TECHNICAL INFORMATION AND SERVICE DATA

AWA RADIOLA

Portable Model 575-P

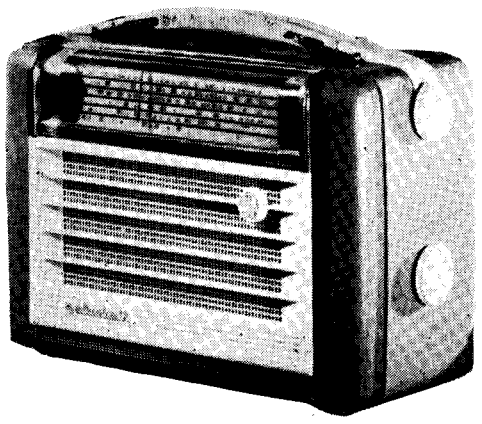
FIVE VALVE, BROADCAST, DRY-CELL BATTERY or A.C. POWER UNIT OPERATED SUPERHETERODYNE

AND

Portable Model 679-P

SIX VALVE, BROADCAST, DRY-CELL BATTERY or A.C. POWER UNIT OPERATED SUPERHETERODYNE

ISSUED BY:
AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



ELECTRICAL SPECIFICATIONS

Frequency Range ..... 540-1600 Kc/s (555-187.5 Metres)

Intermediate Frequency ..... 455 Kc/s

Battery Complement:

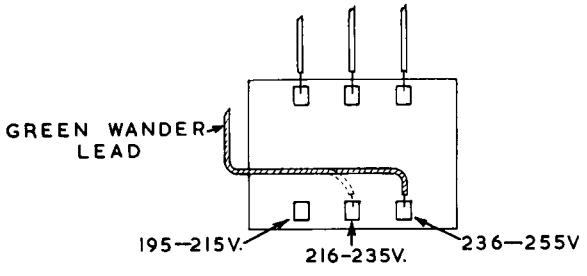
Model 575-P ..... "A" Battery:—One 7.5 volt, type 719
"B" Battery:—One 90 volt, type 490P

Model 679-P ..... "A" Battery:—One 9.0 volt, type 765
"B" Battery:—One 90 volt, type 490P

Battery Consumption:

Model 575-P ..... "A" Battery = 50 mA
"B" Battery = 13 mA ("Full")
= 8 mA ("Save")

Model 679-P ..... "A" Battery = 50 mA
"B" Battery = 13 mA ("Full")
= 8 mA ("Save")



Power Unit Operation:

The receiver may be operated on the following voltage ranges by altering the transformer tappings:—

195-215 volts
216-235 volts
236-255 volts

With the switch in the A.C. position, the 6X4 is operated as a half wave rectifier with both plates connected to the chassis, which is negative for both "A" and "B" circuits. The transformer secondary voltage is applied between cathode and load.

With the switch in the "ACTIVATE" position, one rectifier plate and "A" battery negative are disconnected from the chassis and connected together, thus isolating the "A" and "B" circuits. The 6X4 is then used as two half-wave rectifiers with a common cathode.

Power Unit Frequency Range:
50-60 C.P.S. and 40 C.P.S.

A.C. Power Consumption ..... 17 watts

1T4 R.F. Amplifier (679-P only)
1R5 Converter
1T4 I.F. Amplifier
1S5 Detector, A.F. Amplifier, A.V.C.
3V4 Output
6X4 Rectifier

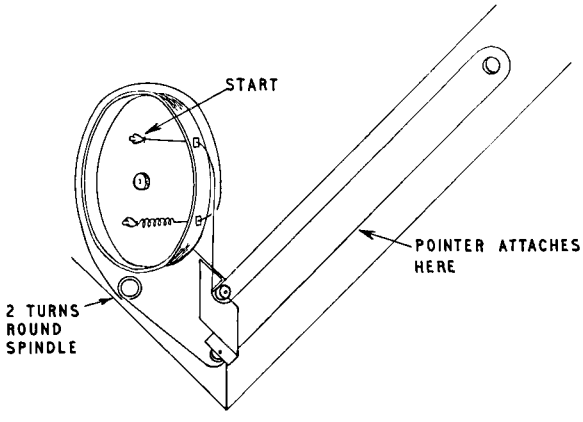
Loudspeaker (Permanent Magnet):

6 inch — Code No. AG52
Transformer — 31727A
V.C. Impedance 3 ohms at 400 C.P.S.

Undistorted Power Output ..... 200 milliwatts

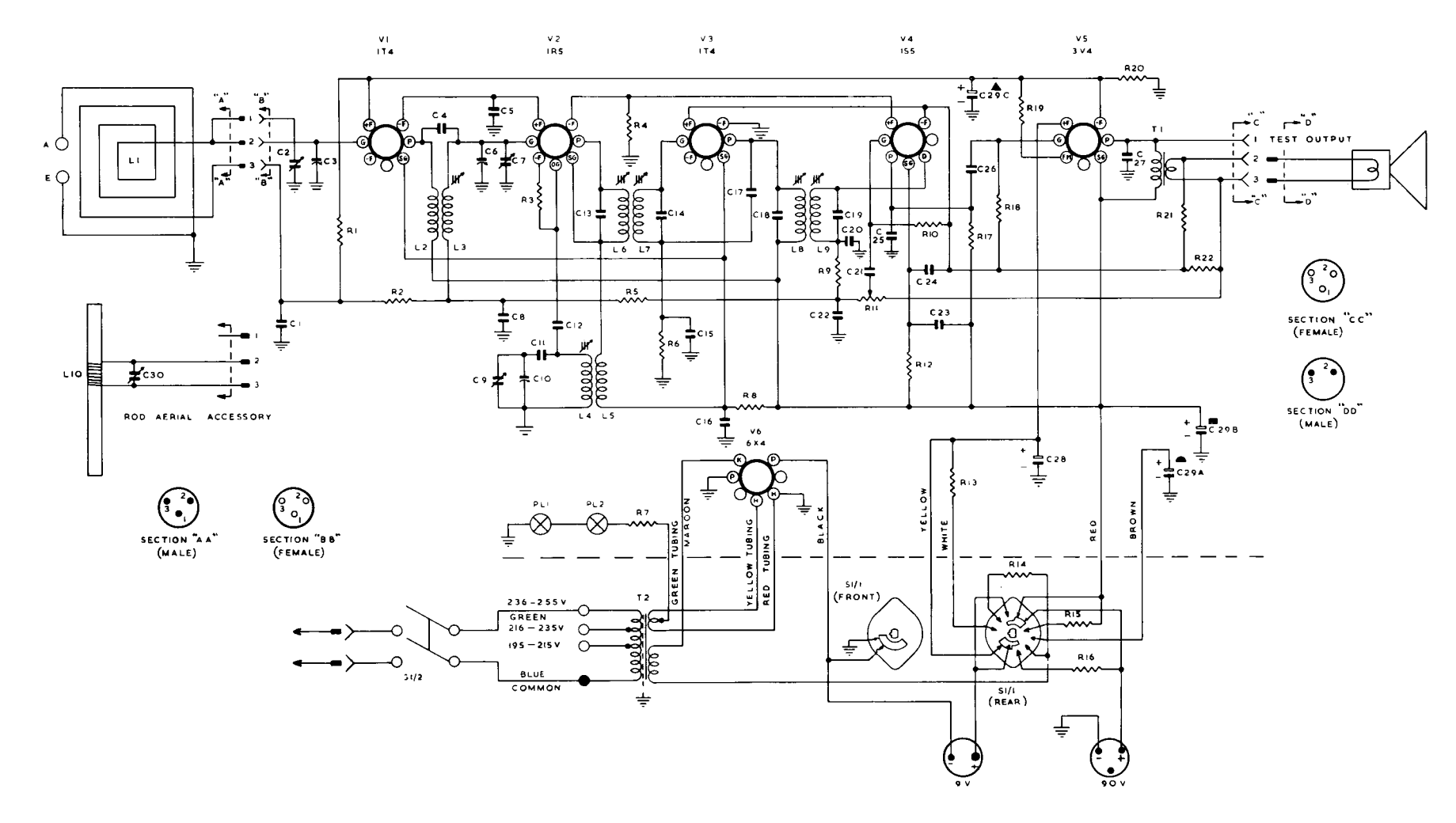
Controls:

Tuning Control — right-hand end of cabinet.
Volume Control — top left-hand end of cabinet.
Power Selector Switch — bottom left-hand end of cabinet.



Drive Cord Replacement:

The accompanying diagram shows the route of the cord and the method of attachment.


V1 1T4
V2 1R5
V3 1T4
V4 1S5
V5 3V4
V6 6X4
A
E
L1
L2
L3
L4
L5
L6
L7
L8
L9
L10
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
C23
C24
C25
C26
C27
C28
C29A
C29B
C29C
C30
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
T1
T2
TEST OUTPUT
ROD AERIAL ACCESSORY
SECTION "AA" (MALE)
SECTION "BB" (FEMALE)
SECTION "CC" (FEMALE)
SECTION "DD" (MALE)
PL1
PL2
S1/1 (FRONT)
S1/1 (REAR)
S1/2
236-255V
GREEN
216-235V
195-215V
BLUE
COMMON
GREEN TUBING
MAROON
YELLOW TUBING
RED TUBING
BLACK
YELLOW
WHITE
RED
BROWN
9V
90V

Chassis Removal:

To remove the chassis from the cabinet open the back and disconnect the speaker cable and batteries. Unsolder the loop aerial leads and pull them back through the guides on the side of the cabinet.

Remove the knobs by pulling them straight off their spindles. Remove a screw under each knob when the cream link covers may be lifted off. The screw under each cover on being removed allows the chassis to be withdrawn.

When replacing the chassis pass the loop leads through the guides, keeping the green lead separate from the black and white, and solder the green lead to the panel so that it connects to the inside of the loop winding.

Note that the link covers are slightly different and must be replaced on the correct side, the one marked "TUNE" on the tuning spindle side and the one marked "VOL" on the volume control side.

ALIGNMENT PROCEDURE

Manufacturer's Setting of Adjustments:

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws are broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using special equipment.

For all alignment operations, keep the generator output as low as possible to avoid A.V.C. action and set the volume control in the maximum clockwise position.

Testing Instruments:

(1) A.W.A. Junior Signal Generator, type 2R7003.

(2) A.W.A. Modulated Oscillator, series J6726.
If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals.

(3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE—MODEL 575-P

Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver to:	Adjust for maximum peak output:
	NOTE: If loop leads protruding from the chassis are disconnected, connect a 1 megohm resistor across them.			
1	Grid of 1T4* (I.F. Amp.)	455 Kc/s	Gang in full mesh	L7 and L6 Cores
2	Aerial Section of Gang* (Drive End)	455 Kc/s	Gang in full mesh	L5 and L4 Cores
	Repeat adjustments 1 and 2 until the maximum output is obtained. With gang in full mesh, set the pointer to the setting mark at the right-hand end of the dial scale. Replace the cover over the receiver chassis which should then be fitted in the cabinet, the resistor removed from the loop leads and the leads then connected to the aerial in the back lid, the green lead to the inside of the loop. The batteries must be in place in the cabinet and the back closed before remainder of alignment is proceeded with.			
3	Inductively coupled to Loop†	600 Kc/s	600 Kc/s (7ZL)	L.F. Osc. Core Adj. (L2)§‡
4	Inductively coupled to Loop†	1640 Kc/s	Gang fully open	H.F. Osc. Adj. (C3)§
5	Inductively coupled to Loop†	1500 Kc/s	1500 Kc/s (3AK)	H.F. Aer. Adj. (C8)§
Repeat adjustments 3 and 5 until the maximum output is obtained.				

* A 0.001 μF capacitor should be connected in series with the high side of the test instrument.

†A coil comprising 3 turns of 16 gauge D.C.C. wire and about 6 inches in diameter should be connected between the output terminals of the test instrument, placed co-axial with the loop and distant not less than 1 foot from it.

‡ Rock the tuning control back and forth through the signal.

§ These adjustments are accessible through 3 holes in the cabinet back.

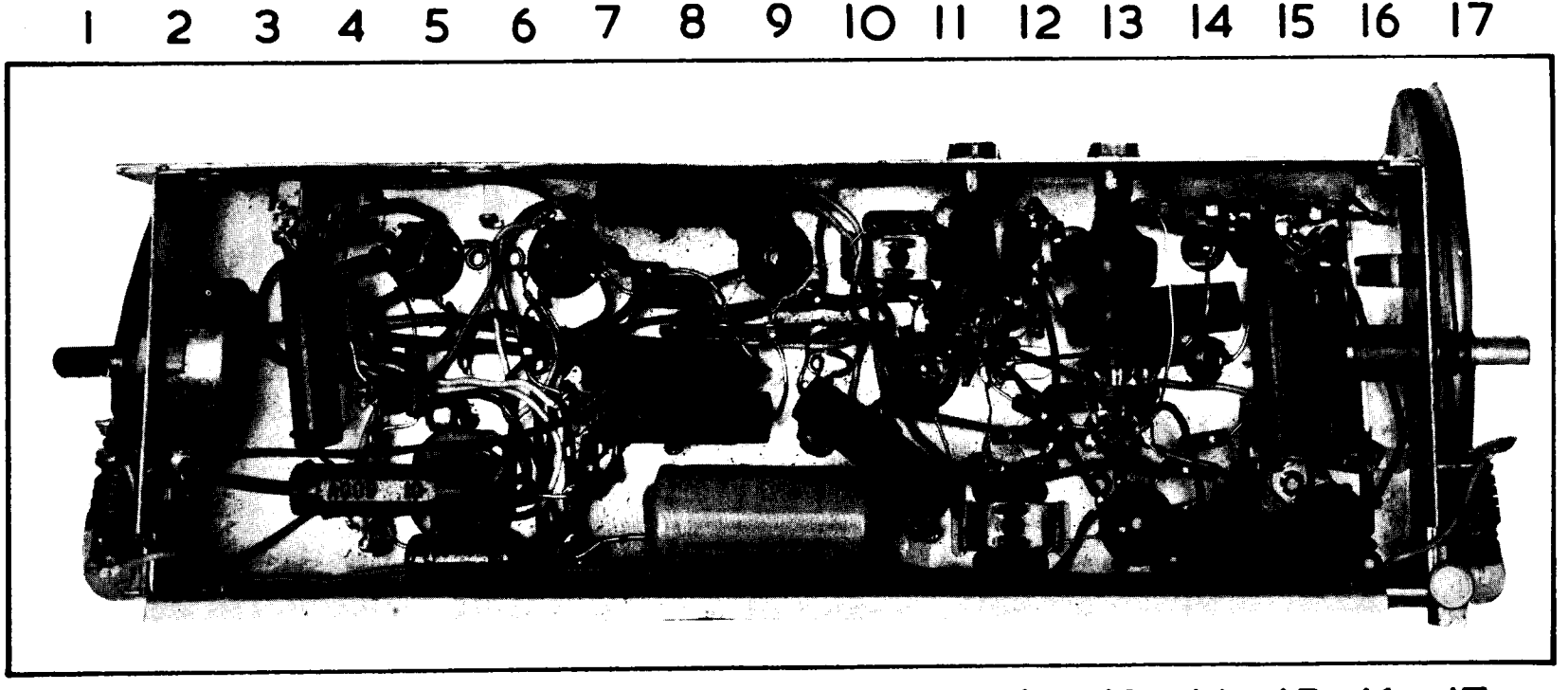

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
A
B
C
D
E
F
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

FIG. 4

D.C. RESISTANCE OF WINDINGS
MODEL 575-P

Winding	D.C. Resistance in ohms
Oscillator Coil:	
Primary (L3)	1
Secondary (L2)	4
I.F. Transformer Windings	25
Loudspeaker Input Transformer (T1)	
Primary	450
Secondary	*
Power Transformer (T2)	
Primary	140
Secondary	100

* Less than 1 ohm.

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

SOCKET VOLTAGES—MODEL 575-P

VALVES		Bias Volts	Screen to Chassis Volts:	Anode to Chassis Volts:	Anode Current mA:	Filament Volts:
1R5	Converter	*	48	48	0.5	1.3-1.4
1T4	I.F. Amp.	*	48	90	2.0	1.3-1.4
1S5	Det., A.F. Amp., A.V.C.	*	25*	35*	0.1	1.3-1.4
3V4	Output	−4.5	90	88	6.5	2.6-2.8

* Cannot be measured with an ordinary voltmeter.
Measured with no signal input. Volume Control maximum clockwise.
A.C. Power Unit Operation:—
H.T. Secondary Volts = 130V A.C.
6X4 Cathode to Chassis Volts = 120V D.C.
Heater Volts = 6.3V A.C.

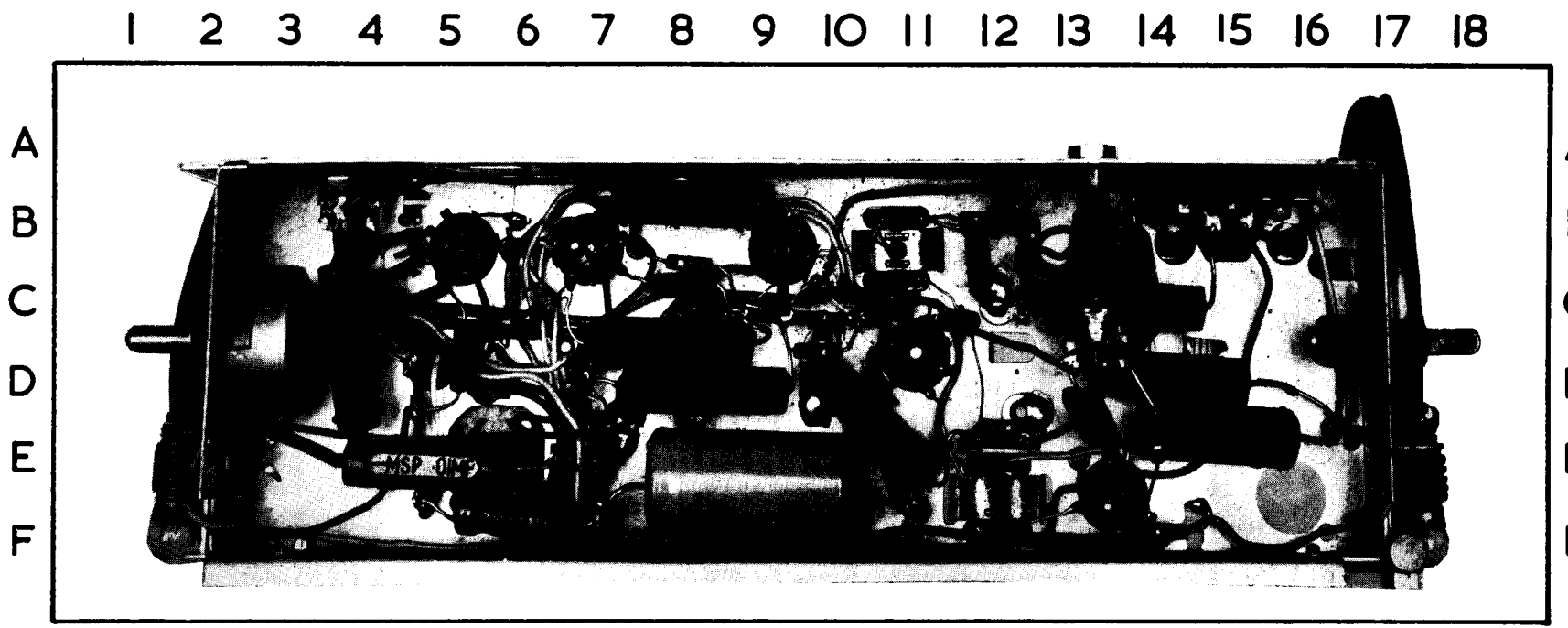

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A
B
C
D
E
F
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIG. 2

ALIGNMENT TABLE—MODEL 679-P

Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver to:	Adjust for maximum peak output:
	NOTE: If loop leads protruding from the chassis are disconnected, connect a 1 megohm resistor across them.			
1	Grid of 1T4* (I.F. Amp.)	455 Kc/s	Gang in full mesh	L9 and L8 Cores
2	Grid of 1R5* (Rear Section of Gang)	455 Kc/s	Gang in full mesh	L7 and L6 Cores
	Repeat adjustments 1 and 2 until the maximum output is obtained. With gang in full mesh, set the pointer to the setting mark at the right-hand end of the dial scale. Replace the cover over the receiver chassis which should then be fitted in the cabinet, remove the resistor from the loop leads and connect them to the aerial in the cabinet back, the green lead to the inside of the loop. The batteries must be in place in the cabinet and the back closed for alignment of aerial circuits. Connect a 10,000 ohms resistor from the rear section of the gang to chassis.			
3	Inductively coupled to loop†	600 Kc/s	600 Kc/s (7ZL)	L.F. Osc. Core Adj. (L4)§‡
4	Inductively coupled to loop†	1640 Kc/s	Gang fully open	H.F. Osc. Adj. (C9)¶
5	Inductively coupled to loop†	1500 Kc/s	1500 Kc/s (3AK)	H.F. Aer. Adj. (C2)§
	Repeat adjustments 3 and 5 until maximum output is obtained. Remove the 10,000 ohm resistor.			
6	Inductively coupled to loop†	600 Kc/s	600 Kc/s (7ZL)	L.F. R.F. Core Adj. (L3)§
7	Inductively coupled to loop†	1500 Kc/s	1500 Kc/s (3AK)	H.F. R.F. Adj. (C7)§
	Repeat adjustments 6 and 7 until maximum output is obtained and finally check adjustments 3 and 5.			

* A 0.001 μF capacitor should be connected in series with the high side of the test instrument.

† A coil comprising 3 turns of 16 gauge D.C.C. wire and about 6 inches in diameter should be connected between the output terminals of the test instrument, placed co-axial with the loop and distant not less than 1 foot from it.

‡ Rock the tuning control back and forth through the signal.

§ These adjustments are accessible through 4 holes in the cabinet back.

¶ Open the back to make this adjustment and then close to complete alignment.

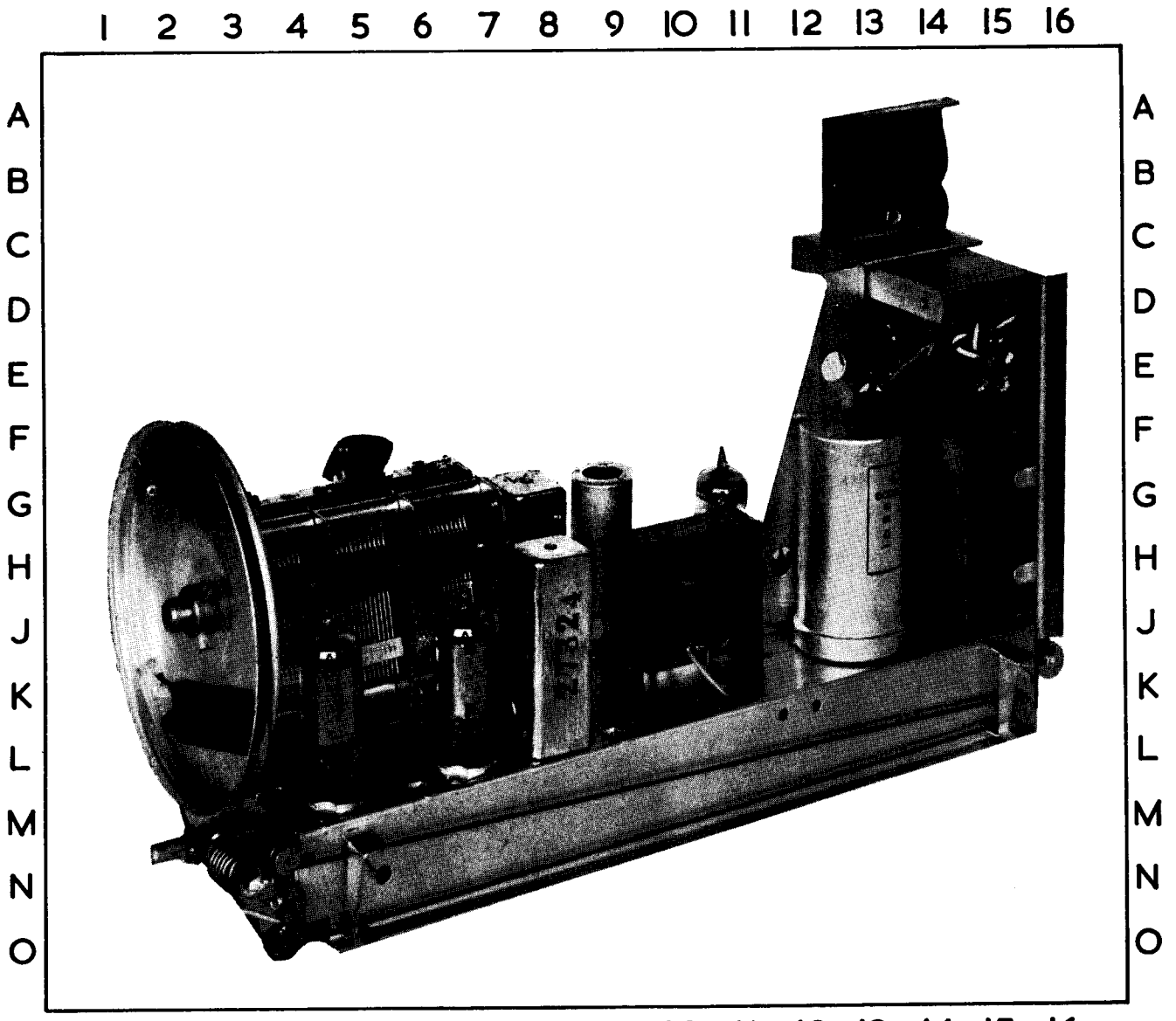
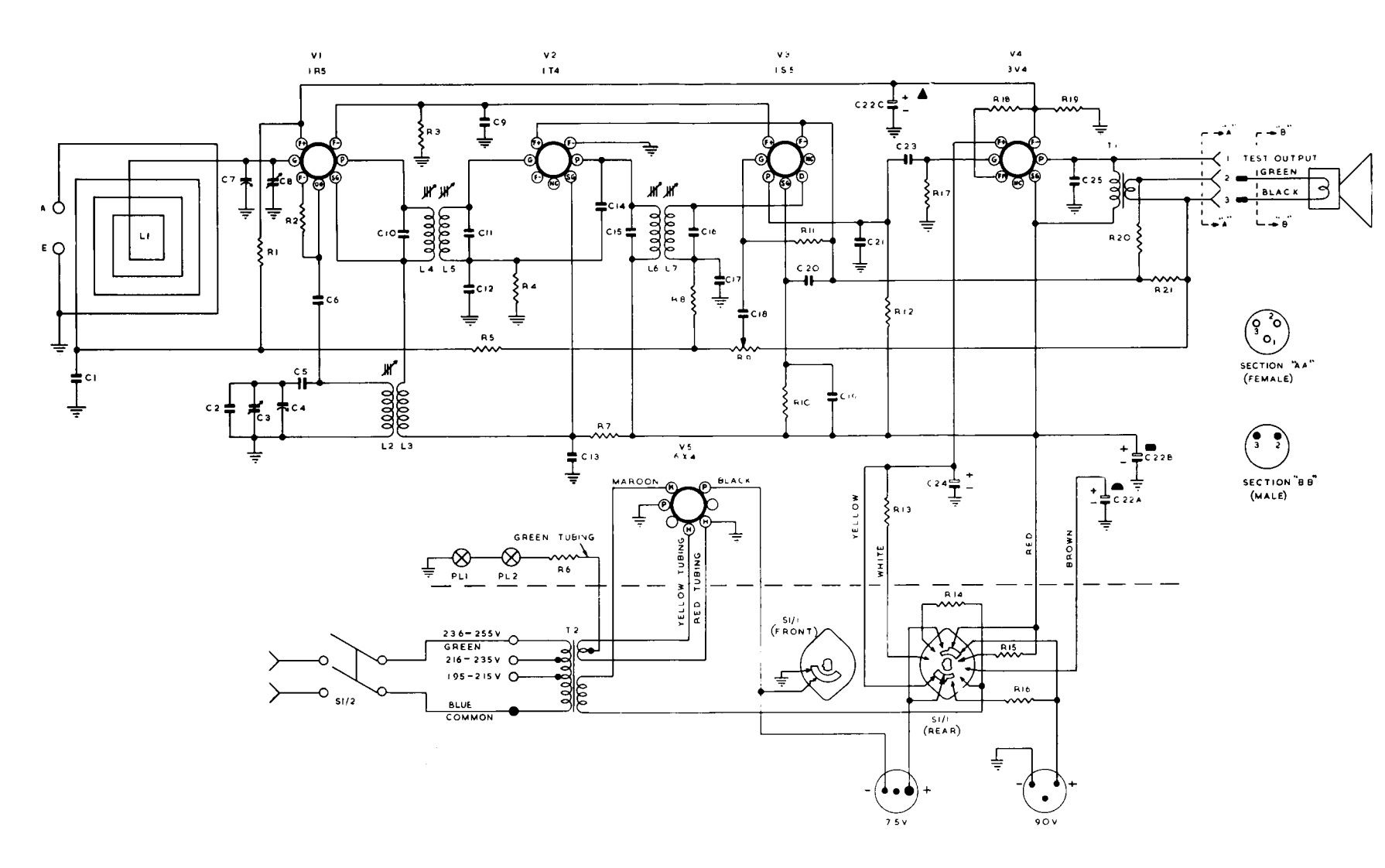


FIG. 3


V1
1R5
V2
1T4
V3
1S5
V4
3V4
V5
4X4
L1
L2 L3
L4 L5
L6 L7
T1
T2
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C20
C21
C22A
C22B
C22C
C23
C24
C25
A
E
TEST OUTPUT
GREEN
BLACK
SECTION "AA" (FEMALE)
SECTION "BB" (MALE)
MAROON
BLACK
GREEN TUBING
YELLOW TUBING
RED TUBING
PL1
PL2
YELLOW
WHITE
RED
BROWN
S1/1 (FRONT)
S1/1 (REAR)
S1/2
236-255V
GREEN
216-235V
195-215V
BLUE
COMMON
75V
90V

CIRCUIT CODE — MODEL 679-P

Code No	Description	Part No.	Fig. No.	Location
	INDUCTORS			
L1	Loop Aerial Coil	31841		
L2, L3	R.F. Coil 540-1600 Kc/s	30784	4	B13
L4, L5	Oscillator Coil 540-1600 Kc/s	30777	4	B11
L6, L7	1st I.F. Transformer	27324	3	J8
L8, L9	2nd I.F. Transformer	27351	3	H8
	RESISTORS			
R1	6.8 megohms ½ watt ± 10%		4	D15
R2	1.8 megohms ½ ,, ,,		4	E14
R3	0.1 megohm ½ ,, ,,		4	B6
R4	820 ohms ½ ,, ,,		4	B8
R5	3.3 megohms ½ ,, ,,		4	B12
R6	4.7 megohms ½ ,, ,,		4	D12
R7	4 ohms ½ ,, ,,		4	D4
R8	22,000 ohms ½ ,, ,,		4	D12
R9	47,000 ohms ½ ,, ,,		4	B11
R10	10 megohms ½ ,, ,,		4	E7
R11	1.0 megohm Volume Control	28311	4	C2
R12	3.3 megohms ½ watt		4	C10
R13	1,100 ohms 3 ,, (Wire Wound ± 5%)		4	F5
R14	1,200 ohms 3 ,, (Wire Wound ± 5%)		3	F14
R15	1,800 ohms 1 ,, ± 10%		3	D14
R16	470 ohms ½ ,, ,,		3	D14
R17	0.47 megohm ½ ,, ,,		4	B7
R18	1.0 megohm ½ ,, ,,		4	C6
R19	470 ohms ½ ,, ,,		4	B6
R20	820 ohms ½ ,, ,,		4	E5
R21	330 ohms ½ ,, ,,		4	C4
R22	30 ohms ½ ,, ,,		4	C4
	CAPACITORS			
C1	0.05 μF paper 200V working		4	C16
C2	3-25 μμF Trimmer	27526	4	A16
C3	12-445 μμF Tuning	30785	3	J4
C4	6.8 μμF ceramic		4	E14
C5	0.1 μF paper 200V working		4	E15
C6	12-445 μμF Tuning	30785	4	J6
C7	3-25 μμF Trimmer	27526	4	A14
C8	0.05 μF paper 200V working		4	C13
C9	5-50 μμF Trimmer		3	F5
C10	12-445 μμF Tuning	30785	3	J5
C11	470 μμF padder ± 2½%		4	C13
C12	68 μμF silvered mica		4	D12
C13	47 μμF silvered mica (in 1st I.F.)		3	J8
C14	47 μμF silvered mica (in 1st I.F.)		3	J8
C15	0.01 μF paper 600V working		4	D10
C16	0.05 μF paper 200V working		4	C15
C17	6.8 μμF ceramic		4	D11
C18	100 μμF silvered mica (in 2nd I.F.)		3	G8
C19	100 μμF silvered mica (in 2nd I.F.)		3	G8
C20	100 μμF silvered mica		4	B11
C21	0.01 μF paper 600V working		4	E4
C22	100 μμF silvered mica		4	B12
C23	0.01 μF paper 600V working		4	B8
C24	0.05 μF paper 200V working		4	D8
C25	100 μμF silvered mica		4	C8
C26	0.01 μF paper 600V working		4	D8
C27	0.0025 μF paper 600V working		4	C3
C28	400 μF 12 P.V. Electrolytic		4	E9
C29A	50 μF 200 P.V. Electrolytic		4	H13
C29B	40 μF 200 P.V. Electrolytic		4	H13
C29C	40 μF 40 P.V. Electrolytic		4	H13
C30	1-10 μμF Trimmer	33155		
	TRANSFORMERS			
T1	Loudspeaker Transformer	31727A	3	H10
T2	Power Transformer 50 C.P.S.	25835	3	G15
	40 C.P.S.	25837		
	LOUDSPEAKER			
	6" permanent magnet	AG52		
	SWITCHES			
S1	Power Selector	31835	3	E13
	PILOT LAMP			
PL1	2.5V 0.2 Amp. M.E.S.		4	E1
PL2	2.5V 0.2 Amp. M.E.S.		4	E17

D.C. RESISTANCE OF WINDINGS
MODEL 679-P

Winding	D.C. Resistance in ohms
R.F. Coil:	
Primary (L2)	100
Secondary (L3)	4
Oscillator Coil:	
Primary (L5)	1
Secondary (L4)	4
1st I.F. Transformer Windings	25
2nd I.F. Transformer Windings	20
Loudspeaker Input Transformer (T1)	
Primary	450
Secondary	*
Power Transformer (T2)	
Primary	140
Secondary	100

* Less than 1 ohm.

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

SOCKET VOLTAGES—MODEL 679-P

	VALVES	Bias Volts	Screen to Chassis Volts:	Anode to Chassis Volts:	Anode Current mA:	Filament Volts:
1T4	R.F. Amp.	*	40	90	0.5	1.3-1.4
1R5	Converter	*	40	40	0.5	1.3-1.4
1T4	I.F. Amp.	*	40	90	1.5	1.3-1.4
1S5	Det., A.F. Amp., A.V.C.	*	25*	35*	0.1	1.3-1.4
3V4	Output	−5.0	90	88	6.5	2.6-2.8

* Cannot be measured with an ordinary voltmeter.
Measured with no signal input. Volume Control maximum clockwise.
A.C. Power Unit Operation:—
H.T. Secondary Volts = 130V A.C.
6X4 Cathode to Chassis Volts = 120V D.C.
Heater Volts = 6.3V A.C.

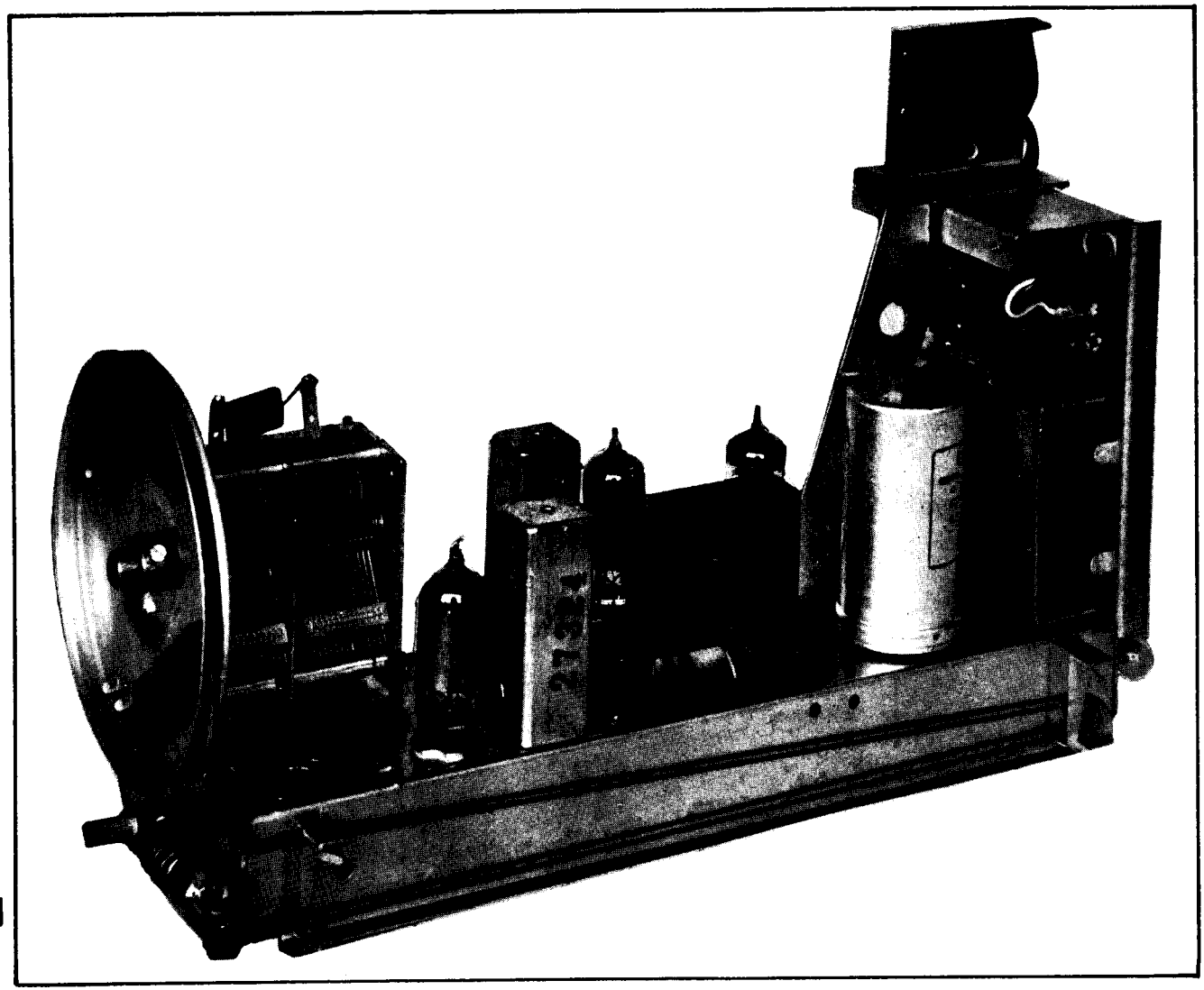


FIG. 1

CIRCUIT CODE — MODEL 575-P

Code No.	Description	Part No.	Fig. No.	Location
	INDUCTORS			
L1	Loop Aerial Coil	31841		
L2, L3	Oscillator Coil 540-1600 Kc/s	30777	2	B13
L4, L5	1st I.F. Transformer	27324	1	H7
L6, L7	2nd I.F. Transformer	27324	1	G7
	RESISTORS			
R1	3.3 megohms ½ watt ± 10%		2	D14
R2	0.1 megohm ½ ,, ,, ,,		2	E13
R3	820 ohms ½ ,, ,, ,,		2	F14
R4	4.7 megohms ½ ,, ,, ,,		2	D12
R5	3.3 megohms ½ ,, ,, ,,		2	B12
R6	4 ohms ½ ,, ,, ,,		2	D5
R7	13,000 ohms ½ ,, ,, 5%		2	C11
R8	47,000 ohms ½ ,, ,, 10%		2	B12
R9	1.0 megohm Volume Control	28311	2	C3
R10	3.3 megohms ½ watt ± 10%		2	C10
R11	10 megohms ½ ,, ,, ,,		2	D7
R12	0.47 megohm ½ ,, ,, ,,		2	B8
R13	1,100 ohms 3 ,, (Wirewound ± 5%)		2	F6
R14	1,200 ohms 3 ,, (Wirewound ± 5%)		1	E13
R15	1,800 ohms 1 ,, ,, 10%		1	C14
R16	470 ohms ½ ,, ,, ,,		1	C13
R17	1.0 megohm ½ ,, ,, ,,		2	C6
R18	470 ohms ½ ,, ,, ,,		2	B7
R19	820 ohms ½ ,, ,, ,,		2	E5
R20	330 ohms ½ ,, ,, ,,		2	C4
R21	30 ohms ½ ,, ,, ,,		2	C4
	CAPACITORS			
C1	0.05 μF paper 200V working		2	C13
C2	9 μμF mica		1	E3
C3	3-25 μμF trimmer	27526	2	B14
C4	12-445 μμF tuning	18621	1	G4
C5	470 μμF padder ± 2½%		2	B14
C6	68 μμF silvered mica		2	D13
C7	12-445 μμF tuning	18621	1	G3
C8	3-25 μμF trimmer	27526	2	B15
C9	0.1 μF paper 200V working		2	E15
C10	47 μμF silvered mica (in 1st I.F.)		1	H7
C11	47 μμF silvered mica (in 1st I.F.)		1	H7
C12	0.01 μF paper 600V working		2	D10
C13	0.05 μF paper 200V working		2	D14
C14	6.8 μμF ceramic		2	C12
C15	47 μμF silvered mica (in 2nd I.F.)		1	G7
C16	47 μμF silvered mica (in 2nd I.F.)		1	G7
C17	200 μμF mica		2	B2
C18	0.01 μF paper 600V working		2	E5
C19	0.01 μF paper 600V working		2	A8
C20	0.05 μF paper 200V working		2	D8
C21	100 μμF silvered mica		2	C8
C22A	50 μF 150 W.V. electrolytic		1	G12
C22B	40 μF 150 W.V. electrolytic		1	G12
C22C	40 μF 25 W.V. electrolytic		1	G12
C23	0.01 μF paper 600V working		2	D8
C24	400 μF 12 P.V. electrolytic		2	E9
C25	0.0025 μF paper 600V working		2	D4
	TRANSFORMERS			
T1	Loudspeaker Transformer	31727A	1	H10
T2	Power Transformer, 50 c.p.s.	25835	1	F13
	40 c.p.s.	25837		
	LOUDSPEAKER			
	6" permanent magnet	AG52		
	SWITCHES			
S1	Power Selector	31835	1	D13
	PILOT LAMP			
PL1	2.5V 0.2 Amp. M.E.S.		2	E1
PL2	2.5V 0.2 Amp. M.E.S.		2	E17