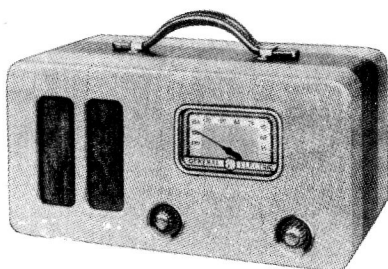


MODEL H-4BP

Four-Tube, Single-Band, Battery-Operated Superheterodyne Receiver



Electrical and Mechanical Specifications

Frequency Range 550-1,560 kc
Intermediate Frequency 455 kc

TUBE COMPLEMENT

(1) Type 1A7-G 1st-Det.—Osc.
(2) Type 1N5-G I-F Amplifier
(3) Type 1H5-G 2nd-Det., A-F, and A.V.C.
(4) Type 1C5-G Output

BATTERIES REQUIRED

"A," one 1.5 volt dry plug-type "A," 2½-in. x 2½-in. x 4-in.
(Eveready No. 742)
"B," two 45 volt dry plug-type "B," 2½-in. x 4-in. x 5¼-in.
(Eveready No. 762)

CURRENT CONSUMPTION

"A" 0.24 ampere—"B," 9.0 milliamperes

POWER OUTPUT

Undistorted 0.10 watt
Maximum 0.21 watt

LOUDSPEAKER

Type 5-inch permanent-magnet dynamic
Voice-coil Impedance 2.2 ohms at 400 cycles

Cabinet Dimensions (inches) 7¾ 14 8⅝
Chassis Base Dimensions (inches)..... 2 7¼ 5½
Over-all Chassis Height 6½ inches
Weight—Shipping weight, less batteries..... 12½ pounds
Net weight, with batteries 16 pounds
Tuning Drive Ratio 8 to 1

General Description

Model H4BP is a portable type, 4 tube superheterodyne battery-operated receiver.

Features of design include magnetite core I.F. transformers stabilized oscillator circuit, automatic volume control, permanent-magnet dynamic loudspeaker of the plug-in type, self-contained loop antenna, light weight long-life, plug-in batteries, low drain 1.5 volt tubes and a large easy-to-read dial. The complete receiver and battery complement is housed in a portable cabinet of modern design.

Alignment Procedure

Output Meter Alignment.—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-oscillator.—For all alignment operations, keep the output as low as possible to avoid a-v-c action.

Pre-setting Dial.—With gang condenser in full mesh, the pointer should be horizontal.

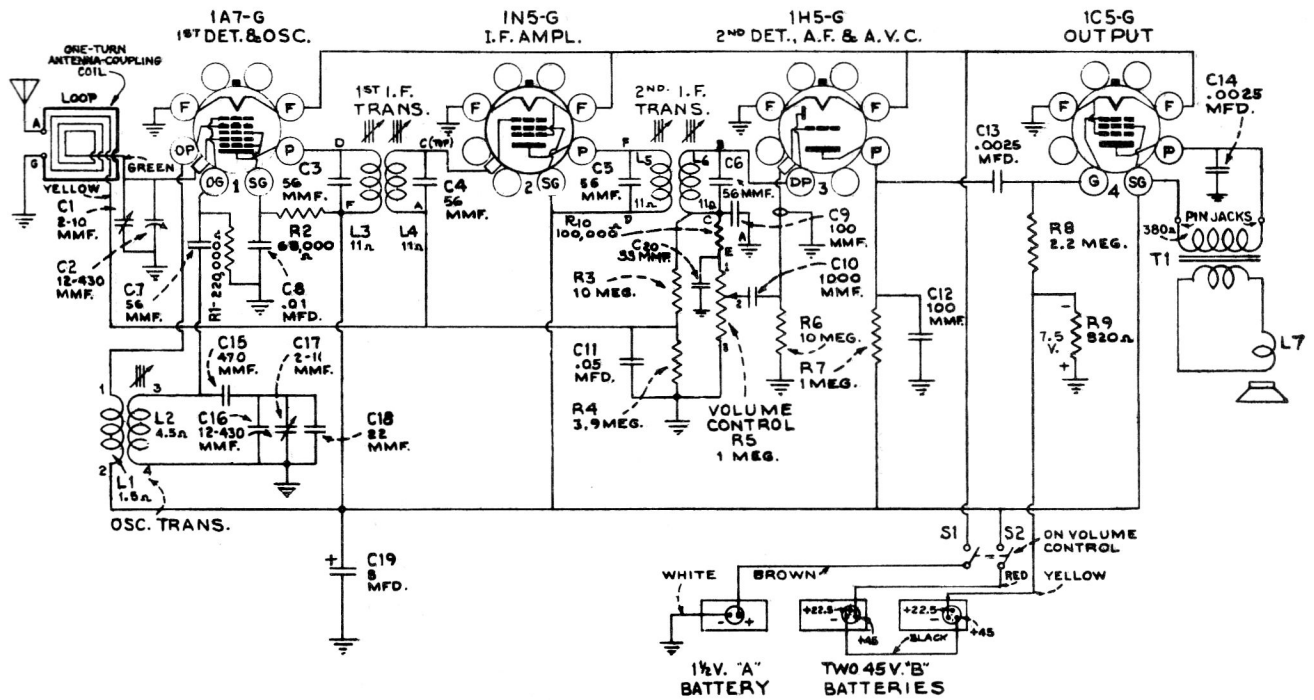
Precautionary Lead Dress.—

1. Dress speaker leads down to chassis.
2. The green lead from the loop to the antenna section of the gang should be dressed between the output and detector tube shields and pulled toward the far corner of the loop by means of the rubber band.
3. The spiral shield on the 1st-A.F. grid lead should be brought as close as possible to the grid cap.
4. Leads to the high side and tap of the volume control should be dressed down to the chassis and away from the output tube plate lead.

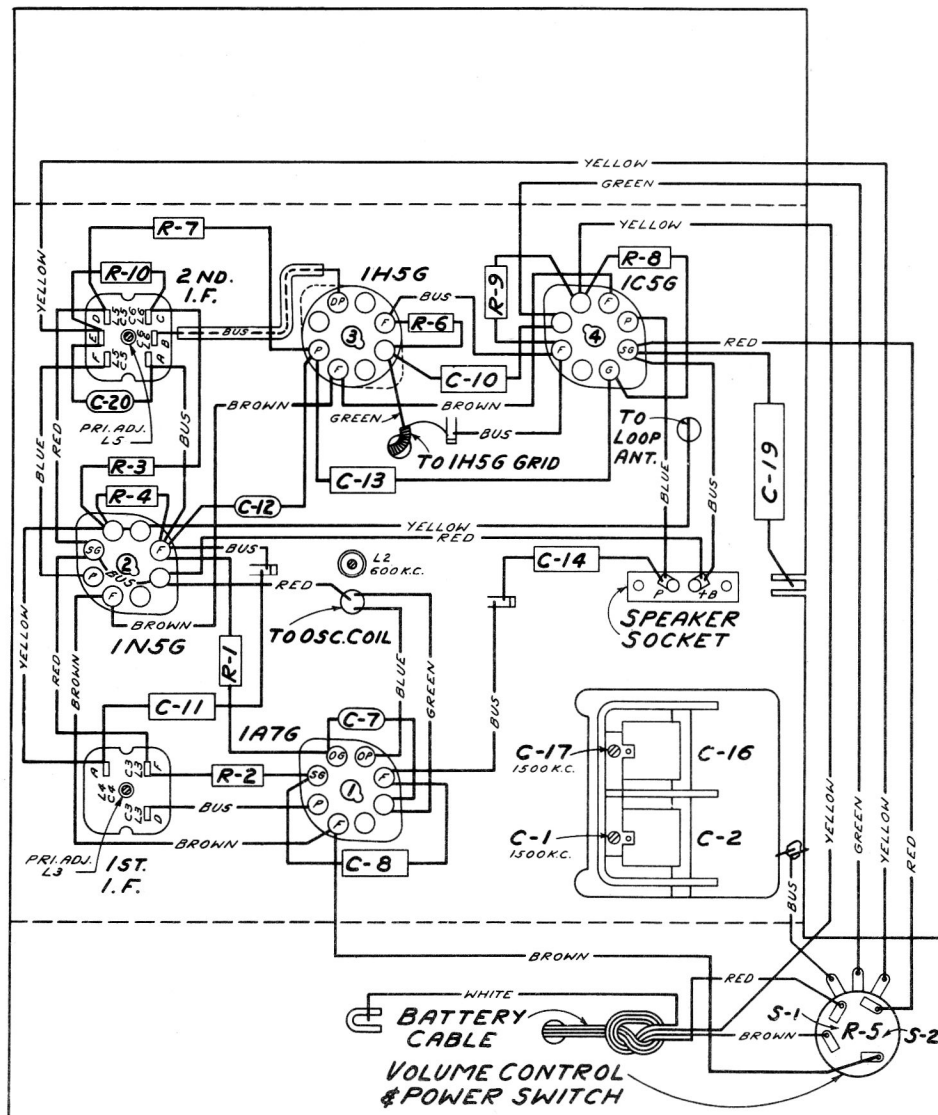
Antenna.—An antenna and ground may be connected to "A" and "G" at bottom of cabinet. If total length of antenna and lead-in is more than 150 feet, connect a 300 mmf capacitor in series with lead-in.

Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output—
1	1N5-G grid cap, in series with .001 mfd.	455 kc	Quiet point between 550-750 kc	L5 and L6 (2nd I-F transformer)
2	1A7-G grid cap, in series with .001 mfd.	455 kc		L3 and L4 (1st I-F transformer)
3	Assemble chassis and batteries in correct position in cabinet, and fasten rear cover (loop) in place while making the following adjustments, which are accessible through holes in the bottom of the cabinet.			
4	Antenna terminal, in series with 200 mfd. Connect low side of test-osc. to "G" term.	1500 kc	1500 kc*	C17 (osc.) C1 (ant.)
5		600 kc	600 kc*	L2 (osc.) Rock in
6	Repeat steps 4 and 5.			

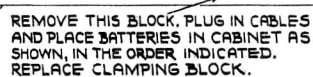
* Use bottom of "1" in "150" for 1500 kc calibration point, and use center of "0" in "60" for 600 kc calibration point.



Schematic Circuit Diagram



Chassis Wiring Diagram



Tube and Trimmer Locations

Type	Plate	Screen	Filament
1A7-G Det.	82V	44V*	1.4V
1A7-G Osc.	82V	—	—
1N5-G	82V	82V	1.4V
1H5-G	52V*	—	1.4V
1C5-G	80V	82V	1.4V

Note:—Values with star (*) are operating voltages. Values not starred are actual measured voltages.

Measurements are made to chassis set tuned to quiet point. Values should hold within approximately $\pm 20\%$ with rated battery voltages.

REPLACEMENT PARTS — MODEL H4BP

STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
RECEIVER ASSEMBLIES			
S-2359	Cable-Battery cable complete with battery plugs.....	13167	Resistor-3.9 meg., 1/4 watt (R4).....
12607	Cap-Shield cap for First I.F. Transformer.....	13601	Resistor-10 meg., 1/4 watt (R3,R6)..
12581	Cap-Shield cap for second I.F. Transformer.....	14887	Retainer-Tuning knob shaft re-tainer (Pkg.of 20).....
32598	Cap-Shield cap for 1H5G (Pkg.of 2)	3768	Screw-No.8/32x3/8 set screw for drum stock #S-2120 (Pkg.of 5).....
32596	Cap-Tube shield cap (Pkg.of 2)...	S-2364	Shaft-Dial pointer shaft and pulley.
14021	Capacitor-22 mmfd. (C18).....	32597	Shaft-Tuning knob shaft.....
12948	Capacitor-33 mmfd. (C20).....	32595	Shield-Tube shield less cap.....
30949	Capacitor-56 mmfd. (C3,C4,C5,C6).	31251	Socket-Tube socket.....
12723	Capacitor-56 mmfd. (C7).....	30956	Socket-2 contact speaker socket.....
30904	Capacitor-100 mmfd. (C9).....	S-2119	Spring-Drive cord tension spring (Pkg.of 3).....
12720	Capacitor-100 mmfd. (C12).....	32263	Transformer-First I.F. Transformer (L3,L4,C3,C4).....
30433	Capacitor-470 mmfd. (C15).....	32264	Transformer-Second I.F. Transformer (L5,L6,C5,C6,C9).....
S-2360	Capacitor-1000 mmfd. (C10).....	32594	Volume control and power switch (R5,S1,S2).....
5107	Capacitor-.0025 mfd. (C13,C14)....	SPEAKER ASSEMBLIES	
14393	Capacitor-.01 mfd. (C8).....	84226-503	
32787	Capacitor-.05 mfd. (C11).....	32163	Cone-Speaker cone (L7).....
32187	Capacitor- 8 mfd. electrolytic capacitor (C19).....	32162	Speaker-Speaker complete.....
32148	Coil-Oscillator coil (L1,L2).....	32164	Transformer-Output transformer (T1).
32591	Condenser-2 gang variable condenser (C1,C2,C16,C17).....	MISCELLANEOUS ASSEMBLIES	
S-2361	Cord-Variable condenser drive cord (19" long).....	S-2367	Crystal-Station selector escutcheon crystal.....
S-2362	Dial-Station selector dial scale.	S-2368	Escutcheon-Station selector escutcheon.....
S-2120	Drum-drive cord drum.....	S-2369	Escutcheon-Tuning or volume control knob escutcheon.....
S-2363	Indicator-Station selector indicator pointer.....	32777	Handle-Carrying handle.....
32208	Plug-2 contact male plug for "A" leads.....	S-2370	Knob-Volume control or tuning knob..
32641	Plug-3 contact male plug for "B" leads.....	32604	Loop-Antenna loop complete.....
14076	Resistor-820 ohms, 1/4 watt (R9)..	32601	Retainer-Knob escutcheon retainer (Pkg.of 2).....
13715	Resistor-68,000 ohms, 1/4 watt (R2).....	31646	Spring-Knob retaining spring (Pkg.of 10).....
14560	Resistor-100,000 ohms, 1/4 watt (R10).....		
12264	Resistor-220,000 ohms, 1/4 watt (R1).....		
13730	Resistor-1 meg., 1/4 watt (R7)....		
12679	Resistor-2.2 meg., 1/4 watt (R8)...		

PARTS PECULIAR TO MODEL H4BP (Second Production)

SPEAKER ASSEMBLIES (CRL-500-1)

S-2375	Cone-Speaker cone and voice coil (L7).....
S-2376	Speaker-Speaker complete.....
S-2377	Transformer-Output transformer (T1).....