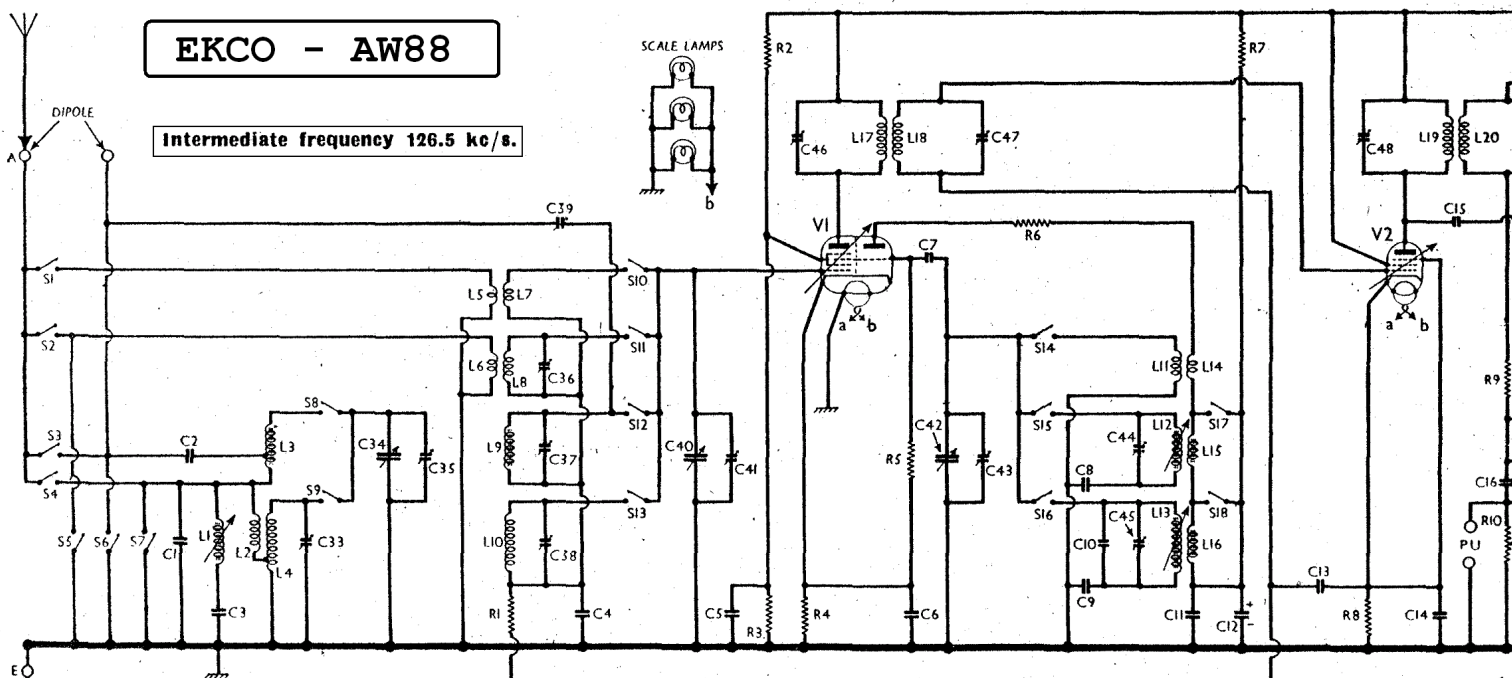
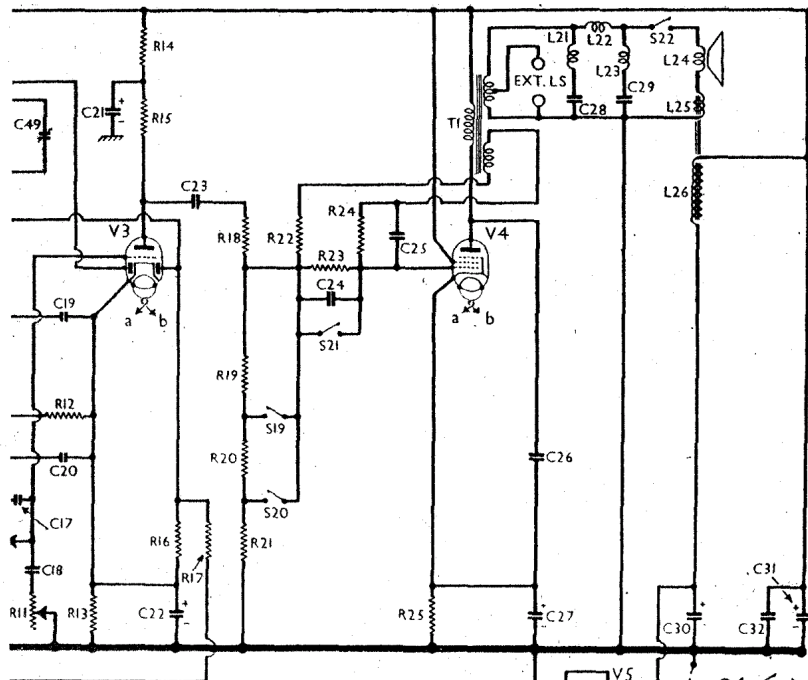
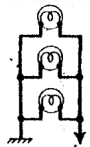


EKCO - AW88

Intermediate frequency 126.5 kc/s.



SCALE LAMPS



CONDENSERS

Values (μF)

Condenser	Description	Value (μF)
C1	Aerial capacity swamp	0.001
C2	Aerial MW coupling	0.001
C3	Aerial IF filter tuning	0.00015
C4	V1 hexode CG decoupling	0.04
C5	V1 SG decoupling	0.1
C6	V1 cathode by-pass	0.1
C7	V1 osc. CG condenser	0.00005
C8	Osc. circuit MW tracker	0.002
C9	Osc. circuit LW tracker	0.0008
C10	Osc. circuit fixed trimmer	0.00002
C11	V1 osc. anode RF by-pass	0.1
C12*	V1 osc. anode decoupling	2.0
C13	V2 CG decoupling	0.04
C14	V2 cathode by-pass	0.1
C15	Coupling to V3 AVC diode	0.000015
C16	AF coupling to V3 triode	0.01
C17	High-note compensator	0.00006
C18	Part variable tone control	0.004
C19	IF by-pass condensers	0.0002
C20	IF by-pass condensers	0.0002
C21*	V3 triode anode decoupling	2.0
C22*	V3 cathode by-pass	50.0
C23	V3 triode to V4 AF coupling	0.01
C24	Parts of feed-back coupling	0.008
C25	Fixed tone corrector	0.1
C26	Fixed tone corrector	0.004
C27*	V4 cathode by-pass	50.0
C28	Parts of whistle filter	0.2
C29	Parts of whistle filter	0.2
C30*	HT smoothing condensers	8.0
C31*	HT smoothing condensers	12.0
C32	HT circuit RF by-pass	0.1
C33†	B-P pri. LW trimmer	—
C34†	Band-pass pri. tuning	—
C35†	B-P pri. MW trimmer	—
C36†	Aerial SW trimmer	—
C37†	B-P sec. MW trimmer	—
C38†	B-P sec. LW trimmer	—
C39†	Image suppressor	—
C40†	Band-pass sec. tuning	—
C41†	Aerial TS trimmer	—
C42†	Oscillator circuit tuning	—
C43†	Osc. circuit SW trimmer	—
C44†	Osc. circuit MW trimmer	—
C45†	Osc. circuit LW trimmer	—
C46†	1st IF trans. pri. tuning	—
C47†	1st IF trans. sec. tuning	—
C48†	2nd IF trans. pri. tuning	—
C49†	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 TH4A	240	4.1	103	7.0
V2 VP41	105	7.0	240	4.6
V3 DT41	240	12.0	240	5.2
V4 OP42	105	1.7	—	—
V5 IW4/350	225	39.0	—	—

† Each anode, A.C.

RESISTORS

Values (ohms)

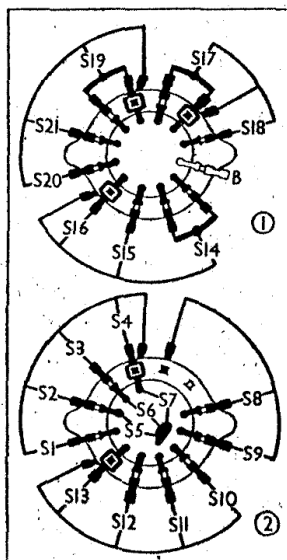
R1	V1 hex. CG decoupling	250,000
R2	V1 SG pot. divider	*12,500
R3	V1 fixed GB resistor	25,000
R4	V1 osc. CG resistor	250
R5	V1 osc. anode stabiliser	25,000
R6	V1 osc. anode HT feed	200
R7	V2 fixed GB resistor	†20,000
R8	V2 GB resistor	300
R9	IF stopper	500,000
R10	Manual volume control	1,000,000
R11	Variable tone control	1,500,000
R12	V3 signal diode load	100,000
R13	V3 GB resistor	2,000
R14	V3 triode anode decoupling	15,000
R15	V3 triode anode load	50,000
R16	V3 AVC diode load	750,000
R17	AVC line decoupling	1,000,000
R18	V4 CG resistors	75,000
R19	V4 CG resistors	100,000
R20	V4 CG resistors	250,000
R21	Part feed-back feed	25,000
R22	Feed-back coupling resistor	32,000
R23	Part feed-back feed	20,000
R24	V4 GB resistor	50,000
R25	V4 GB resistor	120

* Two 25,000 Ω in parallel in our chassis.

† Two 40,000 Ω in parallel in our chassis.

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial IF filter coil ...	40-0
L2	Aerial LW coupling coil ...	*40-0
L3	Band-pass primary coils ...	2.5
L4		30-0
L5	Aerial TS coupling coil ...	Very low
L6	Aerial SW coupling coil ...	0.4
L7	Aerial TS tuning coil ...	Very low
L8	Aerial SW tuning coil ...	0-05
L9	Band-pass secondary tuning coils ...	2.5
L10		27-0
L11	Oscillator TS and SW tuning coil ...	0.05
L12	Oscillator MW tuning coil ...	3-0
L13	Oscillator LW tuning coil ...	9-0
L14	Oscillator TS and SW reaction ...	0-4
L15	Oscillator MW reaction ...	0-6
L16	Oscillator LW reaction ...	2-0
L17	1st IF trans. { Pri. ...	80-0
L18		80-0
L19	2nd IF trans. { Pri. ...	80-0
L20		80-0
L21	Parts of whistle filter ...	2.5
L22		5.5
L23		2.5
L24	Speaker speech coil ...	24-0
L25	Hum neutralising coil ...	0-7
L26	Speaker field coil ...	1,250-0
T1	Output trans. { Pri., Total ...	350-0
		4-0
		40-0
T2	Mains { Heater sec. ...	0-05
		0-1
		550-0
S1-S21	Waveband switches ...	—
S22	Internal speaker switch ...	—
S23	Mains switch, ganged R10	—

* Including part of L4, from tap to chassis.



Diagrams of the two waveband switch units, drawn as seen when viewed from the rear of the underside of the chassis. "B" indicates a blank tag.

Switch	LW	MW	SW	TS
S1	—	—	—	c
S2	—	—	—	—
S3	—	—	—	—
S4	c	—	—	—
S5	—	—	—	—
S6	—	—	—	—
S7	—	—	—	—
S8	—	—	—	—
S9	c	—	—	—
S10	—	—	—	—
S11	—	—	—	—
S12	—	—	—	—
S13	c	—	—	—
S14	—	—	—	—
S15	—	—	—	—
S16	c	—	—	—
S17	—	—	—	—
S18	—	—	—	—
S19	c	—	—	—
S20	—	—	—	—
S21	—	—	—	—

RADIOGRAM MODIFICATIONS

The differences in the RG109 radiogram include a five-position switch (with a gram setting), and an extra switch unit. The pick-up has a 30,000 Ω resistor in parallel with it. In the gram position of the switch, the pick-up is connected between chassis and C16 and C17 (as in our diagram), but on radio it is disconnected. On gram, also, the top of L3 is earthed, and certain other connections are broken, including the HT supply to the hexode portion of V1.

CIRCUIT ALIGNMENT

IF Stages.—Connect signal generator to E socket, and via a 0.02 μ F condenser to grid (top cap) of V1, leaving existing cap in position. Switch set to LW, turn gang to maximum, feed in a 126.5 kc/s (2,372 m) signal, and adjust C46, C47, C48 and C49 for maximum output.

RF and Oscillator Stages.—See that cursor line covers the 550 m mark when gang is at maximum. Volume control should be at maximum during alignment. Connect signal generator via a suitable dummy aerial to A and E sockets.

TS.—Connect signal generator to A and E sockets, and feed in an 18 Mc/s (16.66 m) signal. Switch set to SW, and tune to 18 Mc/s on scale. Fully unscrew C43, then screw it in slowly. Two peaks will be obtained, of which the first reached is correct. Adjust to this accurately.

Feed in a 20.75 Mc/s (14.3 m) signal (its second harmonic being 41.5 Mc/s), at full generator output. Then switch to TS and adjust C41 for maximum output.

SW.—Switch to SW, feed in a 15 Mc/s (20 m) signal, tune to 15 Mc/s on scale, and adjust C36 for maximum output.

MW.—Switch set to MW, tune to 200 m on scale, and feed in a 200 m (1,500 kc/s) signal. Fully unscrew C44 and then screw it in slowly, adjusting accurately to the first peak reached. Tune to 250 m on scale, feed in a 250 m (1,200 kc/s) signal, and adjust C37 and C35 for maximum output. Tune to 500 m on scale, feed in a 500 m (600 kc/s) signal, and adjust iron core of L12 for maximum output, while rocking the gang for optimum results. Repeat the adjustments at 200, 250 and 500 m.

LW.—Switch set to LW, tune to 1,100 m on scale, feed in a 1,100 m (272.5 kc/s) signal, and adjust C45, C38 and C33 for maximum output. C33 is adjusted by sliding the spiral wire on the insulating sleeve over the straight wire.

Tune to 1,700 m on scale, feed in a 1,700 m (176.5 kc/s) signal, and adjust core of L13 for maximum output, while rocking the gang.

IF Filter.—Leaving set tuned to 1,700 m, feed in a 126.5 kc/s signal at full generator output, and adjust core of L1 for minimum output. Reduce generator output, and adjust to 272.5 kc/s. Tune to 1,100 m on scale, and repeat LW alignment as above.

Image Rejector.—Switch set to MW, feed in a 1,000 kc/s signal at full generator output. Tune receiver to image of generator frequency (about 400 m) and adjust C39 for minimum output.

Tune to 250 m, feed in a 1,200 kc/s signal, and readjust C37 for maximum output.