



Circuit diagram of the Alba 310 3-band battery receiver. **L1** and **C11** form a Drotwisch rejector. **R2** is the gain control, adjusting the bias on **V1**.

COMPONENTS AND VALUES

| RESISTANCES | | Values (ohms) |
|-------------|--------------------------------|---------------|
| R1 | V1 C.G. decoupling .. | 50,000 |
| R2 | V1 gain control .. | 25,000 |
| R3 | V1 S.G. and anode H.T. feed | 2,000 |
| R4 | V1 anode tuning M.W. shunt | 250,000 |
| R5 | V2 grid leak and filament pot. | 2,000,000 |
| R6 | V2 anode load .. | 2,000,000 |
| R7 | V2 anode load .. | 30,000 |
| R8 | V3 C.G. R.F. stopper .. | 100,000 |
| R9 | V1, V3 fixed G.B. resistances | 1,500 |
| R10 | V1, V3 fixed G.B. resistances | 200 |

| CONDENSERS | | Values (μF) |
|------------|--|-------------|
| C1 | Band-pass bottom coupling .. | 0.02 |
| C2* | V1 anode and S.G. decoupling .. | 8.0 |
| C3 | V1 anode and S.G. R.F. by-pass | 0.01 |
| C4 | V2 anode by-pass (M.W. and L.W.) .. | 0.0002 |
| C5 | V2 C.G. condenser .. | 0.0001 |
| C6 | V2 anode by-pass .. | 0.00005 |
| C7 | A.F. coupling to T1 .. | 0.1 |
| C8 | V3 tone corrector .. | 0.005 |
| C9* | G.B. potentiometer by-pass | 25.0 |
| C10* | H.T. supply reservoir .. | 2.0 |
| C11† | Drotwisch rejector tuning .. | — |
| C12† | Band-pass pri. tuning .. | — |
| C13† | Band-pass pri. trimmer .. | — |
| C14† | Band-pass sec. and S.W. aerial tuning .. | — |
| C15† | Band-pass sec. trimmer .. | — |
| C16† | Reaction control .. | — |
| C17† | V1 anode S.W. trimmer .. | — |
| C18† | V1 anode L.W. trimmer .. | — |
| C19† | V1 anode M.W. trimmer .. | — |
| C20† | V1 anode tuning .. | — |

* Electrolytic. † Variable. ‡ Pre-set.

| OTHER COMPONENTS | | Approx. Values (ohms) |
|------------------|--------------------------------|-----------------------|
| L1 | Drotwisch rejector coil | 19.0 |
| L2 | Aerial coupling coil (M.W.) | 38.0 |
| L3 | Aerial coupling coil (L.W.) | 6.0 |
| L4 | Band-pass primary (M.W.) | 1.75 |
| L5 | Band-pass primary (L.W.) | 18.0 |
| L6 | Band-pass secondary (M.W.) | 1.75 |
| L7 | Band-pass secondary (L.W.) | 18.0 |
| L8 | Aerial coupling coil (S.W.) | 0.25 |
| L9 | Aerial tuning coil (S.W.) | 0.05 |
| L10 | Reaction coil (S.W.) | 30.0 |
| L11 | Reaction coil (M.W.) | 1.5 |
| L12 | Reaction coil (L.W.) | 4.5 |
| L13 | V1 anode tuning (S.W.) | 0.05 |
| L14 | V1 anode tuning (M.W.) | 1.75 |
| L15 | V1 anode tuning (L.W.) | 18.0 |
| L16 | V2 anode R.F. choke | 11.0 |
| L17 | Speaker speech coil | 2.5 |
| T1 | Intervalve auto-trans. (total) | 2,000.0 |
| T2 | Speaker input trans. (Pri.) | 650.0 |
| T3 | Speaker input trans. (Sec.) | 0.5 |
| S1-15 | Waveband switches | — |
| S16 | H.T. circuit switch | — |
| S17 | L.T. circuit switch | — |

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating with an H.T. battery reading 120 V. 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 VP2 | 100 | 1.6 | 100 | 0.5 |
| V2 PM2HL | 62 | 1.4 | — | — |
| V3 PM22D | 103 | 4.4 | 108 | 0.7 |

GENERAL NOTES

Switches.—**S1-S15** are the waveband switches, in two rotary ganged units beneath the chassis. The units are indicated in our under-chassis view, and the switches are shown in detail in the diagrams on this page, where they are as seen looking at the underside of the chassis, from the front. The table (col. 3) gives the switch positions for the three control settings, starting from the fully anti-clockwise position. O indicates open, and C, closed.

S16 and **S17** are the H.T. and L.T. circuit switches, of the Q.M.B. type, ganged with the gain control **R2**. Looking from the underside of the chassis, the upper two tags belong to **S16** and the lower two to **S17**.

Coils.—**L2, L4, L6**; **L3, L5, L7** and **L11, L12, L14, L15** are in three screened units on the chassis deck, and are iron dust cored. **L1** is the Drotwisch rejector coil, beneath the chassis, while the S.W. coils, **L8, L9** and **L10, L13** are on two unscreened tubular formers, also beneath the chassis. The thick bare wire windings are **L9** and **L13** respectively. **L16** is a single layer R.F. choke, beneath the chassis.

SWITCH TABLE

| Switch | S.W. | M.W. | L.W. |
|--------|------|------|------|
| S1 | C | O | O |
| S2 | C | C | O |
| S3 | O | C | O |
| S4 | O | C | O |
| S5 | C | O | O |
| S6 | C | C | O |
| S7 | O | O | C |
| S8 | C | O | O |
| S9 | O | C | O |
| S10 | O | O | C |
| S11 | C | O | O |
| S12 | C | C | O |
| S13 | C | O | O |
| S14 | O | C | O |
| S15 | O | O | C |

Batteries.—The recommended batteries are: L.T., 2 V 45 AH accumulator cell; H.T., 120 V dry battery. Grid bias is automatic.

Battery Leads and Voltages.—Black lead, spade tag, L.T. negative; Red lead, spade tag, L.T. positive 2 V; Blue lead, black plug, H.T. negative; Green lead, red plug, H.T. positive 120 V.

CIRCUIT ALIGNMENT

Connect signal generator to **A1** and **E** sockets, switch set to M.W., feed in a 200 m. signal, and tune to 200 m. on scale. Adjust **C13**, **C15** and **C19** for maximum output.

Switch set to L.W., feed in a 1,000 m. signal, tune to 1,000 m. on scale, and adjust **C18** for maximum output, rocking the gang slightly for optimum results.

Switch set to S.W., feed in a 20 m. signal, tune to 20 m. on scale, adjust **C17** for maximum output, rocking the gang slightly for optimum results.

To adjust Drotwisch rejector, connect signal generator to **A2** socket and feed in a 1,500 m. signal. Tune it in on receiver, then adjust **C11** (rear of chassis) for minimum output.

Switch diagrams, looking at the underside of the chassis, from the front.

