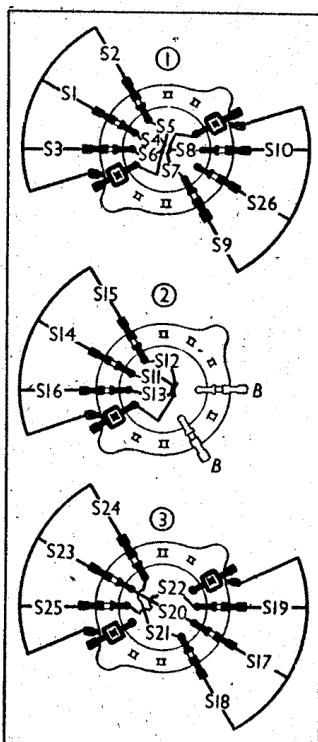


## Switch Table and Diagrams

Switch	MW	SW	LW
S1	—	0	—
S2	0	—	—
S3	0	—	—
S4	0	—	—
S5	0	—	—
S6	0	—	—
S7	0	—	—
S8	0	—	—
S9	0	—	—
S10	0	—	—
S11	0	—	—
S12	0	—	—
S13	0	—	—
S14	0	—	—
S15	0	—	—
S16	0	—	—
S17	0	—	—
S18	0	—	—
S19	0	—	—
S20	0	—	—
S21	0	—	—
S22	0	—	—
S23	0	—	—
S24	0	—	—
S25	0	—	—
S26	—	0	—



Waveband switch diagrams, as seen in the direction of the arrows in our under-chassis view.

### CIRCUIT ALIGNMENT

**IF Stages.**—Connect a signal generator to the grid (top cap) of V1 via a 0.01  $\mu$ F condenser, and chassis. Leave the normal grid lead connected.

Turn receiver volume control to maximum. Feed in a 460 kc/s signal, and adjust the screws associated with the inductors L15, L16, L17 and L18 in that order for maximum output, keeping the input low to avoid AVC action. Repeat the adjustments until no further improvement results.

**RF and Oscillator Stages.**—With the gang at maximum, the pointer should cover the 1,950 m mark on the scale. Connect signal generator via a suitable dummy aerial to A1 and E sockets.

**MW.**—Switch set to MW, tune to 200 m on scale, feed in a 200 m (1,500 kc/s) signal, fully unscrew C41, and then screw it up slowly until a peak is reached, finally adjusting it for maximum output. Tune to 550 m on scale, feed in a 550 m (545 kc/s) signal, and adjust C31 and C35 for maximum output, rocking the gang for optimum results; then adjust C38 for maximum output, still rocking the gang. Return to 200 m, and check the setting of C31 and C35.

**LW.**—Switch set to LW, tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal, and adjust C42 for maximum output. Tune to 1,700 m on scale, feed in a 1,700 m (176.3 kc/s) signal, and adjust C29 and C32 for maximum output, rocking the gang for optimum results; then adjust C39 for maximum output, still rocking the gang. Return to 1,000 m, and check the setting of C29 and C32.

## EKCO - AW 87

Intermediate frequency 460 KC/S.

CONDENSERS		Values ( $\mu$ F)
C1	Small aerial L.W. coupling ..	0.00002
C2	V1 hexode C.G. decoupling ..	0.02
C3	V1 hexode S.G. decoupling ..	0.1
C4	V1 hexode anode decoupling ..	0.02
C5	1st I.F. trans. pri. fixed tuning	0.000045
C6	1st I.F. trans. sec. fixed tuning	0.000062
C7	V1 cathode by-pass ..	0.1
C8	V1 osc. C.G. condenser ..	0.0001
C9	H.T. line R.F. filter ..	0.25
C10	Osc. M.W. fixed trimmer ..	0.00001
C11	Osc. M.W. fixed tracker ..	0.00033
C12	Osc. L.W. fixed trimmer ..	0.00004
C13	V2 C.G. decoupling ..	0.02
C14	V2 cathode by-pass ..	0.1
C15	2nd I.F. trans. pri. fixed tuning	0.000048
C16	2nd I.F. trans. sec. fixed tuning	0.000058
C17	I.F. by-pass ..	0.0005
C18	A.F. coupling to V3 ..	0.02
C19	Coupling to V3 A.V.C. diode ..	0.000005
C20*	V3 anode decoupling ..	2.0
C21*	V3 cathode by-pass ..	25.0
C22	V3 to V4 A.F. coupling ..	0.02
C23	Tone corrector ..	0.0005
C24*	V4 cathode by-pass ..	25.0
C25	Tone corrector ..	0.005
C26	Part of variable tone control ..	0.02
C27*	H.T. smoothing ..	8.0
C28*	—	8.0
C29†	Band-pass pri. L.W. trimmer ..	—
C30†	Band-pass primary tuning ..	—
C31†	Band-pass pri. M.W. trimmer ..	—
C32†	Band-pass sec. L.W. trimmer ..	—
C33†	Aerial circuit S.W. trimmer ..	—
C34†	Band-pass sec. and S.W. tuning	—
C35†	Band-pass sec. M.W. trimmer ..	—
C36†	Osc. circuit tuning ..	—
C37†	Osc. S.W. tracker ..	—
C38†	Osc. M.W. tracker ..	—
C39†	Osc. L.W. tracker ..	—
C40†	Osc. S.W. trimmer ..	—
C41†	Osc. M.W. trimmer ..	—
C42†	Osc. L.W. trimmer ..	—

\* Electrolytic. † Variable. ‡ Pre-set.

RESISTANCES		Values (ohms)
R1	V1 hexode C.G. decoupling ..	100,000
R2	V1 hexode S.G. potentiometer	10,000
R3	—	8,000
R4	V1 hexode anode decoupling ..	1,000
R5	V1 fixed G.B. resistance ..	320
R6	V1 osc. C.G. resistance ..	25,000
R7	V1 osc. anode feed resistance ..	25,000
R8	V2 fixed G.B. resistance ..	500
R9	V3 signal diode load ..	500,000
R10	Manual volume control ..	250,000
R11	V3 triode G.B. resistance ..	750
R12	V3 triode anode decoupling ..	10,000
R13	V3 triode anode load ..	50,000
R14	V3 A.V.C. diode load resistances	250,000
R15	—	500,000
R16	V4 C.G. resistance ..	500,000
R17	V4 G.B. resistance ..	160
R18	Variable tone control ..	250,000

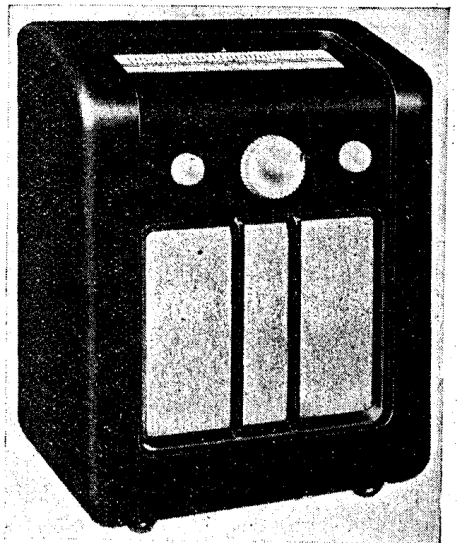
OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial M.W. coupling coil ..	27.0
L2	Aerial L.W. coupling coil ..	150.0
L3	Band-pass primary M.W. and L.W. coils	2.8
L4	—	21.0
L5	Aerial S.W. coupling coil ..	0.1
L6	Aerial S.W. tuning coil ..	Very low
L7	Band-pass secondary M.W. and L.W. coils	3.0
L8	—	19.5
L9	Osc. S.W. tuning coil ..	Very low
L10	Osc. S.W. reaction ..	0.1
L11	Osc. M.W. tuning coil ..	1.2
L12	Osc. M.W. reaction ..	0.5
L13	Osc. L.W. tuning coil ..	7.75
L14	Osc. L.W. reaction ..	2.3
L15	1st I.F. trans. { Pri. ..	15.0
L16	— { Sec. total ..	15.0
L17	2nd I.F. trans. { Pri. ..	15.0
L18	— { Sec. ..	15.0
L19	Speaker speech coil ..	1.6
L20	Hum neutralising coil ..	0.1
L21	Speaker field coil ..	2,250.0
T1	Output trans. { Pri. ..	700.0
—	— { Sec. ..	0.1
—	— { Pri. total ..	35.0
T2	Mains trans. { Heater sec. ..	0.075
—	— { Rect. heat. sec. ..	0.125
—	— { H.T. sec. total ..	600.0
S1-S26	Waveband switches ..	—
S27	Internal speaker switch ..	—
S28	Mains switch, ganged R10 ..	—

### VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 TH4*	245	2.5	80	4.8
V2 VP4†	245	8.0	245	3.5
V3 TDD4	90	2.7	—	—
V4 PenA4	225	32.0	245	4.0
V5 IW4/350	345†	—	—	—

\* Oscillator anode 120 V, 5.8 mA.

† Each anode, A.C.



**SW.**—Switch set to SW, and see that A2 is connected to E. Tune to 15 Mc/s on scale, feed in a 15 Mc/s (20 m) signal, and adjust C40 for maximum output. Two settings will be found, and that involving the lesser trimmer capacity should be selected. The image should now be found at 14.1 Mc/s on scale (using a strong signal); if it is found instead at 15.9 Mc/s, the wrong peak has been used. Now adjust C33, with weak input again, while rocking the gang. Tune to 14.1 Mc/s on scale, where 15 Mc/s signal should be weak compared with that at correct tuning point. If it is strong, readjust C33.

Tune to 6 Mc/s on scale, feed in a 6 Mc/s (50 m) signal, and adjust C37 for maximum output while rocking the gang for optimum results. Return to 15 Mc/s, and readjust C33 for maximum output.

**Chassis Divergence.**—In our chassis, C1 and C10 had the values shown in our tables: 0.00002 (20  $\mu$ F) and 0.00001 (10  $\mu$ F). In the makers' information these two values are transposed.

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