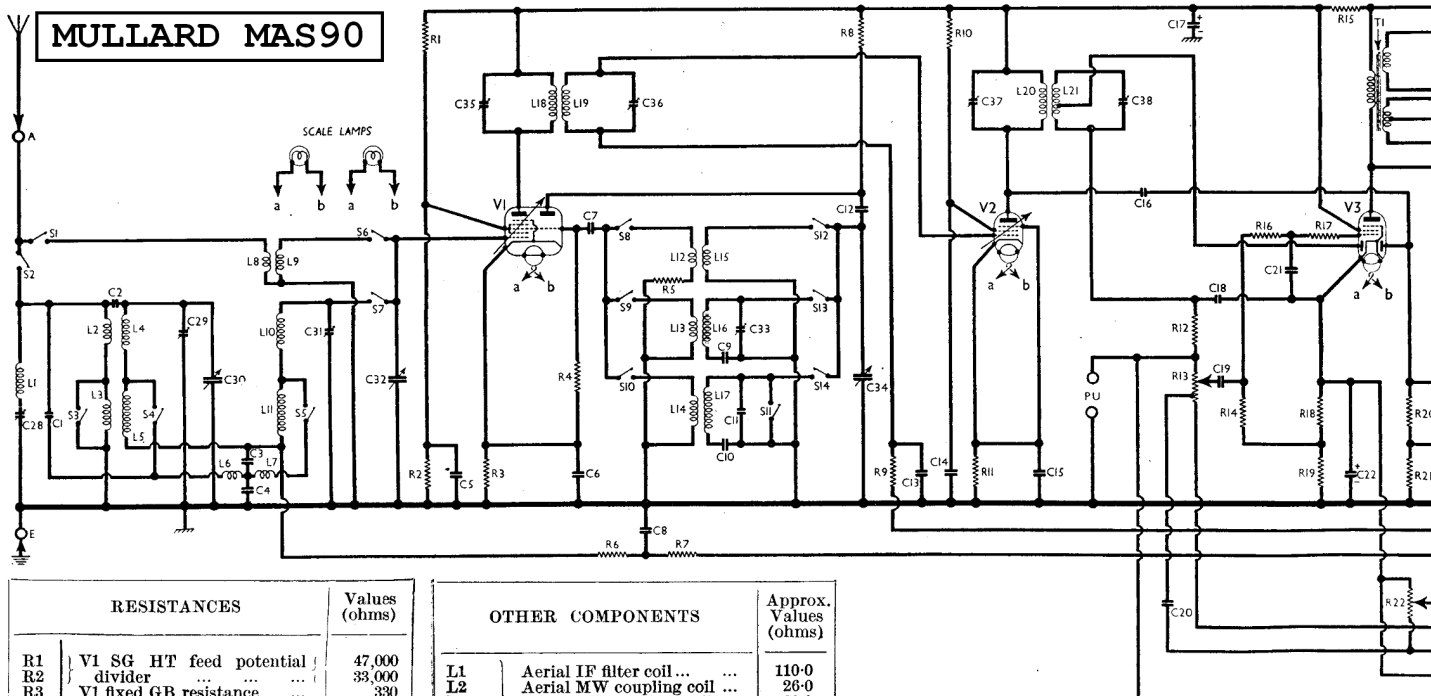


MULLARD MAS90



RESISTANCES

		Values (ohms)
R1	V1 SG HT feed potential divider	47,000
R2	V1 fixed GB resistance	33,000
R3	V1 osc. CG resistance	330
R4	V1 osc. SW reaction damping	47,000
R5	AVC line decoupling resist.	100,000
R6	AVC line decoupling resist.	100,000
R7	AVC line decoupling resist.	100,000
R8	V1 osc. anode HT feed	1,500,000
R9	V2 CG decoupling	1,800,000
R10	V2 SG HT feed	100,000
R11	V2 fixed GB	330
R12	Volume control limiter	47,000
R13	Manual volume control; V3 signal diode load	700,000*
R14	V3 pentode CG resistance	1,000,000
R15	HT feed resistance	1,800
R16	IF filter resistance	82,000
R17	V3 pentode grid stopper	56
R18	V3 pentode GB; AVC delay	150
R19	resistances	390
R20	V3 AVC diode load resist.	560,000
R21	tances	560,000
R22	Variable tone control	50,000
R23		1,500
R24	Feed-back feed resistances	12,000
R25		10,000
R26		820,000

*Tapped at 50,000 Ω from low-potential end

OTHER COMPONENTS

		Approx. Values (ohms)
L1	Aerial IF filter coil	110-0
L2	Aerial MW coupling coil	26-0
L3	Aerial LW coupling coil	90-0
L4	Band-pass primary coils	4-5
L5	Band-pass primary coils	48-0
L6	Band-pass coupling coils	0-7
L7	Band-pass coupling coils	0-7
L8	Aerial SW coupling coil	2-0
L9	Aerial SW tuning coil	Very low
L10	Band-pass secondary coils	4-4
L11	Oscillator SW reaction coil	45-0
L12	Oscillator MW reaction coil	1-0
L13	Oscillator LW reaction coil	2-5
L14	Osc. circuit SW tuning coil	9-5
L15	Osc. circuit MW tuning coil	Very low
L16	Osc. circuit LW tuning coil	8-0
L17	Osc. circuit LW tuning coil	32-0
L18	1st IF trans. Pri.	115-0
L19	1st IF trans. Sec.	115-0
L20	2nd IF trans. Pri.	115-0
L21	2nd IF trans. Sec., total	125-0
L22	Tone control choke	800-0
L23	Speaker speech coil	2-5
T1	Output trans. Pri.	700-0
T2	Output trans. Sec.	1-0
	Output trans. Tert., total	369-0
	Heater sec.	45-0
	Rect. heat. sec.	0-1
	HT sec., total	0-2
	HT sec., total	300-0
S1-S14	Waveband switches	—
S15, S16	Mains switches, ganged	—

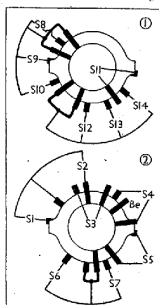
VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 234V, using the 245V tapping on the mains transformer. The receiver was tuned to the lowest wavelength on the MW band, and the volume control was at maximum, but there was no signal input.

Voltages were measured on the 400V scale of a model 7 Universal Avometer, chassis being negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 ECH3	238	1.3	62	1.5
V2 EF9	128	3.7	80	1.6
V3 EBL1	238	5.0	238	3.9
V4 AZ1	253†	—	—	—

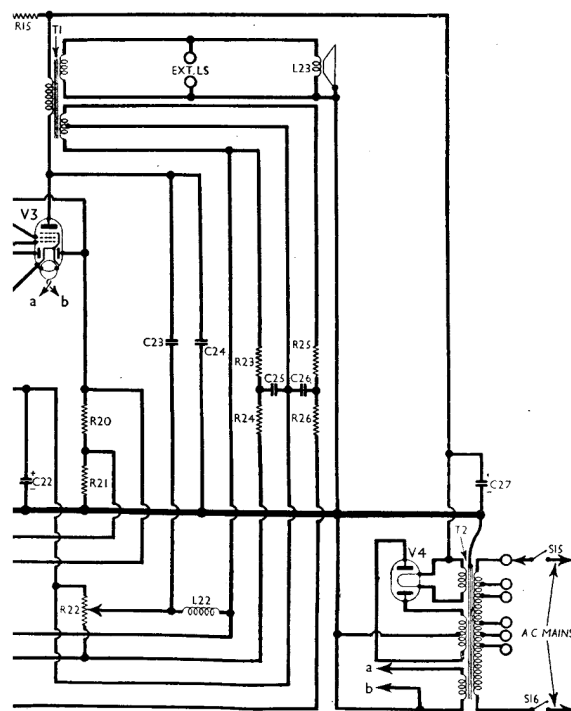
† Each anode, AC



SWITCH TABLE

SWITCH	SW	MW	LW
S1	0	0	0
S2	0	0	0
S3	0	0	0
S4	0	0	0
S5	0	0	0
S6	0	0	0
S7	0	0	0
S8	0	0	0
S9	0	0	0
S10	0	0	0
S11	0	0	0
S12	0	0	0
S13	0	0	0
S14	0	0	0

* Electrolytic. † Variable. ‡ Pre-set.



CIRCUIT ALIGNMENT

IF Stages.—Switch set to MW, turn gang to minimum and volume control to maximum. Connect signal generator to control grid (top cap) of V1 (via a 0.32μF condenser) and chassis. Feed in a 128 KC/S signal. Connect an 80μF condenser across C37, and adjust C38 for maximum output. Remove 80μF condenser and connect it from tapping on L21 to junction of C18, R12. Adjust C37 for maximum output. Remove 80μF condenser and seal all trimmers.

RF and Oscillator Stages.—The only adjustments are for trimming at the bottom of the MW band. Connect signal generator to A and E sockets, via a suitable dummy aerial, switch set to MW and turn volume control to maximum. Fit the special 15 degree trimming jig to the front of the gang condenser, and set the condenser to it. Feed in a 1,600 KC/S (187.5m) signal, and adjust C33, then C31 and C29, for maximum output. Re-check C31 and C33, then seal trimmers and remove jig.

IF Filter.—Feed a 128 KC/S signal into A and E sockets, and adjust C28 for minimum output.