RESTRICTED

TECHNICAL MANUAL

FREQUENCY METER BC-906-E

CHANGES No. 1

WAR DEPARTMENT
WASHINGTON 25, D. C., 16 December 1944

TM 11-2623, 26 July 1944, is changed as follows:

Delete the following items from pages 18 and 19, paragraph 14:

3Z12004-8.2.....	LUG: $\frac{3}{8}$" x $\frac{9}{32}$" diam with $\frac{5}{32}$" diam hole, hot tin dipped; type No. 2079, Cinch Mfg Co; Philco dwg No. 5L1058FE9.	2	*
2Z9402-3.....	PANEL: wiring; over-all dimensions $\frac{7}{8}$" x $\frac{3}{8}$" x $\frac{3}{32}$" thick; bakelite; wax impregnated; 2 lugs $\frac{1}{2}$" apart, center to center; Cinch Mfg. Co; Philco dwg No. 358-2622.	1	*

[A. G. 300.7 (25 Oct 44)]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL
Chief of Staff

OFFICIAL:
J. A. ULIO
Major General
The Adjutant General

DISTRIBUTION:
AAF (10); AGF (10); ASF (2); Dept (5); Arm & Sv Bd (2); Def C (2); Sv C (5); ASF Dep (Sig Sec) (5); AF Dep (Sig Sec) (5); USMA (2); Proc Dists 11 (2); Insp Zones 11 (2); Rep Sh 11 (2)
T/O & E 11-107 (2); 11-237 (2); 11-287 (2); 11-400 Sig AW Orgn (A) Bn Hq (5), Radar Rep Plat (U) (2); 11-500 Radar Maint Team (EC); 11-587 (2); 11-592 (2); 11-597 (2); 11-617 (2)
For explanation of symbols, see FM 21-6.

AGO 2490 610603°—44

U. S. GOVERNMENT PRINTING OFFICE : 1944

TM 11-2623

WAR DEPARTMENT TECHNICAL MANUAL

FREQUENCY METER
BC-906-E

Declassified per ltr CSO
20 Dec 1949

WAR DEPARTMENT 26 JULY 1944

WAR DEPARTMENT TECHNICAL MANUAL

TM 11-2623

FREQUENCY METER BC-906-E

WAR DEPARTMENT 26 JULY 1944

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. 28, AR 380-5, 15 Mar 1944.)

WAR DEPARTMENT,
WASHINGTON 25, D. C., 26 July 1944.

TM 11-2623, Frequency Meter BC-906-E, is published for the information and guidance of all concerned.

[A. G. 300.7 (19 June 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 & H1(5); IC 11(5)

(For explanation of symbols see FM 21 6.)

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

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 — Meter, controls, panel, case, tubes.

2. Cut — Cables and all wiring.

3. Burn — All technical manuals, instruction books, calibration charts, schematics.

4. Bury or scatter — Any or all of the above pieces after destroying their usefulness.

DESTROY EVERYTHING

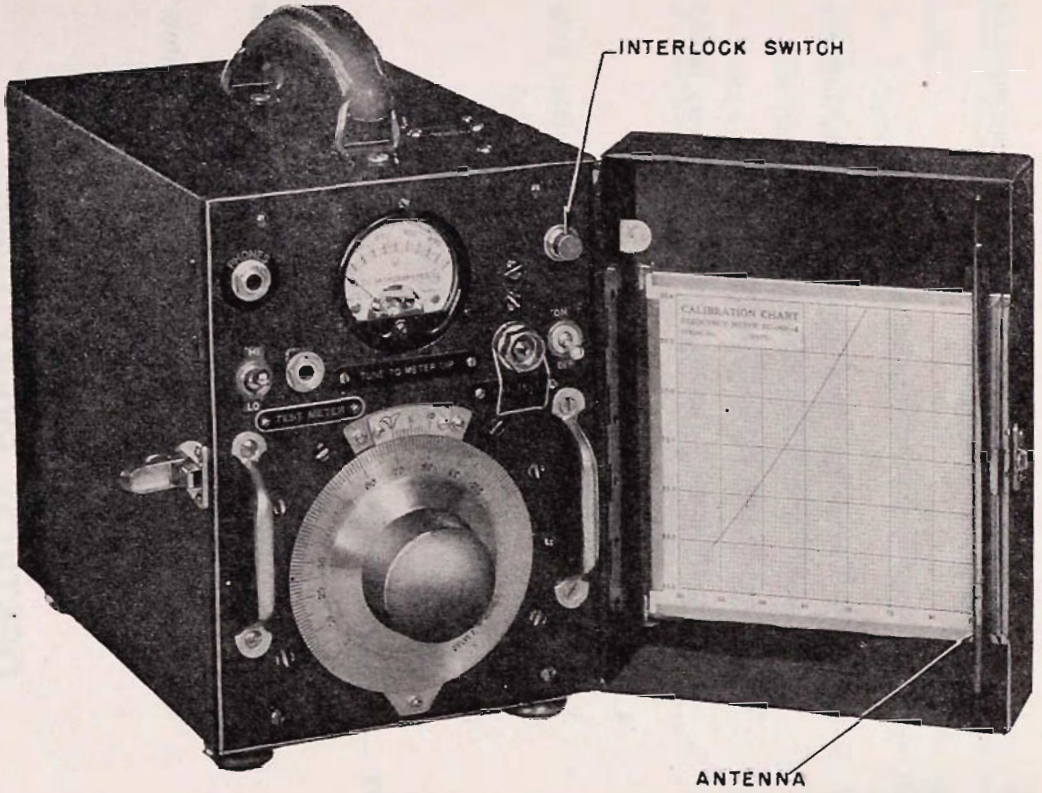

Figure 1. Frequency Meter BC-906-E.

SECTION I
DESCRIPTION

1. GENERAL. Frequency is measured by counting the number of cycles or oscillations per second. Since this cannot be done directly, except at very low frequencies, in practice the measurement is made by:

a. Noting the response of a selective resonant device, such as a tuned circuit (absorption frequency meter, Wien bridge, etc.) or mechanical resonator (tuning fork, vibrating reed, etc.) previously calibrated in terms of frequency.

b. Comparing the unknown with a known frequency from a separate source, either matching it directly by varying a calibrated source (heterodyne frequency meter) or measuring the difference between it and a fixed source (frequency standard), the frequency of which is known with high precision by interpolation.

2. FREQUENCY METER BC-906-E.

a. Frequency Meter BC-906-E (fig. 1) is an absorption-type frequency meter powered by batteries. The instrument is used to determine the frequency of r-f signals and to calibrate radio equipment. The meter mounted on the front panel of Frequency Meter BC-906-E may be used independently as a microammeter. When used as a frequency meter, the set is accurate within ± 0.5 megacycles. The frequency range of Frequency Meter BC-906-E is from 150 to 234 megacycles.

b. It weighs 17.8 pounds. The frequency meter is housed in a black wrinkle-finish metal cabinet. Mounted on the front panel is a friction vernier-drive dial equipped with a vernier attachment which enables a scale reading to be taken in tenths of a division. Also mounted on the front panel are a microammeter (used to indicate resonance with an r-f signal or as a test meter), a test-meter jack (used to connect the microammeter for reading external current values), a phone jack (with a headset, can be used in place of the microammeter for indicating resonance with an r-f signal), a socket for a coaxial connector (wired in parallel with the antenna socket), an

ON-OFF switch, a HI-LO switch (used to change the sensitivity of the frequency meter), and an interlock power switch. When the door of the cabinet is closed the interlock switch shuts off the power. A calibration chart is mounted in the door of the frequency meter.

c. The antenna consists of three sections and is 20 inches in length extended, 8⅜ inches in length collapsed. The antenna is held in place by a socket available through the top of the frequency meter case. When not in use the antenna is stored in the door of the frequency meter.

d. Battery BA-53-A, 45 volts, furnishes current for the plate circuit, and Battery BA-35 (or subsequent production), 1.5 volts, furnishes current for the filament circuit. The current drains are approximately 0.05 ampere at 1.5 volts, and 2 milliamperes at 45 volts.

e. A table of components is given below.

Quantity	*Name of component*	*Approximate dimensions (inches)*
1	Antenna (extension type)	20 x 0.218
1	Battery BA-35, 1.5 volts	3⅞ x 2⅝ x 2⅝
1	Battery BA-53-A, 45 volts	4½ x 3 x 1⅞
1	Chart (calibration)	5⅛ x 5½
1	Tube VT-172 (comm. 1S5)	2⅛ x ¾

SECTION II
OPERATING INSTRUCTIONS

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3. INITIAL PROCEDURE.

a. Take out the four screws in the front panel and remove the frequency meter from its case.

b. Check that the batteries are connected as described in paragraph 11.

c. Check that the tube is mounted firmly in its socket.

d. Replace the frequency meter in its case, and replace the screws.

4. PREPARATION FOR USE AS FREQUENCY METER.

a. Remove the antenna from the clips just inside the door of the frequency meter; insert it through the hole in the top of the case and pull out the sections to full length. Be sure the base is plugged into the antenna socket.

b. Turn ON-OFF switch ON.

c. Set HI-LO switch to LO position. The pointer should move to approximately the 450 mark on the meter scale.

d. If it does not move, remove the meter from the case (par. 3*a*) and turn rheostat (R-4) on the right-hand side of the subpanel until the 450 mark is reached.

e. Set the HI-LO switch to the HI position. The meter pointer should be at 250; if not, readjust the rheostat for best compromise between 450 on LO and 250 on HI.

5. DETERMINING UNKNOWN FREQUENCIES. When Frequency Meter BC-906-E is used with an input signal, collapse the antenna for high frequencies and extend the antenna for low frequencies. To use Frequency Meter BC-906-E for determining an unknown frequency, proceed as follows:

a. Place the frequency meter beside the equipment being checked for frequency. Set the HI-LO switch to the desired position and turn on

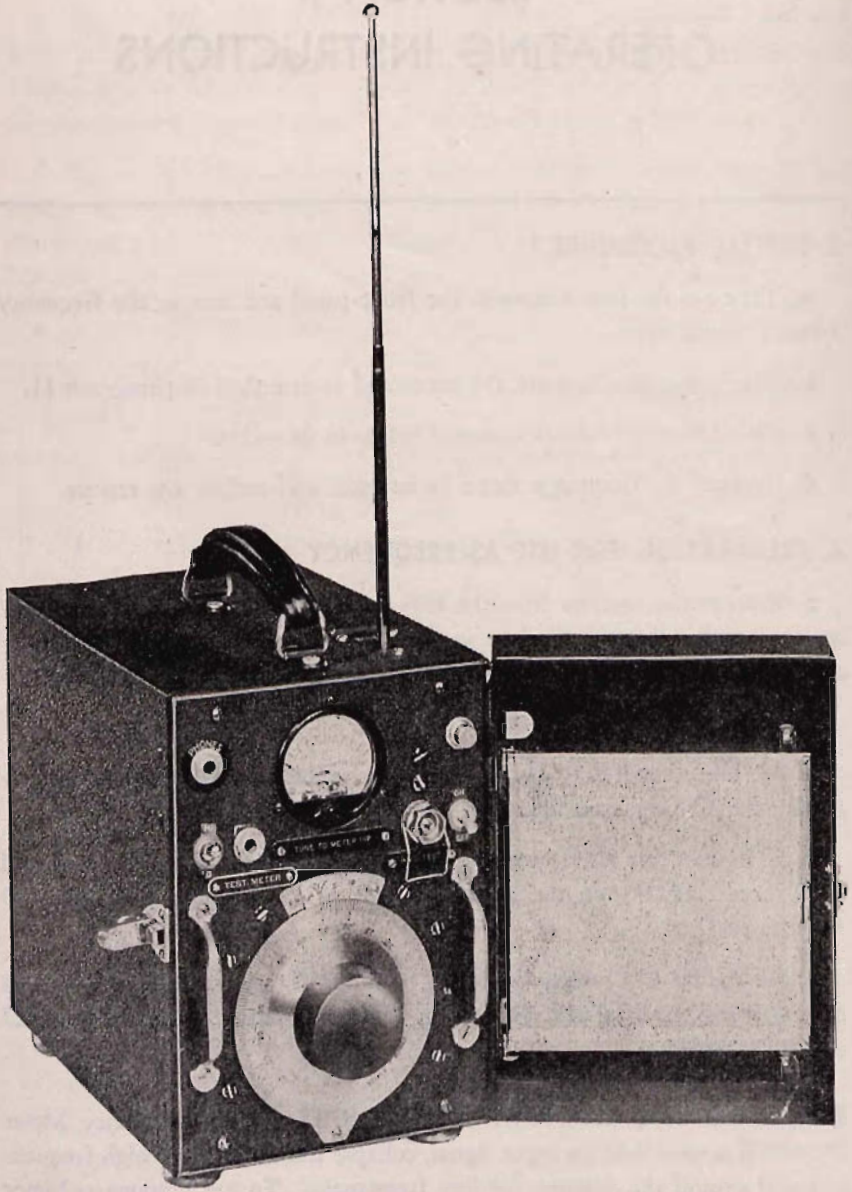


Figure 2. Frequency Meter BC-906-E, with antenna in place.

ON-OFF switch ON. (Set the HI-LO switch to the HI position for use with a low-power input signal.)

b. Rotate the calibrated dial until the meter needle reaches the point of greatest dip.

c. If a headset is used, tune to maximum volume.

d. Consult the calibration chart to obtain frequency of the input signal.

e. Turn the ON-OFF switch OFF.

6. TUNING TO A DESIRED FREQUENCY.

a. Place the frequency meter beside the equipment being aligned.

b. Set the HI-LO switch to the desired position and turn the ON-OFF switch ON. (Set the HI-LO switch to the HI position for use with a low-power input signal.)

c. Set the frequency meter to the desired frequency.

d. Adjust the equipment being aligned for maximum dip on the microammeter of the frequency meter.

e. If a headset is used, adjust for maximum volume.

f. Turn off the frequency meter.

7. USE AS A MICROAMMETER. To use Frequency Meter BC-906-E as a microammeter, turn the ON-OFF switch to OFF. Connect from the source of current to the TEST METER jack of the frequency meter.

CAUTION: The meter will be damaged if the current exceeds 500 microamperes.

8. COMPLETION OF TESTS. Upon completion of tests be sure that all switches are in their OFF or neutral positions and the antenna rod is placed back in its holding clips (fig. 1).

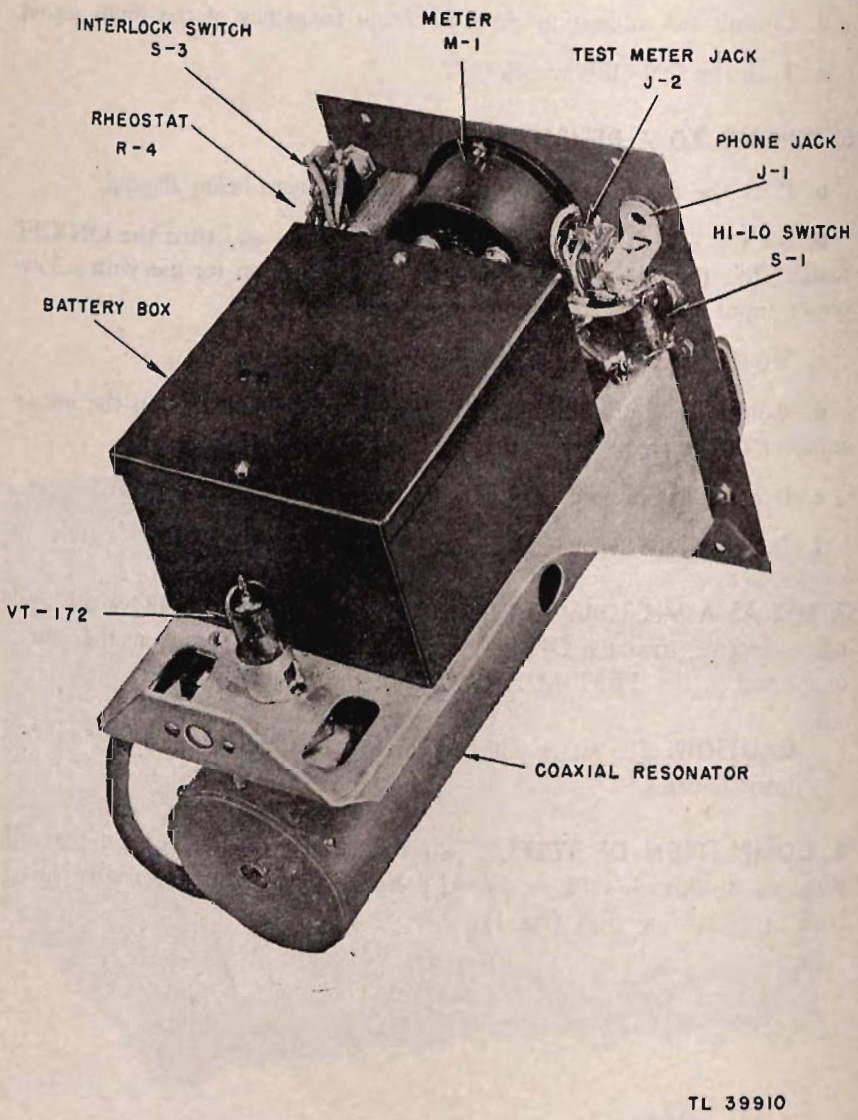


Figure 3. Frequency Meter BC-906-E, top view of chassis.

SECTION III
FUNCTIONING OF PARTS

9. THEORY. Frequency Meter BC-906-E is an absorption-type frequency meter using a coaxial resonator as a tuned circuit (fig. 3). The high Q of the coaxial resonator makes the meter extremely accurate and sensitive. The coaxial resonator output is detected by the diode portion of the tube, and the detector output controls the plate current flow through he microammeter. The numbers in the following discussion refer to reference numbers on figure 4.

a. Signals are picked up on antenna A-1 and fed through the socket to the coaxial resonator which is tuned by variable capacitors C-2 and C-3. A pick-up loop inserted into the resonator develops maximum r-f voltage when the resonator is tuned to the frequency of the incoming signal. The r-f voltage is detected in the conventional detector circuit using the diode portion of tube VT-172, capacitor C-4, choke CH-1, and resistors R-2 and R-3. Choke CH-1 helps filter the d-c voltage developed across resistors R-2 and R-3. In the HI sensitivity position of HI-LO switch S-1, negative d-c voltage is tapped off across both resistors R-2 and R-3. In the LO sensitivity switch position, only the voltage across resistor R-2 is used. The negative voltage is connected directly to the grid of the d-c amplifier section of tube VT-172; when the resonator is tuned to the incoming frequency, maximum negative voltage is applied to the grid, minimum plate current flows, and microammeter M-1 in the plate circuit shows minimum reading. Rheostat R-4 is shunted across the microammeter and is adjusted to keep the maximum deviation within the scale of the microammeter.

b. A test plug may be inserted into jack J-2 to connect the microammeter for reading external currents. The microammeter is then disconnected from all other circuits in Frequency Meter BC-906-E.

c. The time constant of the filter circuit (consisting of capacitor C-4, choke CH-1, and resistors R-2 and R-3) is long enough to filter r-f voltage, but if the incoming signal is a-f modulated, this circuit will not filter the af. The detected a-f voltage is amplified by tube VT-172 and appears across load

resistor R-1 when jack J-1 is open-circuited. The a-f voltage swing is greatest when the r-f circuits are tuned to the incoming frequency, even though the *average* (d-c) plate current is at a minimum. Therefore, when a headset is plugged into jack J-1, the loudest tone from a pulse-modulated, or other a-f modulated signal indicates that the frequency meter is tuned to the incoming frequency.

SECTION IV
MAINTENANCE

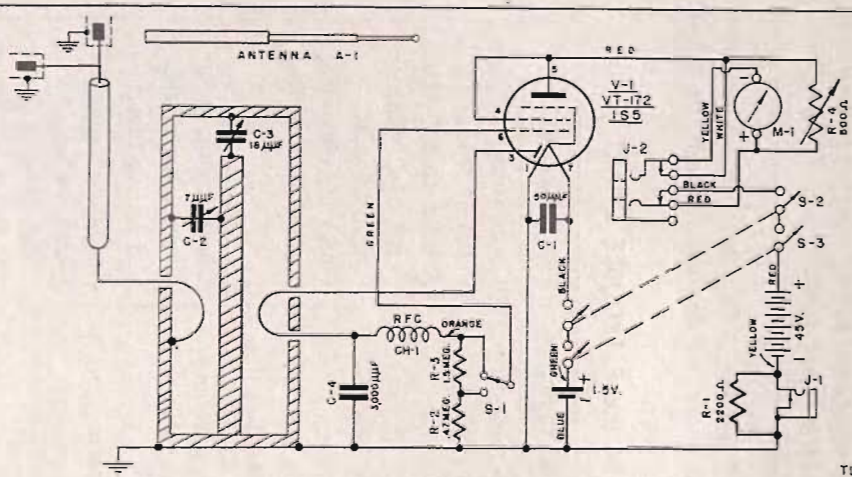
Unsatisfactory performance of this equipment will be reported immediately on W.D., A.G.O. form No. 468. If form is not available, see TM 38-250.

10. CHECKING THE FREQUENCY METER. When failure is encountered, check the items in the trouble location and remedy chart shown below before starting a detailed check.

FREQUENCY METER BC-906-E TROUBLE CHART

Trouble	*Possible causes*	*Remedy*
Meter deflection incorrect	Weak batteries.	Check voltage, replace BA-35 when voltage is less than .9 volts, BA-53-A when less than 34 volts.
	Faulty tube.	Check circuit, replace.
	Wrong setting Rheostat R-4.	Adjust rheostat R-4.
Poor meter response	Faulty connections.	Check circuit, repair.
	Defective tube.	Check voltage, replace defective tube.
	Faulty parts.	Replace.
	Weak batteries.	Check voltage, replace BA-35 when voltage is less than .9 volts, BA-53-A when less than 34 volts.
Frequency coverage incorrect	Loose connections.	Check circuit, repair.
	Faulty parts.	Replace.
	Misalignment.	*Align frequency meter.

*Use only a signal generator which is accurate within ±0.5 megacycles.



APPARATUS LEGEND FOR FREQUENCY METER BC-906-E

PART NO.	S.C. TYPE NO.	QUAN. REQ.	DESCRIPTION	MANUFACTURER'S TYPE NO. AS SPECIFIED BELOW OR EQUAL	ASSEMBLED ON DWG. NO.	ITEM
C-1	3D9050-58	1	CAPACITOR, 50 μμF, 500V. MICA	MICAMOLD TYPE 0XM		
C-2	3D9006V-5	1	CAPACITOR, 7 μμF, TRIMMER (2 PLATES)	AS PER ESPEY ## A-20.005		
C-3	3D9004VA3	1	CAPACITOR, VARIABLE AIR, 18 μμF.	OAK TYPE ST		
C-4	3DA3-29	1	CAPACITOR, 3000 μμF, 500V. CERAMIC	MUTER TYPE 38K1200		
R-1	3Z6220-3	1	RESISTOR, 2200 OHM, 1/2 WATT	ALLEN BRADLEY TYPE EB1/2		
R-2	3RC21AE474K	1	RESISTOR, .47 MEG., 1/2 WATT	ALLEN BRADLEY TYPE EB 1/2		
R-3	3RC21BE155K	1	RESISTOR, 1.5 MEG., 1/2 WATT	ALLEN BRADLEY TYPE EB 1/2		
R-4	3Z7510	1	POTENTIOMETER, 500 OHM LINEAR TAPER	STACKPOLE TYPE LP		
S-1	3Z9857.10	1	TOGGLE SWITCH, SPDT WITH 11/32" BUSHING LENGTH	ARROW H.&H.		
S-2	3Z9858	1	TOGGLE SWITCH, DPST. WITH 11/32" BUSHING LENGTH	ARROW H.&H. TYPE 20902		
S-3	3Z9824-265	1	PUSH SWITCH, DPST. PUSH TO BREAK	ARROW H.&H. TYPE 20908		
J-1	2Z5594-2	1	JACK, SINGLE CONTACT CLOSED CIRCUIT	MALLORY TYPE A2A		
J-2	2Z5572-11	1	JACK, DOUBLE BREAK TYPE	UTAH TYPE 504 B		
CH-1	3C318-7	1	R.F. CHOKE, 2.66 MICRO-HENRIES	AS PER ESPEY ## A-16.017		
A-1	2A294-1	1	COLLAPSIBLE ANTENNA	AS PER ESPEY ## 0-27.454		
M-1	3F875-2	1	MICROAMMETER, 0-500 μ AMPS, 2 1/4" DIA. ROUND CASE	GENERAL ELECTRIC TYPE MR 25W500DCUA		
	3A35	1	BATTERY, 1.5 VOLT	SIGNAL CORPS TYPE BA-35		
	3A53A	1	BATTERY, 45 VOLT	SIGNAL CORPS TYPE BA-53-A		
V-1	2J1S5	1	TUBE, VT-172 VACUUM	SYLVANIA 1S5		

Figure 4. Frequency Meter BC-906-E, schematic diagram.

11. REPLACING BATTERIES IN FREQUENCY METER. To replace batteries in Frequency Meter BC-906-E, proceed as follows:

a. Remove the frequency meter from its case and remove the cover to the battery box (the black box located on top of the chassis).

b. Remove the old batteries and disconnect the leads.

c. Connect the green lead to the plus (+) terminal of the new Battery BA-35 and connect the blue lead to the minus (—) terminal of the same battery.

d. Connect the red lead to the +45-volt terminal of the new Battery BA-35-A, and connect the yellow lead to the minus (—) terminal of the same battery.

e. Place Battery BA-35 in the battery box with the terminals toward the front of the instrument and slide Battery BA-35-A edgewise into the battery box.

f. Replace the top of the battery box and reinstall the frequency meter in its case.

12. SERVICING THE FREQUENCY METER. Servicing Frequency Meter BC-906-E usually is only a matter of checking the batteries. After installing batteries, check the meter deflection as instructed in paragraph 4. If the voltage is low after installing new batteries, make voltage and resistance checks, referring to figure 5. The readings on this figure provide a complete circuit check of the frequency meter. All voltage checks are made to ground with a 1000-ohm-per-volt voltmeter. The resistance readings are made to ground with the power switch OFF and the batteries connected. When replacing tube VT-172, be careful not to break the glass seal around the connector pins.

13. FREQUENCY METER ALIGNMENT.

a. Equipment Used. The items required for alignment of the frequency meter consist of the following:

(1) One standard screwdriver.
(2) One insulated screwdriver.
(3) A signal generator with an output accurate to within ±0.5 megacycles.

b. Deflection Alignment. Remove Frequency Meter BC-906-E from its case and set the HI-LO switch at LO. Adjust rheostat R-4, mounted on the right-hand side of the subpanel until the meter reads 400 to 450.

c. Frequency Alignment. Frequency alignment should be carried out as follows:

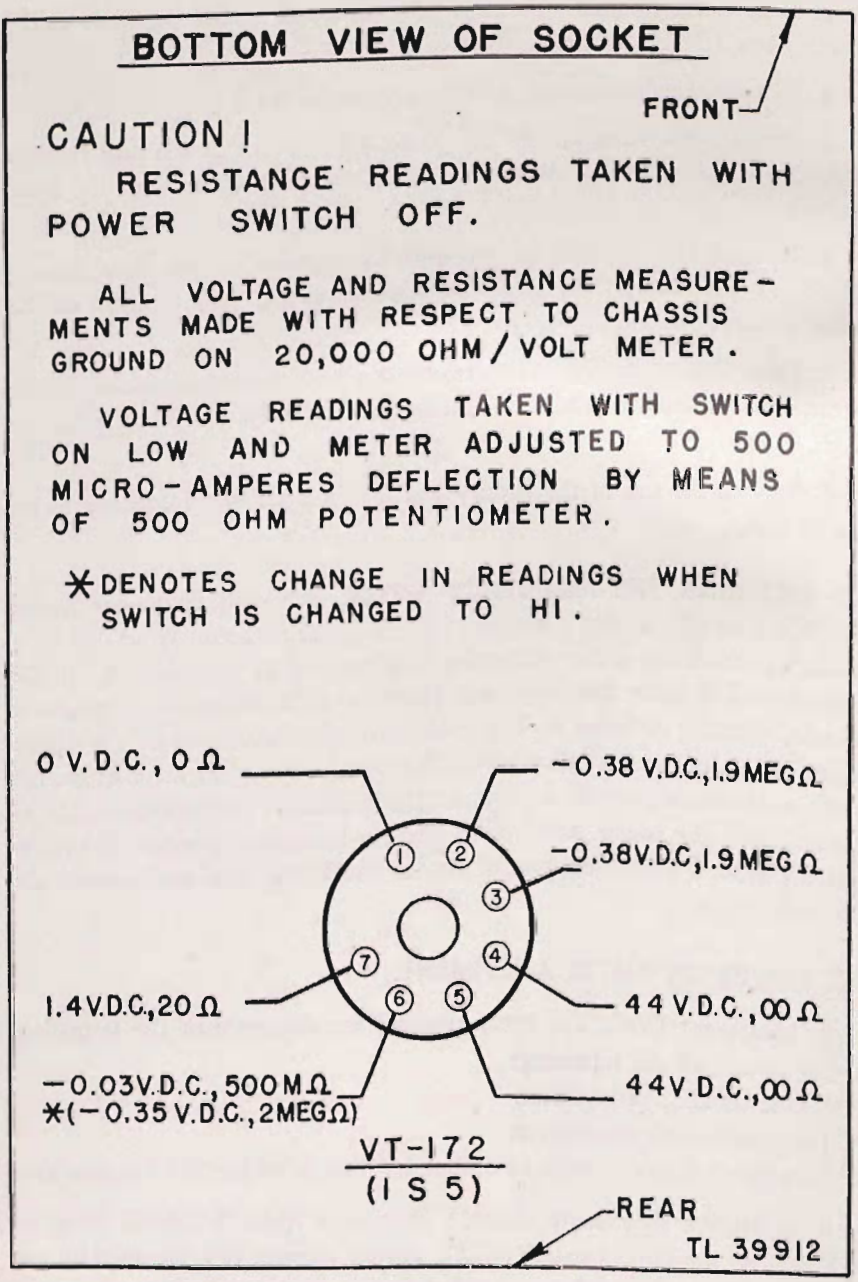


Figure 5. Frequency Meter BC-906-E, voltage and resistance diagram.

(1) Remove Frequency Meter BC-906-E from its case.
(2) Install the antenna and place the frequency meter beside the signal generator.
(3) Turn ON the signal generator and set it to 190 megacycles with the output at maximum.
(4) Set the calibrated dial of the frequency meter to the calibration point for 190 megacycles and turn the ON-OFF switch to ON.
(5) With the HI-LO switch set to LO, adjust capacitor C-2 for maximum dip on the microammeter of the frequency meter.
(6) Turn the ON-OFF switch OFF, remove the antenna, and replace the frequency meter in its case.

SECTION V
SUPPLEMENTARY DATA

14. MAINTENANCE PARTS LIST FOR FREQUENCY METER BC-906-E

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

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*			
M-1	3F875-2	AMMETER: 0 to 500 microamperes; (2¼" round flush bakelite case; 1 31/32" scale length, terminals to BC 2 3/32" in length; 2¾" x 2⅛" over-all; 120° mounting holes, one on vertical axis at top, ⅛" in from edge); Philco dwg No. 455-1015 or Espey Mfg Co dwg No. A-3.068.	1					*
A-1	2A294-1	ANTENNA: (extendable type; 8⅜" collapsed, 20" extended; base hole 0.071" diam; 15/16" deep; mounting 0.375" diam; 1⅛" long; 1st section 7⅝" long, 0.218" diam; ¼" diam ball on top of 3d section; brass, copper, nickel chromium finish; telescopic section to be smooth-sliding); Philco dwg No. 358-1667 or Espey Mfg Co dwg No. C27.454.	1		*	*		*
	3A35	BATTERY BA-35: 1.5 volts.	1	*	*	*	*	*

* Indicates stock available.

14. MAINTENANCE PARTS LIST FOR FREQUENCY METER BC-906-E (cont'd).

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			
	3A53A	BATTERY BA-53-A: 45 volts.	1	*	*	*	*	*
	1F4P1-5.14.6	CABLE ASSEMBLY: coaxial; consists of cable 14 5/8" long made of 7 strand copper wire conductor, dielectric core; tinned copper braid outside covering; 3/4" from both ends of wire is hot tin dipped; cable support No. 20 V.S.S. Steel, tinned approx 2" long, one end is curved to a 3/8" diam, 13/16" from other end is 25/32" outer diam and 0.453" inner diam; clip, steel, cadmium-plated, 0.032" thick, diam of stud hole No. 6-8; Philco dwg No. 358-2146.	1					*
C-1	3D9050-59	CAPACITOR: 50 mmf ±10%; 500v d-c working; (XM262 molded bakelite case; approx dim 7/16" x 11/16" x 3/16"; pigtail terminals); Philco dwg No. 60-00505407.	1					*
C-4	3DA3-29	CAPACITOR: fixed; ceramic; 3,000 mmf ±20%; 500v d-c working; (bakelite double band; over-all size 0.850" long x 0.250" diam; pigtail terminals); Philco dwg No. 305-1360.	1					*
C-2	3D9008V-8	CAPACITOR: (trimmer plate; variable brass plate 7/8" diam; 1/16" thick, mounted on metal shaft 1" long,	2					*

* Indicates stock available.

14. MAINTENANCE PARTS LIST FOR FREQUENCY METER BC-906-E (cont'd).

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			
		threaded 10-32 screwdriver slot 3/64" x 1/8" in end of shaft; two of above plates from Babson Dow Co); Philco dwg No. 258-1201FA6 or Espey Mfg Co dwg No. A20.006						
C-3	3D9004VA3	CAPACITOR: variable: 13.6mmf ±0.5mmf, absolute max 17.9mmf; (2 ceramic end plates; single hole mounting, 3/8-32 thread; 13/16" long; hex nut; 1/4" shaft, with 0.094" hole, 1.437" from mounting base; length of shaft and mounting to front plate 1 3/4" connection lugs at rear; approx 2 3/4" x 2 7/64" x 1 3/64" over-all; Magnetic Windings Co); Philco dwg No. 351-1039 or Espey Mfg Co dwg No. A6.029.	1					*
CH-1	3C318-7	CHOKE: r-f; 25 turns No. 34 dsc copper wire; 68 turns per in.; ceramic form 0.250" x 13/16"; pigtail terminals 1.25" long; wax impregnated and dipped; using standard test jig; capacity difference between 6 and 12mc is 223.25mmf ±5%; at 1,000 cycles inductance is 2.66μh; Philco dwg No. 352-1042 or Espey Mfg Co dwg No. A16.017.	1					*
	2Z3719-1	DIAL ASSEMBLY: counterclockwise rotation; No. 2 scale 0-100 divisions—180° (National Co) dial fits	1					*

* Indicates stock available.

14. MAINTENANCE PARTS LIST FOR FREQUENCY METER BC-906-E (cont'd).

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			
		0.250" diam shaft; Philco dwg No. 358-1669 or Espey Mfg Co dwg No. A27.432.						
	3G1821-24	INSULATOR: fibre glass sheet; (Harvel varnish coated, 1½" x ½" x 0.010", rectangular shape; Acme Specialty Sales Co); Philco dwg No. 257-7098 or Espey Mfg Co dwg No. A26.143	2					*
	3G1770-160.1	INSULATOR: fibre glass sheet; (Harvel varnish coated, 2½" x ⅝" x 0.010", rectangular shape; Acme Specialty Sales Co); Philco dwg No. 257-7451 or Espey Mfg Co dwg No. A26.142.	1					*
J-2	2Z5572-11	JACK: type No. 504B, Utah Co.	1					*
J-1	2Z5594-2	JACK: phone; to fit Plug PL-55; (1" x 1 9/32" x ⅜-32 thread, mounting 5/16" long, with hex nut, single contact break, insulated; Mallory type A2A); Philco dwg No. 358-1195.	1					*
	6R57400-6	KEY: Allen hex; fits No. 6 cup-point setscrew, short arm series; Philco dwg No. 258-1632.	1					*
	3Z12004-8.2	LUG: ⅜" x 9/32" diam with 5/32" diam hole, hot tin dipped; type No. 2079, Cinch Mfg Co; Philco dwg No. 5L1058FE9.	2					*

* Indicates stock available.

14. MAINTENANCE PARTS LIST FOR FREQUENCY METER BC-906-E (cont'd).

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*			
	2Z9402-3	PANEL: wiring; over-all dimensions 7/8" x 3/8" x 3/32" thick; bakelite; wax impregnated; 2 lugs 1/2" apart, center to center; Cinch Mfg Co; Philco dwg No. 358-2622.	1					*
	2A294-1/31	RECEPTACLE: antenna socket; threaded mountings, single spring contact, spring beryllium copper, shank brass, nickel-plated; 4-36 threads for 7/16"; spring 25/32", spring when compressed to fit 0.169" diam hole; Ucinite Corp); Philco dwg No. 258-6190 or Espey Mfg Co dwg No. A27.444.	1					*
R-1	3Z6220-3	RESISTOR: carbon; 2,200 ohms, ±10%; 1/2w; (pigtail terminals; BT-1/2 IRC or S1/2 Speer Resistor Co); Philco dwg No. 66-2223340.	1					*
R-2	3RC21AE474K	RESISTOR: carbon; 470,000 ohms ±10%; 1/2w; (insulated; pigtail terminals; approx dim. 5/8" x 3/16"; diam; type CM-1/2 Stackpole Carbon Co, type BT-1/2 IRC, type S1/2 Speer Carbon Co); Philco dwg No. 66-4473340.	1					*
R-3	3RC21BE155K	RESISTOR: carbon; 1.5 meg ±10%; 1/2w; (insulated; pigtail terminals; approx dim 5/8" x 3/16" diam; type	1					*

* Indicates stock available.

14. MAINTENANCE PARTS LIST FOR FREQUENCY METER BC-906-E (cont'd).

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			
		CM-½ Stackpole Carbon Co, BT-½ IRC, or S1½ Speer Carbon Co): Philco dwg No. 66-5153340.						
R-4	3Z7510	RHEOSTAT: gear and detent assembly; 500 ohms +30% −10%; carbon; linear 280° rotation; ¼" slotted shaft; length of shaft and mounting 1 3/16"; single hole mounting 3/8-32 thread; 3/16" long, 1 13/16" length x 1 9/32" diam; rheostat and detent mounted together as one item; Philco dwg No. 358-2769 or Espey Mfg Co dwg No. A9.064.	1					*
	2Z8669-6	SOCKET: button-base tube; miniature; (mica-filled bakelite with riveting plates; mounting holes 7/8" between centers; 5/8" hole for mounting; 1⅛" x ¾" x ¾" over-all; Philco dwg No. 257-6038.	1					*
	2A294-1/s1/s1	SUPPORT: antenna socket; laminated phenolic grade C or L; over-all dimensions 1 13/16" long x 5/8" wide x 1" high, socket hole 0.377" diam, ¾" deep, two mounting holes 0.136" diam 8-32 tap full thread, 3/8" deep; Sythane Corp; Philco dwg No. 257-7342 or Espey Mfg Co dwg No. A26.144.	1					*

* Indicates stock available.

14. MAINTENANCE PARTS LIST FOR FREQUENCY METER BC-906-E (cont'd).

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*			
S-1	3Z9857.10	SWITCH: sensitivity; toggle; (SPDT; threaded mounting bushing to be 1 1/32" long, supplied with hex nut and knurled ring nut; 1/2" single hole mounting 1 9/16" x 5/8" x 1 5/16" over-all; Arrow-Hart & Hagemann Electric Co); Philco dwg No. 452-1045.	1					*
S-3	3Z9824-269	SWITCH: push to break; (DPST; both circuits normally on; to be supplied with hex nut, one knurled ring nut and one lockwasher, 1/2" single hole mounting; 1 5/16" x 5/8" x 1 11/16" over-all; type 20908 Arrow-Hart & Hagemann Co); Philco dwg No. 452-1036.	1					*
S-2	3Z9858	SWITCH: toggle; (DPST; similar to Arrow-Hart & Hagemann Co type 20902 except threaded mtg bushing to be 1 1/32" long; to be supplied with hex nut and knurled ring nut, 1/2" single hole mounting 1 9/16" x 5/8" x 1 5/16" over-all; Arrow-Hart & Hagemann Co); Philco dwg No. 452-1035 or Espey Mfg Co dwg No. A12.052.	1					*
V-1	2J1S5	TUBE VT-172: vacuum; Comm type 1S5.	1	*	*	*	*	*

* Indicates stock available.

14. MAINTENANCE PARTS LIST FOR FREQUENCY METER BC-906-E (cont'd).

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*			
	6R55499	WRENCH: No. 4 Allen setscrew; Philco dwg No. 258-2350.	1					*

* Indicates stock available.

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