



EDDYSTONE SERVICING
The Post-War Years
1946-1956

*From 'Radio & Television Servicing' by
Molloy & Poole, Vols I & II*

From 504 to 888

Issued to Members of the Eddystone User Group, Christmas 1998

The servicing abstracts which follow contain sufficient information for any 'valve' radio technician to maintain, repair, and align any of the Eddystone models covered. The details were extracted by Jerry Walker, G5JU, of Stratton & Company, from the original service sheets.

Models not covered, namely the 730 Series and 770 Series were not then available on the domestic market (and in many cases were subject to the Official Secrets Act). To obtain full use from the sheets it is recommended that they are unstapled and kept in a plastic page binder or display book.

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EDDYSTONE RECEIVERS

INTRODUCTORY NOTES

Manufacturers : Messrs. Stratton and Co. Ltd., Eddystone Works, Alvechurch Road, West Heath, Birmingham 31.

The front panel and the coil-box of all models are stout diecastings, while separate chassis are used for the power unit, I.F. section and output stage.

In each model, the cabinet is easily removable by withdrawing four large screws at the rear. Most parts of the receiver are then readily accessible.

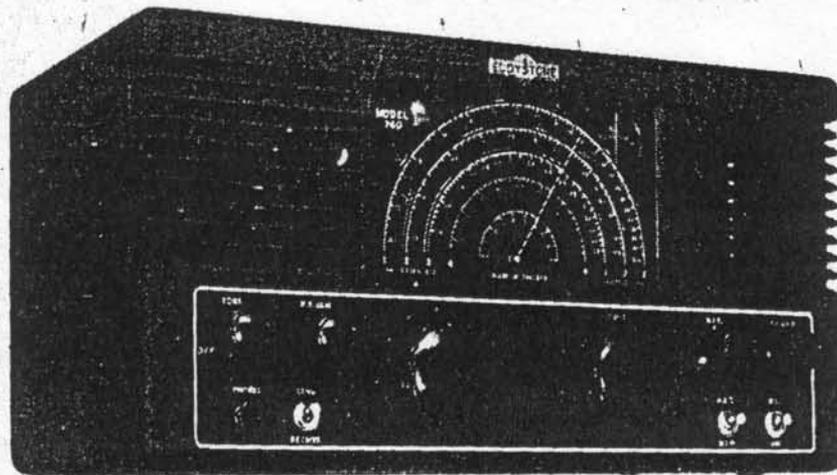
All coils (R.F. and I.F.) are permeability tuned, trimmers also being provided in the R.F. and oscillator sections. Alignment is carried out following the normal procedure, variations being indicated where necessary. When changing a valve, it is usually only necessary to re-adjust the appropriate trimmer capacitors to correct any differences in stray capacitance, and there is then no need to remove the lid of the coil-box. For full alignment, however, this lid must be taken off. Always remember to adjust the trimmers at the high-frequency end of a range and the cores at the low-frequency end. The correct alignment points are given in the table below. Where variable selectivity is fitted (Models 750, 680), alignment should be carried out with the control set at *maximum* selectivity.

Models 640, 740 and 750 are adapted for operation from a 6-volt accumulator and auxiliary H.T. supply. The octal plug which completes the L.T. connections must be inserted in the socket at the rear. This plug and its internal connections should be examined if any failure of or variation in the heater supply occurs.

During manufacture, all receivers are subjected to an ageing process and are then calibrated to an accuracy of plus or minus 0.5 per cent.

The transformers fitted to mains models are for 40-60 c/s. operation and are not suitable for 25 c/s. supplies.

The glass and dial can be cleaned by using a thin artist's brush, long enough



GENERAL APPEARANCE OF POST-WAR EDDYSTONE RECEIVERS
(MODEL 740)

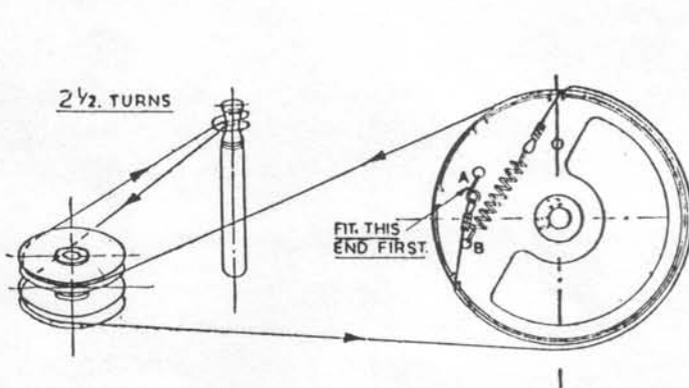
to reach all parts of the glass. The dial lights are standard in all receivers, bulbs with miniature bayonet caps, rated at 6.3 volts, 0.3 amp., being used. To change a lamp, it is only necessary to press the holder, which is sprung into place, and pull out.

A standard wiring code is used as follows :

A.C. mains	Grey	Heaters	Yellow
H.T.	Red	Negative to chassis	Brown
Anodes	Light blue	Chassis potential	Black
Grids	Green	Other leads	White

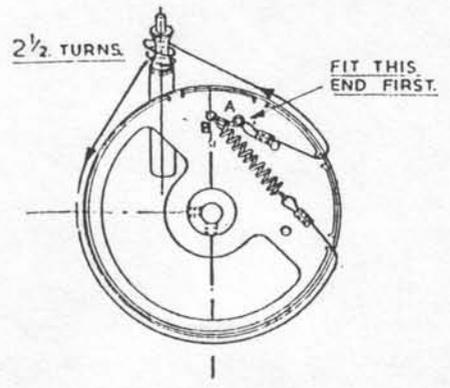
ALIGNMENT FREQUENCIES

Model	Range 1		Range 2		Range 3		Range 4		Range 5	
	High (Mc/s.)	Low (Mc/s.)	High (Mc/s.)	Low (Mc/s.)	High (Mc/s.)	Low (Mc/s.)	High (kc/s.)	Low (kc/s.)	High (kc/s.)	Low (kc/s.)
556, 504	30	14	13	6.5	6.5	3	2800	1400	1300	600
659, 670	28	13	12	6	2.6	1.3	1200	600	—	—
640	30	13	12	5	4	2	—	—	—	—
710, 740	28	12	9	4	3.2	1.5	1200	550	—	—
750	30	13	11	4.7	4.2	2	1350	550	—	—
680	28	14	13	6	5.8	2.5	2500	1200	1100	500



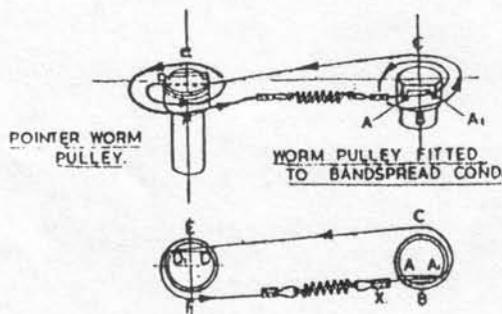
BANDSET.

TURN BANDSET CONDENSER TO MAXIMUM CAPACITY: THE DRIVE DRUM FITTED TO THE CONDENSER SPINDLE SHOULD THEN BE ORIENTATED AS SHOWN. USE CORD D.1069. COMMENCE AT 'A.' & FINISH AT 'B.'



BANDSPREAD.

WITH THE BANDSPREAD CONDENSER SET AT MAX. CAPACITY: THE DRIVE DRUM IS FITTED IN THE POSITION SHOWN. USE CORD D.1070. COMMENCE AT 'A.' & FINISH AT 'B.'



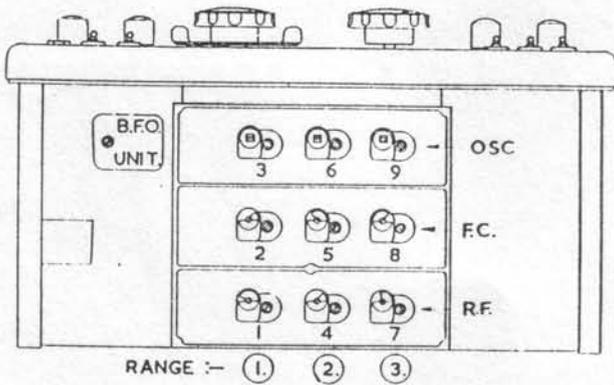
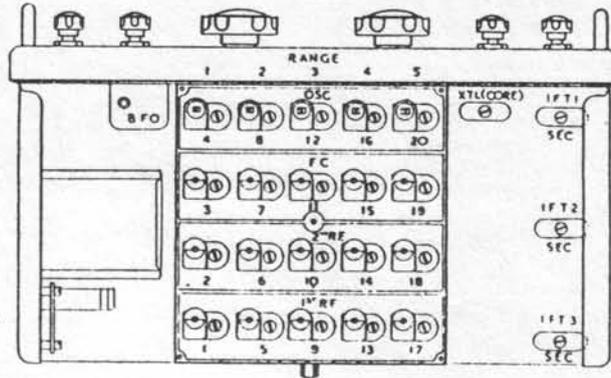
BANDSPREAD POINTER DRIVE.

SET BANDSPREAD CONDENSER AT MAX. CAPACITY. WITH WORM PULLEYS IN POSITIONS SHOWN. FIT CORD D.1071. IN SLOT A.A. SO THAT THE CORD CLIP 'X' JUST CLEARS THE PULLEY. NOW COMPLETE ASSEMBLY BY FOLLOWING: A.-B.-C.-D.-E.-F.

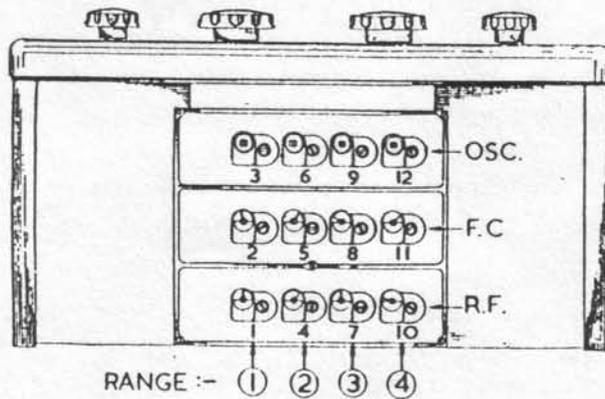
CORD DRIVE REPLACEMENT—EDDYSTONE MODEL 640

Turn receiver panel downwards top towards you; then with cover removed and looking down on the receiver, the cord drives would appear similar to the inverted rear views shown. To fit cords, remove dial bulbs and reflector plate and proceed as indicated in the diagrams.

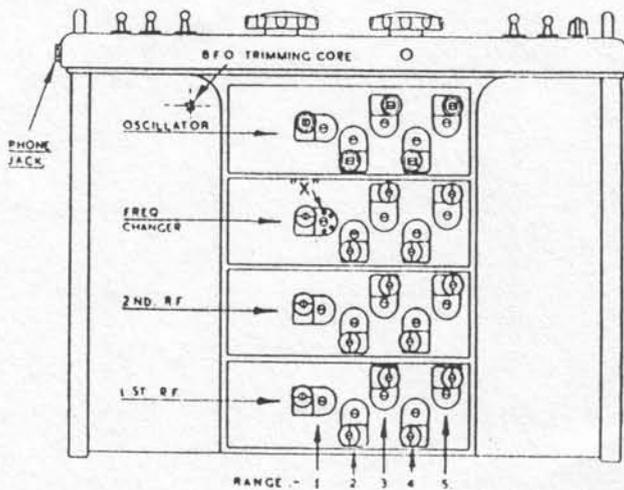
CORE AND TRIMMER LAY-OUT—
EDDYSTONE MODELS 504, 556



CORE AND TRIMMER LAY-OUT—
EDDYSTONE MODEL 640



CORE AND TRIMMER LAY-OUT—
EDDYSTONE MODELS 659, 670, 740, 710



CORE AND TRIMMER LAY-OUT—
EDDYSTONE MODEL 680

EDDYSTONE

Models 504, 556, 556/B

General Description : Model 504, ten-valve (including rectifier), five-waveband communications receiver with crystal filter. Models 556 and 556/B are basically similar to Model 504, but are principally intended for broadcast reception, a magic-eye tuning indicator being fitted in place of the B.F.O. and twin loudspeakers used. Model 556/B is for operation from an internal vibrator power pack. Released 1946.

Valves : (V₁) EF39; (V₂) EF39; (V₃) ECH35; (V₄) EF39; (V₅) EF39; (V₆) EBC33; (V₇) 6V6G (*Note* metal type 6V6 must not be used); (V₈) 5Z4G; (V₉) EB34; (V₁₀) EF39 (Model 504), EM34 (Model 556); Rectifier in Model 556/B, 6X5G.

Intermediate Frequency : 450 kc/s. nominal.

Model 504 : I.F. circuits should be aligned to mid-point of 300 c/s band-pass crystal unit.

Model 556 : I.F. circuits should be stagger-tuned 2.5-kc/s. each side of nominal I.F.

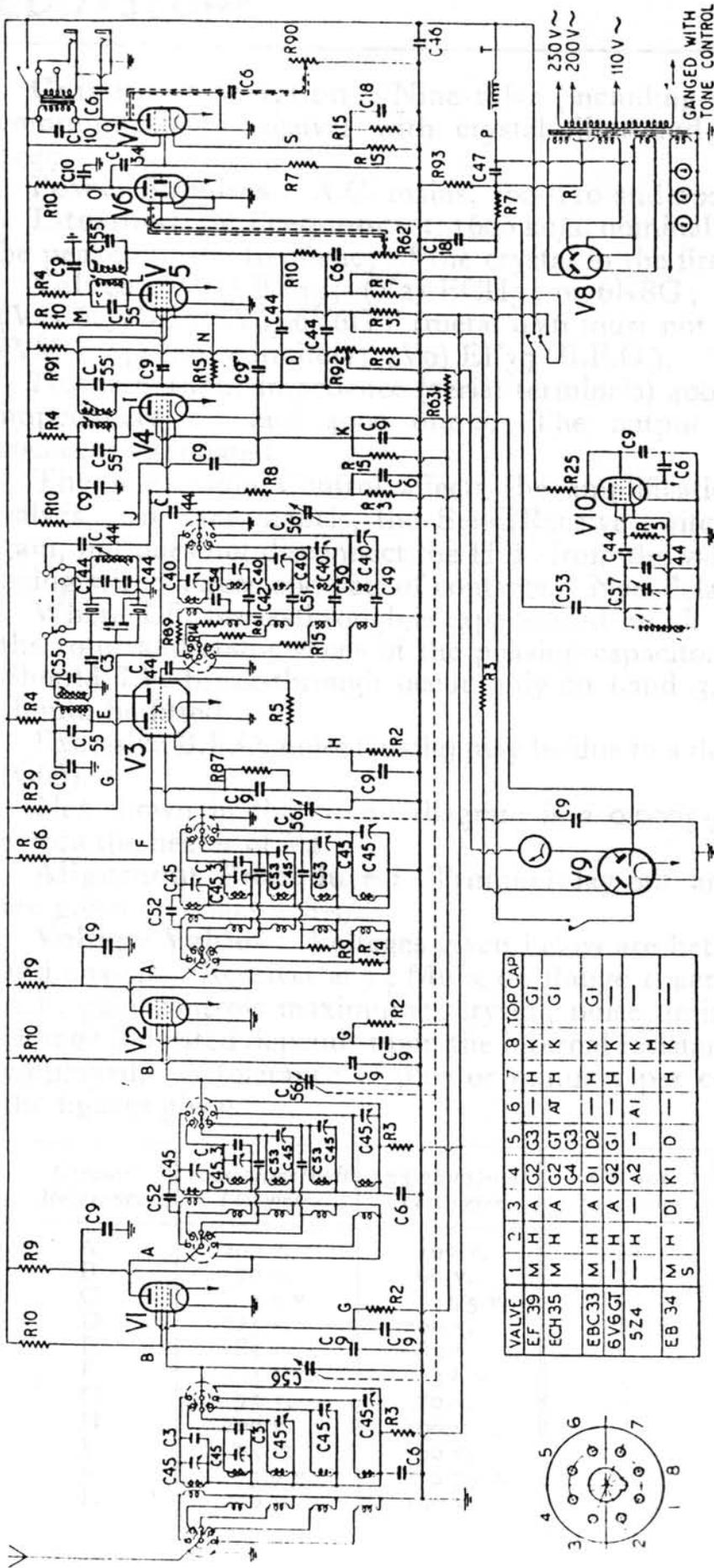
Note : Current consumption of the 556/B is approximately 6.5 amp. from 6-volt accumulator.

Alignment Procedure : Trimmer lay-out and alignment frequencies for these models are given on pages 298-9.

Vibrator Unit : The vibrator power unit for Model 556/B fits into the chassis in the position otherwise occupied by the mains power unit. The voltage on each anode of the rectifier valve is 205 volts, the smoothed output from the unit being 190 volts, 50 mA. Voltage values will therefore differ slightly from those given for Model 504.

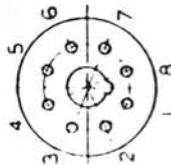
Voltage Values : Voltages given below are between the points indicated on the circuit diagram and chassis. Receiver set at 14 Mc/s. on range 1, aerial terminals short-circuited, R.F. and A.F. gain controls at maximum, crystal and noise limiter switched out, phone/C.W. switch at "phone", Send/Receive switch at "receive" and tone control fully clockwise. The two sets of values indicate that the voltage registered depends on the internal resistance of the meter employed. A tolerance of plus or minus 5 per cent should be allowed.

<i>Circuit Reference</i>	<i>1000 ohms/volt Testmeter</i>	<i>333 ohms/volt Testmeter</i>	<i>Circuit Reference</i>	<i>1000 ohms/volt Testmeter</i>	<i>333 ohms/volt Testmeter</i>
A	180 v.	180 v.	K	2.25 v.	2.25 v.
B	65 v.	25 v.	L	160 v.	152 v.
C	1.3 v.	0.6 v.	M	60 v.	48 v.
D	3.2 v.	0.6 v.	N	2.2 v.	2.0 v.
E	170 v.	160 v.	O	50 v.	40 v.
F	80 v.	70 v.	P	220 v.	220 v.
G	65 v.	60 v.	Q	185 v.	185 v.
H	2.5 v.	2.5 v.	R	1.65 v.	1.7 v.
I	165 v.	160 v.	S	9.5 v.	8.7 v.
J	65 v.	60 v.	T	185 v.	185 v.

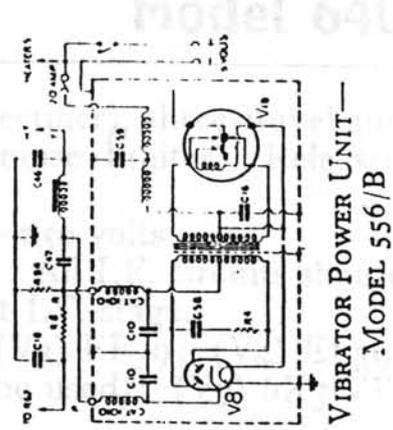


CIRCUIT DIAGRAM—EDDYSTONE MODEL 504

VALVE	1	2	3	4	5	6	7	8	TOP
EF 39	M	H	A	G2	G3	-	H	K	G1
ECH35	M	H	A	G2	G1	A1	H	K	G1
EBC33	M	H	A	D1	D2	-	H	K	G1
6V6GT	-	H	A	G2	G1	-	H	K	-
5Z4	-	H	-	A2	-	A1	-	K	-
EB 34	M	H	D1	K1	D	-	H	K	-



- Capacitors.**
- C3 10 pF.
 - C6 0.01
 - C9 0.1
 - C10 0.0005
 - C18 25 (25 v.)
 - C34 0.1
 - C40 3.5-20 pF.
 - C42 2000 pF.
 - C44 100 pF.
 - C45 3-20 pF.
 - C46 10
- Resistors.**
- R2 330 or 300
 - R3 0.47M or 0.5M
 - R4 4.7 kor 5k
 - R5 47k or 50k
 - R7 0.27M or 0.25M
 - R8 1M
 - R9 1000
 - R10 0.1M
 - R14 47 or 50
 - R15 500 or 500
 - R25 22k or 20k
- Vibrator Power Unit.**
- V8 6X5G
 - V1B NS16 (Wright Weaire)
 - C16 0.5
 - C58 0.012 (1000 v.)
 - C59 0.005
 - R94 28 ohms 1 1/2 W.



EDDYSTONE**Model 640**

General Description : Nine-valve (including rectifier), three-waveband communications receiver with crystal filter and noise limiter. Released 1947.

Power Supplies : A.C. mains, 100-110 and 200-250 volts.

Intermediate Frequency : 1600 kc/s. nominal. All I.F. circuits should be peaked to the frequency of the crystal in the first I.F. stage.

Valves : (V1) EF39; (V2) ECH35 or 6K8G; (V3) EF39; (V4) EF39; (V5) 6Q7GT; (V6) 6V6GT (metal 6V6 must not be used); (V7) 6X5GT; (V8) EB34 (noise limiter); (V9) EF39 (B.F.O.).

Notes : Input impedance (aerial terminals) 400 ohms nominal. Output impedances 2.5 and 4000 ohms. The output across the headphones' socket is attenuated.

The R.F. Gain Control affects the amplification of the R.F. and I.F. valves. In later models, the Send/Receive switch reduces R.F. and I.F. gain, but does not disconnect the H.T. from the valves, a 22000-ohm resistor being wired across one pair of contacts. Non-delayed A.V.C.

Where I.F. break-through is experienced on all bands, the connections to the rotor and stator vanes of the phasing capacitor C38 should be reversed. Should I.F. break-through occur only on band 3, a 1600-kc/s. aerial filter should be fitted.

Excessive B.F.O. noise (rustle) may be due to a defective injection capacitor (C66).

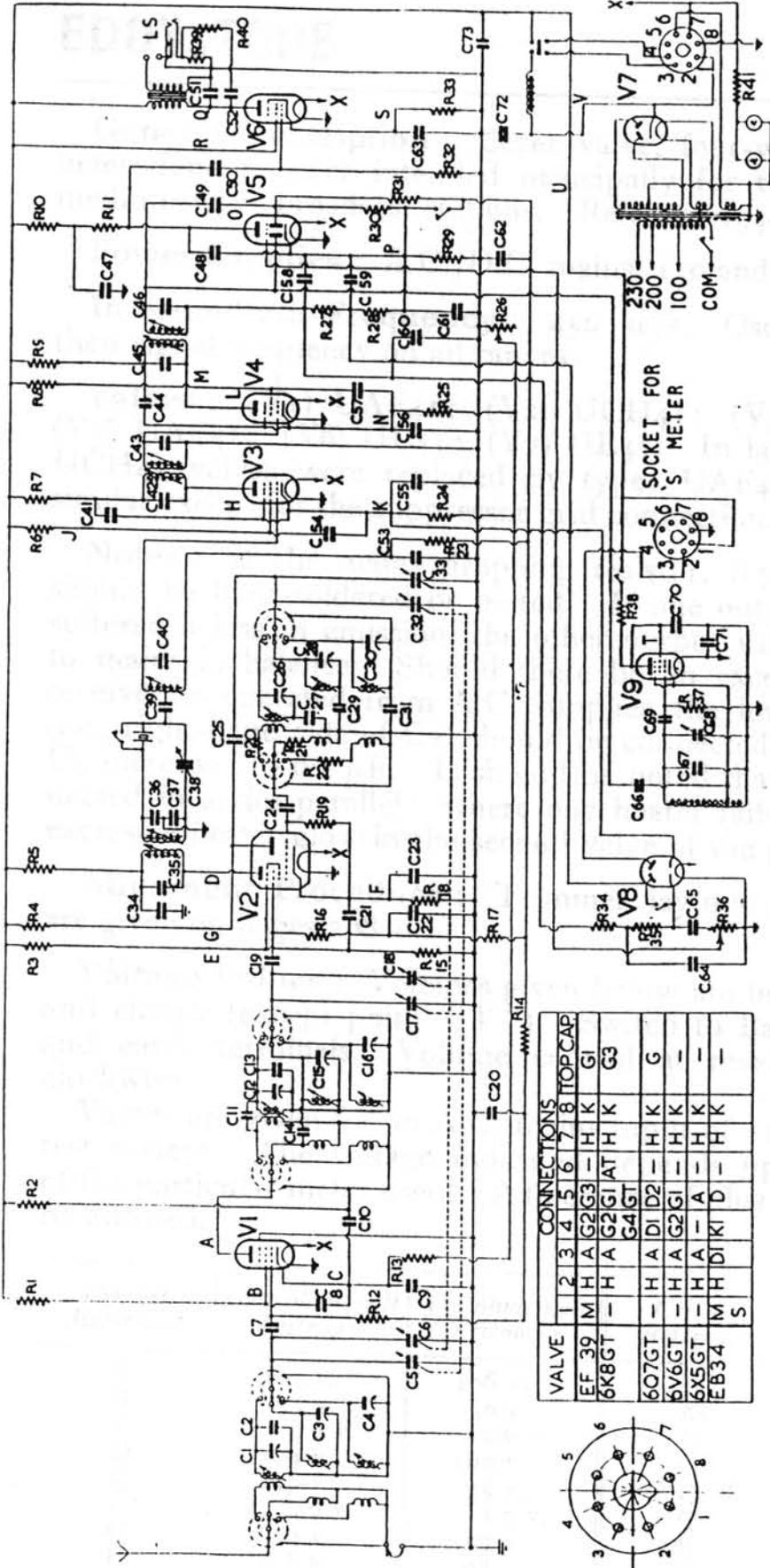
Not shown in the circuit diagram is a 0.0005- μ F. mica capacitor wired across the heater of V2.

Alignment Procedure : Trimmer lay-out and alignment frequencies are given on pages 298-9.

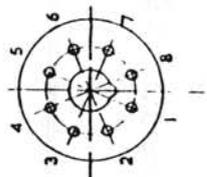
Voltage Values : Voltages given below are between the points indicated and chassis. Receiver at 14 Mc/s. on Range 1, aerial shorted out; R.F. and A.F. gain controls maximum; crystal, noise limiter and B.F.O. off. The voltage indicated depends upon the internal resistance of the particular meter employed. A tolerance of plus or minus 5 per cent should be allowed on the figures given.

<i>Circuit Reference</i>	<i>1000 ohms/volt Testmeter</i>	<i>333 ohms/volt Testmeter</i>	<i>Circuit Reference</i>	<i>1000 ohms/volt Testmeter</i>	<i>333 ohms/volt Testmeter</i>
A	200 v.	190 v.	M	85 v.	70 v.
B	70 v.	60 v.	N	2.2 v.	2.1 v.
C	3.0 v.	2.75 v.	O	75 v.	40 v.
D	225 v.	200 v.	P	1.4 v.	0.8 v.
E	85 v.	85 v.	Q	217 v.	215 v.
F	4.1 v.	3.8 v.	R	225 v.	225 v.
G	75 v.	70 v.	S	10.5 v.	10 v.
H	200 v.	190 v.	T	95 v.	90 v.
J	75 v.	60 v.	U	225 v.	225 v.
K	3.0 v.	2.75 v.	V	250 v.	250 v.
L	200 v.	190 v.			

EDDYSTONE



VALVE	1	2	3	4	5	6	7	8	TOPCAP
EF 39	M	H	A	G2	G1	-	H	K	G1
6K8GT	-	H	A	G2	G1	A	H	K	G3
6O7GT	-	H	A	D1	D2	-	H	K	G
6V6GT	-	H	A	G2	G1	-	H	K	-
6X5GT	-	H	A	-	A	-	H	K	-
EB34	M	H	D1	K1	D	-	H	K	-
	S								



CIRCUIT DIAGRAM—EDDYSTONE MODEL 640

Capacitors.
 3/20 pF. (air)
 3/20 pF. (ceramic)
 3 pF.
 6 pF.
 10 pF.
 20 pF.
 40 pF.
 100 pF.
 200 pF.
 2100 pF.
 950 pF.
 380 pF.
 Bandset capacitor (C5, C17, C32) 12-366.5 pF.
 Bandsread capacitor (C6, C18, C33) 9-46.2 pF.

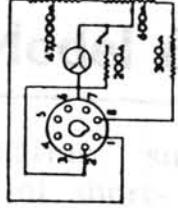
C1, C3, C4, C12, 400 pF.
 C15, C16
 C26, C28, C30
 C66
 C14
 C13
 C2, C20, C39
 C49, C38, C59
 C7, C19, C24,
 C25, C69
 C35, C40, C42,
 C43, C45, C46,
 C67
 C27
 C29
 C31
 C36, C37
 C8, C9
 C20, C21, C22,
 C23, C34, C41,
 C44, C52, C53,
 C54, C55, C56,
 C57, C62, C65,
 C70, C71
 C48, C60
 C51
 C50
 C64
 C47, C72
 C61, C63
 C73
 C38
 C68

Resistors.
 2-6 (wire)
 12
 100
 270
 330
 400
 560 (or 500)
 33k
 47k (or 5000)
 R20
 R21
 R33
 R18, R25
 R13, R24
 R22
 R39
 R2, R5, R7,
 R9, R29
 R3
 R15
 R38
 All 1/2-watt except R3, R4, R15, R33 (1-watt).

27k (or 30k)
 33k
 47k
 100k
 0.27M
 0.47M
 1M
 2.2M
 10k pot.
 0.5M pot.

R4, R10
 R40
 R19, R23, R37
 R1, R6, R8,
 R11, R32
 R12, R14, R16,
 R17, R28, R30,
 R31
 R34
 R35
 R26
 R36

Arbitrary Scale
 (based on 6 db. change per S unit)
 S1 7.5 μA. S6 77 μA.
 S2 16 μA. S7 100 μA.
 S3 27 μA. S8 125.5 μA.
 S4 41 μA. S9 157 μA.
 S5 58.5 μA.



"S" - METER

EDDYSTONE

Model 670

General Description : Seven-valve, four-waveband "marine" super-heterodyne receiver intended principally for the reception of short- and medium-wave broadcast stations. Released 1948.

Power Supplies : A.C./D.C. mains, 110 and 200-250 volts.

Intermediate Frequency : 450 kc/s. Oscillator frequency is higher than signal frequency on all ranges.

Valves : (V₁) UAF₄₁; (V₂) UCH₄₁; (V₃) UAF₄₁; (V₄) UAF₄₁; (V₅) UAF₄₁; (V₆) UL₄₁; (V₇) UL₄₁. In later models the UAF₄₁ and UCH₄₁ valves were replaced by types UAF₄₂ and UCH₄₂, which are similar except for the suppressor grid connection.

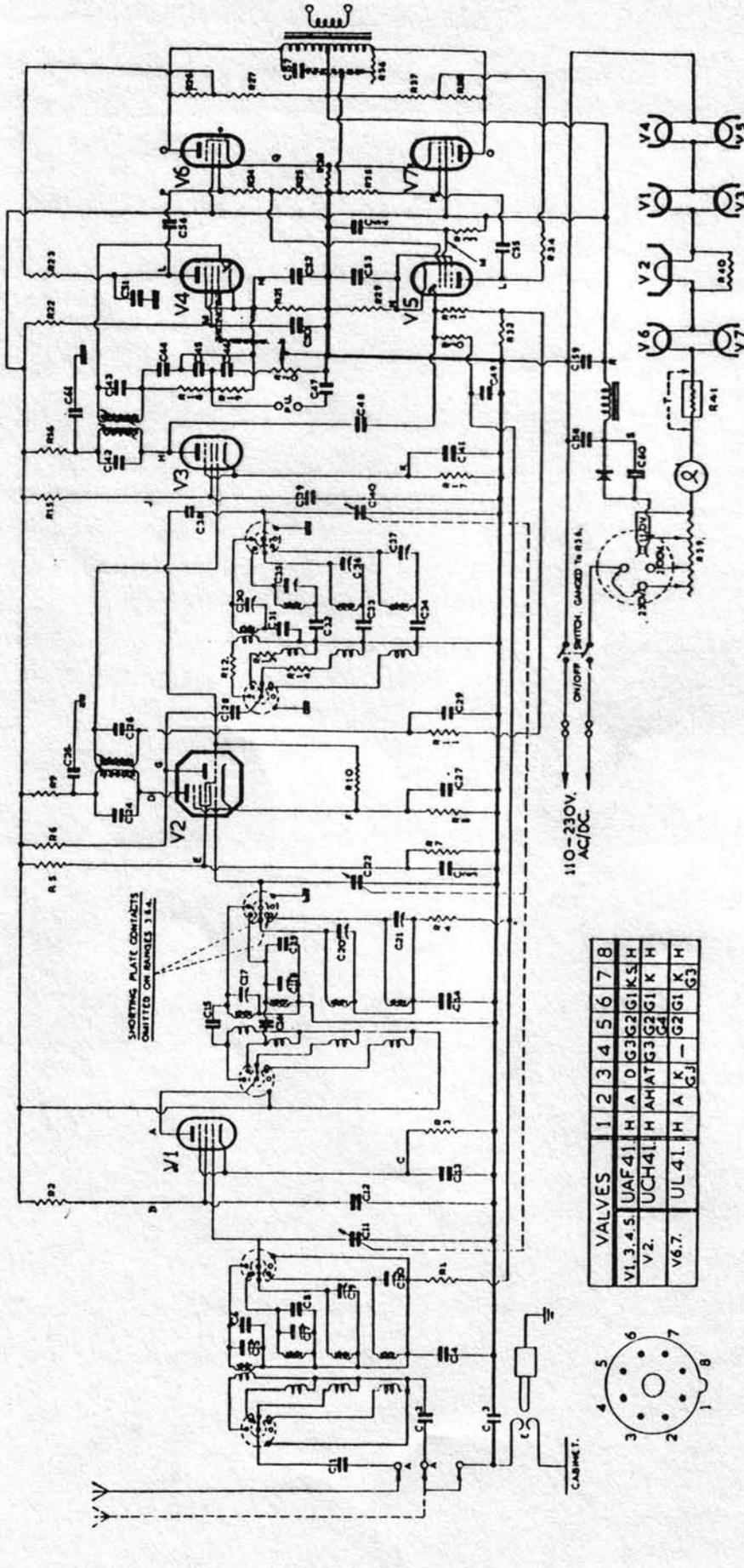
Notes : If the mains dropping resistor, R₃₉, be replaced connections should be hard-soldered or bolted. If one output valve be found to have suffered a loss in emission, the other output valve should also be replaced to maintain balance. Should there be an excessive hum level when the receiver is operated from A.C. supplies, the lower end of the aerial coils (*i.e.*, right-hand side of C₂) should be connected to chassis and the value of C₄ increased to 0.1 μ F. It should be noted that the valve heaters are connected in series-parallel; where one heater fails this may be indicated by excessive heater glow in the second valve of the pair. Fuse rating 500 mA.

Alignment Procedure : Trimmer lay-out and alignment frequencies are given on pages 298-9.

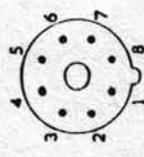
Voltage Values : Voltages given below are between the points indicated and chassis (except point "T"). Switch to Band 4. Short-circuit aerial and earth terminals. Volume control at maximum, tone control fully clockwise.

Values are given for an A.C. mains input of 110 volts using two different test meters. The voltage indicated depends upon the internal resistance of the particular meter used. A tolerance of plus or minus 5 per cent should be allowed.

Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter	Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter
A	105 v.	106 v.	L	15 v.	8 v.
B	55 v.	30 v.	M	10 v.	5 v.
C	0.6 v.	0.6 v.	N	1.1 v.	0.5 v.
D	104 v.	100 v.	O	104 v.	102 v.
E	48 v.	35 v.	P	108 v.	104 v.
F	0.7 v.	1.0 v.	Q	6 v.	5.8 v.
G	70 v.	57 v.	R	108 v.	107 v.
H	106 v.	98 v.	S	118 v.	117 v.
J	55 v.	30 v.	T	14 v.	12 v.
K	0.7 v.	1.0 v.			



VALVES	1	2	3	4	5	6	7	8
V1, 3, 4, 5	UAF41	H	A	D	G3	G2	G1	K, S, H
V2	UCH41	H	AH	AT	G3	G2	G1	K, H
V6, 7	UL41	H	A	K	G1	G2	G1	K, H



CIRCUIT DIAGRAM—EDDYSTONE MODEL 670

- Capacitors.**
- 3/20 pF. (air) C5, C7, C9, C10, C17, C18, C20, C-1
 - 6p F. C16
 - 3.5/20 pF. (ceramic) C30, C35, C36, C37
 - 8 pF. C19
 - 10 pF. C6, C8, C48
 - 20 pF. C15
 - 40 pF. C-1
 - 100 pF. C-1, C-56, C-28, C-38, C-42, C-43, C-44, C-45
 - 280 pF. C34
 - 640 pF. C33
- Resistors.**
- 12 R12
 - 140 R40
 - 47 R13
 - 120 R28
 - 200 R8
 - 330 R3, R17
 - 500 R14
 - 1k R9, R16
 - 2.7k Thermistor. R41
 - R21, R27, R29, R37
 - 1/4-watt, others 1/2-watt. R40
 - 50k Pot. with D.P. switch. R36
- Valves:** V1, V2, V3, V4, V5, V6, V7
- Resistors:** R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41
- Capacitors:** C1, C2, C3, C6, C4, C14, C29, C46, C49, C55, C56, C12, C13, C23, C25, C27, C39, C41, C50, C54, C61, C47, C57, C52, C53, C59, C38
- Other components:** S1 (Speaker), ON/OFF SWITCH, DAMPED 1/2 1/2, 110-230V AC/DC

EDDYSTONE

Model 659

General Description : Eight-valve (including tuning indicator and rectifier), four-waveband short- and medium-wave broadcast receiver. Released 1947.

Power Supplies : A.C. mains, 110 and 200-250 volts. Consumption 45 watts. Model 659/B has an internal vibrator power unit for operation from 6-volt accumulators. Consumption 5.9 amp.

Intermediate Frequency : 450 kc/s. Oscillator frequency is higher than signal frequency on all ranges.

Audio Output : An external high-fidelity loudspeaker is required. Maximum output 3 watts with negative feedback.

Valves : (V1) EF39; (V2) 6K8GT; (V3) EF39; (V4) EBC33; (V5) 6V6GT; (V6) 6X5GT; (V7) EB34; (V8) EM34.

Notes : A noise limiter is included in the circuit, and can be brought into use by means of the small sliding switch at the rear of the cabinet.

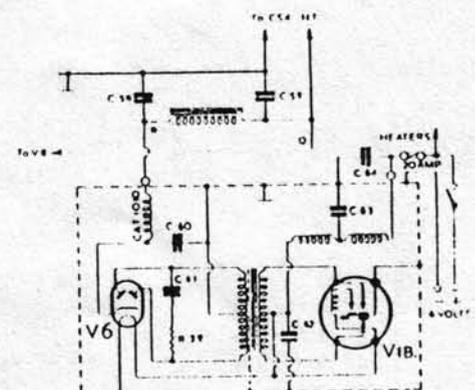
Alignment Procedure : Alignment frequencies are given on page 298. The location of trimmers and cores is the same as for Model 670.

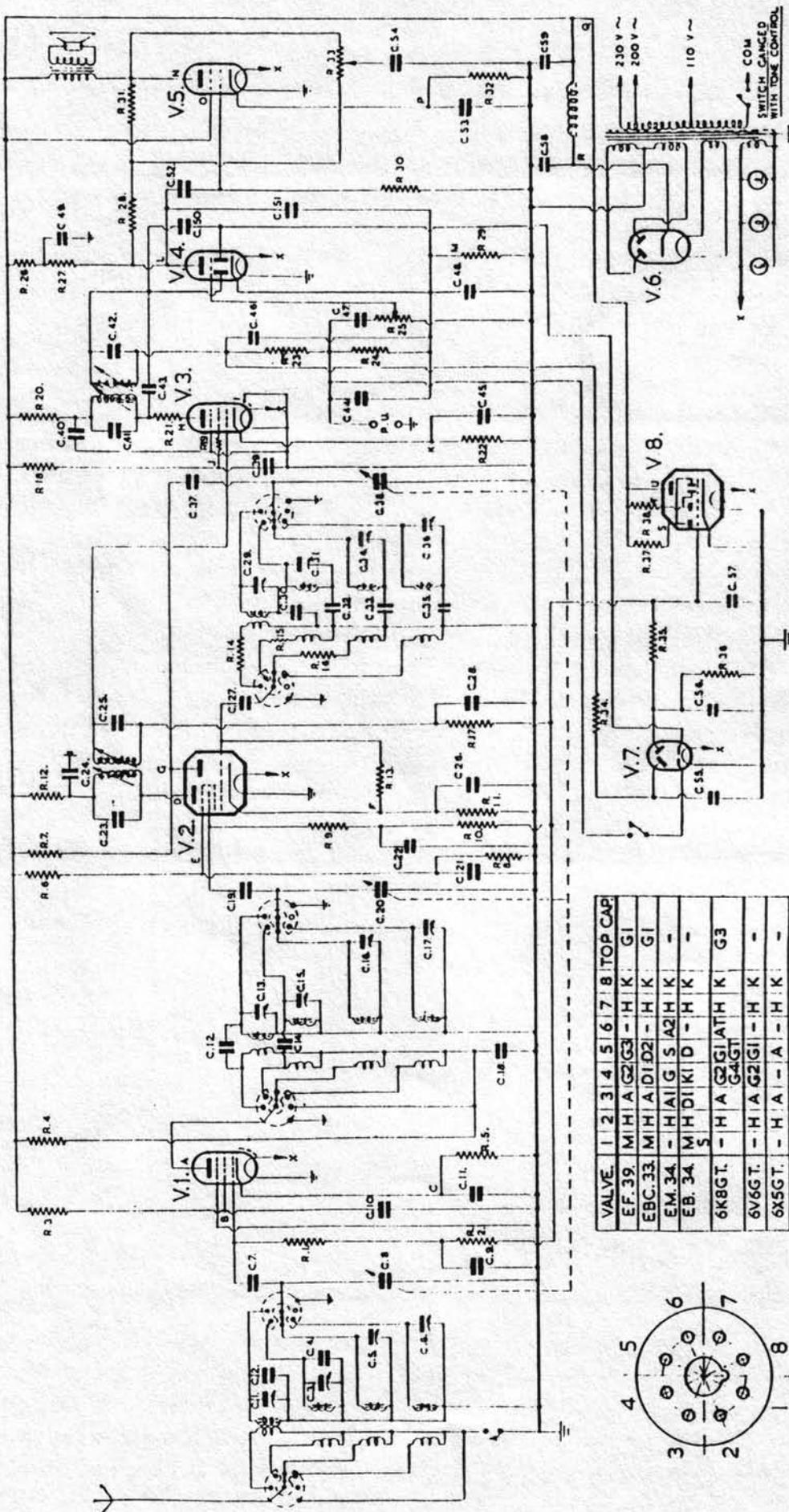
Voltage Values : Voltages given below are between the points indicated and chassis. Receiver at 14 Mc/s. Range 1, aerial shorted out, volume control at maximum, tone control fully clockwise. The voltage indicated depends on the internal resistance of the particular meter employed. A tolerance of plus or minus 5 per cent should be allowed.

Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter	Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter
A	225 v.	215 v.	L	85 v.	60 v.
B	90 v.	70 v.	M	2.7 v.	1.6 v.
C	2.0 v.	1.8 v.	N	245 v.	235 v.
D	240 v.	225 v.	O	250 v.	245 v.
E	100 v.	95 v.	P	12 v.	11.1 v.
F	3.5 v.	3 v.	Q	250 v.	245 v.
G	80 v.	75 v.	R	265 v.	260 v.
H	225 v.	210 v.	S	42 v.	20 v.
J	85 v.	70 v.	T	25 v.	15 v.
K	2.0 v.	1.9 v.	U	250 v.	245 v.

CIRCUIT DIAGRAM OF THE VIBRATOR POWER UNIT IN THE 659/B RECEIVER. OUTPUT IS 190 VOLTS AT 50 MA.

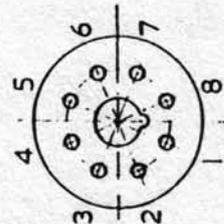
- R39 4700 ohms $\frac{1}{2}$ watt.
 C58, C59 8- μ F. tubular electrolytic 350/500 volt (substitution).
 C60 0.005- μ F. moulded mica.
 C61 0.01- or 0.012- μ F. paper, 1000-volt working.
 C62, C64 0.5- μ F. tubular paper.
 C63 0.005- μ F. moulded mica.
 Vibrator Unit, type NS 6 (Wearite).





CIRCUIT DIAGRAM—EDDYSTONE MODEL 659

VALVE	1	2	3	4	5	6	7	8	TOP CAP		
EF.39	M	H	A	G	2	G	-	H	K	G	
EBC.33	M	H	A	D	I	D	2	-	H	K	G
EM.34	-	H	A	I	G	S	A	2	H	K	-
EB.34	M	H	D	I	K	I	D	-	H	K	-
6K8GT.	-	H	A	G	2	G	I	A	H	K	G
6V6GT.	-	H	A	G	2	G	I	-	H	K	-
6X5GT.	-	H	A	-	A	-	-	H	K	-	-



- Capacitors.**
 3/20 pF. (air) C1, C3, C5, C6, C13, C15, C16, C17
 3.20 pF. (ceramic) C29, C31, C34, C36
 2 pF. C43
 6 pF. C14
 10 pF. C2, C4
 20 pF. C12, C19, C23, C25, C7, C19, C23, C41, C42, C27, C37, C41, C42, C44, C46
 100 pF. C12, C19, C23, C25, C7, C19, C23, C41, C42, C44, C46
 280 pF. C35
 640 pF. C33
 2000 pF. C38
- Resistors.**
 12 R14
 47 R15
 22 R21
 270 R32
 330 R5
 500 R16
 3.3k R29
 4.7k R4, R12, R20
 15k R6
 22k R8, R23
 27k R7, R26
 47k R13
 0.1M R3, R18, R24, R31
 0.27M R27, R28
 0.47M R1, R2, R9, R10, R17, R30, R34, R35, R36
 1M R37, R38
- All 1/2-watt except R7, R8, R32 (1-watt).
 Potentiometers: R25, 0.5M; R33 50k.
- C8, C20, C38 Three-gang capacitor 11.5-210 pF. per section.

EDDYSTONE**Model 740**

General Description : Eight-valve (including rectifier), four-waveband communications receiver with noise limiter. Released 1950.

Power Supplies : A.C. mains, 110 and 200-250 volts. Consumption 45 watts. A socket is provided for vibrator power unit.

Intermediate Frequency : 450 kc/s. Oscillator frequency is higher than signal frequency on all ranges.

Valves : (V1) EAF42; (V2) ECH42; (V3) EAF42; (V4) EAF42; (V5) EL42; (V6) EAF42 (B.F.O.); (V7) EB41 (noise limiter); (V8) EZ40.

Notes : Input impedance (aerial terminals) 400 ohms nominal. The standby switch desensitises the receiver without breaking the H.T. supply. Undistorted audio output 1.2 watts, maximum output 3 watts. A separate loudspeaker is required, impedance 2.5 ohms. The R.F. gain control affects the R.F. and I.F. amplification. Switching on the B.F.O. automatically cuts out A.V.C. action.

Alignment Procedure : Alignment frequencies are given on page 298. The location of trimmers and cores is the same as for Model 670.

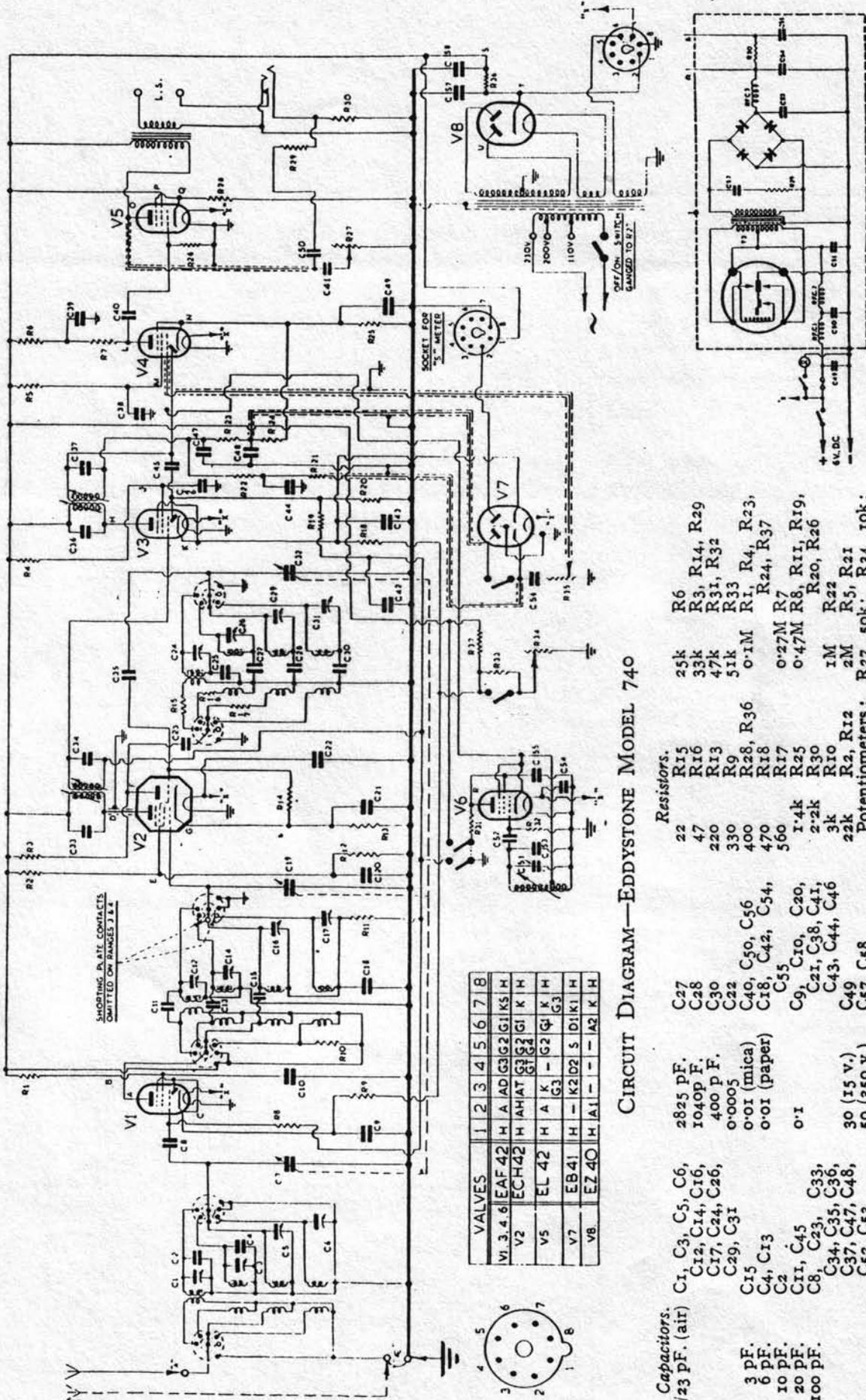
Voltage Values : Voltages given below are between the points indicated and chassis. Receiver at 28 Mc/s., on Range 1. Aerial shorted out; tone, R.F. and A.F. gain controls fully clockwise. The voltage indicated depends on the internal resistance of the meter employed. A tolerance of plus or minus 5 per cent should be allowed. Total H.T. current 57 mA.

Note : When checking Point R, "A.V.C." Switch must be set to "B.F.O."

<i>Circuit Reference</i>	<i>1000 ohms/volt Testmeter</i>	<i>333 ohms/volt Testmeter</i>	<i>Circuit Reference</i>	<i>1000 ohms/volt Testmeter</i>	<i>333 ohms/volt Testmeter</i>
A	240.0 v.	240.0 v.	L	35.0 v.	32.0 v.
B	83.0 v.	70.0 v.	M	18.0 v.	15.0 v.
C	2.0 v.	2.0 v.	N	0.9 v.	0.7 v.
D	240.0 v.	238.0 v.	O	235.0 v.	233.0 v.
E	92.0 v.	84.0 v.	P	240.0 v.	240.0 v.
F	93.0 v.	77.0 v.	Q	10.5 v.	10.5 v.
G	2.0 v.	2.0 v.	R	80.0 v.	75.0 v.
H	240.0 v.	238.0 v.	S	240.0 v.	240.0 v.
J	87.0 v.	72.0 v.	T	260.0 v.	260.0 v.
K	2.5 v.	2.4 v.	U	250.0 v. (A.C.)	250.0 v. (A.C.)

EDDYSTONE "ALL WORLD SIX" Model 710/B

General Description : Model 710/B is a battery-operated receiver intended principally for the reception of short- and medium-wave broadcast stations. The circuit is generally similar to that of the 740 except that the B.F.O. and noise limiter valves are omitted while the output stage consists of two EL42 valves in a push-pull circuit, the two grids being fed from a centre tapped audio transformer, parallel fed from the anode of V4.



CIRCUIT DIAGRAM—EDDYSTONE MODEL 740

	1	2	3	4	5	6	7	8
V1	3	4	6	EAF	42	H	A	AD
V2	3	4	6	ECH	42	H	AH	AT
V5	EL	42	H	A	K	-	G2	Φ
V7	EB	41	H	-	K2	D2	S	DI
V8	EZ	40	H	A1	-	-	A2	K

Capacitors.

- C1, C3, C5, C6, C12, C14, C16, C17, C24, C26, C29, C31
 - C15
 - C4, C13
 - C2
 - C11, C45
 - C8, C23, C33, C34, C35, C36, C37, C47, C48, C52, C53
 - C25
 - C7, C19, C32
 - C51.
- 3/23 pF. (air)
- 3 pF.
- 6 pF.
- 10 pF.
- 20 pF.
- 100 pF.
- 3625 pF.
- Three-gang capacitor 11.5-366 pF. per section.
- B.F.O. pitch

Resistors.

- R6
 - R15
 - R16
 - R13
 - R9
 - R28, R36
 - R18
 - R17
 - R25
 - R30
 - R10
 - R2, R12
 - R35
- 25k
- 33k
- 47k
- 51k
- 0.1M
- 0.27M
- 0.47M
- 1M
- 2M
- Potentiometers: R27 50k; R34 10k; R35 0.5M.

VIBRATOR POWER UNIT—MODEL 710/B

EDDYSTONE

Model 750

General Description : Eleven-valve (including rectifier and voltage stabiliser), four-waveband, double-conversion superheterodyne communications receiver. Released 1950.

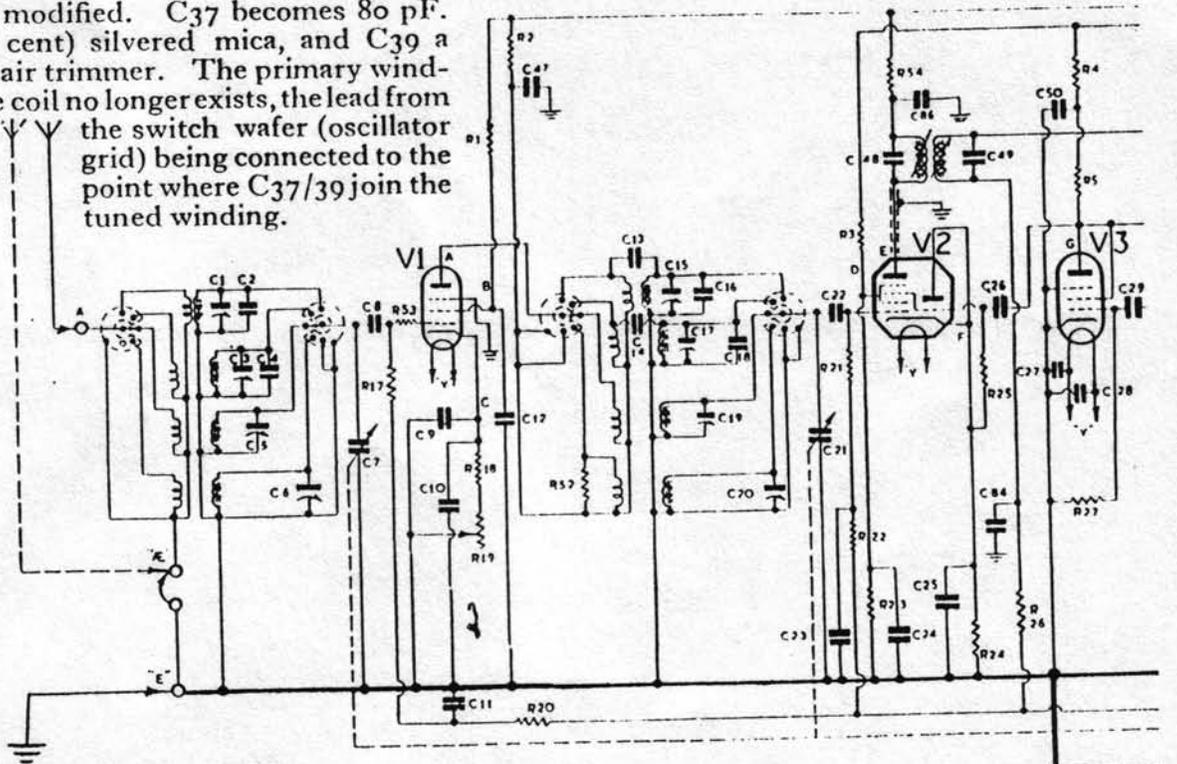
Power Supplies : A.C. mains, 110 and 200-250 volts.

Intermediate Frequencies : First I.F. 1620 kc/s. Second I.F. 85 kc/s. First oscillator frequency is higher than signal frequency on all ranges; second oscillator frequency is fixed (1535 kc/s.).

Valves : (V1) 6BA6; (V2) ECH42; (V3) 6AM6 (8D3) or Z77; (V4) ECH42; (V5) 6BA6; (V6) DH77 or 6AT6; (V7) D77 or 6AL5; (V8) N78; (V9) 6BA6 (B.F.O.); (V10) 5Z4G; (V11) VR150/30. All heater circuits are balanced to earth with a separate winding to supply V7.

Notes : Input impedance 400 ohms (average). Output impedances, 2.5 ohms (rear terminals) and 4000 ohms (telephone jack). Separate R.F., I.F. and A.F. gain controls are fitted. Delayed A.V.C.

On later models, the range 4 oscillator circuit is modified. C37 becomes 80 pF. (± 5 per cent) silvered mica, and C39 a 3-23 pF. air trimmer. The primary winding on the coil no longer exists, the lead from the switch wafer (oscillator grid) being connected to the point where C37/39 join the tuned winding.



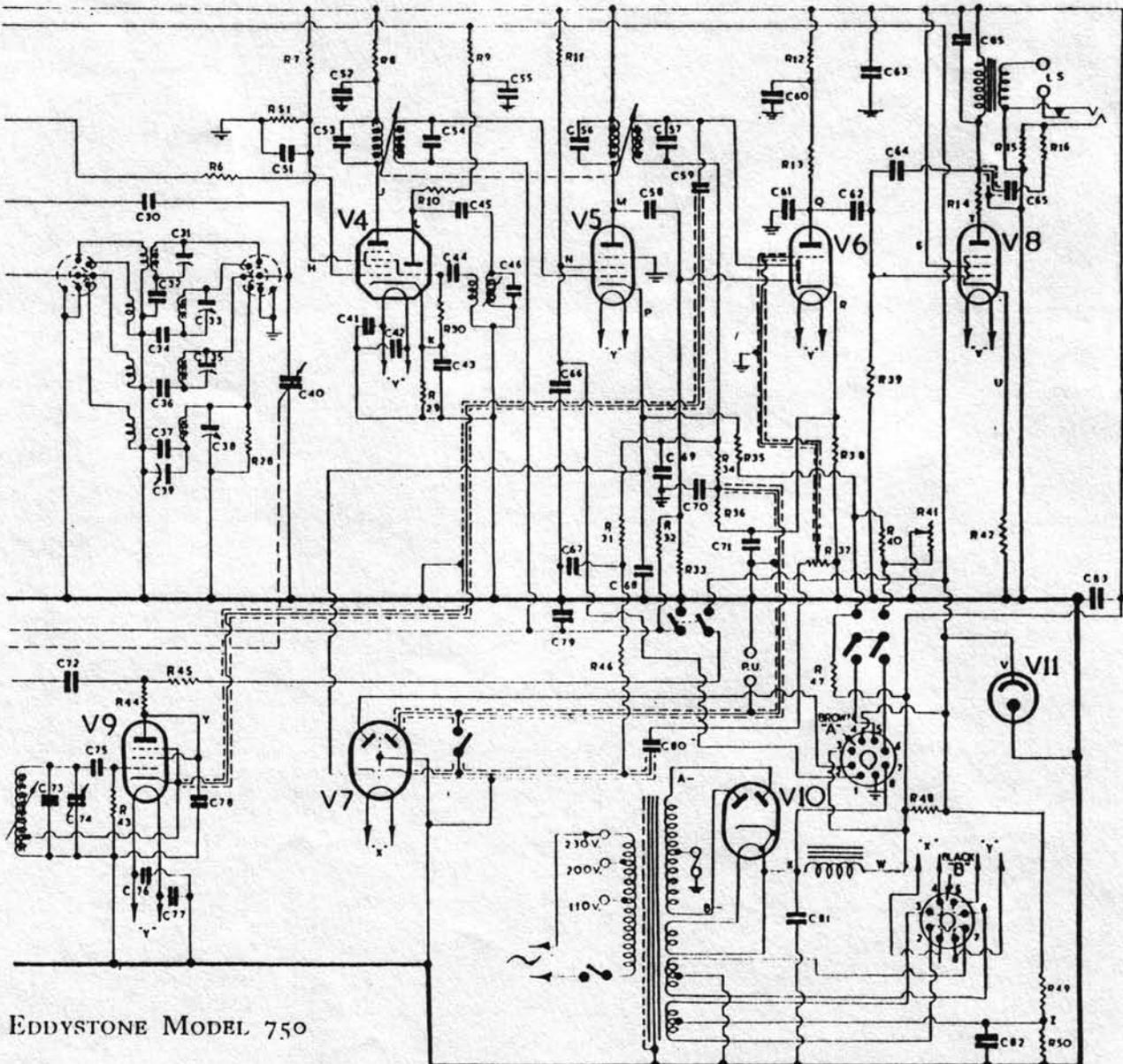
VALVE	V. No	PIN CONNECTIONS.								SERIES.
		1	2	3	4	5	6	7	8	
6 BA6	vi.59.	G1	G3	H	H	A	G2	K	-	B7G.
8D3	v3.	G1	K	H	H	A	G3	G2	-	B7G.
ECH42	v2.4.	H	A	A	T	G3	G2	G1	K	H
5Z4G	v10.	-	H	-	A2	-	A1	-	K	OCTAL.
VR150/30	v11.	-	K	-	-	A	-	-	-	OCTAL.
D77	v7.	K1	O2	H	H	K2	S	D1	-	B7G.
DH77	v6.	G1	K	H	H	D1	D2	A	-	B7G.
N78	v8.	G1	K	H	H	A	-	G2	-	B7G.

CIRCUIT DIAGRAM

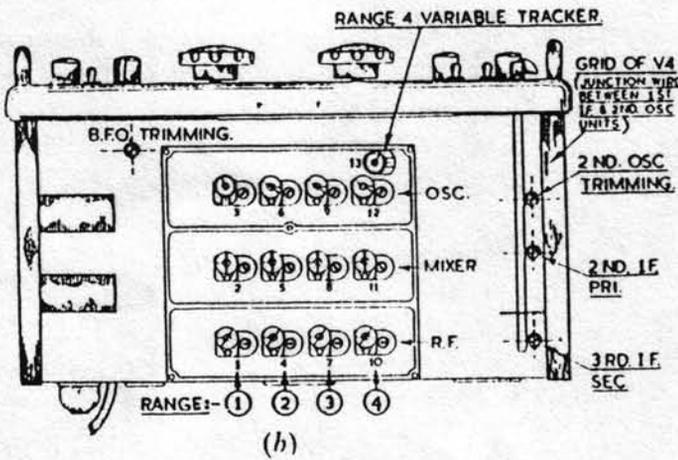
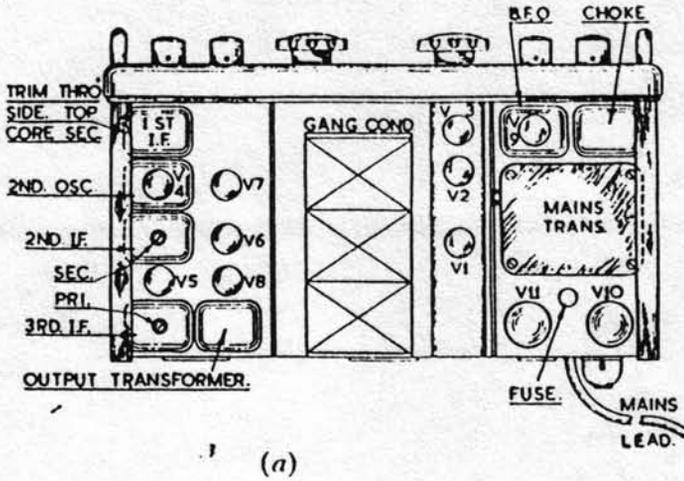
Component Values :

Capacitors.	
3/23 pF. (air)	C1, C3, C5, C6, C15, C17, C19, C20, C33, C35, C38
3/20 pF. (ceramic)	C31
6 pF.	C4, C14, C18, C64
10 pF.	C26
20 pF.	C2, C13, C16, C58, C59
15/45 pF.	C39
50 pF.	C29
100 pF.	C8, C22, C37, C44, C45, C69, C70, C75
200 pF. (2%)	C30, C46, C48, C49
2100 pF.	C32 (1%)
900 pF.	C34 (1%)
385 pF.	C36 (1%)
400 pF.	C73 (2%)
0.0005	C27, C28, C61
0.01 (mica)	C62, C63, C65, C80
0.01 (paper)	C10, C11, C23, C41, C42, C43, C72, C76, C77, C78, C84, C86
0.1	C9, C12, C24, C25, C47, C50, C51, C52, C55, C66, C67, C68, C79
800 pF. (2%)	C53, C54, C56, C57
8 (350 v.)	C60
30 (15 v.)	C71, C82
50 (450 v.)	C81, C83
C7, C21, C40	10-386-pF. gang capacitor.
C74	B.F.O. Pitch capacitor. C85 omitted.

Resistors.	
12	R6, R53
47	R14
68	R18, R35
150	R42
220	R29
330	R24
1k	R2, R4, R8, R9, R15, R45
1.4k	R54
2.7k	R48
3k	R38
3.9k	R52
6.8k	R50
100k	R3, R5, R10, R28
15k	R23
22k	R72
27k	R7, R12, R51
33k	R1, R11, R16
47k	R30, R43, R44
51k	R40
0.1M	R25, R34, R36, R47, R49
0.27M	R13
0.47M	R17, R20, R21, R22, R26, R32, R33, R39
1M	R31
2M	R46
1/4-watt except R1, R7, R11, R23, R51 (1-watt) and R48 (3-watt 5% w.w.).	
Potentiometers: R19, R41 10k; R37 0.5M.	



EDDYSTONE MODEL 750



CHASSIS LAY-OUT—EDDYSTONE MODEL 750
 (a) Above chassis view. (b) Under chassis view.

Later models include a 100,000-ohm resistor from the H.T. line to the junction of R18 and R19 in order to provide improved control of R.F. gain.

Alignment Notes : *Double conversion I.F.:* An 85-kc/s. modulated signal is applied between grid of V4 and chassis while second and third I.F. transformers are adjusted to maximum response. The signal frequency is then changed to 1620 kc/s. and the second oscillator adjusted for maximum output by means of the variable core located in the V4 screening can; two responses may be found, that with core further in (lower frequency) is correct. The signal generator leads are then transferred to the stator of centre section of the gang tuning capacitor and chassis and the first I.F. transformer cores peaked for maximum response. R.F. circuits are adjusted as for single-conversion receivers. Dial cali-

brations should be checked with the aid of a crystal oscillator. Alignment frequencies are given on page 298.

Voltage Values : Voltages given below are between the points indicated and chassis. Receiver at 28 Mc/s., Range 1, aerial terminals short-circuited, I.F. and R.F. controls at maximum. A.F. gain control at minimum, B.F.O. on. The voltage indicated depends on the internal resistance of the meter employed. A tolerance of plus or minus 5 per cent should be allowed. Total H.T. current 96 mA.

Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter	Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter
A	225 v.	225 v.	P	0.9 v.	0.9 v.
B	98 v.	90 v.	Q	65 v.	13 v.
C	1.0 v.	0.95 v.	R	1.0 v.	0.7 v.
D	82 v.	80 v.	S	235 v.	235 v.
E	235 v.	236 v.	T	227 v.	225 v.
F	1.6 v.	1.5 v.	U	4.2 v.	4.1 v.
G	98 v.	73 v.	V	150 v.	150 v.
H	78 v.	75 v.	W	235 v.	235 v.
J	232 v.	230 v.	X	275 v.	272 v.
K	1.4 v.	1.2 v.	Y	75 v.	70 v.
L	85 v.	80 v.	Z	2.0 v.	0.9 v.
M	235 v.	235 v.	A-	250 v. (A.C.)	250 v. (A.C.)
N	85 v.	80 v.	B-	250 v. (A.C.)	250 v. (A.C.)

EDDYSTONE

Models 680, 680X

General Description : Fifteen-valve (including rectifier and voltage stabiliser), five-waveband communications receiver with two stages of R.F. amplification, crystal filter, "S"-meter and noise limiter. Released 1949.

Power Supplies : A.C. mains, 110 and 200-250 volts.

Intermediate Frequency : 450 kc/s. ± 1 kc/s. I.F. circuits should be peaked to exact frequency of crystal. The I.F. transformer cores, however, are sealed, and should not be disturbed unless there is good reason to believe that they require re-alignment.

Valves : (V1) 6BA6; (V2) 6BA6; (V3) 7S7, X81M or 6BE6; (V4) 8D3 (local oscillator); V5) 6BA6; (V6) 6BA6; (V7) 6AL5 or D77; (V8) 6AU6; (V9) 6AU6; (V10) 7D9; (V11) 7D9; (V12) 6BA6 (B.F.O.); (V13) 6AL5 or D77 (noise limiter); (V14) 5Z4G; (V15) VR150/30 (voltage stabiliser). Type 8D3 (V4) is now re-classified as type 6AM6, occasionally type Z77 is used in this position. Type 6BR7 (8D5) replaces type 6AU6 in the 1952 model, known as the 680X.

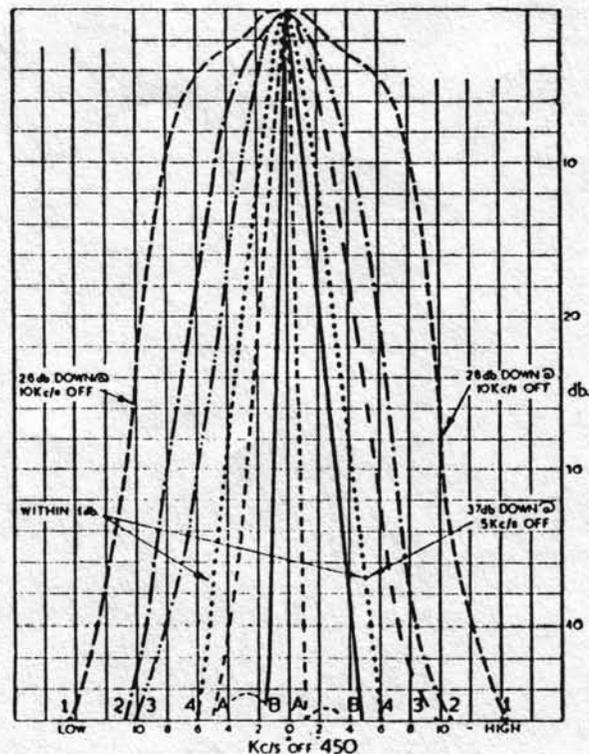
Modifications : Minor modifications may be found in later models, particularly in arrangement adopted for gain compensation with varying selectivity. Circuit Diagrams for the 680 and 680X are given.

Notes : Aerial input impedance 400 ohms (nominal). Output impedance 2.5 ohms. The pre-set controls at the back of the cabinet are for "S"-meter zero adjustment and for dial-illumination control (R61). The heater circuits are balanced to earth, the noise-limiter valve being supplied by a separate winding on the mains transformer. Fuse rating 1 amp.

Alignment Procedure : Trimmer lay-out and alignment frequencies are given on pages 298-9. Alignment of the I.F. stages should be made with the selectivity control in the position of maximum selectivity (curve 4 in the accompanying illustration). Alignment of the R.F. circuits follows normal procedure: the oscillator circuits are first adjusted to correct any calibration errors, then the F.C., second R.F. and first R.F. stages (in that order) are aligned for maximum response.

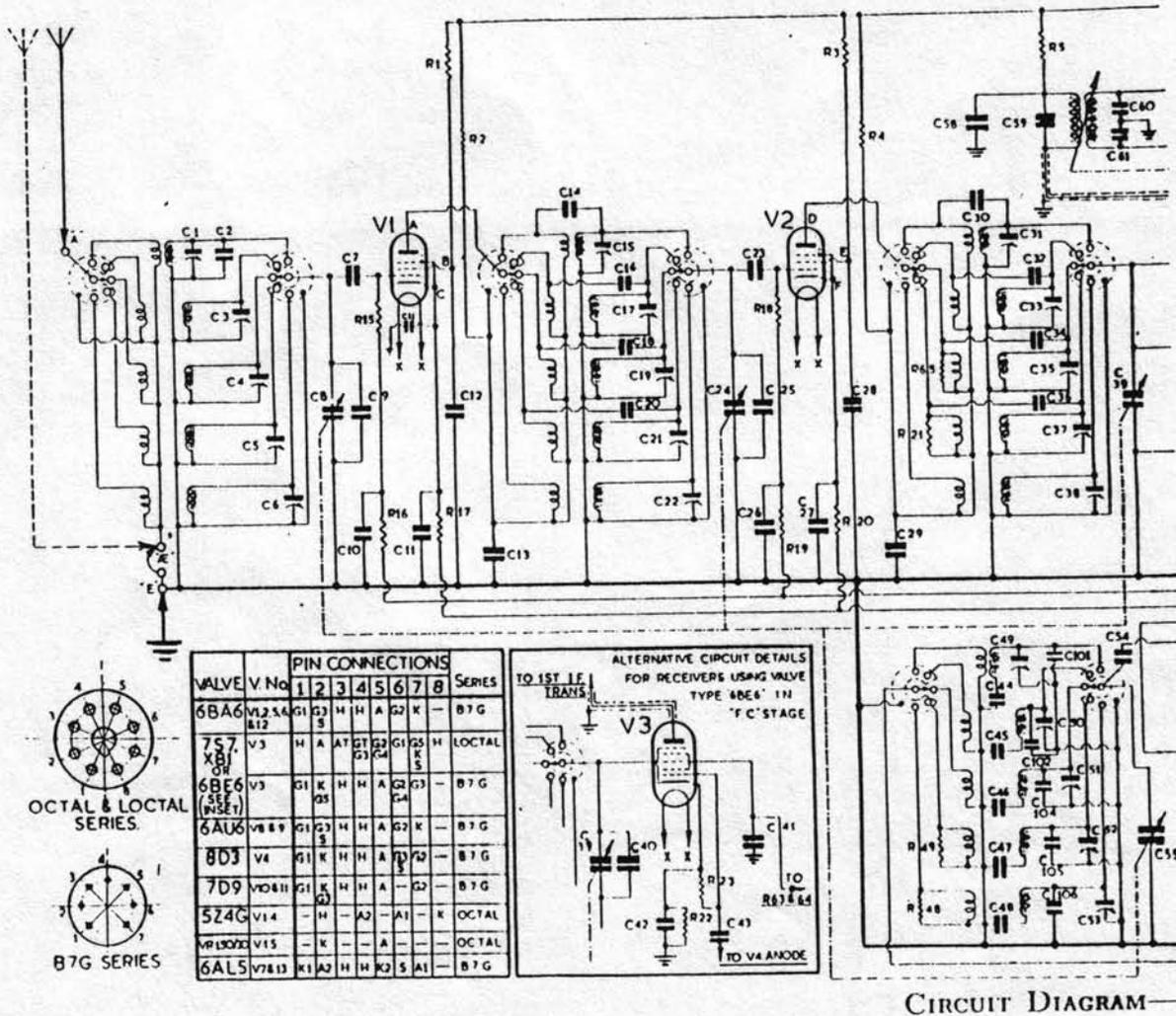
SELECTIVITY CURVES FOR THE "680" RECEIVER

- (1) ----- minimum position.
 (2) ----- first intermediate position.
 (3) ----- second intermediate position.
 (4) ----- maximum selectivity.
 (A) ----- maximum selectivity, with crystal filter in, and phased to reject signal on one side.
 (B) ----- as "A", but with crystal phased on other side.



Voltage Values : Voltages given below are between the points indicated and chassis. Voltage indicated depends on the internal resistance of the particular meter employed. A tolerance of plus or minus 10 per cent should be allowed. Total H.T. current 115 mA.

Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter	Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter
A	218 v.	210 v.	Q	1.0 v.	1.0 v.
B	90 v.	82 v.	R	10.2 v.	9.5 v.
C	0.8 v.	0.8 v.	S	60 v.	35 v.
D	210 v.	208 v.	T	40 v.	30 v.
E	90 v.	85 v.	U	0.9 v.	0.7 v.
F	1.2 v.	1 v.	V	62 v.	38 v.
G	218 v.	215 v.	W	0.9 v.	0.7 v.
H	104 v.	100 v.	X	220 v.	220 v.
J	1.3 v.	1.3 v.	Y	222 v.	222 v.
K	104 v.	100 v.	Z	10.2 v.	9.5 v.
L	212 v.	210 v.	A-	85 v.	80 v.
M	90 v.	82 v.	B-	150 v.	150 v.
N	1.0 v.	0.9 v.	C-	260 v.	260 v.
O	200 v.	200 v.	D-	250 v. (A.C.)	250 v. (A.C.)
P	90 v.	82 v.	E-	150 v.	150 v.



CIRCUIT DIAGRAM—

Capacitors.
3/20 pF. (air)

- 3 pF.
- 6 pF.
- 8 pF.
- 10 pF.
- 20 pF.
- 25 pF.
- 50 pF.
- 100 pF.
- 200 pF.
- 2400 pF.
- 2500 pF.
- 1625 pF.
- 900 pF.
- 400 pF.
- 500 pF.
- 800 pF.
- 0.0005 (mica)
- 0.002 (mica)
- 0.01 (mica)
- 0.01 (paper)
- 0.1
- 8 (350 v.)
- 25 (25 v.)
- 4 (350 v.)
- 16 (450 v.)
- 40 (350 v.)

- C1, C3, C4, C5, C6, C15, C17, C19, C21, C22, C31, C33, C35, C37, C38, C49, C50, C51, C52, C53
- C18, C20, C34, C36
- C16, C32, C89
- C72
- C2, C43, C104, C105, C106
- C14, C30, C63
- C9, C25, C40
- C5 6
- C7, C23, C82, C83, C90, C92, C103
- C54
- C44
- C45
- C46
- C47
- C48, C59, C65, C67, C70, C71
- C64
- C60, C61
- C96, C97, C107
- C73
- C75, C86, C88, C98
- C11,* C26, C68, C76, C84, C93, C99, C100
- C10, C11,* C12, C13, C27, C28, C29, C41, C42, C57, C58, C66, C69, C77, C79, C80, C81
- C74
- C87
- C85
- C94
- C95

C59, C60, C61, C64, C65, C67, C70, C71, C72 ± 2% tolerance.
C9, C25, C40 ± 5% tolerance.

Resistors.

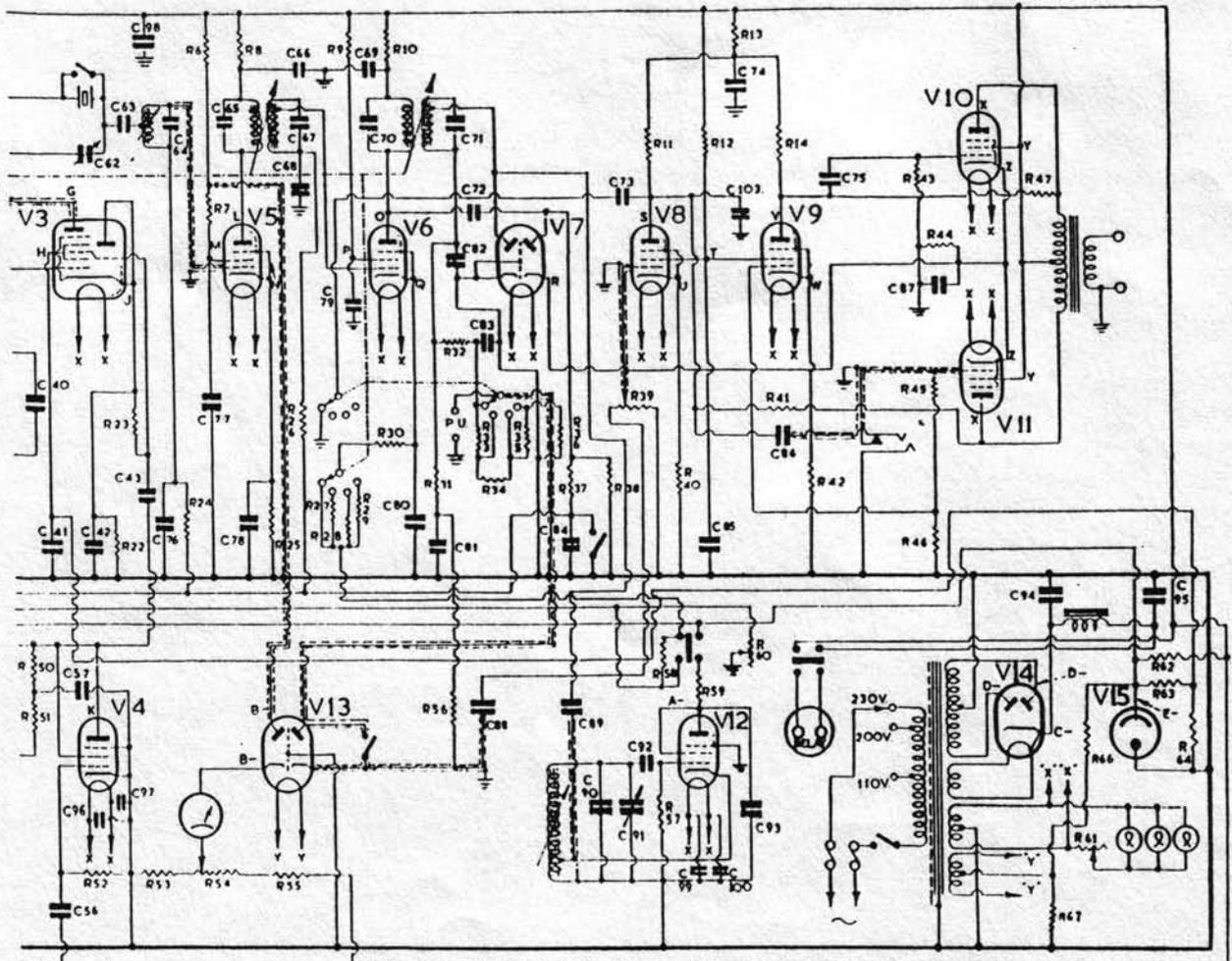
- 68
- 150
- 200
- 560
- 620
- 750
- 1k
- 1.5k
- 2.2k
- 2.7k
- 4.7k
- 6.8k
- 7.5k
- 8.2k
- 10k
- 12.5k
- 13k
- 15k
- 22k
- 27k
- 33k
- 47k
- 0.1M
- 0.18M
- 0.47M
- 1M
- 2.2M
- 3M
- R17, R20, R25, R30
- R21
- R22
- R40, R42, R58
- R44
- R27
- R2, R4, R5, R8, R51
- R65
- R48, R49
- R10, R62
- R28, R63
- R67
- R35, R46
- R29
- R13, R50, R59
- R55*
- R36
- R6, R7, R64
- R34, R52
- R53
- R1, R3, R9
- R33, R57
- R11, R14, R23, R32, R66
- R12
- R15, R16, R18, R19, R24, R26, R37, R43, R45
- R31, R38
- R56
- R41, R47

R1, R3, R9, R53, R64 1-watt. R62 5-watt. Remainder 1/2-watt.

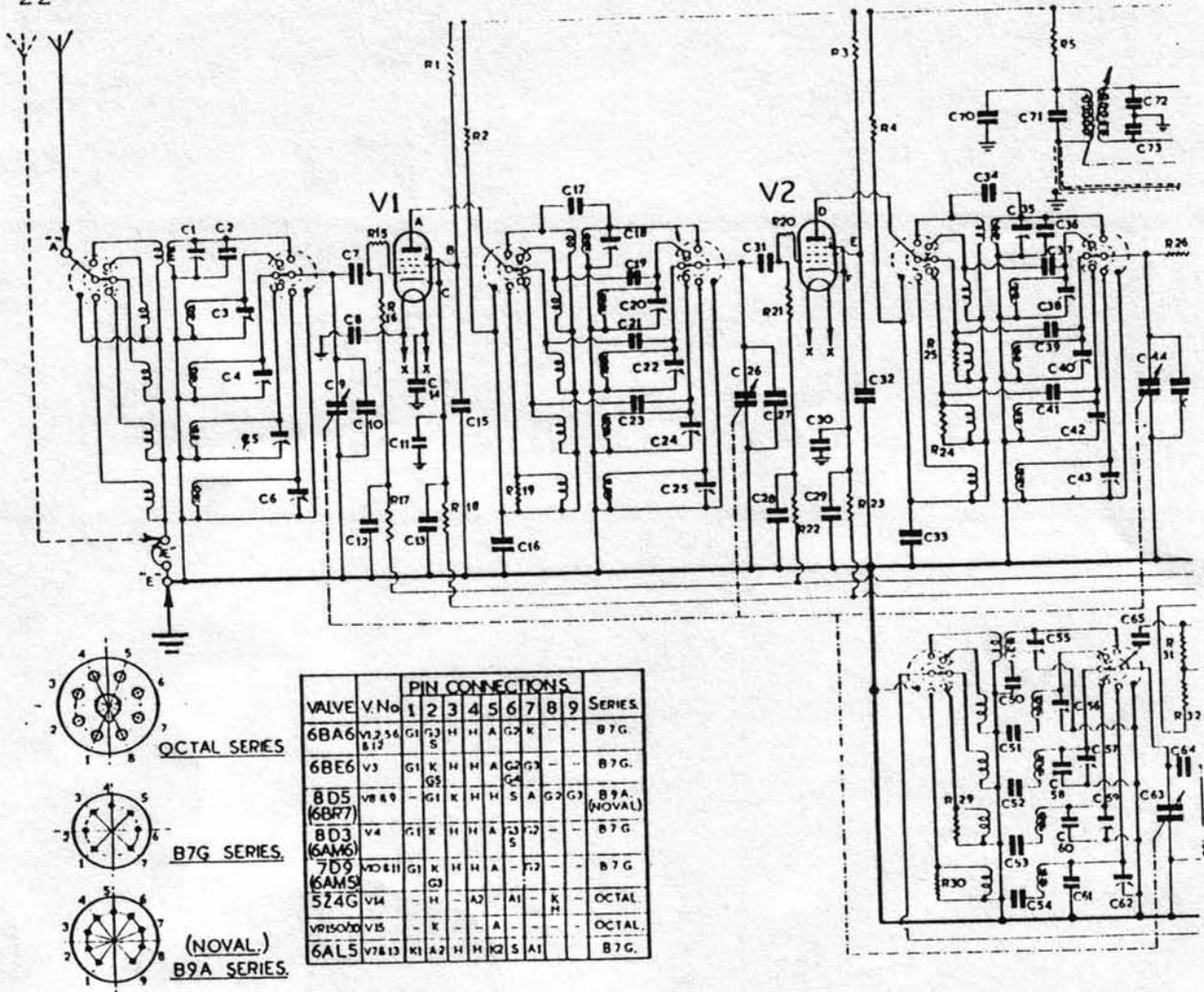
Potentiometers: R60 10,000 ohms; R61 5 ohms; R39 0.5M; R54 5,000 ohms.

* One each, 0.01 and 0.1 in parallel.

* Two 25,000-ohm resistors in parallel.



EDDYSTONE MODEL 680



CIRCUIT DIAGRAM—

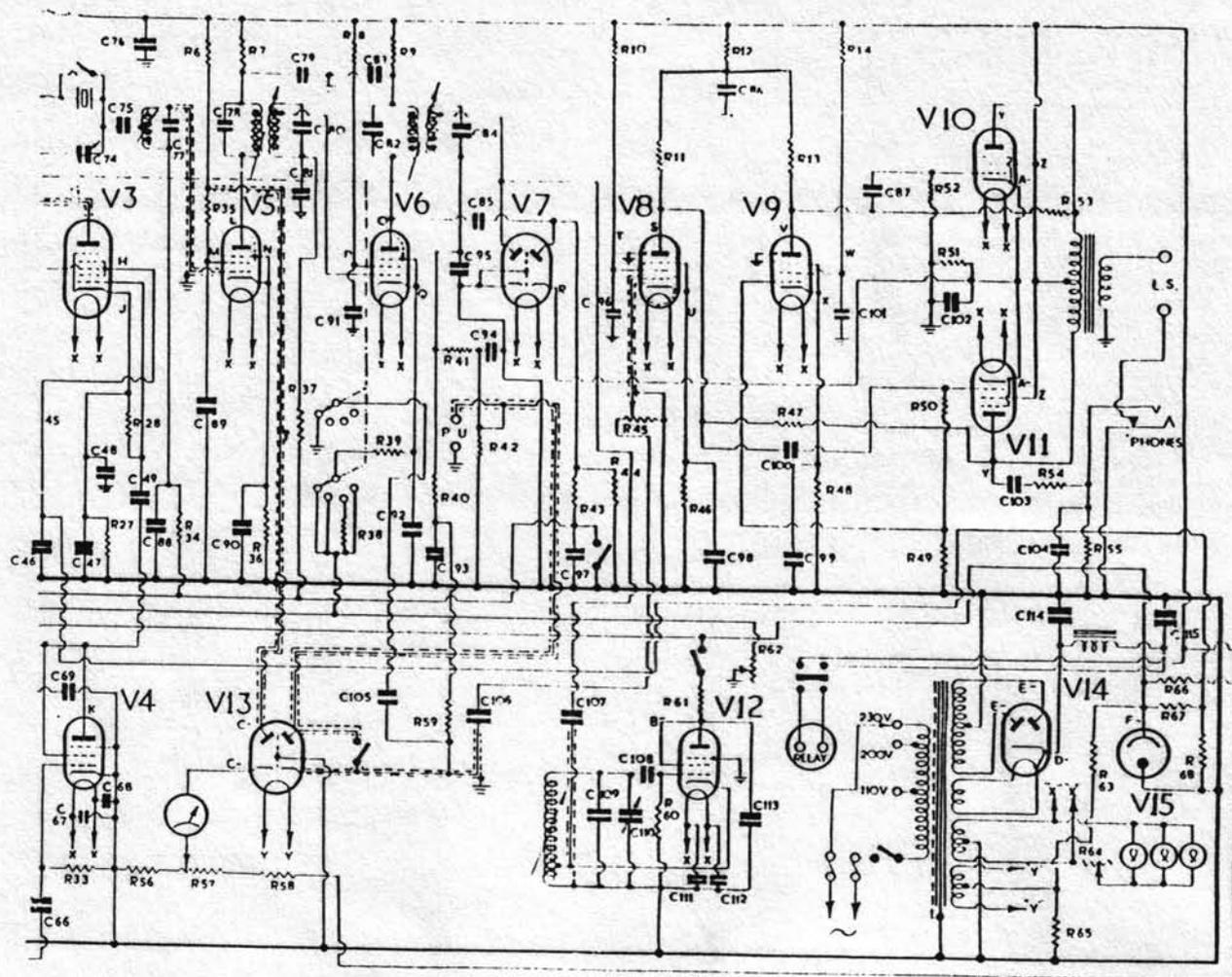
Capacitors.

- C1 3-23 pF.
- C2 10 pF.
- C3 3-23 pF.
- C4 3-23 pF.
- C5 3-23 pF.
- C6 3-23 pF.
- C7 100 pF.
- C8 0.0005
- C9 10-367.75 pF.
- C10 25 pF.
- C11 0.01
- C12 0.01
- C13 0.1
- C14 0.0005
- C15 0.1
- C16 0.1
- C17 20 pF.
- C18 3-23 pF.
- C19 6 pF.
- C20 3-23 pF.
- C21 3 pF.
- C22 3-23 pF.
- C23 3 pF.
- C24 3-23 pF.
- C25 3-23 pF.
- C26 10-367.75 pF.
- C27 25 pF.
- C28 0.01
- C29 0.1

- C30 0.01
- C31 100 pF.
- C32 0.1
- C33 0.1
- C34 20 pF.
- C35 3-23 pF.
- C36 3 pF.
- C37 6 pF.
- C38 3-23 pF.
- C39 3 pF.
- C40 3-23 pF.
- C41 3 pF.
- C42 3-23 pF.
- C43 3-23 pF.
- C44 10-367.75 pF.
- C45 25 pF.
- C46 0.1
- C47 0.1
- C48 0.01
- C49 10 pF.
- C50 7000 pF.
- C51 3625 pF.
- C52 1625 pF.
- C53 900 pF.
- C54 440 pF.
- C55 3-23 pF.
- C56 3-23 pF.
- C57 3-23 pF.
- C58 10 pF.

- C59 3-23 pF.
- C60 20 pF.
- C61 20 pF.
- C62 3-23 pF.
- C63 10-367.75 pF.
- C64 12 pF.
- C65 200 pF.
- C66 50 pF.
- C67 0.0005
- C68 0.0005
- C69 0.1
- C70 0.1
- C71 400 pF.
- C72 800 pF.
- C73 800 pF.
- C74
- C75 20 pF.
- C76 0.01
- C77 500 pF.
- C78 400 pF.
- C79 0.1
- C80 400 pF.
- C81 0.01
- C82 400 pF.
- C83 0.1
- C84 400 pF.
- C85 10 pF.
- C86 8
- C87 0.01

- C88 0.01
- C89 0.1
- C90 0.1
- C91 0.1
- C92 0.1
- C93 0.1
- C94 100 pF.
- C95 100 pF.
- C96 0.5
- C97 0.01
- C98 30
- C99 30
- C100 0.01
- C101 0.5
- C102 30
- C103 0.002
- C104 0.01
- C105 0.002
- C106 0.01
- C107 8 pF.
- C108 100 pF.
- C109 100 pF.
- C110
- C111 0.01
- C112 0.01
- C113 0.01
- C114 16
- C115 40



EDDYSTONE MODEL 680X

Resistors.

R1	33,000 (1 W.)	R36	68
R2	1,000	R37	0.17M
R3	33,000 (1 W.)	R38	560
R4	1,000	R39	68
R5	1,000	R40	1M
R6	15,000	R41	100,000
R7	1,000	R42	100,000
R8	33,000	R43	0.17M
R9	1,000	R44	1M
R10	1M	R45	0.5M (Pot.)
R11	0.27M	R46	1,500
R12	10,000	R47	3M
R13	0.27M	R48	1,500
R14	1M	R49	6,800
R15	12	R50	0.17M
R16	0.47M	R51	620
R17	0.47M	R52	0.17M
R18	68	R53	3M
R19	150	R54	100,000
R20	12	R55	2,200
R21	0.47M	R56	27,000
R22	0.47M	R57	5,000 (Pot.)
R23	68	R58	10,000
R24	150	R59	2M
R25	1,500	R60	47,000
R26	12	R61	10,000
R27	150	R62	10,000 (Pot.)
R28	100,000	R63	0.27M
R29	2,200	R64	5 (Pot.)
R30	2,200	R65	6,800
R31	10,000	R66	2,700 (W.W.)
R32	1,000	R67	4,700
R33	22,000	R68	22,000 (1 W.)
R34	0.47M		
R35	15,000		

VOLTAGE VALUES.

The voltages are between the point indicated and the chassis. Set the receiver at 1000 kc/s on Range 5 with the aerial shorted out, R.F. control set at maximum. A.F. gain control set at minimum with B.F.O. on. Two sets of values are given using different meters as shown. It will be evident that the actual voltage indicated depends on the meter employed. A tolerance of plus or minus 5 per cent should be allowed on the values given.

Point	333 o.p.v.	1000 o.p.v.	Point	333 o.p.v.	1000 o.p.v.
A	205 v.	218 v.	R	11.5 v.	11.5 v.
B	80 v.	84 v.	S	20 v.	25 v.
C	0.8 v.	1 v.	T	18 v.	25 v.
D	210 v.	218 v.	U	0.7 v.	0.8 v.
E	80 v.	83 v.	V	18 v.	22 v.
F	1 v.	1.0 v.	W	15 v.	22 v.
G	212 v.	220 v.	X	0.8 v.	0.8 v.
H	100 v.	100 v.	Y	218 v.	220 v.
J	1.1 v.	1.2 v.	Z	220 v.	225 v.
K	85 v.	100 v.	A—	11.5 v.	11.5 v.
L	206 v.	210 v.	B—	85 v.	85 v.
M	88 v.	93 v.	C—	142 v.	150 v.
N	1 v.	1 v.	D—	252 v.	260 v.
O	206 v.	210 v.	E—	240 v. (A.C.)	245 v. (A.C.)
P	75 v.	80 v.	F—	150 v.	150 v.
Q	1 v.	1 v.			

Total H.T. current : 110 mA. Heater-t heater voltage : 6.3 A.C.

EDDYSTONE

Model 840

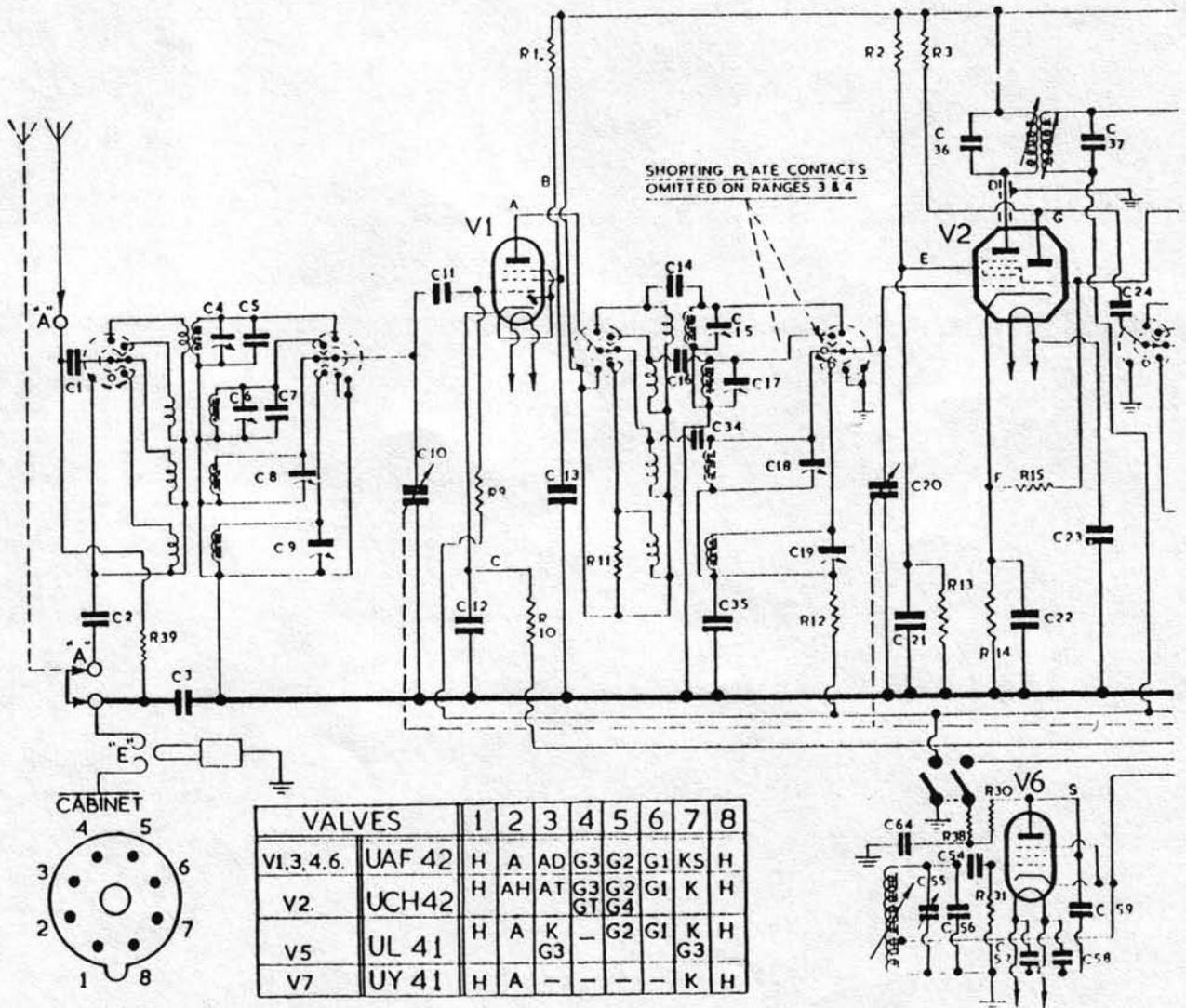
General Description : Seven-valve (including rectifier), four-waveband general-purpose communications receiver with metal-rectifier noise limiter. This receiver has a similar coverage and trimmer lay-out to Model 740, but is for A.C./D.C. operation (100-115 and 220-250 volts).

Wavebands : (1) 30.6-10.5 Mc/s.; (2) 10.6-3.7 Mc/s.; (3) 3.8-1.4 Mc/s.; (4) 205-620 m.

Valves : (V1) UAF42; (V2) UCH42; (V3) UAF42; (V4) UAF42; (V5) UL41; (V6) UAF42; (V7) UY41.

Note : The insulation between the inner chassis and the metal panel should be at least 100 megohms. C66 and C67 which are not shown on the diagram are connected between H.T. line to chassis, and point "L" to chassis respectively.

Voltage Values : Measured with 1000-ohms/volt testmeter between points indicated and chassis, with A.C. input of 110 volts, receiver on Band 4 with aerial shorted to earth.



CIRCUIT DIAGRAM—

A, 100; B, 60; C, 0.7; D, 100; E, 44; F, 1; G, 64; H, 100; J, 60; K, 0.7; L, 13; M, 12; N, 0.6; O, 96; P, 5.3; Q, 100; R, 114; S, 60; T, 105; U, 15.

Component Values : Dial lamp, 12 volt, 3 watt, Festoon type, OS1233.

Capacitors.

C1	0.01
C2	0.01
C3	0.01
C4	3-23 pF.
C5	10 pF.
C6	3-23 pF.
C7	6 pF.
C8	3-23 pF.
C9	2-23 pF.
C10	11.5-366 pF.
C11	100 pF.
C12	0.1
C13	0.1
C14	20 pF.
C15	3-23 pF.
C16	6 pF.
C17	3-23 pF.
C18	3-23 pF.
C19	3-23 pF.
C20	11.5-366 pF.
C21	0.1
C22	0.1

C23	0.0005
C24	100 pF.
C25	3-23 pF.
C26	3-23 pF.
C27	3625 pF.
C28	2825 pF.
C29	1040 pF.
C30	3-23 pF.
C31	400 pF.
C32	3-23 pF.
C33	11.5-366 pF.
C34	3 pF.
C35	0.01
C36	100 pF.
C37	100 pF.
C38	100 pF.
C39	100 pF.
C40	100 pF.
C41	0.1
C42	50
C43	0.01
C44	0.01

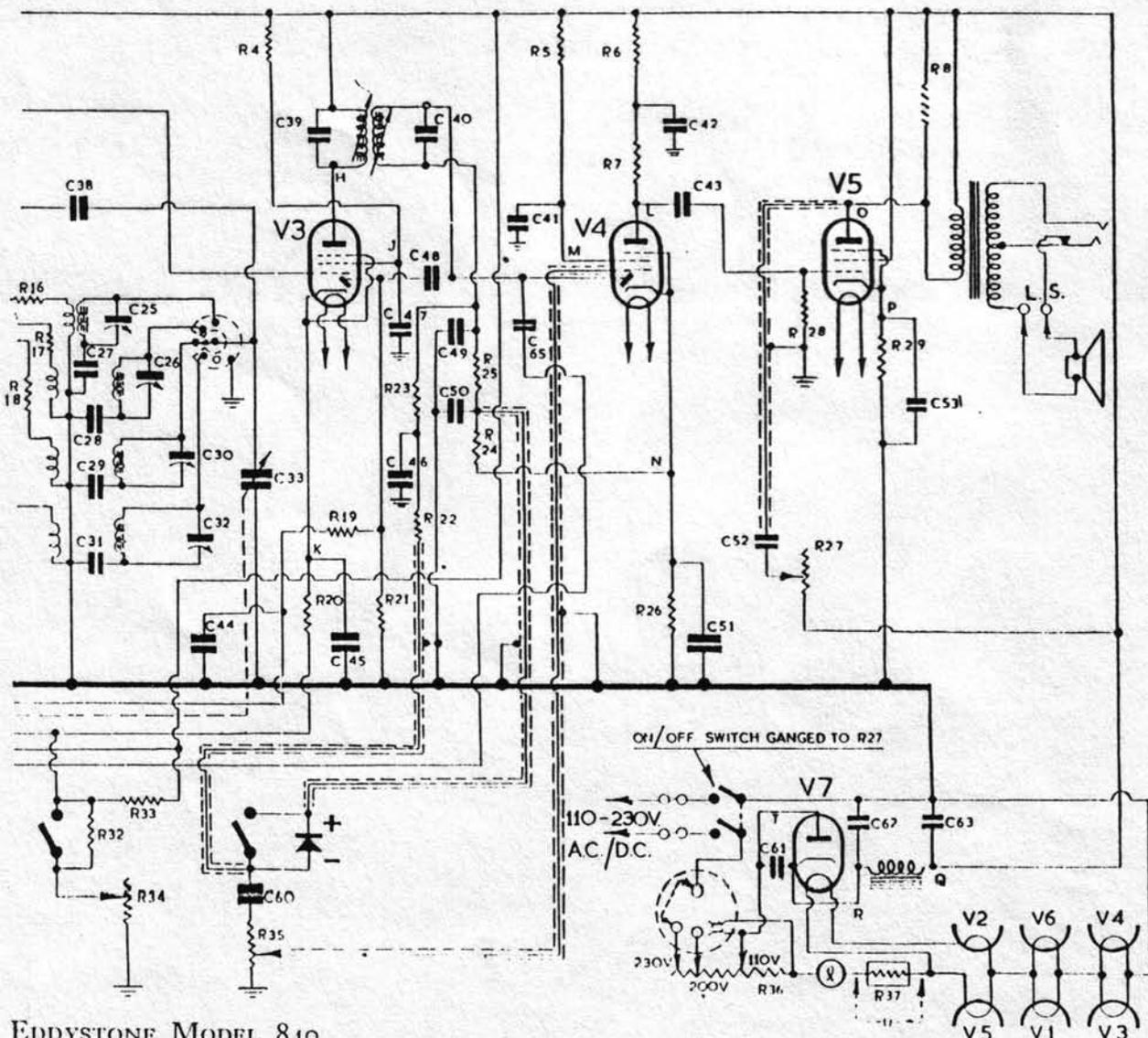
C45	0.1
C46	0.1
C47	0.1
C48	20 pF.
C49	100 pF.
C50	100 pF.
C51	30
C52	0.1
C53	30
C54	100 pF.
C55	B.F.O.
C56	100 pF.
C57	0.01
C58	0.01
C59	0.01
C60	0.01
C61	0.01
C62	50
C63	50
C64	0.01
C65	3 pF.
C66	0.01

C67	0.0005
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Resistors.

R1	47,000
R2	22,000
R3	10,000
R4	47,000
R5	0.73M
R6	22,000
R7	200,000
R8	0.1M
R9	470,000
R10	330
R11	3,300
R12	470,000
R13	47,000
R14	220
R15	22,000
R16	22
R17	47

R18	560
R19	470,000
R20	330
R21	470,000
R22	2.0M
R23	1.0M
R24	100,000
R25	100,000
R26	2,700
R27	50,000
R28	470,000
R29	150
R30	10,000
R31	47,000
R32	47,000
R33	270,000
R34	10,000
R35	500,000
R36	500
R37	Thermistor
R38	1,000
R39	2.0M



EDDYSTONE MODEL 840

EDDYSTONE

Model 820

General Description : Eight-valve (including rectifier and tuning indicator) broadcast receiver unit for reception of F.M. Stations in Band II and for A.M. stations on one spot frequency in the L.W. band and two spot frequencies in the M.W. band. Audio-frequency output is at a level suitable for feeding into a high-quality amplifier or to the pick-up terminals of a conventional receiver.

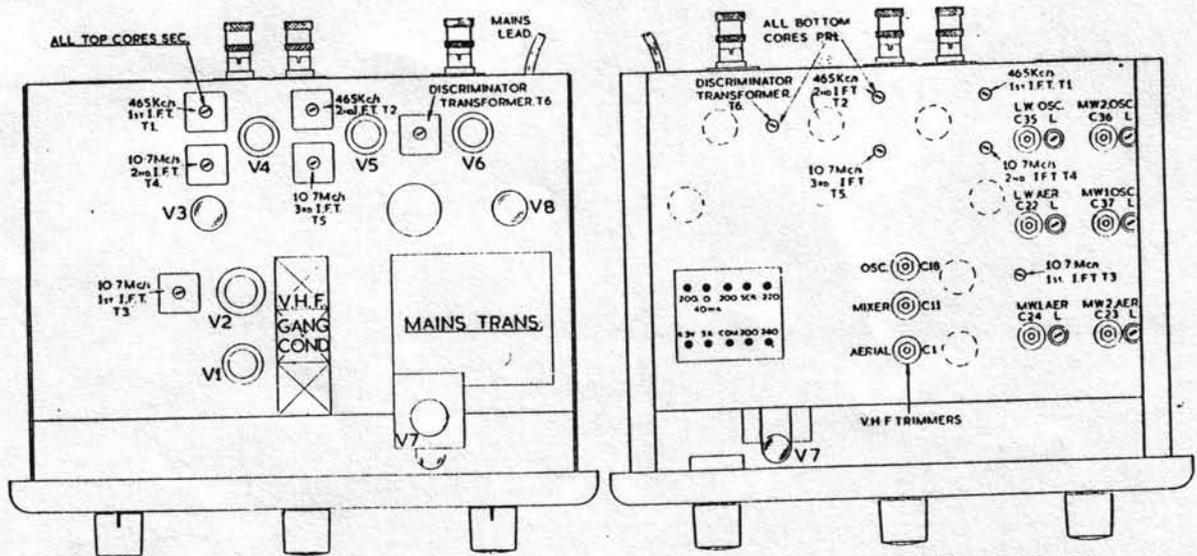
Power Supply : A.C. mains, 200-250 volts (built-in power unit).

Wavebands : M.W. 1, 960-1550 kc/s.; M.W. 2, 610-960 kc/s.; L.W. 200 kc/s.; V.H.F. 85-101 Mc/s.

Valves : (V1) 6AM6 (V.H.F. amp.); (V2) 12AT7 (V.H.F. frequency changer); (V3) ECH42 (10.7 Mc/s. I.F./A.M. frequency changer); (V4) 6AM6 (10.7 Mc/s./462 kc/s. I.F. amp.); (V5) 6AM6 (10.7 Mc/s. I.F. amplifier and limiter); (V6) (Foster-Seeley type discriminator) 6AL5; (V7) EM80 (tuning indicator); (V8) EZ41 (rectifier). On A.M. only V3, V4 and V8 are used, a crystal diode being used for detection/A.G.C.

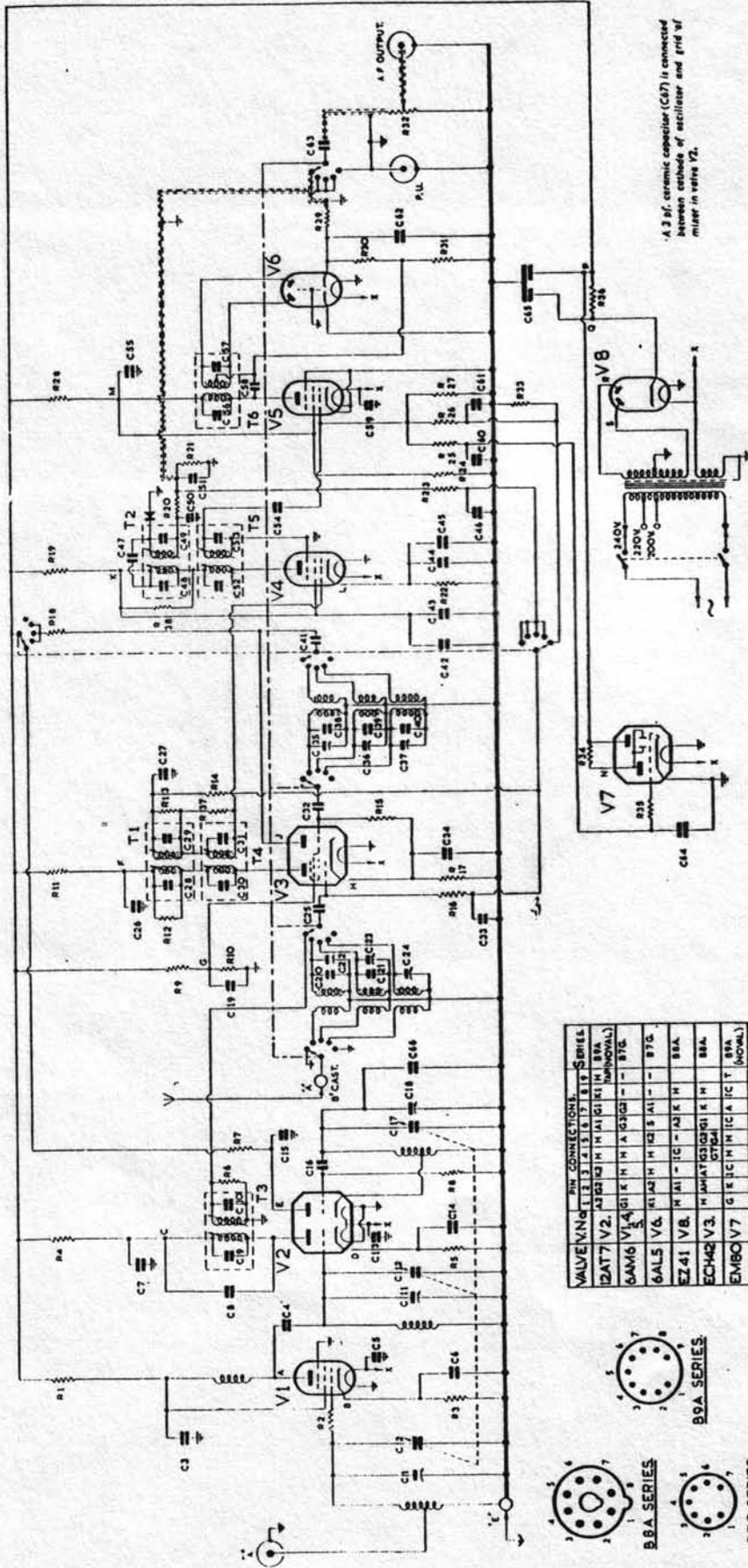
Alignment Procedure : The following notes are based on the use of a centre zero 50-0-50 micro-ammeter and either an A.M. or (preferably) an F.M. signal generator, covering up to 110 Mc/s.

10.7 Mc/s. I.F. Channels : The earthy end of R27 should be unsoldered and the micro-ammeter placed in series (if 0-50- μ A. type is used, positive terminal should be connected to chassis). The output from the signal generator is fed direct to the grid of V4, and with the generator set to 10.7 Mc/s., the output is increased until a deflection is observed on the micro-ammeter. The primary and secondary cores of T5 are adjusted for maximum output. A sensitivity of approximately 15 mV. or 4 μ A. deflection should be obtained. The generator lead is then transferred to the signal grid of V3 and T4 adjusted for maximum deflection: sensitivity should be about 700 μ V. for



PLAN VIEW OF "820" IN OUTLINE.

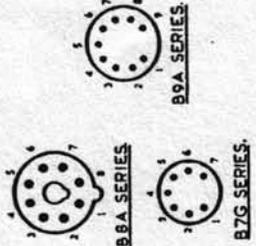
UNDERSIDE VIEW OF "820" IN OUTLINE.



CIRCUIT DIAGRAM—EDDYSTONE RECEIVING UNIT MODEL 820

PIN CONNECTIONS.

VALVE	V1	V2	V3	V4	V5	V6	V7	V8
12AT7	1	2	3	4	5	6	7	8
6AM6	1	2	3	4	5	6	7	8
6AL5	1	2	3	4	5	6	7	8
EZ41	1	2	3	4	5	6	7	8
ECH82	1	2	3	4	5	6	7	8
EMBOV7	1	2	3	4	5	6	7	8



- Capacitors:
- C1 3-30 pF.
 - C2 2-15 pF.
 - C3 500 pF.
 - C4 3 pF.
 - C5 500 pF.
 - C6 500 pF.
 - C7 2-15 pF.
 - C8 10 pF.
 - C9 20 pF.
 - C10 20 pF.
 - C11 3-30 pF.
 - C12 2-15 pF.
 - C13 0.003
 - C14 0.003
 - C15 0.003
 - C16 40 pF.
 - C17 0.003
 - C18 3-30 pF.
 - C19 0.01
 - C20 100 pF.
 - C21 20 pF.
 - C22 3-30 pF.
 - C23 3-30 pF.
 - C24 3-30 pF.
 - C25 100 pF.
 - C26 0.01
 - C27 0.01
 - C28 100 pF.
 - C29 100 pF.
 - C30 20 pF.
 - C31 20 pF.
 - C32 100 pF.
 - C33 0.01
 - C34 0.01
 - C35 3-30 pF.
 - C36 3-30 pF.
 - C37 3-30 pF.
 - C38 200 pF.
 - C39 40 pF.
 - C40 20 pF.
 - C41 100 pF.
 - C42 0.1
 - C43 0.01
 - C44 0.003
 - C45 0.1
 - C46 3-30 pF.
 - C47 1 pF.
 - C48 100 pF.
 - C49 100 pF.
 - C50 100 pF.
 - C51 100 pF.
 - C52 20 pF.
 - C53 20 pF.
 - C54 40 pF.
 - C55 0.003
 - C56 100 pF.
 - C57 50 pF.
 - C58 40 pF.
 - C59 0.003
 - C60 0.01
 - C61 0.01
 - C62 100 pF.
 - C63 0.01
 - C64 0.01
 - C65 32 + 32
 - C66 8 pF.
 - C67 3 pF.

*A 3 pf. ceramic capacitor (C47) is connected between cathode of oscillator and grid of mixer in wave V2.

Resistors.									
R1	2.2k	R9	33k	R17	270	R25	0.47M	R33	68k
R2	12	R10	33k	R18	27k	R26	0.47M	R34	1M
R3	150	R11	2.2k	R19	2.2k	R27	0.27M	R35	0.47M
R4	2.2k	R12	68k	R20	22k	R28	27k	R36	500 (1 W., W.W.)
R5	680	R13	68k	R21	0.1M	R29	68k	R37	47k
R6	0.1M	R14	0.47M	R22	150	R30	0.1M	R38	0.47M
R7	2.2k	R15	47k	R23	1M	R31	0.1M		
R8	10k	R16	0.47M	R24	22k	R32	0.5M (Pot.)		

4 μ A. deflection. Generator output transferred to pin 7 of V2 and cores of T3 adjusted for maximum output.

R.F. Stage : With pointer set to 100 Mc/s. and generator output fed to aerial-feeder socket, C18 is adjusted for maximum deflection of the micro-ammeter. Repeat at 87.5 Mc/s.: if appreciable falling off in output occurs, a slight adjustment should be made to the inductance, repeating the process until good tracking is obtained. With generator set to 95 Mc/s., C1 and C11 are trimmed for maximum deflection.

Discriminator : Signal generator set to 10.7 Mc/s., unmodulated, output at maximum (*i.e.*, about 1 volt) and the output lead connected to grid of V5. A centre zero 50-0-50 μ A. meter is placed across the output of V6 in series with a 100k resistor, *i.e.*, from that cathode above earth, through meter and resistor, to chassis. If the stage is correctly aligned to 10.7 Mc/s., the meter will read zero. A check should be made by varying generator frequency either side of 10.7 Mc/s. For equal frequency variations, the meter should show equal deflections each side of zero. If the readings are unequal, adjustment of the primary (lower) core of T6 should restore balance. In the unlikely event of complete re-alignment of the discriminator being required, the secondary (upper) core is set so that the top of the core is flush with the top of the can of T6. The primary core is then adjusted for maximum deflection, after which the secondary core is adjusted for zero reading. The balance should be checked as above. The peak deflection obtained should be of the order of 20 μ A.

465 kc/s. I.F. : A 465-kc/s. modulated signal is injected to the grid of V4 and the cores of T2 adjusted for maximum audio output measured in the conventional manner. Signal is transferred to signal grid of V3 and T1 adjusted, the local oscillator being rendered inoperative by shorting the grid to earth. The 10.7-Mc/s. circuits should not be disturbed whilst adjusting the 465-kc/s. circuits.

L.W. : Inject signal of required frequency (*e.g.*, 200 kc/s. for Droitwich). Rotate L.W. oscillator core until a deflection is obtained: make fine adjustment with C35. Adjust core and then trimmer of L.W. mixer coil for maximum output.

M.W. : For each position, proceed as for L.W. above.

Performance V.H.F./F.M. : An input of 25 μ V. gives 1 volt at the limiter grid, and ensures full limiting action. Selectivity figures: 6 db. down 100 kc/s. off resonance and 25 db. down 200 kc/s. off. I.F. break-through greater than 70 db. down at 10.7 Mc/s. Image attenuation 35 db. Audio output 0.5 volts (approx.) for 30 per cent modulation (= 22.5 kc/s. deviation).

Performance M.W. and L.W. : Sensitivity is adequate for good results with a comparatively small aerial. Image ratio greater than 35 db.

Selectivity 25 db. down 10 kc/s. off resonance (465 kc/s.). Audio output 0.2 volt approx., 30 per cent modulation, 400 c/s., 50 μ V. input.

Output : High impedance to match into grid circuit of average amplifier.

Voltage Values : Voltages given are those between the points indicated and chassis. Set switch to F.M. for points A to E inclusive, and to a broadcast band for all other points. Values are given for A.C. input of 240 volts using two types of meter: Avo Model 8 (20,000 ohms/volt) and Avo Model 40. It will be evident that the voltage indicated depends on the sensitivity of the meter employed. Tolerance of ± 5 per cent on actual values should also be anticipated.

	<i>Point</i>	<i>Avo 8</i>	<i>Avo 40</i>		<i>Point</i>	<i>Avo 8</i>	<i>Avo 40</i>
A	.	170	165	K	.	170	167
B	.	1.2	0.89	L	.	1.35	1.0
C	.	168	160	M	.	55	42
D	.	2.45	0.73	N	.	27	10
E	.	168	165	P	.	187	190
F	.	184	178	Q	.	200	204
G	.	68	46	R	.	200 A.C.	200 A.C.
H	.	1.65	0.83	S	.	200 A.C.	200 A.C.
J	.	79	70				

EDDYSTONE

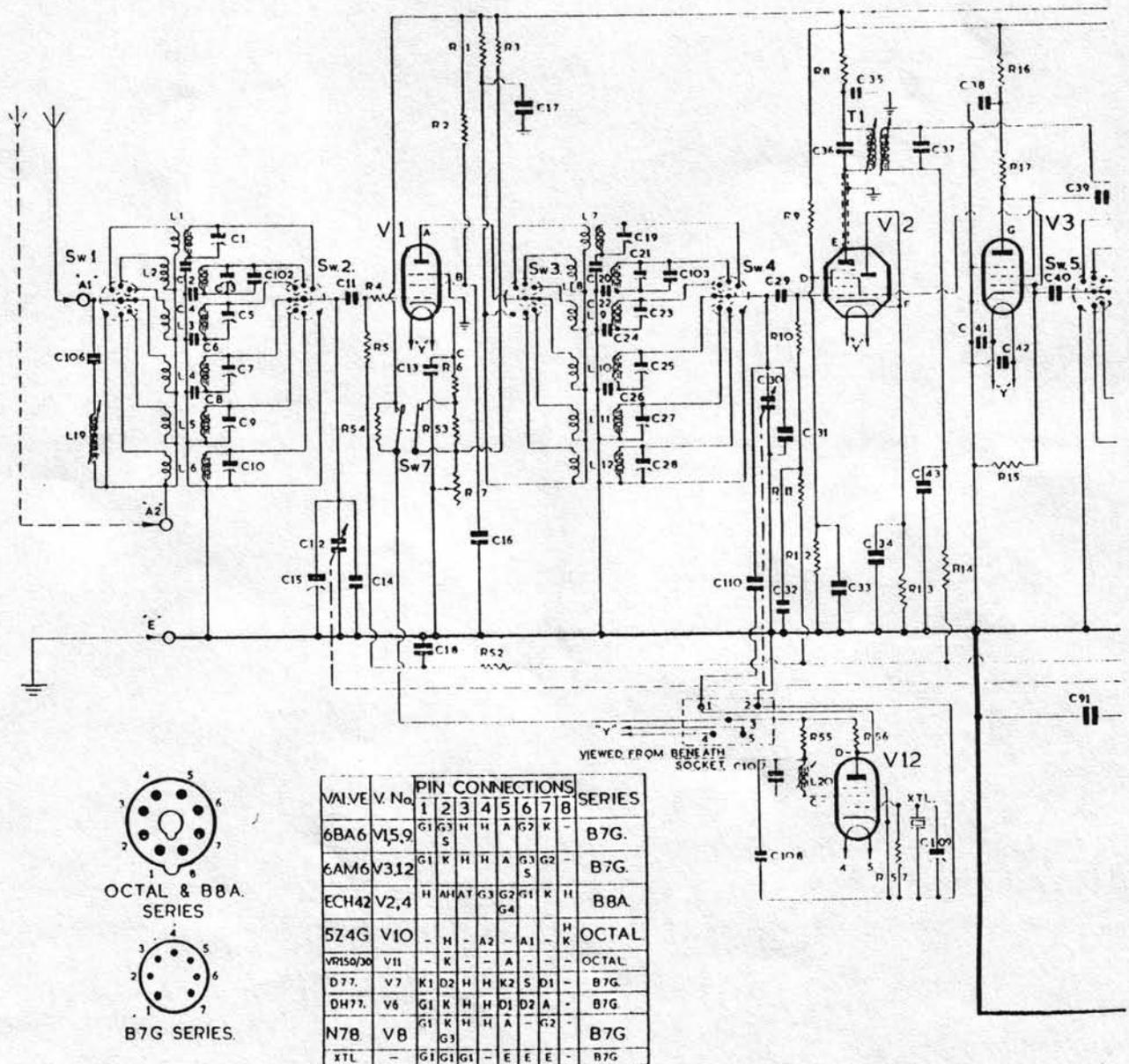
Model 888

General Description : Twelve-valve, six-waveband, double-conversion amateur communications receiver with built-in crystal calibrator and audio filter. Released 1956.

Power Supplies : A.C. mains, 100-125 and 195-250 volts. Consumption about 75 watts.

Wavebands : Bandsread coverage of amateur bands only: 1.8-2 Mc/s.; 3.5-4 Mc/s.; 7-7.3 Mc/s.; 14-14.35 Mc/s.; 21-21.5 Mc/s.; 28-30 Mc/s.

Valve Functions : (V1) 6BA6 (R.F. amplifier); (V2) ECH42 (1st mixer; triode section not used); (V3) 6AM6 (local oscillator); (V4) ECH42 (2nd



VALVE	V. No.	PIN CONNECTIONS								SERIES
		1	2	3	4	5	6	7	8	
6BA6	V15,9	G1	G3	H	H	A	G2	K	-	B7G.
6AM6	V3,12	G1	K	H	H	A	G3	G2	-	B7G.
ECH42	V2,4	H	AH	AH	AH	AH	G3	G2	H	B8A.
5Z4G	V10	-	H	-	A2	-	A1	-	H	OCTAL
VR150/30	V11	-	K	-	-	A	-	-	-	OCTAL
D77.	V7	K1	D2	H	H	K2	S	D1	-	B7G.
DH77.	V6	G1	K	H	H	D1	D2	A	-	B7G.
N7B	V8	G1	K	H	H	A	-	G2	-	B7G.
XTL	-	G1	G1	G1	-	E	E	E	-	B7G.

Capacitors.

C1	2.5-33 pF.
C2	80 pF.
C3	2.5-33 pF.
C4	35 pF.
C5	2.5-33 pF.
C6	20 pF.
C7	2.5-33 pF.
C8	40 pF.
C9	2.5-33 pF.
C10	2.5-33 pF.
C11	100 pF.
C12	8-34 pF.
C13	0.01
C14	20 pF.
C16	0.1
C17	0.1
C18	0.01
C19	2.5-33 pF.
C20	80 pF.
C21	2.5-33 pF.
C22	35 pF.
C23	2.5-33 pF.
C24	20 pF.
C25	2.5-33 pF.

C26	40 pF.
C27	2.5-33 pF.
C28	2.5-33 pF.
C29	100 pF.
C30	8-34 pF.
C31	20 pF.
C32	0.01
C33	0.1
C34	0.1
C35	0.01
C36	200 pF.
C37	200 pF.
C38	0.1
C39	200 pF.
C40	50 pF.
C41	500 pF.
C42	500 pF.
C43	0.01
C44	2.5-33 pF.
C45	30 pF.
C46	120 pF.
C47	2.5-33 pF.
C48	30 pF.
C49	2.5-33 pF.

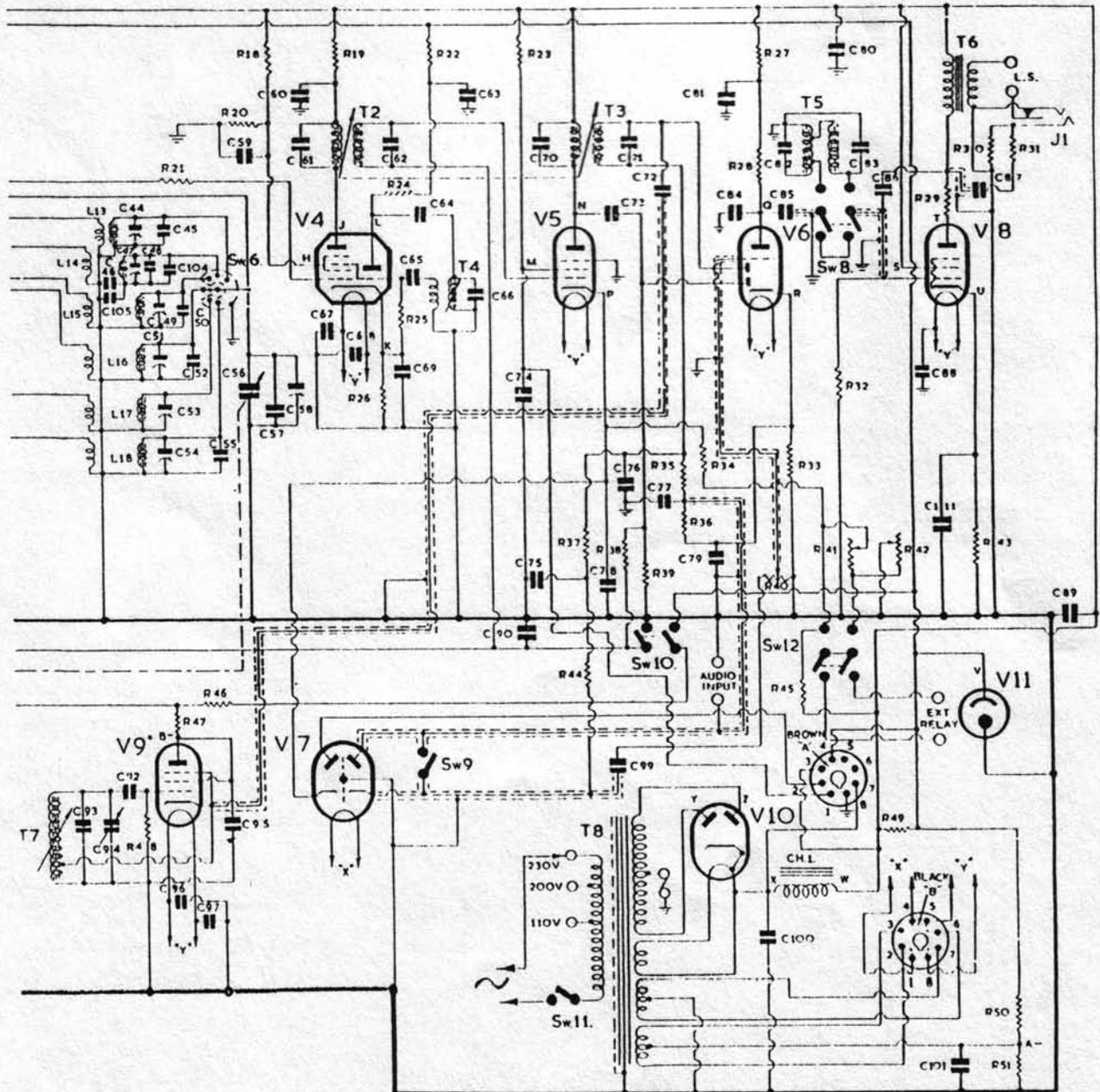
C50	400 pF.
C51	2.5-33 pF.
C52	200 pF.
C53	2.5-33 pF.
C54	2.5-33 pF.
C55	50 pF.
C56	8-34 pF.
C57	40 pF.
C58	2.5-4 pF.
C59	0.1
C60	0.01
C61	800 pF.
C62	800 pF.
C63	0.1
C64	100 pF.
C65	100 pF.
C66	200 pF.
C67	0.01
C68	0.01
C69	0.01
C70	800 pF.
C71	800 pF.
C72	40 pF.
C73	20 pF.

C74	0.1
C75	0.1
C76	100 pF.
C77	100 pF.
C78	0.1
C79	30
C80	0.01
C81	4
C82	0.007
C83	0.007
C84	500 pF.
C85	0.01 mfd.
C86	6 pF.
C87	0.01
C88	0.25
C89	50
C90	0.1
C91	0.01
C92	100 pF.
C93	400 pF.
C95	0.01
C96	0.01
C97	0.01
C99	0.01

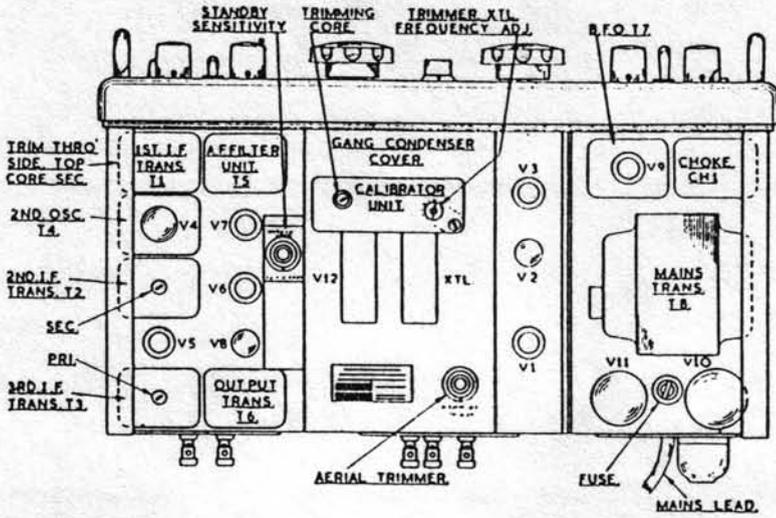
C100	50
C101	30
C102	20 pF.
C103	40 pF.
C104	80 pF.
C105	35 pF.
C106	200 pF.
C107	20 pF.
C108	0.01
C109	3-23 pF.
C110	1 pF.
C111	30 (15 v.)

Resistors.

R1	1k
R2	33k (1 W.)
R3	68k
R4	12
R5	0.47M
R6	68
R7	10k (Pot.)

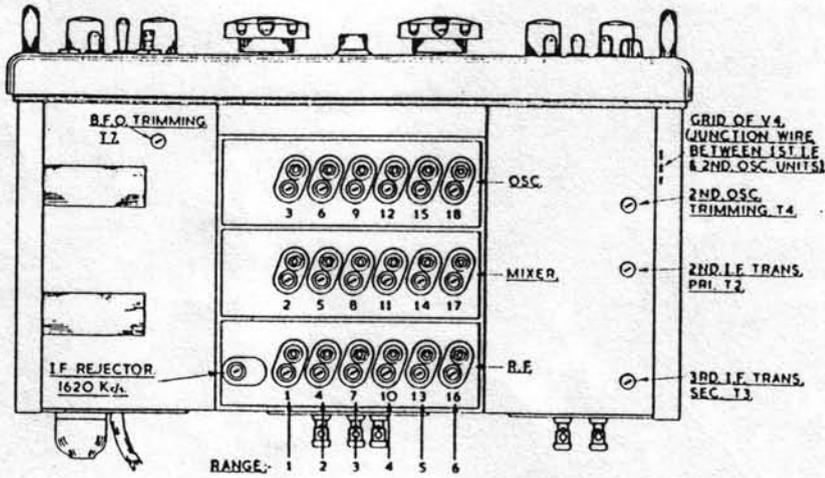


EDDYSTONE AMATEUR-BANDS RECEIVER MODEL 888



Resistors.

R8	1k	R34	68
R9	10k	R35	0.1M
R10	0.47M	R36	0.1M
R11	0.47M	R37	1.0M
R12	15k (1 W.)	R38	0.47M
R13	330	R39	0.47M
R14	0.47M	R40	0.5M (Pot.)
R15	22k	R41	50k (Pot.)
R16	1k	R42	10k (Pot.)
R17	10k	R43	150
R18	27k (1 W.)	R44	2M
R19	1k	R45	68k
R20	27k (1 W.)	R46	1k
R21	12	R47	47k
R22	1k	R48	47k
R23	33k (1 W.)	R49	2.7k (W.W.)
R24	10k	R50	0.1M
R25	47k	R51	6.8k
R26	220	R52	0.47M
R27	27k	R53	0.1M
R28	0.27M	R54	3M
R29	47	R55	22k
R30	1k	R56	0.27M
R31	33k	R57	1M
R32	0.47M		
R33	3.3k		



Voltage Values: Voltages given below are between the points indicated and chassis. Set receiver at 28 Mc/s. on range 1 with the aerial shorted out. I.F. and R.F. controls set at maximum. A.F. gain control set at minimum with all controls on except crystal calibrator, which is switched on for points C-, D-. Values are given using two types of meter: a high-sensitivity 20,000-ohms/volt (e.g., Avo Model 8) and a lower-sensitivity meter such as the Avo Model 40. Total D.C. consumption 110 mA. Input 75 VA.

frequency changer); (V5) 6BA6 (85 kc/s. I.F. amplifier) (V6) 6AT6/DH77 (demodulator/A.G.C. rectifier/A.F. amplifier); (V7) 6AL5/D77 (noise limiter and "S" meter diodes); (V8) N78 (output); (V9) 6BA6 (beat-frequency oscillator); (V10) 5Z4G (rectifier); (V11) VR150/30 (voltage stabiliser); (V12) 6AM6 (100-kc/s. crystal oscillator).

Intermediate Frequencies: 1st I.F. 1620 kc/s.; 2nd I.F. 85 kc/s.

Circuit Reference	20,000 ohms/volt	Avo Model 40	Circuit Reference	20,000 ohms/volt	Model 40
A	250	237	R	1.5	0.75
B	100	86	S	255	250
C	1	1	T	245	240
D	73	67	U	5.1	4.9
E	250	245	V	150	150
F	1.45	1.3	W	255	250
G	105	97	X	275	270
H	86	77	Y	250 A.C.	245 A.C.
J	250	241	Z	250 A.C.	245 A.C.
K	1.9	1	A-	10	2.4
L	105	93	B-	105	75
M	105	90	C-	182	130
N	255	247	D-	20	7
P	1.1	1			
Q	125	43			