

Circuit diagram of the Burgoyne AWT A.C. receiver. One S.W. range is included, and separate switching is used for each waveband. Note the switching arrangements in the circuit from the A1 socket. L1, C21 form a Drotiwich retractor. R4, the gain control, is shorted out on the S.W. band.

COMPONENTS AND VALUES

CONDENSERS		Values (μF)
C1	Aerial M.W. coupling	0.0002
C2	Aerial S.W. coupling	0.0001
C3	Aerial series condenser	0.0002
C4	V1 cathode by-pass	0.1
C5	H.T. supply H.F. by-pass	0.1
C6	V1 S.G. by-pass	0.1
C7	React. series condenser, M.W., L.W.	0.001
C8	V2 anode by-pass, M.W., L.W.	0.0005
C9	H.F. trans. fixed S.W. trimmer	0.00005
C10	V2 C.G. condenser	0.0001
C11	V2 S.G. by-pass	0.1
C12	V2 cathode by-pass	0.1
C13	V2 anode H.F. by-pass	0.0002
C14	V2-V3 L.F. coupling	0.1
C15*	V3 cathode by-pass	25.0
C16	Fixed tone corrector	0.01
C17*	H.T. smoothing	8.0
C18*	H.T. smoothing	12.0
C19	Mains H.F. by-passes	0.001
C20	Mains H.F. by-passes	0.001
C21†	Drotiwich retractor tuning	—
C22†	Aerial M.W. trimmer	—
C23†	Aerial L.W. trimmer	—
C24†	Aerial circuit tuning	0.0005
C25†	H.F. trans. S.W. trimmer	—
C26†	H.F. trans. M.W. trimmer	—
C27†	H.F. trans. L.W. trimmer	—
C28†	Reaction control	0.0005
C29†	H.F. trans. tuning	0.0005

* Electrolytic. † Variable. ‡ Pre-set.

RESISTANCES		Values (ohms)
R1	V1 S.G. H.T. potential divider	20,000
R2	V1 S.G. H.T. potential divider	500,000
R3	V1 fixed G.B. resistance	200
R4	V1 gain control	100,000
R5	V2 S.G. H.T. feed	100,000
R6	V2 grid leak	1,000,000
R7	V2 anode load	50,000
R8	V2 G.B. resistance (gram.)	200
R9	V3 C.G. H.F. stopper	50,000
R10	V3 C.G. resistance	250,000
R11	V3 G.B. resistance	140

OTHER COMPONENTS

		Approx. Values (ohms)
L1	Drotiwich retractor coil	32.0
L2	Aerial series choke	9.0
L3	Aerial S.W. tuning coil	0.05
L4	Aerial M.W. coupling coil	0.4
L5	Aerial M.W. tuning coil	2.5
L6	Aerial L.W. choke	20.0
L7	Aerial L.W. coupling coil	3.0
L8	Aerial L.W. tuning coil	11.5
L9	H.F. trans. S.W. pri.	0.2
L10	S.W. reaction coil	0.1
L11	H.F. trans. S.W. sec.	Very low
L12	S.W. inductance trimmer	Very low
L13	H.F. trans. M.W. pri.	1.2
L14	H.F. trans. M.W. sec.	2.5
L15	M.W. and L.W. reaction coil	1.4
L16	H.F. trans. L.W. pri.	2.7
L17	H.F. trans. L.W. sec.	11.5
L18	V2 anode H.F. choke	200.0
L19	Speaker speech coil	1.7
L20	Hum neutralising coil	0.1
L21	Speaker field coil	2,000.0
T1	Speaker input trans. { Pri. ... 750.0 Sec. ... 0.3	
T2	Mains trans. { Pri. total ... 26.0 Heater sec. ... 0.05 Rect. heat. sec. ... 0.1 H.T. sec. total ... 640.0	
S1-22	Waveband and tuning switches	—
S23	Gram. pick-up switch	—
S24	Internal speaker switch	—
S25	Mains switch, ganged R4	—
F1, F2	Mains circuit fuses	—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VP4B	275	8.4	200	2.7
V2 VP4B	35	4.7	100	1.7
V3 AP4C	245	36.0	275	3.8
V4 AP4C	350†	—	—	—

† Each anode, A.C.

receiver when it was operating on mains of 220 V, using the 220-230 V tapping on the mains transformer. 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.

GENERAL NOTES

Switches.—S1-S23 are the waveband and pick-up switches, in three ganged rotary units beneath the chassis. These units are indicated in the under-chassis view by numbers in circles, and the arrows show the direction in which they are viewed in the diagrams on page VIII. These diagrams show the individual switches. Blank tags are outlined and marked "B."

The table below gives the switch positions for the various control settings, O indicating open, and C, closed.

Switch	S.W.	M.W.	L.W.	Gram.
S1	O	C	O	O
S2	O	C	O	O
S3	C	O	O	O
S4	C	O	O	O
S5	O	O	C	O
S6	O	C	O	O
S7	C	O	O	O
S8	O	C	O	O
S9	O	O	C	O
S10	O	O	O	C
S11	C	O	O	O
S12	C	O	O	O
S13	C	O	O	O
S14	O	O	C	O
S15	O	O	O	C
S16	O	C	C	O
S17	C	O	O	O
S18	C	C	O	O
S19	C	O	O	O
S20	O	C	O	O
S21	O	O	C	O
S22	O	O	O	C
S23	O	O	O	C

S24 is the internal speaker switch, normally closed, but which opens when the special external speaker plug is inserted and rotated anti-clockwise.

S25 is the Q.M.B. mains switch, ganged with the gain control R4.

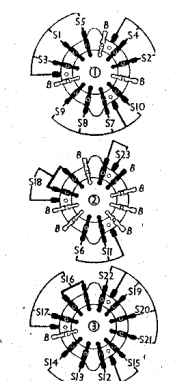
Coils.—L1-L3 are beneath the chassis, as is also L6. L4, L5, L7, L8, L9-L11 and L13-L17 are in three screened units on the chassis deck, two of them also containing two trimmers each.

L12, beneath the chassis, merely consists of two turns taken in one of the connecting leads. Its inductance is variable by altering the spacing of the turns.

L18 is an H.F. choke, mounted beneath the chassis, at the rear.

Fuses F1, F2.—These are two 1/2-in. glass tubular types, rated at 1 A each, and incorporated in the special mains plug.

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



Diagrams of the switch units, looking at the underside of the chassis in the directions indicated by the arrows in the under-chassis view.