RADIO CORPORATION PTY. LTD.
DIVISION OF ELECTRONIC INDUSTRIES LTD.
126-130 GRANT STREET, SOUTH MELBOURNE, S.C.4.

TECHNICAL BULLETIN

BULLETIN JJ-2
File:-Receivers A/C
Date: 29/3/46
Page: 1

SUBJECT-Substitute Valves-Model JJ.

The type 6A8G and 6B8G valves may be substituted with types 6J8G and 6G8G respectively.

These valve types must be used in combination and cannot be substituted as independent replacements otherwise distortion at low volume will result.

When using the types 6J8G and 6G8G tubes a slight circuit alteration is necessary as follows:-

(a) An additional 60,000 Ohm carbon resistor tol. ±10% 1 watt (part number PR415) is to be connected in parallel and directly across the existing 60,000 Ohm 1 watt resistor circuit number 33.

(b) The 60,000 Ohm ½ watt resistor circuit number 32 is to be replaced with a 10,000 Ohm carbon resistor tol. ±10% ½ watt (part number PR 164).

SUBJECT-Alignment Instructions.-Receiver Type "JJ"

Equipment:- Signal Generator.
Dummy Capacitor .01MFD.
Dummy Capacitor 200MMFD.
Output Meter.
Alignment Tool.

Alignment Conditions:-
Load Impedance 5,000 Ohms.
Output Level 50 milliwatts
Volume Control Full on (clockwise.

Alignment:- Intermediate Frequency 455Kc.

Do not use a screwdriver or alignment tool with an iro point for aligning IF. transformers. A special tool, Part No. PM581 is obtainable from the factory or failing this an insulated rod with a small brass blade may be used.

Tuning Range 1640-540Kc.

Set dial pointer to the end of travel mark on the dial calibration near 550Kc. (Condenser gang plates fully meshed).

Operation	Generator Connection	Frequency	Dummy Capacity	Instructions
1.	To grid of 6B8G	455Kc.	.01MFD mica capacitor in series with generator.	Leave grid cap on. Peak 2nd IF. Transformer prim ary then secondary.
2.	Grid of 6A8G	455Kc.	.01MFD mica capacitor in series with generator.	Gang plates full out. Leave grid cap on. Peak 1st IF. Transformer prim ary and secondary.
3.	To antenna lead	1400Kc.	200MMFD in series with generator.	Set pointer at 1400Kc. adjust oscillator and peak aerial trimmer for maximum output.
4.	To antenna lead	600Kc.	200MMFD in series with generator.	Set dial pointer on 600 Kc. Peak series padder while rocking gang to a fro for maximum output.

SUBJECT-Voltage Table-Receiver Type "JJ"

Equipment:-

1,000 Ohm per volt meter with 0-500 volt and 0 -10 volt scales.

Conditions of Test:-

All voltages measured from tube socket contacts to chassis. 230 volt 50 cycle A/c. input, receiver tuned to 1,000Kc., volume control full on (clockwise) no signal.

Tube	Fil.	Plate	Screen	Cathode	Oscl. Plate
6A8G	6.3V	260V.	62V.	3.8V.	166V.
6B8G	6.3V	100V.	62V.	3.2V	-
6V6GT	6.3V	245	260	14V.	-
5Y3G	5V.	330/330RMS. The initial surge voltage across the first electrolytic (circuit No. 20) is 430 volts dropping to normal operating value of 350 volts. DC voltage across field is 90 volts.			

SUBJECT-Component Parts List:- Electrical-Receiver Type "JJ"

Circuit No.	Part Name	Rating	Tol.±	Radio Corp. Part No.
1.	.1MFD Paper Condenser	400V DCW	20%	PC103
2.	.1MFD Paper Condenser	400V DCW	20%	PC103
3.	.1MFD Paper Condenser	200V DCW	20%	PC218
4.	.05MFD Paper Condenser	200V DCW	20%	PC102
5.	.05MFD Paper Condenser	200V DCW	20%	PC102
6.	.05MFD Paper Condenser	200V DCW	20%	PC102
7.	.05MFD Paper Condenser	200V DCW	20%	PC102
8.	.02MFD Paper Condenser	400V DCW	20%	PC111
9.	.002MFD Paper Condenser	600V DCW	20%	PC112
10.				
11.	.001MFD Mica Condenser	1000VT	10%	PC108
12.	.0002MFD Mica Condenser	1000VT	10%	PC124
13.	.0002MFD Mica Condenser	1000VT	10%	PC124
14.	.0002MFD Mica Condenser	1000VT	10%	PC124
15.	.0001MFD Mica Condenser	1000VT	10%	PC110
16.	.00005MFD Mica Condenser	1000VT	10%	PC141
17.	25 MFD Electrolytic Condenser	40VP	20%	PC269
18.	25 MFD Electrolytic Condenser	40VP	20%	PC269
19.	16 MFD Electrolytic Condenser	525VP	20%	PC300
20.	8 MFD Electrolytic Condenser	525VP	20%	PC313
21.	2 Gang Variable Condenser	-	-	PC636
22.	150-500MMFD Series Padder			PC164
23.	3-55 MMFD Trimmer			PC224
24.	0-30 MMFD Trimmer (W.W.) Glass Tube.			PC663
25.				
26.				
27.	1.75 megohm Carbon Resistor	$\frac{1}{2}$ watt	10%	PR248
28.	1.75 megohm Carbon Resistor	$\frac{1}{2}$ watt	10%	PR248
29.	500,000 Ohm Carbon Resistor	$\frac{1}{2}$ watt	10%	PR245
30.	100,000 Ohm Carbon Resistor	$\frac{1}{2}$ watt	10%	PR103
31.	70,000 Ohm Carbon Resistor	$\frac{1}{2}$ watt	10%	PR256
32.	60,000 Ohm Carbon Resistor	1 watt	10%	PR125
33.	60,000 Ohm Carbon Resistor	$\frac{1}{2}$ watt	10%	PR415
34.	50,000 Ohm Carbon Resistor	$\frac{1}{2}$ watt	10%	PR160
35.	50,000 Ohm Carbon Resistor	$\frac{1}{2}$ watt	10%	PR160
36.	30,000 Ohm Carbon Resistor	$\frac{1}{2}$ watt	10%	PR151

SUBJECT-Component Parts List-Electrical-Receiver-Type "JJ"

Circuit No.	Part Name	Rating	Tol.±	Radio Corp. Part No.
37.	30,000 Ohm Carbon Resistor	½ watt	10%	PR151
38.	3,000 Ohm Carbon Resistor	½ watt	10%	PR185
39.	2,500 Ohm Carbon Resistor	½ watt	10%	PR300
	2,500 Ohm Carbon Resistor	½ watt	10%	PR300
	(2 in parallel to make 1,250 Ohms).			
40.	2,000 Ohm Carbon Resistor	½ watt	10%	PR253
41.	600 Ohm W.W. Resistor	½ watt	10%	PR338
42.	300 Ohm W.W. Resistor	1 watt	10%	PR122
43.	½ megohm Volume Control (tapped at 40,000 Ohms).	-	-	PR377
44.				
45.				
46.	1st IF. Transformer (455Kc.).	-	-	PT461
47.	2nd IF. Transformer (455Kc.).	-	-	PT462
48.	Antenna Transformer	-	-	PT381
49.	Power Transformer	-	-	PT770
50.	Coil Oscillator	-	-	PT414
51.	Tube Type 6A8G			
52.	Tube Type 6B8G			
53.	Tube Type 6V6GT			
54.	Tube Type 5Y3G			
55.	Socket 8 pin (4)	-	-	PM532
56.	Speaker 1,500 Ohm field 5,000 Ohm Input	-	-	PM569
57.	Lamp, Single Contact 6-8V. 3CP.	-	-	PM450

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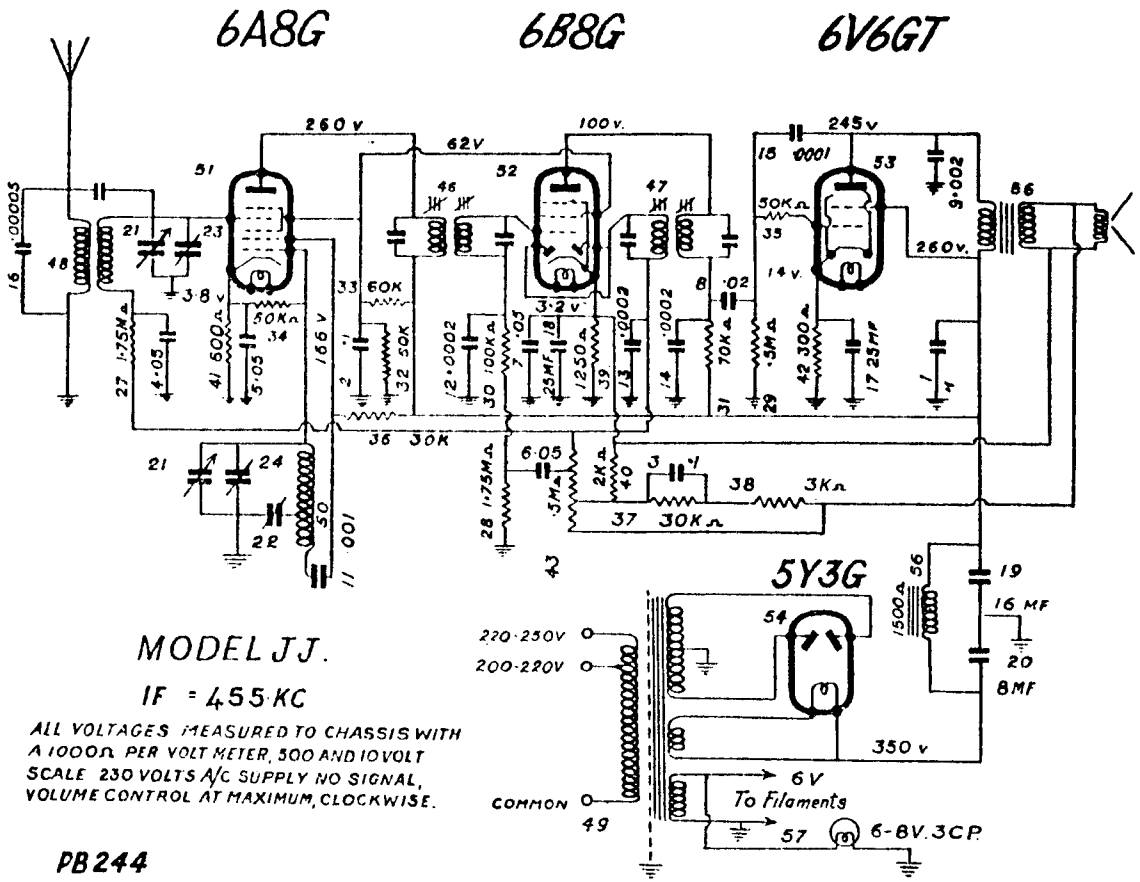
TECHNICAL BULLETIN

SUBJECT-Component Parts List-Mechanical-Receiver Type "JJ"

Part Name	Part Number
Terminal Strip (3 Lug)	A103/509
Terminal Strip (2 Lug)	A107/30C
1 Pin Socket	
Bottom Plate	18/96
Top Plate	19/96
Contacts	15/82-2
Dial Drum Assy.	A103/612
Chassis Assy.	A101/620
Valve Earth Clips	22/30C
Condenser Brkts.	45/409-1-2
Grommet (a/c cord)	40/30C
Dial Glass	2/620
Dial Frame Assy.	A110/407-2
Dial Pointer Assy.	A111/407
Control Knob Less Springs	61/81
Control Knob Springs	17/81
Tuning Spindle Assy.	A102/612
Cabinet	59/81
Chassis-Cabinet Mtg. Screws	96/47
Wooden Pulley	17/87
Pulley Bush	18/87
Speed Nuts	227/250
Dial Light Brkt. Assy.	A113/407
Diffuser Glass	27/407
Valve Shield	162/30A
Valve Shield Clamp	161/30A
Valve Shield Earth Contact	22/30C

SUBJECT-Schematic Circuit Diagram-Receiver Type "JJ"



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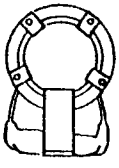
SUBJECT-Coil Connections-Receiver Type "JJ"

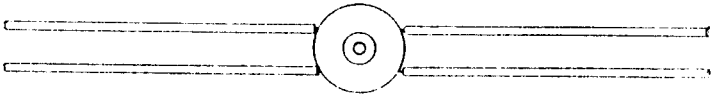
A.V.C. — Earth

(Outside secondary) Grid — Antenna. (Inside Primary)



Aerial Coil

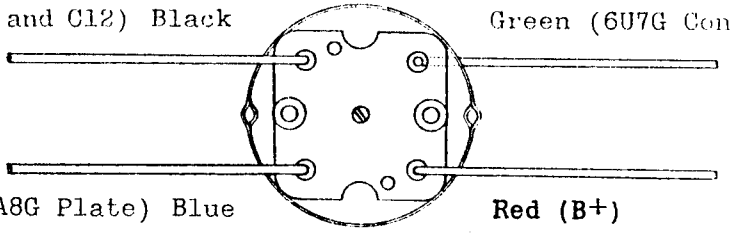
(padder cond.) Red — Black (padder cond.)



(6A8G Osc. plate cond.) Blue — Green (6A8G Oscl. grid)

Oscl. Coil

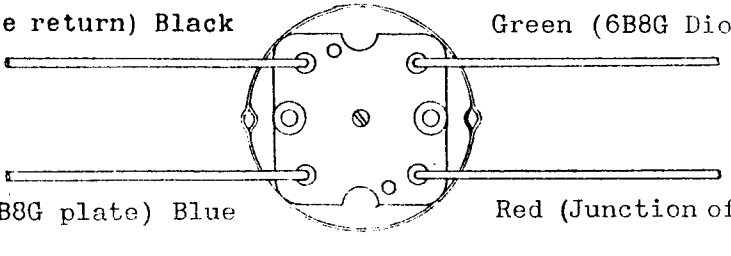
(Junction of R30 and C12) Black — Green (6U7G Control Grid)



(6A8G Plate) Blue — **Red (B+)**

1st IF. Trans.

(Diode return) Black — Green (6B8G Diode)



(6B8G plate) Blue — Red (Junction of R31, C14 and C8

2nd IF. Trans.

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TECHNICAL BULLETIN

BULLETIN JJ-1
File:-Receivers A/c.
Date: 23/1/46.

SUBJECT-Model "JJ" Mantel Receiver.
4 Tube Broadcast Superheterodyne.

For operation from
200-250 Volt 50 Cycle A/c. Mains.

This Bulletin Contains:-

1. Technical Specifications.
2. General Description.
3. Alignment Instructions.
4. Voltage Table.
5. Component Parts List.
6. Circuit Diagram.
7. Coil and IF. Transformer Connections.

SUBJECT-Technical Specifications-Receiver Type "JJ".

Tube Complement:
Type 6A8G Converter.
Type 6B8G IF. Amplifier, AVC., Detector, 1st Audio.
Type 6V6GT Beam Power Output.
Type 5Y3G Full Wave Rectifier.

Intermediate Frequency: 455Kc.

Broadcast Coverage: 540Kc. (Killcycles) to 1640Kc.
555M. (Meters) to 182.9M.

Calibration: Straight Line Frequency.

Power Consumption: 50.6 Volt/Amps (230 Ma. at 230 volts).

General Description:

This receiver is a 4 valve reflexed superheterodyne of unusual design. The usual disadvantages of reflexed receivers, i.e., low volume distortion and failure of the volume control to cut off, are overcome.

The circuit consists of a 6A8G pentagrid converted followed by a type 6B8G diode pentode used as a combined IF. amplifier, diode detector and A.V.C. bias source and 1st audio amplifier.

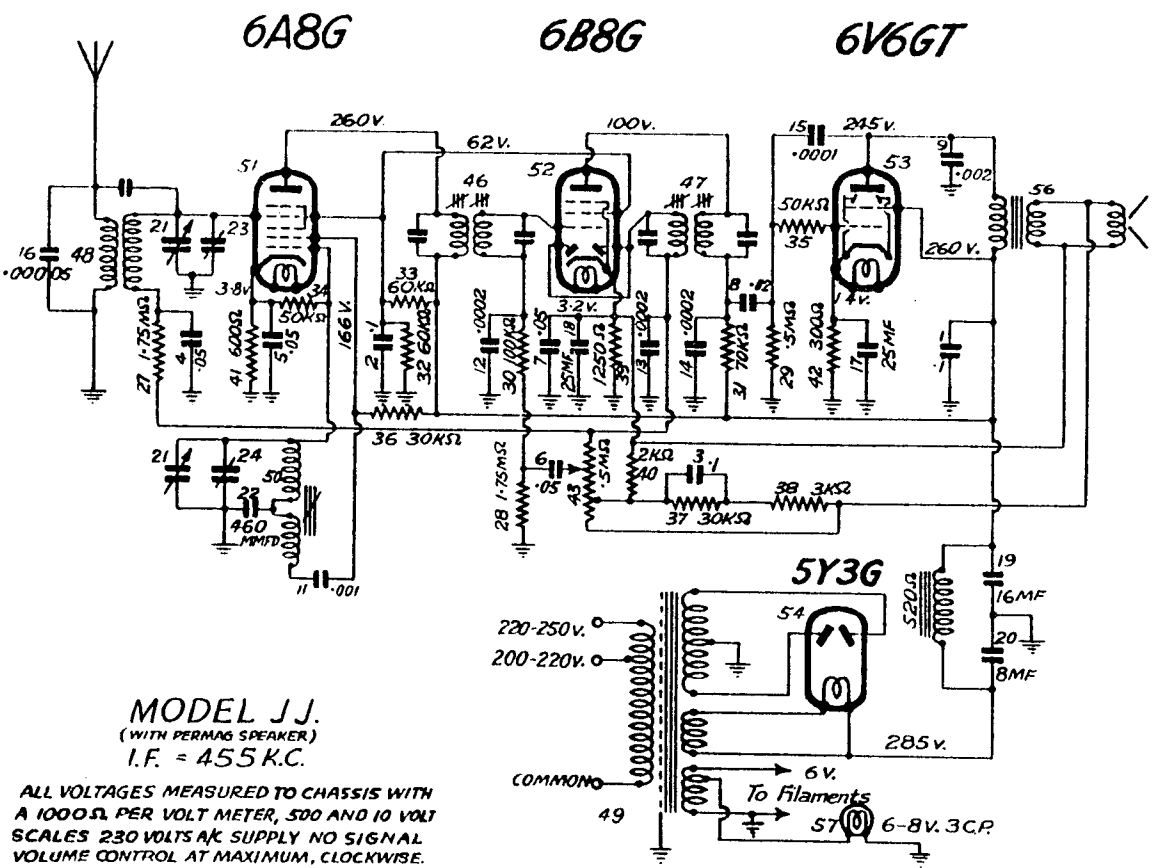
A.V.C. is applied to the 6A8G only. Volume is controlled by varying the reflexed audio signal applied to the 6B8G. The audio output from this tube is fed directly to the 6V6G output tube. Degenerative feedback is taken from the secondary of the output transformer and applied to the bottom of the volume control. A second circuit providing bass boost is connected to the tap on the volume control.

High tension is supplied from full wave rectifier 5Y3G and filtered by 8 uf. and 16 uf. electrolytic condensers in conjunction with the loudspeaker field coil.

SUBJECT-Iron Cored Oscillator Coil.

New Parts	Part No.
Iron cored oscillator coil (includes iron core)	PT793
Series pad condenser .000460MFD.	PC684

Revised Circuit.



PB312

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TECHNICAL BULLETIN

SUBJECT-Iron Cored Oscillator Coil.

A variable iron cored oscillator coil is being used in place of the solenoid wound type on future production runs of the Model "JJ" receiver.

The change requires a new alignment procedure as detailed below.

Part numbers of the new parts and a revised circuit are shown on the following page.

Alignment Procedure:-

Load Impedance: 5,000 Ohms.
Output Level: 50 Milliwatts.
Volume Control: Full on (clockwise).
Dummy Antenna: 200MMFD. Mica Capacitor.
Intermediate Frequency: 455 Kc.

Operation No.	Generator Connection	Generator Frequency	Dummy Capacity	Instructions
1.	To control grid of 6B8G tube.	455 Kcs.	.01MFD. mica capacitor in series with generator.	Leave grid cap on tube. Peak 2nd IF. trans. primary and secondary.
2.	To control grid of 6A8G tube.	455 Kcs.	.01MFD. mica capacitor in series with generator.	Leave grid cap on tube. Gang plates full out. Peak 1st IF. trans. primary and secondary.
3.	To antenna terminal.	600 Kcs.	200MMFD. mica capacitor in series with generator.	Turn gang and dial pointer to 600 Kc. Peak osc. coil inductance trimmer (iron core) for max. output rocking the gang to and fro through the signal while adjusting.
4.	To antenna terminal.	1400 Kcs.	200MMFD. mica capacitor in series with generator.	Turn gang and dial pointer to 1400 Kcs. Adjust osc. coil trimmer for logging and peak aerial coil trimmer.

5. Repeat operations Nos. 3 and 4.