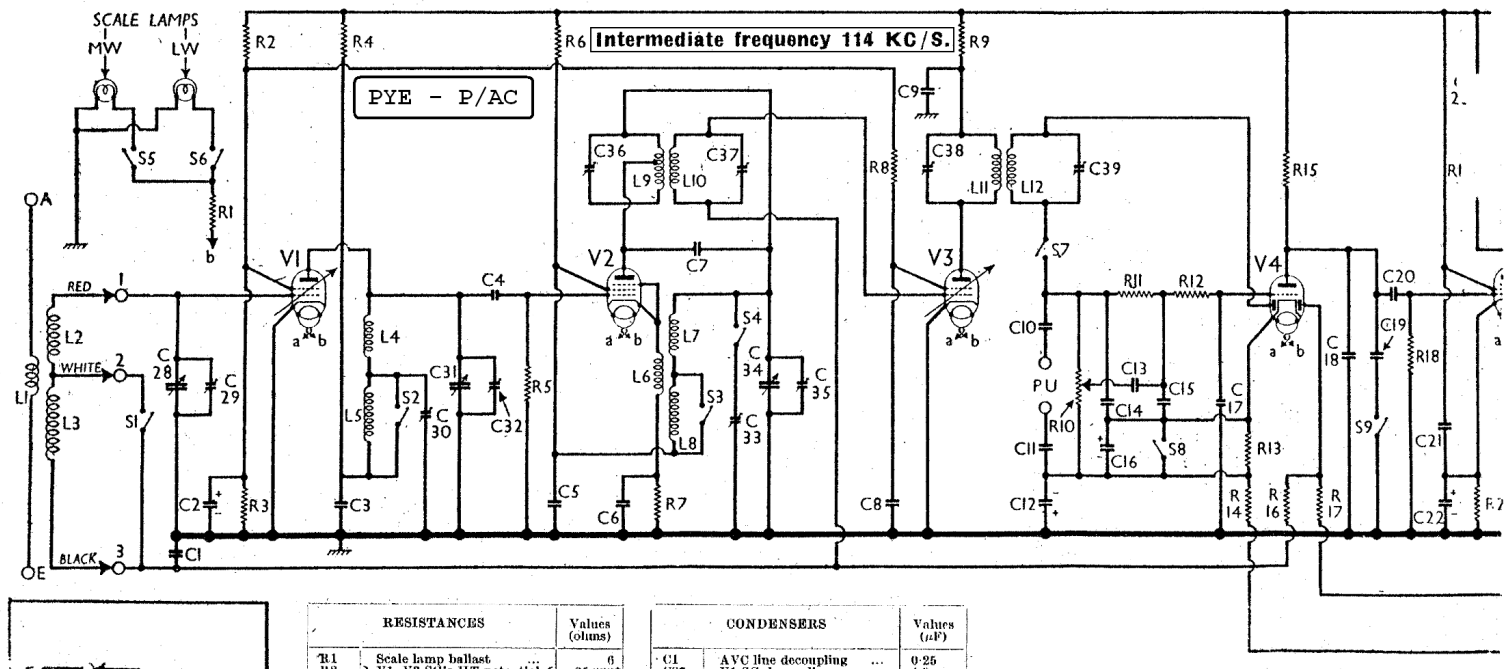

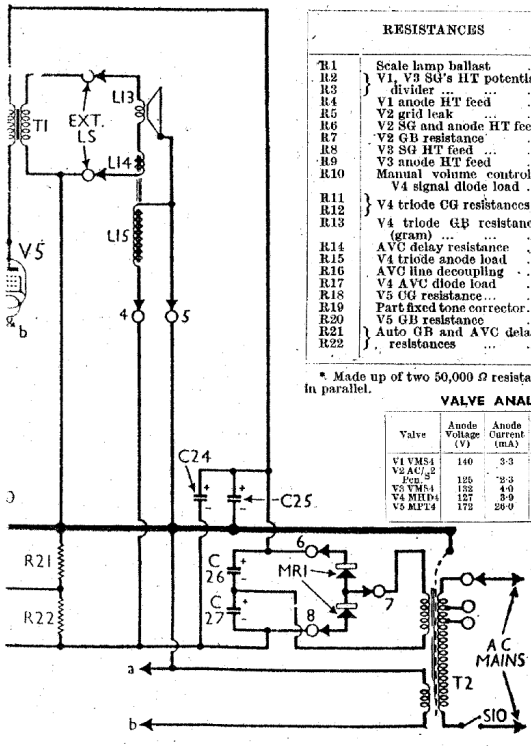

RESISTANCES		Values (ohms)
R1	Scale lamp ballast ...	6
R2, R3	V1, V3 SG's HT potential divider	25,000* 15,000
R4	V1 anode HT feed ...	15,000
R5	V2 grid leak	50,000
R6	V2 SG and anode HT feed	20,000
R7	V2 GB resistance ...	2,000
R8	V3 SG HT feed	2,000
R9	V3 anode HT feed ...	15,000
R10	Manual volume control; V4 signal diode load ...	40,000
R11, R12	V4 triode CG resistances	1,000,000
R13	V4 triode GB resistance (gram)	500
R14	AVC delay resistance ...	25,000
R15	V4 triode anode load ...	10,000
R16	AVC line decoupling ...	100,000
R17	V4 AVC diode load ...	500,000
R18	V5 CG resistance... ...	100,000
R19	Part fixed tone corrector...	8,500
R20	V5 GB resistance ...	325
R21, R22	Auto GB and AVC delay resistances	500 20,000

* Made up of two 50,000 Ω resistances connected in parallel.

CONDENSERS		Values (μF)
C1	AVC line decoupling ...	0·25
C2*	V1 SG decoupling ...	4·0
C3	V1 anode decoupling ...	0·1
C4	V2 CG condenser... ...	0·00002
C5	V2 SG and anode decoupling	0·1
C6	V2 cathode by-pass ...	0·01
C7	V2 anode coupling ...	0·001
C8	V3 SG decoupling ...	0·1
C9	V3 anode decoupling ...	0·1
C10, C11	PU isolating condensers...	0·25 0·25
C12*	V4 cathode by-pass ...	4·0
C13	AF coupling to V4 triode	0·25
C14, C15	IF by-pass condensers ...	0·0002 0·001
C16*	V4 cathode by-pass ...	25·0
C17, C18	IF by-pass condensers ...	0·00005 0·001
C19	Tone control condenser ...	0·025
C20	V4 triode to V5 coupling...	0·1
C21	V5 SG decoupling ...	2·0
C22*	V5 cathode by-pass ...	25·0
C23	Part fixed tone corrector...	0·01
C24*, C25*	HT smoothing condensers	7·0 8·0
C26*, C27*	Voltage doubler condensers	4·0 4·0
C28†	Frame aerial tuning ...	—
C29†	Frame aerial MW trimmer	—
C30†	V1 anode LW trimmer ...	—
C31†	V1 anode circuit tuning ...	—
C32†	V1 anode MW trimmer ...	—
C33‡	Osc. circuit LW trimmer...	—
C34†	Oscillator circuit tuning...	—
C35‡	Osc. circuit MW trimmer	—
C36‡	1st IF trans. pri. tuning...	—
C37‡	1st IF trans. sec. tuning...	—
C38‡	2nd IF trans. pri. tuning...	—
C39‡	2nd IF trans. sec. tuning...	—

* Electrolytic. † Variable. ‡ Pre-set.

VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VMS4	140	3·3	51	0·9
V2 AC/$_2$ Pen. S*	125	2·3	116	1·4
V3 VMS4	132	4·0	59	1·3
V4 MHD4	127	3·9	—	—
V5 MP14	172	26·0	180	4·4

OTHER COMPONENTS			Approx. Values (ohms)
L1, L2, L3	Frame aerial windings ...		1·83 20·5
L4, L5	V1 anode tuning coils ...		4·0 32·0
L6	Oscillator reaction coil ...		0·2
L7	Osc. MW tuning coil ...		2·25
L8	Osc. LW tuning coil ...		9·0
L9, L10	1st IF trans.	Pri., total Sec. ...	160·0 122·0
L11, L12	2nd IF trans.	Pri. ... Sec. ...	122·0 122·0
L13	Speaker speech coil ...		1·23
L14	Hum neutralising coil ...		0·2
L15	Speaker field coil ...		1,600·0
T1	Output trans.	Pri. ... Sec. ...	300·0 0·3
T2	Mains trans.	Pri., total Heater sec. HT sec.	30·0 0·1 28·0
S1–S4	Waveband switches ...		—
S5, S6	Scale lamp switches ...		—
S7, S8	PU jack switches ...		—
S9	Tone control switch ...		—
S10	Mains switch		—

CIRCUIT ALIGNMENT

IF Stages.—The chassis must be removed from the carrying case for this operation. The frame aerial need not be connected, but the three frame aerial terminals should be joined together. The speaker and rectifier leads must be connected to the chassis, but they are long enough to permit this without removing these pieces from the cabinet. A 2BA box spanner will be needed, preferably of the insulated type, but otherwise shrouded with adhesive tape to prevent contact with the can, for the adjustment of **C36** and **C37,** and a set-spanner will be required for the second transformer.

Connect the signal generator leads via a 0.002 μF condenser to the control grid (pin 2) of **V2** (a convenient point for the clip is to one side of **C4**) and chassis, and turn the volume control to maximum. Feed in a 114 kc/s (2,631.5 m) signal, and adjust **C36, C37, C38** and **C39** for maximum output, taking care, particularly in the case of **C36,** that the reading does not alter when the spanner is removed.

RF and Oscillator Stages.—With the gang at maximum, the dividing line between MW and LW sections of the scale disc should be parallel with the chassis deck, and the two pointers should register with the ends of the line. To adjust the scale, remove the scale lamp holder, which otherwise forms a stop, and turn the gang to a stop just beyond maximum and slacken the fixing screw holding the scale to the spindle. The screw may be reached by passing a long screwdriver through the hole in the electrolytic condenser platform riser.

Now set gang accurately to maximum by inserting in the gang casing two pieces of metal with square ends about 1¼ inches wide, one end going either side of the spindle and spanning the vanes, and press them so that the upper edges of the stator and rotor vanes are flush. Adjust the scale as indicated, and tighten up the screw; then adjust the pointers, and replace the scale lamp holder.

Replace chassis in its case, and couple the output from the signal generator to the frame by means of an external coil.

MW.—Switch set to MW, turn the gang to minimum reading (dividing line on scale), screw up **C32** to maximum and screw **C29** to minimum. Feed in a 196 m (1,530 kc/s) signal, and adjust **C35** for maximum output. Two peaks will be found, and that which involves the lesser trimmer capacity should be selected. Now adjust **C29** and **C32** for maximum output. The input signal should be reduced as the circuits come into line, and if necessary the coupling coil may be moved progressively farther from the set to prevent AVC action. Finally, readjust **C35.**

LW.—Switch set to LW, the gang remaining at minimum, and screw up **C30** almost to maximum. Feed in a 775 m (387.1 kc/s) signal, and adjust **C33,** then **C30,** for maximum output. Tune to 850 m on scale, feed in a strong 850 m (352.9 kc/s) signal, and readjust **C33** for maximum output. If two peaks are found select that involving the *maximum* trimmer capacity.

SUITE ET FIN