



BUSH - VTR103

Transistor Table

| Transistor | Emitter (V) | Base (V) | Collector (V) |
|------------|-------------|----------|---------------|
| VT1 | AF114 | 7.3 | 6.9 |
| VT2 | AF115 | 6.9 | 6.8 |
| VT3 | AF116 | 5.6 | 5.2 |
| VT4 | AF116 | 6.1 | 5.6 |
| VT5 | AF116 | 5.9 | 5.5 |
| VT6 | OC71 | 5.9 | 5.5 |
| VT7 | OC81D | 5.95 | 0.35 |
| VT8 | OC81 | 8.9 | 8.75 |
| VT9 | OC81 | 8.9 | 8.75 |

CIRCUIT ALIGNMENT

Equipment Required.—An A.M. signal generator with the necessary frequency coverage modulated 30 per cent at 400kc/s; an output wattmeter with a range of 0-200mW to match 3 ohms impedance; a non-metallic bladed type trimming tool; an Avo meter model 8, or both a D.C. valve voltmeter and a 0-50μA meter; a matched pair of 220kΩ

resistors for use in connection with the F.M. balance meter and a 10pF capacitor suitably mounted for use as an injector unit for the external aerial socket.

Alignment Notes.—For calibration purposes the receiver should be removed from the cabinet and the pointer replaced. Switch on the signal generator about 15 minutes before alignment. Disconnect the internal loudspeaker and connect the output wattmeter in its place.

Note: If at any time the output meter is connected without the speaker being disconnected, ensure that the power output from the receiver is never greater than 70mW or damage to the output transistors may result. Set the volume control to the maximum output position and the tone control to maximum treble (clockwise).

Adjust the signal generator as the circuits come into line to maintain an output of 50mW (20mW if the internal speaker is left connected).

A.M. I.F. Circuits.—Where two peaks occur, the one with the core nearer the outer of the former is correct.

- 1.—Switch to M.W. and set the tuning

- 2.—Feed in a 470kc/s modulated signal via a 0.1μF capacitor to the base of VT3 and adjust the cores of L27/L28 (location reference B3), L22/L23 (B2) and L16/L17 (C2) in that order for maximum output. Adjust each transformer once only. L17 and L23 are "top" adjustments and L16 and L22 "bottom" adjustments.
- A.M. R.F. Circuits.**—Ensure that the tuning pointer is in line with the horizontal datum line on the auxiliary calibration scale when the tuning gang is at maximum capacitance. Connect the signal generator via the series 10pF capacitor to the external aerial socket. Turn the volume control to maximum output.
- 1.—Switch to M.W. and set the tuning pointer to the 600kc/s calibration mark. Feed in a 600kc/s signal and adjust L15 (C2) for maximum output.
- 2.—Set the tuning pointer to 1,500kc/s, feed in a 1,500kc/s signal and adjust CT6 (C1) for maximum output.
- 3.—Repeat operations 1 and 2 for correct calibration.

