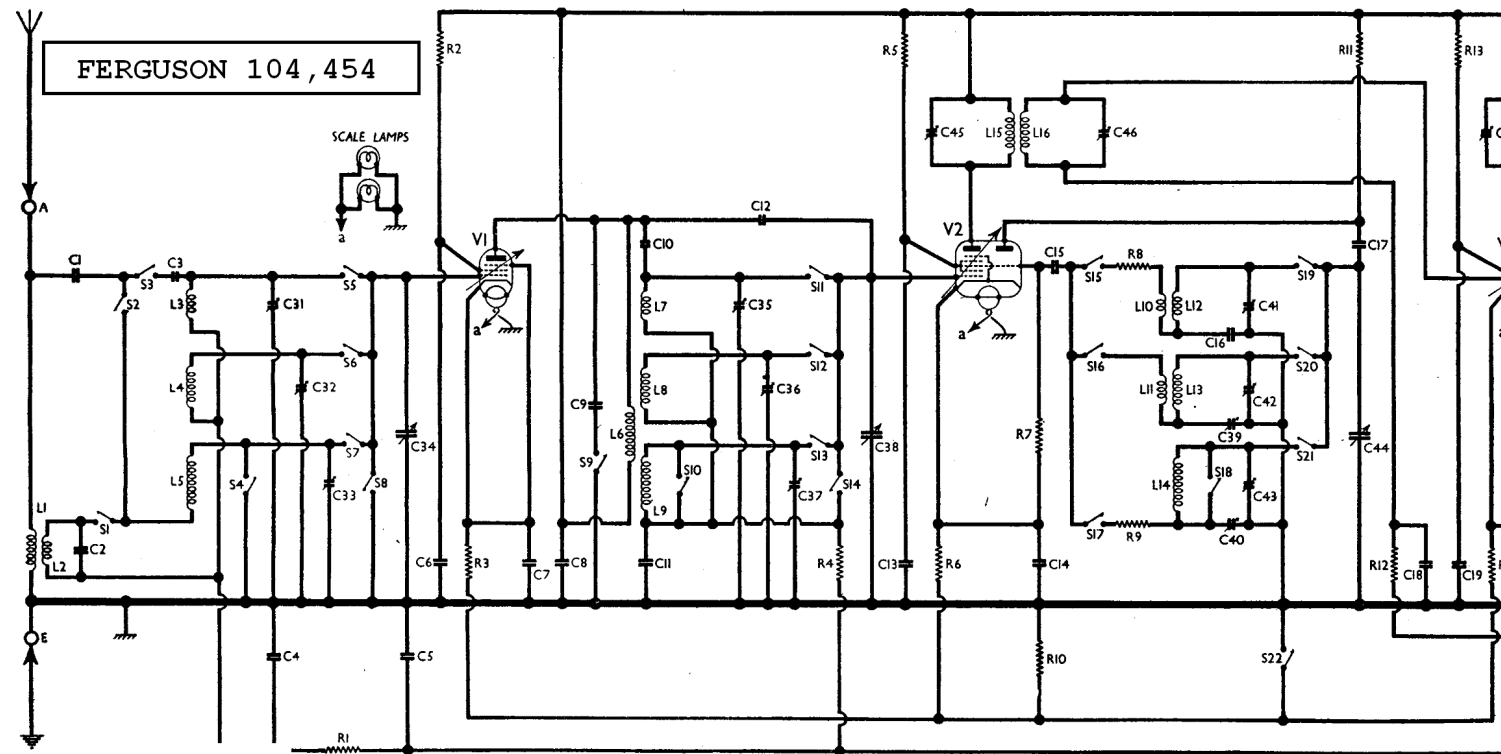


SCALE LAMPS



RESISTANCES	Values (ohms)
R1 V1 CG decoupling ...	250,000
R2 V1 8G HT feed ...	100,000
R3 V1 fixed GB resistance ...	400
R4 V2 8G HT feed ...	250,000
R5 V2 fixed GB resistance ...	100,000
R6 V2 osc. CG resistance ...	200
R7 V2 osc. CG resistance ...	60,000
R8 V2 osc. CG resistance ...	25
R9 V2 osc. CG resistance ...	10,000
R10 V1, V2, V3 MW and LW GB resistance ...	200
R11 V2 osc. anode HT feed ...	25,000
R12 V3 CG decoupling ...	500,000
R13 V3 8G HT feed ...	100,000
R14 V3 fixed GB resistance ...	400
R15 IF stopper ...	100,000
R16 V4 signal diode load ...	500,000
R17 Manual volume control ...	2,000,000
R18 V4 triode GB, AVC delay ...	2,500
R19 V4 triode anode load ...	250,000
R20 V4 AVC diode load ...	500,000
R21 V4 AVC diode load ...	500,000
R22 V5 CG resistance ...	500,000
R23 V5 GB resistance ...	150
R24 V5 anode stopper ...	100
R25 Variable tone control ...	100,000

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 230 V, using the 220-230 V tapping on the mains transformer. The receiver was tuned to the lowest wavelength on the medium wave band, and the volume control was at maximum, but there was no signal input.

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

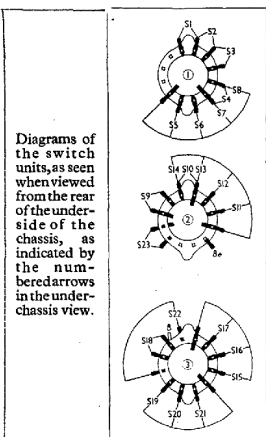
Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 EF39	228	3.7	116	1.2
V2 6X4	228	1.6	121	1.8
V3 6X4	144	5.0	128	1.4
V4 6Q7	228	4.6	290	4.9
V5 6X4	95	0.7	290	4.9
V6 6X4	270	39.0	290	4.9

† Each anode AC.

CONDENSERS	Values (μF)
C1 Aerial MW coupling ...	0.0005
C2 Part LW coupling ...	0.002
C3 Aerial SW coupling ...	0.00001
C4 V1 CG decoupling ...	0.1
C5 V1 CG decoupling ...	0.02
C6 V1 8G decoupling ...	0.1
C7 V1 cathode by-pass ...	0.1
C8 HT circuit RF by-pass ...	0.1
C9 RF trans. pri. shunt ...	0.0004
C10 RF SW coupling ...	0.000005
C11 V2 8G decoupling ...	0.1
C12 RF "Top" coupling condenser ...	0.000005
C13 V2 8G decoupling ...	0.1
C14 V2 cathode by-pass ...	0.1
C15 V2 osc. CG condenser ...	0.0001
C16 V2 osc. CG condenser ...	0.005
C17 V1 osc. anode coupling ...	0.0001
C18 V3 CG decoupling ...	0.1
C19 V3 8G decoupling ...	0.1
C20 V3 cathode by-pass ...	0.1
C21 V3 cathode by-pass ...	0.00025
C22 V3 cathode by-pass ...	0.00025
C23 V3 cathode by-pass ...	0.001
C24 V4 triode to V5 AF coupling ...	0.02
C25 V4 cathode by-pass ...	25.0
C26 V4 triode to V5 AF coupling ...	0.02
C27 Fixed tone corrector ...	0.005
C28 Part of variable tone control ...	0.05
C29 HT smoothing condensers ...	16.0
C30 HT smoothing condensers ...	16.0
C31 Aerial circ. SW trimmer ...	0.00003
C32 Aerial circ. MW trimmer ...	0.00003
C33 Aerial circ. LW trimmer ...	0.00011
C34 Aerial circuit tuning ...	0.00028
C35 RF coupling, V1 trimmer ...	0.00003
C36 RF trans. MW trimmer ...	0.00003
C37 RF trans. LW trimmer ...	0.00011
C38 RF circuit tuning ...	0.00011
C39 Osc. circuit MW tracker ...	0.0006
C40 Osc. circuit LW tracker ...	0.00025
C41 Osc. circuit SW tracker ...	0.00025
C42 Osc. circuit MW trimmer ...	0.00003
C43 Osc. circuit LW trimmer ...	0.0002
C44 Oscillator circuit tuning ...	0.0002
C45 1st IF trans. pri. tuning ...	—
C46 2nd IF trans. pri. tuning ...	—
C47 2nd IF trans. pri. tuning ...	—
C48 2nd IF trans. sec. tuning ...	—

* Electrolytic. † Variable. ‡ Pre-set.

OTHER COMPONENTS	Approx. Values (ohms)
L1 Aerial circuit choke ...	330.0
L2 Aerial LW coupling ...	20.0
L3 Aerial SW tuning coil ...	Very low
L4 Aerial MW tuning coil ...	3.0
L5 Aerial LW tuning coil ...	20.0
L6 RF trans. primary ...	Very low
L7 SW RF tuning coil ...	Very low
L8 RF trans. MW sec. ...	3.0
L9 RF trans. LW sec. ...	3.0
L10 Oscillator MW reaction ...	0.1
L11 Oscillator LW reaction ...	0.1
L12 Osc. circ. SW tuning coil ...	Very low
L13 Osc. circ. MW tuning coil ...	2.0
L14 Osc. circ. LW tuning coil ...	5.25
L15 1st IF trans. (Pri.) ...	8.5
L16 1st IF trans. (Sec.) ...	8.5
L17 2nd IF trans. (Pri.) ...	8.5
L18 2nd IF trans. (Sec.) ...	8.5
L19 Speaker speech coil ...	15
L20 Hum neutralizing coil ...	0.2
L21 Speaker field coil ...	1,500.0
L22 Speaker input (Pri.) ...	400.0
L23 Speaker input (Sec.) ...	0.15
L24 P.T. total ...	32.0
L25 Heater sec. ...	0.1
L26 Rect. heat. sec. ...	0.15
L27 HT sec. total ...	480.0
S1-S22 Waveband switches ...	—
S23 Grain pick-up switch ...	—
S24 Mains switch, ganged R17 ...	—



CIRCUIT ALIGNMENT

IF Stages.—Switch set the SW, and tune gang and volume control to maximum. Remove the top cap connector of V2 and connect a 500,000 Ω resistance between the connector and the top cap of the valve. Connect the signal generator, via a 0.0002 μF condenser, between the grid (top cap) of V2 and the earth lead.

Feed in a 470 KC/S signal and adjust C48, C47, C46 and C45 in turn for maximum output. Repeat these adjustments.

RF and Oscillator Stages.—With the gang at maximum, pointer should be horizontal. Connect signal generator, via a suitable dummy aerial, to aerial and earth leads.

SW.—Switch set to SW, tune to 15 m. on scale, feed in a 15 m (20 MC/S) signal, and adjust C41, using the peak involving the lesser capacity, then adjust C35 and C31 in that order for maximum output. There is no adjustable tracking on this band, but performance should be checked at 50 m (6 MC/S).

MW.—Switch set to MW, tune to 214 m on scale, feed in a 214 m (1,400 KC/S) signal, and adjust C42, then C36 and C32 for maximum output. Feed in a 500 m (600 KC/S) signal, tune it in, and adjust C39 for maximum output while rocking the gang for optimum results. Repeat the 214 m adjustments.

LW.—Switch set to LW, tune to 1,250 m on scale, feed in a 1,250 m (240 KC/S) signal, and adjust C43, then C37 and C33 for maximum output. Feed in a 2,000 m (150 KC/S) signal, tune it in, and adjust C40 for maximum output while rocking the gang for optimum results. Repeat the 1,250 m adjustments.