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# TM 11-1151

WAR DEPARTMENT TECHNICAL MANUAL

## DETECTOR SET AN/PRS-1

**RESTRICTED. DISSEMINATION OF RESTRICTED MATTER.**  
The information contained in restricted documents and the essential characteristics of restricted materiel may be given to any person known to be in the service of the United States and to persons of undoubted loyalty and discretion who are cooperating in Government work, but will not be communicated to the public or to the press except by authorized military public relations agencies. (See also par. 18b. AR 380-5, 28 Sep 1942.)

WAR DEPARTMENT TECHNICAL MANUAL  
TM 11-1151

*This technical manual supersedes TM 11-1151 (Tentative), 12 February 1944*

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DETECTOR SET  
AN/PRS-1



WAR DEPARTMENT 15 APRIL 1944

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WAR DEPARTMENT,  
WASHINGTON 25, D. C., 15 APRIL 1944.

TM 11-1151, War Department Technical Manual, Detector Set AN/PRS-1, is published for the information and guidance of all concerned.

[A. G. 300.7 (7 Feb 44).]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,  
*Chief of Staff*

OFFICIAL:

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

DISTRIBUTION:

X

(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 — Detector head assembly, meter, amplifier assembly, all tubes, batteries, resistors, capacitors, sockets, plugs, jacks, headset, resonator, and batteries.

2. Cut — All cords, cables, wires, bags, and covers.

3. Burn — All wires, cords, circuit diagrams, technical manuals, bags, and covers.

4. Bend — Exploring rod extensions, antennas, and reflectors.

5. Bury or scatter — All of the above pieces after destruction is completed.

## ***DESTROY EVERYTHING***

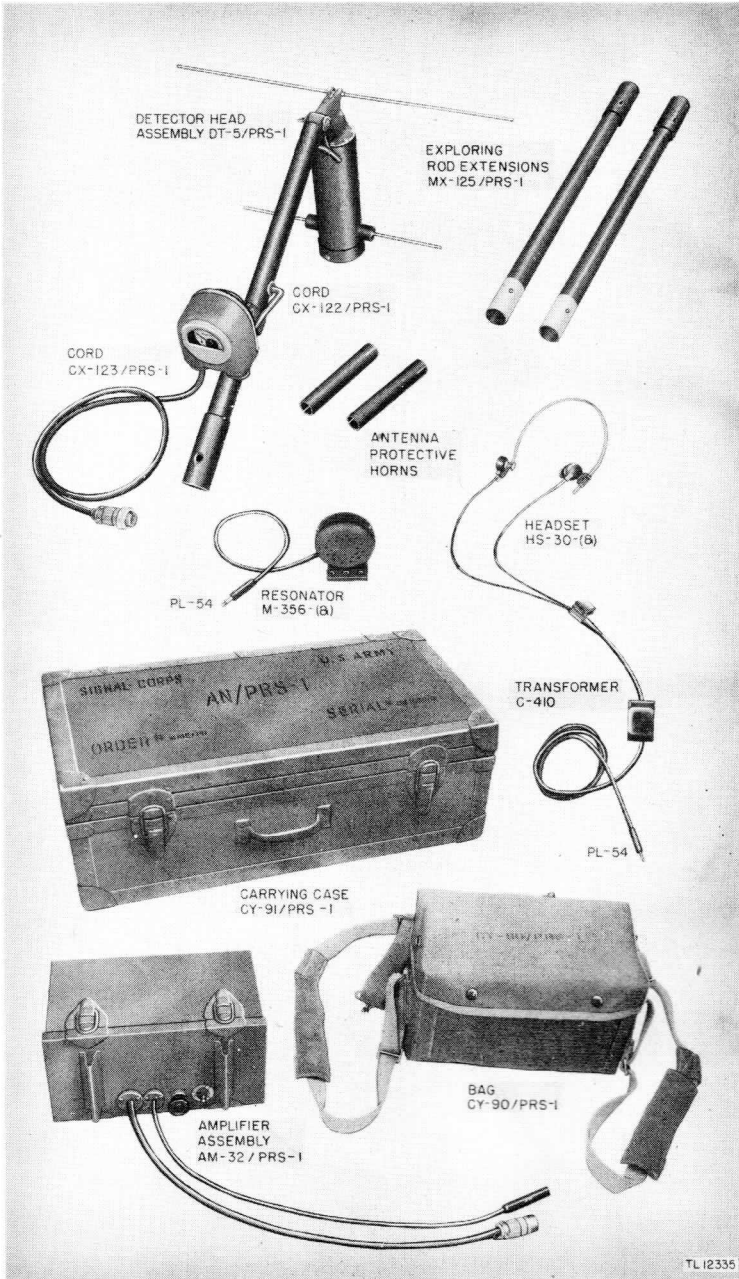


Figure 1. Detector Set AN/PRS-1, components.

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This technical manual supersedes TM 11-1151 (Tentative), 12 February 1944

## SECTION I

# DESCRIPTION

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### 1. GENERAL.

*a. Purpose.* Detector Set AN/PRS-1 (fig. 1) is a portable device intended for the detection of both metallic and nonmetallic antitank mines.

*b. Application.* Buried objects, such as metallic and nonmetallic antitank mines, are indicated by both aural and visual means. A sharp increase or decrease in the volume of the 1,000-cycle tone in Headset HS-30 (E) or Resonator M-356 (E) is the best indication of the presence of a buried object such as an antitank mine. The symbol (E), where used in this technical manual, indicates all items of equipment regardless of model or procurement. The volume change is accompanied by a swinging to the left of the needle of a meter on the exploring rod as the volume of the tone increases, and by a swinging to the right as the volume of the tone decreases.

*c. Range and Scope.* This detector set has been designed to detect antitank mines buried not more than 3 inches below the surface of the ground. Detection is possible at depths up to 5 inches, depending upon the skill of the operator, the type of terrain, and the general soil condition. It is imperative that the detector head be held at the same distance above ground at which it was balanced, otherwise false indications will be given. Detector Set AN/PRS-1 is sensitive to nonuniformities (rocks, tree roots, air pockets) in the ground the size of a 5-inch cube. The aural and visual indications produced by such nonuniformities may be similar to those produced by either a metallic or nonmetallic mine, depending upon the depth and nature of the nonuniformity.

**2. POWER SOURCE.** The power source of Detector Set AN/PRS-1 consists of a set of four batteries contained in the battery compartment of Amplifier Assembly AM-32/PRS-1. One Battery BA-203/U is used

as the filament power supply. Three Batteries BA-63 furnish all other power required by the detector set. The batteries are secured in the amplifier assembly by a webbed strap (fig. 7). If Battery BA-203/U is not available, two Batteries BA-205/U may be substituted. If Batteries BA-63 are not available, three Batteries BA-53 may be used. If substitution is made of the alternate batteries, an adapter must be improvised for connecting them to the battery cable plugs (par. 6 and fig. 9).

**3. LIST OF COMPONENTS.**

S. C. stock No.	Quantity	Component	Dimensions (in.)	Weight (lb.)
2C449-32	1	Amplifier Assembly AM-32/PRS-1, less batteries	11 x 5-1/2 x 7-3/4	4.75
2Z8309-2	2	Antenna protective horns	6-1/2 x 1-1/8	
2Z555-90	1	Bag CY-90/PRS-1	13 x 6 x 8-1/4	2.0
3A63	6	Battery BA-63, 3 in use, 3 spare	4 x 3 x 2-1/4	1.5 (each)
3A275-203	4	Battery BA-203/U, 1 in use, 3 spare	5-1/2 x 3-7/8 x 2-3/4	1.75 (each)
2Z1891-91	1	Carrying Case CY-91/PRS-1	28-1/4 x 15 x 8-1/4	23.0
3E6000-122	1	Cord CX-122/PRS-1	24	
3E6002-123	1	Cord CX-123/PRS-1	48	
2C799	1	Detector Head Assembly DT-5/PRS-1	23 x 8-1/2 x 3-1/2	5.0
274150-125	2	Exploring Rod Extension MX-125/PRS-1	23 x 1-1/2-diam	1.0 (each)
2B830U	1	Headset HS-30-(U)		2.0
2B2156	1	Resonator M-356-(E)	3 x 3-diam	1.0
	1	Set spare antenna and reflector parts		
	2	Technical Manual TM 11-1151	5-7/8 x 9 x 1/4	0.5 (each)
2J1N5- GT/G	4	Tube VT-146 (JAN-1N5GT/G), 2 in- stalled, 2 spare		
2J955	2	Tube VT-121 (JAN-955), 1 installed, 1 spare		
		Detector Set AN/PRS-1, packed in Carrying Case CY-91/PRS-1		65 (total weight)

**4. DESCRIPTION OF MAIN COMPONENTS.** Detector Set AN/PRS-1 (fig. 1) consists of the following main components:

*a. Detector Head Assembly DT-5/PRS-1.* The detector head assembly includes the detector head with antenna and reflector, the meter and meter



Figure 2.

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*b. Explor* tension is an assembly ex are supplied

*c. Ampli* up of an au One cord, v nect the an



Figure 2. Detector Set AN/PRS-1, packed in Carrying Case CY-91/PRS-1.

housing, and the lower section of the exploring rod to which they are attached. Swivel joints on the lower section of the exploring rod permit the adjustment of the angles which the detector head and the meter housing make with the exploring rod. The antenna and reflector are removable. The detector set is tuned by means of a tuning control at the bottom of the detector head (fig.3). The detector head assembly is connected to the amplifier assembly by Cord CX-123/PRS-1 which is equipped with a 5-connector male plug.

**b. Exploring Rod Extension MX-125/PRS-1.** The exploring rod extension is an aluminum tube designed for attachment to the detector head assembly exploring rod by means of a ball-detent joint. Two extensions are supplied to make possible an optimum exploring range.

**c. Amplifier Assembly AM-32/PRS-1.** The amplifier assembly is made up of an audio oscillator, an audio amplifier, two short cords, and a case. One cord, which terminates in a 5-connector female plug, is used to connect the amplifier assembly to the detector head assembly. The other

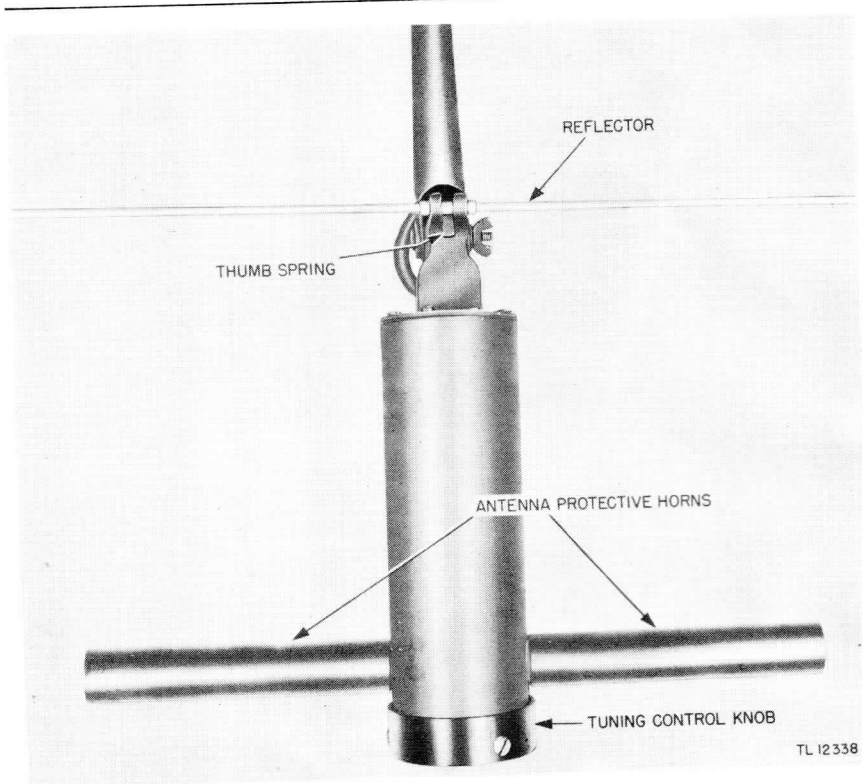


Figure 3. Detector Set AN/PRS-1, external view of detector head.

cord terminates in Jack JK-26 for connection to Plug PL-54 or PL-540 on Headset HS-30-( $\text{\textcircled{E}}$ ), or Plug PL-54 on Resonator M-356-( $\text{\textcircled{E}}$ ) (fig. 4). Located on the bottom of the amplifier housing are the volume control and the ON-OFF switch. Two base legs are provided on the bottom of the amplifier to protect the controls and cords. Space for the batteries is provided within the amplifier housing. The controls, cords, and amplifier housing are of waterproof construction.

*d. Bag CY-90/PRS-1.* This bag (fig. 1) is designed to carry the amplifier assembly and is equipped with webbed shoulder straps and belt. A hole in the bottom of the bag gives access to the ON-OFF switch and volume control of the amplifier. The hook and buckle on the belt and shoulder straps provide a means of quickly discarding the equipment.

*e. Carrying Case CY-91/PRS-1.* This is a wooden case for storing and transporting the equipment when it is not in use. The complete detector set, including tubes, batteries, spare parts, and technical manuals, fits into



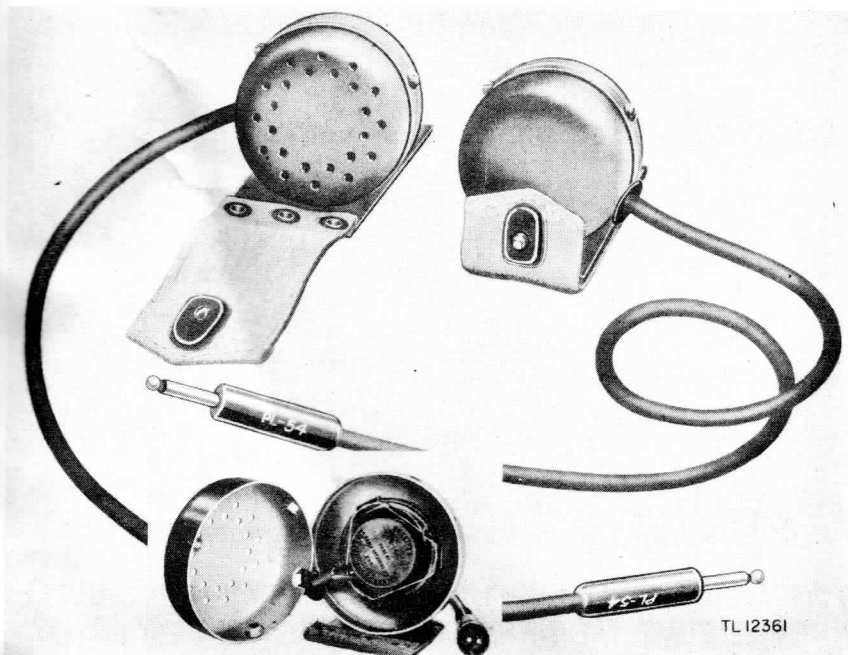


Figure 4. Resonator M-356-<sup>(C)</sup>, showing Receiver R-14.

the carrying case (fig. 2). Fittings are provided to hold the components of the detector set securely in place.

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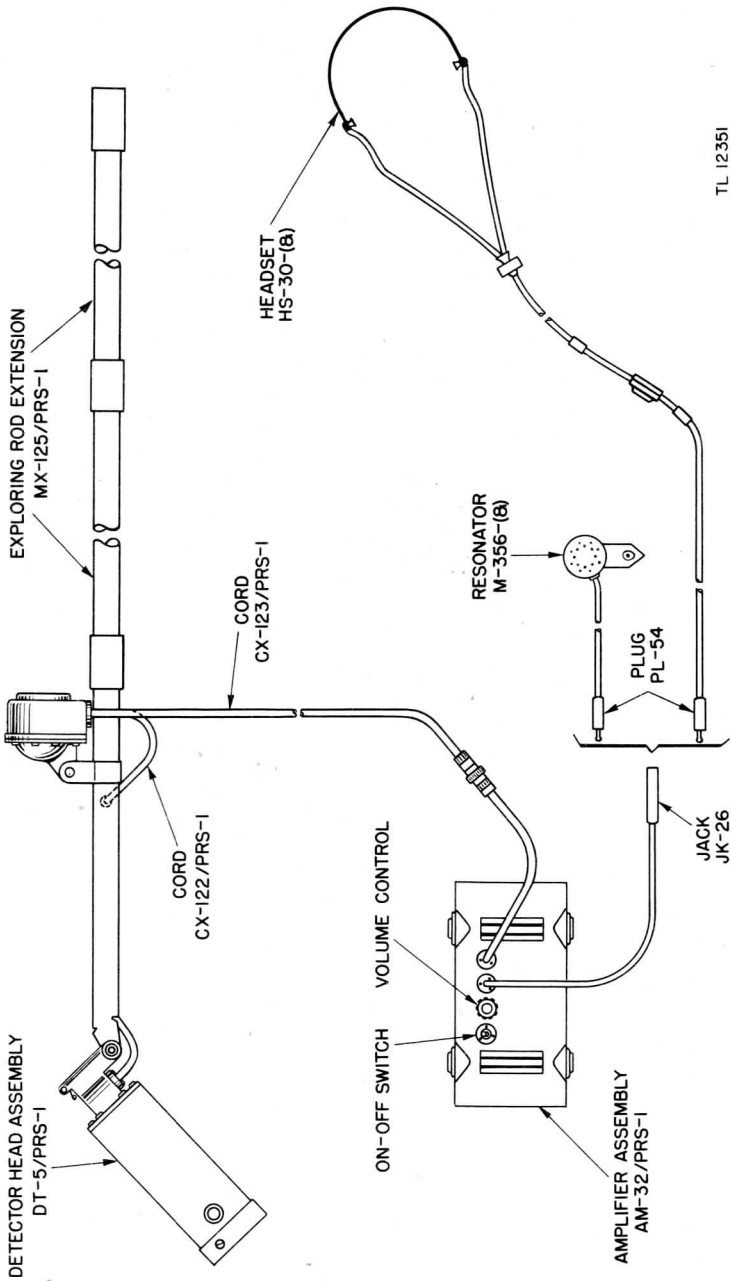


Figure 5. Detector Set AN/PRS-1, cording diagram.

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## SECTION II

# INSTALLATION AND OPERATION

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**5. ASSEMBLY OF COMPONENTS (fig. 5).** Do not force any parts of Detector Set AN/PRS-1 when assembling. To assemble for use:

*a.* Disengage the drawbolts on the carrying case and remove the components.

*b.* Fit together the two exploring rod extensions, locking them with the ball-detent joint, and attach them to the exploring rod of the detector head assembly.

*c.* Install the reflector rod by depressing the thumb spring (fig. 3) at the top of the detector head and inserting the rod through the hole in the reflector holder. When the groove in the reflector rod collar is in line with the slot in the reflector holder, release the thumb spring.

*d.* Install the two antenna rods by screwing them firmly on the threaded terminals at the base of the detector head.

*e.* When the detector set is to be used in wet grass or brush, slip an antenna protective horn (fig. 3) over each antenna rod.

*f.* If the set has been in storage, install the batteries as follows:

- (1) Unsnap the four Dot fasteners on the cover of the bag.
- (2) Remove the amplifier from the bag and place it on a level surface. Do not damage the cables and controls on the bottom of the amplifier base.
- (3) Release the four drawbolts and lift the cover from the amplifier base.
- (4) Install three B Batteries BA-63 and one A Battery BA-203/U in the battery compartment. Connect the battery cable plugs (fig. 6) to the three B batteries and the A battery.
- (5) Secure the batteries with the battery hold-down strap (fig. 7).

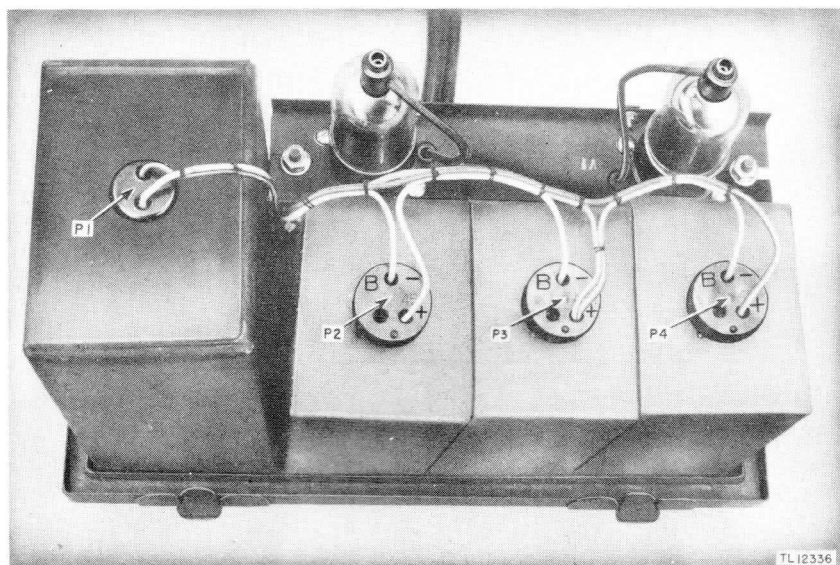


Figure 6. Amplifier Assembly AM-32/PRS-1, battery installation, battery hold-down strap removed.

- (6) Replace the amplifier cover on the base and secure the four drawbolts.
- (7) Replace the amplifier in its bag and snap the four Dot fasteners on the cover.

*g.* Shoulder the amplifier bag and make the necessary adjustments in the shoulder straps (fig. 8) to assure the greatest comfort and the maximum stability of the amplifier.

*h.* Connect the 5-prong male plug on the meter Cord CX-123/PRS-1 to the 5-connector female plug on the cord attached to the amplifier housing.

*i.* Either Headset HS-30-( $\text{\textcircled{C}}$ ) or Resonator M-356-( $\text{\textcircled{C}}$ ) (fig. 4) may be used with the detector set.

- (1) To use the headset, insert Plug PL-54 or PL-540 on the headset cord into Jack JK-26 on the cord attached to the amplifier housing.
- (2) To use the resonator, place its strap under the left shoulder strap of the bag so that the small resonator openings are toward the operator's ear. Snap the Dot fastener. Insert Plug PL-54 into Jack JK-26 on the cord attached to the amplifier housing.

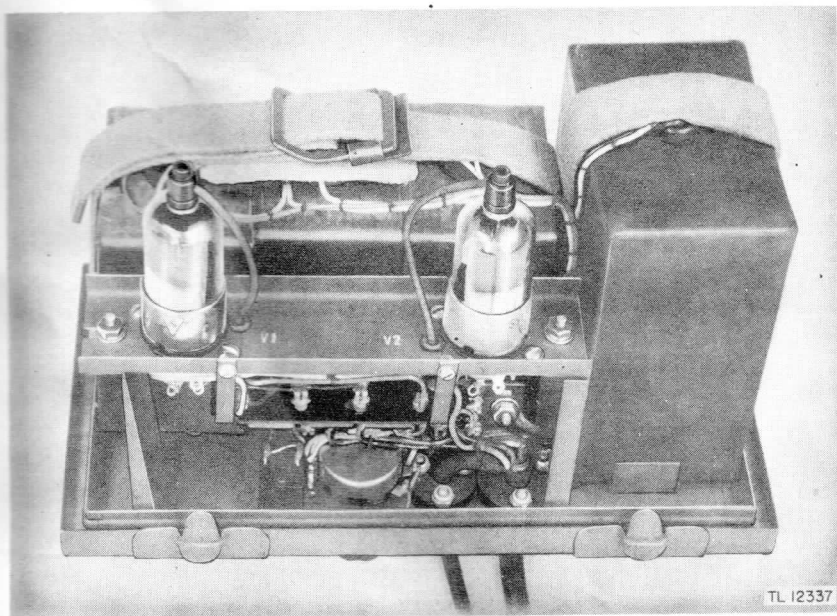


Figure 7. Amplifier Assembly AM-32/PRS-1, battery installation, battery hold-down strap in place.

**6. ALTERNATE BATTERY INSTALLATION (fig. 9).** When Batteries BA-63 and BA-203/U are not available, substitute Batteries BA-53 and BA-205/U, respectively. Battery adapters must be improvised before alternate battery installation can be made.

*a.* Remove the receptacles from three used Batteries BA-63 and from one used Battery BA-203/U. Solder short leads of hook-up wire to the terminals of the receptacles.

*b.* Install three B Batteries BA-53 and two A Batteries BA-205/U.

*c.* Connect the leads from the A battery adapter to the terminals of two Batteries BA-205/U and connect a short piece of wire between the positive terminal of one Battery BA-205/U and the negative terminal of the other. **Observe the polarity shown in figure 9.**

*d.* Connect the leads from each B battery adapter to the terminals of the corresponding Battery BA-53. **Observe the polarity shown in figure 9.**

*e.* Connect the A battery plug P1 to the A battery adapter, and the B battery plugs P2, P3, and P4 to their respective B battery adapters.



Figure 8. Detector Set AN/PRS-1, harness details.

f. Tighten the battery hold-down strap and replace the cover on the amplifier assembly.

## 7. ADJUSTMENT FOR OPERATION.

a. Turn on the detector by means of the ON-OFF switch on the bottom of the amplifier assembly. Let the detector warm up for a period of 2 or 3 minutes.

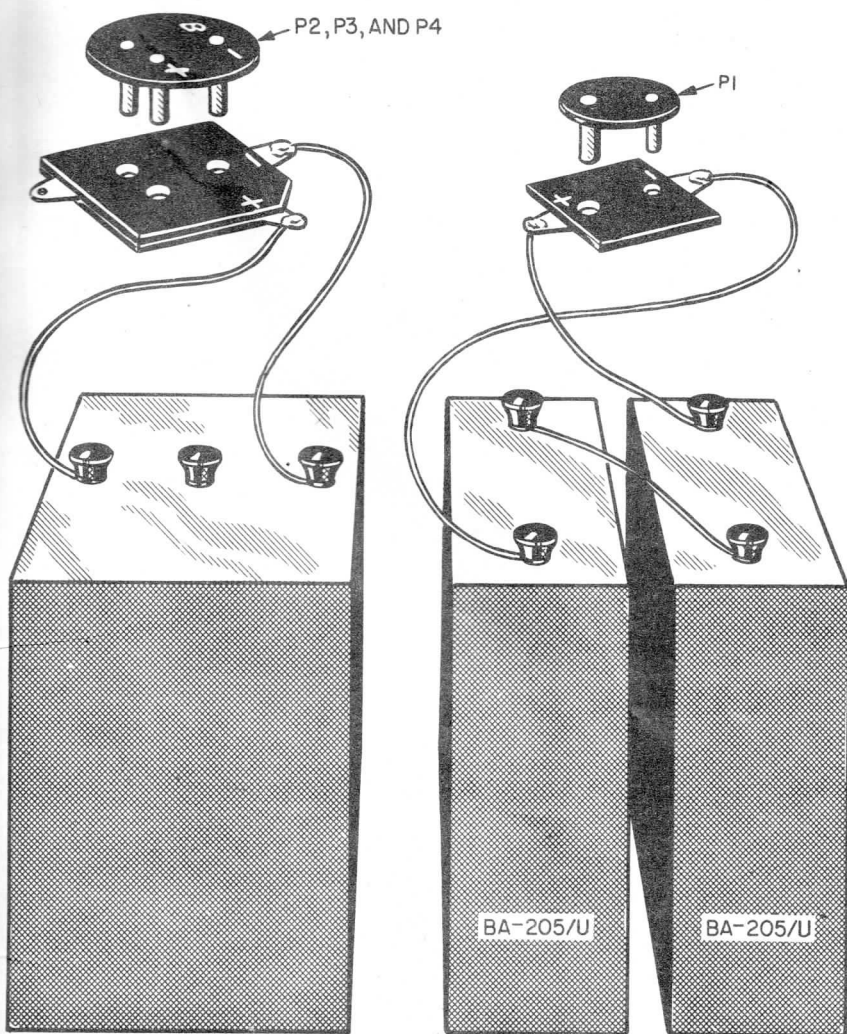


Figure 9. Detector Set AN/PRS-1, alternate battery installation.

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b. The adjustment of the tuning control knob on the bottom of the detector head assembly (fig. 3) is **critical**. Make this adjustment as follows:

(1) Turn the tuning control knob to the right (**clockwise as viewed from above the detector head**) until a stopping point is reached. **DO NOT FORCE THE TUNING CONTROL KNOB.**

(2) Back off the tuning control knob to the left (counterclockwise) seven turns.





Figure 10. Detector Set AN/PRS-1, operation.

(3) Lower the detector head slowly from a height of about 4 feet to the ground. Note any meter deflections. If more than one deflection of the meter is noted, continue turning the tuning control knob in the same direction in half-turns until a deflection of the meter needle occurs only when the detector head is approximately 10 inches above the ground. Caution must be exercised not to turn the tuning control knob too far. If rotation of the knob is continued in a counterclockwise direction, a

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Figure 11. Detector Set AN/PRS-1, operation.

point will be reached where it will be impossible to get an indication on the meter by raising and lowering the detector head above the ground. This point is referred to as the "null point".

(4) Further rotation of the control knob beyond the "null point" in a **counterclockwise direction** will again bring the meter back into operation. If the detector set is operated with this adjustment, slight variation in the



Figure 12. Detector Set AN/PRS-1, operation.

height of the detector head above the ground will cause erratic and abrupt meter indications.

(5) Hold the detector head assembly at the height above ground at which the **maximum** meter needle deflection occurs. Maximum meter needle deflection for a properly tuned detector set will usually occur within a distance of 1 to 6 inches above the ground. Readjust the tuning control knob by quarter-turns in either direction until the meter indication is at or slightly above half-scale.

(6) Adjust the volume control for a low level of tone in the headset or resonator.

(7) The detector set is now ready for operation.

## 8. OPERATING PROCEDURE (figs. 10, 11, and 12).

a. Adjust the angle of the detector head so that the antenna and reflector are in a vertical plane when the detector is held in a sweeping position.

**CAUTION:** Do not hold the exploring rod assembly high in the air while the set is turned on. Under such conditions the enemy can pick up the signal from this set with his direction finding equipment.

b. Grasp the exploring rod extension with the right hand. Support the upper end of the extension under the forearm. Place the left hand below the right hand at a point on the extension that will permit supporting the detector head at the determined operating height (par 7b(5)).

c. Make an easy sweep from side-to-side with the detector. **Keep the detector head at a constant height above the ground.** If the terrain is irregular, carefully follow the contours of the ground. At the end of each sweep, advance 6 inches and make another sweep.

d. When the detector head passes over a buried object, either one of the following occurs:

(1) The volume of the tone in the headset increases and the meter needle deflects to the left.

(2) The volume of the tone decreases and the meter needle deflects to the right.

e. Mines are best detected by aural indications.

f. Best results are obtained over regular terrain and homogeneous ground. Numerous false indications are caused by ground irregularities, stones, air pockets, roots of trees, pools of water, and nonuniformity of soil. Only experience with the set can teach the operator to distinguish between indications of this type and those caused by mines.

**CAUTION:** Constant check must be made of the meter readings to see that the detector is properly tuned. It is necessary to make frequent readjustments during operation.

g. Detector Set AN/PRS-1 is a sensitive instrument and should be treated as such. Do not strike the detector head against other objects.

h. Turn the detector set off when it is not in use.

## 9. LOCATION OF EXACT POSITION OF BURIED OBJECT.

*a.* Sweep the detector head from side to side, noting the point on the ground where the greatest change in the volume of tone occurs. Meter readings are an additional check on the location of this point.

*b.* At this point, move the detector head forward and backward, and again note the point of greatest change in aural and visual indications. The buried object will then be directly beneath the detector head.

**10. DISASSEMBLY.** If the detector set has been operated in damp or rainy weather, wipe all parts dry. Refer to figure 2 when placing the components in the carrying case.

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### SECTION III

## FUNCTIONING OF PARTS

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#### 11. THEORY OF OPERATION.

a. The energy radiated by the antenna of the resonant-line oscillator of the detector set is energy dissipated. The energy loss can be considered to take place in a resistance. This resistance is the radiation resistance of the antenna system.

b. The radiation resistance of a fixed antenna is of a constant value. If the height of the antenna is varied, its radiation resistance will vary over a wide range of values, depending upon the dielectric characteristics of the earth directly below the antenna. Thus, the presence of nonuniformities near the surface of the earth, whether rocks, air pockets, pools of water, metallic or nonmetallic antitank mines, will cause variations in the radiation resistance of the antenna system in the detector set. These variations in radiation resistance will occur as the detector head is swept over those sections of the earth which contain the nonuniformities.

c. A change in the radiation resistance varies the amount of power drawn from the resonant-line oscillator to which the antenna is coupled. This variation in power is accompanied by a change in the amount of grid current flowing in the oscillator circuit and, therefore, by a change in the volume of the tone heard in the headset, and by a simultaneous movement of the indicating meter needle (par. 15).

12. **RESONANT-LINE OSCILLATOR CIRCUIT.** In the following description refer to figure 13 for the circuit diagram of the resonant-line oscillator. Triode Tube JAN-955 (V101) is used in a resonant-line oscillator circuit. The tank circuit of the resonant-line oscillator is a quarter-wave, two-conductor line. The operating frequency is determined by the position on the resonant line of the shunting capacitor C101 and by the

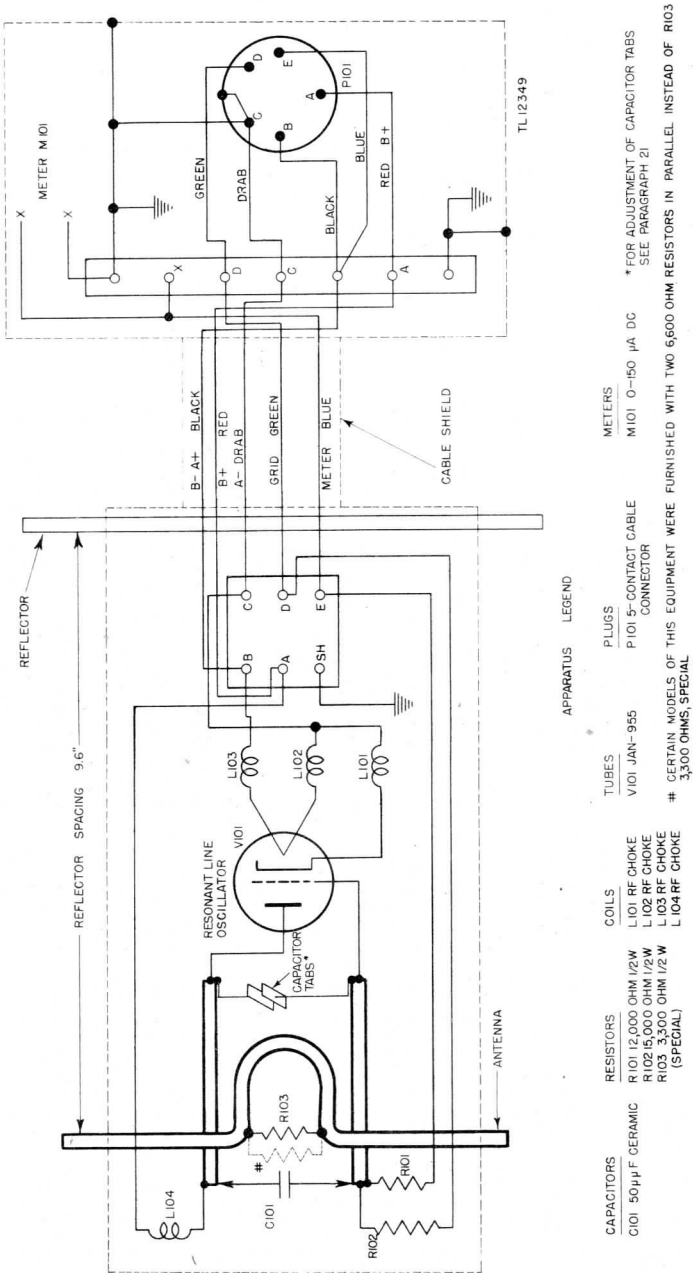


Figure 13. Detector Head Assembly DT-5/PRS-1, circuit diagram.

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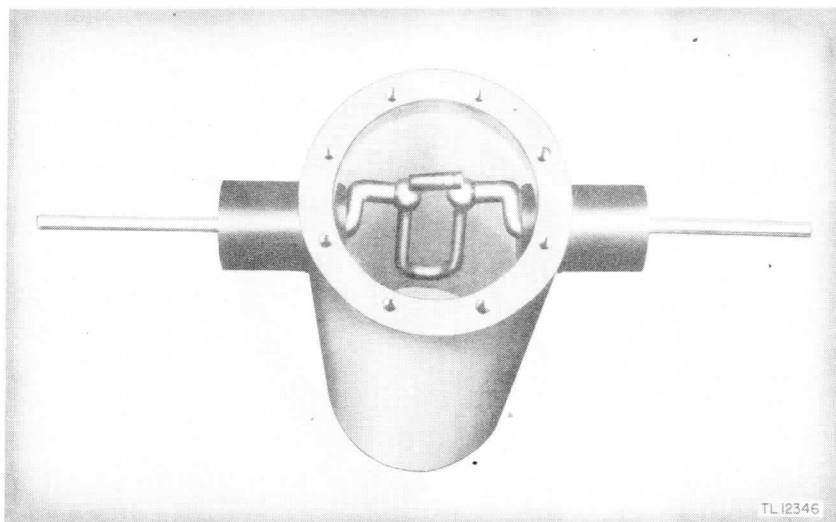


Figure 14. Detector Head Assembly DT-5/PRS-1, antenna coupling loop.

separation of the capacitor tabs (fig. 15). The range of operating frequencies is from approximately 280 to 330 megacycles. The antenna is tightly coupled inductively to the resonant-line oscillator (fig. 14). A shunting resistor R103 is provided to lower the Q of the antenna coupling circuit, thus permitting the detector to operate over a wider frequency range. A reflector is mounted on the detector-head end bracket casting to reflect the radiated energy into the ground. Changes in the dielectric characteristics of the ground over which the resonant-line oscillator is operating vary the radiation resistance of the antenna system. This causes a change in the grid current of the resonant-line oscillator which is indicated by a 0 to 150 microammeter M101. These changes in grid current cause grid-bias voltage variations to appear across grid-bias resistor R101. Resistor R102 introduces these grid-bias voltage variations into the control-grid circuit of amplifier tube V2. R-f chokes L2 and L3 in the heater leads and L1 in the cathode lead of V101 raise these tube elements above r-f ground potential. R-f choke L4 keeps the radio-frequency currents from the power supply.

**13. AUDIO OSCILLATOR CIRCUIT.** A phase-shift type audio oscillator (fig. 16), designed to operate at a frequency of approximately 1,000 cycles per second, provides the signal for the aural indication of the presence of mines. Tube JAN-1N5GT/G (V1) is used as the audio-oscillator tube. The resistance-capacitance network C1—R1, C2—R2, and C3—R3,

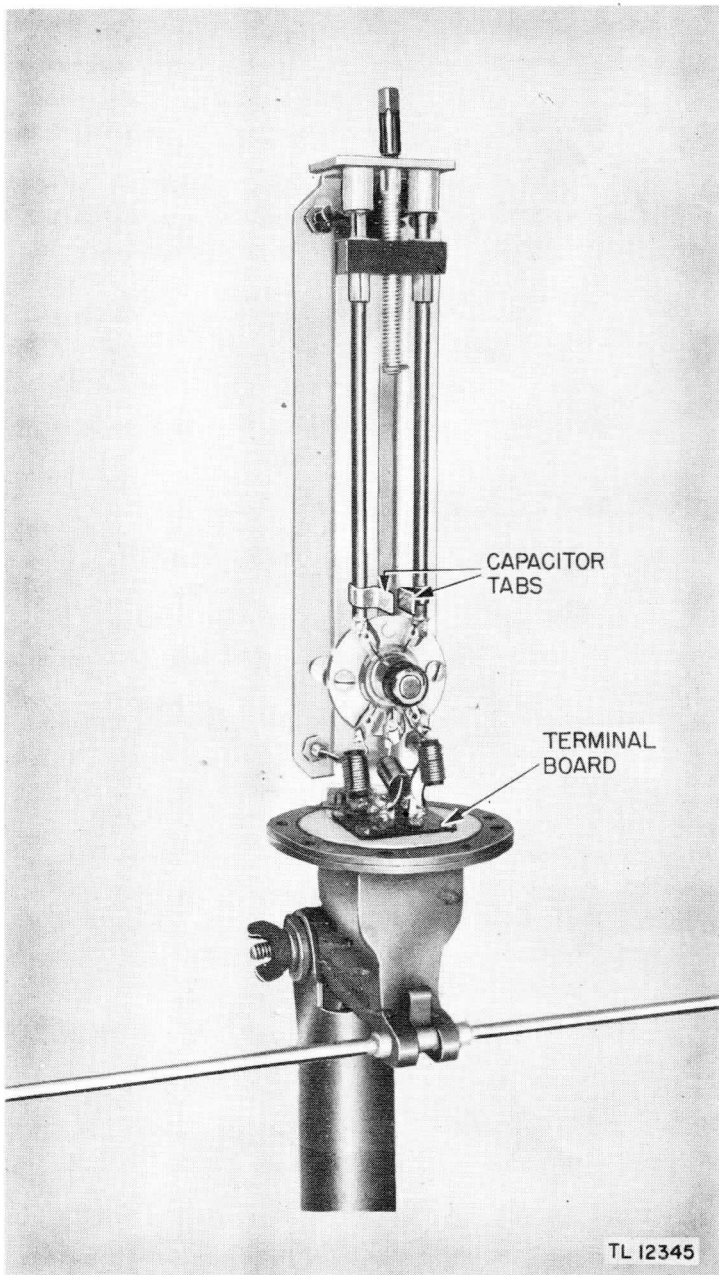


Figure 15. Detector Head Assembly DT-5/PRS-1, resonant-line oscillator with case removed, showing capacitor tabs.

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creates the phase shift necessary for the maintenance of oscillation. This network has components of such value that the audio oscillator generates a frequency of approximately 1,000 cycles. The phase-shift network is connected between the plate and control grid of audio-oscillator tube V1. Resistor R4 acts as a filament-dropping resistor, and the voltage drop across this resistor is applied as grid bias to the grid of V1 through resistor R3. (R4 makes the filament of V1 positive with respect to its grid.) Plate voltage is applied through resistor R5, which is the plate-load resistance of the audio oscillator. The filaments of tubes V1 and V2 are connected in series across the filament voltage supply. Capacitor C4 couples the output of the audio oscillator to the audio-amplifier circuit.

**14. AUDIO-AMPLIFIER CIRCUIT.** Tube JAN-1N5GT/G (V2) as shown in figure 16 is used in the audio-amplifier circuit. Resistor R4, the resistance of the filament of V1, and resistor R7 provide bias voltage for the control grid of amplifier tube V2. Resistor R6 and the series potentiometer R8 are used as a voltage divider to limit the amount of audio signal applied to the audio-amplifier tube. In addition, resistor R102 in the resonant-line oscillator circuit is connected in the control-grid circuit of amplifier tube V2.

**15. SUMMARY.** The grid-bias voltage variations occurring in the resonant-line oscillator vary the grid bias of tube V2. These variations in grid bias change the amplification of tube V2, thereby determining the strength of the audio tone which will be heard in the headset or resonator. The amplifier circuit is so designed that a grid current of 150 microamperes in the resonant-line oscillator provides enough additional bias voltage to tube V2 to bring it near plate current cut-off and thus reduce to a minimum the audio signal in the headset or resonator. A reduction in resonant-line oscillator grid current, on the other hand, provides less bias voltage to tube V2, an increase in the amplification of that tube, and hence, an increase in the strength of the audio signal in the headset or resonator. Thus, the audio amplifier acts to decrease the audible tone when the resonant-line-oscillator grid current is increased and to increase the audible tone when the current is decreased.

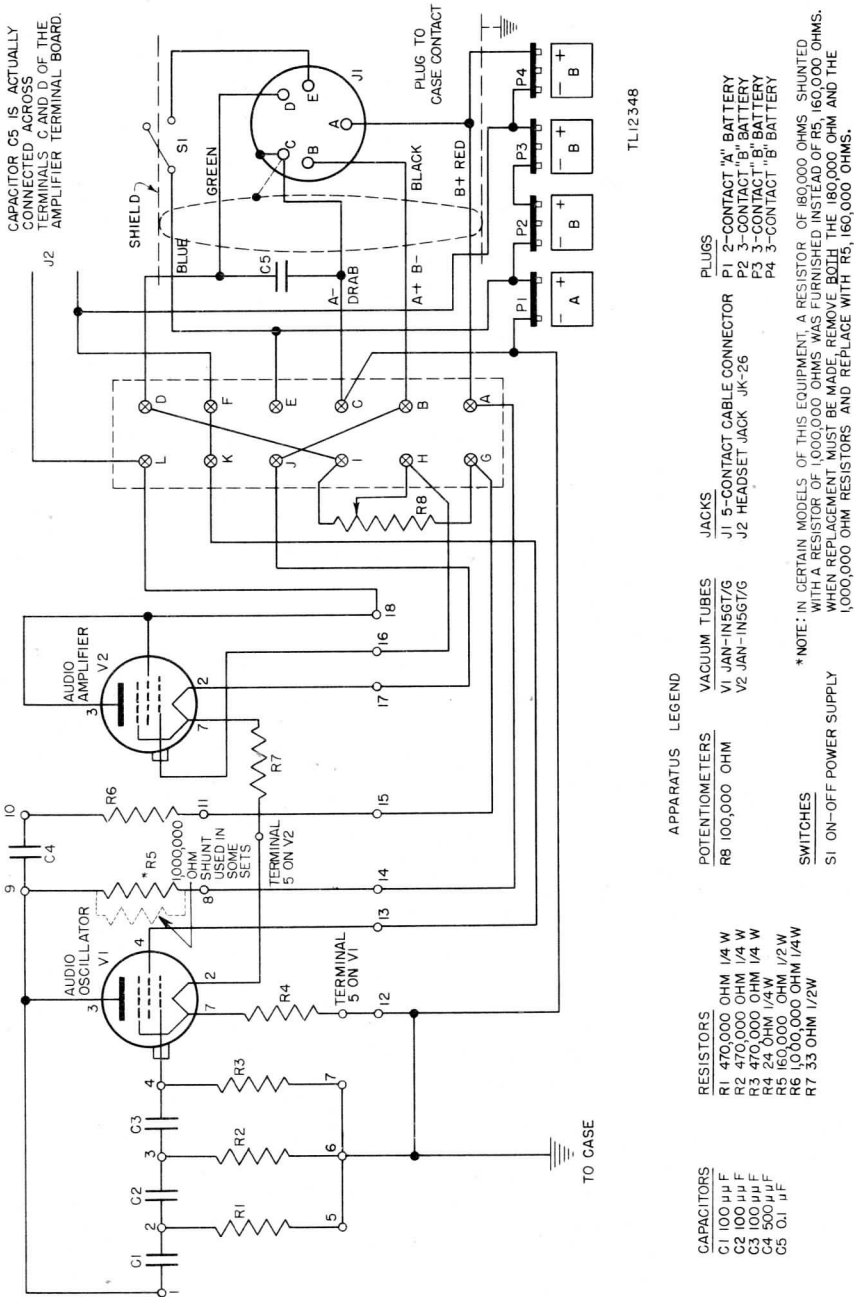


Figure 16. Amplifier Assembly AM-32/PRS-1, circuit diagram.

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## SECTION IV MAINTENANCE

**NOTE:** Unsatisfactory performance of this equipment will be reported immediately on W.D., A.G.O. Form No. 468. If form is not available see TM 38-250.

### 16. PRELIMINARY CHECKS BY OPERATOR.

a. If the detector set fails to operate properly, proceed as follows:

- (1) Make certain that the cord connectors joining the amplifier and detector head assembly cords are properly fitted.
- (2) See that headset Plug PL-54 or PL-540, or resonator Plug PL-54 is correctly inserted in Jack JK-26.
- (3) Firmly screw the antenna rods on the threaded terminals of the detector head case.
- (4) If the antenna protective horns are being used in wet weather, remove them and thoroughly dry the antenna rods, especially where they enter the detector head case.

b. If trouble persists, refer to the trouble location chart (fig. 20).

17. **HEADSET OR RESONATOR TESTS BY OPERATOR.** Remove the amplifier assembly from Bag CY-90/PRS-1. Release the four drawbolts and remove the cover from the amplifier assembly. Momentarily connect the plug of the headset or resonator across the A battery. (Touch the tip of Plug PL-54 or PL-540 to terminal E and the sleeve of the plug to terminal C of the terminal strip of the amplifier (fig. 17)). If the headset or resonator is operating properly, sharp clicks will be heard as contact is made and broken.

**NOTE:** The following tests and adjustments must be made only by trained maintenance personnel.

\*NOTE: IN CERTAIN MODELS OF THIS EQUIPMENT, A RESISTOR OF 160,000 OHMS SHUNTED WITH A RESISTOR OF 1,000,000 OHMS WAS FURNISHED INSTEAD OF R5, 160,000 OHMS. WHEN REPLACEMENT MUST BE MADE, REMOVE BOTH THE 160,000 OHM AND THE 1,000,000 OHM RESISTORS AND REPLACE WITH R5, 160,000 OHMS.

SWITCHES  
S1 ON-OFF POWER SUPPLY

R4 24 OHM 1/4W  
R5 160,000 OHM 1/2W  
R6 1,000,000 OHM 1/4W  
R7 55 OHM 1/2W

C4 500µF  
C5 0.1 µF

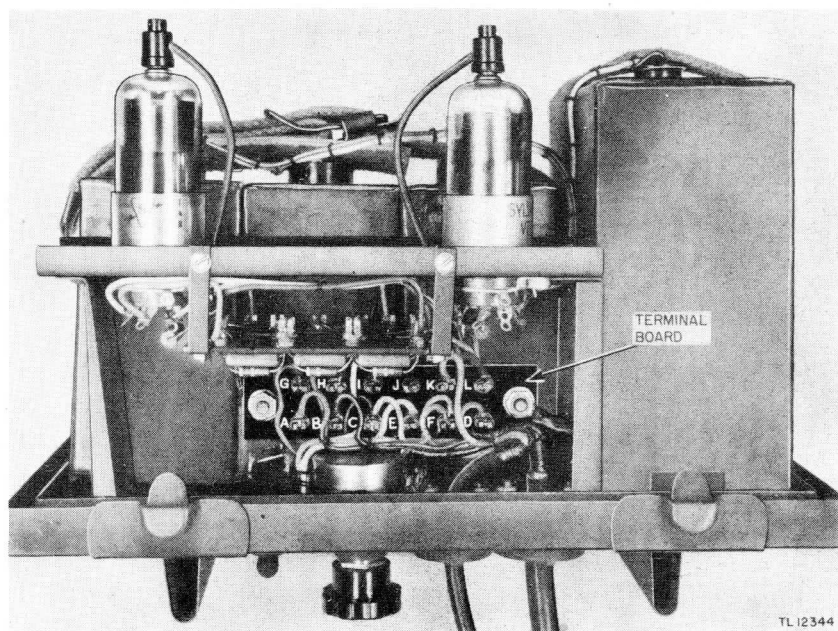


Figure 17. Amplifier Assembly AM-32/PRS-1 with cover removed, terminal board.

**18. HEADSET OR RESONATOR TESTS BY MAINTENANCE PERSONNEL.**

*a. Test of Headset HS-30-(&).* (1) Touch the test leads from an ohmmeter across the headset Plug PL-54 or PL-540. The reading of the meter should be approximately 200 ohms if the matching Transformer C-410 (fig. 1) has a good primary winding.

**CAUTION:** Do not use the ohmmeter LOW OHMS scale for this test. If there is no continuity reading, inspect the connections and the cord between Transformer C-410 and Plug PL-54 (or PL-540) for breaks.

(2) If the primary of Transformer C-410 is found to be in good condition, remove the four screws from the bottom of the transformer. Take the top from the transformer, loosen the screw holding one lead to the headset, and remove that lead.

(3) Touch the test leads from the ohmmeter across the secondary (the headset side) of the transformer. The reading of the meter should be approximately 30 ohms.

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(4) If the primary and the secondary of the matching transformer show continuity, the trouble is in the headset. Inspect the cord connecting the headset to the matching transformer for loose, broken, or corroded connections, both at the transformer and at Receivers R-30-( $\&$ ).

(5) Unscrew the caps from Receivers R-30-( $\&$ ). Carefully pull the receiver units from their cases. Take one lead from one of the receiver units. Touch the test leads from the ohmmeter across the terminals on the rear of each receiver unit.

**CAUTION:** Do not use the ohmmeter LOW OHMS scale for this test.

If either unit is open-circuited, replace it.

*b. Test of Resonator M-356-( $\&$ )* (1) Touch the test leads from an ohmmeter across the resonator Plug PL-54 (fig. 4). The reading of the meter should be approximately 1,000 ohms for a good resonator.

(2) If there is no continuity reading, inspect the connections of the cable for breaks. See that the screws holding the lugs in Plug PL-54 (when used) are tight.

(3) If these tests fail to locate the trouble, dismantle the resonator case for further inspection as follows:

a. Remove the two screws from the rim of the resonator case and the screw from the flat mounting bracket.

b. Pry apart the two halves of the case with a screwdriver inserted in the hole through which the cord is run. Do not damage the cord or the rubber grommet.

(4) Inspect the terminals on the phenolic case of Receiver R-14 (in the resonator case, figure 4) for loose, broken, or corroded connections.

(5) Test the Receiver R-14 with an ohmmeter. If open-circuited, replace it.

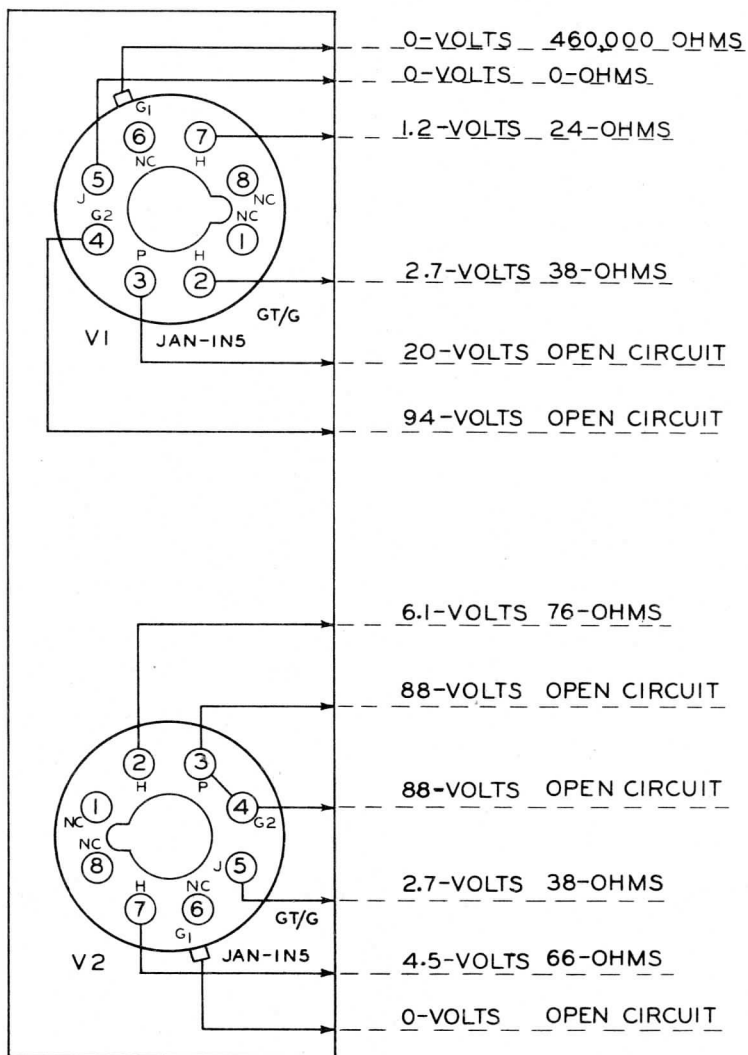
#### 19. VOLTAGE, RESISTANCE, AND CONTINUITY MEASUREMENTS ON AMPLIFIER ASSEMBLY AM-32/PRS-1 (figs. 16 and 18).

Remove the amplifier assembly from Bag CY-90/PRS-1. Release the four drawbolts and remove the cover from the amplifier assembly.

*a. Voltage Measurements.* Make voltage measurements between the chassis of the amplifier assembly and the terminals of the tube sockets.

(2) Use a voltmeter having a sensitivity of 1,000 ohms per volt.

(3) Place all tubes in their sockets, connect Headset HS-30-( $\&$ ), turn the set on, and set volume control R8 at the maximum setting (to the right).



**CAUTION: REMOVE ALL BATTERIES BEFORE MEASURING RESISTANCE**

BOTTOM VIEW OF SOCKETS SHOWN.  
 VOLUME CONTROL SET AT MAXIMUM (TO THE RIGHT).  
 MEASUREMENTS MADE WITH HEADSET HS-30-(6)  
 CONNECTED TO SET.

ALL VACUUM TUBES IN PLACE.  
 MEASUREMENTS ARE MADE BETWEEN TUBE SOCKET  
 TERMINALS AND CHASSIS USING VOLTMETER HAVING  
 SENSITIVITY OF 1,000 OHMS PER VOLT ON D-C RANGES.

TL-12347

Figure 18. Amplifier Assembly AM-32/PRS-1, tube-socket voltage and resistance.

(4) If the tube-socket voltages differ by more than 20 percent from the values indicated in figure 18, make resistance and continuity measurements to determine which parts are defective.

**b. Resistance and Continuity Measurements.** (1) Disconnect all batteries.

(2) Make resistance and continuity measurements between the chassis of the amplifier assembly and the terminals of the tube sockets.

(3) Do not use the ohmmeter LOW OHMS scale for these measurements.

(4) If the resistance values differ appreciably from those indicated in figure 18, make point-to-point resistance and continuity measurements to further localize the defective part.

(5) Replace all components found to have a resistance value beyond the tolerance limits indicated in the composite maintenance list.

## 20. VOLTAGE, RESISTANCE, AND CONTINUITY MEASUREMENTS ON DETECTOR HEAD ASSEMBLY DT-5/PRS-1 (figs. 13 and 19).

**a. Disassembly of Detector Head.** (1) Disconnect Cord CX-123/PRS-1 from the amplifier cord.

(2) Remove the reflector and antenna rods from the detector head.

(3) Loosen the two screws in the tuning control knob on the bottom of the detector head (fig. 3) and remove the knob.

(4) Remove the eight screws around the edge of the end flange of the detector head assembly, and the four screws holding the packing gland around the control knob shaft.

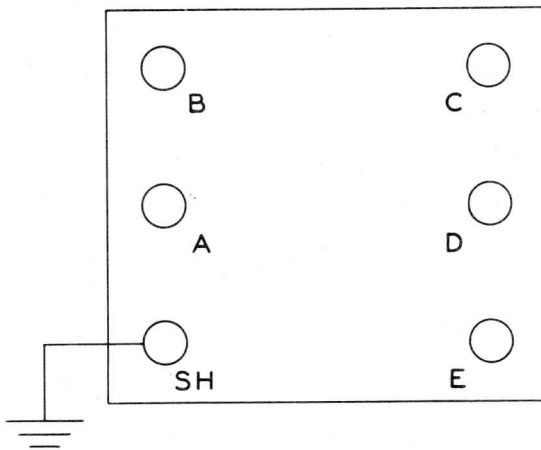
(5) Remove the three screws holding the packing gland on the cable in the end bracket at the top of the detector head.

(6) Remove the eight screws around the end-bracket casting at the top of the detector head.

(7) Carefully remove the detector head case from the resonant-line oscillator chassis. Do not damage Tube JAN-955 (V101) nor the antenna coupling loop (fig. 14).

**b. Voltage Measurements.** (1) Connect Cord CX-123/PRS-1 to the amplifier cord.

(2) Make all voltage measurements between the chassis of the resonant-line oscillator and the terminals of the detector head terminal board (fig. 15).



**RESISTANCE TO CHASSIS**

TERMINAL	OHMMETER READING
A	OPEN
B	5 OHMS
C	0 OHMS
D	30,000 OHMS
E	500 OHMS

**VOLTAGE TO CHASSIS**

TERMINAL	VOLTMETER READING	
	MAX	MIN
A	141	119.5
B	6.1	5.5
C	0	0
D	21	3
E	1.25	0.35

TL 12393

Figure 19. Detector Head Assembly DT-5/PRS-1, resonant-line oscillator terminal-board voltage and resistance.



- (3) Turn the set on.
- (4) Use a voltmeter having a sensitivity of 1,000 ohms per volt.
- (5) If any terminal-board voltage is found to be above or below the maximum and minimum voltages indicated in figure 19 for that terminal, make a resistance and continuity check of the circuit involved.

*c. Resistance and Continuity Measurements.* (1) Disconnect Cord CX-123/PRS-1 from the amplifier cord.

(2) Make resistance and continuity measurements between the chassis of the resonant-line oscillator and the terminals of the detector head terminal board.

(3) If the resistance values differ appreciably from those indicated in figure 19, make point-to-point resistance and continuity measurements to further localize the defective part.

(4) Replace all components found to have a resistance value beyond the tolerance limits indicated in the composite list of maintenance parts.

*d. Further Detector Head Assembly Tests.* (1) If false and erratic indications are given by the detector set in operation and the above tests have failed to localize the source of trouble, the antenna loading resistor R103 may be at fault.

a. Carefully cut one of the resistor leads near the metal knob (fig. 14) to which it is soldered.

b. Use an ohmmeter range which has a center-scale value of approximately 3,000 ohms.

c. Resistor R103 should have a resistance between 2,970 and 3,630 ohms.

d. When resistor R103 is to be replaced, substitute **only** a resistor of **identical make and characteristics**. A resistor of another make, even though it has the same resistance value, may not work.

e. In some cases, two carbon or metallized resistors of any make, connected in parallel, each having twice the resistance value of R103 (or 6,600 ohms), and each having the same physical dimensions at R103, are furnished in this set.

f. In replacing R103, spot-solder it to the antenna coupling coil. Do not sweat it in. Excessive heat changes its resistance value.

(2) If resistor R101 is replaced, check its resistance value **after** soldering it in place. This value should lie between 12,000 and 14,000 ohms.

(3) Test for meter M101 continuity between terminals E and SH of the detector head terminal board (fig. 15).

a. Do not use the ohmmeter LOW OHMS scale for this measurement. Use the 100,000-ohm or the 1,000,000-ohm range to be sure that the meter will not be burned out by the ohmmeter current.

b. If the meter tests **open**, replace it or connect a short wire between terminals E and SH of the detector-head terminal board and use only aural indications in the operation of the detector set.

**21. BATTERY TESTS.** Measure the battery voltages at the terminal board (fig. 17) located immediately above the volume control (R8) in Amplifier Assembly AM-32/PRS-1. Make all battery tests with the set turned on and with the cord connected to the detector head assembly.

a. Measure A battery voltages between terminal C and E on the amplifier terminal board. The **minimum** A battery voltage for successful operation of this set is 5.5 volts.

b. Measure B battery voltages between terminals E and A on the amplifier terminal board.

**NOTE:** The B battery voltage measured between terminals E and A is the sum of the voltages of the three B batteries in series and should never be less than 114 volts.

c. If the total B battery voltage is less than 114 volts, measure the voltages at the terminals of the individual batteries.

d. Replace all batteries falling below the minimum operating voltages shown below.

#### BATTERY VOLTAGES

Battery	Rated Voltage	Minimum Operating Voltage
BA-53	45	38
BA-63	45	38
BA-203/U	6	5.5
BA-205/U	3	2.75

**22. REPLACEMENT OF TUBE JAN-955 (fig. 15).** Disconnect cord CX-123/PRS-1 from the amplifier cord before replacing this tube.

a. Remove the cover from the resonant-line oscillator assembly (par. 20a). Insert the new Tube JAN-955 in the socket in such manner that the greater portion of the envelope is above the tube socket.

b. Replace the cover on the resonant-line oscillator, connect the cords, and try the detector set.

(1) Adjust the detector set (par. 7). After the detector set is adjusted, turn the tuning control knobs to the right (clockwise) until the stop is reached. Count the number of turns between the operating point and the position of maximum clockwise rotation. There should be not less than twelve turns between these positions.

(2) If less than six turns separate the positions referred to above, disconnect Cord CX-123/PRS-1 from the amplifier cord and remove the cover from the resonant-line oscillator assembly. Carefully squeeze the capacitor tabs a fraction of an inch closer together.

**CAUTION:** Do not let the capacitor tabs touch each other, or the meter M101 will be burned out.

(3) If the operating point is more than twelve turns from the positions referred to above, disconnect Cord CX-123/PRS-1 from the amplifier cord and remove the cover from the resonant-line oscillator assembly. Carefully pull the capacitor tabs a fraction of an inch farther apart.

c. If adjustment of the capacitor tabs is necessary, check the operating point, as described in subparagraph *b*(1) above, before operating the set.

**23. REPLACEMENT OF TUBES JAN-1N5GT/G (fig. 7).** In certain models of this equipment, a resistor of 180,000 ohms shunted with a resistor of 1,000,000 ohms was furnished instead of R5, 160,000 ohms. If difficulty is experienced in finding tubes which will oscillate, remove **BOTH** the 180,000-ohm and the 1,000,000-ohm resistors and replace with R5, 160,000 ohms.

**24. LUBRICATION.** None required.

## SECTION V SUPPLEMENTARY DATA

### 25. COMPOSITE MAINTENANCE LIST FOR DETECTOR SET AN/PRS-1.

NOTE: Order maintenance parts by stock number, name, and description.

Ref. symbol	Signal Corps stock No.	Name and description of part	Quantity per major unit	Lowest maintenance echelon
C1	3K2010131	CAPACITOR: silver mica, 100 $\mu$ mf, $\pm$ 5%, 500v, CM20C101K. Dwg. 4394-6-5. See also C2, C3.	3	2d
C2		CAPACITOR: same as C1.		2d
C3		CAPACITOR: same as C1.		2d
C4	3DK900-106	CAPACITOR: mica, 500 $\mu$ mf, $\pm$ 10%, 500v, CM20B. Dwg. 4394-6-6.	1	2d
C5	3DA200-4.2	CAPACITOR: moulded paper, 0.2 $\mu$ f, $\pm$ 20%, 200v. Dwg. 4394-6-7.	1	2d
C101	3DS050-22.1	CAPACITOR: ceramic, 50 $\mu$ mf, $\pm$ 5%, 300v. Dwg. 4392-7-10.	1	2d
J1	2Z8675.49	CONNECTOR: socket, female, 5-contact, series 2039-8, AN/5103-14S-5S. Dwg. 4392-8-6.	1	2d
J2	2Z5526	JACK JK-26: phone.	1	2d

Composite Maintenance List for Detector Set AN/PRS-1 (continued)

Ref. symbol	Signal Corps stock No.	Name and description of part	Quantity per major unit	Lowest maintenance echelon
L101	2C799/C1	COIL: choke, r-f, 12 turns unshielded. Dwg. 4392-6-7. See also L102, L103, L104.	4	2d
L102		COIL: same as L101.		2d
L103		COIL: same as L101.		2d
L104		COIL: same as L101.		2d
M101	3F871E5-4	METER: 0-150 d-c microampere meter, 2-1/2", AWS type MR-25-B.	1	3d
P1	2Z7112.35	PLUG: A battery connector, male, Eby 30-2M-3. Dwg. 4394-6-32.	1	2d
P2	2Z7113.34	PLUG: B battery connector, male, type 23, Eby 30-3B. Dwg. 4394-6-21. See also P3, P4.	3	2d
P3		PLUG: same as P2.		2d
P4		PLUG: same as P2.		2d
P101	2Z8799-80	CONNECTOR: plug, male, AN/3106-14S-5P. Dwg. 4392-8-5.	1	2d
R1	3RC10AE474K	RESISTOR: 470,000-ohm, ±10%, 1/4-watt. Dwg. 4394-6-8. See also R2, R3.	3	2d
R2		RESISTOR: same as R1.		2d
R3		RESISTOR: same as R1.		2d
R4	3RC20BE240J	RESISTOR: 24-ohm, ±5%, 1/2-watt. Dwg. 4394-6-12.	1	2d
R5	3RC21BE164J	RESISTOR: 160,000-ohm, ±5%, 1/2-watt.	1	2d

R5	3RC21BE164J	RESISTOR: 160,000-ohm, $\pm 5\%$ , 1/2-watt.	1	2d
<p><b>NOTE:</b> In certain procurements, this set was supplied with a resistor R5 of 180,000 ohms, shunted by a 1,000,000-ohm resistor. When repair is to be made of such units, remove <b>BOTH</b> the 180,000-ohm and the 1,000,000-ohm resistors and replace with a single 160,000-ohm resistor.</p>				
R6	3RC10AE105K	RESISTOR: 1,000,000-ohm, $\pm 10\%$ , 1/4-watt. Dwg. 4394-6-10.	1	2d
R7	3RC20BE330J	RESISTOR: 33-ohm, $\pm 5\%$ , 1/2-watt. Dwg. 4394-6-11.	1	2d
R8	2Z7271-71	POTENTIOMETER: 0-100,000-ohm, $+10\%$ - $0\%$ , linear taper. Dwg. 4394-5-4.	1	2d
R101	3RC20BF123J	RESISTOR: 12,000-ohm, $\pm 20\%$ , 1/2-watt. Dwg. 4392-5-8.	1	2d
R102	3RC10AE153M	RESISTOR: 15,000-ohm, $\pm 20\%$ , 1/4-watt. Dwg. 4392-5-7.	1	2d
R103	3RC20BF332K	RESISTOR: 3,300-ohm, $\pm 10\%$ , 1/2-watt, special. Dwg. 4392-5-9. or RESISTOR: 6,600-ohm, 1/2-watt, (2) required.	1	2d
<p><b>NOTE:</b> In certain procurements, this set was supplied with two 6,600-ohm resistors in parallel, instead of R103, 3,300-ohm, special.</p>				
S1	3Z9849.10-2	SWITCH: toggle, SPST, 3-amp, 250v, C-H 8280. Dwg. 4394-6-14.	1	2d
V1	2J1N5GT/G	TUBE JAN-1N5GT/G (VT-146): See also V2.	2	1st
V2		TUBE: same as V1.		1st
V101	2J955	TUBE JAN-955 (VT-121).	1	1st
	2C449-32	AMPLIFIER ASSEMBLY AM-32/PRS-1.	1	FD*

\* FD denotes Field Depot.

## Composite Maintenance List for Detector Set AN/PRS-1 (continued)

Ref. symbol	Signal Corps stock No.	Name and description of part	Quantity per major unit	Lowest maintenance echelon
2A288A-9		ANTENNA: with base, 5-1/2" long x 1/2" dia., 10-32 tap. Dwg. 4392-3-2.	2	2d
2Z8309-2		ANTENNA PROTECTIVE HORN: 6-1/2" long x 1-1/8" OD, laminated phenolic. Dwg. 4392-3-1.	2	2d
2Z555-90		BAG CY-90/PRS-1: haversack.	1	FD*
3A63		BATTERY BA-63 or BA-53: Dwg. 4394-6-30.	3	1st
3A275-203		BATTERY BA-203/U or (2) BA-205/U: Dwg. 4394-6-31.	1	1st
2Z1891-91		CASE CY-91/PRS-1: carrying.	1	FD*
2Z2636-12		CLAMP: for connector plug and cable, No. 2255-3, AN/3057-6. Dwg. 4394-6-17.	1	2d
2Z1605-4		CLIP: grid, 1/4", National No. 8. Dwg. 4394-6-29.	2	2d
2Z3192		CONTACT HOLDER ASSEMBLY: includes (2) contacts; (2) lugs; (1) 50 $\mu$ mf capacitor and holder. Dwg. 4392-7-A.	1	2d
3E7186		CORD: 2'-0" of Cordage CO-219 with Jack JK-26 at one end.	1	2d
3E7186-2		CORD: 6" long, 2-conductor with Transformer C-410 on one end, Plug PL-540 on other end.	1	2d
3E6000-122		CORD CX-122/PRS-1.	1	2d

\* FD denotes Field Depot.

3E6000-123	CORD CX-123/PRS-1	1	2d
3E7186-1	CORDAGE CO-137: 2'-6" long, terminates at one end in 5-conductor female connector, Amphphenol AN-3057-6.	1	2d
2C799	DETECTOR HEAD ASSEMBLY DT-5/PRS-1: includes detector head, meter, and rod.	1	FD*
2Z1860	DETECTOR HEAD CASE ASSEMBLY: consisting of case; (2) special bolts; (2) locknuts; (2) gaskets; (2) sleeves, coupling; (2) pick-up plates, inner; (2) pick-up plates, outer.	1	FD*
2Z4149	EXPLORING ROD ASSEMBLY: with clutch and meter mounting bracket. Dwg. 4392-10-A.	1	2d
2Z2866-1	EXPLORING ROD CLUTCH: 0.879" OD x 0.078" high, 9/32" hole in center. Dwg. 4392-10-11.	2	2d
2Z2866	EXPLORING ROD CLUTCH: 0.879" diam. x 0.078" thick, oblong hole, 0.380" long x 0.190" wide. Dwg. 4392-10-3.	2	2d
2Z4150-125	EXPLORING ROD EXTENSION MX-125/PRS-1.	2	FD*
2Z4867-51	GASKET: rubber, for detector head. Dwg. 4392-3-14.	1	2d
2Z4867-52	GASKET: 2.250" ID x 2-15/16" OD, neoprene or fiber. Dwg. 4392-2-4.	2	3d
2Z4867-53	GASKET SET: (2) each, 1/4" x 5/16" x 10-5/16"; (2) each, 1/4" x 5/16" x 5-3/8"; soft rubber. Dwg. 4394-4-B.	1	3d
2Z4879-1	GLAND: packing, 1-1/16" diam. x 5/16" thick, 9/32" hole through center, 3 mounting holes, bakelite. Dwg. 4394-5-5.	2	2d
2Z4879-2	GLAND: packing, 1-1/4" diam. x 1/16" thick, 1/2" diam. hole through center, 4 mounting holes, dural or steel. Dwg. 4392-7-2.	1	3d

\* FD denotes Field Depot.



Composite Maintenance List for Detector Set AN/PRS-1 (continued)

Ref. symbol	Signal Corps stock No.	Name and description of part	Quantity per major unit	Lowest maintenance echelon
2Z4879		GLAND: packing, 1-1/4" diam. x 5/6" thick, 7/16" hole through center, 3 mounting holes, bakelite. Dwg. 4392-6-2.	3	2d
6Z4914		GROMMET: 1/8" ID x 11/32" OD, rubber. Dwg. 4392-6-25.	3	2d
6Z4877-9		GROMMET: 3/8" ID x 5/8" OD, rubber. Dwg. 4394-6-23.	5	2d
6Z4876-19		GROMMET: 3/8" ID x 17/32" OD, synthetic rubber. Dwg. 4392-5-3.	4	2d
2B830U		HEADSET HS-30-U.	1	2d
3GK1250-8.12		INSULATOR: stand-off, 3/8" diam. x 1/2" long, 6-32 tap, Srestitute..	4	3d
2Z5789-4		KNOB ASSEMBLY: tuning, 3-5/16" x 1", special. Dwg. 4392-4-A.	1	2d
2Z5822		KNOB: potentiometer, 1-1/8" diam. Dwg. 4394-5-15.	1	2d
6L3806-20-21		NUT: wing, steel, 1/4"-20. Dwg. 4392-10-7.	2	2d
6L3604-36		NUT: hex, 4-36, steel. Dwg. 4394-5-20.	3	3d
6L3104-40S		NUT: hex, 4-40. Dwg. 4932-3-12.	2	3d
6L3108-32S		NUT: hex, 8-32 steel. Dwg. 4394-5-18.	6	3d
6L3608-32.3		NUT: hex, 8-32 steel. Dwg. 4394-6-26.	4	3d
6L3110-32S		NUT: hex, 10-32 steel. Dwg. 4392-6-12.	4	3d
6L2638-20S		NUT: potentiometer gland, steel. Dwg. 4392-5-3.	1	3d

2A3161

REFLECTOR: 23" long x 0.310" diam., hard brass, silver plated,

1

2d

2A3161	REFLECTOR: 23" long x 0.310" diam., hard brass, silver plated, Dwg. 4392-3-9.	1	2d
2B2156	RESONATOR M-356-(G).	1	3d
2Z7858-13	RING: pressure, toggle switch cover, TC-35-20 7-5. Dwg. 4394-6-19.	1	3d
2Z7858-12	RING: retaining, 5/16" OD x 0.187" ID, annealed steel, for exploring rod assembly. Dwg. 4392-7-11.	1	3d
6L7920-4-31.1	SCREW: rhb, clutch binding, 1/4"-20 x 1-15/16" long. Dwg. 4392-10-6.	2	2d
6L6436-4.1S	SCREW: rhms, 8-32 x 1/2" long. Dwg. 4392-6-10.	3	3d
6L18204-4.8	SCREW: self-tapping, rh, 4-40, steel. Dwg. 4394-5-13.	2	3d
6L6440-4.3S	SCREW: rhms, 4-40 x 1/4" long. Dwg. 4392-6-11.	4	3d
6L6832-6.8S	SCREW: fhms, 4-40 x 1/4" long. Dwg. 4392-5-2.	4	3d
6L6440-5S	SCREW: fhms, 4-40 x 5/16" long. Dwg. 4392-3-10.	2	3d
6L6632-3.8S	SCREW: bhms, 6-32 x 3/16" long. Dwg. 4392-7-13.	4	3d
6L6632-4.8S	SCREW: bhms, 6-32 x 1/4" long. Dwg. 4392-5-5.	2	3d
6L6632-5.8S	SCREW: bhms, 6-32 x 5/16" long. Dwg. 4392-5-4.	2	3d
6L6632-6.8S	SCREW: bhms, 6-32 x 3/8" long. Dwg. 4392-5-6.	2	3d
6L6632-6.1S	SCREW: rhms, 6-32 x 3/8" long. Dwg. 4392-6-14.	1	3d
6L6832-6.8S	SCREW: bhms, 8-32 x 3/8" long. Dwg. 4392-2-7.	16	3d
6L6832-6.1S	SCREW: rhms, 8-32 x 3/8" long. Dwg. 4392-4-7.	2	3d
6L6832-8.1S	SCREW: rhms, 8-32 x 1/2" long. Dwg. 4392-6-10.	9	3d
6L6832-14.1S	SCREW: rhms, 8-32 x 7/8" long. Dwg. 4394-5-12.	6	3d

## Composite Maintenance List for Detector Set AN/PRS-1 (continued)

Ref. symbol	Signal Corps stock No.	Name and description of part	Quantity per major unit	Lowest maintenance echelon
6L6832-1.3S		SET SCREW: for tuning knob, 8-32 thread, 1-19/32" long. Dwg. 4392-4-3.	2	2d
2Z8203-25		SHAFT: 3-1/2" long x 3/8" diam, brass, complete with retaining washers and pin. Dwg. 4392-7-6.	1	3d
2Z8309-3		SHIELD: toggle switch, neoprene. Dwg. 4394-5-1.	1	3d
2Z8761-6		SOCKET: tube, Amphenol No. S-8TM. Dwg. 4394-6-24.	2	2d
2ZK8761.7		SOCKET: tube, Hammarlund No. UHS-900-X. Dwg. 4392-5-10.	1	2d
3G1837-3.3		SPACER: insulator, 7/16" OD x 7/32" ID x 3/32" thick, bakelite. Dwg. 4392-5-15.	4	2d
6L30703		SPACER: 3/8" OD x 5/32" ID x 1/16" thick, bakelite. Dwg. 4392-5-13.	4	2d
3G1837-2.3		SPACER: insulator, 3/8" OD x 5/32" ID x 1/16" thick, bakelite. Dwg. 4392-5-12.	4	2d
2Z8879-8		SPRING: special, 1/4" wide x 1-7/16" long, phosphor bronze, silver plated, detector head assembly. Dwg. 4392-3-8.	1	3d
2Z8879-7		SPRING: reflector, 3/8" wide x 2-9/16" long, annealed spring steel. Dwg. 4392-7-15.	1	3d
6Z8441		STRAP: 45" long x 1/8" thick, battery hold-down, webbing, with buckle. Dwg. 4394-3-6.	1	3d

2Z9406.55

TERMINAL STRIP ASSEMBLY: detector head, bakelite, with 6 lugs.  
Dwg. 4392-6-4

1

3d

2Z9406.55	TERMINAL STRIP ASSEMBLY: detector head, bakelite, with 6 lugs. Dwg. 4392-6-A.	1	3d
2Z9418.17	TERMINAL STRIP ASSEMBLY: amplifier assembly, bakelite, with 18 lugs. Dwg. 4394-6-20.	1	3d
2Z9412.44	TERMINAL STRIP ASSEMBLY: amplifier assembly, bakelite, with 12 lugs. Dwgs. 4394-6-3, 4394-6-20.	1	3d
2Z9405.42	TERMINAL STRIP ASSEMBLY: meter case, bakelite, with 5 lugs. Dwg. 4392-9-B.	1	3d
6L50104-3	WASHER: brass, 5/8" OD x 1/4" ID x 0.01" thick. Dwg. 4392-10-8.	1	3d
6L72204Z	WASHER: lock, No. 4, std, steel. Dwgs. 4394-5-19, 4392-3-11.	5	3d
6L70006Z	WASHER: lock, No. 6, split, steel. Dwg. 4392-5-19.	2	3d
6L70006.1	WASHER: lock, No. 6, std, stainless steel. Dwgs. 4392-6-16, 4392-7-14.	5	3d
6L58008	WASHER: plain, No. 8, std, steel. Dwgs. 4394-5-16, 4394-5-17, 4394-6-28.	16	3d
6L72210C	WASHER: lock, No. 10, std, steel. Dwg. 4392-6-13.	4	3d
6L53014	WASHER: spring, 1/2" OD x 0.252" ID x 0.012" thick, phosphor bronze. Dwg. 4392-7-12.	1	3d
1B820.72	WIRE: No. 20, stranded, copper, Vinylite insulation, 36" hook-up.	1	2d
1B824.1	WIRE: No. 24, stranded, copper, Vinylite insulation, 10" long, red.	1	2d
1B824.2	WIRE: No. 24, stranded, copper, Vinylite insulation, 10" long, blue.	1	2d
1B824.3	WIRE: No. 24, stranded, copper, Vinylite insulation, 10" long, green.	1	2d

Order Nos. 1345-MSCPD-44, 1346-MSCPD-44, 1347-MSCPD-44, 1348-MSCPD-44, 1349-MSCPD-44, 18152-PHILA-44  
53,500 — 1 May 44

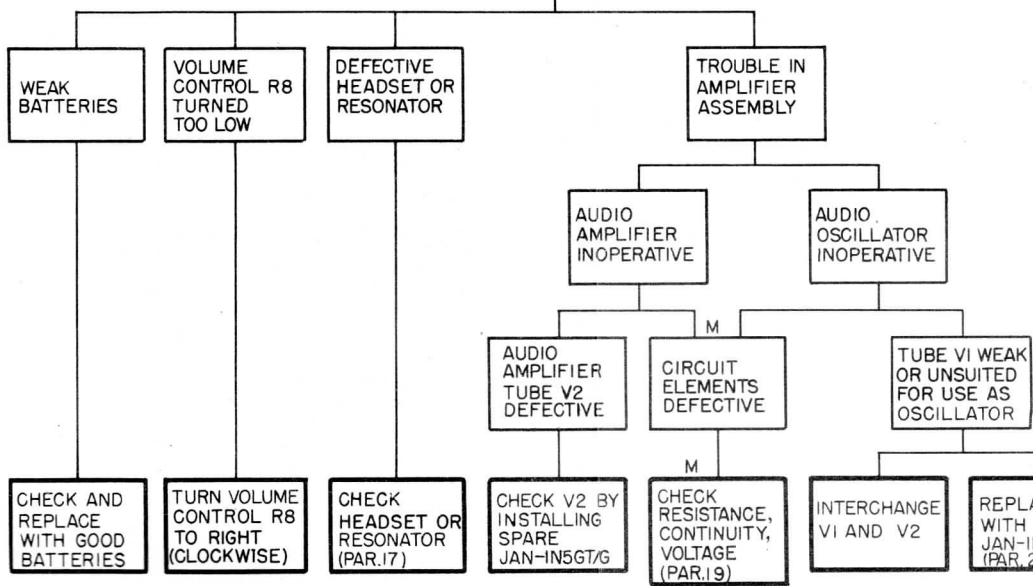
## E R R A T A

The last two sentences of Paragraph 12, page 19, should read as follows:

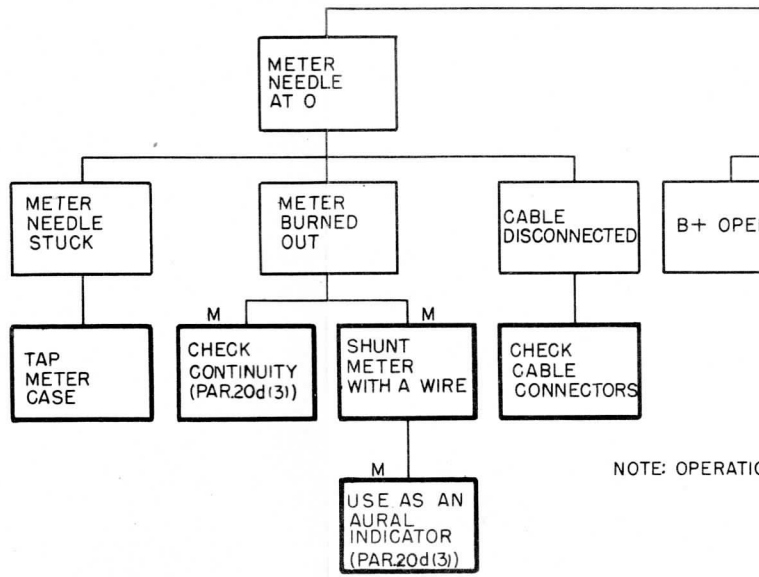
R-f chokes L102 and L103 in the heater leads and L101 in the cathode lead of V101 raise these tube elements above r-f ground potential. R-f choke L104 keeps the radio-frequency currents from the power supply.

①

NO SOUND IN HEADSET OR RESONATOR, BUT METER NEEDLE MOVES



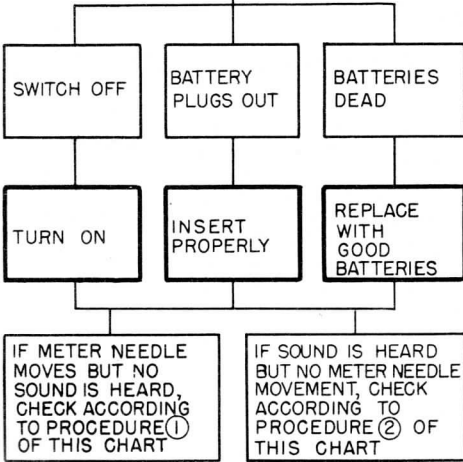
②



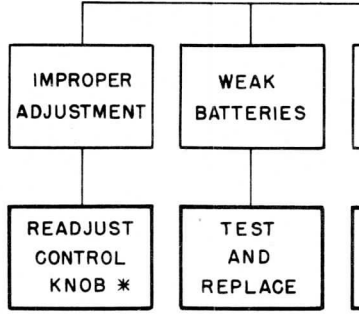
NOTE: OPERATION

③

NO SOUND IN HEADSET OR  
RESONATOR AND NO METER  
NEEDLE MOVEMENT



④



\* THE PROPER OPERATING ADJUSTMENT IS ALWAYS TO THE RIGHT (IN A CLOCKWISE DIRECTION) FROM THE DETECTOR HEAD

FACE VI  
GOOD  
N56T/G  
(3)

SOUND IN HEADSET OR RESONATOR  
BUT NO METER NEEDLE  
MOVEMENT

RESONANT LINE OSCILLATOR  
INOPERATIVE (PAR.20)

METER  
NEEDLE  
NEAR 0

METER  
NEEDLE HUGS  
RIGHT-HAND  
PIN

RESONANT-  
LINE  
OSCILLATOR  
MISTUNED

DEFECTIVE  
CIRCUIT  
ELEMENTS

DEFECTIVE  
CIRCUIT  
ELEMENTS

METER  
NEEDLE  
STUCK

RETUNE  
(PAR.7)

M  
REPLACE  
JAN-955 IF  
BURNED OUT  
(PAR.22)

VISUAL  
INSPECTION  
WITH CABLES  
CONNECTED

M  
CHECK  
VOLTAGE,  
RESISTANCE,  
CONTINUITY  
(PAR.20)

VISUAL  
INSPECTION  
WITH CABLES  
CONNECTED

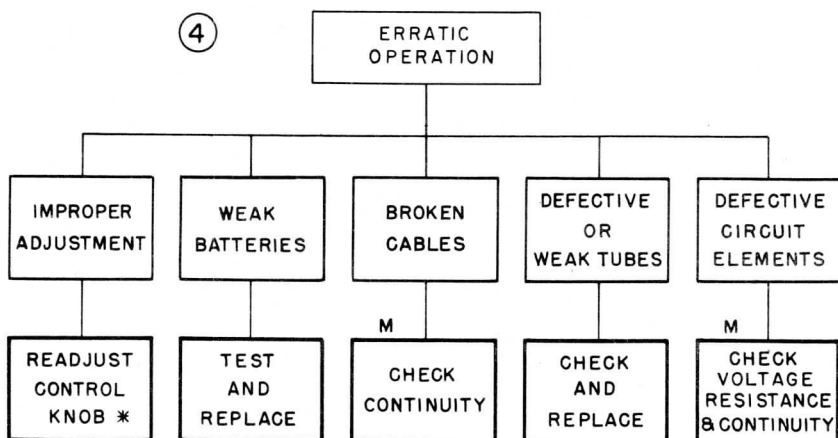
M  
CHECK  
VOLTAGE,  
RESISTANCE,  
CONTINUITY  
(PAR.20)

TAP  
METER  
CASE

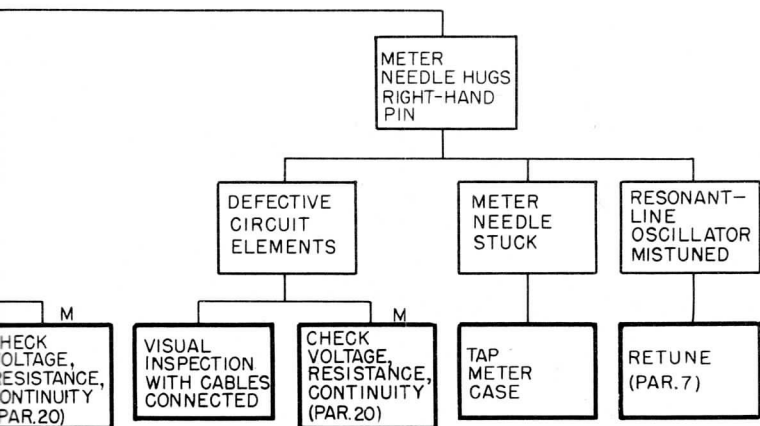
OPERATIONS MARKED "M" ARE TO BE PERFORMED ONLY BY TRAINED MAINTENANCE PERSONNEL.

TLI2350

Figure 20. De



\* THE PROPER OPERATING ADJUSTMENT FOR THE CONTROL KNOB IS ALWAYS TO THE RIGHT (IN A CLOCKWISE DIRECTION FROM ABOVE THE DETECTOR HEAD) FROM THE NULL POINT (PAR. 7 b (3)).



ED MAINTENANCE PERSONNEL.

TLI2350

Figure 20. Detector Set AN/PRS-1, trouble chart.