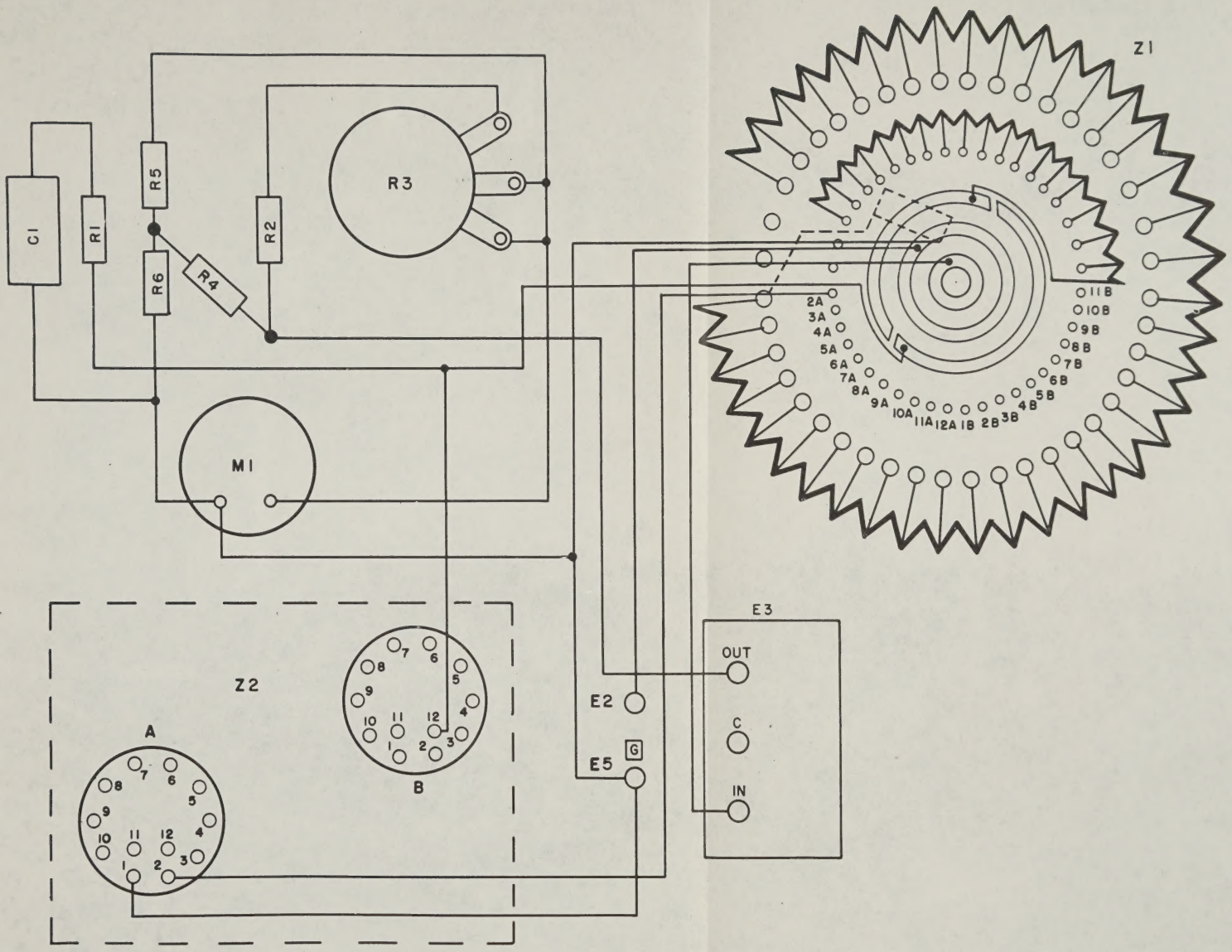


Figure 13. Output meter TS–585A/U, wiring diagram.

☆GPO : 1958 O -440483 (P.O. 3792B)

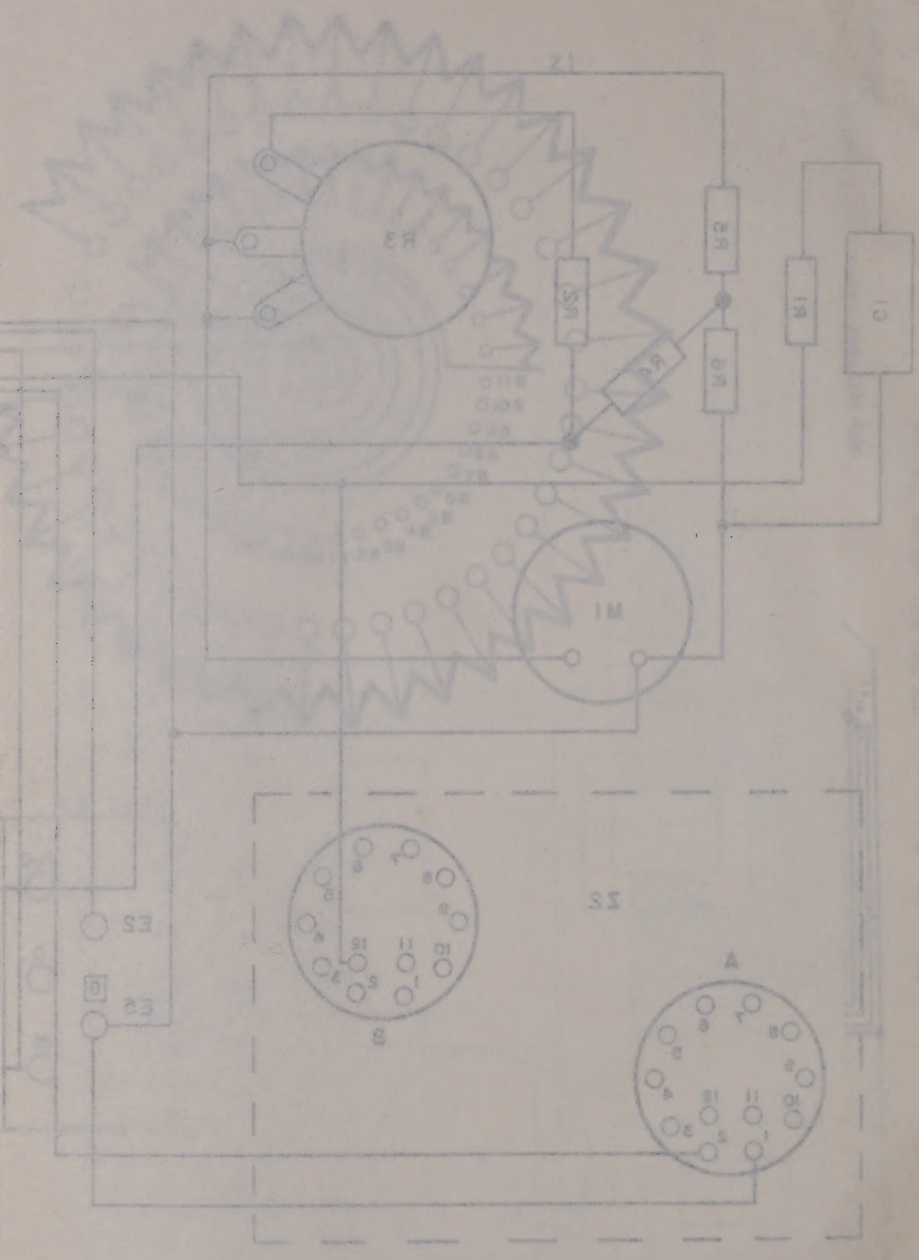


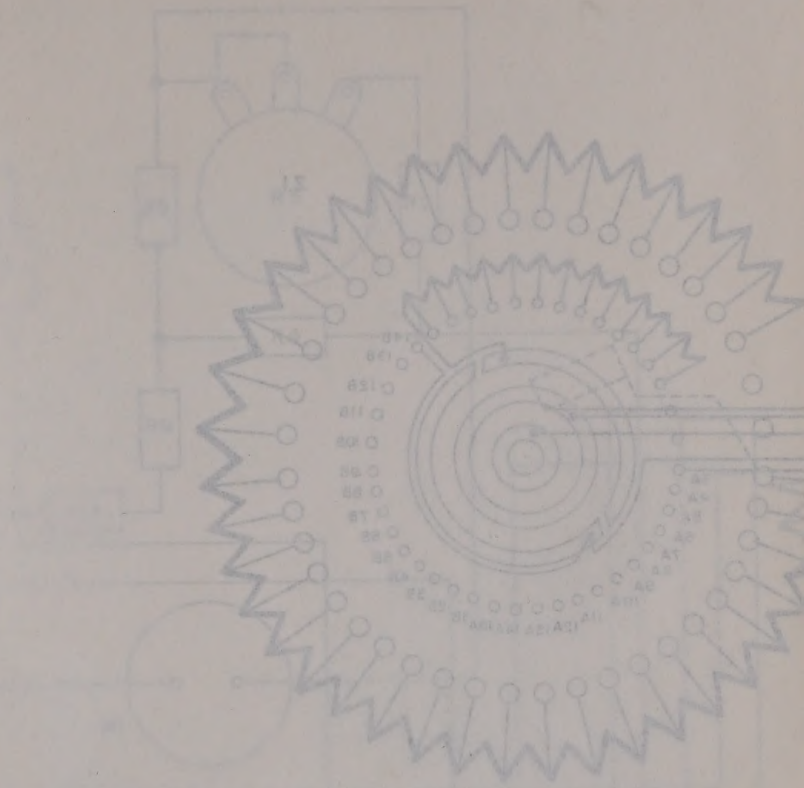
NOTES:

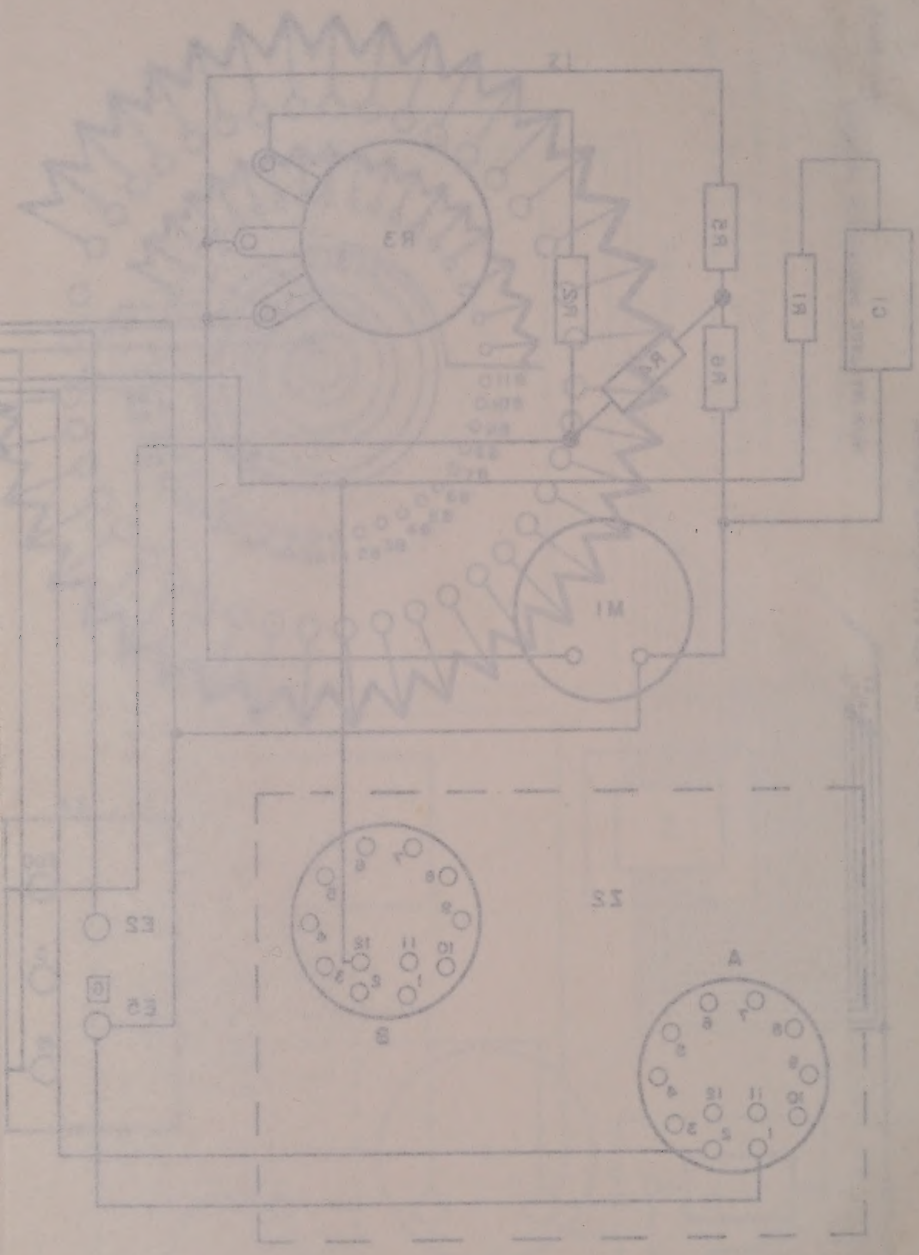
1. CONTACT STUDS DESIGNATED 2A TO 12A AND 1B TO 11B ON CONTROL Z1 ARE CONNECTED TO LIKE-NUMBERED TERMINALS ON AUTOTRANSFORMER Z2.
2. CONTROL Z1 AS VIEWED FROM BOTTOM OF CHASSIS. CONCEALED WIRES ARE SHOWN AS SOLID LINES. BROKEN LINES REPRESENT HIGH WATTAGE PROTECTION RESISTOR.

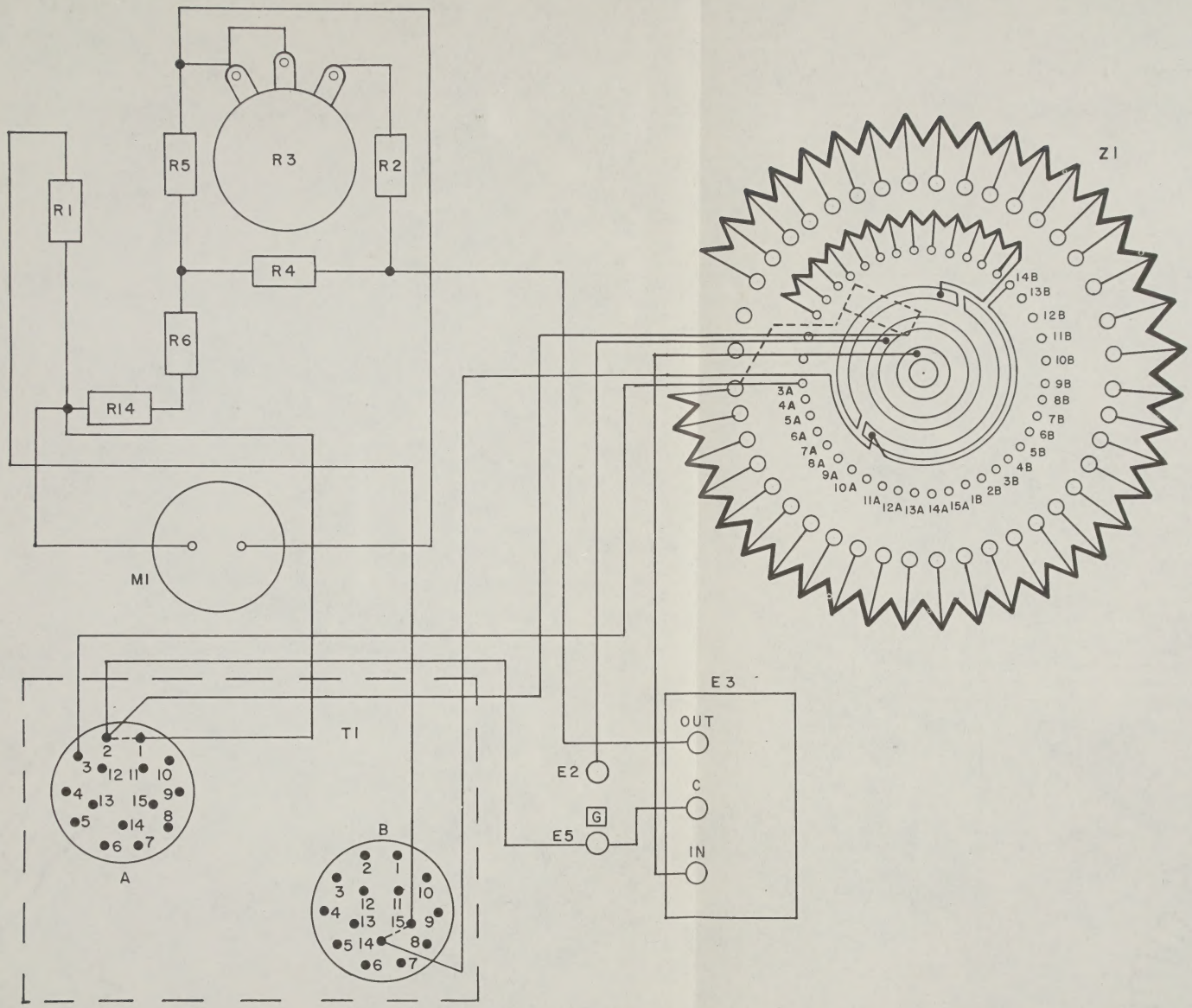
TM5017-21

Figure 14. Output Meter TS-585B/U, wiring diagram.


R3
R5
R6
R4
R1
C
M1
Z2
A
B
E2
E5




R3
R5
R6
C1
M1
Z2
A
B

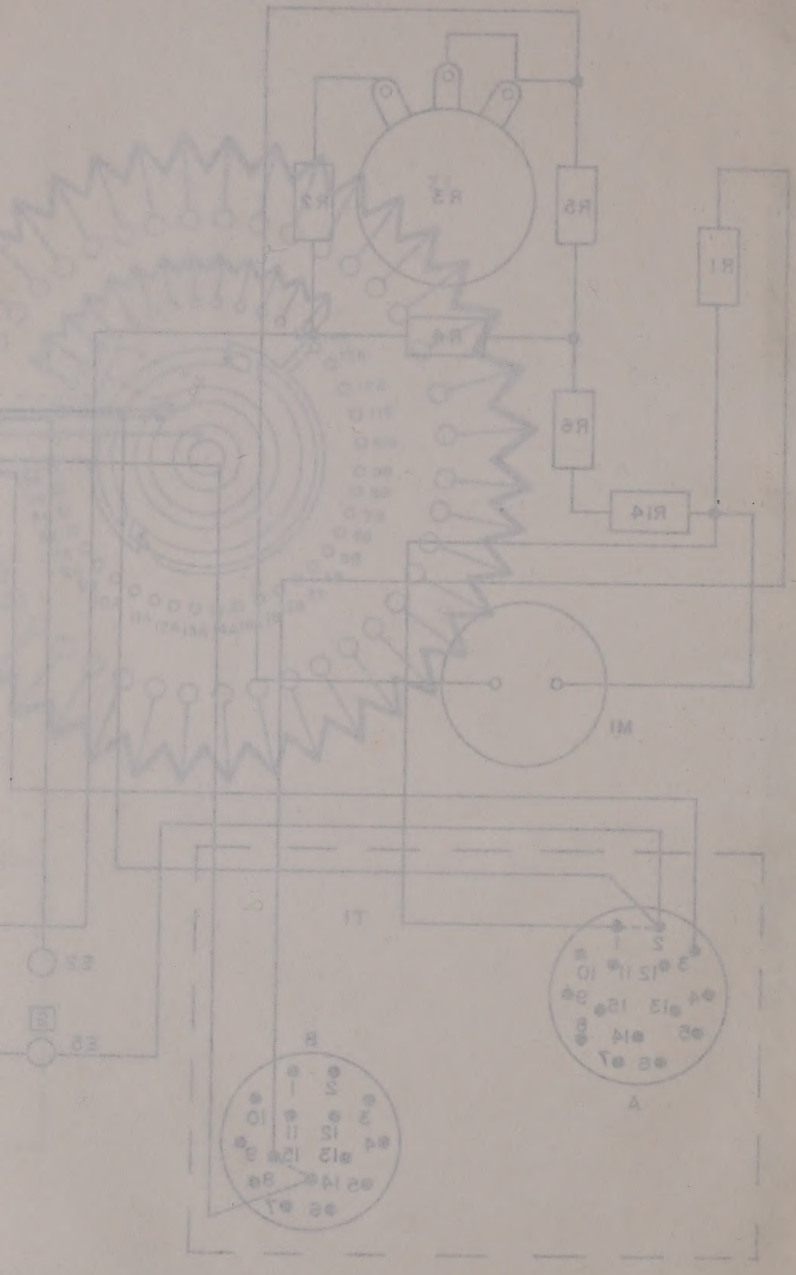


NOTES:

1. CONTACT STUDS DESIGNATED 3A TO 15A AND 1B TO 14B ON CONTROL Z1 ARE CONNECTED TO LIKE-NUMBERED TERMINALS ON AUTOTRANSFORMER T1.
2. CONTROL Z1 AS VIEWED FROM BOTTOM OF CHASSIS. CONCEALED WIRES ARE SHOWN AS SOLID LINES. BROKEN LINES REPRESENT HIGH WATTAGE PROTECTION RESISTOR.

TM5017-22

Figure 15. Output Meter TS-585C/U, wiring diagram.


R3
R2
R5
R1
R4
R6
R14
M1
T1
B
A

By order of the Secretaries of the Army and the Air Force:

MAXWELL D. TAYLOR,
General, United States Army,
Chief of Staff.

Official:

JOHN A. KLEIN,
Major General, United States Army,
The Adjutant General.

N. F. TWINING,
Chief of Staff, United States Air Force.

Official:

E. E. TORO,
Colonel, United States Air Force,
Air Adjutant General.

Distribution:

Active Army:

CNGB (1)
ASA (3)
Tec Svc, DA (1) except CSIGO (30)
Tec Svc Bd (1)
Hq CONARC (5)
CONARC Bd (Incl ea Test Sec) (1)
Army AA Comd (2)
OS Maj Comd (5)
OS Base Comd (5)
Log Comd (5)
MDW (1)
Armies (5)
Corps (2)
Ft & Cp (2)
Sp Wpn Comd (2)
Army Cml Cen (4)
Gen & Br Svc Sch (5) except Sig Sch (25)
Gen Depots (2) except Atlanta Gen Depot (None)
Sig Sec, Gen Depots (10)
Sig Depots (17)
US Army Tng Cen (2)
POE (OS) (2)
Trans Terminal Comd (2)
Army Terminals (2)
OS Sup Agencies (2)
Army Elct PG (1)
Sig Fld Maint Shops (3)
Sig Lab (5)
ACS (3)
Mil Dist (1)
Units organized under following TOE's:
11–7C, Sig Co, Inf Div (2)
11–15C, Sig Bn, Corps or Abn Corps (2)
11–16C, Hq & Hq Co, Sig Bn, Corps or Abn Corps (2)
11–57C, Armd Sig Co (2)
11–127R, Sig Rep Co (2)
11–128C, Sig Depot Co. (2)
11–500R (AA–AE), Sig Svc Org (2)
11–537R, Sig Co, Amph Spt Brig (2)
11–557C, Abn Sig Co (2)
11–587R, Sig Base Maint Co (2)
11–592R, Hq & Hq Co, Sig Base Depot (2)
11–597R, Sig Base Depot Co (2)
20–300R, Amph Spt Brig (2)
33–56R, Hq & Hq Co, Rad Bcst and Leaflet Bn (2)

NG: State AG (6); units—same as Active Army except allowance is one copy to each unit.

USAR: None.

For explanation of abbreviations used, see SR 320–50–1.