

| OTHER COMPONENTS |                           | Approx. Values (ohms) | Locations |
|------------------|---------------------------|-----------------------|-----------|
| L1               | Internal aerial coils     | 1.8                   | D4        |
| L2               |                           | 8.7                   | F4        |
| L3               |                           | 2.8                   | D4        |
| L4               | Oscillator tuning coils   | 7.0                   | D4        |
| L5               |                           | 1.2                   | D4        |
| L6               | Oscillator reaction coils | 3.7                   | D4        |
| L7               |                           | 13.5                  | B2        |
| L8               | 1st I.F. trans.           | 13.5                  | B2        |
| L9               |                           | 12.5                  | B2        |
| L10              | 2nd I.F. trans.           | 9.5                   | B2        |
| L11              |                           | 2.8                   | B2        |
| T1               | Speech coil               | 490.0                 | B1        |
| S1-S8            | O.P. trans.               | —                     | B1        |
| S9(M)            | Waveband switches         | —                     | D3        |
| S16(M)           | Mains/battery switches    | —                     | G3        |
| MR1              | Westinghouse 15B35        | —                     | A2        |

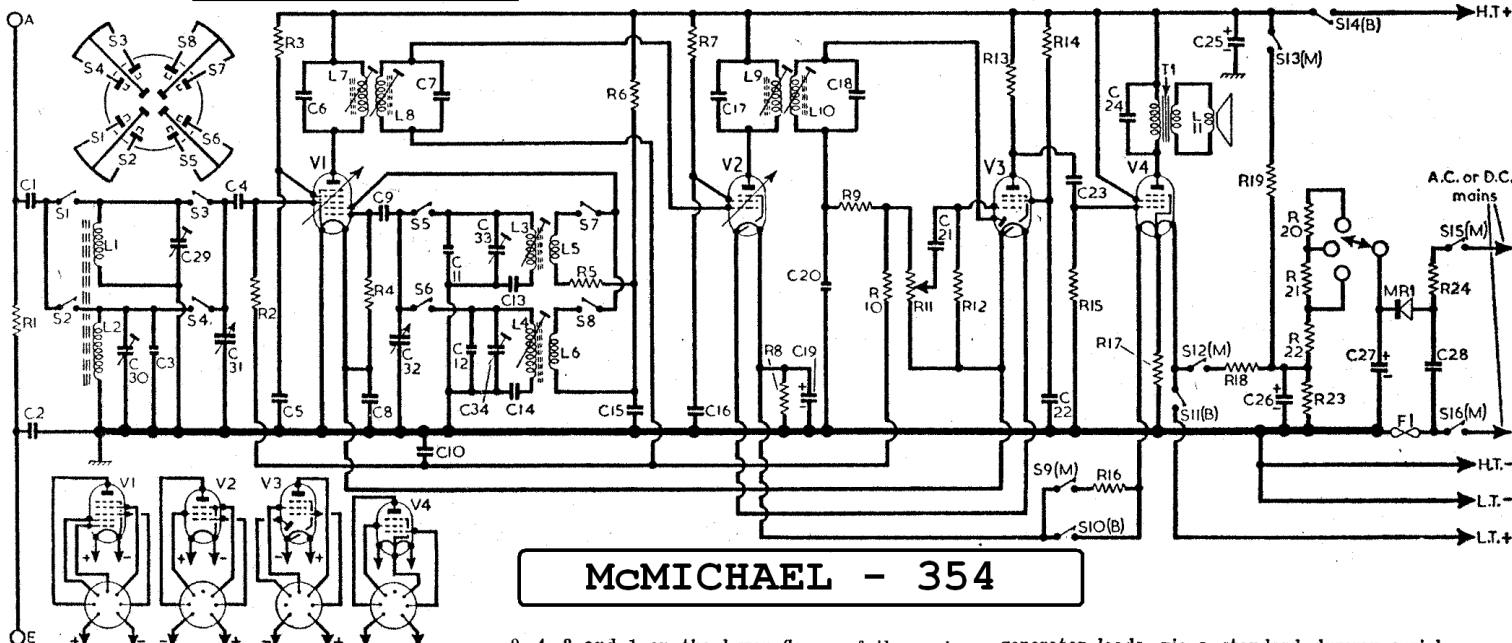
| CAPACITORS |                            | Values  | Locations |
|------------|----------------------------|---------|-----------|
| C1         | Aerial and earth isolators | 0.001μF | D3        |
| C2         |                            | 0.005μF | E3        |
| C3         | L.W. aerial trim           | 15pF    | D4        |
| C4         | V1 C.G.                    | 100pF   | E4        |
| C5         | V1 S.G. decoupling         | 0.05μF  | E4        |
| C6         | 1st I.F. trans.            | 100pF   | B2        |
| C7         | tuning                     | 100pF   | B2        |
| C8         | Filament by-pass           | 0.05μF  | D4        |
| C9         | V1 osc. C.G.               | 100pF   | E3        |
| C10        | A.G.C. decoupling          | 0.1μF   | E4        |
| C11        | M.W. osc. trim.            | 20pF    | D4        |
| C12        | L.W. osc. trim.            | 80pF    | D4        |
| C13        | M.W. osc. tracker          | 528pF   | D4        |
| C14        | L.W. osc. tracker          | 160pF   | D3        |
| C15        | Osc. anode decoupling      | 0.05μF  | D4        |
| C16        | V2 S.G. decoupling         | 0.05μF  | F4        |
| C17        | 2nd I.F. trans.            | 100pF   | B2        |
| C18        | tuning                     | 180pF   | B2        |
| C19*       | Filament by-pass           | 500μF   | F3        |
| C20        | I.F. by-pass               | 30pF    | F4        |
| C21        | A.F. coupling              | 0.005μF | F3        |
| C22        | V3 S.G. decoupling         | 0.1μF   | G4        |
| C23        | A.F. coupling              | 0.01μF  | F4        |
| C24        | Tone corrector             | 0.005μF | B1        |
| C25*       | H.T. smoothing             | 16μF    | A1        |
| C26*       |                            | 32μF    | A1        |
| C27*       | H.T. smoothing             | 32μF    | A1        |
| C28        |                            | 32μF    | A1        |
| C29†       | Mains R.F. by-pass         | 0.01μF  | G4        |
| C30†       | M.W. aerial trim.          | 30pF    | C2        |
| C31†       | L.W. aerial trim.          | 30pF    | C2        |
| C32†       | Aerial tuning              | 528pF   | C1        |
| C33†       | Oscillator tuning          | 528pF   | C1        |
| C34†       | M.W. osc. trim.            | 30pF    | C2        |
| C35†       | L.W. osc. trim.            | 30pF    | C2        |

| Valve |       | Anode |      | Screen |      |
|-------|-------|-------|------|--------|------|
|       |       | V     | mA   | V      | mA   |
| V1    | DK92  | 85    | 0.75 | 37     | 0.15 |
| V2    | DF91  | 25    | 0.15 | 60     | 0.5  |
| V3    | DAF91 | 85    | 1.5  | 40     | 0.02 |
| V4    | DL94  | 10    | 0.07 | 85     | 1.0  |

| RESISTORS |                     | Values | Locations |
|-----------|---------------------|--------|-----------|
| R1        | Anti-static shunt   | 1MΩ    | E3        |
| R2        | V1 C.G.             | 1MΩ    | E4        |
| R3        | V1 S.G. feed        | 180kΩ  | E4        |
| R4        | V1 osc. C.G.        | 27kΩ   | E4        |
| R5        | Osc. stabilizer     | 680Ω   | D3        |
| R6        | Osc. anode feed     | 33kΩ   | E3        |
| R7        | V2 S.G. feed        | 33kΩ   | E4        |
| R8        | Filament H.T. shunt | 1kΩ    | E4        |
| R9        | I.F. stopper        | 270kΩ  | F3        |
| R10       | A.G.C. decoupling   | 2.2MΩ  | E4        |
| R11       | Volume control      | 1MΩ    | G3        |
| R12       | V3 C.G.             | 10MΩ   | G4        |
| R13       | V3 anode load       | 1MΩ    | F4        |
| R14       | V3 S.G. feed        | 4.7MΩ  | F4        |
| R15       | V4 C.G.             | 1MΩ    | F4        |
| R16       | V4 mains G.B.       | 22Ω    | G3        |
| R17       | Filament H.T. shunt | 2kΩ    | F3        |
| R18       | Filament ballast    | 2,520Ω | A1        |
| R19       | H.T. smoothing      | 3.9kΩ  | G3        |
| R20       | Voltage adj.        | 422Ω   | A1        |
| R21       |                     | 428Ω   | A1        |
| R22       | H.T. smoothing      | 810Ω   | A1        |
| R23       | H.T. shunt          | 100kΩ  | G3        |
| R24       | Surge limiter       | 300Ω   | G4        |

\*Electrolytic. † Variable. ‡ Pre-set.

Intermediate frequency 470 kc/s.



## McMICHAEL - 354

### CIRCUIT ALIGNMENT

The following alignment adjustments should be carried out with the chassis in its carrying case.

**I.F. Stages.**—Switch receiver to M.W. and turn gang to maximum capacitance. Connect output of signal generator, via an 0.01 μF capacitor in each lead, to control grid (pin 6) of V1 and chassis. Feed in a 470 kc/s (638.3 m) signal and adjust the cores of L10 (location reference B2), L9 (F4), L8 (B2) and L7 (E4) for maximum output. Repeat these adjustments until no further improvement results.

**R.F. and Oscillator Stages.**—Check that with the gang at minimum capacitance the cursor coincides with the lowest wavelength end of the tuning scales. If the receiver is aligned with the chassis removed from its carrying case, the substitute calibration marks labelled

0, 4, 3 and 1 on the lower flange of the scale backing plate should be used. These calibration points are given in brackets after each alignment wavelength in the following instructions. If the receiver is removed from its carrying case check that with the gang at maximum capacitance, the cursor coincides with the zero mark on the substitute scale. Transfer signal

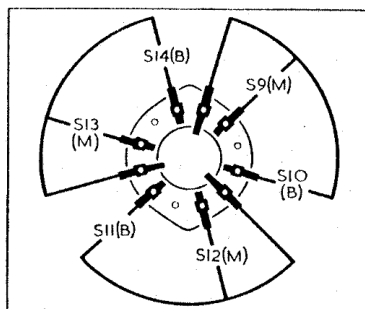


Diagram of the mains/battery switch unit as viewed from the rear of an inverted chassis.

generator leads, via a standard dummy aerial, to A and E sockets.

**M.W.**—Switch receiver to M.W., tune to 190 m (calibration mark 1), feed in a 190 m (1,580 kc/s) signal and adjust C33 (C1) and C29 (C2) for maximum output. Tune receiver to 500 m (mark 2), feed in a 500 m (600 kc/s) signal and adjust the core of L3 (D4) for maximum output. The internal aerial coil L1 (C2) should also be adjusted for maximum output at

**Switches.**—S1-S8 are the waveband switches ganged in a single rotary unit beneath the chassis. The unit is indicated in our underside illustration of the chassis and shown in detail in the diagram inset in the top left-hand corner of the circuit diagram overleaf, where it is drawn as seen from the rear of an inverted chassis.

**S9(M)-S16(M)** are the mains/battery change-over switches ganged in a single rotary unit beneath the chassis. The unit is indicated in our under chassis illustration, and shown in detail in the diagram in column 2, where it is drawn as viewed from the rear of an inverted chassis.