

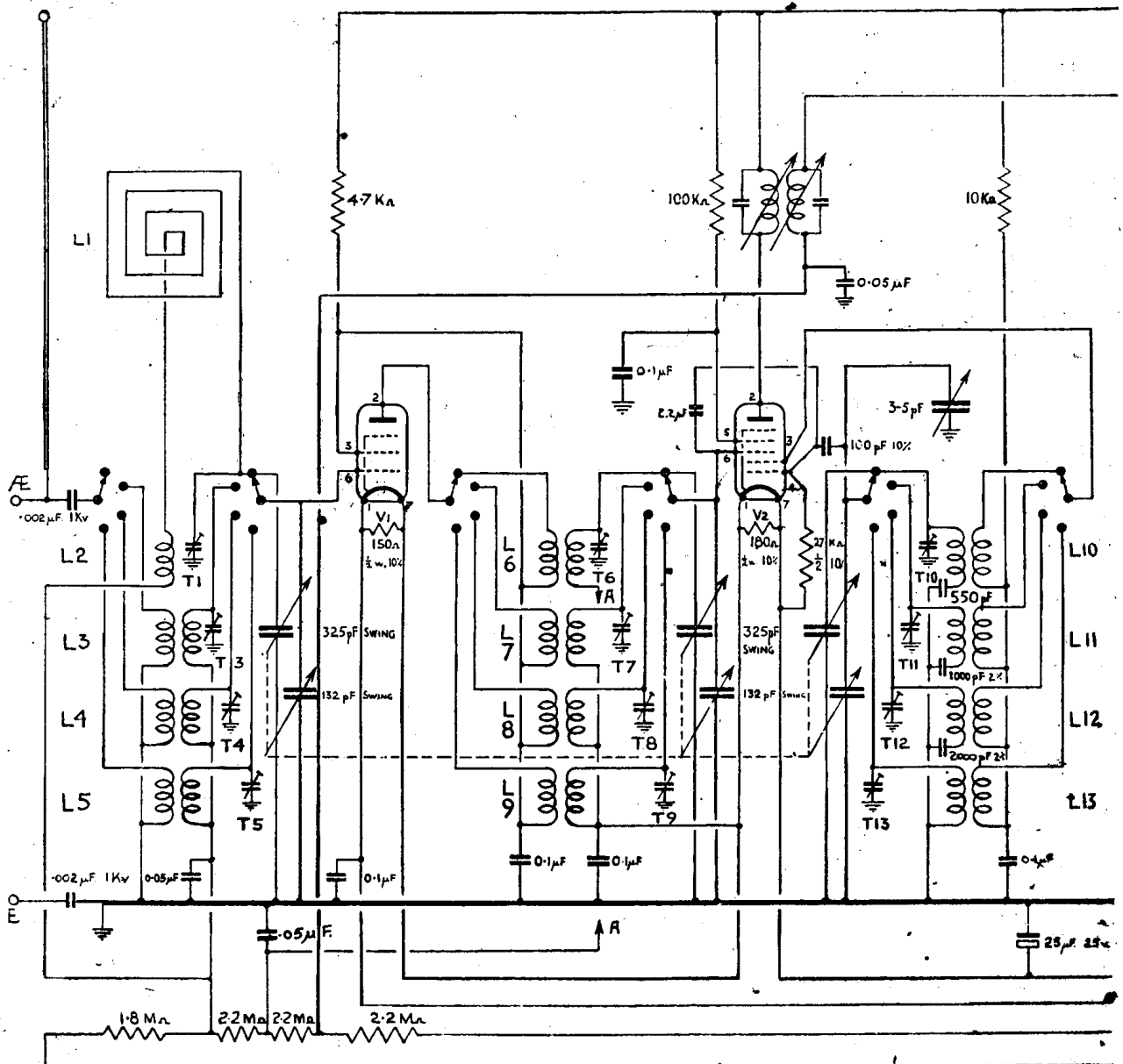
CHAMPION

Models 781A, 781B

General Description : Seven-valve (including rectifier), four-waveband portable receiver with electrical bandspreading, R.F. amplifying stage, separate output valves for battery and mains operation, frame and telescopic rod aerials. Manufacture discontinued.

Power Supplies ; Batteries: H.T. two 45 volts (*e.g.*, Batrymax Type B.104); L.T. two 4.5 volts (*e.g.*, Ever Ready No. 28); an additional L.T. battery, of similar type, is required when using dial lights on battery operation; battery economy switch is fitted. A.C./D.C. mains, 100-120 and 200-250 volts.

Wavebands : Model 781A, M.W. 180-550 m.; S.W.1 56-100 m.; S.W.2 31-55 m.; S.W.3 16-30 m. In Model 781B, the S.W.1 band is

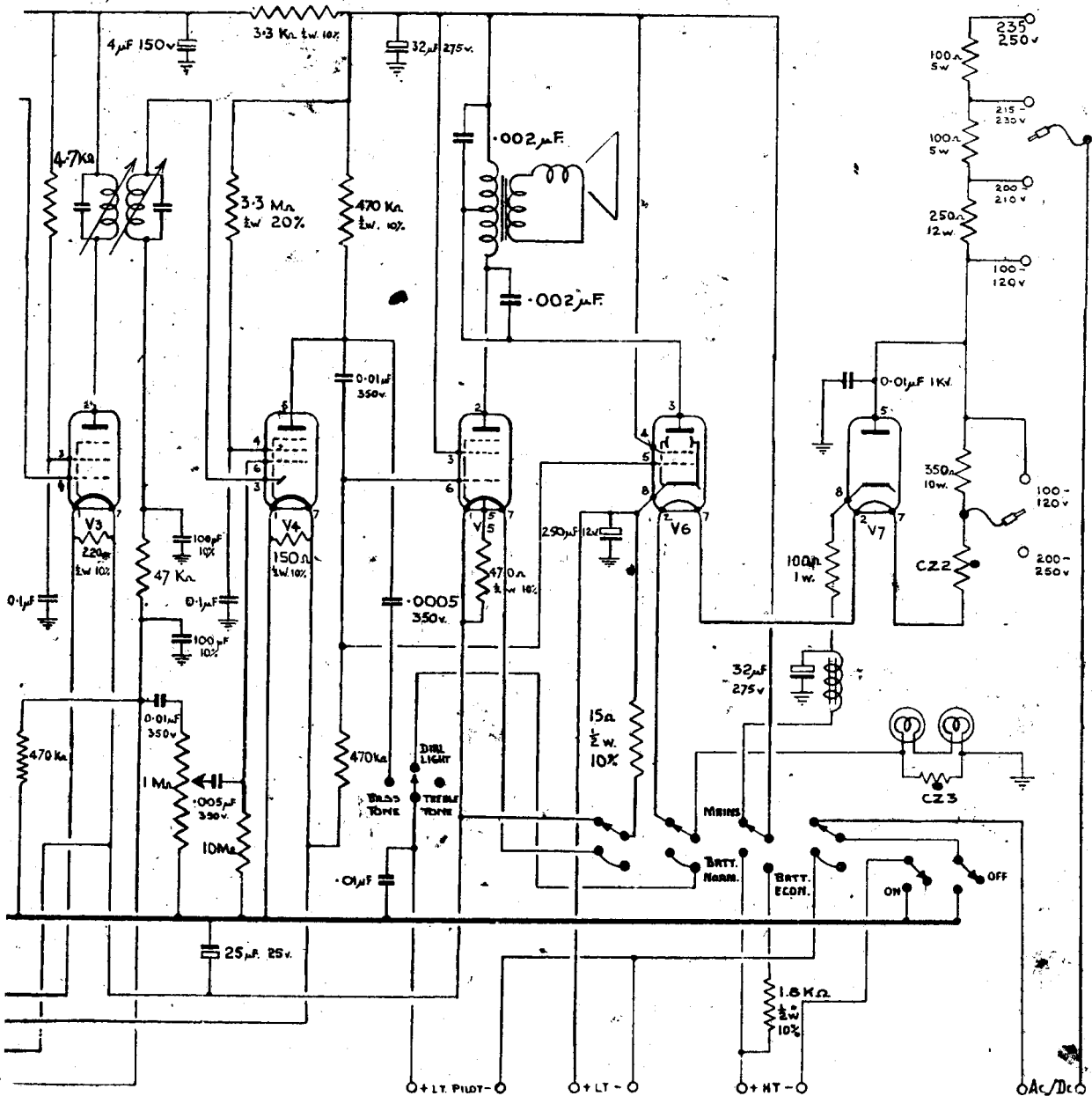
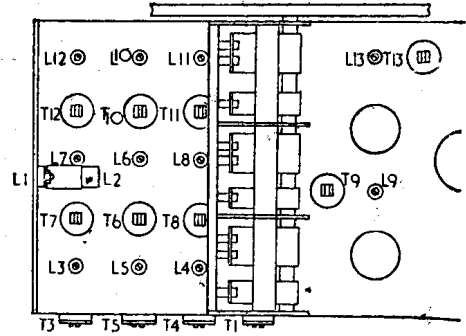


CIRCUIT DIAGRAM—

replaced by L.W. 1000-2000 m. A six-section tuning gang is used with 132-pF. swing sections for S.W.; in addition a 3-5-pF. capacitor in the local oscillator circuit provides bandsread tuning to permit accurate logging of stations.

Valves : (V₁) DF91; (V₂) DK92; (V₃) DF91; (V₄) DAF91; (V₅) DL94; (V₆) 50L6; (V₇) 35Z4.

Alignment Procedure : The circuit diagram and the trimmer and coil lay-out are for Model 781A, in which L₂, L₃, L₄, L₅ are for M.W., S.W.1, S.W.2 and S.W.3 respectively. In Model 781B the L.W. coils and trimmers have the same circuit numbers as those for S.W.1 in Model 781A with the addition of L₁₄, the L.W. frame aerial, used in conjunction with L₃ which becomes a matching coil.



CHAMPION MODEL 781A

I.F. : Switch set to M.W. and open gang. Inject a 465-kc/s. signal to grid of V₂ and peak I.F.T.s. for maximum output.

R.F. : During alignment ensure that bandsread capacitor is set at figure 5 on dial.

M.W. : (a) Tune set to 600 kc/s. Inject a 600-kc/s. signal via dummy aerial and a 2.5-pF. capacitor to grid of V₂. Adjust L₁₀ and L₆ for maximum output.

(b) Tune set and generator to 1500 kc/s. Adjust T₁₀ and T₆.

(c) Repeat (a) and (b).

(d) Connect generator to coupling loop provided on frame aerial. Tune set and generator to 600 kc/s. Adjust L₆ and L₂.

(e) Adjust T₆ and T₁ at 1500 kc/s.

(f) Repeat (d) and (e).

S.W.1 : (g) Connect generator as in (a). Adjust L₁₁ and L₇ at 3 Mc/s.

(h) Adjust T₁₁ and T₇ at 5 Mc/s.

(i) Repeat (g) and (h).

(j) Connect generator via dummy aerial and a 2.5-pF. capacitor to aerial lead. Adjust L₇ and L₃ at 3 Mc/s.

(k) Adjust T₇ and T₃ at 5 Mc/s.

(l) Repeat (j) and (k).

S.W.2 : As for S.W.1 but at following frequencies: 6 Mc/s. (L₁₂ and L₈); 9.5 Mc/s. (T₁₂ and T₈); 6 Mc/s. (L₈ and L₄); 9.5 Mc/s. (T₈ and T₄).

S.W.3 : As for S.W.1 but at following frequencies: 11.5 Mc/s. (L₁₃ and L₉); 18 Mc/s. (T₁₃ and T₉); 11.5 Mc/s. (L₉ and L₅); 18 Mc/s. (T₉ and T₅).

Notes : When carrying out adjustments to the trimmers on S.W.2 and S.W.3 it is important to ensure that the proper signal, and not the image, is peaked. This can be checked by tuning the generator first to the fundamental frequency, then to frequency 930 kc/s. higher: the fundamental frequency should give the greater response.

L.W. : On Model 781B, L₁₁, L₇ and L₃ are adjusted at 150 kc/s., and T₁₁, T₇ and T₃ at 300 kc/s.