

Rear view of the chassis. The components shown dotted at the top of the right-hand circuit panel are hidden by the screen. TR5 and TR6 emitter resistors, R22 and R23, are mounted on the printed circuit side of the right-hand panel.

**Circuit Description—continued**

Base bias for TR1, TR2 and TR4 is provided by potential dividers R1, R2; R5, R11, R12, R25; and R14, R15, respectively, while bias for TR3 is obtained from the emitter resistor R17 of TR4. The bias potential divider for TR3 includes the volume control R12, so that the positive-going D.C. component developed across R13, reduces its gain on strong signals, thus providing A.G.C. TR4 is coupled via phase-splitting transformer T1 to the bases of class B, push-pull output transistors TR5, TR6. The output load is formed by the high-impedance (25Ω) speaker L13, which has one side directly connected to the -6V tapping on the H.T. supply. Tone correction is provided by the negative feedback network C28, R24, C29, R25 and R12, connected between L13 and the base circuit of TR4. The degree of feedback applied to TR4 depends on the setting of volume control R12, and progressively decreases as the control is turned towards maximum.

**CIRCUIT ALIGNMENT**

- 1.—Remove the chassis from the cabinet as described under "Dismantling" in col. 3. Connect a signal generator across L2 (location reference A1), and an A.C. voltmeter across the speaker L13 for use as an output indicator. Switch the receiver to M.W. and turn the volume and tuning controls fully clockwise.
- 2.—Feed in a modulated 472kc/s signal and adjust the cores of L11, L10, L9, L8 and L7 (location reference A2) for maximum output, maintaining the generator output level as low as practicable to avoid A.G.C. action. Repeat these adjustments until optimum results are obtained.
- 3.—Transfer the signal generator output to the external aerial socket, connecting it via a 1kΩ resistor in its live output lead.
- 4.—Tune the receiver to 460m. Feed in a 652kc/s signal and adjust the core of L6 (A1) for maximum output. Then slide the former of L2 (A1) along the ferrite rod for maximum output.
- 5.—Tune the receiver to 230m. Feed in a 1,300kc/s signal and adjust C12 and C4

(location reference B1) for maximum output.

- 6.—Repeat operations 3, 4 and 5 until optimum sensitivity and calibration are obtained.
- 7.—Switch the receiver to L.W. and tune it to 1,750m. Feed in a 170kc/s signal and adjust C6 (A1) and L3 (C1) for maximum output. As there may be some oscillator pulling when adjusting C6, care should be taken to adjust C6 and L3 at the correct tracking point.
- 8.—Tune the receiver to 1,250m. Feed in a 240kc/s signal and adjust C2 (B1) for maximum output.
- 9.—Repeat operations 7 and 8. Finally, seal the formers of L2 and L3 to the ferrite rod with wax to prevent them from moving.

**GENERAL NOTES**

**Switches.**—The waveband and on/off switches S1-S8 are combined in a single 3-position rotary-type unit. The unit is indicated in our chassis illustration (location reference A1), and a detailed sketch showing the switch contacts is provided below. S1

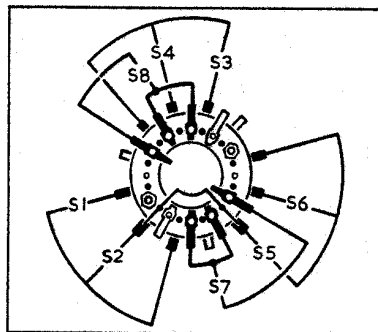


Diagram of the waveband and on/off switch unit S1-S8 drawn as seen in location A1 of our chassis illustration on this page.

S3 and S5 are closed on M.W.; S2, S4 and S6 are closed on L.W.

**Batteries.**—The batteries recommended by the manufacturer are two Ever Ready type PPF's, rated at 6V each.

**TRANSISTORS**

**TR5, TR6.**—In the event of the replacement of either of the output transistors TR5, TR6 (Mullard OC81's) being necessary, both transistors must be replaced with a matched pair.

**Coding.**—The transistor collector lead is the one nearest to the white or red spot painted on the side of the transistor case. In addition, the manufacturers have colour coded the sleeving of the three connecting leads as follows: green, base; white, collector; and red, emitter. A diagram of the coding is shown inset with the circuit diagram overleaf.

**Soldering.**—Transistors may be damaged by the application of excessive heat. If a transistor has to be removed or replaced, the soldering or unsoldering operation should be completed as quickly as possible using an earthed soldering iron. A heat shunt, such as a pair of pliers should be clamped across the transistor lead between the transistor and the soldering iron during the soldering or unsoldering of its leads. Avoid bending the leads near to the case of the transistor as this may damage the seal. Take care not to scratch or chip the paint covering on glass-cased transistors.

**DISMANTLING**

**Removing Chassis.**—Remove the back cover (two screws). Disconnect and remove the batteries; remove the tuning knob and pointer (pull off), and the pointer spacing collar and washer; disconnect the speaker leads (pull off connectors); unscrew the hexagon pillars which secure the chassis to the cabinet; remove the chassis from the cabinet by first pulling its lower edge outwards and then downwards to allow the control knobs to clear the holes in the cabinet.