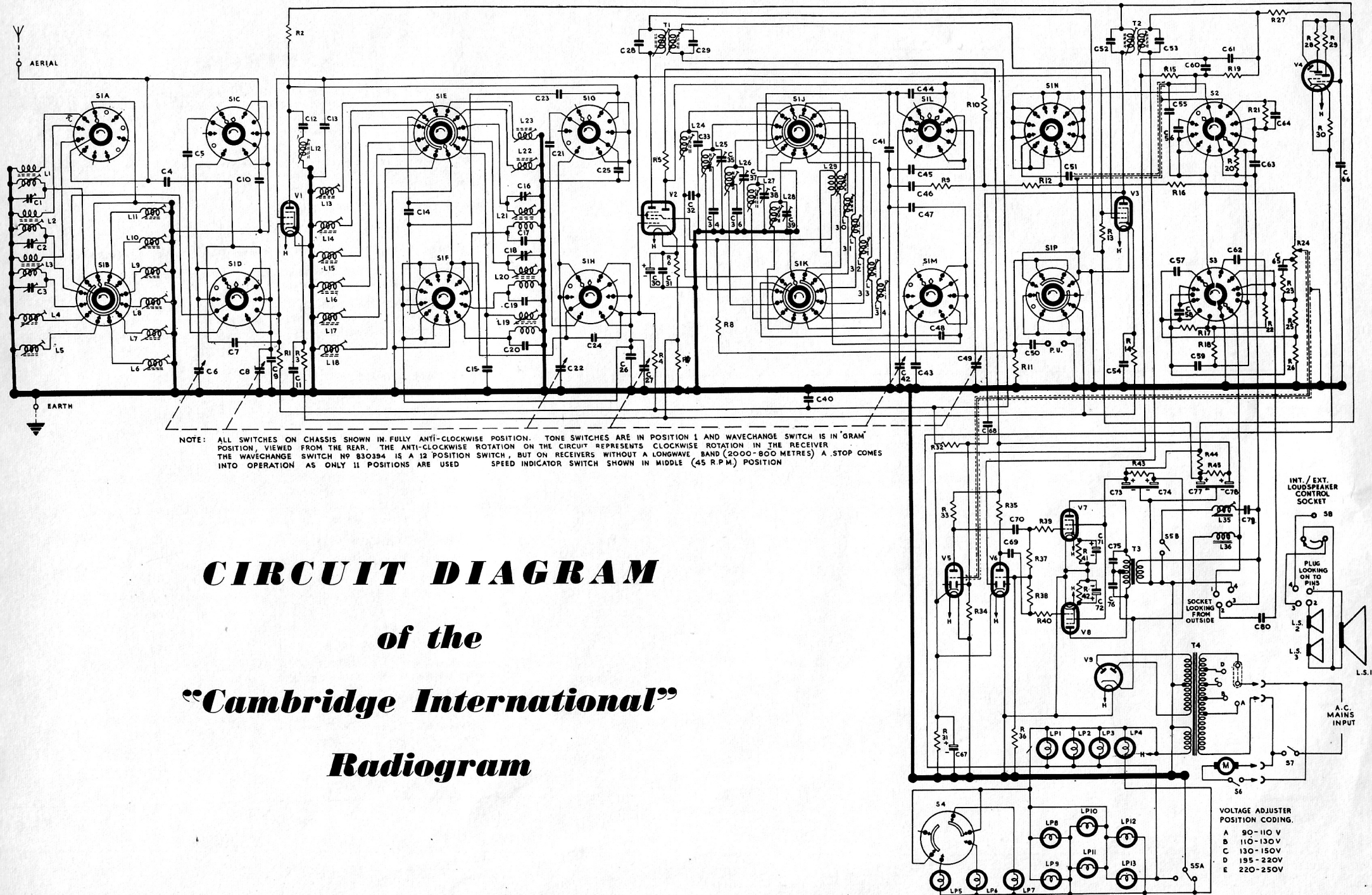




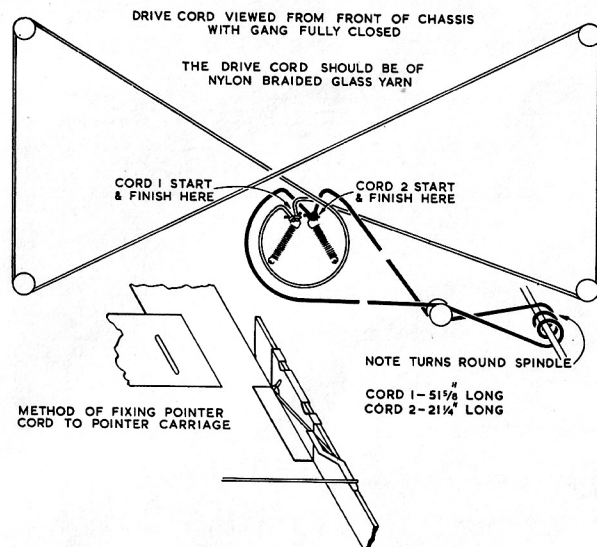


FIG. 5

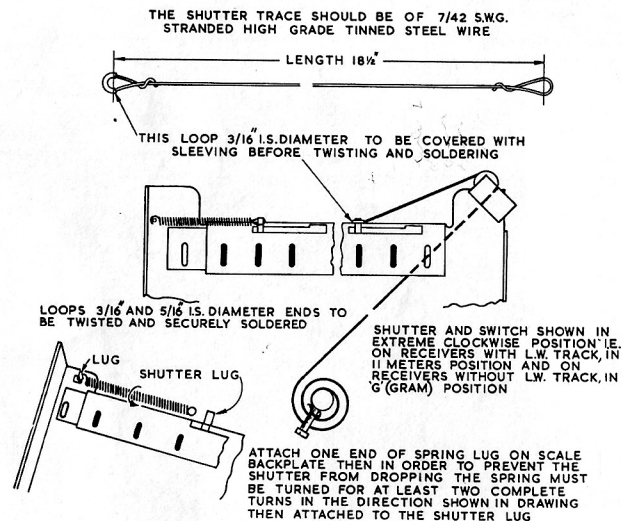


FIG. 6

NOTES

- 1** A 100 Division Trimming Scale is fitted to the scale reflector plate for use when trimming the receiver outside the cabinet; this should agree with the 100 Division Logging Track on the scale when chassis and scale are correctly placed in the cabinet.
The bottom of the pointer carriage serves as an index for the scale.
A Calibration Chart is printed on page 3.
When no accurate frequency standard is available the receiver should be calibrated against a reliable broadcasting station operating on a frequency close to that specified in the trimming instructions.
 - 2** External Speaker 15 ohms impedance.
 - 3** Dial and Indicator Bulbs 6.5 volt 0.3 amp. M.E.S.
 - 4** The Flywheel Tuning needs no maintenance other than a very occasional drop of oil.
 - 5** Make sure Mains Voltage Adjuster is in correct position to ensure maximum valve and component life and the best performance.
 - 6 TO REMOVE TUNING INDICATOR.** Loosen two screws "A," see Fig. 2, rotate circular base plate in a clockwise direction to end of slots and pull out.
When replacing Tuning Indicator, reverse the above procedure, making sure that the shadows appear vertical with the less sensitive one at the top. Tighten up two screws "A."
 - 7 TO REMOVE CHASSIS.**
 - a** Remove Mains Plug from wall socket.
 - b** Remove right hand back panel from cabinet (viewed from back).
 - c** Pull off knobs.
 - d** Remove Tuning Indicator.
 - e** Remove all plugs from side of chassis and Mains Plug on lead attached to chassis from cabinet.
 - f** Remove the three Chassis Fixing Screws.
 - g** Move the chassis approximately 1 inch to the left, lift up and withdraw taking care that the scale backplate does not foul the Tuning Indicator bracket.
 - 8 TO REMOVE THE GRAM UNIT.**
 - a** Remove the Mains Supply Plug on lead attached to gram unit from socket in cabinet.
 - b** Remove pick-up plugs from chassis.
 - c** Remove the small Three-Pin Plug (coded green) from socket in cabinet.
 - d** Detach the three Indicator Lamps from the bracket in front of cabinet.
 - e** Remove the four nuts and washers from under the motor board.
 - f** Lift Gram Unit clear of cabinet, taking care that the leads do not become entangled.
- Note.**—When replacing the small Three-Pin Plugs, ensure that the Red and the Green plugs are inserted into the sockets of the corresponding colour.

9 HETERODYNE WHISTLE FILTER.

L35 is adjusted to resonate with C79 at 9 kc/s to provide minimum response to modulation of this frequency. The coil is sealed in position on the core; should it require re-adjustment it must be sealed in position again afterwards.



model

PE80RG



model

PE80RG

AP11.

CIRCUIT ANALYSIS

Mains Consumption		Radio Gram. Motor		65 watts approx. 15 watts		A.F. Output 7.5 watts	
Valve		Mullard	Ea	Ia	Es	Is	Osc. and Target
							Ea Ia Ek Ik
V1	R.F. Amplifier	EF.41	203	4.4	87	1.1	— — 1.9 5.5
V2	Freq. Changer	ECH.42	212	2.2	87	4.5	110 4.8 2.0 11.5
V3	I.F. Amplifier	EF.41	242	4.6	87	1.0	— — 1.9 5.6
V4	Tuning Indicator	EM.34	—	—	—	—	242 — 1.9 1.1
V5	A.V.C. and L.F. Amp.	EBC.41	132	0.3	—	—	— — 1.9 0.3
V6	Det. and Phase Inverter	EBC.41	132	0.3	—	—	— — 1.9 0.3
V7	Output	EL.41	265	21.5	242	3.0	— — 8.25 24.5
V8	Output	EL.41	265	21.5	242	3.0	— — 8.25 24.5
V9	Power Rectifier	EZ.40	Anode to Anode 520 v. A.C.				270 73.3

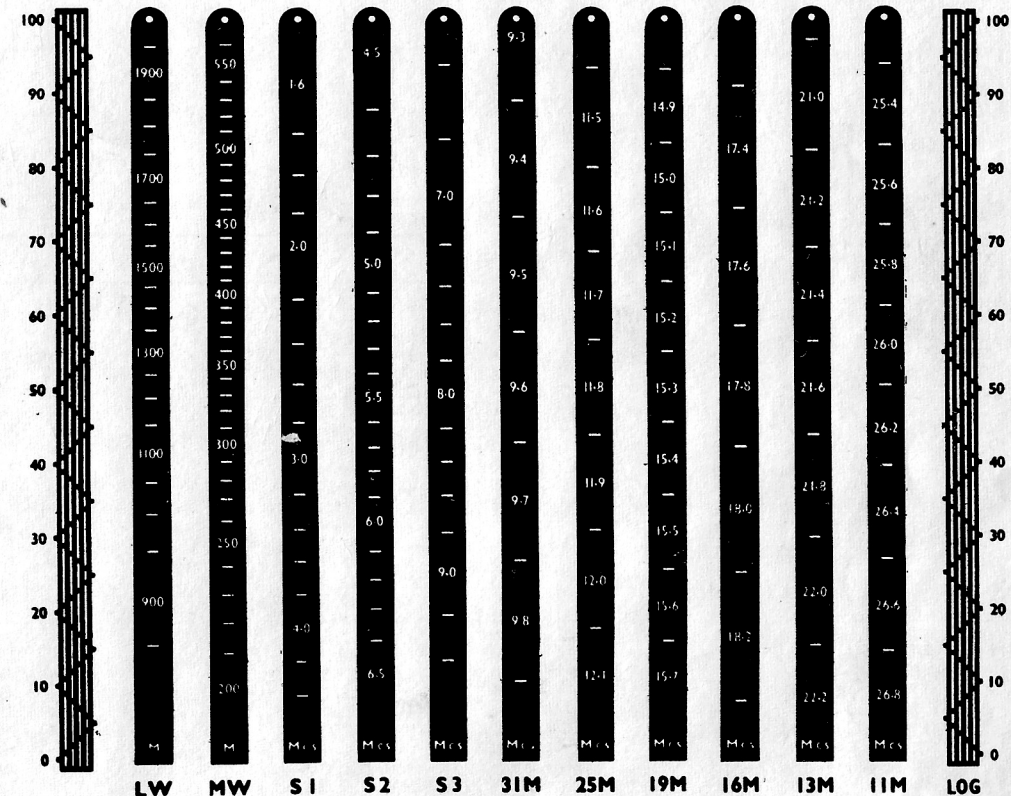
Note.—All measurements taken on M.W. band with no signal input. Gang fully meshed.
Mains input 210 volts into 195-220 volt tap.
Measurements taken with an Avometer Model 8 instrument which has a resistance of 20,000 ohms per volt.

TRIMMING PROCEDURE

Apply Signal as below	Set Receiver Controls to	Adjust in order for maximum output, except in case of L12
(1) (a) 470 Kc/s. between chassis and control grid of V3 via 0.1 μ F condenser (b) As above but connect to control grid of V2	Low frequency end of M.W. band (550 metres)	Iron dust cores of T2
(2) 470 Kc/s. between chassis and aerial socket via standard dummy aerial	Low frequency end of M.W. band (550 metres)	Iron dust cores of T1
(3) As (2) but 167 Kc/s.	L.W. band 1800 metres	Iron dust cores of L24, L19 and L1
(4) As (2) but 333 Kc/s.	L.W. band 900 metres	Trimmer C1
(5) Repeat (3) (L1 only) and (4) until tracking is correct		
(6) As (2) but 600 Kc/s.	M.W. band 500 metres	Iron dust cores of L25, L20 and L2
(7) As (2) but 1500 Kc/s.	M.W. band 200 metres	Trimmers C35, C18 and C2
(8) Repeat (6) and (7) until calibration and tracking are correct		
(9) 1800 Kc/s. between chassis and aerial socket via a 400 ohm resistor	S1 band 167 M. Log track 79	Iron dust cores of L26, L21 and L3
(10) As (9) but 4.0 Mc/s.	S1 band 75 M. Log track 17.5	Trimmers C37, C16 and C3
(11) Repeat (9) and (10) until calibration and tracking are correct		
(12) As (9) but 4.9 Mc/s.	S2 band 61.25 M. Log track 71	Iron dust cores of L27, L22 and L4
(13) As (9) but 6.1 Mc/s.	S2 band 49.18 M. Log track 28	Trimmer C38
(14) Repeat (12) (L27) and (13) until calibration is correct.		
(15) As (9) but 7.2 Mc/s.	S3 band 41.67 M. Log track 69	Iron dust cores of L28, L23 and L5
(16) As (9) but 9.6 Mc/s.	S3 band 31.25 M. Log track 2	Trimmer C39
(17) Repeat (15) (L28) and (16) until calibration is correct		
(18) As (9) but 9.6 Mc/s.	31 M. band 31.25 M. Log track 50	Slug of L34 and iron dust cores of L13 and L6
(19) As (9) but 11.6 Mc/s.	25 M. band 25.42 M. Log track 50	Slug of L33 and iron dust cores of L14 and L7
(20) As (9) but 15.3 Mc/s.	19 M. band 19.61 M. Log track 50	Slug of L32 and iron dust cores of L15 and L8
(21) As (9) but 17.8 Mc/s.	16 M. band 16.85 M. Log track 50	Slug of L31 and iron dust cores of L16 and L9
(22) As (9) but 21.6 Mc/s.	13 M. band 13.89 M. Log track 50	Iron dust cores of L30, L17 and L10
(23) As (9) but 26.1 Mc/s.	11 M. band 11.49 M. Log track 50	Iron dust cores of L29, L18 and L11

Adjust all cores and trimmers in the above order, i.e. first, Oscillator; second, R.F. anode; third, Aerial. In the case of the fully spread bands the only adjustments necessary are at the one frequency stated for each.
In order to facilitate tuning of the aerial and R.F. circuits a resistance 4.7 K. ohm in series with a condenser of 0.01 μ F should be connected between V2 hexode anode and chassis. This has the effect of reducing the I.F. sensitivity about 30 times.

CALIBRATION CHART



EUROPEAN MODELS ONLY INCORPORATE A LONG WAVEBAND

CODE LIST

CONDENSERS						CONDENSERS cont'd					
Specification		Volts	±	Fig.	No.	Specification		Volts	±	Fig.	No.
C1	3-50 pF Trimmer			4	800228	C66	0-02 μF Tubular	150		4	669105
C2	3-50 pF Trimmer			4	800076	C67	25 μF Electrolytic	12		4	667170
C3	3-50 pF Trimmer			4	800076	C68	10 pF Mica		20%	4	665650
C4	6-8 pF Ceramic	20%		4	666799	C69	0-05 μF Tubular	350		4	668139
C5	390 pF Mica	2%		4	664232	C70	0-05 μF Tubular	350		4	668139
C6	528 pF Swing Gang Condenser			3	800191	C71	50 μF Electrolytic	12		4	667171
C7	100 pF Ceramic	20%		4	666806	C72	50 μF Electrolytic	12		4	667171
C8	10 pF Swing Gang Condenser			3	800191	C73	32 μF } Electrolytic	350		3	667504
C9	56 pF Mica	2%		4	664064	C74	32 μF } Electrolytic	350		3	667504
C10	100 pF Mica	2%		4	664100	C75	0-001 μF Tubular	300		3	669098
C11	0-04 μF Tubular	150		4	669106			A.C.			
C12	47 pF Mica	2%		4	664048	C76	0-001 μF Tubular	300		3	669098
C13	0-05 μF Tubular	350		4	668139			A.C.			
C14	5-6 pF Ceramic	20%		4	666659	C77	16 μF } Electrolytic	350		3	667509
C15	39 pF Mica	2%		4	664032	C78	16 μF } Electrolytic	350		3	667509
C16	3-50 pF Trimmer			4	800076	C79	1-0 μF Tubular	150		4	669114
C17	39 pF Ceramic	10%		4	666847	C80	6-0 μF Tubular	150		4	668917
C18	3-50 pF Trimmer			4	800076						
C19	100 pF Ceramic	20%		4	666806						
C20	0-0002 μF Tubular	600		4	669087						
C21	390 pF Mica	2%		4	664232						
C22	528 pF Swing Gang Condenser			3	800191						
C23	100 pF Ceramic	20%		4	666806						
C24	100 pF Ceramic	20%		4	666806						
C25	100 pF Mica	2%		4	664100						
C26	39 pF Mica	2%		4	664032						
C27	10 pF Swing Gang Condenser			3	800191						
C28*	100 pF Mica	2%		3	666776						
C29*	100 pF Mica	2%		3	666776						
C30	50 μF Electrolytic	12		4	667171						
C31	0-04 μF Tubular	150		4	669106						
C32	180 pF Mica	2%		4	664150						
C33	82 pF Mica	2%		4	664092						
C34	510 pF Mica	2%		4	664262						
C35	3-50 pF Trimmer			4	800760						
C36	1,700 pF Mica	5%		4	666795						
C37	3-50 pF Trimmer			4	800076						
C38	3-50 pF Trimmer			4	800076						
C39	3-50 pF Trimmer			4	800076						
C40	0-04 μF Tubular	150		4	669106						
C41	15 pF Ceramic N750K	10%		4	666515						
C42	528 pF Swing Gang Condenser			3	800191						
C43	330 pF Mica	2%		4	664212						
C44	330 pF Ceramic	20%		4	666809						
C45	100 pF Mica	2%		4	664100						
C46	0-05 μF Tubular	350		4	668139						
C47	110 pF Mica	2%		4	664106						
C48	100 pF Ceramic	20%		4	666806						
C49	45-5 pF Swing Gang Condenser			3	800191						
C50	0-01 μF Tubular	150		4	669082						
C51	0-01 μF Tubular	350		4	669096						
C52*	100 pF Mica	2%		3	666776						
C53*	100 pF Mica	2%		3	666776						
C54	0-04 μF Tubular	150		4	669106						
C55	0-0005 μF Tubular	600		4	669089						
C56	0-001 μF Tubular	350		4	669091						
C57	0-002 μF Tubular	350		4	669093						
C58	0-0005 μF Tubular	600		4	669089						
C59	0-001 μF Tubular	350		4	669091						
C60	100 pF Ceramic	20%		4	666806						
C61	100 pF Ceramic	20%		4	666806						
C62	0-04 μF Tubular	150		4	669106						
C63	0-25 μF Tubular	150		3 & 4	669112						
C64	0-25 μF Tubular	150		3 & 4	669112						
C65	0-01 μF Tubular	150		4	669082						

Note.—* Integral part of I.F. Transformer.

INDUCTANCES					
Specification		Ref.	Fig.	No.	
L1	L.W. Aerial Coil	L.W.16	4	780629	
L2	M.W. Aerial Coil	M.W.7	4	780246	
L3	S1 Aerial Coil	T.B.4	4	780605	
L4	S2 Aerial Coil	S.W.7	4	780275	
L5	S3 Aerial Coil	S.W.5	4	780277	
L6	31 m. Aerial Coil	S.W.6	4	780276	
L7	25 m. Aerial Coil	S.W.5	4	780277	
L8	19 m. Aerial Coil	S.W.3A.	4	780574	
L9	16 m. Aerial Coil	S.W.3	4	780272	
L10	13 m. Aerial Coil	S.W.2	4	780279	
L11	11 m. Aerial Coil	S.W.1	4	780280	
L12	I.F. Filter Coil		4	780149	
L13	31 m. R.F. Coil	S.W.6	4	780276	
L14	25 m. R.F. Coil	S.W.5	4	780277	
L15	19 m. R.F. Coil	S.W.3A.	4	780574	
L16	16 m. R.F. Coil	S.W.3	4	780272	
L17	13 m. R.F. Coil	S.W.2	4	780279	
L18	11 m. R.F. Coil	S.W.1	4	780280	
L19	L.W. R.F. Coil	L.W.15	4	780628	
L20	M.W. R.F. Coil	M.W.17	4	780627	
L21	S1 R.F. Coil	T.B.4	4	780605	
L22	S2 R.F. Coil	S.W.7	4	780275	
L23	S3 R.F. Coil	S.W.5	4	780277	
L24	L.W. Osc. Coil	L.W.1	4	780241	
L25	M.W. Osc. Coil	M.W.1	4	780234	
L26	S1 Osc. Coil	T.B.1	4	780249	
L27	S2 Osc. Coil	S.W.7	4	780275	
L28	S3 Osc. Coil	S.W.5	4	780277	
L29	11 m. Osc. Coil	S.W.1	4	780280	
L30	13 m. Osc. Coil	S.W.2	4	780279	
L31	16 m. Osc. Coil	S.W.4	4	780278	
L32	19 m. Osc. Coil	S.W.5	4	780277	
L33	25 m. Osc. Coil	S.W.6	4	780276	
L34	31 m. Osc. Coil	S.W.7	4	780275	
L35	Whistle Filter Choke		4	079005	
L36	Crossover Choke		4	079004	

Note.—* Integral part of I.F. Transformer.

INDUCTANCES

	Specification	Ref.	Fig.	No.
L1	L.W. Aerial Coil	L.W.16	4	780629
L2	M.W. Aerial Coil	M.W.7	4	780246
L3	S1 Aerial Coil	T.B.4	4	780605
L4	S2 Aerial Coil	S.W.7	4	780275
L5	S3 Aerial Coil	S.W.5	4	780277
L6	31 m. Aerial Coil	S.W.6	4	780276
L7	25 m. Aerial Coil	S.W.5	4	780277
L8	19 m. Aerial Coil	S.W.3A.	4	780574
L9	16 m. Aerial Coil	S.W.3	4	780272
L10	13 m. Aerial Coil	S.W.2	4	780279
L11	11 m. Aerial Coil	S.W.1	4	780280
L12	I.F. Filter Coil		4	780149
L13	31 m. R.F. Coil	S.W.6	4	780276
L14	25 m. R.F. Coil	S.W.5	4	780277
L15	19 m. R.F. Coil	S.W.3A.	4	780574
L16	16 m. R.F. Coil	S.W.3	4	780272
L17	13 m. R.F. Coil	S.W.2	4	780279
L18	11 m. R.F. Coil	S.W.1	4	780280
L19	L.W. R.F. Coil	L.W.15	4	780628
L20	M.W. R.F. Coil	M.W.17	4	780627
L21	S1 R.F. Coil	T.B.4	4	780605
L22	S2 R.F. Coil	S.W.7	4	780275
L23	S3 R.F. Coil	S.W.5	4	780277
L24	L.W. Osc. Coil	L.W.1	4	780241
L25	M.W. Osc. Coil	M.W.1	4	780234
L26	S1 Osc. Coil	T.B.1	4	780249
L27	S2 Osc. Coil	S.W.7	4	780275
L28	S3 Osc. Coil	S.W.5	4	780277
L29	11 m. Osc. Coil	S.W.1	4	780280
L30	13 m. Osc. Coil	S.W.2	4	780279
L31	16 m. Osc. Coil	S.W.4	4	780278
L32	19 m. Osc. Coil	S.W.5	4	780277
L33	25 m. Osc. Coil	S.W.6	4	780276
L34	31 m. Osc. Coil	S.W.7	4	780275
L35	Whistle Filter Choke		4	079005
L36	Crossover Choke		4	079004

CODE LIST

RESISTORS					SWITCHES, LAMPS, ETC.	
	Ohms	Watts	±	Fig.	No.	
R1	1 meg.	1/2	20%	4	670410	S1A Front Bank 1
R2	10,000	1/2	10%	4	670454	S1B Rear Bank 2
R3	330	1/2	10%	4	670512	S1C Rear Bank 1
R4	1 meg.	1/2	20%	4	670410	S1D Front Bank 2
R5	10,000	1/2	10%	4	670530	S1E Rear Bank 4
R6	180	1/2	10%	4	670509	S1F Front Bank 3
R7	100	1/2	10%	4	670506	S1G Rear Bank 3
R8	47,000	1/2	10%	4	670538	S1H Front Bank 4
R9	15,000	1/2	10%	4	670532	S1J Front Bank 5
R10	47,000	1/2	10%	4	670538	S1K Rear Bank 6
R11	470,000	1/2	20%	4	670408	S1L Rear Bank 5
R12	100,000	1/2	20%	4	670404	S1M Front Bank 6
R13	18,000	1/2	10%	4	670153	S1N Front Bank 7
R14	330	1/2	10%	4	670512	S1P Rear Bank 7
R15	150,000	1/2	20%	4	670405	S2 Tone Control (Bass)
R16	4-7 meg.	1/2	20%	4	670414	S3 Tone Control (Treble)
R17	2,200	1/2	10%	4	670522	S4 Stylus and Speed Indicator Switch
R18	2,200	1/2	10%	4	670522	SSA Dial/Gram. Lighting Switch
R19	100,000	1/2	20%	4	670404	SSB Whistle Filter Switch
R20	15,000	1/2	10%	4	670532	S6 Gram. Motor ON/OFF Switch
R21	10,000	1/2	10%	4	670530	S7 ON/OFF Switch
R22	180	1/2	10%	4	670509	S8 INT./EXT. Loudspeaker Control
R23	68,000	1/2	10%	4	670540	LP1
R24	1 meg. Volume Control	1/2	10%	4	810257	LP2 } Dial Lighting Lamps
R25	100	1/2	10%	4	670506	LP3
R26	100	1/2	10%	4	670506	LP4 Volume Control Lamp
R27	2-2 meg.	1/2	20%	4	670412	LP5
R28	1 meg.	1/2	20%	4	670410	LP6 } Gram. Speed Indicator Lamps
R29	1 meg.	1/2	20%	4	670410	LP7
R30	1,500	1/2	10%	4	670520	LP8 } Gram. Compartment Lighting Lamps
R31	3,300	1/2	20%	4	670395	LP9
R32	1 meg.	1/2	20%	4	670410	LP10
R33	100,000	1/2	20%	4	670404	LP11 } Record Storage Lighting Lamps
R34	470,000	1/2	20%	4	670408	LP12 Gram. "ON," Warning Lamp (Green)
R35	100,000	1/2	20%	4	670404	LP13 Radio "ON," Warning Lamp (Red)
R36	68,000	1/2	10%	4	670540	LS1 Loudspeaker 12-inch P.M. (Bass)
R37	330,000	1/2	10%	4	670548	LS2
R38	390,000	1/2	10%	4	670549	LS3 } Loudspeakers 6-inch x 4-inch P.M. (Treble)
R39	22,000	1/2	20%	4	670400	
R40	22,000	1/2	20%	4	670400	
R41	330	1/2	10%	4	670512	
R42	330	1/2	10%	4	670512	
R43	1,000	1/2	10%	4	670138	
R44	2,200	1/2	10%	4	670446	
R45	10,000	1/2	10%	4	670454	

MISCELLANEOUS

Item	Part
Lamp Shroud (Volume Control)	400
Flexible Coupling (Gang Condenser Drive)	071
Tension Spring (for Drive Drum)	700
Tension Spring (for Waveband Indicator Shutter)	700
Knob Springs	700
Knob Sleeve (for use on Wavechange Knob)	030
Knob (Wavechange)	550
Knob (with Spot)	048
Knob (Plain)	550
Knob Escutcheon	041
Extension Loudspeaker Plug	705
Scale (Africa and Middle East)	070
Scale (India)	070
Scale (South America)	070
Scale (European)	070
Cabinet	061

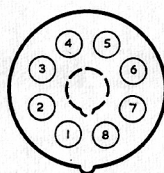
TRANSFORMERS

	Specification	Fig.	No.
T1	1st I.F. Trans. { Prim. 10-0 Ω } { Sec. 10-5 Ω }	3	770369/A
T2	2nd I.F. Trans. { Prim. 10-0 Ω } { Sec. 10-5 Ω }	3	770369/A
T3	Output Trans. { Prim. Start to Finish } { Sec. 350 Ω }	3	077049
T4	Mains Trans. { Prim. 31 Ω on 220- } { Sec. 130 Ω + 140 Ω }	3	077008

AP11.

VALVE BASE CONNECTIONS

	1	2	3	4	5	6	7	8
V1	H	A	K G3 S	K G3 S	G2	G1	K G3 S	H
V2	H	A	A T	GT G3	G2 G4	G1	K	H
V3	H	A	K G3 S	K G3 S	G2	G1	K G3 S	H
V4	—	H	A1	G	T	A2	H	K
V5 & V6	H	A	G	S	D2	D1	K	H
V7 & V8	H	A	K G3	—	G2	G1	K G3	H
V9	H	A1	—	—	—	A2	K	H



VIEW LOOKING AT PINS

FIG. 1

PE80RG

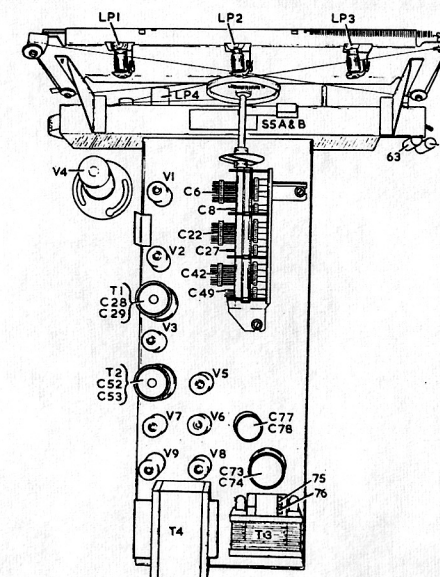
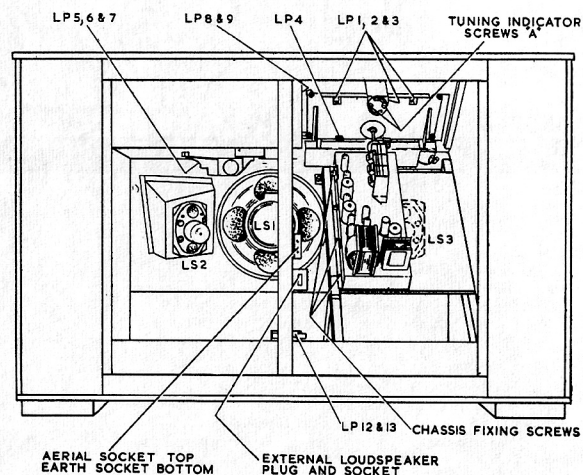


FIG. 3



NOTE: LAMPS LP10 & 11 WILL BE FOUND INSIDE TOP FRONT OF THE RECORD COMPARTMENTS

FIG. 2

NOTE: ALL RESISTORS SHOWN SOLID BLACK

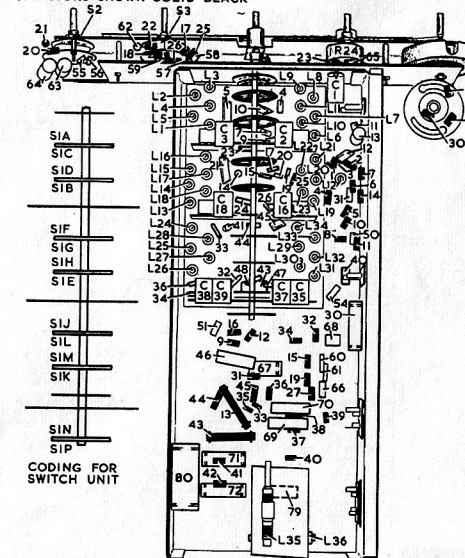


FIG. 4