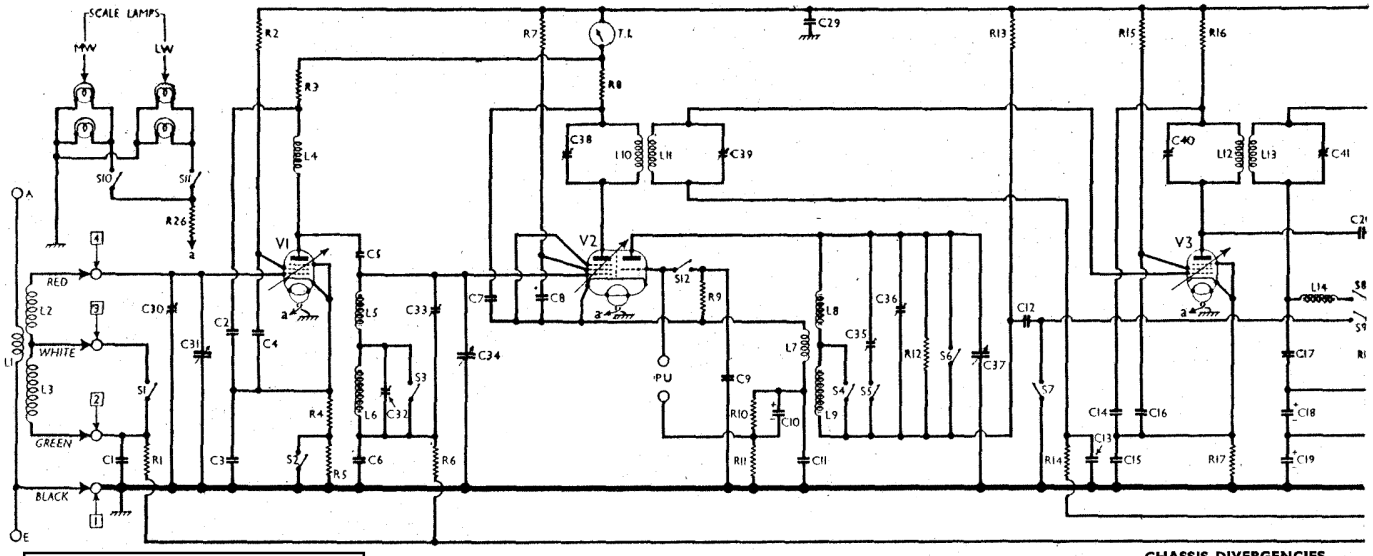


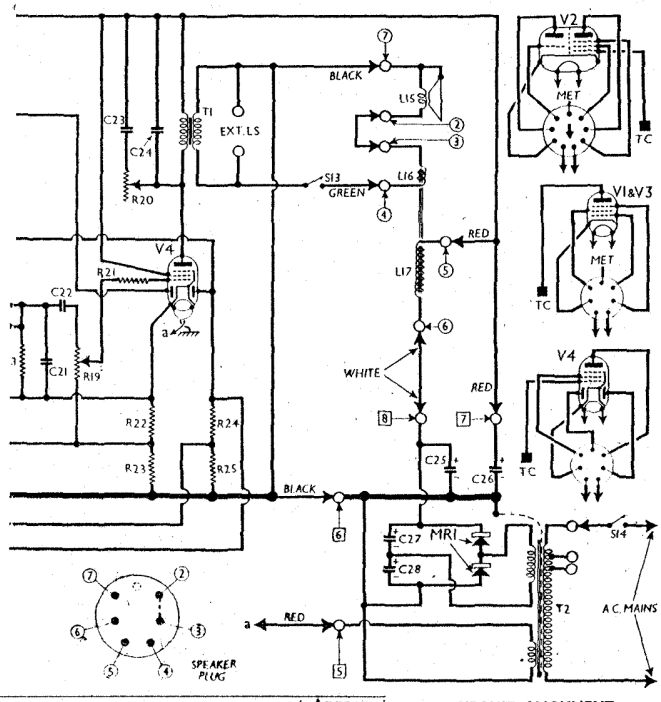
Intermediate frequency 127 KC/S.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 AC/VP1	184	5·3	170	1·3
V2 AC/TP	235	3·7	188	1·7
	Oscillator			
	62	1·7		
V3 AC/VP1	246	5·0	212	1·4
V4 AC/2Pen DD	206	30·0	233	6·8

	CONDENSERS	Values (μF)
C1	V1 CG decoupling ...	0·5
C2	V1 anode decoupling ...	0·1
C3	V1 cathode by-pass ...	0·1
C4	V1 SG decoupling ...	0·1
C5	V1 to V2 RF coupling ...	0·000025
C6	V2 pent. CG decoupling	0·1
C7	V2 pent. anode decoupling	0·1
C8	V2 SG decoupling ...	0·1
C9	V2 osc. CG condenser ...	0·002
C10*	V2 cathode AF by-pass...	25·0
C11	V2 cathode RF by-pass...	0·1
C12	V2 osc. anode decoupling (radio); V2 triode to V4 AF coupling (gram)	0·1
C13	V3 CG decoupling ...	0·1
C14	V3 anode decoupling. ...	0·1
C15	V3 cathode by-pass	0·1
C16	V3 SG decoupling ...	0·1
C17	IF by-pass	0·0001
C18*	V4 cathode by-pass con-	50·0
C19*	densers	25·0
C20	Coupling to V4 AVC diode	0·0002
C21	IF by-pass	0·0002
C22	AF coupling to V4 ...	0·01
C23	Part variable tone control	0·025
C24	Fixed tone corrector ...	0·001
C25*	HT smoothing condensers	7·0
C26*		16·0
C27*	Voltage doubler condensers	4·0
C28*		4·0
C29	HT circuit RF by-pass...	0·25
C30‡	Frame aerial MW trimmer	—
C31†	Frame aerial tuning ...	—
C32‡	RF circuit LW trimmer	—
C33‡	RF circuit MW trimmer	—
C34†	RF circuit tuning ...	—
C35‡	Osc. circ. LW trimmer...	—
C36‡	Osc. circ. MW trimmer...	—
C37†	Oscillator circuit tuning	—
C38‡	1st IF trans. pri. tuning	—
C39‡	1st IF trans. sec. tuning	—
C40‡	2nd IF trans. pri. tuning	—
C41‡	2nd IF trans. sec. tuning	—

* Electrolytic. † Variable. ‡ Pre-set.

	RESISTANCES	Values (ohms)
R1	V1 CG decoupling ...	500,000
R2	V1 SG HT feed	50,000
R3	V1 anode HT feed ...	10,000
R4	V1 fixed GB resistances...	500
R5		3,000
R6	V2 pent. CG decoupling...	500,000
R7	V2 SG HT feed	25,000
R8	V2 pent. anode HT feed...	2,000
R9	V2 osc. CG resistance ...	100,000
R10	V2 GB resistance (gram.)	250
R11	V2 fixed GB (radio) ...	750
R12	Oscillator circuit damping	40,000
R13	V2 osc. anode HT feed ...	100,000
R14	V3 CG decoupling ...	500,000
R15	V3 SG HT feed	25,000
R16	V3 anode HT feed ...	2,000
R17	V3 fixed GB resistance ...	500
R18	V4 signal diode load ...	250,000
R19	Manual volume control ...	250,000
R20	Variable tone control ...	25,000
R21	V4 pent. grid stopper ...	25,000
R22	V4 pentode GB and AVC	140
R23	delay resistances ...	750
R24	V4 AVC diode load resistances	500,000
R25		250,000
R26	Scale lamps ballast ...	3



	OTHER COMPONENTS	Approx. Values (ohms)
L1	Ext. aerial frame coupling	0·17
L2	Frame aerial tuning coils	1·8
L3		20·0
L4	V1 anode RF choke ...	530·0
L5	RF circuit tuning coils ...	1·54
L6		4·5
L7	Oscillator reaction coil ...	0·7
L8	Osc. circ. MW tuning coil	1·3
L9	Osc. circ. LW tuning coil	4·7
L10	1st IF trans. Pri. ...	42·0
L11	Sec. ...	42·0
L12	2nd IF trans. Pri. ...	42·0
L13	Sec. ...	42·0
L14	IF filter choke	660·0
L15	Speaker speech coil ...	1·23
L16	Hum neutralising coil ...	0·2
L17	Speaker field coil ...	1,650·0
T1	Output trans. Pri ...	740·0
	Sec. ...	0·31
T2	Mains trans. Pri., total ...	30·0
	Heater sec. ...	0·13
	HT sec. ...	31·0
T.I.	Tuning meter winding ...	1,000·0
S1-S6	Waveband switches ...	—
S7-S9	Radio/gram change switches	—
S10, S11	Scale lamp switches ...	—
S12	Pick-up jack-switch ...	—
S13	Speaker jack-switch ...	—
S14	Mains switch	—

Switch Table

Switch	LW	MW	Gram
S1	—	C	—
S2	—	C	—
S3	—	C	—
S4	—	C	—
S5	C	—	—
S6	—	—	C
S7	C	C	—
S8	C	C	—
S9	—	—	C
S10	—	C	—
S11	C	—	—

CHASSIS DIVERGENCIES

The HT circuit RF by-pass condenser **C29** was not shown in the makers' diagram. **C12** may be 0.05 μF.

According to the makers' notes, the signal diode load resistance **R18,** which in our diagram is shown connected to **V4** cathode, *may be returned instead to* the junction of **R22** and **R23,** applying a negative bias potential to the diode, so that a fixed degree of inter-station noise suppression is obtained.

In later chassis, this arrangement is replaced by a variable muting control, and it is suggested that, in cases where circumstances render it advisable, the modification should be made by the dealer. The procedure is as follows :

Remove **R23** altogether, and replace it with a variable potentiometer of 500 O and a 250 O fixed resistance, connecting the top end of the fixed element of the potentiometer to the bottom end of **R22,** and the 250 O resistance between the bottom end of the fixed element of the potentiometer and chassis.

Disconnect the lower end of **R18** from **V4** cathode, and connect it instead to the slider of the potentiometer.

It is suggested that the potentiometer, which forms the mute control, should be fitted to the escutcheon board, the centre of its spindle being 1¼ inches from the left-hand edge of the board, when viewed from the front, on a line 4 inches back from the straight portion of the front edge of the board. The leads should consist of flexible wire.

In practice, the control is adjusted by tuning to a point at which no signal is received, so that interference noises are at a maximum, and the mute control is then adjusted to a point at which the noise is suppressed, when there should be no interference at any point on the scale.

At the same time, of course, all signals of a strength up to that of the local interference level are also suppressed, so that only stations whose field strength locally exceeds that of the interference level are received.

CIRCUIT ALIGNMENT

IF Stages.—While the secondary tuning condenser of an IF transformer is being adjusted, a damping resistance of 20,000 O must be connected across the primary, and it must be transferred to the secondary while the primary condenser is being adjusted. On each transformer small tags are provided on each tuning condenser, and the resistance may be conveniently attached by means of clips to these.

Insert the pick-up plug fully in its sockets to open **S12** and mute the oscillator, and turn the volume control to maximum. Connect the signal generator via a 0.002 μF condenser to the control grid (top cap) of **V2** and chassis. Feed in a 127 KC/S (2,362.2 m) signal, connect the damping resistance to the tags of **C38,** and, using an insulated tool, adjust **C39** for maximum output; transfer damping resistance to **C39,** and adjust **C38** for maximum output. Transfer damping resistance to **C40,** and adjust **C41** for maximum output; transfer damping resistance to **C41,** and adjust **C40** for maximum output. Withdraw the pick-up plug.

RF and Oscillator Stages.—With the gang at maximum, the pointer should coincide with the indentations in the "H" marks at the high wavelength ends of the scale. If it does not, see that scale glass fits squarely in its clamps. If a small amount of correction is then required, it can be obtained by slackening *the three screws in the pointer drive* drum, when the slotted holes permit a small amount of movement. If a greater amount of movement is required, it can be obtained by releasing the screw holding the drum boss to the gang spindle.

The frame aerial must be removed from the cabinet and connected to the chassis, which is, of course, also removed from the cabinet. *Connect signal generator to* a coupling coil, whose proximity to the frame aerial can be varied. At first, this coil should be closely coupled to the frame, but it should be moved farther away as the circuits come into line; throughout the adjustments, the tuning indicator should indicate minimum signal.

MW.—Switch set to MW, turn the gang to minimum, feed in a 196 m (1,530 KC/S) signal, and adjust **C36** for maximum output. If two peaks are found, select that involving the lesser trimmer capacity. Then adjust **C33** for maximum output. Feed in a 500 m (600 KC/S) signal and tune it in. If the final setting is 15·20 m low on the scale, it is fairly certain that **C36** has been set on the wrong peak. Repeat the 196 m adjustments.

LW.—Switch set to LW, with gang still set at minimum, feed in a 775 m (388 KC/S) signal, and adjust **C35,** then **C32,** for maximum output. Tune to 846 m on scale, feed in an 846 m (355 KC/S) signal, and readjust **C35** for maximum output, this time selecting the peak involving the *greater* trimmer capacity if two peaks are found; but do not disturb **C32.**

Finally, replace frame aerial and *chassis in the cabinet and adjust* **C30** on a broadcast signal for maximum output. The setting will not be critical, but it should be close to minimum capacity.

PYE - SP/AC