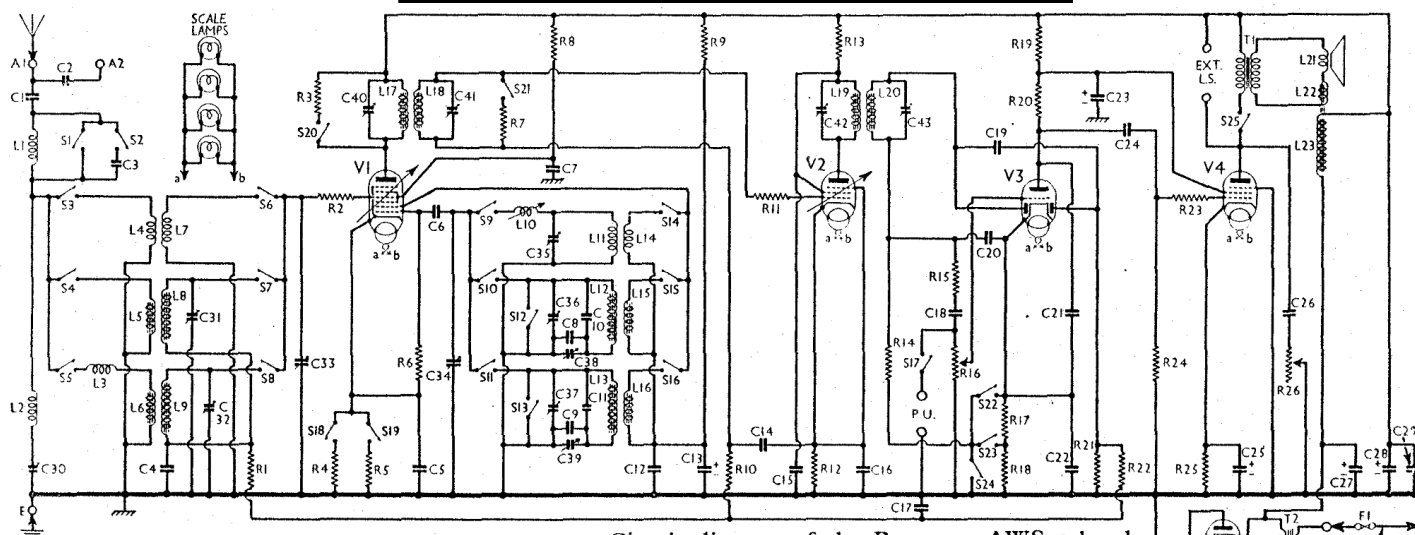


BURGOYNE - AWS & AWSRG



COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	V1 pentode C.G. decoupling	100,000
R2	V1 pentode C.G. stabiliser	100
R3	L17 sensitivity shunt resistance	50,000
R4	V1 fixed G.B. and sensitivity control resistances	200
R5	V1 osc. C.G. resistance	500
R6	V1 osc. C.G. resistance	50,000
R7	L18 sensitivity shunt resistance	50,000
R8	V1 S.G. H.T. feed	40,000
R9	V1 osc. anode H.T. feed	40,000
R10	V2 C.G. decoupling	250,000
R11	V2 C.G. stabiliser	500
R12	V2 fixed G.B. resistance	100
R13	V2 S.G. and anode H.T. feed	5,000
R14	V3 signal diode load resistance	250,000
R15	I.F. stopper	250,000
R16	Manual volume control	500,000
R17	V3 G.B. and sensitivity control resistances	500
R18	V3 triode anode and V4 S.G. H.T. feed	5,000
R19	V3 triode anode load	30,000
R20	V3 A.V.C. diode load	500,000
R21	A.V.C. line decoupling	250,000
R22	V4 C.G. I.F. stopper	50,000
R23	V4 C.G. resistance	250,000
R24	V4 G.B. resistance	140
R25	V4 G.B. resistance	140
R26	Variable tone control	10,000

CONDENSERS		Values (μF)
C1	Aerial series condenser	0.0001
C2	A2 socket aerial series condenser	0.000035
C3	L.W. second channel rejector tuning	0.00005
C4	V1 pentode C.G. decoupling	0.1
C5	V1 cathode by-pass	0.1
C6	V1 osc. C.G. condenser	0.0001
C7	V1 S.G. decoupling	0.1
C8	Osc. circuit M.W. fixed tracker	0.00048
C9	Osc. circuit L.W. fixed tracker	0.00013
C10	Osc. circuit M.W. fixed trimmer	0.00002
C11	Osc. circuit L.W. fixed trimmer	0.00005
C12	Osc. anode R.F. by-pass	0.1
C13*	Oscillator anode decoupling	2.0
C14	V2 C.G. decoupling	0.001
C15	V2 S.G. and anode decoupling	0.1
C16	V2 cathode by-pass	0.1
C17	A.V.C. line decoupling	0.1
C18	A.F. coupling to V3 triode	0.005
C19	V3 A.V.C. diode coupling	0.0001
C20	I.F. by-pass	0.0004
C21	V3 triode anode I.F. by-pass	0.0001
C22	V3 cathode by-pass	0.1
C23*	V3 triode anode and V4 S.G. decoupling	4.0
C24	V3 to V4 A.F. coupling	0.01
C25*	V4 cathode by-pass	50.0
C26	Part variable tone control	0.05
C27*	H.T. smoothing	8.0
C28*	H.T. smoothing	12.0
C29	H.T. circuit R.F. filter	0.1
C30†	Aerial I.F. filter tuning	—
C31†	Aerial circuit M.W. trimmer	—
C32†	Aerial circuit L.W. trimmer	—
C33†	Aerial circuit tuning	0.0005
C34†	Oscillator circuit tuning	0.0005
C35†	Oscillator circuit S.W. trimmer	—
C36†	Oscillator circuit M.W. trimmer	—
C37†	Oscillator circuit L.W. trimmer	—
C38†	Oscillator circuit M.W. tracker	—
C39†	Oscillator circuit L.W. tracker	—
C40†	1st I.F. trans. pri. tuning	—
C41†	1st I.F. trans. sec. tuning	—
C42†	2nd I.F. trans. pri. tuning	—
C43†	2nd I.F. trans. sec. tuning	—

* Electrolytic. † Variable. ‡ Pre-set.
§ Two 25 μF in parallel.

Circuit diagram of the Burgoyne AWS 3-band A.C. superhet, taken from our own chassis. Slight divergencies may occur in early models. The AWSG and AWSG/RG radio-grams have similar chassis.

OTHER COMPONENTS

		Approx. Values (ohms)
L1	Second channel L.W. rejector	8.5
L2	Aerial I.F. filter coil	22.0
L3	Aerial L.W. choke	58.0
L4	Aerial S.W. coupling coil	0.15
L5	Aerial M.W. coupling coil	0.4
L6	Aerial L.W. coupling coil	3.0
L7	Aerial S.W. tuning coil	0.1
L8	Aerial M.W. tuning coil	2.6
L9	Aerial L.W. tuning coil	12.5
L10	Osc. S.W. trimming coil	Very low
L11	Oscillator S.W. tuning coil	Very low
L12	Oscillator M.W. tuning coil	1.25
L13	Oscillator L.W. tuning coil	3.9
L14	Oscillator S.W. reaction	0.1
L15	Oscillator M.W. reaction	0.9
L16	Oscillator L.W. reaction	1.3
L17	1st I.F. trans. Pri.	5.4
L18	1st I.F. trans. Sec.	9.5
L19	2nd I.F. trans. Pri.	5.6
L20	2nd I.F. trans. Sec.	5.0
L21	Speaker speech coil	1.7
L22	Hum neutralising coil	0.1
L23	Speaker field coil	2,000.0
Tr	Speaker input trans. Pri.	700.0
	Speaker input trans. Sec.	0.3
T2	Mains trans. Pri. total	27.0
	Heat. sec. total	0.075
	Rec. heat. sec.	0.1
	H.T. sec. total	560.0
S1-S16	Waveband switches	—
S17	Radio-gram. change switch	—
S18-S24	Sensitivity switches	—
S25	Internal speaker switch	—
S26	Mains switch, ganged R16	—
F1, F2	Mains circuit fuses, 1 amp.	—

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 band and both the volume and sensitivity controls were at maximum (the latter fully anti-clockwise). 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 VO4*	255	5.3	85	1.2
V2 VP4B	180	10.7	180	3.1
V3 DDT4	110	3.3	—	—
V4 APP4C	230	35.0	220	3.6
V5 APV4	350†	—	—	—

* Oscillator anode (G2) 100 V, 3.4 mA.

† Each anode, A.C.

GENERAL NOTES

Switches.—S1-S17 are the wavechange and gramophone switches, ganged in four rotary units beneath the chassis. These are indicated by numbers in circles

in our under-chassis view, and shown in detail in the diagrams on page viii.

S18-S24 are the sensitivity switches, in a single rotary unit beneath the chassis, also indicated in our under-chassis view, and shown in the diagrams on page viii.

The tables (p. viii) give the switch positions for the various control settings, starting from fully anti-clockwise in each case. A dash indicates open, and C, closed.

S25 is the internal speaker switch, combined with the external speaker sockets. When the special external speaker plug is inserted, and rotated anti-clockwise, S25 opens and mutes the internal speaker.

S26 is the Q.M.B. mains switch, ganged with the volume control, R16.

Coils.—L1-L3 are on separate small tubular formers beneath the chassis, while L10 is a small self-supporting inductance, also beneath the chassis. The remaining coils are in six screened units on the chassis deck. Some of these, including the I.F. transformers, contain also two associated trimmers.

Scale Lamps.—These are four M.E.S. types, each rated at 6.2 V, 0.3 A.

CIRCUIT ALIGNMENT

I.F. Stages.—Disconnect V1 top cap connector, and connect signal generator to top cap (via a 0.0002 μF condenser) and chassis. Connect a 250,000 Ω resistance from top cap to chassis. Feed in a 473 KC/S signal, and adjust C43, C42, C41 and C40 for maximum output, the sensitivity switch being at "distant." Remove shunting resistance and replace top cap connector.

R.F. and Oscillator Stages.—Connect signal generator to A1 and E sockets. Switch set to L.W., tune to bottom of scale, turn volume control to maximum and sensitivity switch to "distant," and feed in a 473 KC/S signal. Adjust C30 for minimum output.

M.W.—Switch set to M.W., tune to 200 m. on scale, feed in a 200 m. signal, and adjust C36 and C31 for maximum output. Tune to 500 m. on scale, feed in a 500 m. signal, and adjust C38 for maximum output. Re-adjust C36 at 200 m. and C38 at 500 m. until no further improvement can be made. If necessary slightly re-adjust C31 in order to balance sensitivity at 200 and 500 m.

L.W.—Switch set to L.W., and set pointer to 1,700 m. on scale. Feed in a 1,700 m. signal, and adjust C32 and C39 for maximum output. Set pointer to 1,200 m., feed in a 1,200 m. signal, and adjust C37 only for maximum output. Continue adjusting C39 on 1,700 m. and C37 on 1,200 m. until no further improvement can be made.

S.W.—Switch set to S.W., tune to 21 m. on scale, feed in a 21 m. signal, and adjust C35 for maximum output. Set pointer to 48 m. on scale, feed in a 48 m. signal, and adjust L10 by closing up or opening out turns until maximum output is indicated. Continue adjusting C35 at 21 m. and L10 at 48 m. until no further improvement results.