



RADIO CORPORATION PTY. LTD.

DIVISION OF ELECTRONIC INDUSTRIES LTD.
126-130 GRANT STREET, SOUTH MELBOURNE, S.C.A.

BULLETIN GN-1

File: Receivers AC.

Date: 1/5/50

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TECHNICAL BULLETIN

SUBJECT-

MANTEL MODEL "GN."

5 Tube Superheterodyne Receiver
Incorporating Bandspreading of the
19, 25 and 31 Metre Shortwave Bands.

FOR OPERATION FROM

200-250 Volt 50 Cycle A.C. Electric Supply Mains
Transformer Primary Mains Taps 200 - 220V. and 220 - 250V.
Power Consumption 55 Watts (approx.).

TUNING RANGES

RECEIVER COVERAGE

Broadcast Band	535 - 1640 Kc/s.	560.7 - 182.9 Metres
19 Metre Band	14.9 - 15.5 Mc/s.	(Bandspread) 20.13 - 19.29 Metres
25 Metre Band.. ..	11.5 - 12.1 Mc/s.	(Bandspread) 26.95 - 24.79 Metres
31 Metre Band.. ..	9.4 - 9.8 Mc/s.	(Bandspread) 31.91 - 31.63 Metres

This Bulletin Contains:

1. Alignment Instructions
2. Circuit Diagram
3. Component Parts List
4. Connections for IF. and RF. Trans.

SUBJECT-ALIGNMENT INSTRUCTIONS - Model "GN"Alignment Conditions:

Load impedance.. 5,000 ohms
 Output level .. 50 Milliwatts.
 Vol. control .. Max. vol. fully
 clockwise
 Tone control .. Max. bass cut
 position
 Intermed. freq. 455 Kc/s.
 Supply Mains .. 230 volts 50 cycle
 AC input to trans.
 220-250V. primary tap.

Equipment:

Signal Generator
 Output Meter
 Mica capacitor .. 0.01 MFD.
 Dummy antenna .. 200 MMFD. Mica
 capacitor
 Dummy antenna .. 400 ohm. non induc-
 tive resistor.
 Alignment tools.. Type M195 and
 PM581.

Operation No.	Generator Connection	Generator Frequency	Dummy Antenna	Instructions
1.	To control grid of 6U7G tube.	455 Kc/s.	0.01MFD Mica capacitor in series with generator.	Turn wave change switch to B/cast Band. Leave grid cap on. Peak 2nd IF. trans. pri. and sec. for max. output
2.	To control grid of 6J8GA tube	455 Kc/s.	0.01MFD Mica capacitor in series with generator.	Gang plates fully out of mesh. Leave grid cap on. Peak 1st IF. trans. pri. and sec. for max. output.
3.	Set centre of dial pointer on centre of end of travel mark near 550 Kc/s. Cond. gang plates fully meshed.			
4.	To antenna terminal.	600 Kc/s.	200MMFD in series with generator.	RECEIVERS FITTED WITH AIR CORED B/CAST ANTENNA TRANSFORMER. Turn dial pointer and gang to 600 Kc/s. Peak B/cast oscl. coil ind. trim. (iron core) for max. output. Rock the gang to and fro through the signal while adjusting. RECEIVERS FITTED WITH IRON CORED B/CAST ANTENNA TRANSFORMER. Turn gang and dial pointer until dial pointer is on 600 Kc/s. dial mark. Leave the gang and dial pointer set in this position and peak the B/cast oscl. coil ind. trim. (iron core) for max. output. then peak the B/cast antenna trans. ind. trim. (iron core) for max. output, Do not rock the gang to and fro through the signal while adjusting or move the dial pointer off 600 Kc/s. dial mark until after the inductance trimmer for both of these coils has been peaked for max. output.

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Operation No.	Generator Connection	Generator Frequency	Dummy Antenna	Instructions
5.	To antenna terminal	1400 Kc/s.	200MMFD in series with generator	Turn gang and dial pointer to 1400 Kc/s. Adjust B/cast oscl. coil trim. cond. for logging and peak B/cast ant. trans. trim. cond. for max. output.
6.				Repeat operations No. 4 & 5
7.				Turn wave change switch to 31 metre band (this band must be aligned before the 25 and 19 metre bands).
8.	To antenna terminal	9.6 Mc/s.	400 ohm non-inductive resistor	Turn dial pointer and gang to 9.6 Mc/s. Adjust 31 metre band oscl. coil ind. trim. (iron core) for logging and peak 31 metre ant. trans. trim. (iron core) for max. output.
9.	To antenna terminal	11.8 Mc/s.	400 ohm non-inductive resistor.	Turn wave change switch to 25 metre band. Turn dial pointer and gang to 11.8 Mc/s. Adjust 25 metre band oscl. coil ind. trim (iron core) for logging and peak 25 metre ant. trans. trim. (iron core) for max. output
10.	To antenna terminal	15.2 Mc/s.	400 ohm non-inductive resistor	Turn wave change switch to 19 metre band. Turn dial pointer and gang to 15.2 Kc/s. Adjust 19 metre band oscl. coil. ind. trim. (iron core) for logging and peak 19 metre ant. trans. trim. (iron core) for max. output
11.	Check the logging of the shortwave bands on some well-known shortwave stations. If a crystal calibrator is available check the logging at each 100 Kc/s. mark on the dial.			

SUBJECT-

COMPONENT PARTS LIST - Model "GN."

Circuit No.	Description	Tol. ±	Rating	Part No.
1.	.25 MFD Paper Condenser	20%	400V.DCW	PC128
2.	.1 MFD " "	20%	400V.DCW	PC103
3.	.1 MFD " "	20%	200V.DCW	PC218
4.	.05 MFD " "	20%	200V.DCW	PC102
5.	.05 MFD " "	20%	200V.DCW	PC102
6.	.05 MFD " "	20%	200V.DCW	PC102
7.	.05 MFD " "	20%	200V.DCW	PC102
8.	.03 MFD " "	20%	200V.DCW	PC303
9.	.02 MFD " "	20%	400V.DCW	PC111
10.	.02 MFD " "	20%	400V.DCW	PC111
11.	.002 MFD " "	20%	600V.DCW	PC112
12.	.001 MFD Mica Condenser	10%	1000VT.	PC108
13.	.00046 MFD " "	2 1/2%	1000VT.	PC728
14.	.00025 MFD " "	10%	1000VT.	PC126
15.	.0001 MFD " "	10%	1000VT.	PC110
16.	.0001 MFD " "	10%	1000VT.	PC110
17.	.0001 MFD " "	10%	1000VT.	PC110
18.	85 MMFD Silvered Mica Condenser	2 1/2%	1000VT.	PC809
19.	80 MMFD " " "	2 1/2%	1000VT.	PC798
20.	70 MMFD " " "	2 1/2%	1000VT.	PC799
21.	50 MMFD " " "	2 1/2%	1000VT.	PC801
22.	30 MMFD " " "	1MMFD	1000VT.	PC810
23.	15 MMFD " " "	1MMFD	1000VT.	PC811
24.	4 MMFD " " "	+1MMFD-0	1000VT.	PC791
25.	2 Gang Varb. Condenser			PC636
26.	0-30 MMFD Trimmer Cond. Wire Wound			PC663
27.	1.5-18 MMFD Trimmer Condenser			PC250
28.	16 MFD Tol. ± 20% 525PV			} Combination type. PC760
29.	16 MFD " " " "			
30.	25 MFD " " " "			
31.	10 Megohm Carbon Resistor	10%	1 W.	PR236
32.	3 " " "	10%	1/2 W.	PR282
33.	1.75 " " "	10%	1/2 W.	PR248
34.	.5 " " "	10%	1/2 W.	PR245
35.	.25 " " "	10%	1 W.	PR496
36.	100,000 ohm " " "	10%	1 W.	PR165
37.	60,000 " " "	10%	1/2 W.	PR125
38.	50,000 " " "	10%	1/2 W.	PR160
39.	50,000 " " "	10%	1/2 W.	PR160
40.	50,000 " " "	10%	1/2 W.	PR160
41.	30,000 " " "	10%	1 W.	PR156
42.	20,000 " " "	10%	1 W.	PR171
43.	5,000 " " "	10%	1/2 W.	PR250
44.	2,000 " " "	10%	1/2 W.	PR253
45.	2,000 " " "	10%	1/2 W.	PR253
46.	300 " " "	10%	1/2 W.	PR258
47.	300 " " "	10%	1/2 W.	PR258

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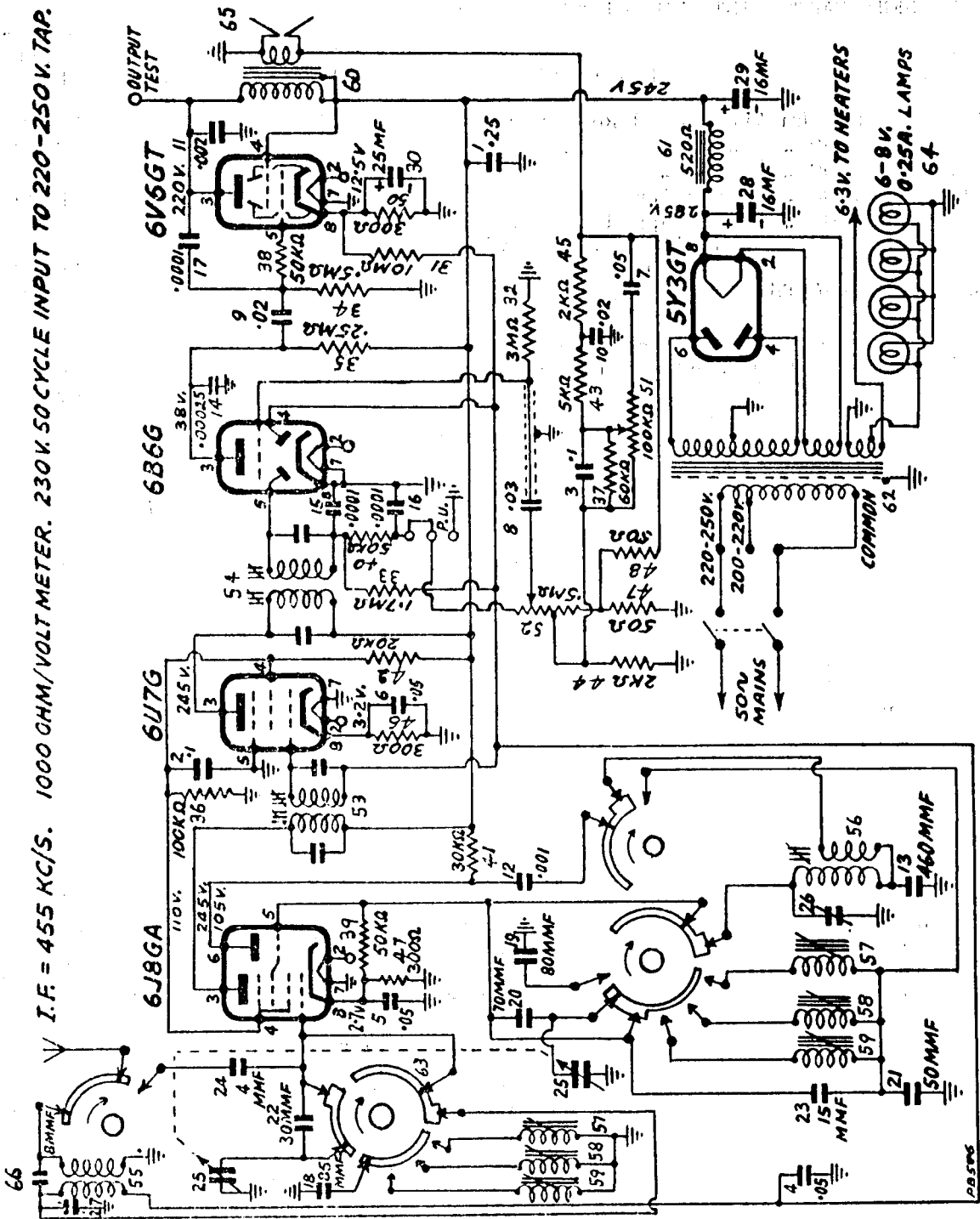
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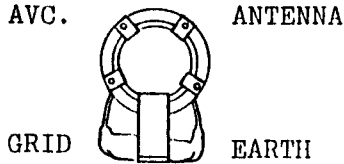
COMPONENT PARTS LIST - Model "GN."-Contd.

Circuit No.	Description	Tol. ±	Rating	Part No.
48.	50 ohm Wire Wound Resistor	10%	½ W.	PR280
49.	50 " " " "	10%	½ W.	PR280
50.	300 " " " "	10%	1 W.	PR122
51.	100,000 " Potentiometer	20%		PR699
52.	500,000 " Pot. tapped at 40,000 ohms. and with DP. ST. switch attached	20%		PR662
53.	IF Transformer			PT869
54.	" "			PT869
55.	Antenna Trans. B/cast (Air Cored)			PT381
	Antenna Trans. B/cast (Iron Cored)			PT905
56.	Oscil. Coil B/cast			PT860
57.	19 Metre Bandsread Coil			PT914
58.	25 Metre " "			PT913
59.	31 Metre " "			PT912
60.	Speaker Input Trans. 5,000 ohms Primary Imped...			PT848
61.	Choke 14H, 60 Ma.			PT806
62.	Power Transformer 200-250 Volt 50 cycle mains			PT807
	" " 200-260 Volt 40 cycle mains			PT809
63.	Wave-change Switch			S169
64.	Dial Lamp 6.3V. 0.25A Min. Screw Base, T3¼ Bulb			PM678
65.	6" Permag. Speaker			K166
66.	8 MMFD. (Part of antenna coil circuit No. 55)			PC825
	Tube Shield..			PM217
	Antenna Terminal..			PM306
	8 Pin Socket			PM532
	Tube type 6J8GA			
	" " 6U7G			
	" " 6B6G			
" " 6V6GT				
" " 5Y3GT				
	<u>Description</u>	<u>Part No.</u>	<u>Description</u>	<u>Part No.</u>
	Pickup Shorting Bar..	A101/513	Pulley-large	13/613
	3 lug terminal strip	A103/509	Pulley-small	17/87
	Clip for IF. trans...	7/670	Dial drum..	A104/698
	Pointer Assy.	A101/698	Cabinet mount feet	A138/300
	Tuning Spindle..	6/698	Cabinet back	19/698
	Nut for Tuning Spindle	41/161	Knob (WC)..	178/81-1
	"C" Washer	19/57-1	Knob (Tone)	178/81-2
	Bush for Tuning Spindle	4/698	Knob (Tu. and Vol.)..	167/81
	Speaker clip	20/698	Knob Springs	161/81
	Dial lamp socket assy.	A106/698	Cabinet	155/81
	Knob lamp socket assy.	A129/30C	Dial reading NSW	165/81-2
	Coil mount clips	6/622	Dial reading VIC-TAS.	165/81-3
	Tube shield earth clips	22/30C	Dial reading QLD.	165/81-4
	Speaker lead clip term strip assy.	A105/698	Dial reading SA.-WA.	165/81-5

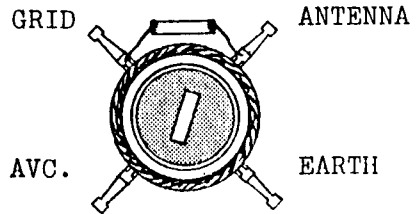
I.F. = 455 KC/S. 1000 OHM/VOLT METER. 230V. 50 CYCLE INPUT TO 220-250V. TAP.



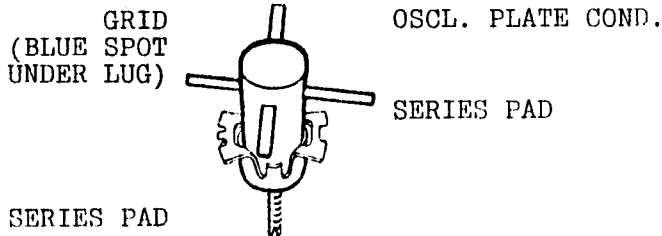
ANTENNA TRANS. B/C. (AIR CORED)



ANTENNA TRANS. B/C. (IRON CORED)



OSCL. COIL B/C.



19, 25 and 31 METRE ANT. TRANS.

Lead from top lug (iron core end): - GRID.

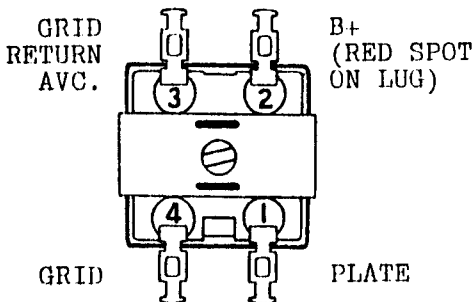
Lead from bottom lug (mounting end):- EARTH.

19, 25 and 31 METRE OSCL. COIL

Lead from top lug (iron core end) : - GRID.

Lead from bottom lug (mounting end):- OSCL. PLATE COND.

1st IF. TRANS.



2nd IF. TRANS.

