



RADIO CORPORATION PTY. LTD.

DIVISION OF ELECTRONIC INDUSTRIES LTD.

126-130 GRANT STREET, SOUTH MELBOURNE, S.C.4.

TECHNICAL BULLETIN

BULLETIN GR-1
BULLETIN GRP-1
File:—Receivers AC.
Date: 25-5-48
Page 1.

SUBJECT:—

MODEL "GR"

3 Tube Reflexed TRF Receiver

For operation from

200-250 Volts 50 Cycle AC. Mains Supply

MODEL "GRP"

3 Tube Reflexed TRF Receiver

For operation from

200-260 Volts 40 Cycle AC. Mains Supply

This Bulletin Contains:—

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

SUBJECT:-- Technical Specifications - Models "GR" and "GRP"

TUBE COMPLEMENT--

Type 6G8G RF Amplifier, Diode Detector, Audio Driver
Type 6V6GT/G Power Output Amplifier
Type 5Y3GT/G Full Wave Rectifier (Model "GR")
Type 6X5GT/G Full Wave Rectifier (Model "GRP")

TUNING RANGE--

535-1640 Kilocycles
560-182.9 Metres

POWER CONSUMPTION--

35 Watts (approx.)

POWER OUTPUT--

1.75 Watts (max.)
.5 Watt (undistorted)

GENERAL DESCRIPTION--

The Models "GR" and "GRP" are three tube reflexed TRF Receivers having a sensitivity of 1000 microvolts for an output of 50 milliwatts with a load impedance of 5000 ohms.

The circuit consists of tuned aerial and RF stages with a type 6G8G tube for diode detection, RF and audio amplification. The rectified audio voltage from the diode is fed via the condenser, (circuit No. 4) to the control grid of the pentode section providing reflexed operation. The output from the reflexed stage is resistance capacity coupled to a type 6V6GT/G beam power output amplifier tube.

Volume is controlled by varying the bias on the control grid of the variable Mu. RF amplifier tube.

Bias is obtained for both tubes from the back bias network in the high tension negative line.

The high tension filter circuit consists of two electrolytic condensers and a 5K ohm resistor, circuit Nos. 10, 11 and 23. High tension voltage is supplied from a type 5Y3GT/G full wave rectifier for the Model "GR" and a type 6X5GT/G rectifier for the Model "GRP". A different power transformer is required for each type rectifier tube.



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SUBJECT:- Alignment Procedure - Models "GR" and "GRP"

EQUIPMENT--Signal Generator

Output Meter

Alignment Tool. Part No. PM581

Dummy Antenna: 40MMFD. Mica Capacitor (Tol. $\pm 5\%$)

ALIGNMENT CONDITIONS--Load Impedance - 5000 Ohms

Output Level - 50 Milliwatts

Volume Control - Full on (Minimum bias position)

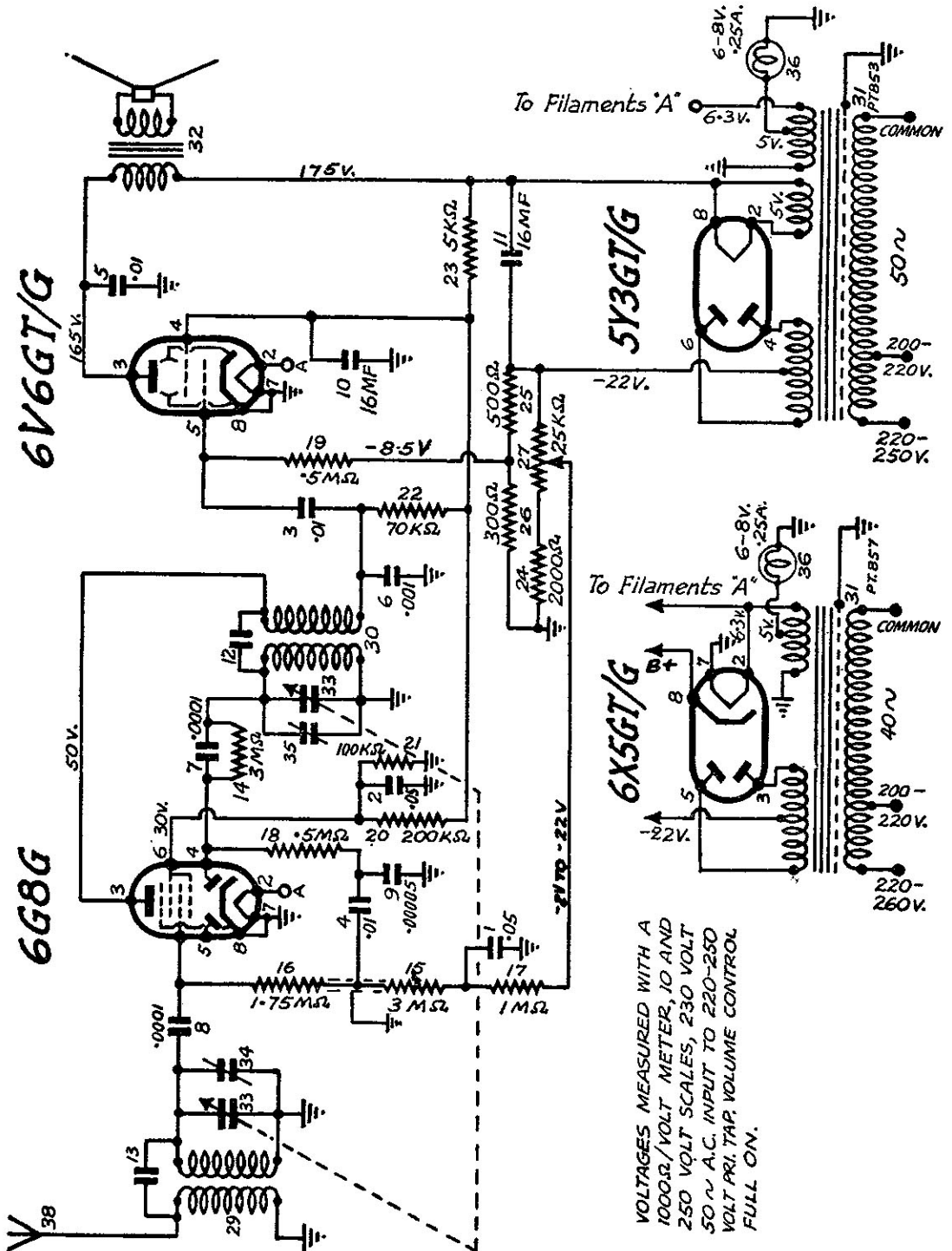
ALIGNMENT--Remove the rear portion of the cabinet from the chassis. Set the dial pointer on the end of travel mark on the dial calibration near 550 Kcs. (condenser gang plates fully meshed).

Operation No.	Generator Connection	Generator Frequency	Dummy Antenna	Instructions
1.	To antenna lead--refer note below	1400Kcs.	40MMFD. mica capacitor	Turn gang and dial pointer to 1400Kcs. (indicated by a mark on the dial reading). Adjust RF and antenna transformer trimmers for maximum output.

Note.--During alignment the 40MMFD. dummy antenna is not connected in series with the 17 ft. antenna lead, but is connected directly to the antenna about 2 inches from where it enters the chassis or cabinet by a fine pin inserted through the insulation of the antenna lead. The antenna is to be fully rolled up into a small hank (about 3 inches).

SUBJECT:- SCHEMATIC CIRCUIT DIAGRAM - Models "GR" and "GRP"

PB 359



VOLTAGES MEASURED WITH A
 1000Ω/VOLT METER, 10 AND
 250 VOLT SCALES, 230 VOLT
 50 ~ A.C. INPUT TO 220-250
 VOLT PRI. TAP. VOLUME CONTROL
 FULL ON.



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TECHNICAL BULLETIN

SUBJECT:- Voltage Table - Models "GR" and "GRP"

EQUIPMENT-

DC. Voltmeter-1000 Ohm/volt meter with 0-10 and 0-250 volt scales
AC. Voltmeter-0-10, 0-250 and 0-500 volt scales

Conditions of test-

230 volts 50 cycle AC. input to 220-250 volt primary tap.
Volume control full on (minimum bias position).
Heater voltages measured across socket heater contacts.
Tube voltages measured from socket contacts to chassis.

Tube	Fil.	Plate	Screen	Grid
6G8G	6.3V	50V	30V	-2V to -22V back bias
6V6GT/G	6.3V	165V	155V	-8.5V back bias
50 cycle operation				
5Y3GT/G	5V	185/185V RMS.		
40 cycle operation				
6X5GT/G	6.3V	185/185V RMS.		The initial surge voltage across the first electrolytic condenser circuit No. 11 is 280 volts, dropping to normal operating value of 175 volts. The DC. voltage drop across the 5K. ohm filter resistor is 20 volts.

SUBJECT:-- Component Parts List - Models "GR" and "GRP"

Circuit No.	Description	Tolerance ±	Rating	Part No.
1	.05 MFD, Paper Condenser	20%	200V DCW	PC102
2	.05 MFD, " "	20%	200V DCW	PC102
3	.01 MFD, " "	20%	600V DCW	PC140
4	.01 MFD, " "	20%	600V DCW	PC140
5	.01 MFD, " "	20%	600V DCW	PC140
6	.001 MFD, Mica Condenser	10%	1000VT	PC570
7	.0001 MFD, Silvered Mica Condenser	10%	1000VT	PC571
8	.0001 MFD, " " "	10%	1000VT	PC571
9	.00005 MFD, Mica Condenser	10%	1000VT	PC572
10	16 MFD, Electrolytic Condenser	20%	350 PV	PC283
11	16 MFD, " "	20%	525 PV	PC298
12	8 MMFD Silvered Mica Cond. (part of circuit No. 30)			PC665
13	8 MMFD " " " " " No. 29)			PC665
14	3 Megohm Carbon Resistor	10%	1/2 Watt	PR282
15	3 Megohm " "	10%	1/2 Watt	PR282
16	1.75 " " "	10%	1/2 Watt	PR248
17	1 " " "	10%	1/2 Watt	PR246
18	.5 " " "	10%	1/2 Watt	PR245
19	.5 " " "	10%	1/2 Watt	PR245
20	200,000 ohm " "	10%	1 Watt	PR414
21	100,000 ohm " "	10%	1/2 Watt	PR103
22	70,000 ohm " "	10%	1 Watt	PR617
23	5,000 ohm " "	10%	1 Watt	PR304
24	2,000 ohm " "	10%	1/2 Watt	PR253
25	500 ohm " "	10%	1/2 Watt	PR274
26	300 ohm Wire Wound Resistor	10%	1/2 Watt	PR258
27	25,000 ohm Carbon Potentiometer	20%		PR650
28				
29	Antenna Transformer			PT787
30	RF Transformer			PT788
31	{ Operation on 200-250 volt 50 cycle AC. mains. Power Transformer part No. PT853 and rectifier tube type 5Y3GT/G }	Model "GR"		
		{ Operation on 200-260 volt 40 cycle AC. mains. Power transformer part No. PT857 and rectifier tube type 6X5GT/G. }		
32	Speaker, 5" Permrag with 5,000 ohms Imped.		Input transformer	K141
33	2 Gang with gears			PC739
34	Trimmer Condenser 3-55 MMFD			PC224
35	Trimmer Condenser 3-55 MMFD			PC224
36	Dial Lamp, Min. Screw Base T3 $\frac{1}{4}$ size Bulb	6-8V.	.25A	PM678
37	Socket, 8 pin			PM532



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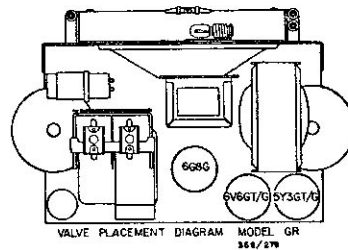
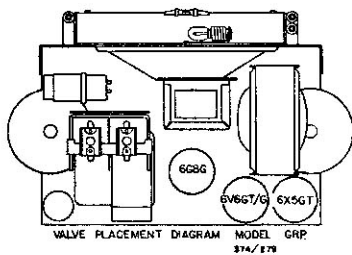
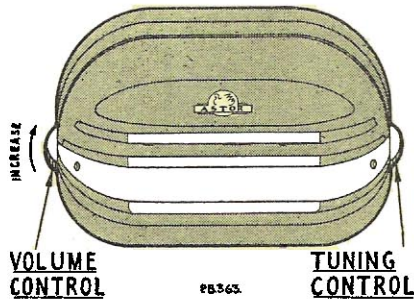
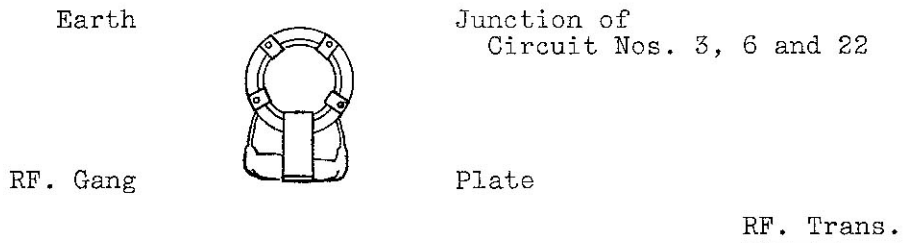
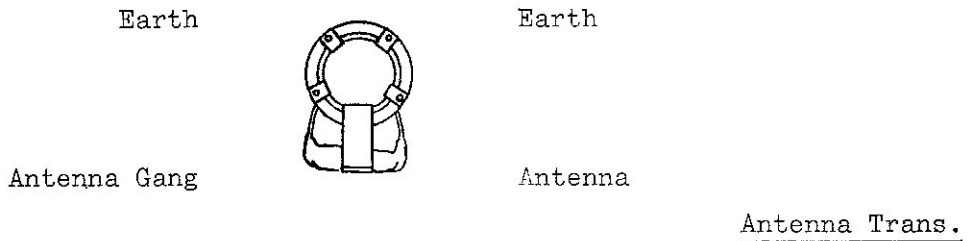
SUBJECT:- Component Parts List - Models "GR" and "GRP"

PART NAME	PART NO.
Dial Guide Pulley (4)	27/658
Pilot Lamp Socket Assembly	A146/30C
Spacer - Pulley Mounting	11/658
Spacer - R.F. Coil (3/16" long)	14/218A-1
Volume Control Mount Block	16/589
Grommet - A.C. Cord	5/91
Support - Condenser Bracket	24/658
Under Chassis Shield	25/658
A.C. Contact Strip Assembly	A105/E243
Grid Clip	873/495
Thumb Wheel (2)	13/606-1
Dial Pointer	4/658
Spring - Dial Cord Tension	73/239-1
Silk Card	6/658
Cabinet Front - Type M3 (Refer Styling)	64/81
Cabinet Back - Type M3 (Refer Styling)	63/81
Cabinet Assembly Stud	5/658
Cabinet Assembly Nut	7/658
Dial Fixing Stud (2)	8/658
Transformer Bracket	26/658
Metallic Insulator	22/658
Cabinet Feet (3)	28/658
Dial Bar N.S.W.	3/658-2
Dial Bar Vic.	3/658-3
Dial Bar Qld.	3/658-4
Dial Bar S.A.	3/658-5
Dial Bar W.A.	3/658-6
Dial Bar Tas.	3/658-7

Styling Details

Color	Cabinet Front Part No.	Cabinet Back Part No.
Walnut (2022B)	64/81-1	63/81-1
Cream (AXT405)	64/81-2	63/81-2
Champagne (X1D)	64/81-3	63/81-3
Green (X24)	64/81-4	63/81-4
Amber (X411)	64/81-5	63/81-5
Red (X383)	64/81-6	63/81-6

SUBJECT:- Coil Connections - Models "GR" and "GRP"

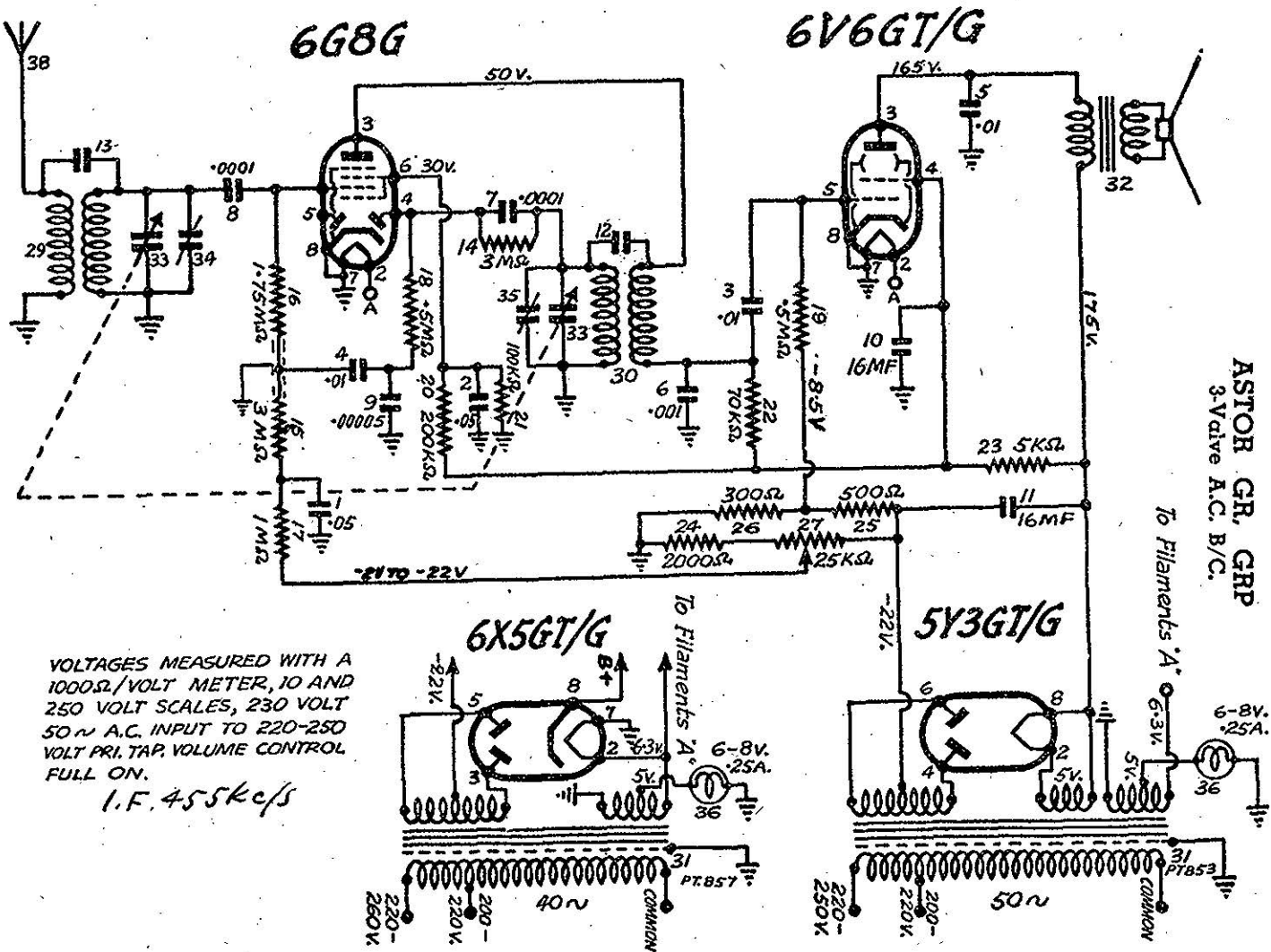


ASTOR RADIO

Manufactured by Radio Corporation Pty. Ltd., Melbourne

Note: The circuits of the following Astor Receivers, current in 1948, appeared in Volume 6 "Australian Official Radio Service Manual"—KM (Page 591); JJ (Page 371); FP (Page 551); L (Page 661); L/M (Page 781); KO (Page 751); KP (Page 721); KN (Page 681).

ASTOR GR, GRP 3-Volt A.C. B/C.

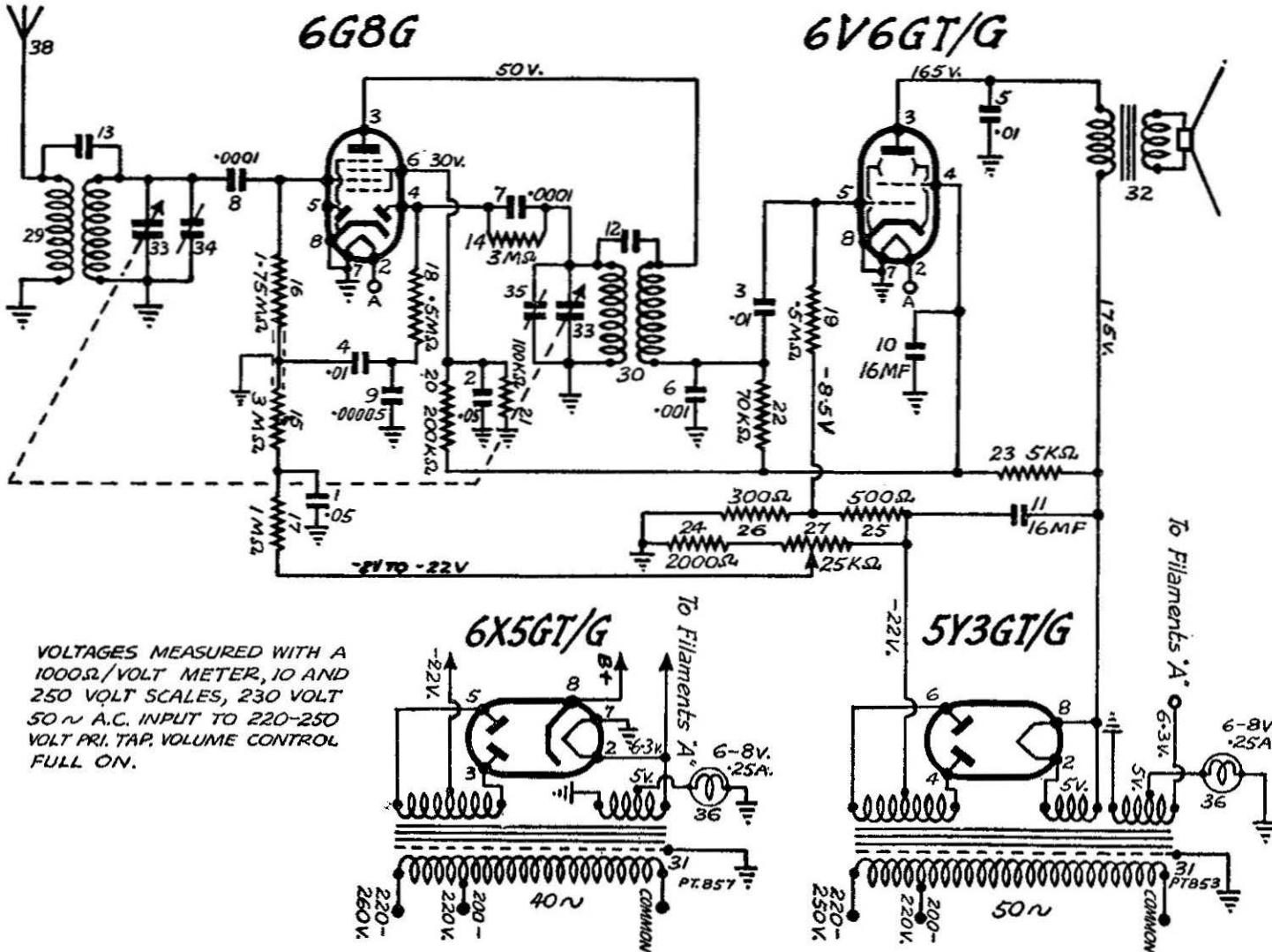


VOLTAGES MEASURED WITH A 1000Ω/VOLT METER, 10 AND 250 VOLT SCALES, 230 VOLT 50~ A.C. INPUT TO 220-250 VOLT PRI. TAP, VOLUME CONTROL FULL ON.

I.F. 455kc/s

SUBJECT:-

SCHEMATIC CIRCUIT DIAGRAM - Models "GR" and "GRP"



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