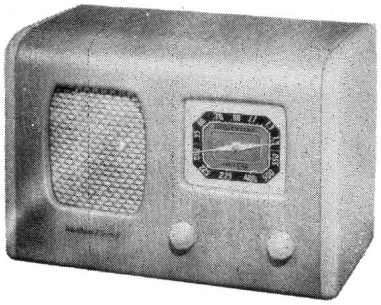
Models B-452-W, B-454-B, P-456

Battery-Operated Superheterodyne Radio Receiver



Specifications

Frequency Range:

.54 to 1.5 Megacycles
(Standard Broadcast Only)

Tubes:

Type	Position
1A7G	Converter
1N5G	I-F Amplifier
1H5G	Second Detector, AVC and 1st Audio Amplifier
1T5GT	Power Output

Batteries Required:

Filament 1.5 Volts
Plate Supply 90 Volts

(See Instruction Folder accompanying receiver for battery recommendations.)

Note:

Refer schematic re adding 4.0-ohm resistor for storage cell filament supply.

Current Consumption:

"A" — 200 mils
"B" — 9.5 mils

Power Output:

125 milliwatts

A.V.C.:

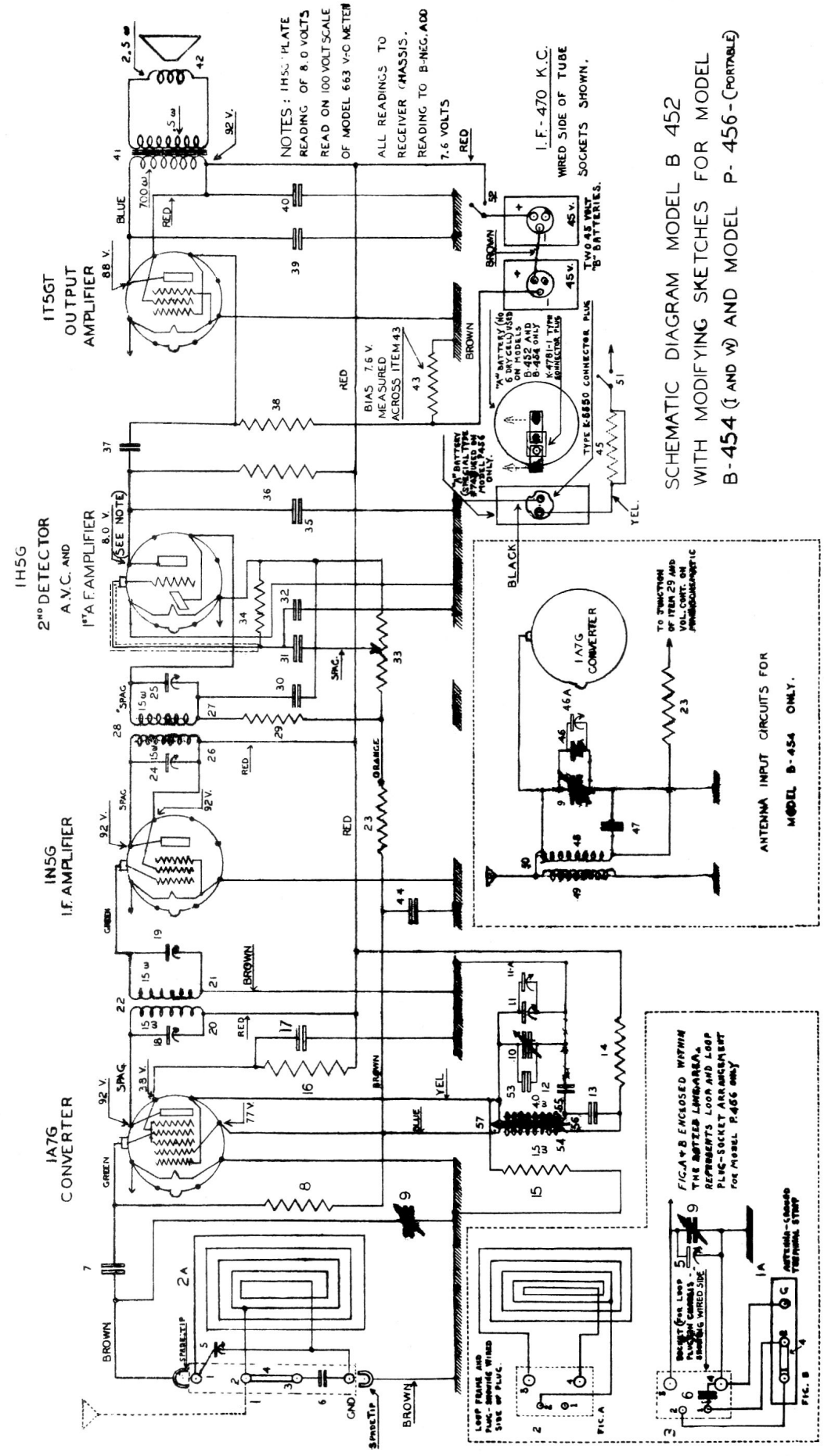
On type 1A7G converter only.

Antenna:

Models B-452 and P-456 have built-in loops with provision made for use of external antenna. Model B-454(I&B) has antenna and ground leads for external antenna only.

General:

Loops removable to fit batteries. Long battery cable provided for use of heavy duty batteries external to cabinet.


SCHEMATIC DIAGRAM MODEL B 452
WITH MODIFYING SKETCHES FOR MODEL
B-454 (I AND W) AND MODEL P-456-(PORTABLE)
NOTES: 1H5G PLATE READING OF 8.0 VOLTS READ ON 100 VOLT SCALE OF MODEL 663 V-O METER
ALL READINGS TO RECEIVER CHASSIS. READING TO B-NEG. ADD 7.6 VOLTS
I.F.-470 K.C.
WIRED SIDE OF TUBE SOCKETS SHOWN.
TWO 45 VOLT "B" BATTERIES.
1A7G CONVERTER
1N5G I.F. AMPLIFIER
1H5G 2ND DETECTOR A.V.C. AND 1ST A.F. AMPLIFIER
1T5GT OUTPUT AMPLIFIER
ANTENNA INPUT CIRCUITS FOR MODEL B-454 ONLY.
FIG. A
FIG. B

REPLACEMENT PARTS LIST

Item	Description	Part No.
1	Ant-Ground Term.Strip (B-452)	K-5497
1A	Ant-Ground Term.Strip (P-456)	K-5547
2	Loop & Plug Assembly (P-456)	K-5472-2
2A	Loop & Strip Assembly (B-452)	K-5472-1
3	Socket Assembly (Loop)(P-456)	K-5540-1
4	Metal Straps	K-3291-1
5	Trimmer: 1.5-10 mmf.	K-1458-5
6	Capacitor: 100 mmf. mica	K-1611-2
7	Capacitor:1000 mmf. mica	K-1611-23
8	Resistor 2.0 meg. 1/2 watt	K-2226-1
9	Tuning Gang:Ant.420 mmf.) B-454	K-5524-3
10	Tuning Gang:Osc.420 mmf.)	
11	Trimmer(on gang)1.5-20 mmf.) B-452	K-5494-2
11A	Extra Trim.(Max. Cap)1.5-20 mmf.) P-456	K-5541
12	Capacitor:500 mmf.mica(B452 &P456)	K-1611-7
12A	Capacitor:400 mmf.mica (B-454)	K-1611-24
13	Capacitor .002 mmf.600 Volt	K-2228-2
14	Resistor 10,000 ohm 1/2 watt	K-2226-10
15	Resistor .2 meg. 1/2 watt	K-2226-67
16	Resistor , 75,000 ohm 1/2 watt	K-2226-27
17	Capacitor .1 mf. 200 Volt	K-2227-9
18-19	First I-F Trimmers	K-2134-1
20-21	First I-F Coils Only	K-4739
22	First I-F Assembly Complete	K-4738-1
23	Resistor: 2.0 meg. 1/2 watt	K-2226-1
24-25	Second I-F Trimmers	K-2932-1
26-27	Second I-F Coils Only	K-4585
28	Second I-F Assembly Complete	K-4545-1
29	Resistor: 50,000 ohms 1/2 watt	K-2226-6
30	Capacitor 100 mmf.mica (part of	K-2932
31	Capacitor .01 mf. 200 Volt	K-2227-6
32	Capacitor 100 mmf. mica	K-1611-2
33	Vol.Cont.(1/2 meg.) & Sw.(B-452)	K-4754-2
33A	Vol.Cont.(1/2 meg.) & Sw.(B-454)	K-5528-2
33B	Vol.Cont.(1/2 meg.) & Sw.(P-456)	K-5528-1
34	Resistor:10.0 meg. 1/2 watt	K-2226-74
35	Capacitor 100 mmf. mica	K-1611-2
36	Resistor 1.0 meg. 1/2 watt	K-2226-2
37	Capacitor .01 mf. 200 volt	K-2227-6
38	Resistor 2.0 meg. 1/2 watt	K-2226-1
39	Capacitor .005 mf. 400 Volt	K-2228-5
40	Capacitor: 16.0 mf. 150 Volt	K-4698-1
41	Output Transformer	K-5469
42	Loudspeaker (B-452 & P-456)	K-5500
42A	Loudspeaker (B-454)	K-5636
43	Resistor 800 ohms, 1/2 Watt	K-2226-76
44	Capacitor .05 mf. 200 Volt	K-2227-8
45	Resistor 3.5 ohm 1/2 Watt (used with one section of a storage battery only)	K-2252-46
46	Trimmer 1.5-20 mmf. (B-454)	K-5524-3
46A	Trimmer 1.5-20 mmf. (B-454)	K-5524-3
47	Capacitor .05 mf. 200 V. (B-454)	K-2227-8
48	Ant.Transformer Secondary)	
49	Ant.Transformer Primary)	K-5588
50	Ant.Coil Assy. Complete)	
51-52	Battery On-Off Sw. Part of 33,33A & 33B	
53	Capacitor, Mica, 25 mmf.	K-1611-9
54-55	Oscillator P & G Coils	-
56	Oscillator Iron Core	-
57	Osc. Coil Assembly Complete	K-5474
	MISCELLANEOUS	
	Dial Assembly (Frame & Scale)(B-452)	K-5498
	Dial Cord (20") (order by foot)	K-4636
	Dial Cord Spring	K-4487
	Dial Assembly (Frame & Scale)(B-454)	K-5590
	Dial Assembly (Frame & Scale)(P-456)	K-5539
	Dial Drive Shaft (B-452)	K-4489-7
	Dial Drive Shaft (B-454)	K-4489-10
	Dial Drive Shaft (P-456)	K-4489-9
	Sockets	K-1924-1
	Ground Clips	K-4759-3
	Grommets	K-2786-4
	Tube Shields (Model B-452)	K-4759-1
	Tube Shields (Model B-454)	K-5600-1
	Tube Shield Caps (Model B-452)	K-4759-2
	Double Stand-Off. Insulation	K-4958
	Indicator (B-452 and P-456)	K-5475
	Indicator (Model B-454)	K-5509
	Cabinet (Model B-452)	K-5461
	Cabinet (Model B-454 Ivory)	K-5593-1
	Cabinet (Model B-454 Brown)	K-5593-2
	Cabinet (Portable P-456)	K-5545
	Bezel (Celluloid) (Model B-452)	K-5466-3
	Bezel (Celluloid) (Model B-454)	K-5518-4
	Bezel (Celluloid) (Model P-456)	K-5466-2
	Knob, Tuning (Model B-452)	K-2765-5
	Knob, Volume-Off (B-452)	K-2765-2
	Knob, Tuning (B-454 & P-456)	K-4762-1
	Knob, Volume-Off (B-454 & P-456)	K-4762-3
	Felt Washers	K-2491-4
	"B" Battery Plugs	K-4780-1
	"A" Battery Plugs (B-452 & B-454)	K-4781-1
	"A" Battery Plugs (Model P-456)	K-5550
	Grid Clips	K-3030-2
	Indicator Mounting Screws	K-5492-3
	Battery Cable, Black	K-1850-0
	Battery Cable, Brown	K-1850-1
	Battery Cable, Red	K-1850-2
	Battery Cable, Yellow	K-1850-4
	Tube Shield Bases	K-5600-3
	Felt Discs	K-4995
	Escutcheon Pin	K-3967
	Battery Holding Plate (Model P-456)	K-5564

REALIGNING DETAILS

I.F.: (a) With .1 mf. capacitor in generator lead set to 470 K.C., connect input to type 1A7G Converter grid and adjust I-F trimmers, items 18, 19, 24 and 25.

R.F.: (a) With gang closed, pointer should line up with end of black dial scale band.
(b) Check for "null" position by turning receiver with signal generator operating at high output level but not directly connected to receiver. Hold receiver at "null" position and connect signal generator through 100-mmf. capacitor to antenna loop terminal #2 on B-452 and P-456 chassis.
(c) Tighten bottom oscillator trimmer, item 11-A, then unscrew one turn.
(d) Set generator and receiver to 580 K.C. and bring in signal with rough adjustment of oscillator iron core, item 56.
(e) Set generator and receiver to 1400 K.C. Align oscillator trimmer, item 11 (on top of gang). (Note: If peak cannot be found on this trimmer, loosen trimmer, item 11-A slightly). Align loop trimmer, item 5. (See Note 4).
(f) Set generator and receiver to 580 K.C. and align oscillator iron core, item 56, rotating dial slightly to either side of 580 position, while doing so.
(g) Set generator and receiver to 1400 K.C. and check items 11 and 5.
(h) Check at 1000 K.C.
(i) See Notes below re model B-454 antenna tune.

NOTES:

1. "Null" position is only required for sets using loop, viz B-452 and P-456. For the model B-454, R-F alignment is proceeded with by connecting 100-mmf. dummy directly to blue antenna lead.

2. Link between terminals 2 and 3 on B-452 and 1 and 2 on P-456 should be kept on terminals "3" and "GND" during re-alignment.

3. Item 46 antenna trimmer on the model B-454 gang is aligned at 1400 K.C. position, taking place of item 5 on models B-452 and P-456.

4. On Model P-456 the Loop Trimmer, item 5, is mounted on the gang capacitor.