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TM 11-1241

WAR DEPARTMENT TECHNICAL MANUAL

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TEST SET AN/MPM-7

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WAR DEPARTMENT

8 JUNE 1945

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TM 11-1241

TEST SET AN/MPM-7

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WAR DEPARTMENT,
WASHINGTON 25, D. C., 8 June 1945.

TM 11-1241, Test Set AN/MPM-7, is published for the information and guidance of all concerned.

[A. G. 300.7 (29 Jan 45).]

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(For explanation of symbols see FM 21-6.)

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DESTRUCTION NOTICE

WHY — To prevent the enemy from using or salvaging this equipment for his benefit.

WHEN—When ordered by your commander.

HOW — 1. **Smash**—Use sledges, axes, handaxes, pickaxes, hammers, crowbars, heavy tools.

2. **Cut** — Use axes, handaxes, machetes.

3. **Burn** — Use gasoline, kerosene, oil, flame throwers, incendiary grenades.

4. **Explosives** — Use firearms, grenades, TNT.

5. **Disposal** — Bury in slit trenches, fox holes, other holes. Throw in streams. Scatter.

USE ANYTHING IMMEDIATELY AVAILABLE FOR DESTRUCTION OF THIS EQUIPMENT.

WHAT—1. **Smash** — Tuning assemblies, tubes, meters, dials, switches, cases, chassis.

2. **Cut** — Cables, wiring, transformer windings, choke windings.

3. **Burn** — Manuals, schematic diagrams, wooden cases, data obtained with test equipment.

4. **Bend** — Metal cases, chassis, nameplates.

5. **Bury or scatter** — All of the above material after destroying its usefulness.

DESTROY EVERYTHING

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TEST SET AN/MPM-7

1. INTRODUCTION.

The purpose of this manual is to serve as a guide for Test Set AN/MPM-7 and to present general information on each individual component. Test Set AN/MPM-7, used with Test Set AN/GPM-1 (see TM 11-1080), furnishes the test equipment required for third echelon maintenance of Radar Set AN/TPL-1 and Radar Set AN/TPX-4. The components of Test Set AN/MPM-7 are carried in two Chests CH-273 and one Chest CY-154/TPX-1, located on a shock-mounted base in the center of the van which houses Test Set AN/GPM-1. This manual is not to be used as a source of complete information on the components of Test Set AN/MPM-7. The components are listed below with the technical manuals (TMs) which cover the separate components in detail. The operational use of most of the items of Test Set AN/MPM-7 is given in TM 11-1552 and TM 11-1160. The application, description, and performance characteristics of some of the components may be found in TM 11-1200.

Quantity	Component	TM
1	Echo Box TS-270/UP	11-1086
1	Fluxmeter TS-15B/AP	11-2559
1	Oscilloscope TS-34A/AP	11-1067A
1	Power Unit PU-6/TPS-1	11-933
1	Power Meter TS-125/AP	11-1217
1	Signal Generator TS-155B/UP	11-2657B
1	Test Set TS-216/TPL-1	11-1552
1	Test Set TS-159/TPX	11-1243
1	Wavemeter Test Set TS-117/GP	11-2538
1	Crystal Rectifier Test Set TS-268/U	11-1242
1	Voltage Divider TS-265/UP	11-1552
1	Antenna AT-67/AP	
2	Dummy Antenna TS-208/MPM	
1	Probe Antenna AT-70/U	
1	Dummy Load TS-279/UPM	11-1552
6	Clamp UG-187/U	
1	Spanner wrench	
2	Adapter M-358	
2	Adapter M-359	
2	Crystal Adapter UG-119/UP	
2	Radio Frequency Adapter UG-57/U	
2	Radio Frequency Jack UG-30/U	

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Quantity	Component	TM
1	Radio Frequency Coupling UG-32/U	
2	Plug PL-258	
2	Plug PL-259	
2	Cord CG-70/MPM	
3	Cord CG-71/MPM	
1	Cord CG-76/TPX-1	
2	Cord CG-109/TPX-1	
1	Cord CG-110/TPX-1	
1	Cord CX-159/TPX-1	
1	Cord CX-304/TPX-3	
1	Cord CX-395/TPL-1	
1	Cord CX-470/MPM-7	
1	Test cord	
1	Thermometer	
1	Thermometer case	
10	Tube 1N21B	
10	Lamp LM-54	
1	Case, Lamp LM-54	
1	Chest CY-154/TPX-1	
2	Chest CH-273	
	Running spares for Oscilloscope TS-34A/AP:	
11	Fuse FU-27	
1	Lamp LM-52	
1	Tube JAN-5Y3GT/G	
1	Tube JAN-6AG7	
1	Tube JAN-6SL7GT	
1	Tube JAN-6SN7GT	
1	Tube JAN-6X5GT/G	
1	Tube JAN-6AK5	
1	Tube JAN-2AP1	

2. POWER.

The power for operating the test equipment is obtained from Power Unit PU-6/TPS-1, a 400-cycle alternating-current (a-c) source, and from Power Unit PE-95 supplied with Test Set AN/GPM-1. Power Unit PE-95 furnishes 115-volt, 60-cycle power. Convenience outlets for 115-volt, 60-cycle power are provided on both sides of the van. Six-volt, 12-volt, and 24-volt direct-current (d-c) power is supplied by batteries located in the front of the van. These batteries are charged by Rectifier Power Unit PP-34/MSM.

3. ECHO BOX TS-270/UP (fig. 1).

Echo Box TS-270/UP is used to measure frequency and to check relative power output of the transmitter of Radar Set AN/TPL-1. It is also used to reradiate part of the transmitter output back to the antenna in order to check the over-all efficiency of the radar set. The echo box is made up of a cylindrical cavity containing a piston or plunger that may be moved axially to vary the length of the cavity, an indicating microammeter, and a crystal rectifier. Antenna AT-67/AP is used as the pick-up and radiating antenna

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for the echo box. A complete description of the installation, operation, preventive maintenance, and functioning of parts is given in TM 11-1086.

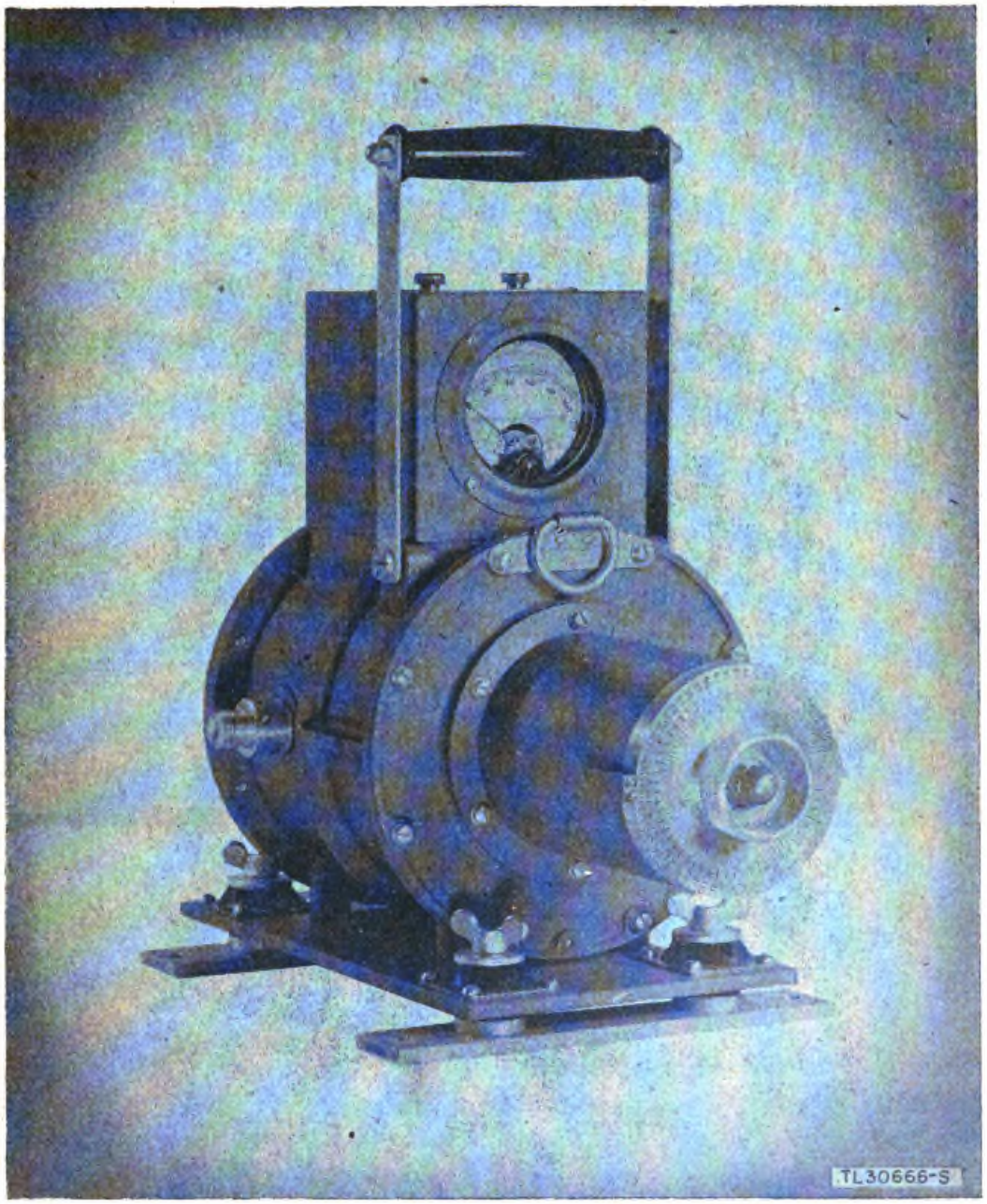

Figure 1. Echo Box TS-270/UP.

4. FLUXMETER TS-15B/AP (fig. 2).

Fluxmeter TS-15B/AP is a portable, self-contained test instrument designed to measure magnetic flux density in gausses between the poles of magnets used in transmitter of Radar Set AN/TPL-1. The major components of the fluxmeter are a probe meter and a gaussmeter connected by a shielded cable. In operation the probe meter is placed between the poles of the magnet, the needle of the probe meter is adjusted to the calibration mark, and the flux

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density is read on the gaussmeter. The probe meter, the 1.5-volt battery which supplies the operating power, and the shielded cable are stored in the wooden

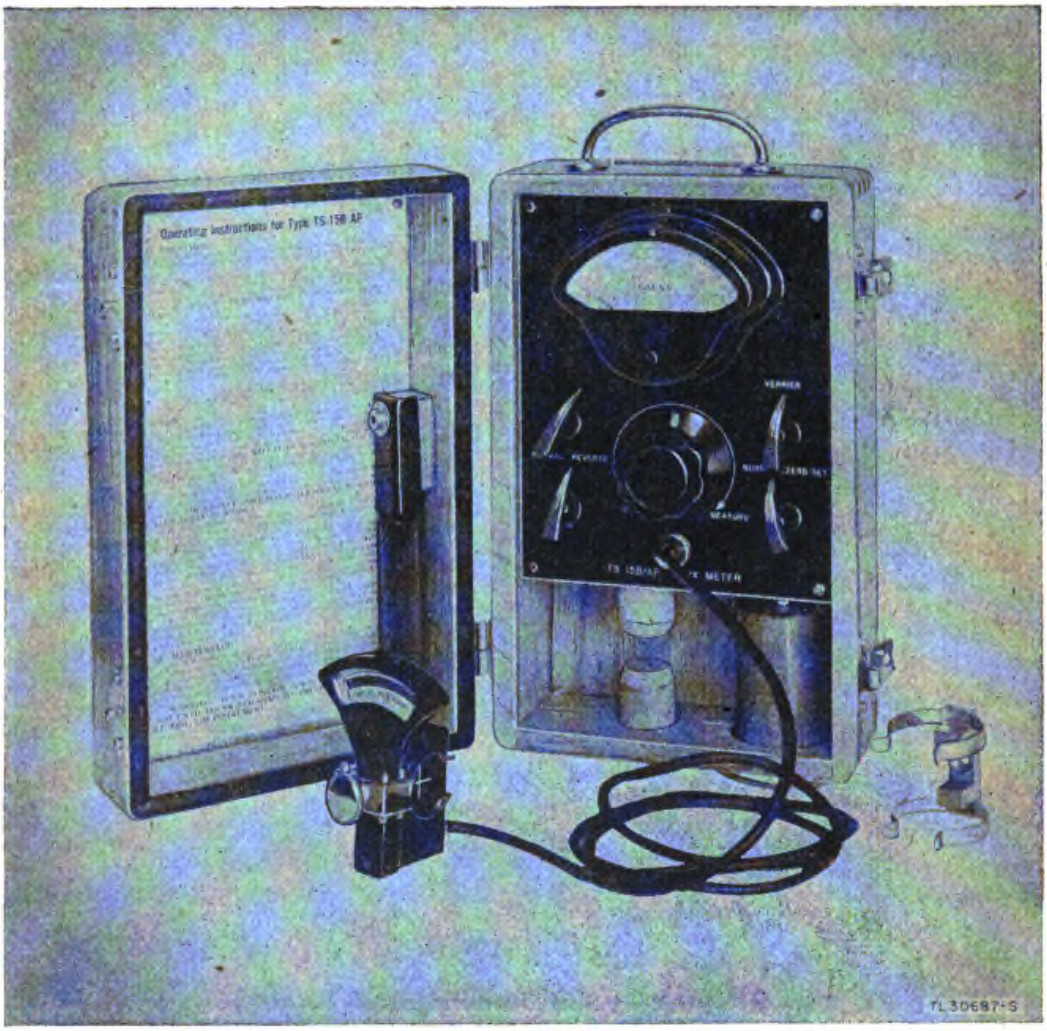

Figure 2. Fluxmeter TS-15B/AP.

case which contains the gaussmeter. A complete description of the installation, operation, preventive maintenance, and functioning of parts is given in TM 11-2559.

5. OSCILLOSCOPE TS-34A/AP (fig. 3).

Oscilloscope TS-34A/AP is a small portable instrument used for observing electrical waveforms and for measuring their voltage and duration. Normally, signal voltages up to 100 volts peak amplitude may be observed. When the probe assembly supplied with the oscilloscope is used, signal voltages having a peak amplitude of 450 volts may be observed. The voltage divider (par. **13**) may be used to increase the range to include signals with peak amplitudes up to 16,000 volts. The instrument may be used either as an ordinary oscilloscope with a saw-tooth sweep or as a synchroscope with a start-stop sweep synchronized by the input signal. The oscilloscope uses a

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2-inch cathode-ray tube inclosed in an iron tube which serves as a shield against extraneous light and electric and magnetic fields. A lens within the

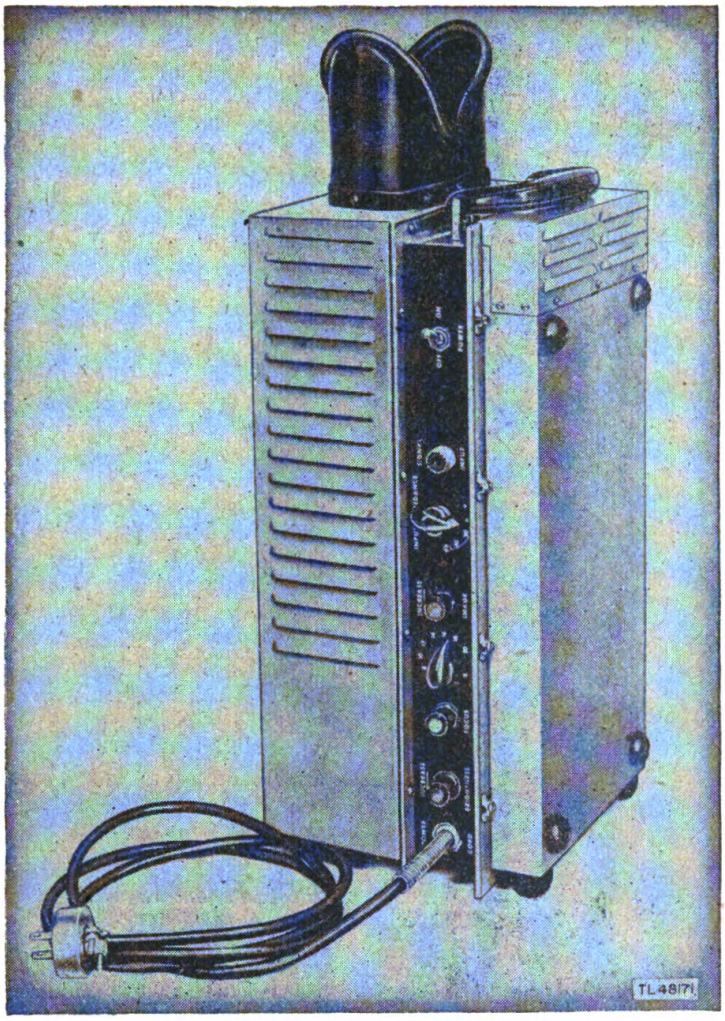

Figure 3. Oscilloscope TS-34A/AP.

viewing tube magnifies the images and enables the operator to observe the screen comfortably from a closer position. A soft eyeshade or hood is provided on the top of the oscilloscope; controls and connectors are located in protecting channels along the sides of the instrument. Signal input connections are made with special jacks and cables provided with the oscilloscope. A suitcase-type carrying case is provided for the oscilloscope, the probe assembly, and the operating cords and cables. Detailed information covering installation, operation, functioning of parts, and preventive maintenance is given in TM 11-1067.

6. POWER UNIT PU-6/TPS-1 (fig. 4).

Power Unit PU-6/TPS-1 consists of a 400-cycle generator and a single-cylinder, air-cooled gasoline engine. The speed of the gasoline engine is regulated at 4,000 revolutions per minute. The generator assembly is mounted

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on the engine drive-shaft. The generator consists of a 1,400-watt, 120-volt, 400-cycle inductor-alternator and a 400-watt, 27-volt d-c generator. The

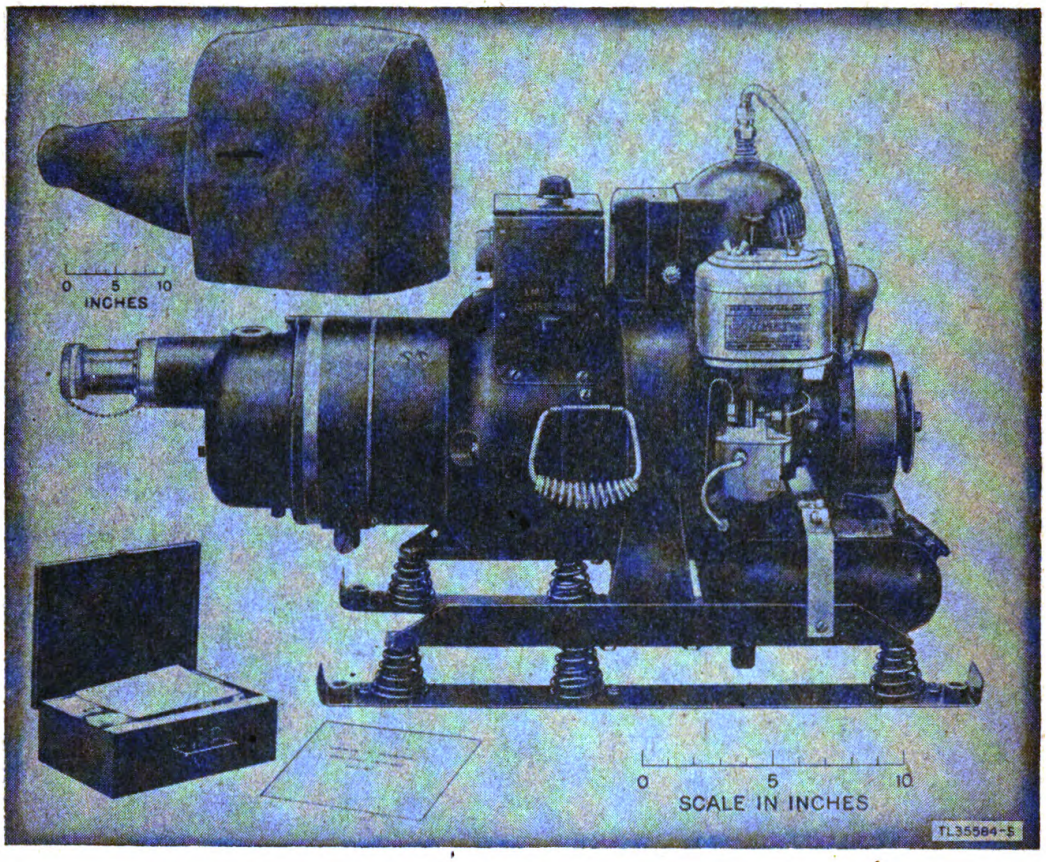

Figure 4. Power Unit PU-6/TPS-1.

generator is used to furnish the 400-cycle power required by Radar Set AN/TPL-1 and Radar Set AN/TPX-4. A complete description of the installation, operation, preventive maintenance, and functioning of parts is given in TM 11-933.

7. POWER METER TS-125/AP (fig. 5).

Power Meter TS-125/AP is a compact battery-operated wattmeter used for measuring average radio-frequency (r-f) power. The instrument is encased in a cast aluminum box. A pick-up horn antenna and an r-f cable are stored in the lid, and two attenuators are stored in compartments in the case. Power for the instrument is obtained from three standard flashlight batteries. In operation, the r-f energy is fed to the power meter either by the pick-up antenna or by a direct connection to a directional coupler on the radar set being tested. The attenuators provided with the meter are used to increase the range of the meter by attenuating the r-f power known amounts. They are connected between the r-f cable and the input connector of the meter. A complete description of the installation, operation, preventive maintenance, and functioning of parts is given in TM 11-1217.

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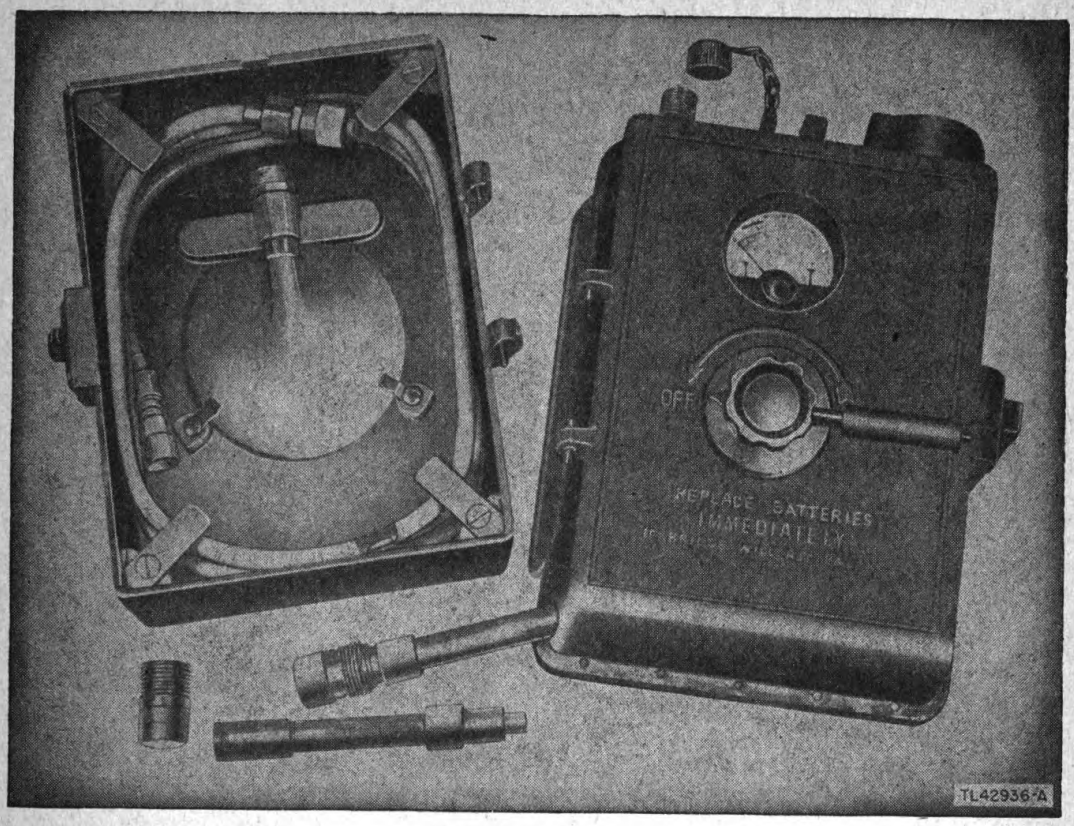

Figure 5. Power Meter TS-125/AP.

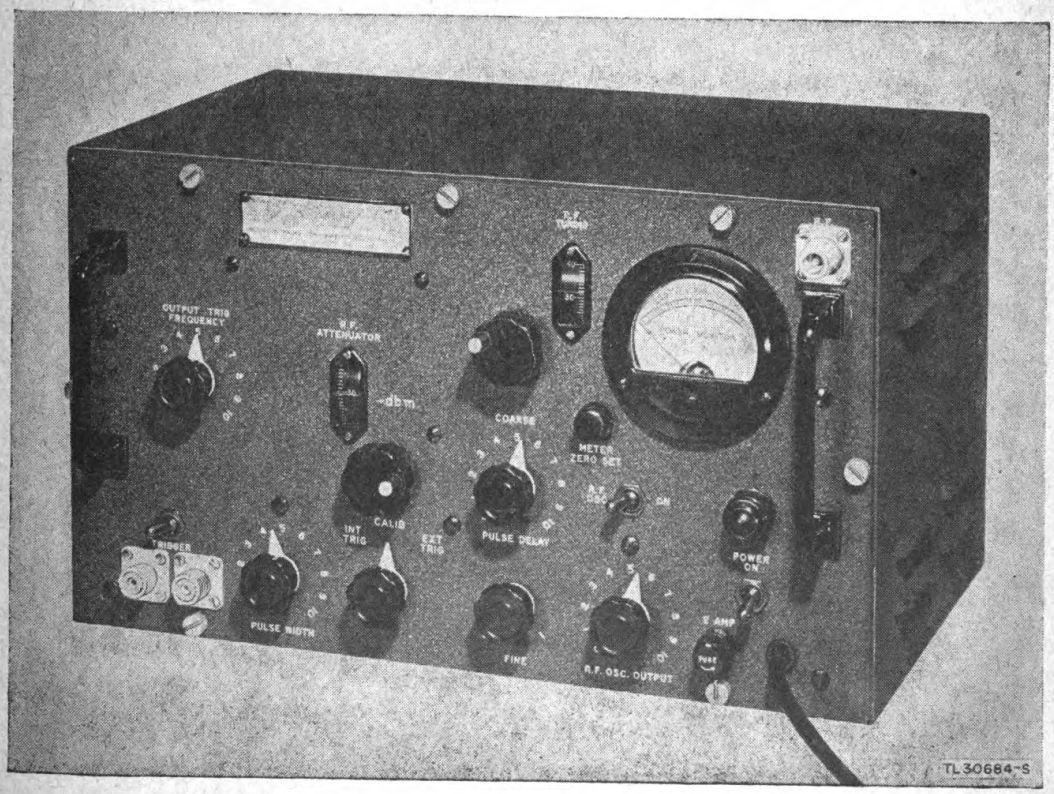

Figure 6. Signal Generator TS-155B/UP.

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8. SIGNAL GENERATOR TS-155B/UP (fig. 6).

Signal Generator TS-155B/UP supplies an r-f signal for testing Radar Set AN/TPL-1. It produces a calibrated, pulse-modulated r-f signal. The instrument may be used for checking the sensitivity of the radar receiver or as an r-f wattmeter for measuring the power output of the radar transmitter. The signal generator is shock-mounted in a wooden transit case which also contains necessary operating accessories A complete description of installation, operation, functioning of parts, and preventive maintenance is given in TM 11-2657B.

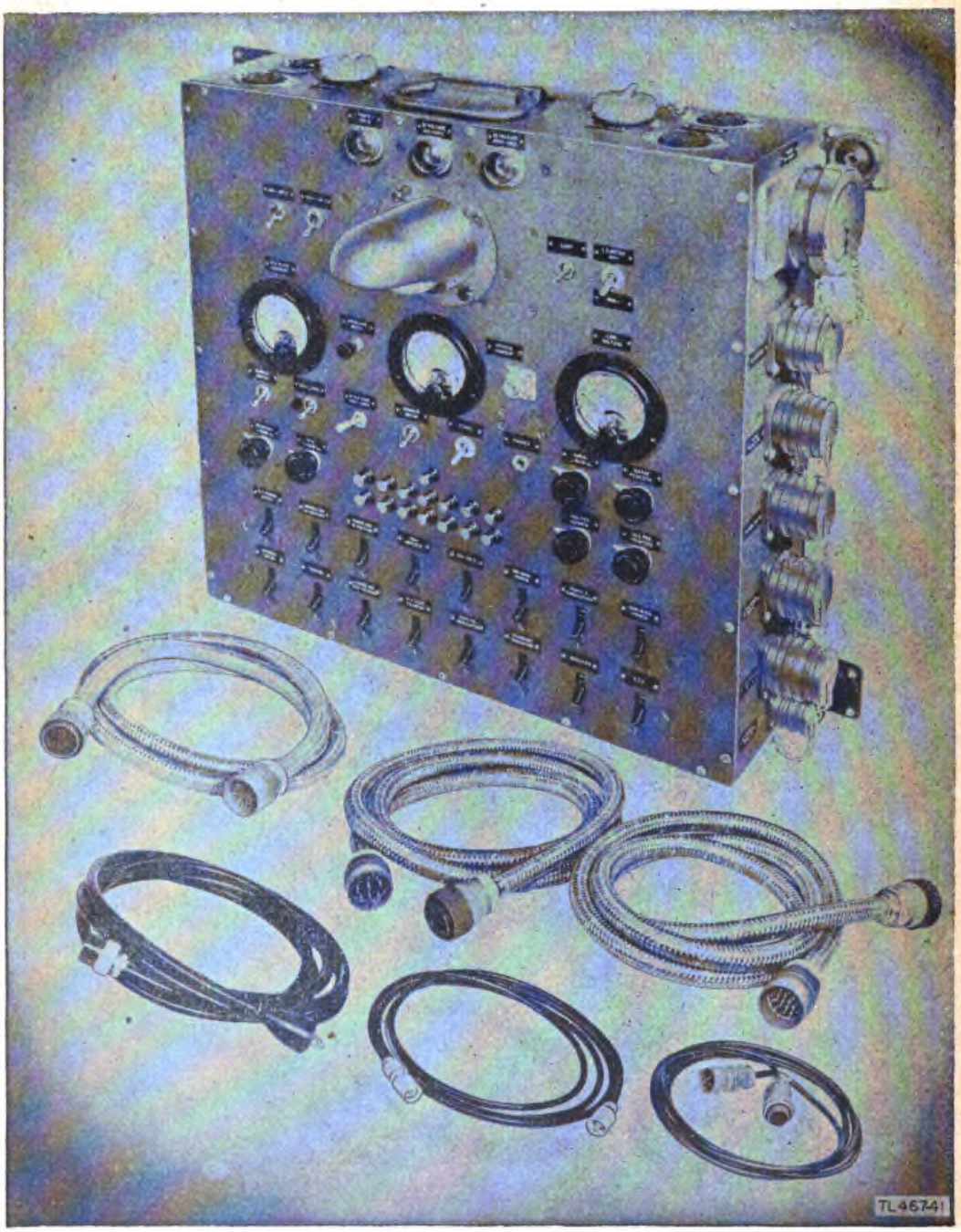

Figure 7. Test Set TS-216/TPL-1.

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9. TEST SET TS-216/TPL-1 (fig. 7).

a. Test Set TS-216/TPL-1 is designed to facilitate trouble shooting and servicing Radar Set AN/TPL-1. It enables operation of most of the electrical components of the set after the components have been removed from the console cabinet.

b. Connections between Test Set TS-216/TPL-1 and components of the radar set are made through receptacles mounted on the side panels of the set. Each receptacle is labeled to indicate the radar component to which it is connected. Two power receptacles and four 60-cycle convenience outlets are mounted on the top panel of the box. Three meters, whose functions correspond to the functions of the three meters of the radar set, are mounted on the front panel of the test set. A white light (for illuminating purposes), three neon-bulb indicating lights, and numerous variable controls, switches, and circuit breakers are also mounted on the front panel. The binding posts on the front panel, generally used for test purposes, may also be used in some cases to supply input voltages. A complete description of the installation, operation, preventive maintenance, and functioning of parts is given in TM 11-1552.

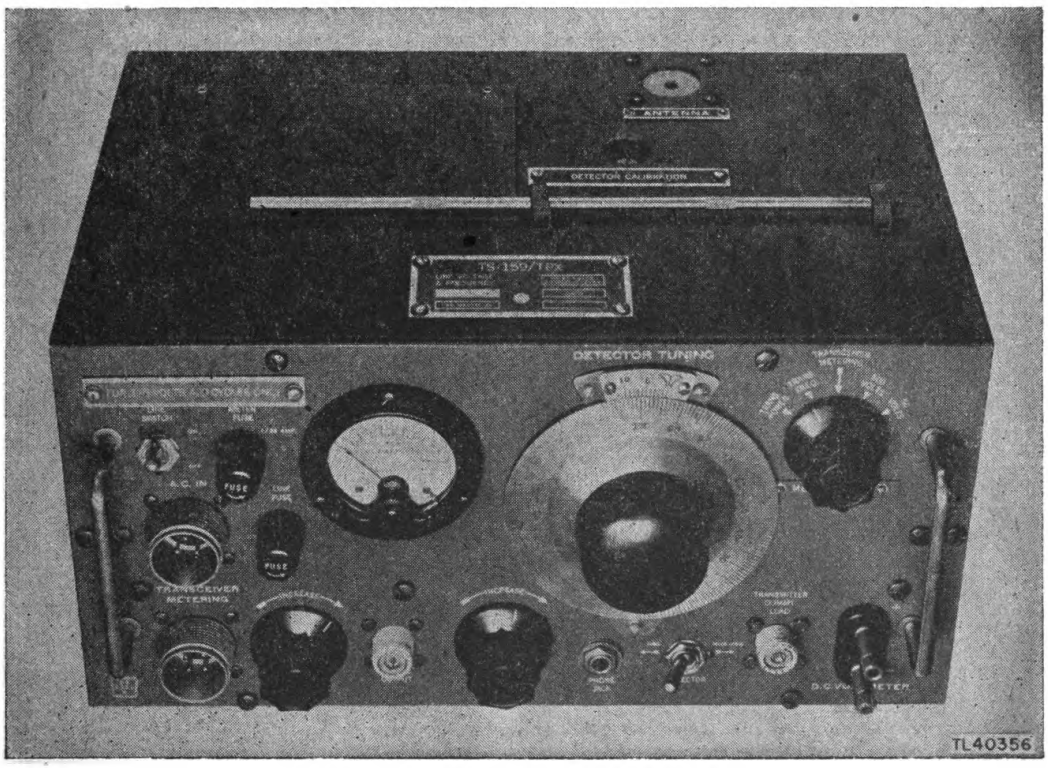

Figure 8. Test Set TS-159/TPX.

10. TEST SET TS-159/TPX (fig. 8).

Test Set TS-159/TPX is a compact instrument mounted in an aluminum cabinet. It is used for testing, tuning, and aligning Transmitter-Receiver RT-48A/TPX-1. The test set will perform the following functions:

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a. A crystal-calibrated oscillator furnishes a radio-frequency (r-f) signal to tune the r-f stages of the IFF receiver. The crystal oscillator itself is used with a frequency tripler to furnish a 30-megacycle (mc) signal for the intermediate-frequency (i-f) alignment of the IFF receiver.

b. A crystal-calibrated oscillating detector is used as a wavemeter to measure and adjust the frequency of the IFF transmitter.

c. The test set provides a dummy load for use when measuring the IFF transmitter power. The transmitter output to the dummy load is detected and measured by a vacuum-tube voltmeter.

d. The 0-1 milliampere (ma) d-c meter on the front panel of the test set can be connected to the transmitter-receiver to measure important currents and voltages, or the meter can be used as an external 50- or 500-volt d-c 1,000-ohm-per-volt voltmeter.

e. A complete description of the installation, operation, preventive maintenance, and functioning of parts is given in TM 11-1243.

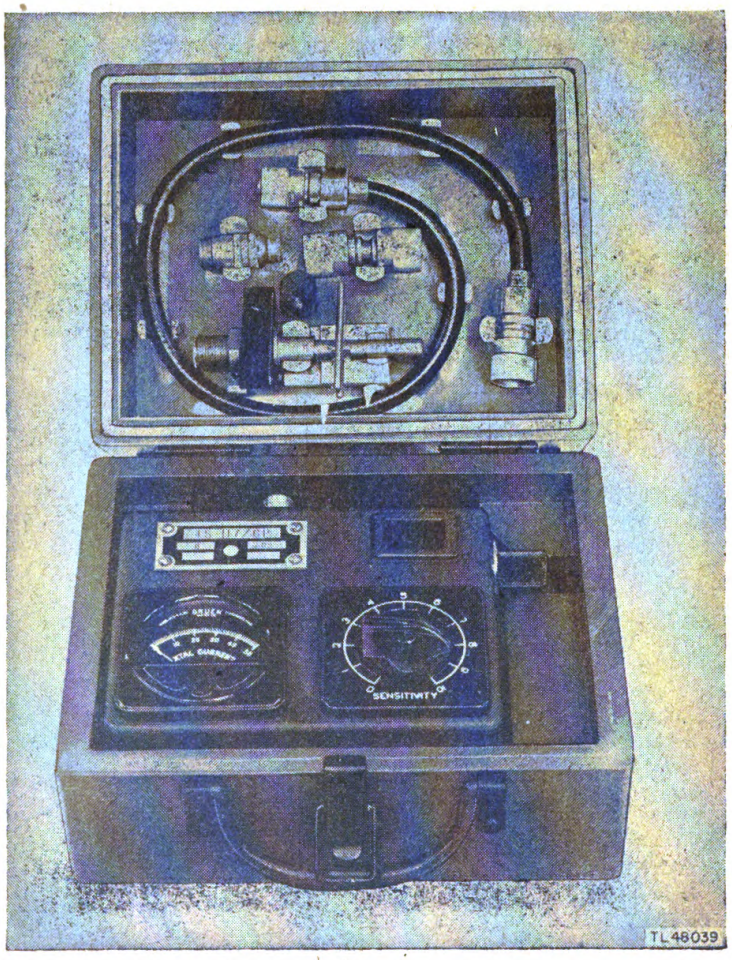

Figure 9. Wavemeter Test Set TS-117/GP.

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11. WAVEMETER TEST SET TS-117/GP (fig. 9).

Wavemeter Test Set TS-117/GP is used for measuring the transmitting frequency of Radar Set AN/TPL-1. It is a self-contained unit requiring no power for its operation. The instrument is housed in a case with all controls readily accessible and a calibration chart mounted on the back of the case. Frequency measurements may be made readily either by placing the set in a field of r-f energy or by making a direct connection to the source of the r-f energy. A cavity is adjusted to resonance by a micrometer head whose reading is converted to frequency by use of the calibration chart. A complete description of the installation, operation, preventive maintenance, and functioning of parts is given in TM 11-2538.

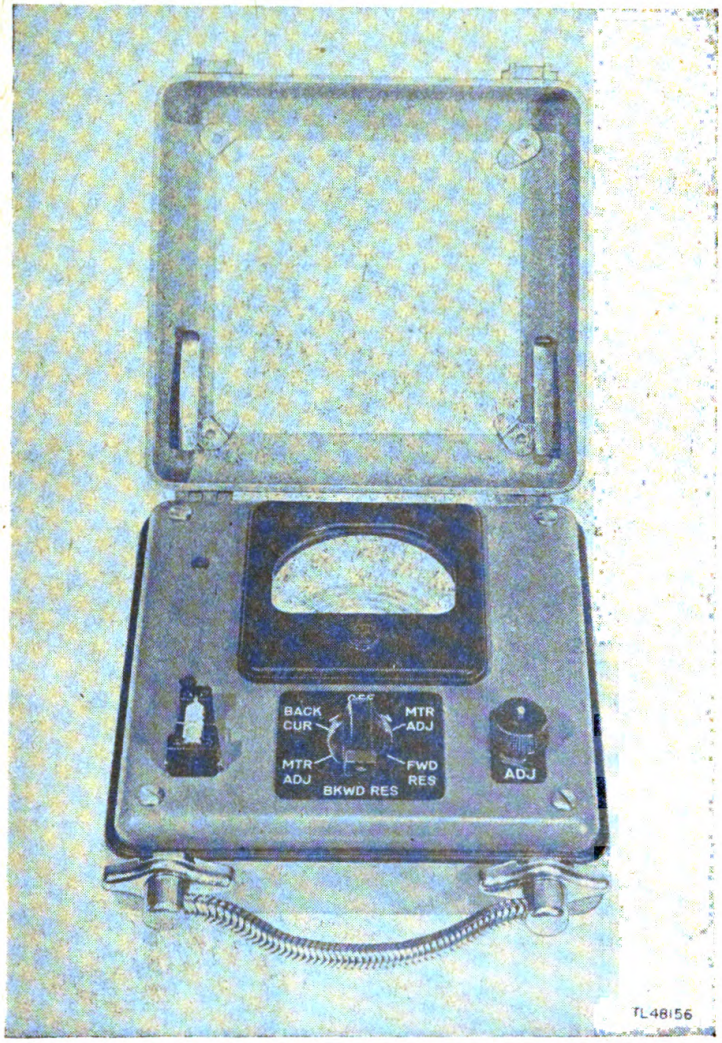

Figure 10. Crystal Rectifier Test Set TS-268/U.

12. CRYSTAL RECTIFIER TEST SET TS-268/U (fig. 10).

Crystal Rectifier Test Set TS-268/U is used for checking the characteristics of Tubes (crystals) 1N21, 1N21A, 1N21B, 1N22, 1N23, 1N23A, and 1N23B. The test set measures the front-to-back d-c resistance, the back-to-

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front d-c resistance, and the back current at 1.0 volt dc. The meter scale is divided into "good" and "poor" areas to correspond to the allowable limits

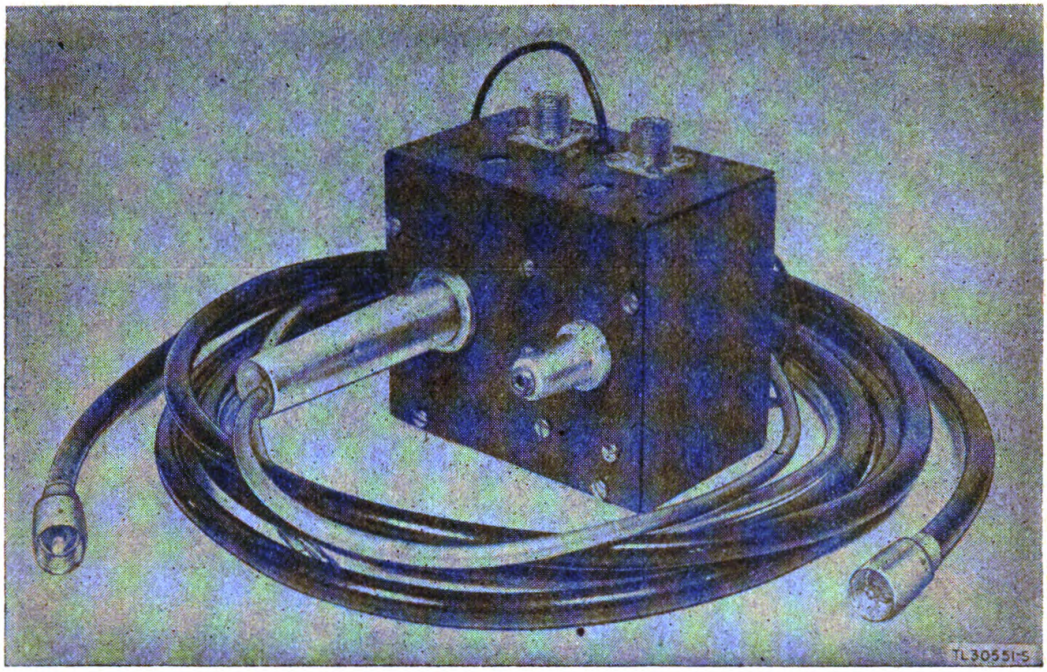

Figure 11. Voltage Divider TS-265/UP.

for each type of crystal. Power for the test set is furnished by one Battery BA-30. A complete description of the operation, installation, and functioning of parts is given in TM 11-1242.

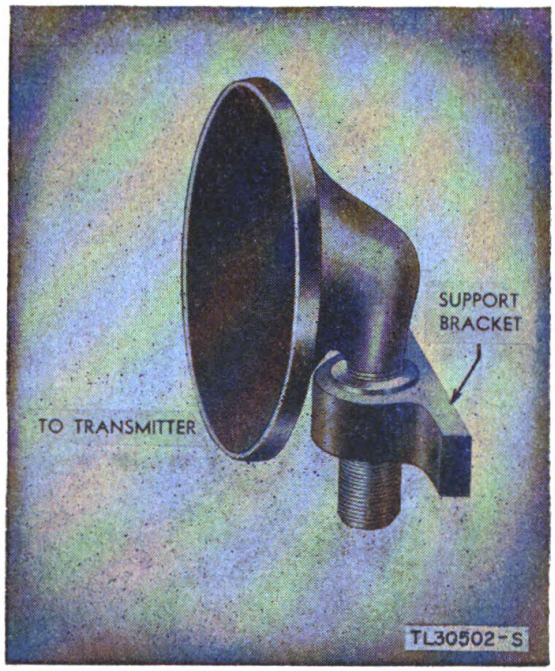

Figure 12. Antenna AT-67/AP.

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13. VOLTAGE DIVIDER TS-265/UP (fig. 11).

Voltage Divider TS-265/UP is used with Oscilloscope TS-34A/AP to provide a known step-down ratio which allows large-amplitude pulses to be observed and measured with the scope. The voltage divider is especially useful in observing the voltage waveforms in the transmitter system because the pulses in the system attain a peak amplitude of approximately 16,000 volts. The unit is designed to provide either a 10-to-1 or a 100-to-1 step-down ratio. A complete description of the installation and operation is given in TM 11-1552.

14. ANTENNA AT-67/AP (fig. 12).

Antenna AT-67/AP is a small pick-up horn used as a test antenna with Power Meter TS-125/AP, Signal Generator TS-155B/UP, and Echo Box TS-270/UP. The horn is connected to either test set by a type N (female) fitting.

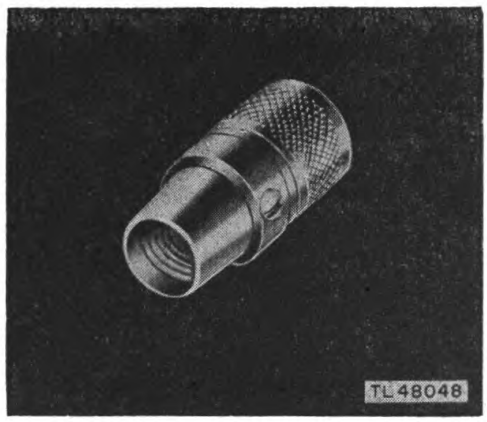

Figure 13. Dummy Antenna TS-208/MPM.

15. DUMMY ANTENNA TS-208/MPM (fig. 13).

Dummy Antenna TS-208/MPM is a connector Plug PL-259-A with a 47-ohm, 1-watt resistor soldered between the center pin and the shell inside the connector. It is used as a transmitter dummy load for aligning Radio Receiver and Transmitter BC-1267-A of Radio Equipment RC-145-A.

16. PROBE ANTENNA AT-70/U (fig. 14).

Probe Antenna AT-70/U fits on the slotted coaxial line and is used with a power meter for measuring the standin-wave ratio along the r-f transmission line of Radar Set AN/TPL-1. The probe is adjustable so that the degree of coupling can be varied. Probe Antenna AT-70/U can be used in place of Probe Antenna AT-64/U, but the AT-64/U cannot be used for the AT-70/U.

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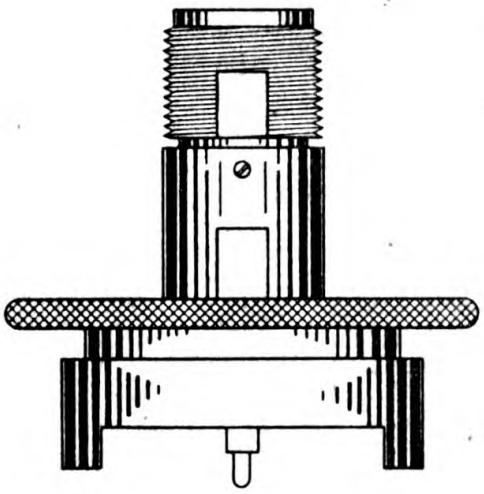

TL 48155

Figure 14. Probe Antenna AT-70/U.

17. DUMMY LOAD TS-279/UPM (fig. 15).

Dummy Load TS-279/UPM is used for performing checks in the transmitter system with the magnetron disconnected. It consists of a 1,000-ohm, 150-watt resistor which is insulated from the metallic case in which it is mounted. The dummy load replaces the magnetron in the circuit and presents an equivalent impedance, so that the circuit performance is comparatively unaffected by the substitution.

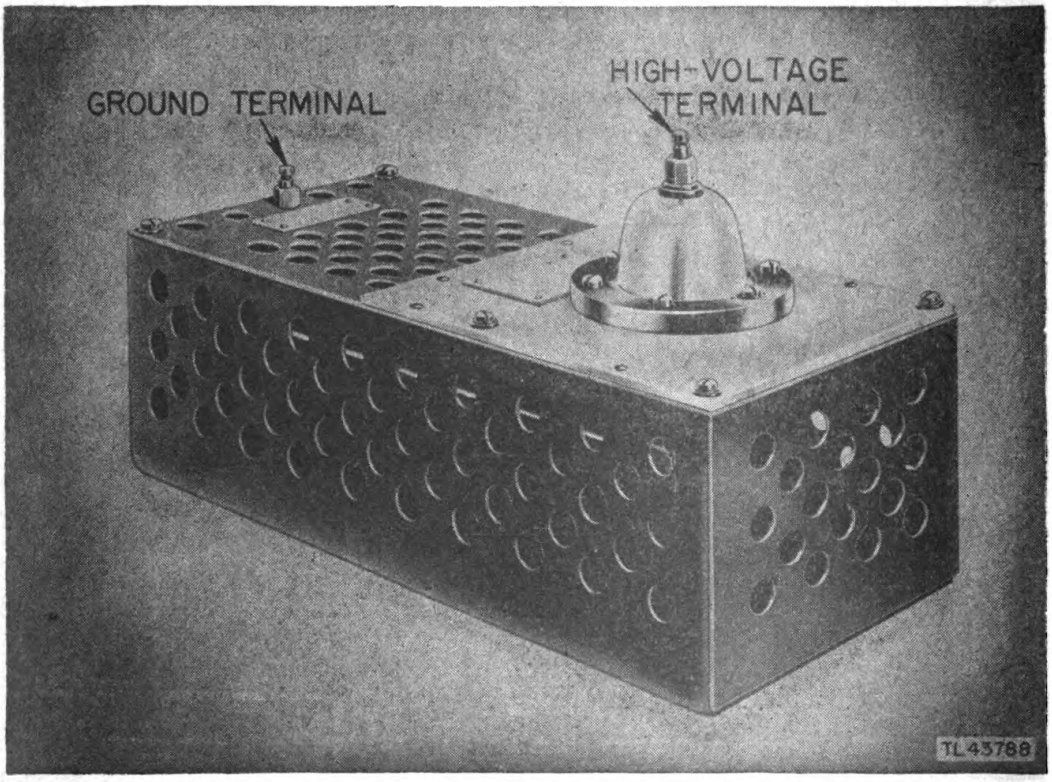

Figure 15. Dummy Load TS-279/UPM.

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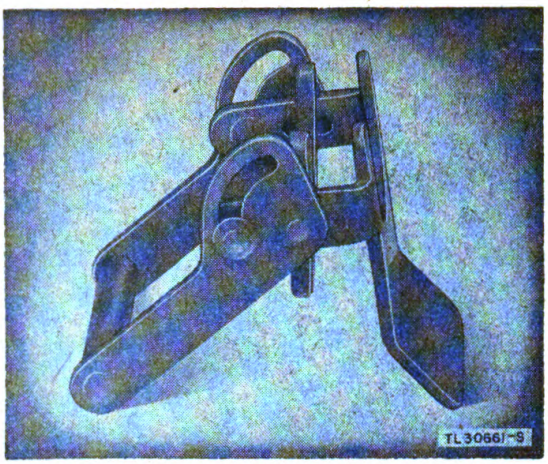

Figure 16. Clamp UG-187/U.

18. CLAMP UG-187/U (fig. 16).

The clamp is used to hold two sections of r-f coaxial line together when an easily made temporary connection is desired.

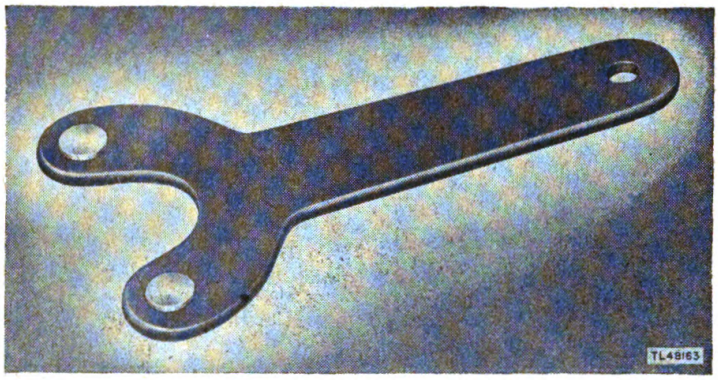

Figure 17. Spanner wrench.

19. SPANNER WRENCH (fig. 17).

The spanner wrench is used to disconnect the line coupling on the upper end of the vertical transmission line of Radar Set AN/TPL-1. The use of the spanner wrench is described in paragraph 287b of TM 11-1552.

20. ADAPTERS AND PLUGS.

a. Adapter M-358 (fig. 18) is a T-type connector used to connect Dummy Antenna TS-208/MPM to the receiver of Radar Set AN/TPX-4 for alignment purposes.

b. Adapter M-359 (fig. 18) is a video-type, male-to-male, right-angled connector used with Adapter M-358 to align the receiver of Radar Set AN/TPX-4. It connects Socket SO-239 and Plug PL-259. The male portion of the adapter has a coupling unit to fit Socket SO-239.

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c. Radio Frequency Jack UG-30/U (fig. 18) has a type N receptacle at each end. It is used to connect two r-f coaxial cables for increased length.

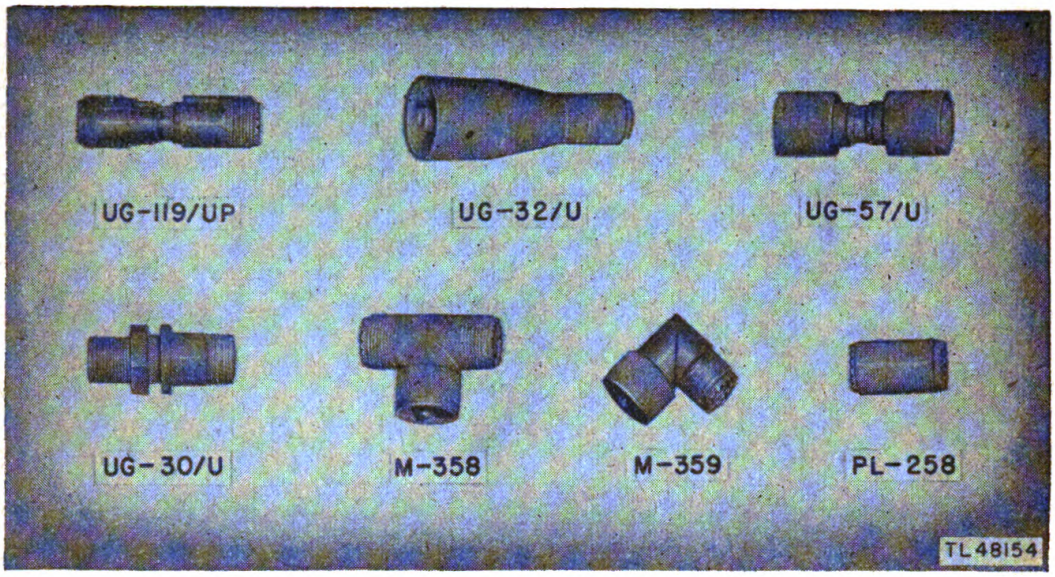

Figure 18. Adapters and plugs.

d. Plug PL-258 (fig. 18) is a video-type connector with two female sockets. It fits the male portion of Plug PL-259 and permits interconnection of cables fitted with Plug PL-259.

e. Plug PL-259 (fig. 19) is short-circuited internally and is used to replace the antenna on Radar Set AN/TPX-4 when receiver alignments and adjustments are being made.

f. Crystal Adapter UG-119/UP (fig. 18) has a type N plug on one end and Socket SO-239 on the other end. The adapter serves as a holder for Tube 1N21B, used with Signal Generator TS-155B/UP.

g. Radio Frequency Coupling UG-32/U (fig. 18) is a coaxial connector used to couple the 50-ohm weatherproof type N connector to a ⅞-inch rigid transmission line.

h. Radio Frequency Adapter UG-57/U (fig. 18) is a splicing adapter, male both ends, for use with a type N connector. The adapter is weatherproof and has an impedance of 50 ohms.

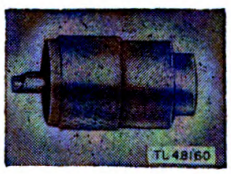

Figure 19. Plug PL-259.

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21. TUBE 1N21B (fig. 20).

Tube (crystal) 1N21B is a cartridge-type crystal detector for use in microwave detection. A sharpened tungsten whisker on a smooth silicon surface supplies the rectifying contact. The crystal fits Crystal Adapter UG-119/UP.

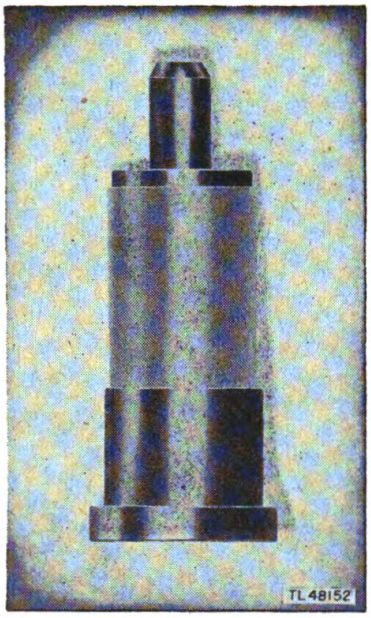

Figure 20. Tube 1N21B.

22. CORDS.

a. Cord CG-70/MPM. This cord is a 15-foot length of Radio Frequency Cable RG-9/U terminated at each end with Radio Frequency Plug UG-24/U. It is a stranded single-conductor, double-shielded r-f cable of medium size with a vinyl covering. It is used to connect Echo Box TS-270/UP or Signal Generator TS-155B/UP to Antenna AT-70/AP.

b. Cord CG-71/MPM. This is a general utility cord made up of a 6-foot length of Radio Frequency Cable RG-13/U terminated at each end with Plug PL-259. Radio Frequency Cable RG-13/U is a stranded, single-conductor, double-shielded r-f cable with a vinyl protective covering.

c. Cord CG-76/TPX-1. This is a 6-foot, two-conductor metering cable used to connect Test Set TS-159/TPX and Radar Set AN/TPX-1.

d. Cord CG-109/TPX-1. The cord is a 5-foot length of r-f test cable used to connect the transmitter r-f output from Transmitter-Receiver RT-48/TPX-1 to Test Set TS-159/TPX for metering purposes.

e. Cord CG-110/TPX-1. This is a 5-foot, two-conductor i-f cable used between Test Set TS-159/TPX and Radar Set AN/TPX-4 for i-f alignment.

f. Cord CX-159/TPX-1. This is a 6-foot, two-conductor cable that carries 115-volt a-c power from Radar Set AN/TPX-4 to Test Set TS-159/TPX.

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g. Cord CX-304/TPX-3. This cord is a 5-foot length of nine-conductor cable interconnecting Transmitter-Receiver RT-48A/TPX-1 and Radar Set AN/TPL-1.

h. Cord CX-395/TPL-1. This cord is a 6-foot length of two-conductor cable used to carry 400-cycle power from Test Set TS-216/TPL-1 to Test Set TS-159/TPX.

i. Cord CX-470/MPM-7. This cord is a 50-foot length of four-conductor cable used to connect Power Unit PU-6/TPS-1 to Test Set TS-216/TPL-1.

j. Test Cord. This cord is a two-conductor, 5-foot test cord. Each conductor is terminated at one end in a banana type plug; the other ends of the two conductors are terminated in alligator clips. The cord is used with Test Set TS-159/TPX. The banana plugs fit the D.C. VOLTMETER connections on the test set.

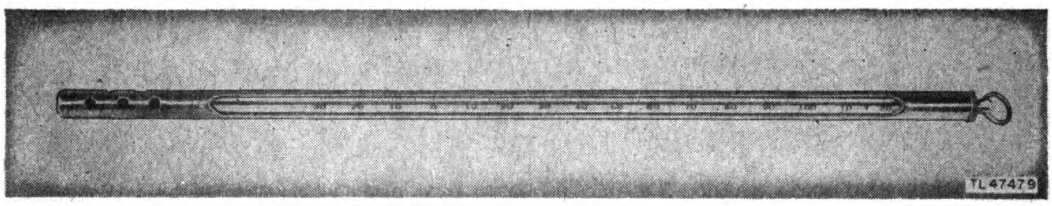

Figure 21. Thermometer and case.

23. THERMOMETER AND CASE (fig. 21).

The thermometer, which consists of a glass tube with a mercury element, is contained in a metal case 14 inches long and approximately ⅜ inch in diameter. The case has an opening to permit temperature readings over the range of —40° to +120°F. The glass tube is replaceable by unscrewing the cap from the end of the case. This cap, which holds the glass tube in place, is lined with a special shock-absorbing material.

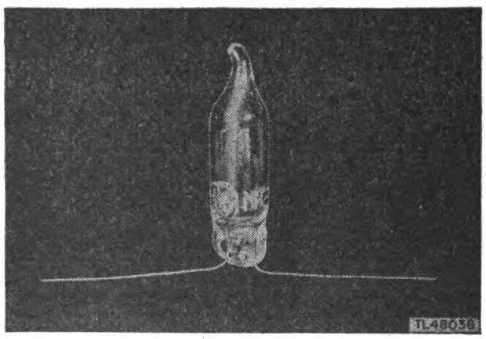

Figure 22. Lamp LM-54.

24. LAMP LM-54 AND CASE (figs. 22 and 23).

Lamp LM-54 is a general utility neon lamp used to detect the presence of r-f power in the various circuits of the radio set under test. A carrying case for Lamp LM-54 is included in Test Set AN/MPM-7.

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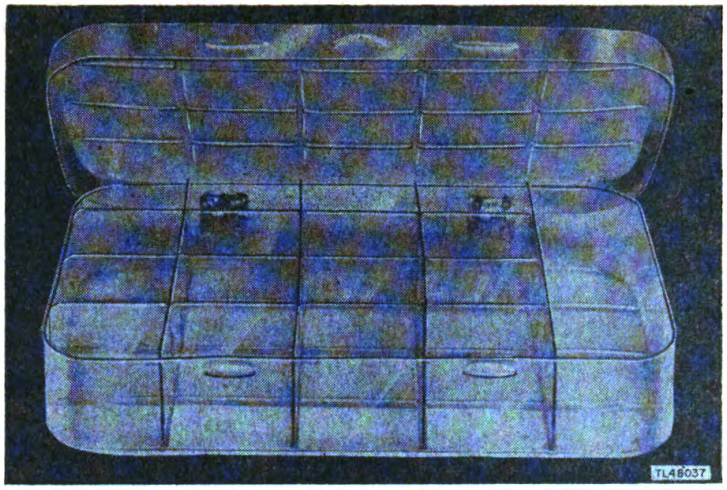

Figure 23. Case for Lamp LM-54.

25. CHESTS.

a. Chest CH-273 (fig. 24) is a wooden chest 42½ inches long, 22¼ inches wide, and 20¾ inches high. Two of these chests are furnished to store the smaller components of Test Set AN/MPM-7.

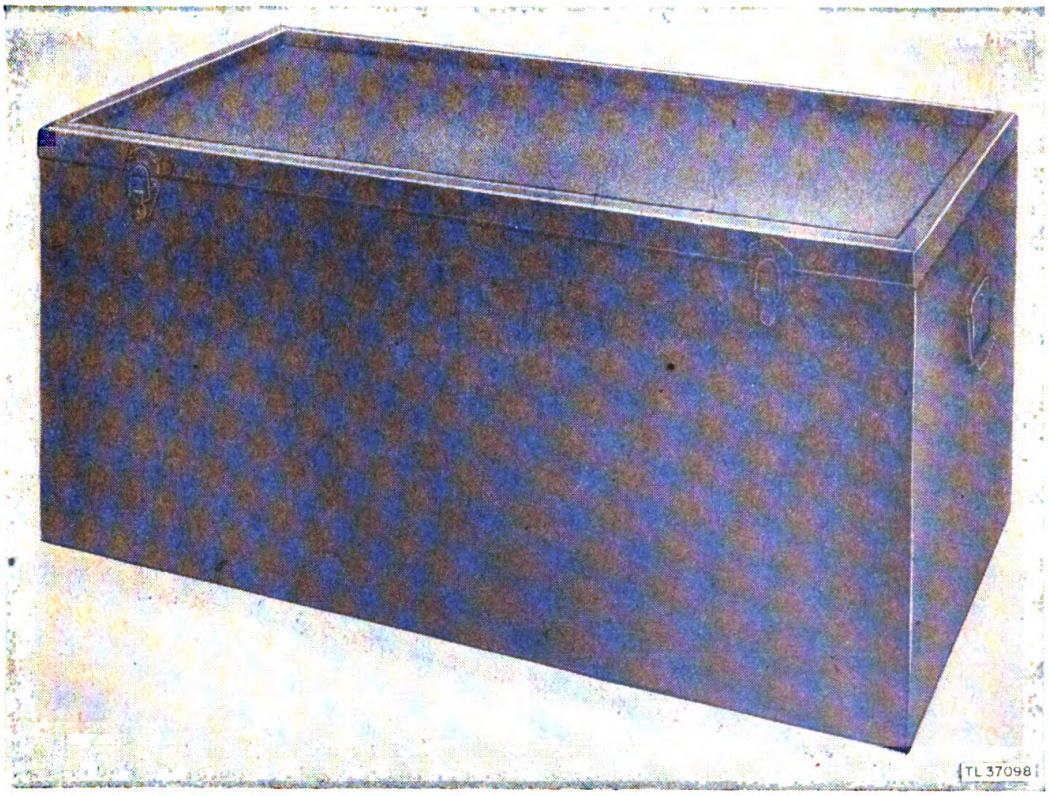

Figure 24. Chest CH-273.

b. Chest CY-154/TPX-1 (fig. 25) is used to store Test Set TS-159/TPX.

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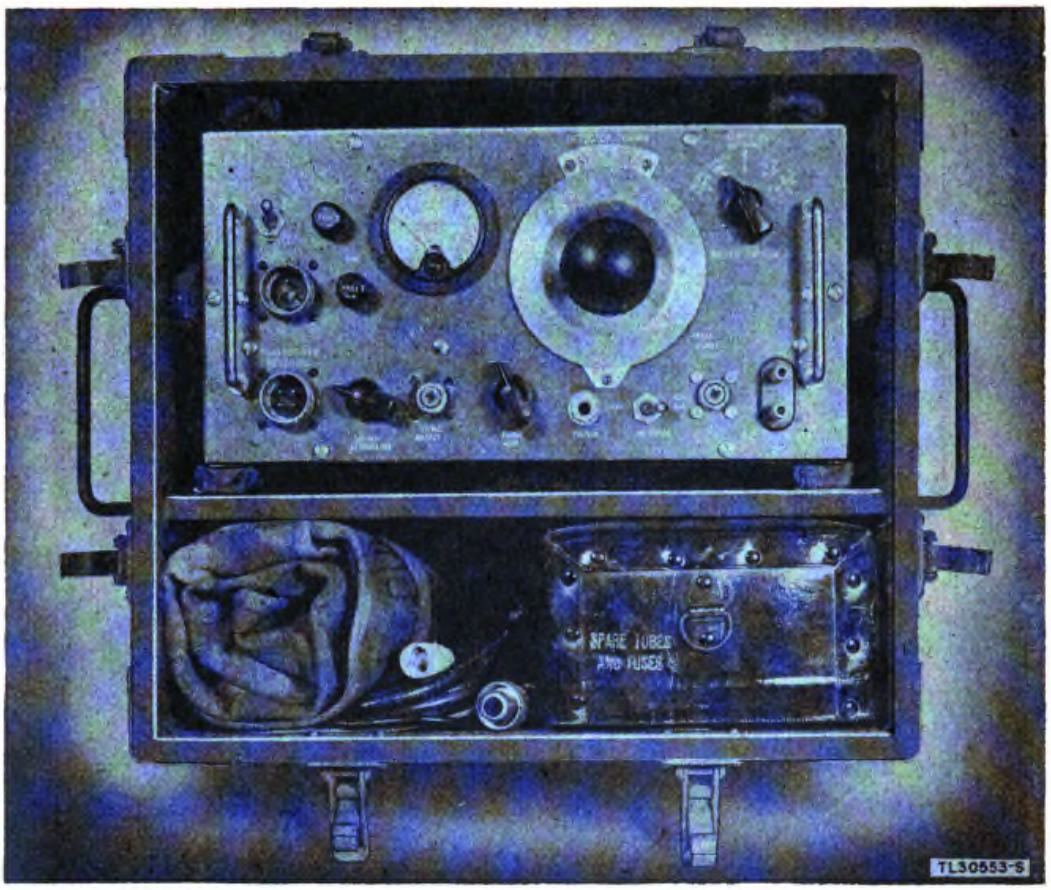

Figure 25. Test Set TS-159/TPX in Chest CY-154/TPX-1.

26. MAINTENANCE.

NOTE: Failure or unsatisfactory performance of equipment used by Army Ground Forces and Army Service Forces will be reported on W.D., A.G.O. Form No. 468 (fig. 26) (Unsatisfactory Equipment Report); by Army Air Forces, on Army Air Forces Form No. 54 (Unsatisfactory Report).

a. General. The information in this paragraph is provided to aid the repairman in maintaining the test equipment furnished with Test Set AN/MPM-7. Take care to keep the equipment in good operating condition. Make routine checks and inspections periodically to prevent serious damage to the equipment. For maintenance procedure for the specific test equipment refer to the applicable technical manual (par. **1**).

b. Chests. Clean the chests (figs. 24 and 25) periodically to prevent dust and dirt from accumulating on the test equipment stored in them. Scrape off any broken or cracked paint and repaint the affected area. Use sandpaper to remove the paint and to prepare the surface for the new coat of paint.

c. Cords. The cords furnished with the test set are subject to damage, weathering, and deterioration. If they are handled carefully, the useful life of the cords will be greatly extended.

(1) Inspect the cords regularly for worn or damaged covering and insulation. If any such places are found, repair or replace the damaged cord immediately.

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(2) Set up the equipment in such a way that no cords are resting on any sharp objects or stretched over the edge of the bench or any test equipment. Make no sharp bends in the cords, because they may result in damage to the wire or covering.

d. Adapters and Plugs. Clean the plugs and adapters periodically to keep dirt and corrosion from accumulating around the pins and the threads of the connecting rings. Never force plugs or adapters together when making a connection; the threads may be stripped or the pins bent until they are of no

WAR DEPARTMENT
UNSATISFACTORY EQUIPMENT REPORT

FOR	TECHNICAL SERVICE: SIGNAL CORPS MATÉRIEL		DATE: 20 FEB 1945
FROM	ORGANIZATION: 885 SIGNAL REPAIR CO.		STATION: APO 258, NEW YORK
TO	NEXT SUPERIOR HEADQUARTERS: SIGNAL OFFICER	STATION: ARMY	TECHNICAL SERVICE:

COMPLETE MAJOR ITEM

NOMENCLATURE: TEST SET TS-159/TPX	TYPE:	MODEL:	
MANUFACTURER:	U. S. A. REG. No. ORDER NO. 817-MPD-44	SERIAL NO.: 153	DATE RECEIVED: 15 DEC 1944

EQUIPMENT WITH WHICH USED (*if applicable*): RADAR SET AN/TPX-4

DEFECTIVE COMPONENT—DESCRIPTION AND CAUSE OF TROUBLE

PART NO.	TYPE	MANUFACTURER	DATE INSTALLED
511-1	WIRE WOUND	WARD LEONARD	20 DEC 1944

DESCRIPTION OF FAILURE AND PROBABLE CAUSE (*If additional space is required, use back of form*)

DATE OF INITIAL TROUBLE	TOTAL TIME INSTALLED			TOTAL PERIOD OF OPERATION BEFORE FAILURE					
	YEARS	MONTHS	DAYS	YEARS	MONTHS	DAYS	HOURS	MILES	ROUNDS
26 JAN 1945		1	6			5	15		

BRIEF DESCRIPTION OF UNUSUAL SERVICE CONDITIONS AND ANY REMEDIAL ACTION TAKEN

RESISTOR BURNED OUT - TOO LOW WATTAGE RATING

TRAINING OR SKILL OF USING PERSONNEL			RECOMMENDATIONS (*If additional space is required, use back of form*)
POOR	FAIR	GOOD	
		X	RESISTOR 511-1 SHOULD HAVE A HIGHER POWER RATING

ORIGINATING OFFICER

TYPED NAME, GRADE, AND ORGANIZATION	SIGNATURE
HAROLD T. MASON, CAPT, SIG C 885 SIG REPAIR CO.	Harold T. Mason

FIRST ENDORSEMENT

TO CHIEF	TECHNICAL SERVICE:	OFFICE:	
NAME, GRADE, AND STATION:		STATION:	DATE:

Instructions

1. It is imperative that the chief of technical service concerned be advised at the earliest practical moment of any constructional, design, or operational defect in matériel. This form is designed to facilitate such reports and to provide a uniform method of submitting the required data.
2. This form will be used for reporting manufacturing, design, or operational defects in matériel, petroleum fuels, lubricants, and preserving materials with a view to improving and correcting such defects, and for use in recommending modifications of matériel.
3. This form will not be used for reporting failures, isolated material defects or malfunctions of matériel resulting from fair-wear-and-tear or accidental damage nor for the replacement, repair or the issue of parts and equipment. It does not replace currently authorized operational or performance records.
4. Reports of malfunctions and accidents involving ammunition will continue to be submitted as directed in the manner described in AR 750-10 (change No. 3).
5. It will not be practicable or desirable in all cases to fill all blank spaces of the report. However, the report should be as complete as possible in order to expedite necessary corrective action. Additional pertinent information not provided for in the blank spaces should be submitted as inclosures to the form. Photographs, sketches, or other illustrative material are highly desirable.
6. When cases arise where it is necessary to communicate with a chief of service in order to assure safety to personnel, more expeditious means of communication are authorized. This form should be used to confirm reports made by more expeditious means.
7. This form will be made out in triplicate by using or service organization. Two copies will be forwarded direct to the technical service; one copy will be forwarded through command channels.
8. Necessity for using this form will be determined by the using or service troops.

W. D., A. G. O. Form No. 468
30 August 1944

This form supersedes W. D., A. G. O. Form No. 468, 1 December 1943, which may be used until existing stocks are exhausted.

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Figure 26. Sample Unsatisfactory Equipment Report.

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further use. Any bent or broken plugs or adapters must be repaired or replaced immediately.

e. Crystal. Crystals must be handled carefully. Do not drop them. In dry climates handle a crystal as little as possible, because static discharges from the fingers will burn out a crystal. Never allow a crystal to be left unshielded near a field of microwave energy; such a field will burn out crystals.

27. UNSATISFACTORY EQUIPMENT REPORT.

a. When trouble in the equipment used by Army Ground Forces or Army Service Forces occurs more often than repair personnel feel is normal, War Department Unsatisfactory Equipment Report, W.D., A.G.O. Form No. 468 (fig. 26) should be filled out and forwarded through channels to the Office of the Chief Signal Officer, Washington 25, D. C.

b. When trouble in equipment used by the Army Air Forces occurs more often than repair personnel feel is normal, Army Air Forces Form No. 54 should be filled out and forwarded through channels.

c. If either form is not available, prepare the data according to sample form reproduced in figure 26.

28. MAINTENANCE PARTS FOR TEST SET AN/MPM-7.

The following information was compiled on 14 May 1945. The appropriate pamphlet of the ASF Signal Supply Catalog for Test Set AN/MPM-7 is SIG 6-AN/MPM-7, Sets of Equipment. For an index of available catalog pamphlets, see the latest issue of ASF Signal Supply Catalog SIG 2.

Ref symbol	Signal Corps stock No.	Name of part and description
	3F3944-7	TEST SET AN/MPM-7: special 3d echelon equip for Radar Sets AN/TPL-1 and AN/TPX-4.
	2Z299-358	ADAPTER M-358: T-type plug to fit Socket SO-239 and Plug PL-259.
	2Z299-359	ADAPTER M-359: connects Socket SO-239 and Plug PL-259.
	3F3988-67	ANTENNA AT-67/AP: horn type.
	2Z1800.30	CASE: neon lamp, acetate 6" x 3½" x 1".
	6Z1744	CASE: steel, nickel pl, Green #600, for 12" glass thermometer.
	2Z599-273	CHEST CH-273: plywood, 42½" x 22¼" x 18¾".
	2Z2499-154	CHEST CY-154/TPX-1: plywood, 16" x 14¼" x 11¾".
	2Z7390-187	CLAMP UG-187/U: quick acting clamp to connect 2 sections of Transmission Line RG-44/U during test.
	1F430-70	CORD CG-70/MPM: 15 ft lg of Radio Frequency Cable RG-5/U.
	1F430-71	CORD CG-71/MPM: 6 ft lg of Radio Frequency Cable RG-11/U.
	3E6015-76	CORD CG-76/TPX-1: 72" lg.

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28. MAINTENANCE PARTS FOR TEST SET AN/MPM-7 (contd).

Ref symbol	Signal Corps stock No.	Name of part and description
	1F430-109	CORD CG-109/TPX-1: 5 ft lg of Radio Frequency Cable RG-58/U.
	1F430-110	CORD CG-110/TPX-1: 60" lg of Radio Frequency Cable RG-8/U.
	3E6000-159	CORD CG-159/TPX-1: 72" lg.
	3E6000-304	CORD CX-304/TPX-3: 60" lg Cable WM-1/U.
	3E6000-395	CORD CX-395/TPL-1: 6 ft lg.
	3E6000-470	CORD CX-470/MPM-7: 50 ft lg.
	3F7193-4	CORD: test probes, voltmeter leads, 2 conductor.
	3F4325-268	CRYSTAL RECTIFIER TEST SET TS-268/U: used to test crystal rectifiers.
	3F4325-208	DUMMY ANTENNA TS-208/MPM: consists of connector Plug PL-259-A w/47-ohm, 1-watt resistor.
	3F4325-279	DUMMY LOAD TS-279/UPM: ceramic coated, Ayrton-Perry WW, noninductive resistor.
	3F4325-270	ECHO BOX TS-270/UP: w/3 calibration charts, in cellulose acetate envelope.
	3F4325-15B	FLUXMETER TS-15B/AP.
	3Z1927	FUSE FU-27: 2 amp, 250 volts, running spare for Oscilloscope TS-34A/AP.
	3F4325-34A	OSCILLOSCOPE TS-34A/AP.
	2Z5952	LAMP LM-52: 6-8 v, 0.15 amp, running spares for Oscilloscope TS-34A/AP.
	2Z5954	LAMP LM-54: neon, 105-125v, 1/25w.
	2Z7226-258	PLUG PL-258: female type, junction.
	2Z7226-259.2	PLUG PL-259: (shorted).
	3F4325-125	POWER METER TS-125/AP.
	3H4531-6	POWER UNIT PU-6/TPS-1: Homelite model HRU-AD, portable.
	3F3988-70	PROBE ANTENNA AT-70/U: brass probe, silver pl.
	2Z7390-57	RADIO FREQUENCY ADAPTER UG-57/U: splicing adapter.
	2Z7390-32	RADIO FREQUENCY COUPLING UG-32/U: coaxial coupling fitting.
	2Z7390-30	RADIO FREQUENCY JACK UG-30/U: female contact.
	3F4325-155B	SIGNAL GENERATOR TS-155B/UP.
	6R7529-1	SPANNER WRENCH: per Signal Corps drawing SC-B-11820, used on rotating joint.
	3F4325-159	TEST SET TS-159/TPX.
	3F4325-216	TEST SET TS-216/TPL-1.
	6Z8648-3	THERMOMETER: Green #230, indicating, mercury, glass.
	2J1N21B	TUBE 1N21B.
	2J5Y3GT/G	TUBE: JAN-5Y3GT/G, running spare for Oscilloscope TS-34A/AP.
	2J6AG7	TUBE: JAN-6AG7, running spare for Oscilloscope TS-34A/AP.
	2J6SL7GT	TUBE: JAN-6SL7GT, running spare for Oscilloscope TS-34A/AP.

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28. MAINTENANCE PARTS FOR TEST SET AN/MPM-7 (contd).

Ref symbol	Signal Corps stock No.	Name of part and description
	2J6SN7GT	TUBE: JAN-6SN7GT, running spare for Oscilloscope TS-34A/AP.
	2J6X5GT/G	TUBE: JAN-6X5GT/G, running spare for Oscilloscope TS-34A/AP.
	2J6AK5	TUBE: JAN-6AK5, running spare for Oscilloscope TS-34A/AP.
	2J2AP1	TUBE: JAN-2AP1, running spare for Oscilloscope TS-34A/AP.
	3F4325-265	VOLTAGE DIVIDER TS-265/UP: used to divide voltage pulses for viewing on a synchroscope.
	3F4325-117	WAVEMETER TEST SET TS-117/GP.

Order No. 2333-MPD-45; 6,424 copies; 25 June 1945.

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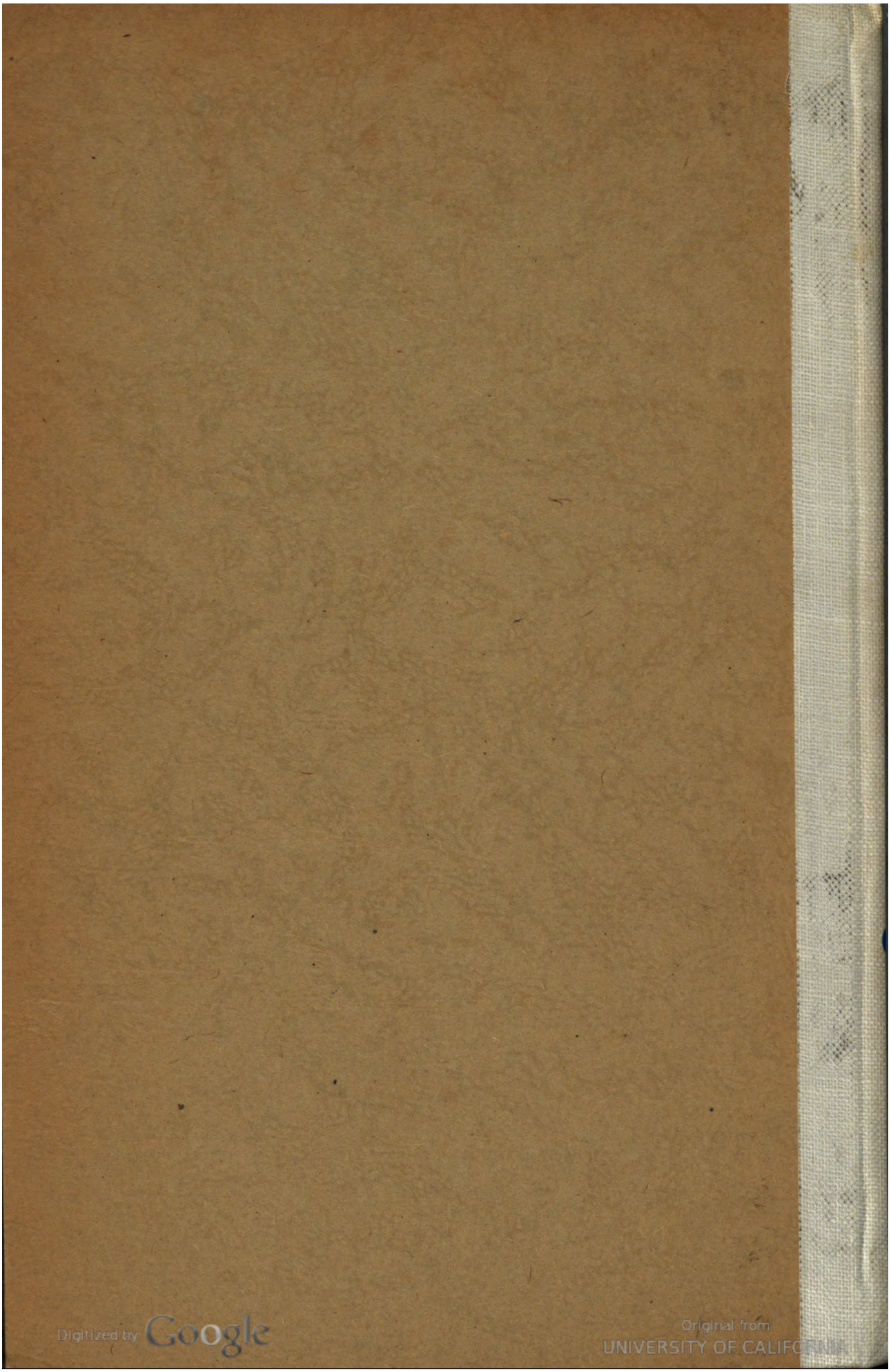
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