

# SERVICE BULLETIN

SEMPER FIDELIS

(Grove oscutchen, Plessey's<sup>u</sup> spk)

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## SERVICE BULLETIN No. 11.

MODEL 21: DUAL WAVE RECEIVER WITH METAL VALVES  
AND IRON CORED INTERMEDIATE FREQUENCY  
TRANSFORMERS.

PROPERTY F  
J.W.S. OKE



Compliments of  
Fairbairn & Jones, Ltd.  
Electrical Engineers  
23-25 Wellesley St. East  
AUCKLAND.

# RADIO CORPORATION OF NEW ZEALAND LTD.



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## MODEL 21: DUAL WAVE RECEIVER WITH METAL VALVES AND IRON-CORED INTERMEDIATE FREQUENCY TRANSFORMERS.

### 1. ELECTRICAL SPECIFICATIONS.

Power supply	225-250 volts A.C., 50 cycles.
Power consumption	Approx. 65 watts.
Undistorted power output	3 watts.
Valves used	Frequency changer 6A8
	I.F. Amplifier 6K7
	Diode detector 6H6
	Audio amplifier 6J7
	Output pentode 6F6
	Rectifier 5Z4
Intermediate frequency	456 kc./sec.
Broadcast band	550-1500 kc./sec.
Short-wave band	5.7-15.5 mc./sec.
Line-up frequencies	Intermediate frequency 456 kc./sec.
	Broadcast band 600, 1000, and 1400 kc./sec.
	Short-wave band 6, 9, 12, and 15 mc./sec.

### 2. VOLTAGE TESTS—A.C.: High-tension secondary of power transformer, from each rectifier plate to ground 325 volts 375

Heater of rectifier 5 volts

All other heaters 6.3 volts

D.C.: Unfiltered D.C. voltage, rectifier heater to ground 370 volts

Filtered D.C. voltage, speaker field to ground 250 volts

Other voltages to ground, using 1000 ohm per volt meter on 500 volt range except where otherwise stated :—

Valve.	Function.	Plate.	Osc. Plate.	Screen.	Cathode.
6A8	Freq. changer	250	145	100	*3.0
6F6	Output	230	—	250	16†
6J7	Audio amp.	70	—	30	2.0 *
6K7	I.F. amp.	250	—	100	3.0 *

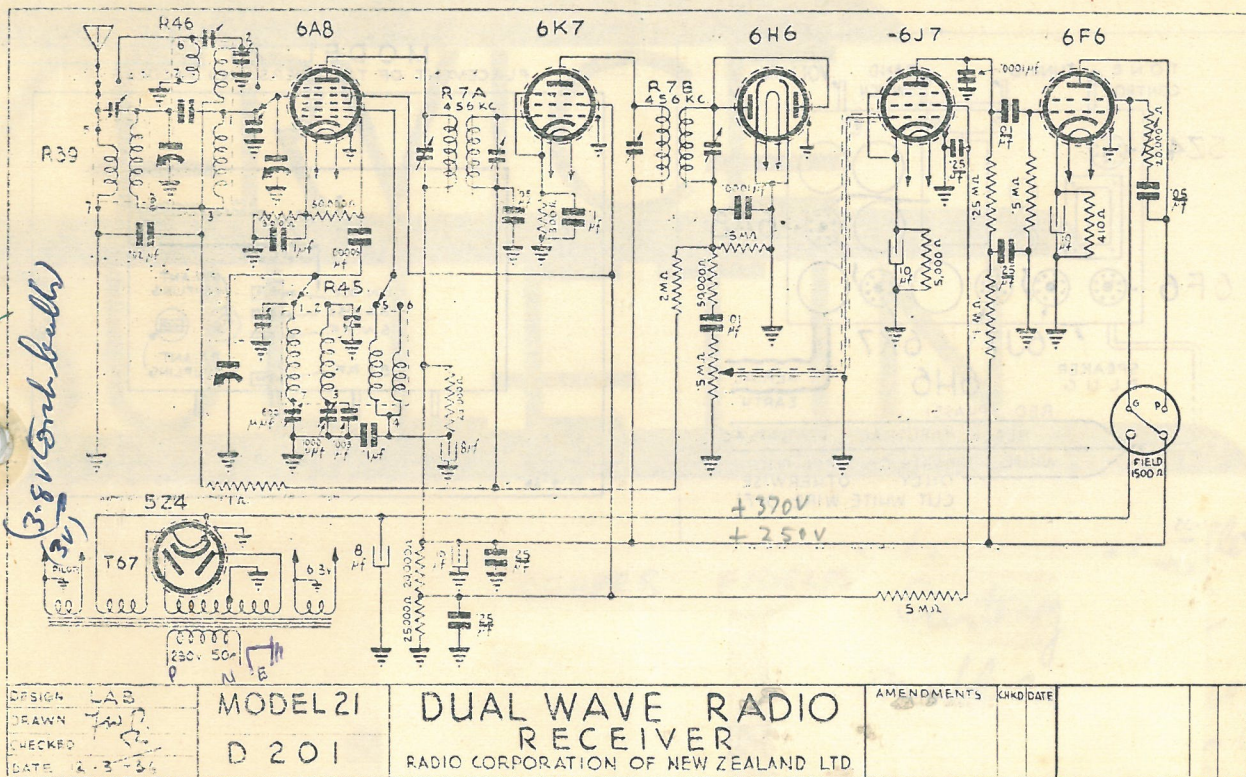
†100 volt range.

\*10 volt range.

### 3. RESISTANCE TESTS :

Coil.	Where Measured.	Resistance.
Power tran. primary	Across power cord.	40 ohms
H. T. secondary	Each rectifier plate to ground.	240-280 ohms
Speaker field	"Fil" of speaker socket.	1500 ohms
Speaker input tran.	"P" to "G" of speaker socket.	600 ohms
1st I.F. primary	See circuit.	Approx. 7 ohms
1st I.F. secondary	See circuit.	Approx. 7 ohms
2nd I.F. primary	See circuit.	Approx. 7 ohms
2nd I.F. secondary	See circuit.	Approx. 7 ohms
Broadcast ant. primary	5 to 7 of coil R 39.	Approx. 45 ohms
Broadcast ant. secondary	1 to 3 of coil R 39.	Approx. 6 ohms
Shortwave ant. primary	6 to 7 coil of R 46.	Approx. 3 ohms
Shortwave ant. secondary	2 to 3 of coil R 46.	(Short circuit)
Broadcast R.F. secondary	1 to 3 of coil R 46.	Approx. 6 ohms
Broadcast osc. primary	4 to 5 of coil R 45.	Approx. 3 ohms
Broadcast osc. secondary	1 to 7 of coil R 45.	Approx. 4 ohms
Shortwave osc. primary	4 to 6 of coil R 45.	(Short circuit)
Shortwave osc. secondary	2 to 3 of coil R 45.	(Short circuit)





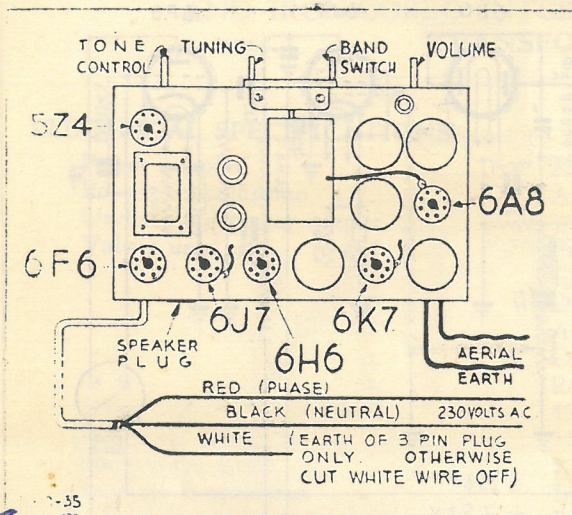
4. **LINE-UP PROCEDURE :** This is fully explained in Service Bulletin No. 12, "Standard Line-up Procedure for Multi-wave Receivers," accpy of which is obtainable on application to the factory if desired.

5. **SENSITIVITY TESTS :** (Microvolts input to give standard output of 50 milliwatts):

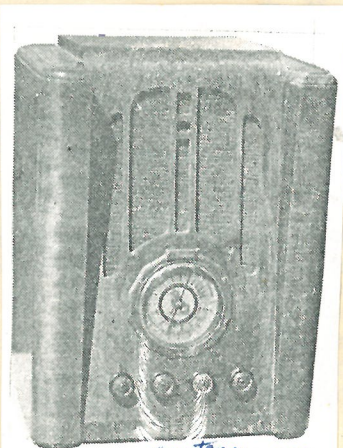
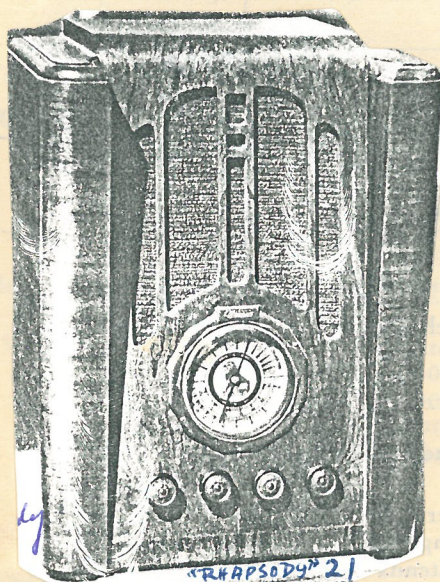
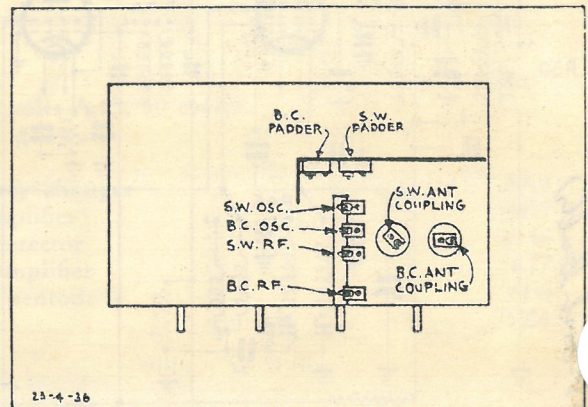
Frequency.	Applied to:	Microvolts.
456 kc./sec.	Grid of 6K7 I.F. amplifier.	1500
456 kc./sec.	Grid of 6A8 frequency changer	20
1400 kc./sec.	Antenna through "dummy" antenna	3
1000 kc./sec.	Antenna through "dummy" antenna	3.5
600 kc./sec.	Antenna through "dummy" antenna	7.5
15 mc./sec.	Antenna through "dummy" antenna	1.5 (approx.)
12 mc./sec.	Antenna through "dummy" antenna	2.0 (approx.)
9 mc./sec.	Antenna through "dummy" antenna	3.5 (approx.)
6 mc./sec.	Antenna through "dummy" antenna	6.0 (approx.)

6. **GRAMOPHONE CONNECTION :** Owing to the very limited demand for gramophone connections, it is not standard practice to include such arrangements in ordinary models, but to supply details for the necessary modifications to be made. The circuit is shown and described in Service Bulletin No. 13, "Gramophone Attachment to Standard Model Receivers." The only parts required are one D.P.D.T. switch, one pick-up jack (or two terminals), and the requisite length of twin shielded wire. This bulletin is obtainable on application to the factory, who can, if necessary, supply the above parts already wired for connection to the receiver, at a nominal charge.





# MODEL 21 PLACEMENT OF TRIMMERS AND PADDERS



Model 18 or 21 6-valve DW in "Rhapsody" cabinet 1936

6 valve DW (No RF stage)  
Metal valves, uses 6A8 & 6J7

Pacific 21-69763

appear to have 'G' type valves 6A8C } changed from metal  
6K7G } at factory  
6J7G }  
(the set sub still had metal 6H6 in)



