

Transistor Table

| Transistor | Emitter (V) | Base (V) | Collector (V) |
|------------|-------------|----------|---------------|
| TR1 AF117 | 1-1 | 1-05 | 7-30 |
| TR2 AF117 | 0-69 | 0-85 | 5-0 |
| TR3 AF117 | 1-10 | 1-38 | 7-4 |
| TR4 OC71 | 0-69 | 0-79 | 1-3 |
| TR5 OC81D | 1-15 | 1-3 | 8-23 |
| TR6 OC81 | — | 0-17 | 9-0 |
| TR7 OC81 | — | 0-17 | 9-0 |

CIRCUIT ALIGNMENT

Two methods of i.f. alignment are given; a preferred sweep generator method and a spot frequency method, if sweep equipment is not available.

Equipment Required.—An a.m. signal generator covering the range 150kc/s—2Mc/s; an audio output meter with an impedance to match 15Ω; an r.f. coupling loop and suitable trimming tools.

For sweep alignment of the i.f. circuits, a wobulator with ± 20 kc/s deviation and an oscilloscope will be additional equipment required.

I.F. Circuits (Sweep Method).

1.—Connect the oscilloscope across the volume control RV1. Connect the wobulator to the S4 side of C3 after removing the input connector from the r.f. panel. Connect the wobulator and oscilloscope earth leads to the earth terminal adjacent to IFT1. Turn the volume control to maximum.

2.—Feed in a 470kc/s ± 20 kc/s deviation sweep signal and adjust the cores of IFT3, IFT2 and IFT1 for maximum output with a response which conforms in shape to the curve shown in the diagram below.

Note: The top of the trace should be flat to within 1dB.

I.F. Circuits (Spot Frequency Method).

1.—Connect the audio output meter across the loudspeaker terminals. Connect the signal generator between chassis and the r.f. input tag on the i.f. panel after removing the lead from the r.f. panel. Switch receiver to m.w. and turn the tuning gang to the fully meshed position.

Resistors

| | | |
|-----|-------|----|
| R1 | 33kΩ | D2 |
| R2 | 6-8kΩ | D2 |
| R3 | 1kΩ | D2 |
| R4 | 100Ω | D2 |
| R5 | 680Ω | D2 |
| R8 | 56kΩ | D2 |
| R9 | 2-2kΩ | D2 |
| R10 | 680Ω | D2 |
| R11 | 18kΩ | D3 |
| R12 | 4-7kΩ | D3 |
| R13 | 8-2kΩ | D3 |
| R14 | 470Ω | D3 |
| R15 | 330Ω | D3 |
| R16 | 3-9kΩ | D3 |
| R17 | 22kΩ | E3 |
| R18 | 150Ω | E3 |
| R19 | 6-8kΩ | D3 |
| R20 | 150kΩ | E3 |
| R21 | 270Ω | D3 |
| R22 | 270Ω | E3 |
| R23 | 33Ω | E3 |
| R24 | 47kΩ | D3 |
| RV1 | 5kΩ | D3 |
| RV2 | 1-5kΩ | E3 |
| RV3 | 10kΩ | D2 |

Capacitors

| | | |
|----|--------|----|
| C1 | 96pF | C1 |
| C2 | 10pF | A1 |
| C3 | 0-01μF | D2 |
| C4 | 0-1μF | D2 |

| | | |
|-----|---------|----|
| C5 | 300pF | D2 |
| C6 | 300pF | D2 |
| C7 | 0-022μF | A1 |
| C9 | 16pF | B1 |
| C10 | 260pF | A1 |
| C11 | 330pF | A1 |
| C12 | 0-1μF | D2 |
| C13 | 0-1μF | D2 |
| C14 | 300pF | D2 |
| C15 | 300pF | D2 |
| C16 | 0-1μF | D2 |
| C17 | 12-5μF | D2 |
| C18 | 0-047μF | D3 |
| C19 | 0-022μF | D3 |
| C20 | 250pF | D3 |
| C21 | 0-01μF | D3 |
| C22 | 0-01μF | D3 |
| C23 | 2μF | D3 |
| C24 | 125μF | D3 |
| C25 | 160μF | D3 |
| C26 | 160μF | E3 |
| C27 | 0-01μF | E2 |
| C28 | 0-01μF | E3 |
| C29 | 320μF | E3 |
| C30 | 0-15μF | D2 |
| CT1 | 40pF | C1 |
| CT2 | 40pF | C1 |
| CT3 | 40pF | C1 |
| CT4 | 40pF | A1 |
| CT5 | 40pF | A1 |
| CT6 | 25pF | B1 |
| CV1 | 326pF | A1 |
| CV2 | 326pF | A1 |

Coils & Transformers*

| | | |
|------|-----------|----|
| L1 | 3-0 | C1 |
| L2 | 10-0 | C1 |
| L3 | — | B1 |
| L4 | — | A1 |
| L5 | 15-0 | † |
| IFT1 | a b 5-3 | D2 |
| IFT2 | a b 5-3 | D3 |
| IFT3 | a b 3-6 | D3 |
| AFT1 | a b 204-0 | E3 |
| AFT2 | a b 190-0 | E3 |
| | b 2-2 | E3 |
| | b 3-2 | E3 |

Miscellaneous

| | | |
|---------|------|----|
| D1 | OA79 | D2 |
| D2 | OA91 | D3 |
| S1-S8 | — | B1 |
| S9, S10 | — | D3 |

* Approximate d.c. resistance in ohms.
† Speaker.

2.—Feed in a 470kc/s modulated signal and adjust the cores of IFT3, IFT2 and IFT1 in that order for maximum output, reducing the input signal level as the circuits come into line. Repeat with reduced signal input until no further improvement can be obtained.

R.F. Circuits

1.—Connect the signal generator to the r.f. coupling loop and loosely couple the loop to the ferrite rod aerial. Check that with the tuning gang at maximum the red line of the cursor coincides with the end of the tuning scale. Switch receiver to m.w. and adjust the volume control to a convenient level, keeping the signal input at minimum to avoid a.g.c. action.

2.—Tune receiver to 500m. Feed in a 600kc/s signal and adjust L4 for maximum output.

3.—Tune receiver to 231m. Feed in a 1,300kc/s signal and adjust CT5 for maximum output.

4.—Repeat operations 2 and 3 as necessary always finishing with the 1,300kc/s adjustment.

5.—Tune receiver to 500m. Feed in a 600kc/s signal and adjust L3, by sliding the former along the ferrite rod, for maximum output.

6.—Tune receiver to 231m. Feed in a 1,300kc/s signal and adjust CT2 for maximum output.

7.—Repeat operations 5 and 6 until there is no further improvement, finishing with the 1,300kc/s adjustment.

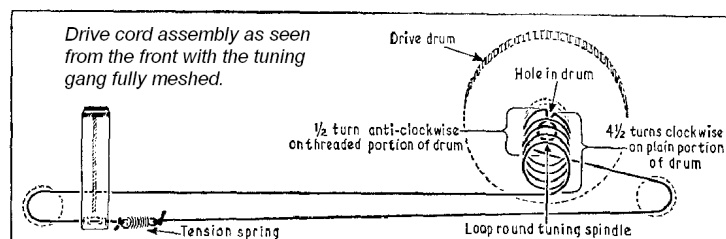
8.—Switch receiver to l.w. and tune to 1,154m. Feed in a 260kc/s signal and adjust CT4 and CT1 for maximum output.

9.—Tune receiver to 1,714m. Feed in 175kc/s signal and adjust L2 for maximum output.

10.—Repeat operations 8 and 9 (except adjustment of CT4) until there is no further improvement, always finishing with the 260kc/s adjustment.

11.—Switch receiver to bandsread and tune to 208m. Feed in a 1,439kc/s signal and adjust CT6, and CT3, for maximum output.

PERDIO - PR167 Caralux



The 470 kc/s i.f. response curve

