TM11-1080

WAR DEPARTMENT TECHNICAL MANUAL

TEST SET AN/GPM-1

THIS IS MASTER
WITH CHANGES
DO NOT SELL

WAR DEPARTMENT • *OCTOBER 1944*

TM 11-1080
C 1

TECHNICAL MANUAL

TEST SET AN/GPM-1

CHANGES No. 1

WAR DEPARTMENT
WASHINGTON 25, D. C., 6 December 1945

TM 11-1080, 31 October 1944, is changed, as follows:

Insert the following note after caption of figure 1:

Note (Added). On some procurements Test Unit I-176 is supplied instead of Test Set I-179 and Voltohmmeter TS-294B/U is supplied instead of Voltohmmeter TS-294A/U (Radio City Products model 664).

3. LIST OF COMPONENTS.

The components of * * * Set AN/GPM-1 are:

Quantity	*Article*	*Stock No.*
1	Test Set I-179 **or Test Unit I-176.**	3F4179 **or 3F4470-176**
*	* * * *	* * *
1	Signal Generator I-222-A_____	3F3900-222A.
1	**Voltohmmeter TS-294A/U** (Radio City Products model 664) **or Voltohmmeter TS-294B/U.**	3F14050 **or 3F14050.1.**
*	* * * *	* * *

4.1. TEST UNIT I-176 (Added).

a. Test Unit I-176 is an instrument designed to measure resistance, alternating current (a-c), direct current (d-c), and voltage over a wide range of values. The complete details of the operation and maintenance of this instrument are covered in TM 11-2626. Batteries BA-2 and BA-30 are supplied with this instrument but must be installed in the test set before use.

b. There are five a-c voltage ranges, covering 0 to 5 volts, 0 to 25 volts, 0 to 100 volts, and 0 to 1,000 volts; each has a sensitivity of 1,000 ohms per volt.

c. The five d-c voltage ranges, providing a choice of either 1,000- or 20,000-ohm-per-volt sensitivity, are 0 to 5 volts, 0 to 25 volts, 0 to 100 volts, 0 to 250 volts, and 0 to 1,000 volts. An additional high-voltage range of 0 to 5,000 volts has a sensitivity of 20,000 ohms per volt.

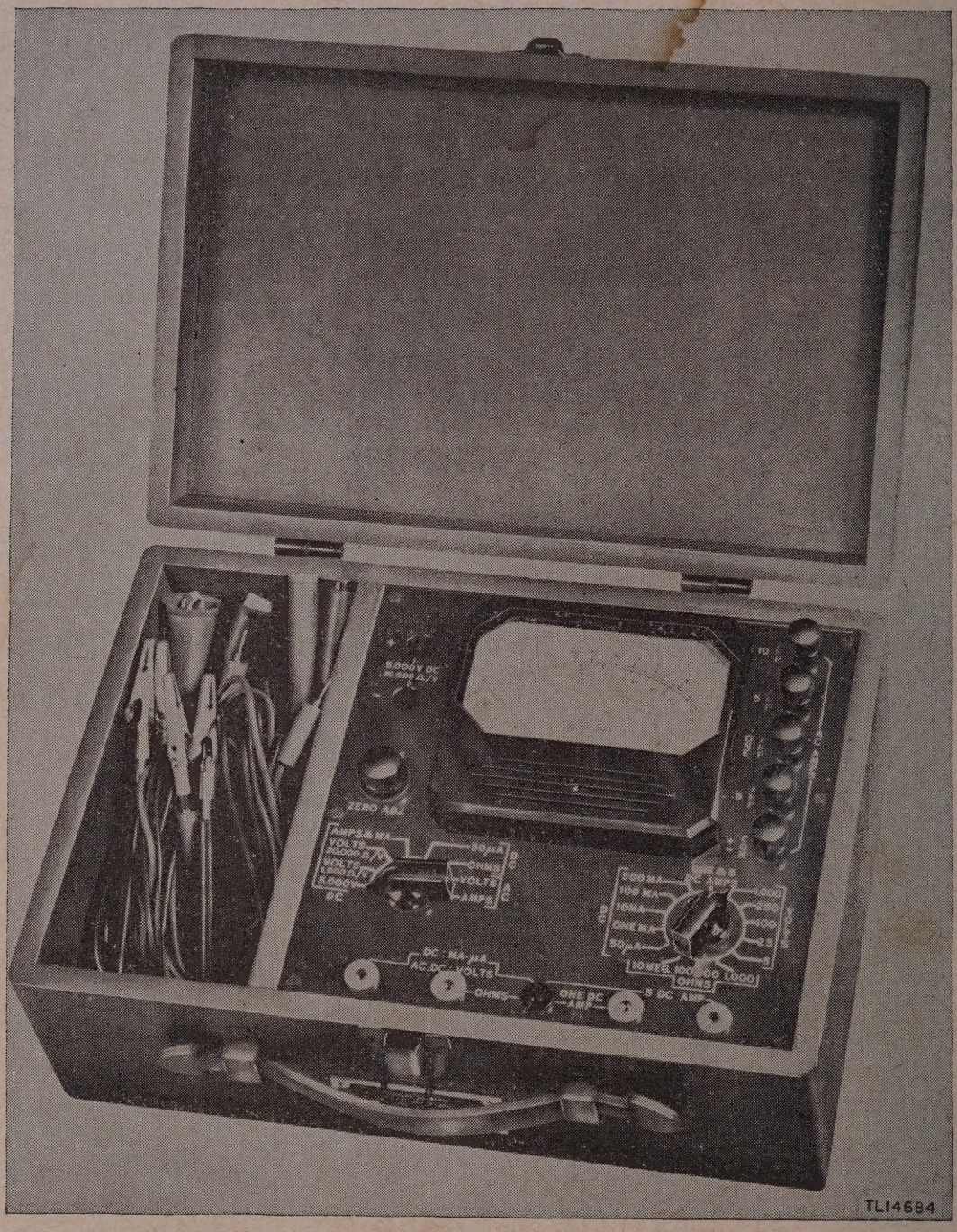


Figure 4.1. Test Unit I–176, with cover raised.

d. Alternating-current (a-c) measurements can be made in four ranges: 0 to 0.5 ampere, 0 to 1 ampere, 0 to 5 amperes, and 0 to 10 amperes.

e. Direct-current (d-c) measurements can be made in seven ranges: 0 to 50 microamperes, 0 to 1 milliampere, 0 to 10 milliamperes, 0 to 100 milliamperes, 0 to 500 milliamperes, 0 to 1 ampere, and 0 to 5 amperes.

f. The three ranges provided for resistance measurements are 0 to 1,000 ohms, 0 to 100,000 ohms, and 0 to 10,000,000 ohms (10 megohms). All ranges use a constant-resistance ohmmeter circuit, with a 1.5-volt internal battery for the two lower ranges and a 22.5-volt internal battery for the highest range.

g. Two pairs of ordinary test leads, four removable alligator clips, and one pair of special high-voltage multiplier-type leads for the 5,000-volt range are included with the instrument and are kept in a compartment provided for the purpose in the case of the instrument.

9. VOLTOHMMETER TS-294A/U (RADIO CITY PRODUCTS MODEL 664) OR TS-294B/U (RCA JUNIOR VOLTOHMYST TYPE 165A).

This instrument (fig. * * * ohmmeter before use. TM 11-2624 **and TM 11-2624B** cover the operation and maintenance in detail. The ranges are as follows:

* * * * * * *

Figure 9. ***Voltohmmeter TS-294A/U*** *(Radio City Products model 664), front view.*



Figure 9.1 Voltohmmeter TS-294B/U.

SECTION IV

MAINTENANCE

Delete the statement following the section heading and substitute the following therefor:

Note. Failure or unsatisfactory performance of equipment used by Army Ground Forces and Army Service Forces will be reported on WD AGO Form 468 (Unsatisfactory Equipment Report); by Army Air Forces, on AAF Form 54 (Unsatisfactory Report). If either form is not available, prepare letter containing the data elicited by the sample form shown in figure 15.1 without reproducing copies of the form.

22.1 UNSATISFACTORY EQUIPMENT REPORT (Added).

a. When trouble in equipment used by Army Ground Forces or Army Service Forces occurs more often than repair personnel feel is normal, War Department Unsatisfactory Equipment Report, WD AGO Form 468 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 Army Air Forces occurs more often than repair personnel feel is normal, AAF Form 54 should be filled out and forwarded through channels.

c. If either form is not available, prepare letter containing the data elicited by the sample form shown in figure 15.1 without reproducing copies of the form.

24. MAINTENANCE PARTS LIST FOR TEST SET AN/GPM–1.

NOTE: Maintenance parts lists * * * as indicated below:

* * * * * * *

Tube tester Espey model 105	TM 11–2516
Voltohmmeter TS–294A/U (Radio City Products model 664).	TM 11–2624
Voltohmmeter TS–294B/U	**TM 11–2624B**
Test Set I–179	TM 11–2600
Test Unit I–176	**TM 11–2626**
Oscilloscope BC–1060–A	TM 11–2526

* * * * * * *

The maintenance parts * * * entire test set.

* * * * * *

WAR DEPARTMENT

UNSATISFACTORY EQUIPMENT REPORT

FOR	TECHNICAL SERVICE: Signal Corps — MATÉRIEL		DATE: 1 Feb 45
FROM	ORGANIZATION: 175 Signal Repair Co		STATION: APO 102
TO	NEXT SUPERIOR HEADQUARTERS: Supply Sec, Hq Fourth Army Sig Sv	STATION: APO 110	TECHNICAL SERVICE: Signal Corps

COMPLETE MAJOR ITEM

NOMENCLATURE: Radio Transmitter BC-123-A	TYPE: Ground, vehicular		MODEL: A
MANUFACTURER: American Radio Corp	U. S. A. REG. NO.: Order No. 1234-Phila-45	SERIAL NO.: 12345	DATE RECEIVED: 5 Jan 45

EQUIPMENT WITH WHICH USED (*If applicable*): Radio Set SCR-456-A in Tank, Medium, M4

DEFECTIVE COMPONENT—DESCRIPTION AND CAUSE OF TROUBLE

PART NO.: Sig C Stk No. 3E47-2	TYPE: Capacitor C20; fixed; 1-mf; 500 vdcw	MANUFACTURER: American Radio Corp	DATE INSTALLED: When manufactured

DESCRIPTION OF FAILURE AND PROBABLE CAUSE (*If additional space is required, use back of form*): Capacitor C20 shorts out due to humid operating conditions

DATE OF INITIAL TROUBLE	TOTAL TIME INSTALLED			TOTAL PERIOD OF OPERATION BEFORE FAILURE					
	YEARS	MONTHS	DAYS	YEARS	MONTHS	DAYS	HOURS	MILES	ROUNDS
15 Jan 45	-	-	-	0	0	5		-	-

BRIEF DESCRIPTION OF UNUSUAL SERVICE CONDITIONS AND ANY REMEDIAL ACTION TAKEN: Operation in tropics; heavy rainfall. Was replaced and set given moistureproofing and fungiproofing treatment, 20 Jan 45.

TRAINING OR SKILL OF USING PERSONNEL			RECOMMENDATIONS (*If additional space is required, use back of form*)
POOR	FAIR	GOOD: X	Substitute capacitor designed for tropical operation

ORIGINATING OFFICER

TYPED NAME, GRADE, AND ORGANIZATION: E. A. Wilson, 1st Lt, Sig C, 175 Signal Repair Co

SIGNATURE: E. A. Wilson

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
20 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.

U. S. GOVERNMENT PRINTING OFFICE 16—42569-3

TL19589C

Figure 15.1 Sample Unsatisfactory Equipment Report.

25. ARMY SERVICE FORCES SIGNAL SUPPLY CATALOG (Added).

The following information was compiled on 11 August 1945.

The appropriate pamphlet of the ASF Signal Supply Catalog for Test Set AN/GPM-1 is:

SIG 6-AN/GPM-1, Sets of Equipment.

For an index of available catalog pamphlets, see the latest issue of ASF Signal Supply Catalog SIG 2.

[AG 300.7 (22 Oct 45)]

BY ORDER OF THE SECRETARY OF WAR:

OFFICIAL:
EDWARD F. WITSELL
Major General
Acting The Adjutant General

DWIGHT D. EISENHOWER
Chief of Staff

DISTRIBUTION:

AAF (5); AGF (5); ASF (2); T of Opns (5); Dept (2); Base Comd (2); Arm & Sv Bd (1); S Div ASF (1); Tech Sv (2); SvC (2); Air Tech SvC (2); Dep 11 (2); Lab 11 (2); 4th Ech Maint Shop 11 (2); 5th Ech Maint Shop 11 (2); Three (3) copies to each of the following: T/O & E 11-107; 11-127; 11-587; 11-592; 11-597.

Refer to FM 21-6 for explanation of distribution formula.

AGO 2598C

U. S. GOVERNMENT PRINTING OFFICE: 1945

TECHNICAL MANUAL

TEST SET AN/GPM-1

CHANGES No. 2

DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., *5 April 1949*

TM 11-1080, 31 October 1944, is changed as follows:

The classification RESTRICTED is removed.

3. (Superseded.) Components of Test Set AN/GPM-1

The various procurements of Test Set AN/GPM-1 contain different models of such components as the oscilloscope, test set, tube tester, and voltohmmeter. The components are listed below. Where two or more items are shown, only one is supplied.

Quantity	Name of component	Nomenclature
1	Oscilloscope	Oscilloscope BC-1060-A *or* Oscilloscope TS-239/UP
1	Test set	Test Set I-179 *or* Test Unit I-176
1	Tube tester	Tube Tester I-177 *or* Tube Tester I-177-A
1	Oscillator	Oscillator I-151-A *or* Oscillator I-151-E
1	Signal generator	Signal Generator I-222-A
1	Voltohmmeter	Voltohmmeter TS-294A/U *or* Voltohmmeter TS-294B/U *or* Voltohmmeter TS-294C/U
1	Headset	Headset HS-30-U
1	Chest mount	Chest Mount FT-502
2	Outlet box	Outlet Box J-45/MPN-1
6	Cord (black insulator)	Cord CD-502
6	Cord (red insulator)	Cord CD-502
3	Cord (black insulator)	Cord CD-503
3	Cord (red insulator)	Cord CD-503
3	Cord (black insulator)	Cord CD-504
3	Cord (red insulator)	Cord CD-504
2	Cord	Cord CD-505
1	Cord	Cord CD-605
1	Cord	Cord CD-1106
1	Cord	Cord CD-1141
1	Cord	Cord CG-71/MPM *or* Cord CG-67/MRQ-2
1	Cord	Cord CD-1265

Quantity	Name of component	Nomenclature
2	Technical manual	TM 11–1080
2	Battery	Battery BA–2
2	Battery	Battery BA–42
2	Battery	Battery BA–205/U

5.1 (Added.) Oscilloscope TS–239/UP

The oscilloscope, with its accessories and transit case, is shown in figure 5.1. This scope uses a 3-inch cathode-ray tube that is mounted at an angle of 45° from the front panel. The screen on the CRT (cathode-ray tube) is viewed through a green plexiglas window in the front

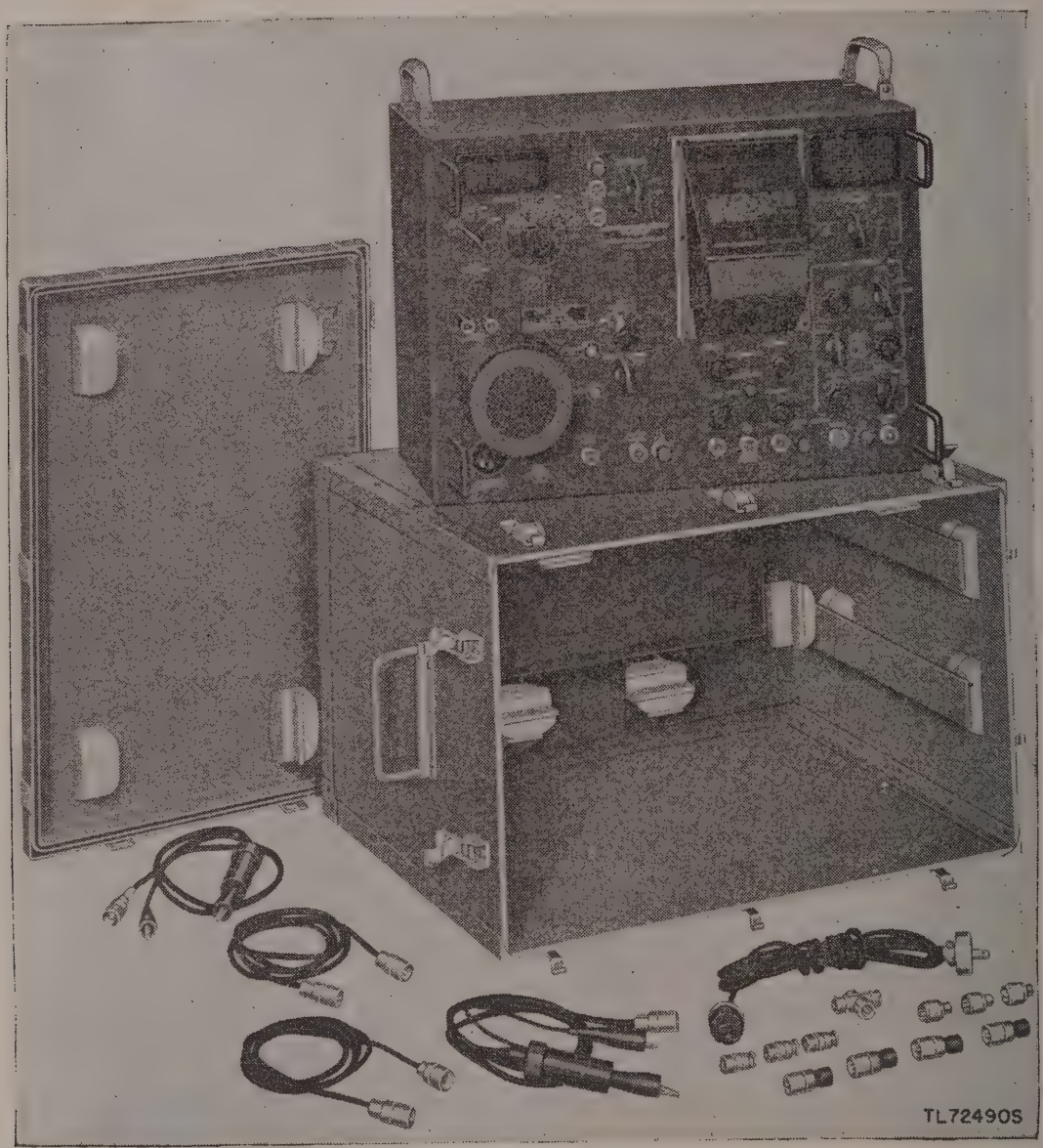


Figure 5.1. Oscilloscope TS–239/UP.

panel. The image of an illuminated orange-colored scale reflected from the surface of the window appears to coincide with the CRT screen, thus producing a reference scale free from parallax and differing in color from the signal image. The scope is of the start-stop type in which the horizontal sweep is started independently by each signal pulse so that such pulses do not have to occur periodically to be viewed satisfactorily. Sweep speeds are available from about 1 to 100,000 microseconds. Any portion of sweeps nominally over 10 microseconds may be delayed and expanded for more detailed examination of part of the signal. Vertical amplification is uniform over a wide frequency band so that fast-rising and flat-topped pulses from about 0.2 to 5,000 microseconds may be adequately displayed. Complete technical data with operating and servicing instructions are contained in Handbook of Operating and Maintenance Instructions AN 16–35TS239–3.

6. Tube Tester, I–177

* * * * * * *

6.1 (Added.) Tube Tester I–177–A

The differences between Tube Tester I–177 and I–177–A are all in the internal construction. Technical characteristics, operation, and maintenance instructions for both testers are the same and are contained in TM 11–2516.

Figure 6. Tube ***Tester I–177****, front view.*

7.1 (Added.) Oscillator I–151–E

The technical characteristics and operating instructions for Oscillator I–151–E (fig. 7.1) are the same as explained in paragraph 7. The differences between Oscillator I–151–A and Oscillator I–151–E are mainly in the internal construction; both models are described in TM 11–2524.

9.1 (Added.) Voltohmmeter TS–294C/U

This voltohmmeter is very similar to the voltohmmeters described in paragraph 9 except that the a-c and d-c voltage ranges are 0 to 5, 10, 50, 100, 500, and 1,000 volts. Technical characteristics, operating instructions, and maintenance data are contained in TM 11–2624B.

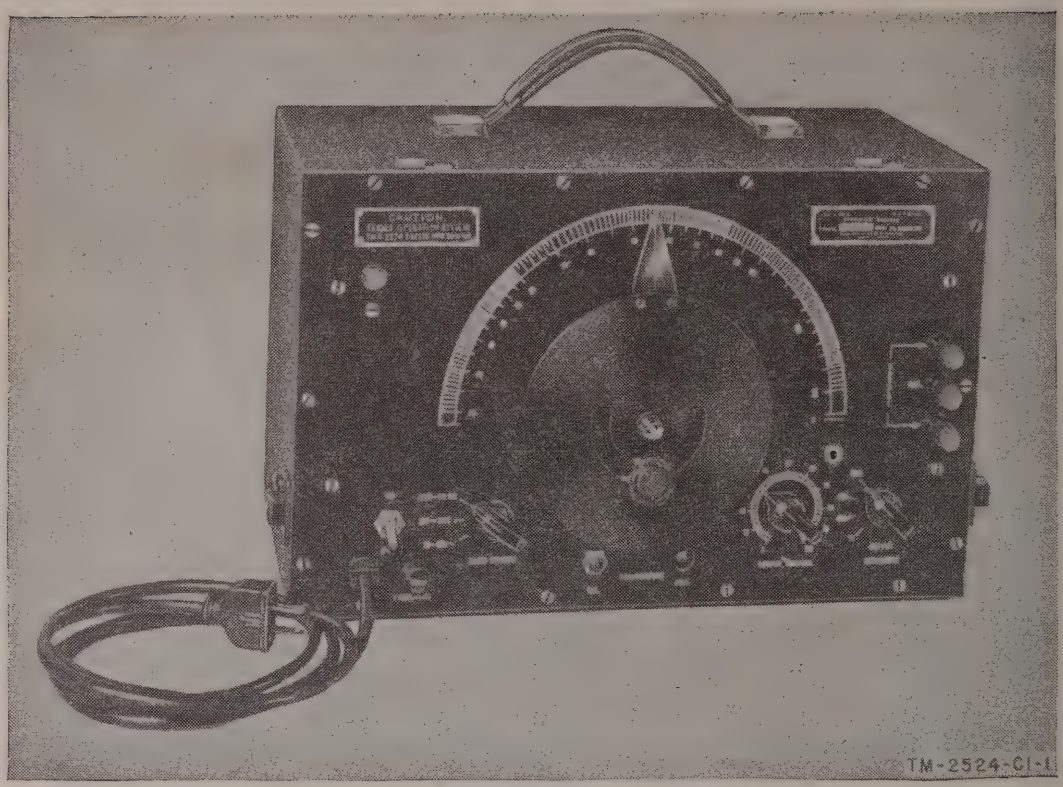


Figure 7.1. Oscillator I–151–E.

12. Cords

* * * * * * *

l. (Added.) Cord DC–1265 (fig. 12.1). This cord is a 6-foot, rubber-covered, two-conductor extension cord with a male plug on one end and a female receptacle on the other end. It is used as a general utility cord to connect various chassis to a power source.

m. (Added.) Cord CG–67/MRQ–2 (fig. 12.2). Some models of Test Set AN/GPM–1 include this cord instead of Cord CG–71/MPM (*k* above). The cords are used for the same purpose.

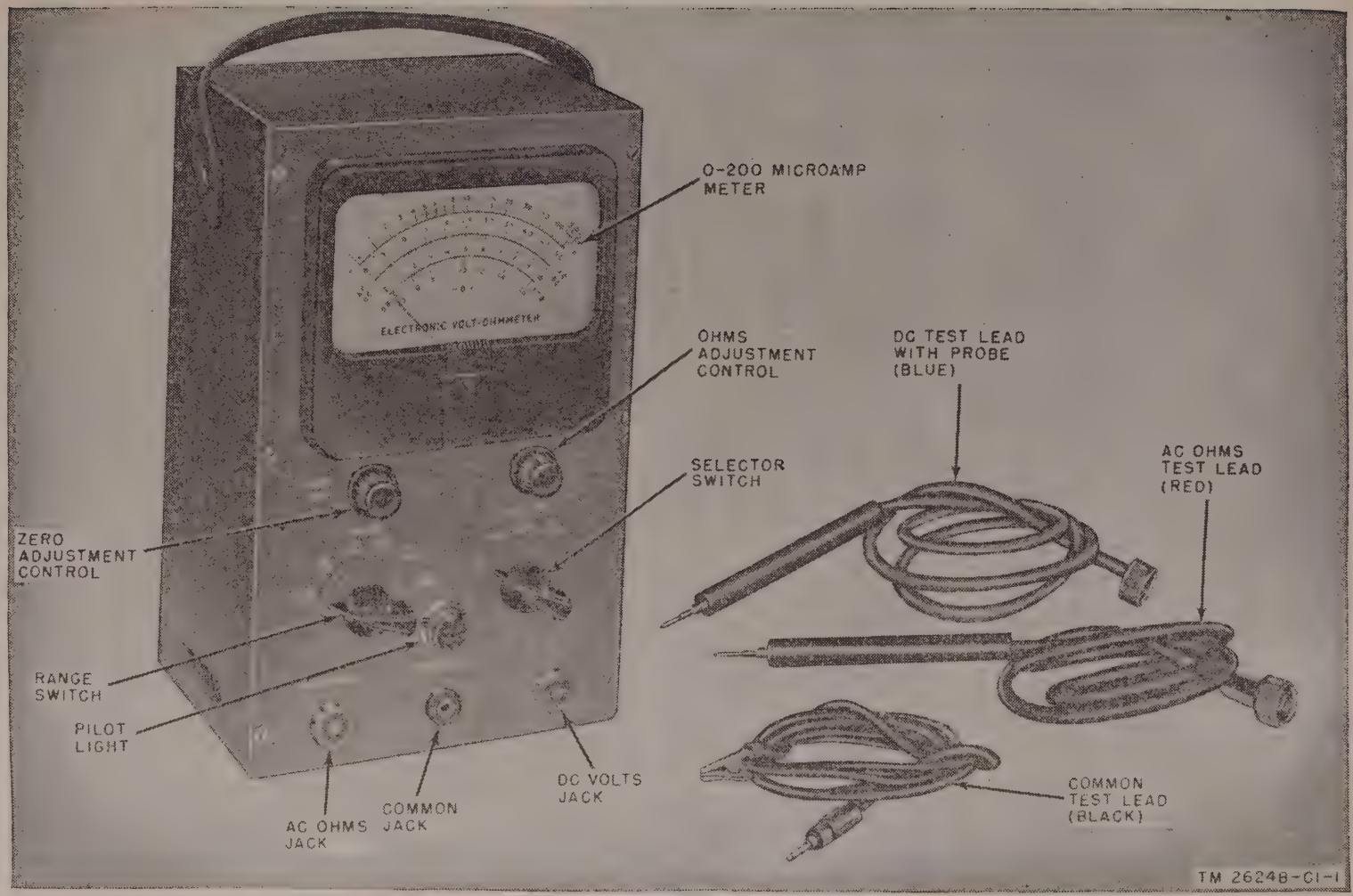


Figure 9.2. Voltohmmeter TS-294C/U.

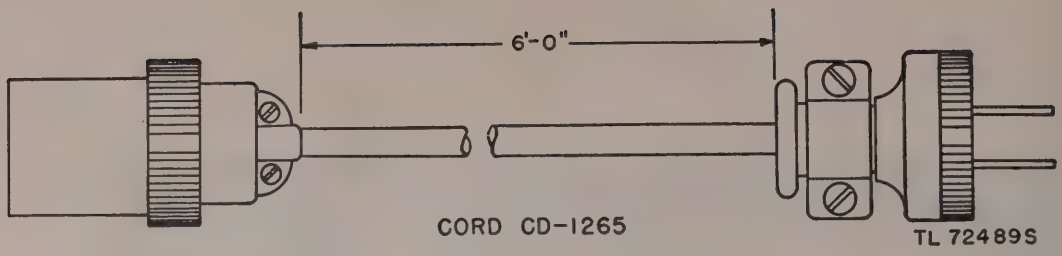


Figure 12.1. Details of Cord CD–1265.

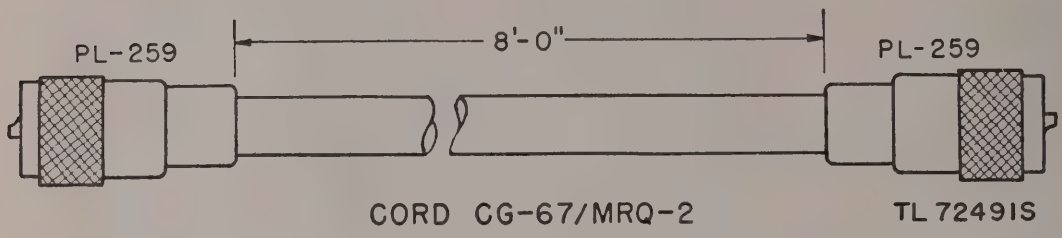


Figure 12.2. Details of Cord CG–67/MRQ–2.

24. Maintenance Parts List for Test Set AN/GPM–1

Note. (Superseded.) Maintenance parts lists for the various items of test equipment of Test Set AN/GPM–1 may be found in the technical manual for the various equipments as listed below:

Oscillator I–151–A	TM 11–2524
Oscillator I–151–E	TM 11–2524
Tube Tester I–177	TM 11–2516
Tube Tester I–177–A	TM 11–2516
Test Unit I–176	TM 11–2626
Signal Generator I–222–A	TM 11–1082
Voltohmmeter TS–294A/U	TM 11–2624
Voltohmmeter TS–294B/U	TM 11–2624B
Voltohmmeter TS–294C/U	TM 11–2624B
Oscilloscope BC–1060–A	TM 11–2526
Oscilloscope TS–239/UP	HOMI AN 16–35TS239–3

* * * * * * *

[AG 300.7 (24 March 49)]

By order of the Secretary of the Army:

Official:
EDWARD F. WITSELL
Major General
The Adjutant General

OMAR N. BRADLEY
Chief of Staff, United States Army

Distribution:

Army:

Tech Sv (2); Arm & Sv Bd (1); AAF Bd (ea Sv Test Sec) (1); AFF (5); OS Maj Comd (5); Base Comd (3); MDW (5); A (ZI) (20), (Overseas) (5); CHQ (2); FC (2); USMA (2); Sch 11 (10); Gen Dep (10); Dep 11 (5) except Baltimore & Sacramento (20); Tng Ctr (2); PE (10) Overseas Supply Div (2); Lab 11 (2); 4th & 5th Ech Maint Shops 11 (2); T/O & E 11–47 (2); 11–107 (2); 11–127 (2); 11–587 (2); 11–592 (2); 11–597 (2); 11–617 A, B, C, D, E (2); SPECIAL DISTRIBUTION.

Air Force:

USAF (5); USAF Maj Comd (5); USAF Sub Comd (3); Services (MATS) (2); Class III Instls (2); SPECIAL DISTRIBUTION.

For explanation of distribution formula see SR 310–90–1.

U. S. GOVERNMENT PRINTING OFFICE: 1949

WAR DEPARTMENT TECHNICAL MANUAL

TM 11-1080

TEST SET AN/GPM-1



WAR DEPARTMENT OCTOBER 1944

WAR DEPARTMENT,
WASHINGTON 25, D. C., 31 OCTOBER 1944.

TM 11-1080, Test Set AN/GPM-1, is published for the information and guidance of all concerned.

[A.G. 300.7 (31 May 44).]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
Major General,
The Adjutant General.

DISTRIBUTION:

IBn 11 (2); IC 11 (5);
Armies (Sig) (5); Corps (Sig) (5); Svc (Sig) (5); Depts (5); Def (2); T of O (5); Base (5); ASF Dep (Sig Sec) (2); Oversea Sig Dep (10); Gen Oversea SOS Dep (Sig Sec) (10); Sig C Rep Shs (2); Sig C Inspec Z (2); Sig C Proc Dists (2); PE (Sig Sec) (2); Arm & Sv Boards (2).
IBn 11; T/O & E 11-400, (A), Sig AW Orgn Bn, Hq.
IC 11; T/O 11-107, 11-237, 11-287, 11-400 Sig AW Orgn (B) Co, Hq Team, Sig AW Orgn, Radar Rep Plat (C), 11-357, 11-500 Sig Sv Orgn (EC), Radar Maint Team, 11-587, 11-592, 11-597, 11-617.
For explanation of symbols, see FM 21-6.

TABLE OF CONTENTS

			Paragraph	Page
SECTION	I.	Description.		
		General	1	1
		Power	2	1
		List of components	3	2
		Test Set I-179	4	3
		Oscilloscope BC-1060-A	5	5
		Tube tester, Espey model 105	6	6
		Oscillator I-151-A	7	7
		Signal Generator I-122-A	8	7
		Volt-Ohmmeter, Radio City Products model 664	9	7
		Outlet Box J-45-( )/MPN-1	10	10
		Headset HS-30-U	11	10
		Cords	12	11
		Chest Mount FT-502	13	14
		Truck M-30	14	14
	II.	Installation and operation.		
		General	15	15
		Power supplies	16	15
		Headset HS-30-U	17	15
	III.	Functioning of parts.		
		General	18	16
	IV.	Maintenance.		
		General	19	17
		Headset HS-30-U	20	17
		Cords	21	20
		Truck wiring	22	20
	V.	Supplementary data.		
		Resistors and capacitors	23	21
		Maintenance parts list for Test Set AN/GPM-1	24	21

LIST OF ILLUSTRATIONS

Fig. No.	Title	Page
1	Test Set AN/GPM-1, mounted position in truck	VIII
2	Truck M-30 and Power Unit PE-95, side view	1
3	Rectifier Power Unit PP-34-()/MSM, mounted position in truck	2
4	Test Set I-179, front view	4
5	Oscilloscope BC-1060-A, front view	5
6	Tube tester, Espey model 105, front view	6
7	Oscillator I-151-A, front view	7
8	Signal Generator I-122-A, front view	8
9	Volt-Ohmmeter, Radio City Products model 664	9
10	Outlet Box J-45-( )/MPN-1, top view	10
11	Details of Cords CD-1141, CG-71/MPM, and CD-1106	12
12	Details of Cords CD-605, CD-505, CD-502, CD-503, CD-504, CD-1103, and CD-1102	13
13	Chest Mount FT-502, front view	14
14	Truck M-30, interior view	14
15	Truck M-30, schematic wiring diagram	19
16	Resistor color code, use	21
17	Capacitor color code, use	22

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 — Tubes, meters, knobs, panels, switches, bakelite cases, adapters, etc.

2. Cut — Cables, wires, etc.

3. Burn — Technical manuals, wooden cases, tube charts, etc.

4. Bend — Chests, cases, nameplates, etc.

5. Bury or scatter — Any or all of the above pieces after breaking.

DESTROY EVERYTHING

FIRST AID TREATMENT FOR ELECTRIC SHOCK

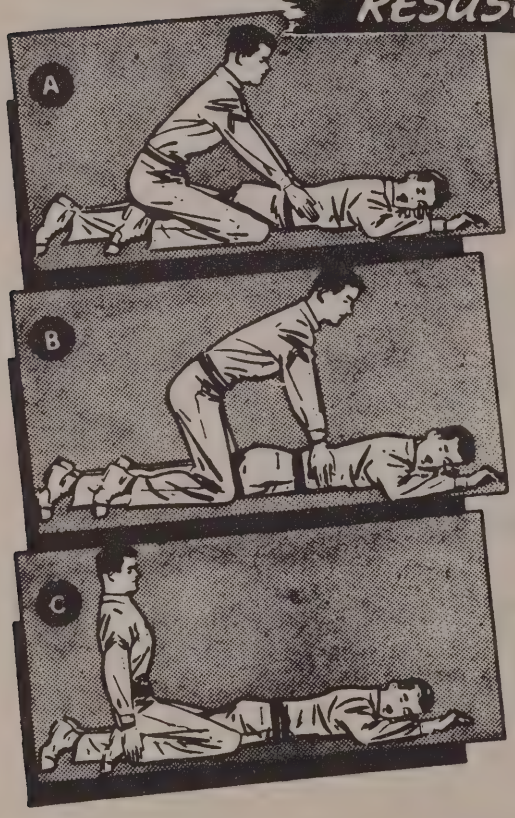
I. FREE THE VICTIM FROM THE CIRCUIT IMMEDIATELY.

Shut off the current. If this is not immediately possible, use a dry nonconductor (rubber gloves, rope, board) to move either the victim or the wire. Avoid contact with the victim. If necessary to cut a live wire, use an axe with a dry wooden handle. Beware of the resulting flash.

II. ATTEND INSTÀNTLY TO THE VICTIM'S BREATHING.

Begin resuscitation at once on the spot. Do not stop to loosen the victim's clothing. Every moment counts. Keep the patient warm. Wrap him in any covering available. Send for a doctor, Remove false teeth or other obstructions from the victim's mouth.

RESUSCITATION



POSITION

1. Lay the victim on his belly, one arm extended directly overhead, the other arm bent at the elbow, the face turned outward and resting on hand or forearm, so that the nose and mouth are free for breathing (fig. A).

2. Straddle the patient's thighs, or one leg, with your knees placed far enough from his hip bones to allow you to assume the position shown in figure A.

3. Place your hands, with thumbs and fingers in a natural position, so that your palms are on the small of his back, and your little fingers just touch his lowest ribs (fig. A).

FIRST MOVEMENT

4. With arms held straight, swing forward slowly, so that the weight of your body is gradually brought to bear upon the victim. Your shoulders should be directly over the heels of your hands at the end of the forward swing (fig. B). Do not bend your elbows. The first movement should take about 2 seconds.

SECOND MOVEMENT

5. Now immediately swing backward, to remove the pressure completely (fig. C).

6. After 2 seconds, swing forward again. Repeat this pressure-and-release cycle 12 to 15 times a minute. A complete cycle should require 4 or 5 seconds.

CONTINUED TREATMENT

7. Continue treatment until breathing is restored or until there is no hope of the victim's recovery. Do not give up easily. Remember that at times the process must be kept up for hours.

8. During artificial respiration, have someone loosen the victim's clothing. Wrap the victim warmly; apply hot bricks, stones, etc. Do not give the victim liquids until he is fully conscious. If the victim must be moved, keep up treatment while he is being moved.

9. At the first sign of breathing, withhold artificial respiration. If natural breathing does not continue, immediately resume artificial respiration.

10. If operators must be changed, the relief operator kneels behind the person giving artificial respiration. The relief takes the operator's place as the original operator releases the pressure.

11. Do not allow the revived patient to sit or stand. Keep him quiet. Give hot coffee or tea, or other internal stimulants.

HOLD RESUSCITATION DRILLS REGULARLY

TL 37451

WARNING

HIGH VOLTAGE

is used in the operation

of this equipment.

DEATH ON CONTACT

may result if personnel fail

to observe safety precautions.

The major components of the radar equipment are contained within shielded cases with access doors which, when opened, automatically remove dangerous voltages from within the units. Remember that in several of the tests for which this equipment is used, safety interlocks must be short-circuited in order to make the necessary tests. Consequently, extreme caution must be exercised during these tests, since these safety devices have been placed in the units specifically to protect operating personnel.

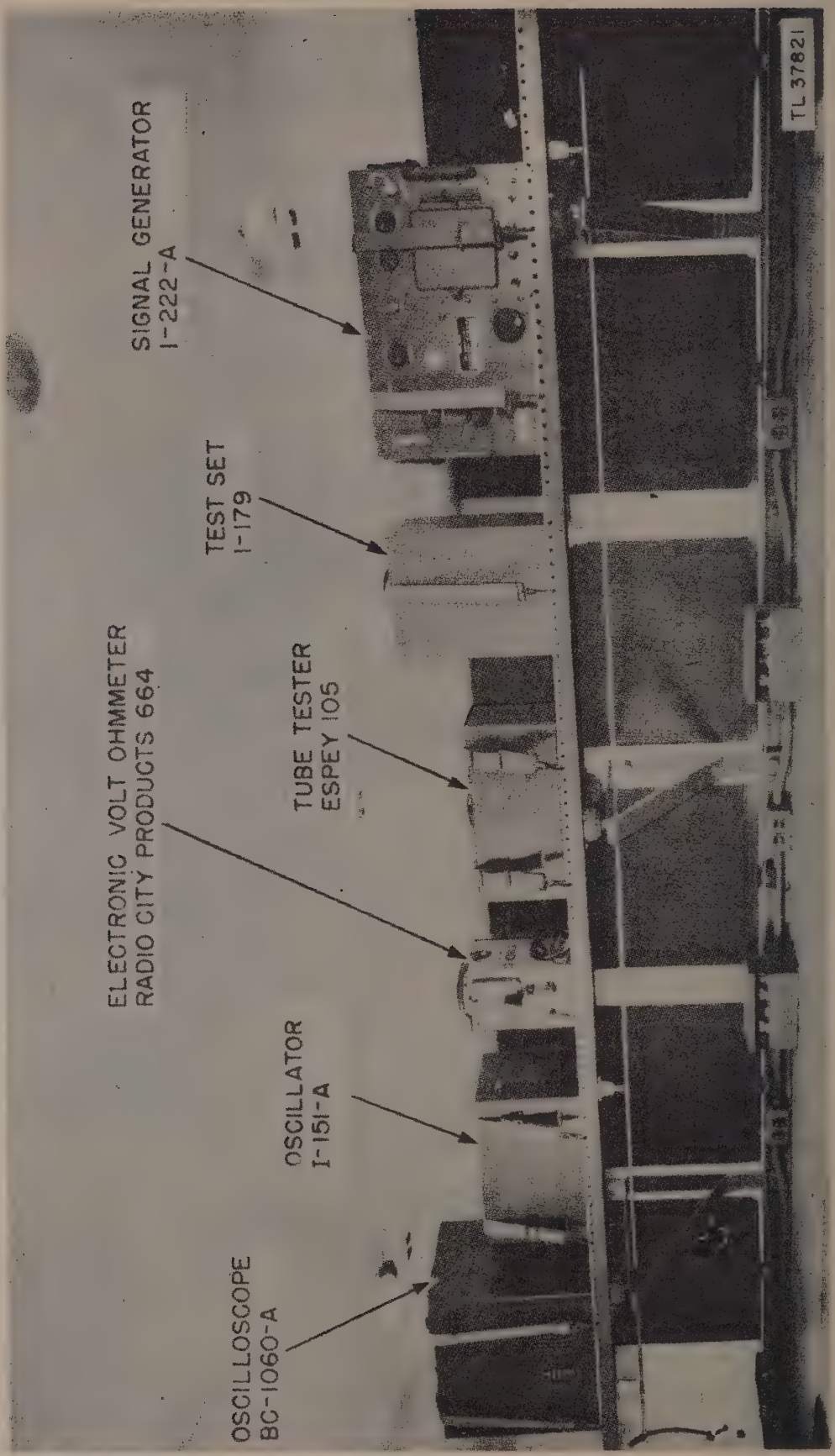


Figure 1. Test Set AN/GPM-1, mounted position in truck.

SECTION I
DESCRIPTION

1. GENERAL.

Test Set AN/GPM-1 is the basic test equipment for all ground radar and IFF radio sets. It consists of the instruments and cords necessary for general third echelon maintenance. The instruments are carried on a shock-mounted rack on the right-hand side of Truck M-30 (fig. 1). The specialized maintenance equipment, which will depend on the radio set to be serviced, is carried in a shock-mounted chest in the center of the truck.

2. POWER.

a. Power Unit PE-95. Power for operating the test equipment is normally obtained from Power Unit PE-95 which is carried on a trailer attached to the rear of the truck. Figure 2 shows the truck and power unit connected ready to travel. Complete details of the operation and maintenance of Power Unit PE-95 is covered in TM 11-904-( ).

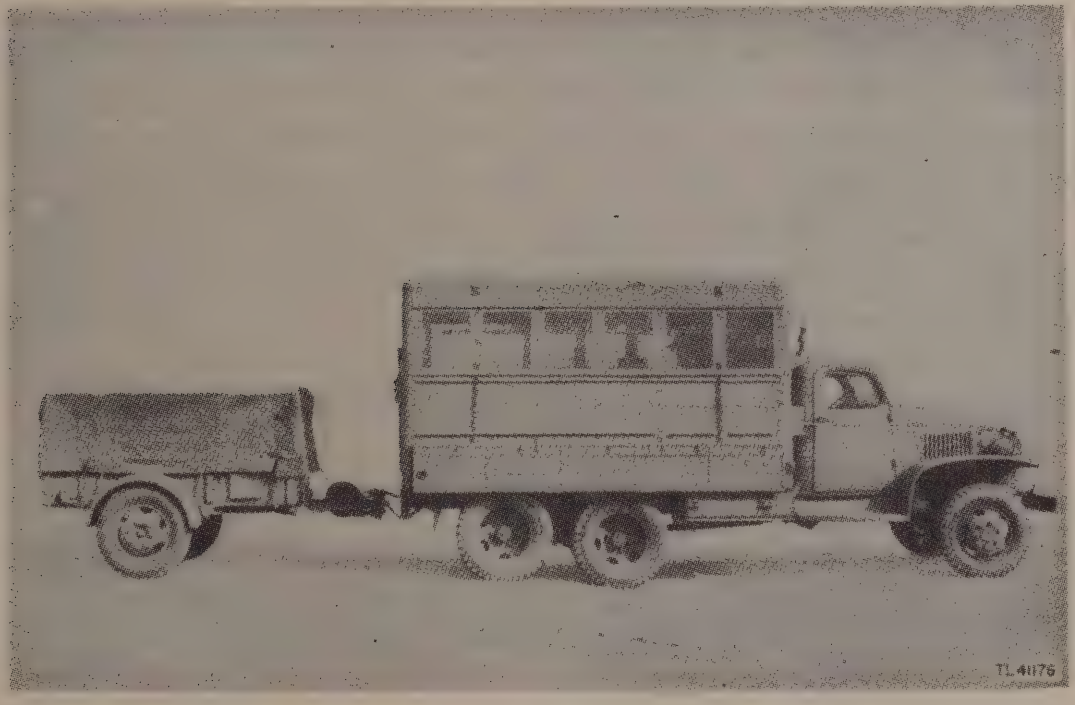


Figure 2. Truck M-30 and Power Unit PE-95, side view.

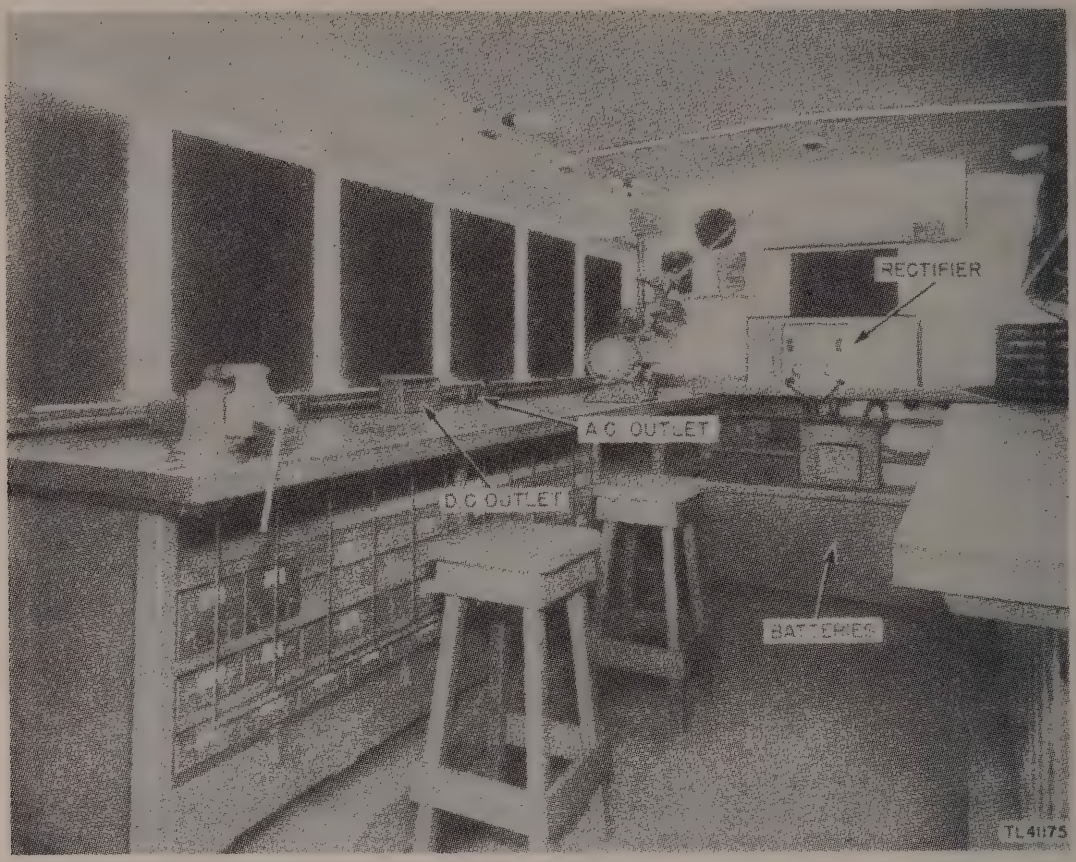


Figure 3., Rectifier Power Unit PP-34-( )/MSM, mounted position in truck.

b. Batteries. These batteries are carried in the front of the truck (fig. 3) and supply 6-volt, 12-volt, and 24-volt d-c power to be used in making tests on the equipment. The charge in the batteries is maintained by Rectifier Power Unit PP-34-( )/MSM. Figure 3 shows the rectifier mounted in the front of the truck. The complete details of the operation and maintenance of Rectifier Power Unit PP-34-( )/MSM is covered in TM 11-965.

c. Commercial Power. In localities where commercial power is available, it may be connected into the socket on the rear of the truck instead of the cable from Power Unit PE-95.

3. LIST OF COMPONENTS.

The components of Test Set AN/GPM-1 are:

Quantity	*Article*	*Stock No.*
1	Test Set I-179	3F4179
1	Oscilloscope BC-1060-A	3F3630-1060A
1	Tube tester, Espey model 105	3F5694
1	Oscillator I-151-A	2Z6840-36

Quantity	Article	Stock No.
1	Signal Generator I-222-A	3F3900-222A
1	Volt-Ohmmeter, Radio City Products model 664	3F14050
2	Outlet Box J-45-( )/MPN-1	6Z9390-45
1	Headset HS-30-U	2B830
6	Cord CD-502, black	3E1502
6	Cord CD-502, red	3E1502.1
3	Cord CD-503, black	3E1503
3	Cord CD-503, red	3E1503.1
3	Cord CD-504, black	3E1504
3	Cord CD-504, red	3E1504.1
2	Cord CD-505	3E1505
1	Cord CD-605	3E1605-5.5
1	Cord CD-1102	3E1999-102
1	Cord CD-1103	3E1999-103
1	Cord CD-1104	3E1999-104
1	Cord CD-1106	3E1999-106
1	Cord CD-1141	3E1999-141
1	Cord CG-71/MPM	1F430-71
1	Chest Mount FT-502	2Z6721-502
2	Battery BA-2	3A2
2	Battery BA-42	3A42
2	Battery BA-205/U	3A275-205

4. TEST SET I-179.

This instrument (fig. 4) is a multi-range circuit analyzer designed to cover a wide range of voltage, current, and resistance measurements. The complete details of the operation and maintenance of this instrument are covered in TM 11-2600. Batteries BA-2 and BA-42 are supplied with this instrument but must be installed in the test set before use. Test Set I-179 covers the following ranges:

a. D-c Volts. Zero to 3, 12, 60, 300, 600, 1,200, and 6,000 volts. These d-c voltage ranges can either be set for a sensitivity of 1,000 ohms per volt, or 20,000 ohms per volt.

b. A-c Volts. Zero to 3, 12, 60, 300, 600, 1,200, and 6,000 volts. The sensitivity of all these ranges is 1,000 ohms per volt. When the a-c voltage measurement is to be separated from a d-c component, the two jacks marked OUTPUT VOLTS should be used. Voltages up to 600 volts a-c may be measured by this connection.

c. D-c Current. Zero to 60 and 300 microamperes, zero to 3, 30, 120, and 600 milliamperes, and zero to 12 amperes.



Figure 4. Test Set I-179, front view.

d. A-c Current. Zero to 3, 6, and 12 amperes.

e. Resistance Measurements. Zero to 3,000 ohms, 300,000 ohms, and 30 megohms.

5. OSCILLOSCOPE BC-1060-A.

This instrument (fig. 5) is used to observe the waveshapes in the various radio components. It is equipped with a 3-inch cathode-ray tube and a shield that may be pulled forward to aid in observing the waveforms in strong light. A graduated scale is provided for the face of the tube. In addition to

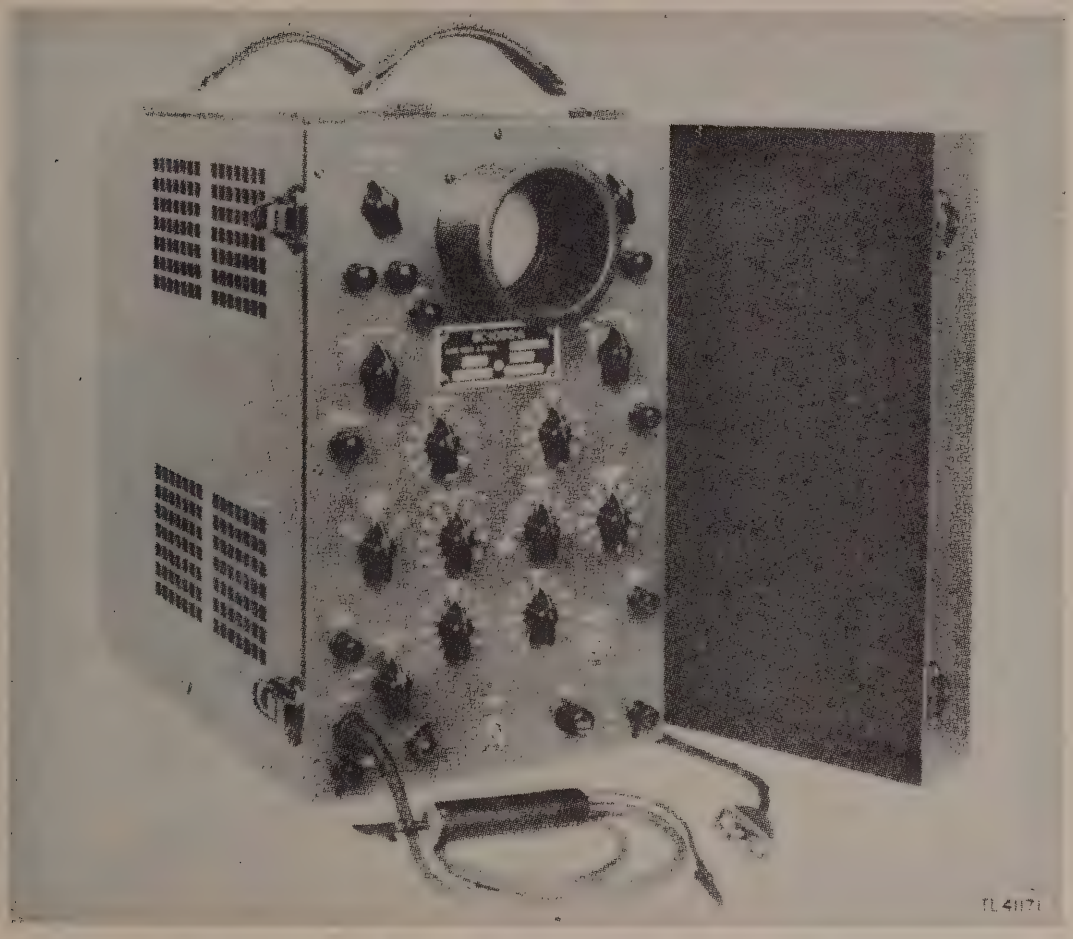


Figure 5. Oscilloscope BC-1060-A, front view.

the normal connections to the deflecting plates, a terminal is provided to enable a signal to be applied directly to the grid for intensity modulation of the beam. The complete details of the operation and maintenance of this instrument are covered in TM 11-2526.

6. TUBE TESTER, ESPEY MODEL 105.

This instrument (fig. 6) may be used for testing standard receiving-type tubes and some small transmitting-type tubes. Twelve different tube sockets are provided to accommodate the various types of tube bases now in use. In

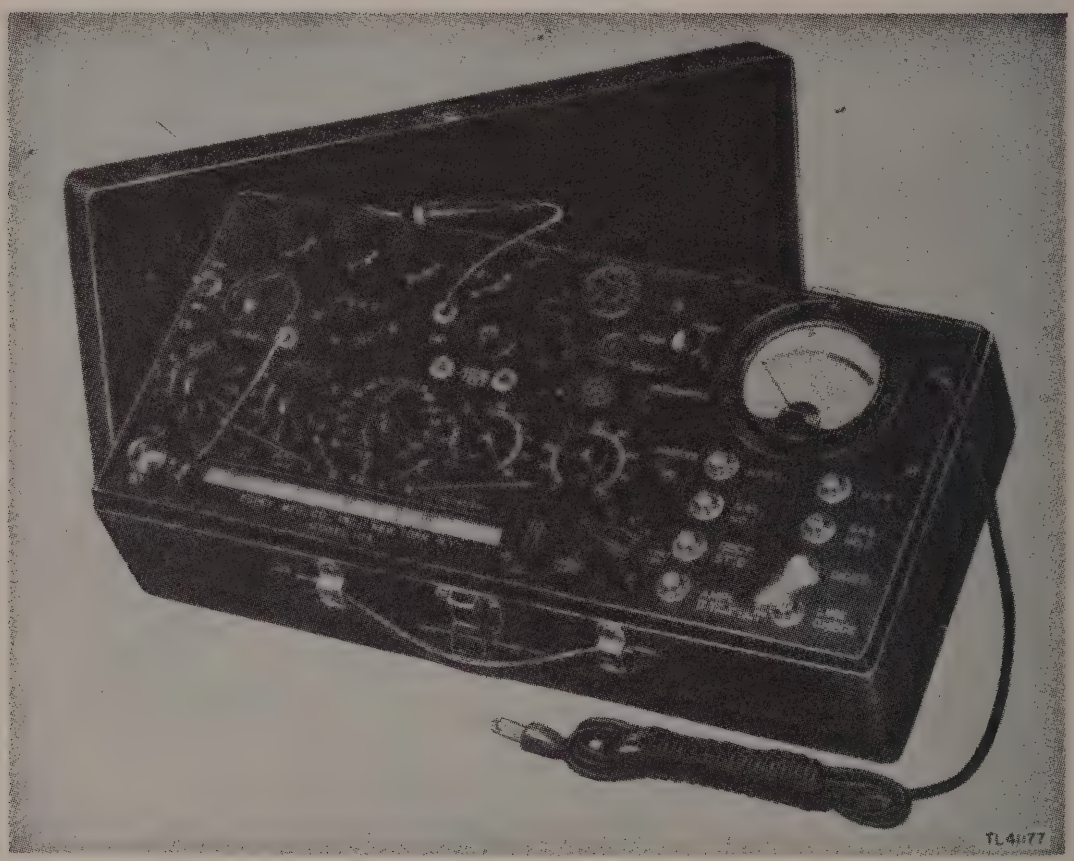


Figure 6. Tube tester, Espey model 105, front view.

addition to the regular type tubes, the tester will test acorn-type tubes, ballast tubes, *magic-eye* tubes, and pilot lamps. It will also test miniature base tubes. The complete operating instructions and maintenance instructions are contained in TM 11-2516.

7. OSCILLATOR I-151-A.

This instrument (fig. 7) is used to check the output stages of a receiver and it also may be used for checking the circuit performance of the oscilloscopes. It may also be used to check the pulse-recurrence frequency. The frequency range is 20 cycles to 20,000 cycles in three bands, 20 to 200, 200 to 2,000, and 2,000 to 20,000. Balanced output impedance of 10, 250, 500, or 5,000 ohms may be obtained or unbalanced-output impedance of 5, 125, 250, or 2,500 ohms may be obtained. The complete operating and maintenance details are given in TM 11-2524.

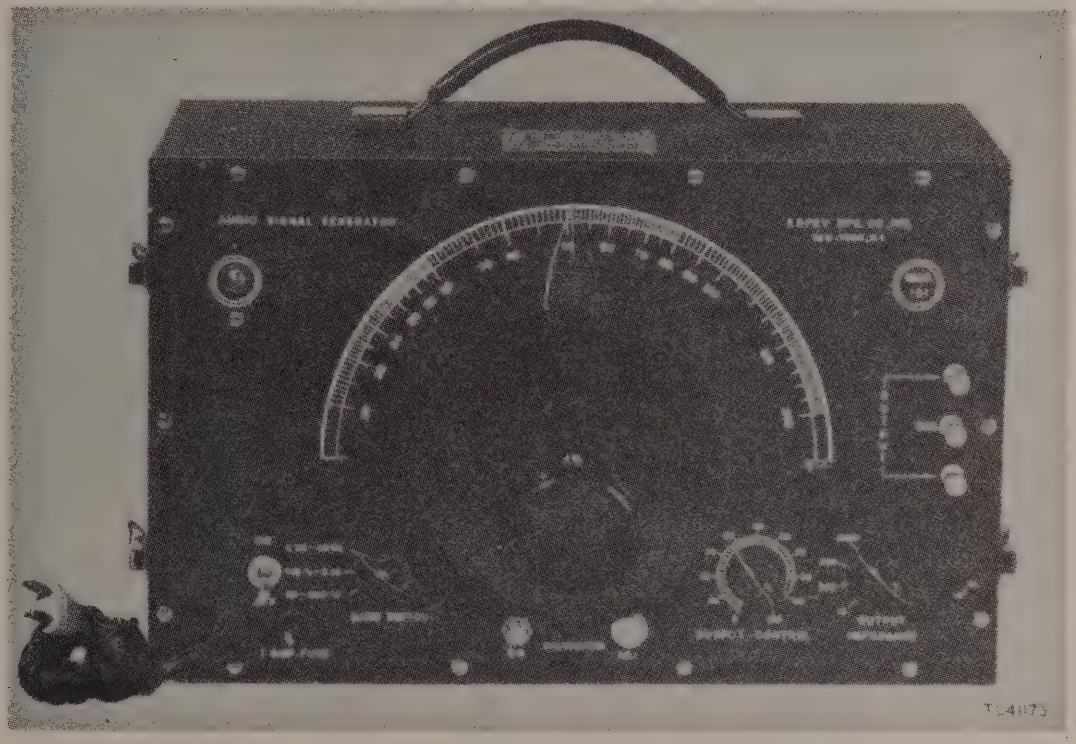


Figure 7. Oscillator I-151-A, front view.

8. SIGNAL GENERATOR I-222-A.

This instrument (fig. 8) is a combination signal generator and heterodyne-type wavemeter. A 5-megacycle crystal oscillator is incorporated as a frequency standard calibrator. It is used to tune the receiver and transmitter of IFF radio equipment to the operating frequency. The details of the operation and maintenance are covered in TM 11-1082.

9. VOLT-OHMMETER, RADIO CITY PRODUCTS MODEL 664.

This instrument (fig. 9) is a vacuum tube voltmeter for measuring a-c and d-c voltages and resistance over a wide range. The instrument operates from

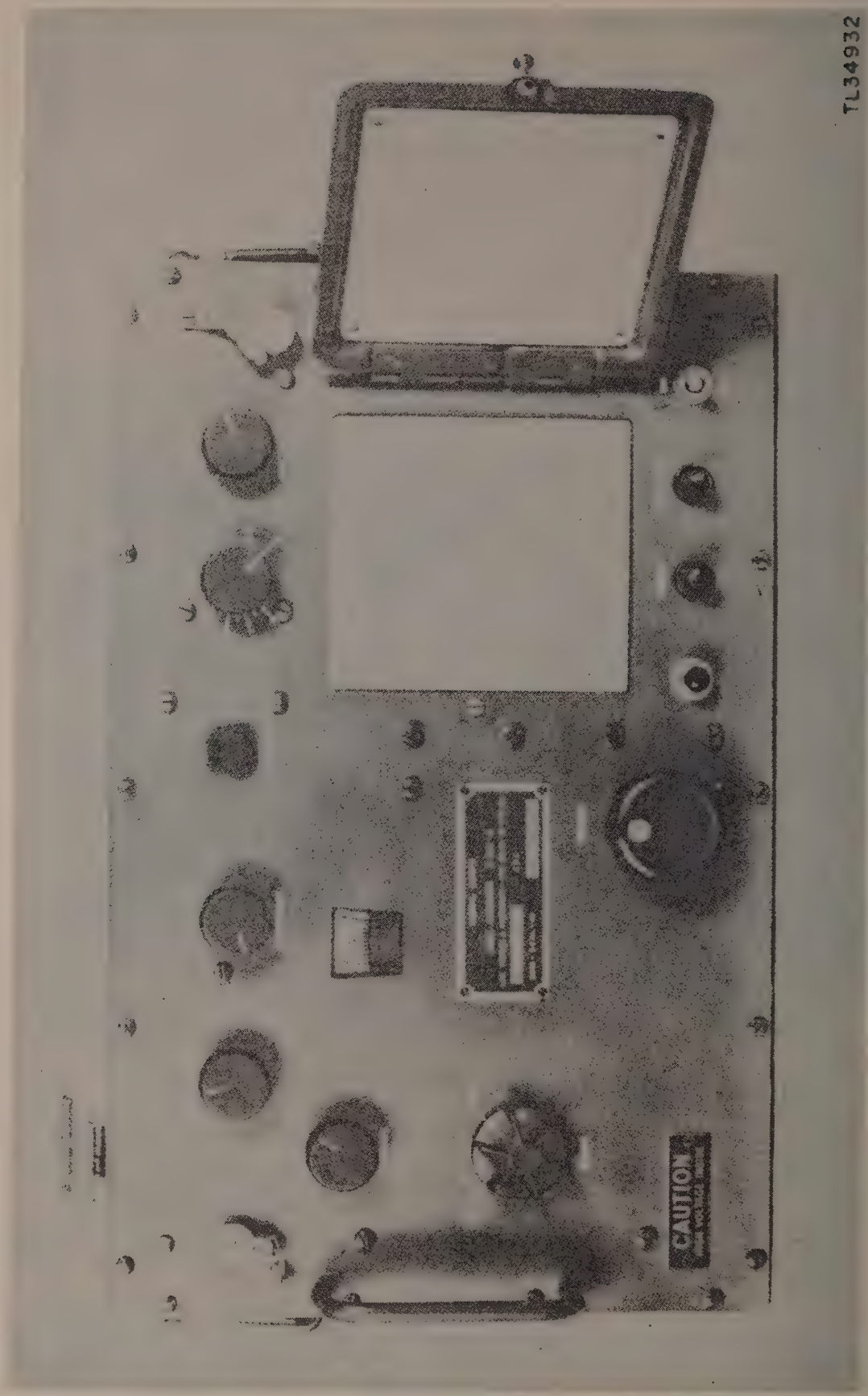


Figure 8. Signal Generator I-222-A, front view.

105- to 130-volt 60-cycle line. Battery BA-205/U is supplied with this instrument but must be installed in the ohmmeter before use. TM 11-2624 covers the operation and maintenance in detail. The ranges are as follows:



Figure 9. Volt-Ohmmeter, Radio City Products model 664, front view.

a. D-c Volts. 0.05 to 1,000 volts. The input resistance on all d-c voltage ranges is 11 megohms.

b. A-c Volts. 0.25 to 1,000 volts. The sensitivity on the a-c ranges is 1,000 ohms per volt.

c. Resistance Measurements. 0.1 to 1,000 megohms.

10. OUTLET BOX J-45-( )/MPN-1.

This unit (fig. 10) is used as a source of polarized a-c power when the components of the radio set are being serviced. Without a polarized source, short circuits would occur in the event that the primaries of the power transformers are grounded at one end. The unit consists of a box with four polarized outlets and a cable with a polarized plug.

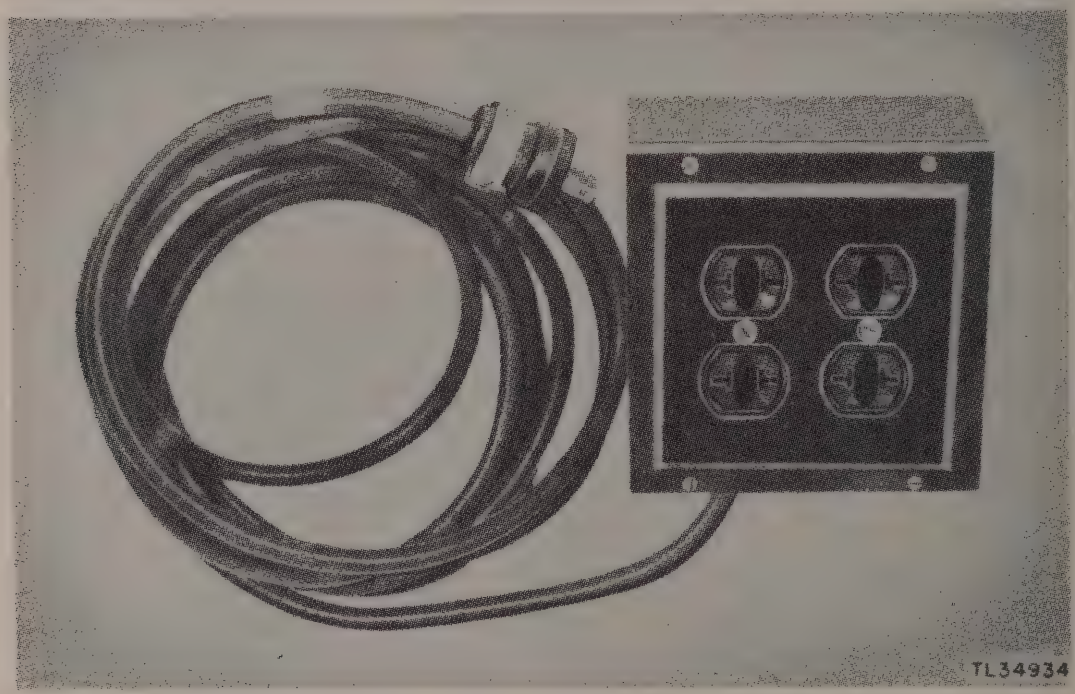


Figure 10. Outlet Box J-45-( )/MPN-1, top view.

11. HEADSET HS-30-U.

This is a special type of headset which was originally issued for use with Helmet M-1 (Infantry) and crash helmets used by the Infantry and armored forces. It incorporates the following features:

a. Headband HB-30. The headband is a thin band of relatively soft steel that can be bent to fit the contour of the wearer's head. Sliding clips at each end of the headband hold the receivers and provide for their adjustment.

b. Receiver R-30-U. Two magnetic type receivers, connected in series,

are used in Headset HS-30-U. Each receiver consists of a receiver unit, cap, and receiver housing. The receiver units consist of a diaphram, permanent magnet and associated coils and pole pieces built into water tight brass case.

c. Insert M-300. Soft rubber Inserts M-300 are attached to each receiver and are designed to fit into the wearer's ears.

d. Cord CD-620-U. This is a rubber insulated two-conductor cord. A saw-toothed clothing clip is attached to the cord at the "Y" junction. Terminals TM-163 are provided at the ends of the cord for attaching the headset to associated equipments.

> **NOTE:** In addition to the above items, associated cords, plugs, transformers, and/or junction boxes may be issued for use with different equipments. Such items will be issued with the equipment for which the headset is intended.

12. CORDS.

The following cords are included in this test set:

a. Cord CD-502 (fig. 12). This is a 28-inch single-conductor rubber-covered cord with crocodile clips on both ends. It is used as a general utility cord and is furnished with both red and black insulators.

b. Cord CD-503 (fig. 12). This is a 102-inch single rubber-covered conductor with crocodile clips on both ends. It is furnished with both red and black insulators and is used as a general utility cord.

c. Cord CD-504 (fig. 12). This is a 150-inch single rubber-covered conductor with crocodile clips at both ends. It is furnished with both red and black insulators and is used as a general utility cord.

d. Cord CD-505 (fig. 12). This is a 50-foot two-conductor rubber-covered extension cord with a polarized male plug on one end and a polarized female plug on the other. It is used as a general utility cord.

e. Cord CD-605 (fig. 12). This is a two-conductor cable with a transformer C-410 on one end and a plug PL-55 on the other end. Unless otherwise specified, the length of the cord is 6½ feet. It is used with Headset HS-30-U.

f. Cord CD-1102 (fig. 12). This is a 48-inch single conductor with an alligator clip on one end and a spade lug on the other end. It is used as a general test probe.

g. Cord CD-1103 (fig. 12). This is a 34-inch single conductor with a Plug PL-259 on one end and a Plug PL-55 on the other end. It is used to connect the signal generator to the i-f input of the receiver.

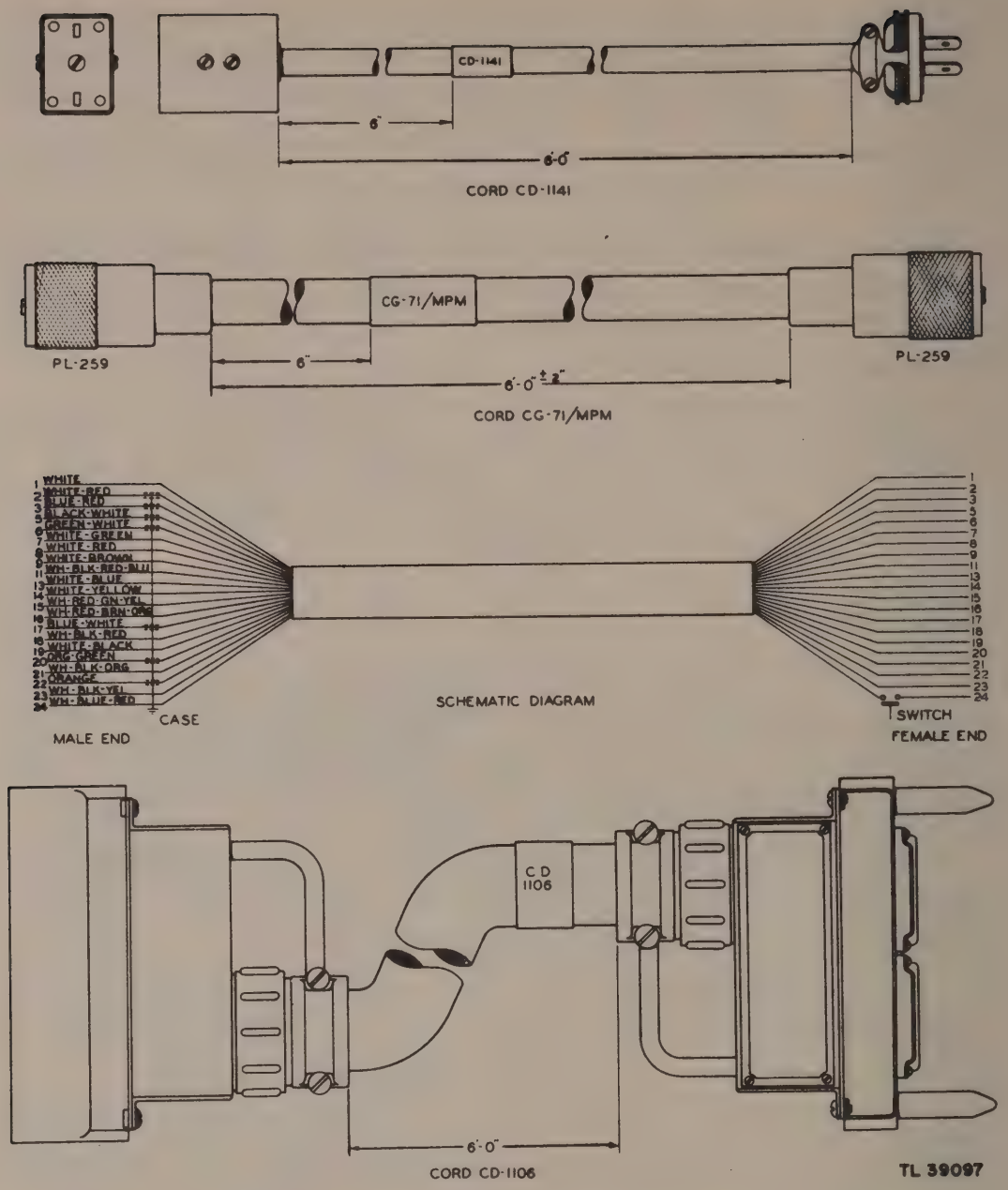


Figure 11. Details of Cords CD-1141, CG-71/MPM, and CD-1106.

h. Cord CD-1104. This is a 60-inch single conductor with a Plug PL-259 on both ends. It is used to connect the output of the signal generator to the r-f input of the receiver.

i. Cord CD-1106 (fig. 11). This is a 72-inch 21-conductor cable with a special plug on each end. When testing IFF units, it is used as a patch cord to enable them to be pulled out of the chassis for servicing.

j. Cord CD-1141 (fig. 11). This is a 72-inch two-conductor cable with a two-pin male plug on end and a receptacle on the other end for plugging into the rectifier. It is used to supply power to the rectifier unit.

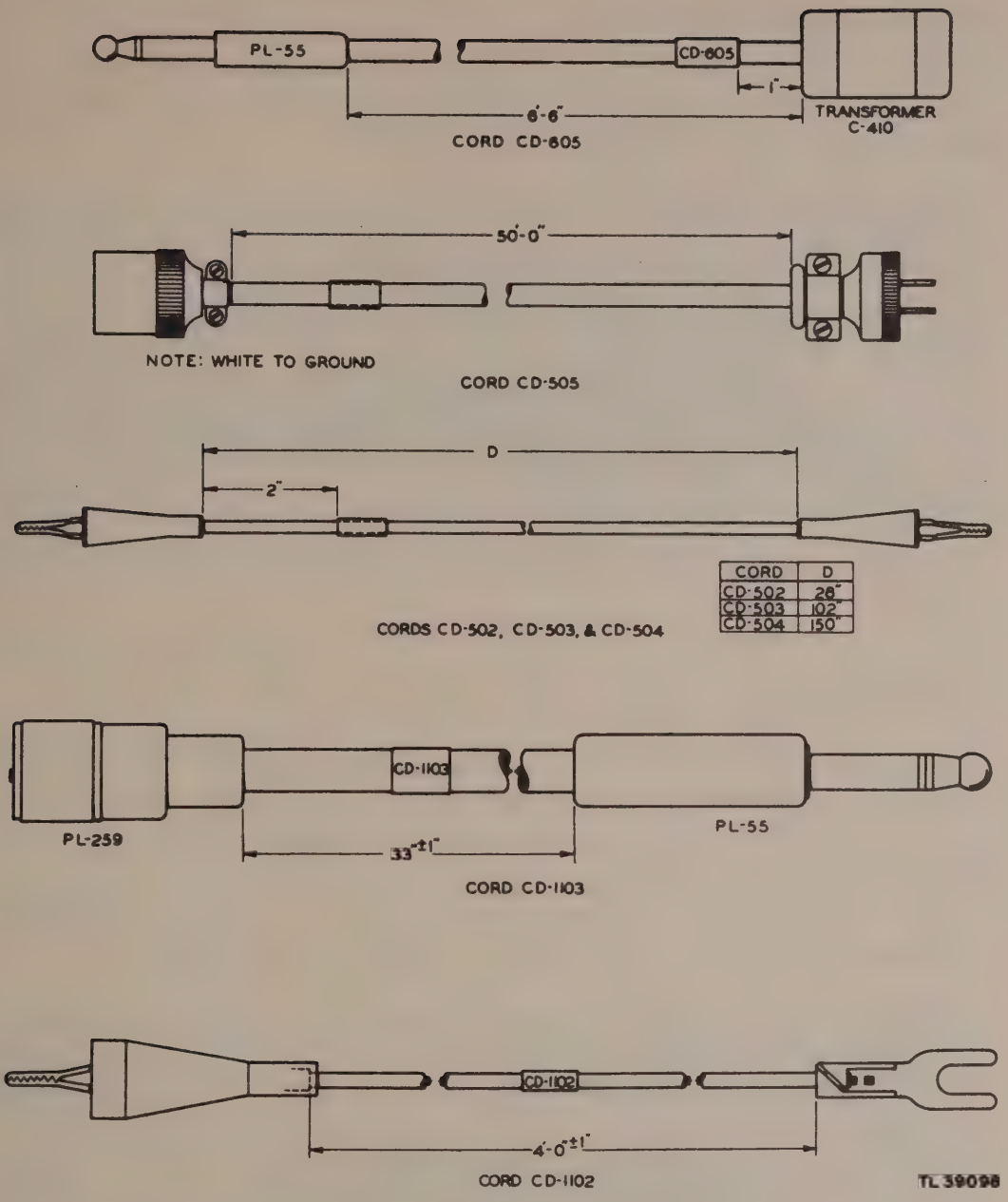


Figure 12. Details of Cords CD-605, CD-505, CD-502, CD-503, CD-504, CD-1103, and CD-1102.

k. Cord CG-71/MPM (fig. 11). This is a six-foot length of flexible coaxial cable with a plug PL-259 attached to each end. It is used to connect two video receptacles. One of its uses in Test Set AN/GPM-1 is to connect Signal Generator I-222-A to the receiver input.

NOTE: Cord CD-652, a 100-foot, six-conductor cable supplied with Trailer Kit MX-23/MSM, is used to supply a-c power from the trailer when located 100 feet away and to supply d-c power to ignition of power unit for remote starting system.

13. CHEST MOUNT FT-502.

This is a wooden shock-mounted base that is mounted in the center of the van for the purpose of carrying the chests that contain the special test equipment for the specific radar set.

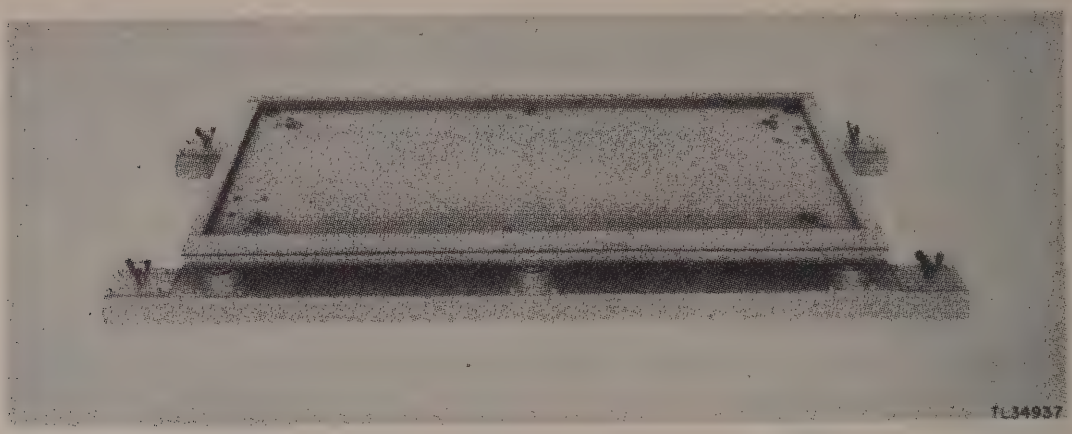


Figure 13. Chest Mount FT-502, front view.

14. TRUCK M-30.

The test instruments for Test Set AN/GPM-1 and the instruments for the specialized test sets are carried in the truck. In addition to the test instruments, the truck is equipped with a power-grinder drill press and a vise mounted on a work bench (fig. 3) on the left-hand side of the truck. The truck is also equipped with bins for spare parts and shelves for tool boxes. The interior views of the truck are shown in figures 1, 3, and 14.

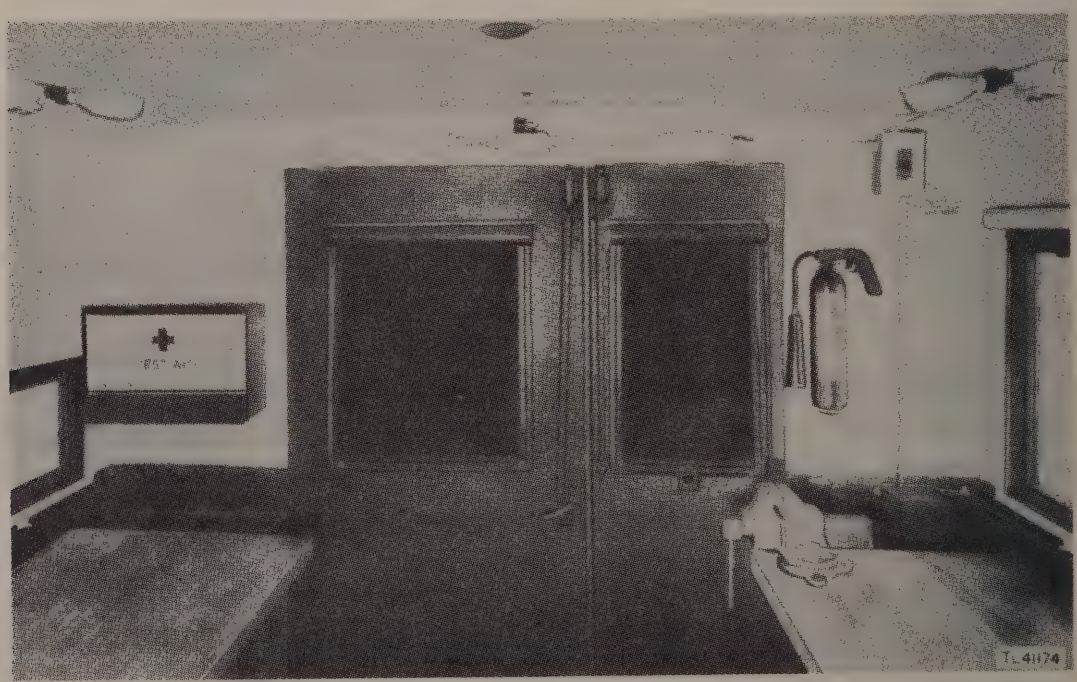


Figure 14. Truck M-30, interior view.

SECTION II

INSTALLATION AND OPERATION

15. GENERAL.

The details of the installation and operation of the various test instruments are covered in the technical manual for each instrument. The uses of the various cords supplied with this test set will be covered in the technical manuals on the radar sets being serviced, as the need arises.

16. POWER SUPPLIES.

a. Connecting Power Unit PE-95. When Power Unit PE-95 is used to supply power to the test equipment, the power unit is connected to the outlet on the rear of the truck by Cord CO-316 which is 8 feet, 4 inches long. When it is necessary to have the power unit at a greater distance from the truck, Cord CD-652 can be connected between the power unit and the end of Cord CO-316. This will allow the power unit to be moved an additional 100 feet from the truck.

b. Starting Power Unit PE-95. When the power unit has been connected to the truck by the 6-pair cable, the power unit may be started by pushing the START button on the switchbox on the rear-inside wall of the truck (fig. 14). To stop the power unit, push the STOP button.

c. Connecting Commercial Power. When it is desirable to use commercial power, it may be connected to the plug on the outside-rear wall of the truck. Use Cord CD-313 carried in Power Unit PE-95.

17. HEADSET HS-30-U.

The proper operation of the headset is outlined below.

a. Wear the receiver holders of the headband *in front* of the ears.

b. Bend or shape the headband to fit the head at the level where the sweatband of the helmet sets. The tension of the headband is correct when there is just enough pressure of Inserts M-300 against the inner ears to assure a partial seal against external noise. When properly bent into shape and correctly worn, the pressure exerted on the ears is not uncomfortable.

c. Fasten the clip to the clothing to support the weight of the associated transformer or junction box. Allow enough slack so that the head can be turned without adding pressure of the inserts in the ears.

SECTION III
FUNCTIONING OF PARTS

18. GENERAL.

The detailed functioning of the various test instruments is covered in the separate technical manuals on the instruments.

SECTION IV

MAINTENANCE

Failure or unsatisfactory performance of equipment used by Army Ground Forces and Army Services Forces will be reported on W.D., A.G.O. Form No. 468. (Unsatisfactory Equipment Report). If form No. 468 is not available, see TM 38-250. Failure or unsatisfactory performance of equipment used by Army Air Forces will be reported on Army Air Forces Form No. 54 (Unsatisfactory Report).

19. GENERAL.

The maintenance of the test instruments is covered in the technical manuals on each test instrument.

20. HEADSET HS-30-U.

a. Lubrication. Lubrication of this equipment is not required.

b. Moistureproofing and Fungiproofing.

(1) GENERAL. Communication failures commonly occur when Signal Corps equipment is operated in a tropical area where temperature and relative humidity are extremely high. The following problems are typical:

(a) Electrolytic action takes place in the coils causing eventual breakdown.

(b) Insulation on the cords and wires breaks down. Fungus growth accelerates deterioration.

(c) Moisture forms electrical leakage paths and reduces efficiency.

(2) TREATMENT. A moistureproofing and fungiproofing treatment has been devised which, if properly applied, provides a reasonable degree of protection against fungus growth, insects, corrosion, salt spray, and moisture. The treatment involves the use of a moisture-resistant and fungi-resistant varnish applied by means of a spray gun and/or brush.

> **CAUTION:** Varnish spray may have toxic effects if inhaled. To avoid inhaling spray, use respirator if available, otherwise, fasten cheesecloth or other cloth material over the nose and mouth.

(3) STEP-BY-STEP INSTRUCTIONS.

(a) Preparation.

1. Make all repairs and adjustments necessary for the proper operation of the equipment.

2. The equipment to be processed must be cleaned thoroughly of all dirt, dust, rust, fungus, oil, grease, etc.

(b) Disassembly.

1. Remove Insert M-300 from the receiver cap.
2. Unscrew the receiver cap from the receiver case.
3. Pull the receiver unit out of the receiver case.
4. Unscrew the two receiver unit terminal screws.

(c) Masking.

1. Receiver cap.
   (a) Mask the threads inside of the receiver cap.
   (b) Mask the acoustic silk inside of the receiver cap and cover the central hole.
   (c) Mask the hole on the outside of the receiver cap.
2. Receiver case. Mask the screw threads on the outside of the receiver case.
3. Receiver unit. Mask the terminal screw holes and adjacent area normally covered by the head of the terminal screws.

(d) Drying. Dry all parts previously disassembled (except those not to be treated) for a period of two to three hours at 160°F.

(e) Varnishing. Apply three coats of lacquer; fungus resistant; Spec. No. 71-2202 (Stock No. 6G1005.3), or equal by means of a suitable brush as follows:

1. All parts of the receiver cap except those masked.
2. All parts of the receiver case except the part that is masked.
3. All unmasked portions of the receiver unit except the diaphragm.

NOTE: The diaphragm must be kept free of varnish or impaired operation will result.

(f) Reassembly and test.

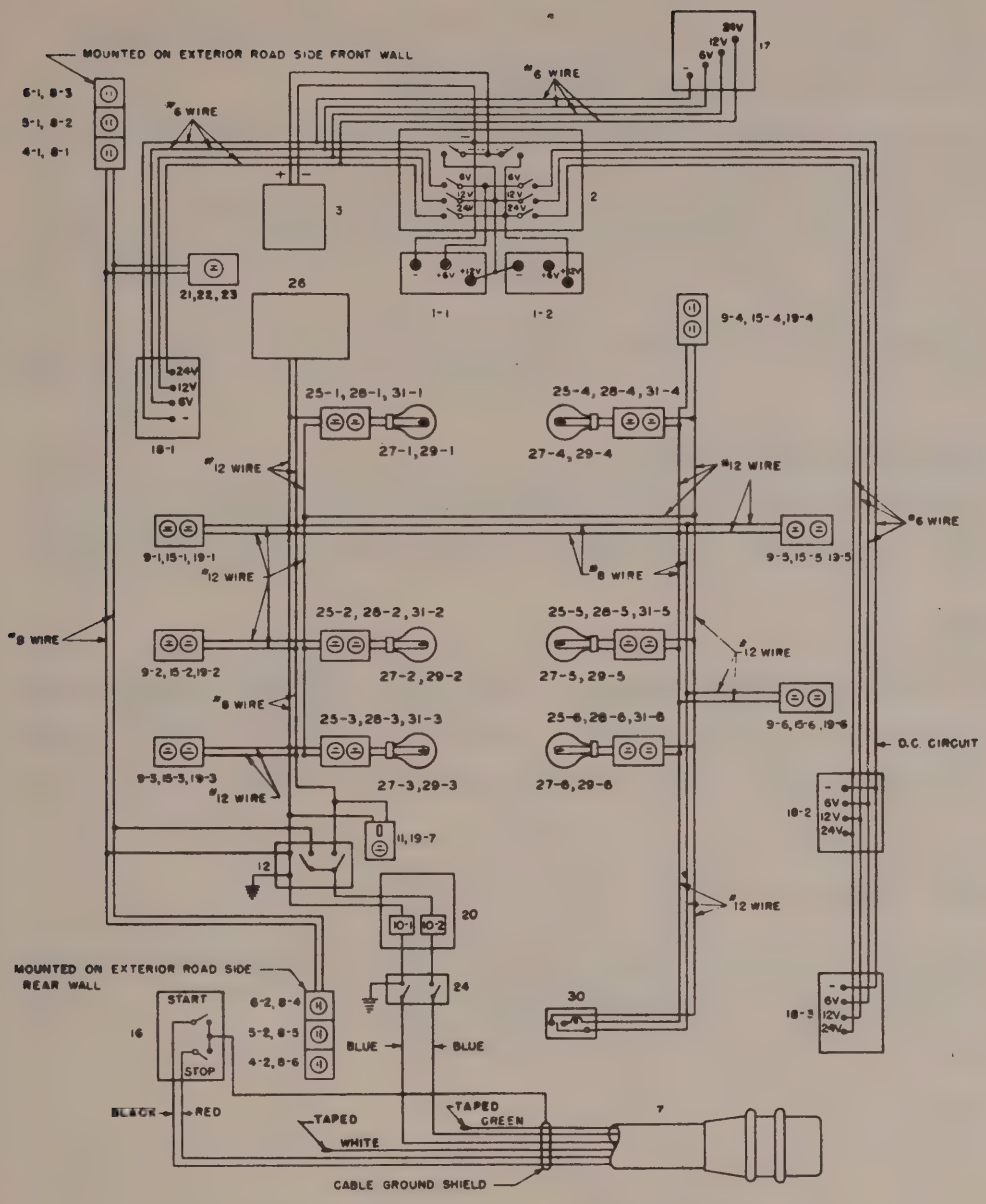
1. Remove all masking tape.
2. Reassemble using the reverse of the procedure given in subpar. *(b)*.
3. Test for proper operation.

(g) Marking. Mark each headset treated with the letters MFP and the date of the treatment. Example: MFP—10 Aug 44.

(4) REFERENCE. For a full description of the varnish-spray method of moistureproofing and fungiproofing refer to TB SIG. 13.

c. Replacing Terminal TM-161. A defective terminal is replaced in the following manner:

(1) Unscrew the receiver cap and pull the receiver unit free of the case.



REF NO.	SIG CORPS TYPE NO.	DESCRIPTION	MANUFACTURER	MFR'S TYPE NO.	QUAN.
1		BATTERY	WILLARD	GHR17-6	2
2		BREAKER BOX	BARLOW	7104	1
3		CHARGER	FEDERAL	ITR-1316	1
4		UNILET FSLA	APPLETON	7907	2
5		UNILET FSC	APPLETON	7902	2
6		UNILET FS	APPLETON	7901	2
7	CO-315	CORD			1
8		COVER SINGLE FS	APPLETON	7993	6
9		COVER, TWIN OUTLET	APPLETON	2510	6
10	FL-18	FILTER			2
11		OUTLET AND SWITCH	HUBBELL	5855	1
12		OVERLOAD SWITCH	SQUARE D	18644 S	1
13					
14					
15		RECEPTACLE DUPLEX (STD.)	HUBBELL	9595	6
16		SWITCH	SQUARE D	B-37 9001	1
17		TERMINAL BOX	BARLOW	7101	1
18		TERMINAL BOX	BARLOW	7106	3
19		UTILITY BOX	APPLETON	4-CS	7
20		WIRING BOX 6 X 9 X 4	COLUMBIA		1
21		UNILET FD	APPLETON	179TOI	1
22		COVER	APPLETON	7969	1
23		RECEPTACLE	HUBBELL	7438	1
24		SWITCH	ARROW H & H	27075	1
25		COVER, TWIN OUTLET	APPLETON	180-W	6
26		HEATER	EVANS PROD. CO.	HV203010	1
27		LAMP 50W	GENERAL ELEC.		6
28		RECEPTACLE, DUPLEX	HUBBELL	9200	6
29		SOCKET	HUBBELL	3665	6
30		SWITCH	ORDNANCE		1
31		UTILITY BOX	APPLETON	180	6

TL-34931

Figure 15. Truck M-30, schematic wiring diagram.

(2) Remove the terminal screw and washer from the damaged terminal.

(3) Remove the damaged terminal from the cord.

(4) Place the wire from which the terminal was removed over the two projections of the new terminal.

(5) Fold the sides of the terminal over the wire with a pair of pliers. Make sure that the wire is centered in the terminal and that the two projections pierce the insulation.

(6) Reassemble by reversing the procedure given in subpars. (1) and (2) above.

d. Replacing Terminal TM-163.

(1) Remove the damaged Terminal TM-163 from the end of the cord.

(2) Replace the terminal as described in subparagraph **c** (4) and (5) above.

21. CORDS.

The various test cords supplied with this test set should be inspected regularly for frayed or cracked insulation and for proper connection to the plugs. The plugs should be inspected also to keep them clean and free from corrosion.

22. TRUCK WIRING.

To aid in the location of faults in the electrical wiring of the truck, figure 15 is a schematic diagram of the electrical circuits in the truck. The d-c circuits as well as the a-c circuits are shown.

SECTION V

SUPPLEMENTARY DATA

23. RESISTORS AND CAPACITORS.

The following figures, 16 and 17, indicate the proper method of determining the correct values of resistors and capacitors when marked with the RMA (Radio Manufacturers Association) color code.



OLD STYLE	COLOR	NEW STYLE
BODY A	INDICATES FIRST SIGNIFICANT FIGURE OF RESISTANCE IN OHMS	BAND A
END B	INDICATES SECOND SIGNIFICANT FIGURE	BAND B
BAND OR DOT C	INDICATES MULTIPLIER	BAND C
END D	IF ANY, INDICATES TOLERANCE IN PER CENT OF THE NOMINAL RESISTANCE VALUE IF NO COLOR APPEARS TOLERANCE IS ± 20%	BAND D

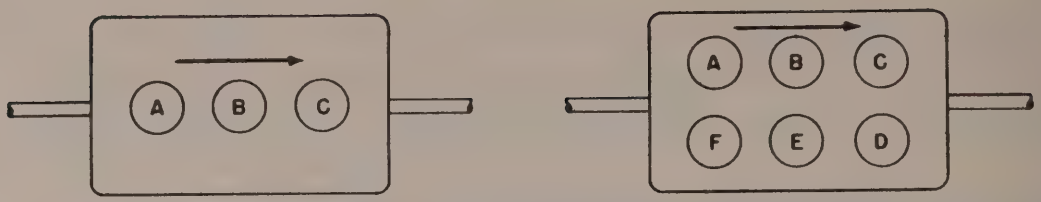
COLOR	SIGNIFICANT FIGURE	MULTIPLIER	TOLERANCE PER CENT (IF GIVEN)
BLACK	0	1	
BROWN	1	10	
RED	2	100	
ORANGE	3	1,000	
YELLOW	4	10,000	
GREEN	5	100,000	
BLUE	6	1,000,000	
VIOLET	7	10,000,000	
GRAY	8	100,000,000	
WHITE	9	1,000,000,000	
GOLD		0.1	5
SILVER		0.01	10
NO COLOR			20

TL 35620

Figure 16. Resistor color code, use.

24. MAINTENANCE PARTS LIST FOR TEST SET AN/GPM-1.

NOTE: Maintenance parts lists for the several individual components of Test Set AN/GPM-1 may be found in the technical manuals for the various equipments as indicated below:



ONE ROW DOTS	COLOR	TWO ROWS OF DOTS
DOT A	INDICATES FIRST SIGNIFICANT FIGURE OF CAPACITANCE VALUE IN MICROMICROFARADS	DOT A
DOT B	INDICATES SECOND SIGNIFICANT FIGURE	DOT B
	INDICATES THIRD SIGNIFICANT FIGURE	DOT C
DOT C	INDICATES MULTIPLIER	DOT D
USUAL TOLERANCE ±20%	INDICATES TOLERANCE IN PER CENT OF THE NOMINAL CAPACITANCE VALUE. IF NO COLOR APPEARS TOLERANCE IS 20%	DOT E
RATED VOLTAGE USUALLY 500 VOLTS	INDICATES THE RATED VOLTAGE	DOT F

COLOR	SIGNIFICANT FIGURE	MULTIPLIER	TOLERANCE PER CENT (IF GIVEN)	RATED VOLTAGE (IF GIVEN)
BLACK	0	1		
BROWN	1	10	1	100
RED	2	100	2	200
ORANGE	3	1000	3	300
YELLOW	4	10,000	4	400
GREEN	5	100,000	5	500
BLUE	6	1,000,000	6	600
VIOLET	7	10,000,000	7	700
GRAY	8	100,000,000	8	800
WHITE	9	1,000,000,000	9	900
GOLD		0.1	5	1,000
SILVER		0.01	10	2,000
NO COLOR			20	500

TL 35619

Figure 17. Capacitor color code, use.

Oscillator I-151-A	TM 11-2524
Tube tester Espey model 105	TM 11-2516
Volt-Ohmmeter, Radio City Products model 664	TM 11-2624
Test Set I-179	TM 11-2600
Oscilloscope BC-1060-A	TM 11-2526
Signal Generator I-222-A	TM 11-1082

The maintenance parts list on the succeeding pages applies to the entire test set.

24. MAINTENANCE PARTS LIST FOR TEST SET AN/GPM-1 *(contd).*

Ref symbol	*Signal Corps stock No.*	*Name of part and description*	*Quan per unit*	*Orgn stock*		*3d ech*	*4th ech*	*Depot stock*
				1st ech	*2d ech*			
CD-502	3E1502	CORD: with black rubber insulators; Sig C dwg #SC-D-11915, Group 1.	6					*
CD-502	3E1502.1	CORD: with red rubber insulators; dwg #ES-D-7677; Sig C dwg #SC-D-11915, Group 1.	6					*
CD-503	3E1503	CORD: with black rubber insulators; Sig C dwg #SC-D-11915, Group 2.	3					*
CD-503	3E1503.1	CORD: with red rubber insulators; dwg #ES-D-7676; Sig C dwg #SC-D-11915, Group 2.	3					*
CD-504	3E1504	CORD: with black rubber insulators; Sig C dwg #SC-D-11915, Group 3.	3					*
CD-504	3E1504.1	CORD: with red rubber insulators; dwg #ES-D-7676; Sig C dwg #SC-D-11915, Group 3.	3					*
CD-505A	3E1505-A	CORD: 50 feet long; 2 #18 conductors; rubber covered type SJ; Sig C dwg #SC-D-11916.	2					*
CD-605	3E1605-6.5	CORD: Sig C spec #71-1525.	1					*
CD-1102	3E1999-102	CORD: 48" long; single conductor; stranded cable; 41 #34 strands tinned copper wire; Sig C dwg #SC-D-12005.	1					*
CD-1103	3E1999-103	CORD: 33" long; single #20 shielded rubber covered stranded cable cond mic cable; 26 #34 strands tinned copper wire; Sig C dwg #SC-D-12005.	1					*

* Indicates stock available.

24. MAINTENANCE PARTS LIST FOR TEST SET AN/GPM-1 *(contd).*

Ref symbol	*Signal Corps stock No.*	*Name of part and description*	*Quan per unit*	*Orgn stock*		*3d ech*	*4th ech*	*Depot stock*
				1st ech	*2d ech*			
CD-1106	3E1999-106	CORD: power; 6" long (for Signal Generator I-222-A) shielded wire conductors; Sig C dwg #SC-D-12004.	1					*
CD-1141	3E1999-141	CORD: 6 feet long; 2 stranded cable conductor; 41 strands #34 wire, #18 gauge; Sig C dwg #SC-D-12080.	1					*
CG-71/ MPM	1F430-71	CORD: Sig C dwg #SC-D-11881.	1					*
	3E1126	CORD: power; 6" long; (for Signal Generator I-22-A) Sig C dwg #SC-D-12014.	1					*
FT-502	2Z6721-502	CHEST MOUNT wooden; check mounted; used for mtg spec test equip during transportation; complete with mtg hardware and straps; Sig C dwg #SC-D-11851 and SC-D-11852.	1					*
	2B830	HEADSET: Sig C hs HS-30-U; Sig C spec #71-1518.	1					*
	2B1300	Insert M-300.	2				*	*
	3Z10161	Terminal TM-161.	4				*	*
	3Z10163	Terminal TM-163.	2				*	*
	6Z7390-45	OUTLET BOX: J-45-( )/MPN-1; polarized outlet box; cable and polarized plug; Sig C dwg #SC-D-1176.8.	2					*

* Indicates stock available.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1955 O—348349