

## VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 ECH35	210	1.0	100	3.0
V2 EF39	105	3.5	—	—
V3 EBC33	210	5.3	100	1.7
V4 EL32	100	2.1	—	—
V5 AZ31	200	22.0	210	4.1
	250†	—	—	—

† Each anode, AC.

## OTHER COMPONENTS

		Approx. Values (ohms)
L1	Aerial coupling coils { SW	1-4
L2	{ MW	30-0
L3	Aerial tuning coils { SW ...	Very low
L4	{ MW ...	3-5
L5	Osc. reaction coils { SW ...	0-1
L6	{ MW ...	1-0
L7	Osc. tuning coils { SW ...	Very low
L8	{ MW ...	2-0
L9	1st IF trans. { Pri. ...	8-5
L10	{ Sec. ...	8-5
L11	2nd IF trans. { Pri. ...	8-5
L12	{ Sec. ...	8-5
L13	Speaker speech coil...	4-0
T1	Speaker input trans. { Pri. ...	400-0
	{ Sec. ...	0-3
T2	Mains { Pri., total ...	100-0
	{ Heater sec. ...	0-2
	{ Rect. heat. sec. ...	0-2
	{ HT sec., total ...	450-0
S1-S7	Waveband switches	—
S8	Mains switch, ganged R9	—

## CIRCUIT ALIGNMENT

**IF Stages.**—Remove top cap connector of V1, and connect a 0.5 megohm resistor in series between connector and the top cap of the valve. Connect signal generator from top cap of valve to chassis, via isolating capacitors of about 0.1  $\mu$ F. Switch set to MW, turn gang to maximum, and feed in a 470 kc/s (635.3 m) signal. Adjust C31, C30, C29 and C28 in turn for maximum output.

**RF and Oscillator Stages.**—With gang at maximum, pointer should be horizontal. Connect signal generator via a suitable dummy aerial to aerial lead of set, and via a 0.1  $\mu$ F capacitor to chassis.

**MW.**—Switch set to MW, tune to 214 m on scale, feed in a 214 m (1,400 kc/s) signal, and adjust C25, then C22, for maximum output. Feed in a 500 m (600 kc/s) signal, tune it in, and adjust C24 for maximum output, while rocking the gang for optimum results.

**SW.**—Switch set to SW, tune to 16 m on scale, feed in a 16 m (18.75 Mc/s) signal, and adjust C25, then C21, for maximum output. Tracking is fixed, but calibration should be checked at about 49 m (6.125 Mc/s).

## RESISTORS

		Values (ohms)
R1	V1 hex. CG decoupling ...	500,000
R2	V1 osc. CG resistor ...	50,000
R3	Osc. reaction damping ...	20
R4	V1 osc. anode HT feed ...	25,000
R5	V2 CG decoupling ...	500,000
R6	V1, V2 SG's HT feed ...	25,000
R7	IF stopper ...	100,000
R8	V3 signal diode load ...	500,000
R9	Manual volume control ...	2,000,000
R10	V1-V3 GB; AVC delay ...	150
R11	V3 triode anode load ...	50,000
R12	V3 AVC diode load ...	500,000
R13	V3 AVC diode load ...	500,000
R14	V4 CG resistor ...	1,000,000
R15	V4 GB resistor ...	470
R16	V4 anode stopper ...	100
R17	HT smoothing resistor ...	1,200

## CAPACITORS

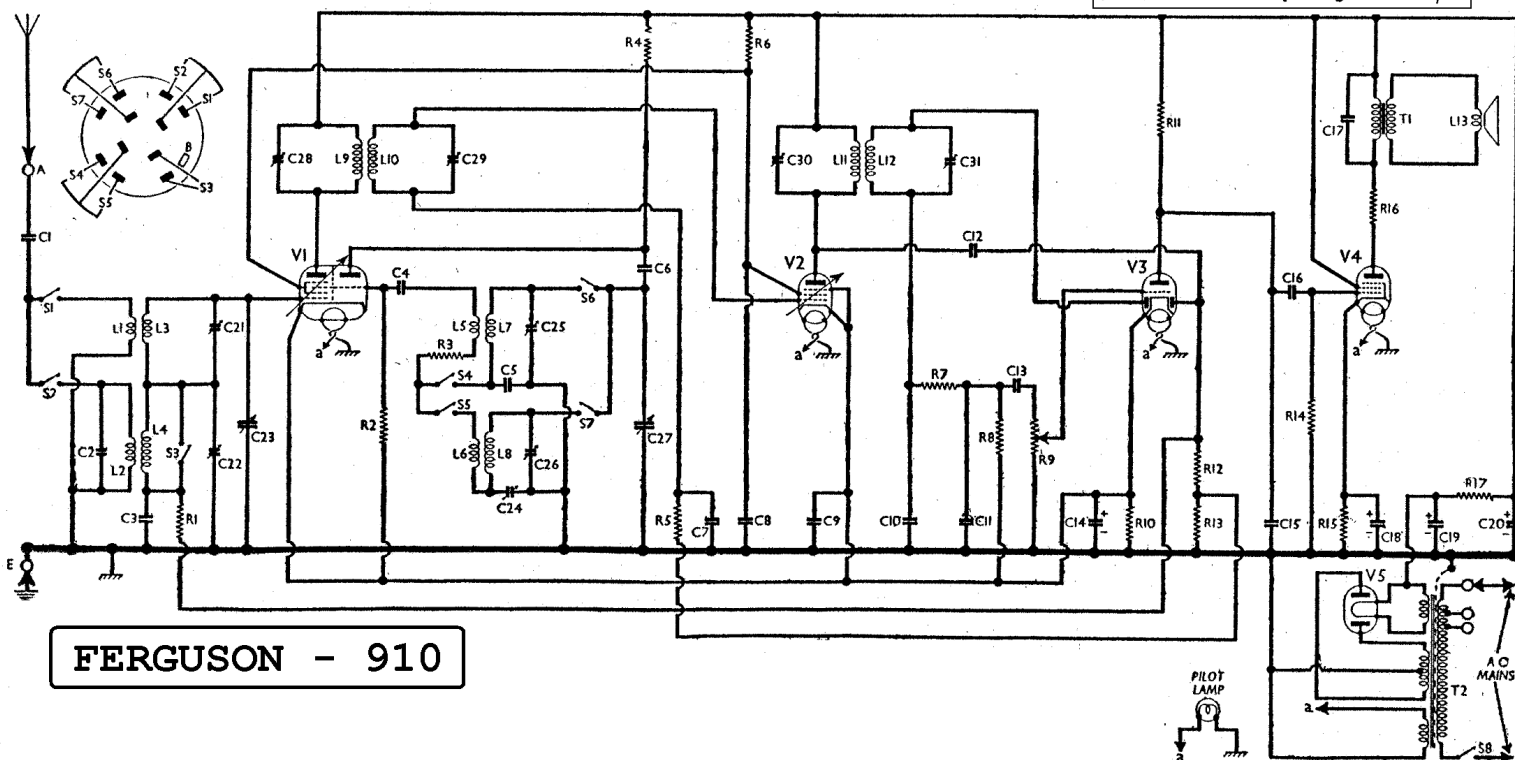
		Values ( $\mu$ F)
C14*	V1-3 cathodes by-pass ...	25.0
C15	IF by-pass ...	0.00025
C16	V3 triode to V4 coupling ...	0.02
C17	Fixed tone corrector ...	0.005
C18*	V4 cathode by-pass ...	25.0
C19*	HT smoothing capacitors {	16.0
C20*	{	16.0
C21†	Aerial circ. SW trimmer ...	0.00003
C22†	Aerial circ. MW trimmer ...	0.00003
C23†	Aerial circuit tuning ...	—
C24†	Osc. circ. MW tracker ...	0.00005
C25†	Osc. circ. SW trimmer ...	0.00003
C26†	Osc. circ. MW trimmer ...	0.00003
C27†	Oscillator circuit tuning ...	—
C28†	1st IF trans. pri. tuning ...	—
C29†	1st IF trans. sec. tuning ...	—
C30†	2nd IF trans. pri. tuning ...	—
C31†	2nd IF trans. sec. tuning ...	—

## CAPACITORS

		Values ( $\mu$ F)
C1	Aerial series coupling ...	0.0005
C2	Aerial MW shunt ...	0.00002
C3	V1 hex. CG decoupling ...	0.1
C4	V1 osc. CG capacitor ...	0.0001
C5	Osc. circ. SW tracker ...	0.005
C6	V1 osc. anode coupling ...	0.0001
C7	V2 CG decoupling ...	0.1
C8	V1, V2 SG's decoupling ...	0.1
C9	V1-3 cathodes by-pass ...	0.1
C10	IF by-pass capacitors {	0.00025
C11	{	0.00025
C12	V3 AVC diode coupling ...	0.0001
C13	AF coupling to V3 triode (continued overleaf)	0.02

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

Intermediate frequency 470 kc/s.



FERGUSON - 910