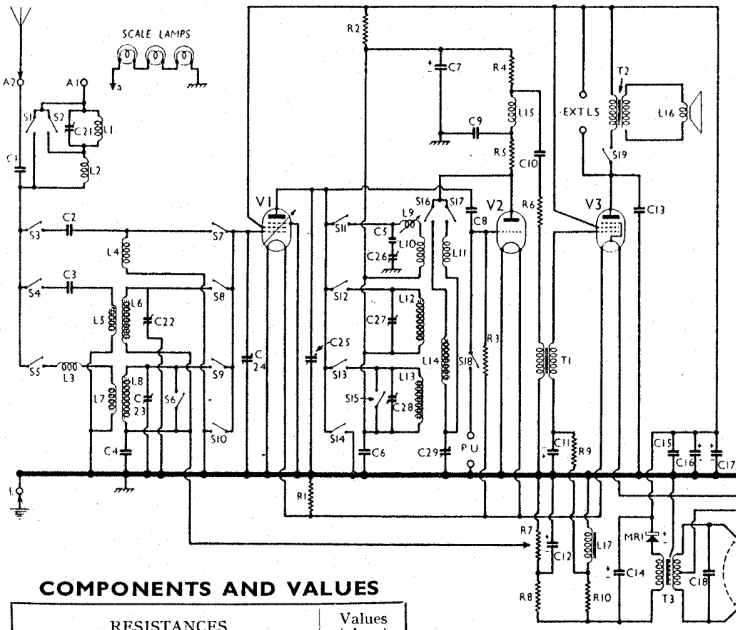
BURGOYNE - AWTV



Scale Lamps.—These are three Osram

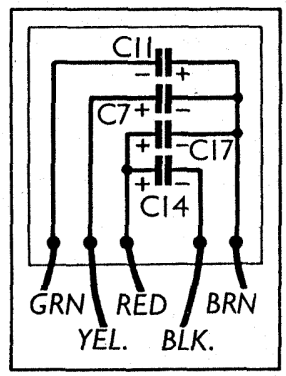


Diagram of the internal connections of the condenser block, with the colour coding of the leads.

M.E.S. types, rated at 2·5 V, 0·2 A, and wired in series across the L.T. supply.

COMPONENTS AND VALUES

	RESISTANCES	Values (ohms)
R1	V1, V2 filament ballast resistance	35
R2	V1 anode decoupling	5,000
R3	V2 grid leak	2,000,000
R4	V2 anode load resistance	30,000
R5	V2 anode R.F. filter	5,000
R6	R.F. stopper	50,000
R7	V1 gain control	10,000
R8	V1 G.B. smoothing resistance	10,000
R9	V3 C.G. decoupling	50,000
R10	Part V3 G.B. circuit	700

	CONDENSERS	Values (μF)
C1	Aerial series condenser	0·0002
C2	Aerial S.W. coupling	0·0002
C3	Aerial M.W. coupling	0·0002
C4	V1 C.G. decoupling	0·1
C5	V1 anode fixed S.W. trimmer	0·00005
C6	V1 anode R.F. by-pass	0·1
C7*	V1 anode decoupling	2·0
C8	V2 C.G. condenser	0·0001
C9	V2 anode R.F. by-pass	0·0002
C10	A.F. coupling to T1	0·1
C11*	V3 C.G. decoupling	20·0
C12*	V1 G.B. circuit decoupling	25·0
C13	V3 anode tone corrector	0·01
C14*	H.T. smoothing	2·0
C15	H.T. line R.F. by-pass	0·1
C16*	H.T. smoothing	8·0
C17*		2·0
C18	Convertor unit interference suppressors	0·1
C19		0·5
C20		0·2
C21‡	Droitwich rejector tuning	—
C22‡	Aerial M.W. trimmer	—
C23‡	Aerial L.W. trimmer	—
C24†	Aerial circuit tuning	—
C25†	Anode circuit tuning	—
C26‡	Anode circuit S.W. trimmer	—
C27‡	Anode circuit M.W. trimmer	—
C28‡	Anode circuit L.W. trimmer	—
C29†	Reaction control	—

* Electrolytic. † Variable. ‡ Pre-set.

	OTHER COMPONENTS		Approx. Values (ohms)
L1	Droitwich rejector coil		30·0
L2	Aerial series choke		9·0
L3	Aerial L.W. choke		21·0
L5	Aerial M.W. coupling		0·05
L6	Aerial M.W. tuning coil		2·4
L7	Aerial L.W. coupling		2·9
L8	Aerial L.W. tuning coil		12·0
L9	Anode S.W. trimming coil		Very low
L10	Anode S.W. tuning coil		0·05
L11	S.W. reaction coil		0·15
L12	Anode M.W. tuning coil		2·75
L13	Anode L.W. tuning coil		12·0
L14	M.W. and L.W. reaction coil		1·5
L15	V2 anode R.F. choke		175·0
L16	Speaker speech coil		2·3
L17	H.T. smoothing choke and V3 G.B. res.		475·0
L18	Convertor unit interference suppressor chokes		8·0
L19			0·3
L20			0·3
T1	Intervalve trans.	Pri.	1,500·0
		Sec.	3,250·0
T2	Speaker input trans.	Pri.	680·0
		Sec.	0·3
T3	Convertor trans.	Pri. (total	1·4
		Sec.	240·0
S1-17	Waveband switches		—
S18	Gram. pick-up switch		—
S19	Internal speaker switch		—
S20	L.T. switch		—
F1	L.T. circuit fuse (2 A)		—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating from an accumulator reading 6 V on load. The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but the reaction control was at minimum. There was no signal input.

Voltages were measured on the 1,200 V scale of an Avometer, chassis being negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 SP2B	95	1·9	110	1·7
V2 LL210	55	1·1	—	—
V3 PP222	108	3·4	110	0·7

GENERAL NOTES

Switches.—**S1-S18** are the wavechange and gramophone switches, ganged in three rotary units beneath the chassis, and indicated in our under-chassis view. The switches are shown in detail in the diagrams on page IV, where they are as seen from the underside of the chassis, looking in the directions of the arrows in the under-chassis view.

The table (p. IV) gives the switch positions for the four control settings, starting from fully anti-clockwise. O indicates open, and **C** closed.

S19 is the internal speaker switch at the rear of the chassis which is normally closed, but opens when the external speaker plug is inserted and rotated anti-clockwise.

S20 is the Q.M.B. battery switch, ganged with the gain control **R7.**

Coils.—**L1, L2, L3** and **L4** are on separate unscreened tubular formers beneath the chassis. **L5-L8, L10, L11** and **L12-L14** are in three screened units on the chassis deck, two of them containing also two trimmers each. **L9** is a small inductive trimmer, in series with the S.W. anode coil for adjustment purposes. It may not be used in some chassis, but is generally present. **L15, L19** and **L20** are air-cored chokes, beneath the chassis, while **L17** and **L18** are iron-cored chokes. **L16** is the speaker speech coil.

Scale Lamps.—These are three Osram

Switch	L.W.	M.W.	S.W.	Gram.
S1	O	O	**C**	O
S2	O	**C**	O	O
S3	O	O	**C**	O
S4	O	**C**	O	O
S5	**C**	O	O	O
S6	O	**C**	O	O
S7	O	O	**C**	O
S8	O	**C**	O	O
S9	**C**	O	O	O
S10	O	O	O	**C**
S11	O	O	**C**	O
S13	**C**	O	O	O
S14	O	O	O	**C**
S15	O	**C**	**C**	O
S16	**C**	**C**	O	O
S17	O	O	**C**	O
S18	O	O	O	**C**

CIRCUIT ALIGNMENT

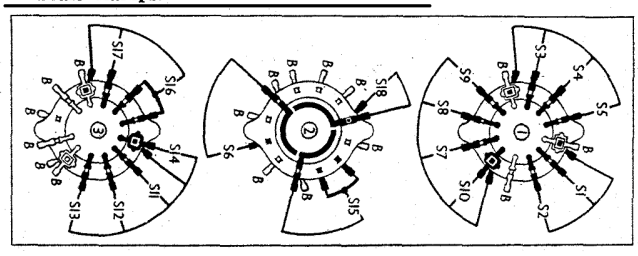
With gang condenser at minimum, pointer should cover black line at lower end of yellow S.W. " strip."

Connect signal generator to **A2** and **E** sockets, switch set to M.W., and turn gain control to maximum. Feed in a 200 m. signal, tune to 200 m. on scale, and adjust **C22** and **C27** for maximum output with reaction control advanced until set is just short of oscillation.

Switch set to L.W., feed in a 1,200 m. signal, tune to 1,200 m. on scale, and adjust **C23** and **C28** for maximum output, again with critical reaction.

Feed a 1,500 m. signal into **A1** and **E** sockets, tune to 1,500 m. on scale, and adjust **C21** (front of chassis) for *minimum* output, keeping reaction control at minimum.

Switch set to S.W., feed a 21 m. signal into **A2** and **E** sockets, tune to 21 m. on scale and adjust **C26** (through hole in chassis deck) for maximum output with critical reaction. Tune to 48 m. on scale, feed in a 48 m. signal, and adjust inductive trimmer **L9** (by pulling out or squeezing in the turns) for maximum output with critical reaction. Re-adjust **C26** at 21 m. and **L9** at 48 m. until no improvement results, and calibration is correct at both points.



Switch diagrams, looking at the units in the directions of the arrows