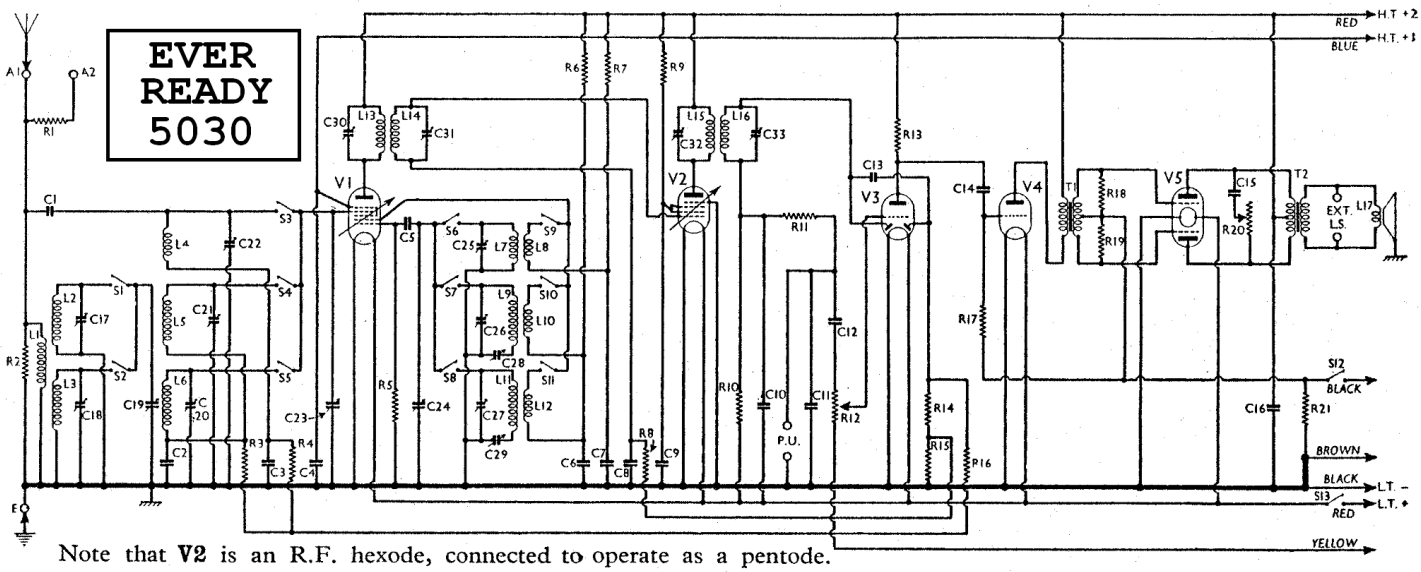

Note that **V2** is an R.F. hexode, connected to operate as a pentode.

COMPONENTS AND VALUES

	CONDENSERS	Values (μF)
C1	Aerial circuit S.W. coupling	0·00001
C2	V1 tet. C.G. M.W. and L.W. decoupling	0·1
C3	Aerial circuit S.W. tracker	0·01
C4	V1 S.G. decoupling	0·1
C5	V1 osc. C.G. condenser	0·0001
C6	V1 osc. anode M.W. and L.W. decoupling	0·1
C7	V1 osc. anode S.W. decoupling	0·1
C8	V2 C.G. decoupling	0·1
C9	V2 S.G. decoupling	0·1
C10	I.F. by-pass	0·0002
C11	Fixed tone corrector	0·0001
C12	A.F. coupling to R12	0·05
C13	V3 A.V.C. diode feed	0·00001
C14	V3 to V4 A.F. coupling	0·05
C15	Part of T.C. circuit	0·05
C16	H.T. reservoir condenser	2·0
C17‡	Band-pass primary M.W. trimmer	0·00004
C18‡	Band-pass primary L.W. trimmer	0·0001
C19†	Band-pass primary tuning	0·00054
C20‡	Band-pass secondary L.W. trimmer	0·0001
C21‡	Band-pass secondary M.W. trimmer	0·00004
C22‡	Aerial circuit S.W. trimmer	0·00004
C23†	Band-pass secondary tuning	0·00054
C24†	Oscillator circuit tuning	0·00054
C25‡	Osc. circuit S.W. trimmer	0·00004
C26‡	Osc. circuit M.W. trimmer	0·00004
C27‡	Osc. circuit L.W. trimmer	0·0001
C28‡	Osc. circuit M.W. tracker	0·0006
C29‡	Osc. circuit L.W. tracker	0·0006
C30‡	1st I.F. trans. pri. tuning	—
C31‡	1st. I.F. trans. sec. tuning	—
C32‡	2nd I.F. trans. pri. tuning	—
C33‡	2nd I.F. trans. sec. tuning	—

	RESISTANCES	Values (ohms)
R1	A2 circuit potentiometer	100,000
R2	A2 circuit potentiometer	11,000
R3	V1 tetrode S.G. decoupling (M.W. and L.W.)	100,000
R4	V1 tetrode C.G. decoupling (S.W.)	100,000
R5	V1 osc. C.G. resistance	100,000
R6	V1 osc. anode M.W. and L.W. H.T. feed	50,000
R7	V1 osc. anode S.W. H.T. feed	15,000
R8	V2 C.G. decoupling	100,000
R9	V2 S.G. H.T. feed	100,000
R10	V3 signal diode load	510,000
R11	I.F. stopper	50,000
R12	Manual volume control	500,000
R13	V3 triode anode load	50,000
R14	V3 A.V.C. diode load resistances	500,000
R15	V3 A.V.C. diode load resistances	260,000
R16	V1 tet. A.V.C. line decoupling	500,000
R17	V4 C.G. resistance	500,000
R18	V5 C.G. circuit stabilisers	11,000
R19	V5 C.G. circuit stabilisers	11,000
R20	Variable tone control	50,000
R21	G.B. battery bleeder	430

	OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial M.W. and L.W. coupling coil		11·0
L2	Band-pass pri. M.W. tuning coil		1·5
L3	Band-pass pri. L.W. tuning coil		11·0
L4	Aerial circuit S.W. tuning coil		Very low
L5	Band-pass sec. M.W. tuning coil		1·5
L6	Band-pass sec. L.W. tuning coil		11·0
L7	Osc. S.W. tuning coil		Very low
L8	Osc. S.W. anode reaction		0·3
L9	Osc. M.W. tuning coil		1·8
L10	Osc. M.W. anode reaction		5·8
L11	Osc. L.W. tuning coil		5·25
L12	Osc. L.W. anode reaction		17·0
L13	1st I.F. trans.	Pri.	6·5
L14	1st I.F. trans.	Sec.	6·5
L15	2nd I.F. trans.	Pri.	6·5
L16	2nd I.F. trans.	Sec.	6·5
L17	Speaker speech coil		1·8
T1	Intervalve trans.	Pri.	525·0
		Sec. total	340·0
T2	Output trans.	Pri. total	550·0
		Sec.	0·2
S1-S11	Waveband switches		—
S12	G.B. circuit switch		—
S13	L.T. circuit switch		—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating with a new battery reading 140 V on the H.T. section, on load. The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but there was no signal input.

Voltages were measured on the 1,200 V scale of an Avometer, chassis being negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 X22*	140	0·5	55	1·5
V2 K50N	140	2·0	40	0·6
V3 K23B	90	0·8	—	—
V4 K30E	138	1·8	—	—
V5 K33B	140†	1·6†	—	—

* Oscillator anode 55V, 1·3 mA.
† Each anode.

GENERAL NOTES

Switches.—**S1-S11** are the wavechange switches, ganged in two rotary units beneath the chassis. The units are indicated in our under-chassis view, and shown in detail in the diagram on page VIII. The table (page VIII) gives the switch positions for the three control settings, starting from fully anti-clockwise. O indicates open, and **C** closed.

S12 and **S13** are the Q.M.B. battery switches, ganged with the volume control **R12.** Looking from the top of the chassis, the upper two tags belong to **S12** and the lower two to **S13.**

Coils.—**L1-L6** are in a tubular unscreened unit beneath the chassis. **L7-L12** and the I.F. transformers **L13, L14** and **L15, L16** are in three screened units on the chassis deck.

External Speaker.—Two sockets are provided at the rear of the chassis for a low impedance (2-3 O) external speaker.

Trimmers.—All the trimmers except those of the I.F. transformers are adjusted through holes in the chassis deck, and are indicated in our plan chassis view.

Resistance Values.—Several of the resistors indicated by the makers as having values of 110,000 O, 510,000 O, 51,000 O, and 16,000 O, in our chassis were 100,000 O, 500,000 O, 50,000 O and 15,000 O types. This makes no appreciable difference to the working of the set, and either value can be used for replacement.

CIRCUIT ALIGNMENT

I.F. Stages.—Short circuit the oscillator tuning coils by a wire across **C24.** Feed in a 455 KC/S signal between control grid (top cap) of **V1** and chassis, and adjust **C33, C32, C31** and **C30** in turn for maximum output, in the order given. Re-check, then remove the short on **C24.**

R.F. and Oscillator Stages.—With gang at maximum, pointer should be horizontal. Set **C28** approximately two-thirds in.

Switch set to M.W., tune to 214 m. on scale, feed a 214 m. (1,400 KC/S) signal

SWITCH TABLE AND DIAGRAM

Switch	S.W.	M.W.	L.W.
S1	O	**C**	O
S2	O	O	**C**
S3	**C**	O	O
S4	O	**C**	O
S5	O	O	**C**
S6	**C**	O	O
S7	O	**C**	O
S8	O	O	**C**
S9	**C**	O	O
S10	O	**C**	O
S11	O	O	**C**

Switch diagrams, looking from the rear of the underside of the chassis.