# WIRELESS SET NO. 62, MKS. 1 AND 2

## Change of E.M.E.R. numbering

ACTION

1. The designations of the E.M.E.Rs. listed below will be changed on all pages by all holders of these publications. Any references made to these publications in future will quote the NEW designations.

| OLD designation | NEW designation |
|---|---|
| Telecommunications F 519/1 (Issue 1, dated 5 Mar. 1947) | Telecommunications F 519 Misc. Inst. No. 2 |
| Telecommunications F 519/2 (Issue 1, dated 19 May 1947) | Telecommunications F 519 Misc. Inst. No. 3 |

END



Distribution - Class 870. Code No. 4 (double)

# WIRELESS SET NO. 62, MARKS 1 AND 2

## SERVICE DATA—FIRST ECHELON WORK

*Note: For double distribution see Tels. A 600*

### Circuit changes during production

1. Owing to the components not being available in time, certain of these modifications may not be incorporated until a later serial number than that indicated. This applies particularly to paras. 2(d) and 3.

2. Changes incorporated after Mk. 1, serial number 1,000, and included in Mk. 2 sets:—

(a) Filament circuit changed from Fig. 1 to Fig. 2.

(b) XTAL/MO switch rewired (Figs. 3 and 4).

(c) R14A (47kΩ) replaced by R2E (100kΩ).
Sender H.T. now earthed through R3C (4.7kΩ) on receive.
Relay contact A1 rewired and R7D removed.
Receiver H.T. now earthed on send (Figs. 5 and 6).

(d) Earth connection to midpoint of R22A removed. R24B added.

3. Changes incorporated after Mk. 1, serial number 1800, and included in Mk. 2 sets:—

(a) C32A (15pF) added across crystal.
C8A (5pF) replaced by C31A (10pF) (Fig. 4).

(b) C7A (30pF) replaced by C30A (with spec. temp. coeff.).
C33A (10pF spec. temp. coeff.) added.

### Relay adjustments

4. For method of adjustment, see Tels. A 424/5 (Type K. 600).

5. Spring tensions: 1 and 3, 21 and 23: 16—20 grams.
2 and 22: 8—12 grams.
Armature travel: 31 mils.
Armature residual stud: 4 mils.
Current: Saturate, 100 mA
Operate, 70 mA

### Send-receive alignment check

6. Set wavemeter to 4 Mc/s and tune in receiver (switch to NET and tune for zero beat). Press pressel switch and tune in wavemeter to SEND frequency. If more than 1.5 kc/s from 4 Mc/s, return to workshops for realignment. Carry out at 4 Mc/s on both frequency ranges.

### Calibration check

7. Check at 2.1, 2.5, 3.0, 3.5, 4.0 (both ranges) 5.0, 6.0, 7.0, 8.0, 9.0 and 9.9 Mc/s by setting crystal calibrator to frequency, tuning in receiver, using A.V.C. meter, and noting receiver frequency dial reading. If error is greater than 1%, return to workshops for realignment.

### Mechanical replacements

8. Note that when components are replaced in this set, the replacement must be of tropical pattern and in accordance with the identification list. If the case is removed for any purpose, the fixing screws must be re-sealed, after replacing, with either shellac or bakelite varnish.

### Rotary transformer

9. To reach the rotary transformer for changing brushes, etc., remove the baseplate and disconnect the wires connecting the transformer to the set at the terminal blocks fitted in the side of the chassis (Fig. 8). Place the set right way up on a bench and remove the two rubber-mounted screws at the rear of the chassis at the back of the A.T.I. The rotary transformer and associated smoothing components can now be removed as one unit. The transformer is mounted on the bottom half of the case when it is placed right way up (as in the set). The remainder of the case can be removed by undoing the screws around the edge. Check that the rubber grommets used for suspension are not perished.

### AERIAL TUNING inductance L13A

10. Remove the AERIAL TUNING knob and drive by removing the knob and unscrewing the clutch screw, taking care not to lose the clutch spring. Remove the dial by unscrewing the two grubscrews. Unsolder the connections to the A.T.I. and the fuse panel and remove the tape holding the aerial lead to the frame. Remove the three screws holding the A.T.I. frame to the chassis and lift out the A.T.I. To do this it will be necessary to move the fuse panel.

11. The A.T.I. should be replaced in the reverse order. When reassembling the drive, reference should be made to Fig. 9. Adjust the clutch screw so that the drive operates correctly but slips at the ends of the coil.

### OFF/REC ON/ALL ON switch S3A (Fig. 10).

12. Remove the knob and remove the nut holding the gland to the panel. Remove the nut holding the switch mounting to the chassis, disconnect the switch and remove. To do this it may first be necessary to remove C3W. The separate switches can now be removed by undoing the fixing screws.

### Flick mechanism

13. If the flick mechanism requires attention, the set should be returned to workshops, since recalibration will be needed.



*Distribution—Class 870. Code No. 4 (double)*

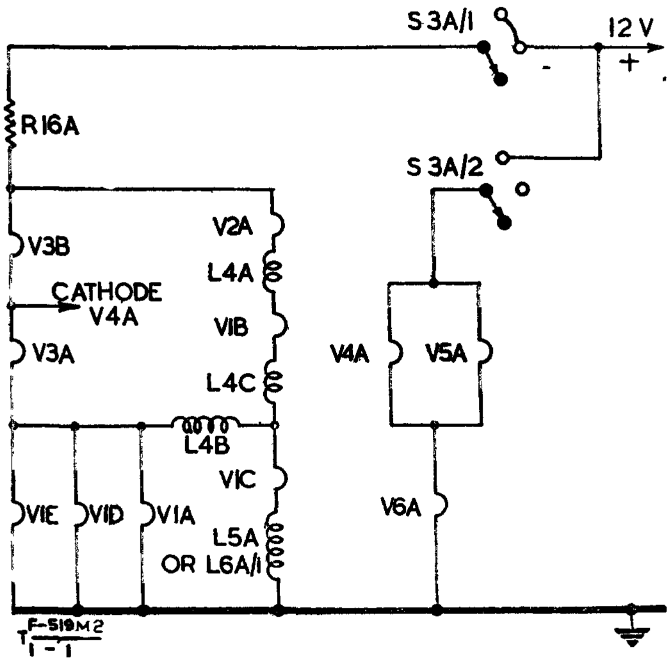



Fig. 1—Filament circuits, Mk. 1, Ser. Nos. 1-1000

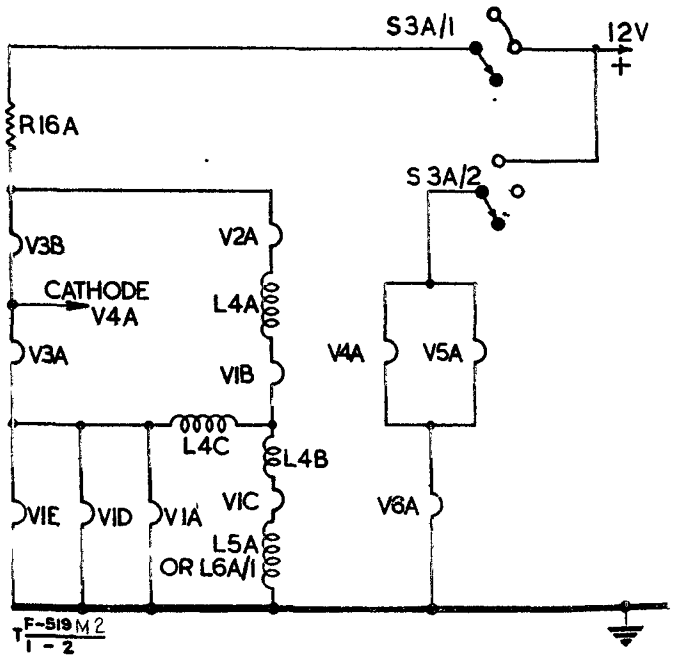



Fig. 2—Filament circuits, Mk. 1, Ser. Nos. 1001 onwards and Mk. 2

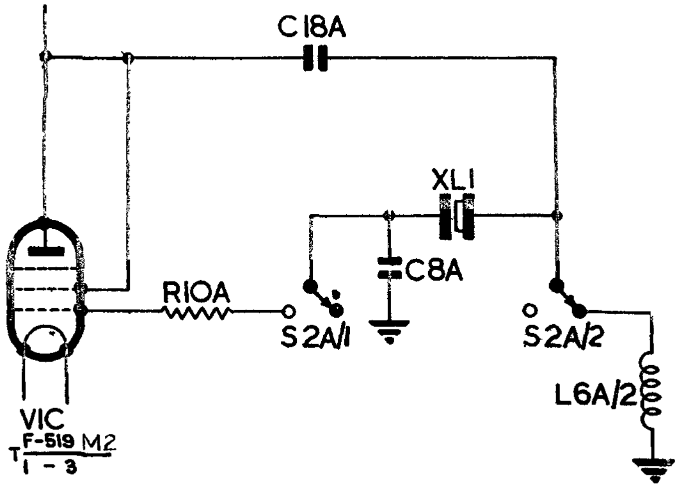



Fig. 3—Crystal Osc. circuits, Mk. 1, Ser. Nos. 1-1000

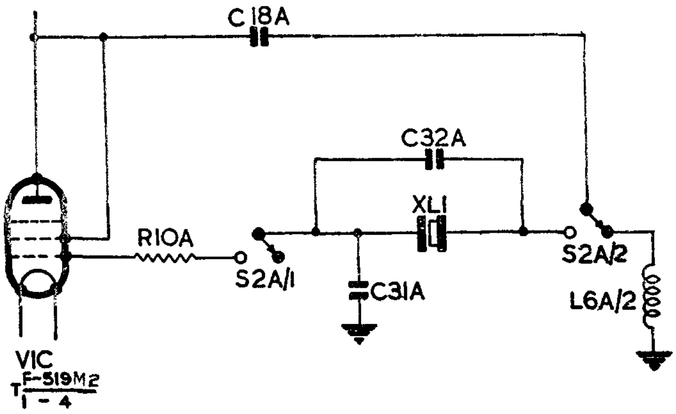



Fig. 4—Crystal Osc. circuits, Mk. 1, Ser. Nos. 1801 onwards and Mk. 2

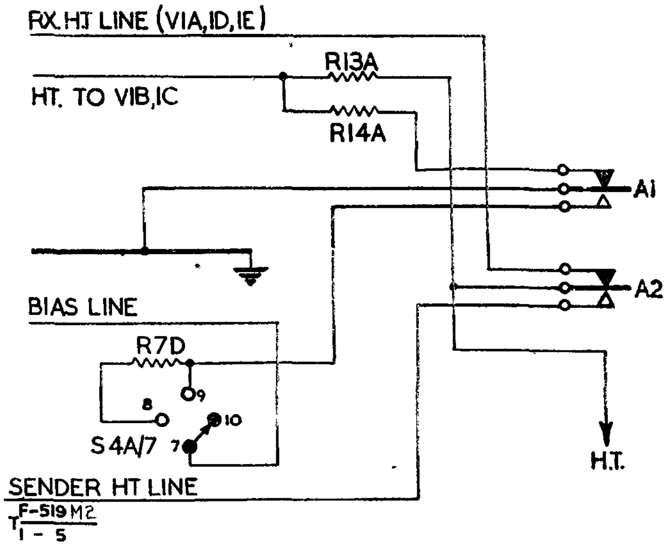



Fig. 5—Send-receive switching, Mk. 1, Ser. Nos. 1-1000

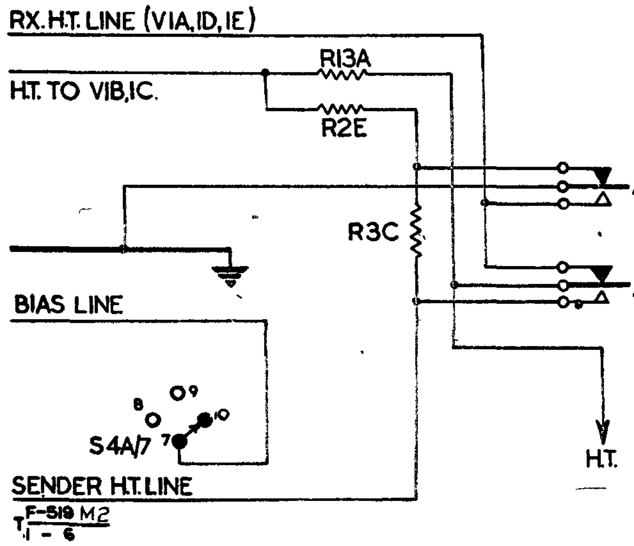



**Fig. 6—Send-receive switching, Mk. 1, Ser. Nos. 1001 onwards and Mk. 2**

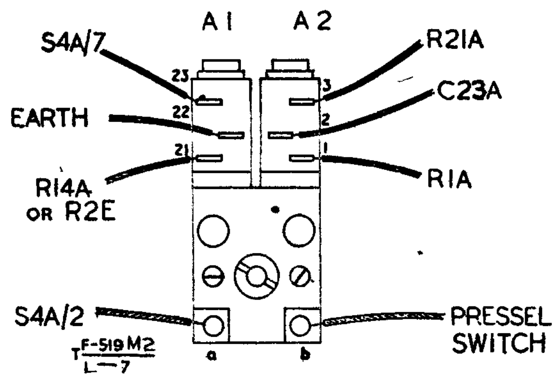



**Fig. 7—Relay connections**

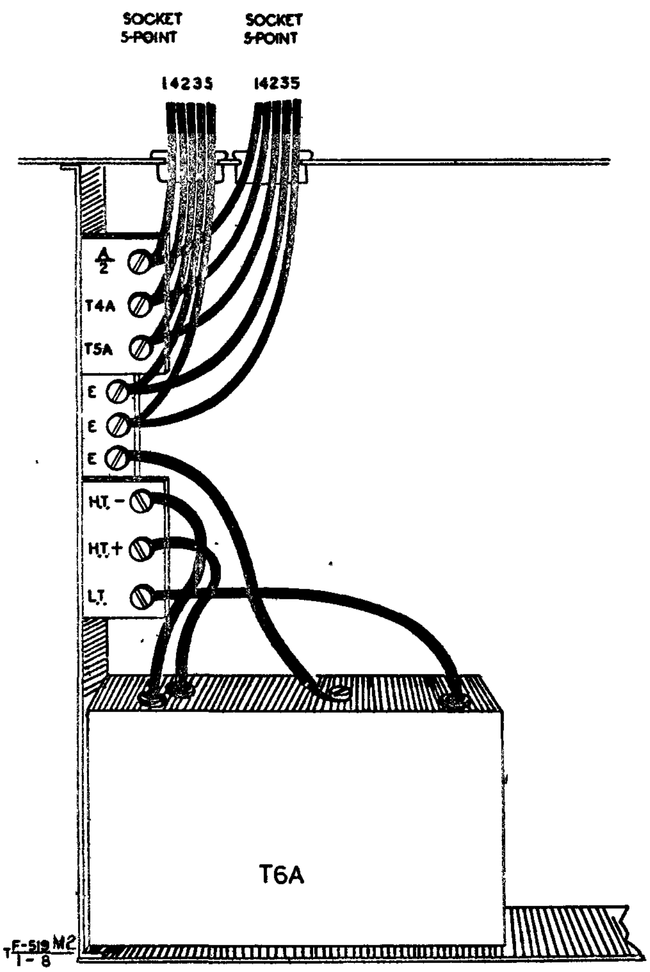



**Fig. 8—Connections to rotary transformer**

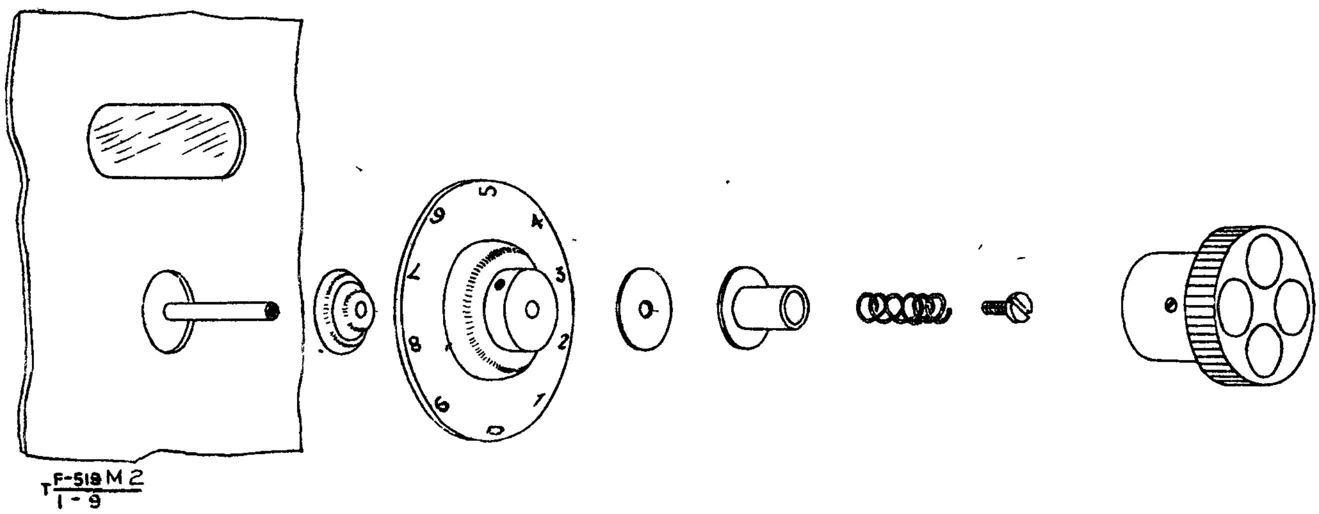



**Fig. 9—Exploded view of A.T.I. drive**

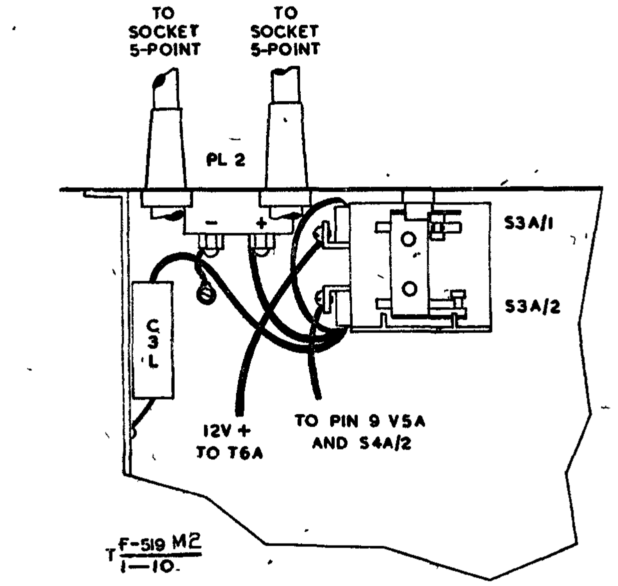



**Fig. 10—S3A connections**

**Table 1—Voltage, current and resistance checks**

**CONDITIONS OF MEASUREMENT**

For all measurements use Avometer, model 7
Voltages above 50V—400V range, between 10 and 50V—100V range
Gain control at maximum
X'TAL/MO switch at MO

H.F. band, 6 Mc/s
ON/OFF switch at ALL/ON
Meter switch at DRIVE
12 V input at plug

| Pin | connections | *Voltage (V)* Receive *R/T* | Receive *Net* | Receive *C.W.* | Send *R/T* | Send *C.W.* | *Current (mA)* Receive *R/T* | Receive *Net* | Receive *C.W.* | Send *R/T* | Send *C.W.* | *To* | *Resistance (Ω)* Receive *R/T* | Receive *Net* | Receive *C.W.* | Send *R/T* | Send *C.W.* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **V1A** | **(CV 1331)** | | | | | | | | | | | | | | | | |
| 1 | Fil. + .. | 2 | 2 | 2 | 2 | 2 | 50 | 50 | 50 | 50 | 50 | CH. | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 2 | — .. | 315 | 320 | 320 | — | — | — | — | — | — | — | H.T. | S.C. | S.C. | S.C. | 1.2k | 1.2k |
| 3 | Anode .. | 100 | 112 | 112 | — | — | 1.5 | 1.4 | 11.4 | — | — | H.T. | 100k | 100k | 100k | 100k | 100k |
| 4 | Screen .. | 60 | 75 | 75 | — | — | 0.6 | 0.5 | 0.5 | — | — | H.T. | 220k | 220k | 220k | 220k | 220k |
| 5 | Sup. .. .. | — | — | — | — | — | — | — | — | — | — | CH. | S.C. | S.C. | S.C. | S.C. | S.C. |
| 6 | Met. .. .. | — | — | — | — | — | — | — | — | — | — | CH. | S.C. | S.C. | S.C. | S.C. | S.C. |
| 7 | — ... | 2 | 2 | 2 | 2 | 2 | — | — | — | — | — | CH. | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 |
| 8 | Fil. .. .. | — | — | — | — | — | 50 | 50 | 50 | 50 | 50 | CH. | S.C. | S.C. | S.C. | S.C. | S.C. |
| T.C. | Grid .. .. | — | — | — | — | — | — | — | — | — | — | CH. | 700k | 105k | 105k | 700k | 105k |
| **V1B** | **(CV 1331)** | | | | | | | | | | | | | | | | |
| 1 | Fil. + .. | 4 | 4 | 4 | 4 | 4 | 50 | 50 | 50 | 50 | 50 | Chassis | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 |
| 2 | — .. | 115 | 135 | 135 | — | — | — | — | — | — | — | H.T. | 33k | 33k | 33k | 33k | 33k |
| 3 | Anode .. | 80 | 80 | 80 | 85 | 85 | 2 | 2 | 2 | 2 | 2 | H.T. | 40k | 40k | 40k | 42k | 42k |
| 4 | Screen .. | 80 | 80 | 80 | 85 | 85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | H.T. | 63k | 63k | 63k | 67k | 67k |
| 5 | Sup. .. .. | — | — | — | — | — | — | — | — | — | — | Chassis | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| 6 | Met. .. .. | — | — | — | — | — | — | — | — | — | — | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| 7 | — .. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 8 | Fil. — .. | 2 | 2 | 2 | 2 | 2 | 50 | 50 | 50 | 50 | 50 | Chassis | 5 | 5 | 5 | 5 | 5 |
| T.C. | Grid .. .. | — | — | — | — | — | — | — | — | — | — | ,, | 470k | 470k | 470k | 470k | 470k |

**Table 1—Voltage, current and resistance checks** (*continued*)

| Pin | connections | *Voltage (V)* Receive R/T | Receive Net | Receive C.W. | Send R/T | Send C.W. | *Current (mA)* Receive R/T | Receive Net | Receive C.W. | Send R/T | Send C.W. | To | *Resistance (Ω)* Receive R/T | Receive Net | Receive C.W. | Send R/T | Send C.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **V1C** | **(CV 1331)** | | | | | | | | | | | | | | | | |
| 1 | Fil. + | 2 | 2 | 2 | 2 | 2 | 50 | 50 | 50 | 50 | 50 | Chassis | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 |
| 2 | — | 2 | 2 | 2 | 2 | 2 | — | — | — | — | — | ,, | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
| 3 | Anode | 95 | 95 | 95 | 100 | 100 | 4 | 4 | 4 | 4 | 4 | H.T. | 28k | 28k | 28k | 30k | 30k |
| 4 | Screen | 95 | 95 | 95 | 100 | 100 | | | | | | H.T. | 28k | 28k | 28k | 30k | 30k |
| 5 | Sup. | — | — | — | — | — | — | — | — | — | — | Chassis | S.C. | S.C. | S.C. | S.C. | S.C. |
| 6 | Met. | — | — | — | — | — | — | — | — | — | — | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| 7 | — | 132 | 132 | 132 | 142 | 136 | — | — | — | — | — | H.T. | 18k | 18k | 18k | 18k | 18k |
| 8 | Fil. — | — | — | — | — | — | 50 | 50 | 50 | 50 | 50 | Chassis | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| T.C. | Grid | — | — | — | — | — | — | — | — | — | — | ,, | 47k | 47k | 47k | 47k | 47k |
| **V1D** | **(CV 1331)** | | | | | | | | | | | | | | | | |
| 1 | Fil. + | 2 | 2 | 2 | 2 | 2 | 50 | 50 | 50 | 50 | 50 | Chassis | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 2 | — | 4 | 4 | 4 | 4 | 4 | — | — | — | — | — | ,, | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 |
| 3 | Anode | 115 | 115 | 135 | — | — | 1.7 | 1.6 | 1.6 | — | — | H.T. | 33k | 33k | 33k | 33k | 33k |
| 4 | Screen | 60 | 75 | 75 | — | — | 0.6 | 0.5 | 0.5 | — | — | H.T. | 220k | 220k | 220k | 220k | 220k |
| 5 | Supt. | — | — | — | — | — | — | — | — | — | — | Chassis | S.C. | S.C. | S.C. | S.C. | S.C. |
| 6 | Met. | — | — | — | — | — | — | — | — | — | — | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| 7 | — | 4 | 4 | 4 | 4 | 4 | — | — | — | — | — | ,, | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 |
| 8 | Fil. — | — | — | — | — | — | 50 | 50 | 50 | 50 | 50 | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| T.C. | Grid | — | — | — | — | — | — | — | — | — | — | ,, | 600k | 100 | 100 | 600k | 100 |
| **V1E** | **(CV 1331)** | | | | | | | | | | | | | | | | |
| 1 | Fil. + | 2 | 2 | 2 | 2 | 2 | 50 | 50 | 50 | 50 | 50 | Chassis | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| 2 | — | — | — | — | — | — | — | — | — | — | — | | — | — | — | — | — |
| 3 | Anode | 115 | 135 | 135 | — | — | 1.7 | 1.6 | 1.6 | — | — | H.T. | 33k | 33k | 33k | 33k | 33k |
| 4 | Screen | 62 | 85 | 85 | — | — | 0.9 | 0.8 | 0.8 | — | — | H.T. | 80k | 80k | 80k | 80k | 80k |
| 5 | Sup. | — | — | — | — | — | — | — | — | — | — | Chassis | S.C. | S.C. | S.C. | S.C. | S.C. |
| 6 | Met. | — | — | — | — | — | — | — | — | — | — | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| 7 | — | 0.3 | 0.4 | 0.4 | — | — | — | — | — | — | — | ,, | *3.3k | *3.3k | *3.3k | *3.3k | *3.3k |
| 8 | Fil. | — | — | — | — | — | — | — | — | — | — | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| T.C. | Grid | — | — | — | — | — | — | — | — | — | — | ,, | 600k | 100 | 100 | 600k | 100 |
| **V2A** | **(CV 306)** | | | | | | | | | | | | | | | | |
| 1 | Fil. + | 4 | 4 | 4 | 4 | 4 | 50 | 50 | 50 | 50 | 50 | Chassis | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 |
| 2 | — | −3 | −3 | −3 | −5.5 | −6.3 | — | — | — | — | — | ,, | 100 | 100 | 100 | 100 | 100 |
| 3 | Anode | — | — | — | 97 | 95 | — | — | — | 0.35 | 0.35 | H.T. | 290k | 290k | 290k | 280k | 280k |
| 4 | — | — | — | — | −3 | 0 | — | — | — | — | — | Chassis | 600k | 1M | 1M | 600k | 1M |
| 5 | Sig. diode | — | — | — | — | — | — | — | — | — | — | ,, | 570k | 570k | 570k | 570k | 570k |
| 6 | Met. | — | — | — | — | — | — | — | — | — | — | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| 7 | A.V.C. Diode | — | — | — | — | — | — | — | — | — | — | ,, | 600k | 1M | 1M | 600k | 1M |
| 8 | Fil. + | 6 | 6 | 6 | 6 | 6 | 50 | 50 | 50 | 50 | 50 | Chassis | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |
| T.C. | Grid | — | — | — | — | — | — | — | — | — | — | ,, | 28k | 28k | 28k | 28k | 28k |
| **V3A** | **(CV 65)** | | | | | | | | | | | | | | | | |
| 1 | Fil. + | 4 | 4 | 4 | 4 | 4 | 150 | 150 | 150 | 150 | 150 | Chassis | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| 2 | — | 6 | 6 | 6 | 6 | 6 | — | — | — | — | — | ,, | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 |
| 3 | Anode | 108 | 108 | 108 | 98 | 98 | 7.5 | 7.5 | 7.5 | 7 | 7 | H.T. | 20.5k | 20.5k | 20.5k | 20.5k | 20.5k |
| 4 | Screen | 112 | 112 | 112 | 103 | 103 | 2.5 | 2.5 | 2.5 | 2.3 | 2.3 | H.T. | 20k | 20k | 20k | 20k | 20k |
| 5 | Grid | — | — | — | — | — | — | — | — | — | — | Chassis | 1M | 1M | 1M | 1M | 1M |
| 6 | — | — | — | — | — | — | — | — | — | — | — | ,, | 2M | 2M | 2M | 2M | 2M |
| 7 | — | 12 | 12 | 12 | 12 | 12 | — | — | — | — | — | ,, | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| 8 | Fil. — | 2 | 2 | 2 | 2 | 2 | 150 | 150 | 150 | 150 | 150 | ,, | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |

* NOTE.—Meter in all positions except A.V.C. When in A.V.C., resistance 480Ω.

**Table 1—Voltage, current and resistance checks** (*continued*)

| | Pin connections | *Voltage (V)* | | | | | *Current (mA)* | | | | | | *Resistance (Ω)* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *Receive* | | | *Send* | | *Receive* | | | *Send* | | *To* | *Receive* | | | *Send* | |
| | | *R/T* | *Net* | *C.W.* | *R/T* | *C.W.* | *R/T* | *Net* | *C.W.* | *R/T* | *C.W.* | | *R/T* | *Net* | *C.W.* | *R/T* | *C.W.* |
| **V3B** | **(CV 65)** | | | | | | | | | | | | | | | | |
| 1 | Fil. + | 6 | 6 | 6 | 6 | 6 | 150 | 150 | 150 | 150 | 150 | Chassis | 5 | 5 | 5 | 5 | 5 |
| 2 | — | — | — | — | — | — | — | — | — | — | — | ,, | 470k | 470k | 470k | 470k | 470k |
| 3 | Anode | — | — | — | 80 | 80 | — | — | — | 2.8 | 2.8 | H.T. | 75k | 75k | 75k | 68k | 68k |
| 4 | Screen | — | — | — | 95 | 95 | — | — | — | 0.3 | 0.3 | H.T. | 270k | 270k | 270k | 270k | 270k |
| 5 | Grid | — | — | — | — | — | — | — | — | — | — | Chassis | 220k | 220k | 220k | 220k | 220k |
| 6 | — | — | — | — | 265 | 250 | — | — | — | — | — | H.T. | 5k | 5k | 5k | S.C. | S.C. |
| 7 | — | — | 315 | 315 | 270 | 250 | — | — | — | — | — | H.T. | 5k | S.C. | S.C. | S.C. | S.C. |
| 8 | Fil. − | 4 | 4 | 4 | 4 | 4 | 150 | 150 | 150 | 150 | 150 | Chassis | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| **V4A** | **(CV 1347)** | | | | | | | | | | | | | | | | |
| 1 | Met. | — | — | — | — | — | — | — | — | — | — | Chassis | S.C. | S.C. | S.C. | S.C. | S.C. |
| 2 | Heater | 12 | 12 | 12 | 12 | 12 | 300 | 300 | 300 | 300 | 300 | ,, | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| 3 | Hex. anode | — | — | — | 270 | 280 | — | — | — | 2.8 | 2.6 | H.T. | 10k | 10k | 10k | 4.7k | 4.7k |
| 4 | Hex. screen | — | — | — | 50 | 50 | — | — | — | 1 | 1 | H.T. | 105k | 105k | 105k | 100k | 100k |
| 5 | Osc. grid | — | — | — | — | — | — | — | — | — | — | Chassis | 3 | 3 | 3 | 3 | 3 |
| 6 | Osc. anode | — | 90 | 90 | 90 | 90 | — | 1.5 | 1.5 | 1.5 | 1.5 | H.T. | 155k | 150k | 150k | 150k | 150k |
| 7 | Heater | 6 | 6 | 6 | 6 | 6 | 300 | 300 | 300 | 300 | 300 | Chassis | 2 | 2 | 2 | 2 | 2 |
| 8 | Cath. | 4 | 4 | 4 | 4 | 4 | — | 1.5 | 1.5 | 5.3 | 5.1 | ,, | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| T.C. | Hex. grid | — | — | — | — | — | — | — | — | — | — | ,, | 3.3k | 3.3k | 3.3k | 3.3k | 3.3k |
| **V5A** | **(CV 1051)** | | | | | | | | | | | | | | | | |
| 1 | Heater | 6 | 6 | 6 | 6 | 6 | 300 | 300 | 300 | 300 | 300 | Chassis | 2 | 2 | 2 | 2 | 2 |
| 2 | Screen | — | — | — | 150 | 135 | — | — | — | 0.65 | 0.63 | H.T. | 105k | 105k | 105k | 100k | 100k |
| 3 | Anode | — | — | — | 280 | 265 | — | — | — | 5 | 5 | H.T. | 5k | 5k | 5k | S.C. | S.C. |
| 4 | Sup. | — | — | — | — | — | — | — | — | — | — | Chassis | S.C. | S.C. | S.C. | S.C. | S.C. |
| 5 | — | — | — | — | — | — | — | — | — | — | — | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| 6 | Cath. | — | — | — | — | — | — | — | — | — | — | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| 7 | Grid | — | — | — | — | — | — | — | — | — | — | ,, | 470k | 470k | 470k | 470k | 470k |
| 8 | — | — | — | — | — | — | — | — | — | — | — | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| 9 | Heater | 12 | 12 | 12 | 12 | 12 | 300 | 300 | 300 | 300 | 300 | ,, | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| **V6A** | **(CV 1510)** | | | | | | | | | | | | | | | | |
| 1 | Heater | 6 | 6 | 6 | 6 | 6 | 600 | 600 | 600 | 600 | 600 | Chassis | 2 | 2 | 2 | 2 | 2 |
| 2 | Anode | — | — | — | 265 | 250 | — | — | — | 24 | 40 | H.T. | 5k | 5k | 5k | 1.5k | 1.5k |
| 3 | Screen | — | — | — | 265 | 250 | — | — | — | — | — | H.T. | 5k | 5k | 5k | S.C. | S.C. |
| 4 | Screen | — | — | — | 265 | 250 | — | — | — | 3.5 | 5 | H.T. | 5k | 5k | 5k | S.C. | S.C. |
| 5 | Earth screen | — | — | — | — | — | — | — | — | — | — | Chassis | S.C. | S.C. | S.C. | S.C. | S.C. |
| 6 | Cathode | — | — | — | 0.2 | 0.25 | — | — | — | 27.5 | 45 | ,, | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| 7 | Grid | — | — | — | −38 | −31 | — | — | — | — | — | ,, | 2.3k | 2k | 2k | 2.3k | 2k |
| 8 | Earth screen | — | — | — | — | — | — | — | — | — | — | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |
| 9 | Heater | — | — | — | — | — | 600 | 600 | 600 | 600 | 600 | ,, | S.C. | S.C. | S.C. | S.C. | S.C. |

*Note: The next page is page 1001*

## Table 1001—List of components, Wireless set No. 62

| *Circuit reference* | *Value* | *Tolerance* | *Rating* | *Type* | *Remarks* | *Location reference (Figs. 1001 and 1002)* |
|---|---|---|---|---|---|---|
| RESISTORS | | | | | | |
| R1A | 220kΩ | ±20% | ½W | Ceramic | — | B1 |
| R2A | 100kΩ | ±20% | ¼W | Ceramic | — | D2 |
| R2B | 100kΩ | ±20% | ¼W | Ceramic | — | C10 |
| R2C | 100kΩ | ±20% | ¼W | Ceramic | — | D10 |
| R2D | 100kΩ | ±20% | ¼W | Ceramic | — | F6 |
| R2E | 100kΩ | ±20% | ¼W | Ceramic | Mk. 1 over 1000 and Mk. 2 | B12 |
| R3A | 4.7kΩ | ±20% | ¼W | Ceramic | — | D2 |
| R3B | 4.7kΩ | ±20% | ¼W | Ceramic | — | F7 |
| R3C | 4.7kΩ | ±20% | ¼W | Ceramic | Mk. 1 over 1000 and Mk. 2 | F12 |
| R4A | 1MΩ | ±20% | ¼W | Ceramic | — | E2 |
| R4B | 1MΩ | ±20% | ¼W | Ceramic | — | D12 |
| R4C | 1MΩ | ±20% | ¼W | Ceramic | — | C12 |
| R4D | 1MΩ | ±20% | ¼W | Ceramic | — | C11 |
| R4E | 1MΩ | ±20% | ¼W | Ceramic | — | D13 |
| R5A | 100kΩ | ±20% | ½W | Ceramic | — | B2 |
| R5B | 100kΩ | ±20% | ½W | Ceramic | — | F6 |
| R6A | 470kΩ | ±20% | ¼W | Ceramic | — | D3 |
| R6B | 470kΩ | ±20% | ¼W | Ceramic | — | C8 |
| R6C | 470kΩ | ±20% | ¼W | Ceramic | — | C10 |
| R6D | 470kΩ | ±20% | ¼W | Ceramic | — | H6 |
| R7A | 47kΩ | ±20% | ¼W | Ceramic | — | B3 |
| R7B | 47kΩ | ±20% | ¼W | Ceramic | — | D5 |
| R7C | 47kΩ | ±20% | ¼W | Ceramic | — | B8 |
| R8A | 22kΩ | ±20% | ¼W | Ceramic | — | B3 |
| R8B | 22kΩ | ±20% | ¼W | Ceramic | — | C11 |
| R8C | 22kΩ | ±20% | ¼W | Ceramic | — | G4 |
| R9A | 10kΩ | ±20% | ¼W | Ceramic | — | B5 |
| R10A | 22Ω | ±20% | ¼W | Ceramic | — | C5 |
| R11A | 33kΩ | ±10% | 1W | Ceramic | — | B7 |
| R12A | 3.3kΩ | ±20% | ¼W | Ceramic | — | D8 |
| R12B | 3.3kΩ | ±20% | ¼W | Ceramic | — | G6 |
| R13A | 20kΩ | ±10% | 12W | Wire-wound | — | B12 |
| R13B | 20kΩ | ±10% | 12W | Wire-wound | — | B13 |
| R14A | 47kΩ | ±20% | ½W | Ceramic | Mk. 1 up to 1000 | B12 |
| R15A | 860Ω | — | 10W | Wire-wound, tapped | — | E14 |
| R16A | 30Ω | ±20% | 6W | Wire-wound | — | H16 |
| R17A | 15kΩ | ±20% | ¼W | Ceramic | — | G12 |
| R18A | 1MΩ | ±20% | ¼W | Variable | — | F13 |
| R19A | 220kΩ | ±20% | ¼W | Ceramic | — | H11 |
| R20A | 270kΩ | ±10% | ¼W | Ceramic | — | F12 |
| R21A | 68kΩ | ±20% | 1W | Ceramic | — | F11 |
| R22A | 20Ω | — | — | Variable, wire-wound, centre-tapped | — | H9 |
| R23A | 39kΩ | ±20% | ¼W | Ceramic | — | H6 |
| R24A | 4.2Ω | ± 2% | 1/10W | Wire-wound | — | H3 |
| R24B | 4.2Ω | ± 3% | 1/10W | Wire-wound | Mk. 1 over 1000 and Mk. 2 | G9 |
| R25A | 33Ω | ±10% | ¼W | Ceramic | — | G2 |
| R26A | 550Ω | | | Variable, wire-wound | — | F2 |
| R27A | 29.5kΩ | ± 2% | ½W | Meter resistor (high stability) | — | F3 |
| R28A | 1.2MΩ | ± 5% | ½W | Meter resistor | — | E3 |
| R29A | 1.2MΩ | ± 5% | 1W | Meter resistor | — | F3 |
| R30A | 150kΩ | ±10% | ¼W | Ceramic | — | G8 |
| CONDENSERS | | | | | | |
| C1A | 90pF | ±10% | 350V | Protected silvered mica | — | D1 |
| C1B | 90pF | ±10% | 350V | Protected silvered mica | — | G6 |

**Table 1001—List of components, Wireless set No. 62** (*continued*)

| *Circuit reference* | *Value* | *Tolerance* | *Rating* | *Type* | *Remarks* | *Location reference (Figs. 1001 and 1002)* |
|---|---|---|---|---|---|---|
| CONDENSERS | | | | | | |
| C2A | 0.001μF | ±25% | 350V | Moulded mica | — | D1 |
| C2B | 0.001μF | ±25% | 350V | Moulded mica | — | G12 |
| C2C | 0.001μF | ±25% | 350V | Moulded mica | — | H9 |
| C2D | 0.001μF | ±25% | 350V | Moulded mica | — | F2 |
| C3A | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | C2 |
| C3B | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | B1 |
| C3C | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | B3 |
| C3D | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | D3 |
| C3E | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | D3 Fig. 1001, D4 Fig. 1002 |
| C3F | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | D4 |
| C3G | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | B7 |
| C3H | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | D7 |
| C3J | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | D8 |
| C3K | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | D5 |
| C3L | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | E16 |
| C3M | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | F16 |
| C3N | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | F15 |
| C3P | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | F15 |
| C3Q | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | H11 |
| C3R | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | G9 |
| C3S | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | H7 |
| C3T | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | H6 |
| C3U | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | H7 |
| C3V | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | H4 |
| C3W | 0.1μF | ±20% | 350V | Metal-cased tubular paper | — | H4 |
| C4A | 140pF | ± 5% | 350V | Protected silvered mica | — | C3 |
| C4B | 140pF | ± 5% | 350V | Protected silvered mica | — | D5 |
| C5A | 0.005μF | ±20% | 1kV | Metal-cased tubular paper | — | D2 |
| C5B | 0.005μF | ±20% | 1kV | Metal-cased tubular paper | — | C10 |
| C5C | 0.005μF | ±20% | 1kV | Metal-cased tubular paper | — | E12 |

**Table 1001—List of components, Wireless set No. 62 (*continued*)**

| *Circuit reference* | *Value* | *Tolerance* | *Rating* | *Type* | *Remarks* | *Location reference (Figs. 1001 and 1002)* |
|---|---|---|---|---|---|---|
| CONDENSERS | | | | | | |
| C5D | 0.005μF | ±20% | 1kV | Metal-cased tubular paper | — | C13 |
| C6A | 250pF | ± 2% | 350V | Protected silvered mica | — | B3 |
| C6B | 250pF | ± 2% | 350V | Protected silvered mica | — | B4 |
| C6C | 250pF | ± 2% | 350V | Protected silvered mica | — | B7 |
| C6D | 250pF | ± 2% | 350V | Protected silvered mica | — | B8 |
| C7A | 30pF | ±10% | 350V | Protected silvered mica | Mk. 1 up to 1800 | D6 |
| C7B | 30pF | ±10% | 350V | Protected silvered mica | — | G4 |
| C8A | 5pF | ±20% | 350V | Protected silvered mica | Mk. 1 up to 1800 | C6 |
| C8B | 5pF | ±20% | 350V | Protected silvered mica | — | D3 |
| C9 | 550pF max. | | | Variable, 4-gang | — | C9A D3<br>O9B D5<br>C9C H6<br>C9D H5 |
| C10A | 1.5—15pF | | | Trimmer, flat type | — | B2 |
| C10B | 1.5—15pF | | | Trimmer, flat type | — | G7 |
| C10C | 1.5—15pF | | | Trimmer, flat type | — | G5 |
| C11A | 3—50pF | | | Trimmer, flat type | — | B2 |
| C11B | 3—50pF | | | Trimmer, flat type | — | G7 |
| C11C | 3—50pF | | | Trimmer, flat type | — | G5 |
| C12A | 3—30pF | | | Trimmer, concentric type | — | D5 |
| C12B | 3—30pF | | | Trimmer, concentric type | — | D6 |
| C13A | 1,700pF | ±20% | 350V | Protected silvered mica | — | D6 |
| C14A | 3,500pF | ± 2% | 350V | Protected silvered mica | — | D6 |
| C15A | 410pF | ± 2% | 350V | Protected silvered mica | — | B9 |
| C15B | 410pF | ± 2% | 350V | Protected silvered mica | — | B10 |
| C16A | 20pF | ±20% | 350V | Protected silvered mica | — | B11 |
| C16B | 20pF | ±20% | 350V | Protected silvered mica | — | F6 |
| C17A | 100pF | ±20% | 350V | Moulded mica | — | C10 |
| C18A | 500pF | ±20% | 350V | Moulded mica | — | B5 |
| C18B | 500pF | ±20% | 350V | Moulded mica | — | C10 |
| C19A | 820pF | ± 2+ | 350V | Protected silvered mica | — | H8 |
| C20A | 90pF | ± 5% | 350V | Protected silvered mica | — | H8 |
| C21A | 100μF | +50%<br>−20% | 6V | Electrolytic | — | D3 |
| C22A | 2μF | ±20% | 350V | Electrolytic | — | B12 |
| C22B | 2μF | ±20% | 350V | Electrolytic | — | H12 |
| C23A | 8μF | +50%<br>−20% | 500V | Electrolytic | — | F15 |

Table 1001—List of components, Wireless set No. 62 (*continued*)

| *Circuit reference* | *Value* | *Tolerance* | *Rating* | *Type* | *Remarks* | *Location reference (Figs. 1001 and 1002)* |
|---|---|---|---|---|---|---|
| CONDENSERS | | | | | | |
| C24A | 8μF | +50% −20% | 75V | Electrolytic | — | E14 |
| C25A | 0.03μF | ±10% | 500V | Metal-cased tubular paper | — | H9 |
| C26A | 0.004μF | ±15% | 750V | Moulded mica | — | G3 |
| C27A | 487pF max. | | | Variable, air-spaced | — | H3 |
| C28A | 4.75pF | | | Trimmer, flat type | — | G4 |
| C28B | 4.75pF | | | Trimmer, flat type | — | G4 |
| C29A | 4 turns twisted wire | | | | — | G8 |
| C30A | 27pF | ±10% | 350V | Ceramic: Special Temp. Coeff. | Mk. 1 over 1800, Mk. 2 | D6 |
| C31A | 10pF | ±20% | 350V | Protected silvered mica | Mk. 1 over 1800, Mk. 2 | C5 |
| C32A | 15pF | ±20% | 350V | Protected silvered mica | Mk. 1 over 1800, Mk. 2 | C6 |
| C33A | 10pF | ±10% | 350V | Ceramic: Special Temp. Coeff. | Mk. 1 over 1800, Mk. 2 | D7 |

| *Circuit reference* | *Description* | *Location reference (Figs. 1001 and 1002)* |
|---|---|---|
| INDUCTORS | | |
| L1A | R.F. choke | D2 |
| L1B | R.F. choke | F15 |
| L1C | R.F. choke | C15 |
| L1D | R.F. choke | H4 |
| L1E | R.F. choke | F2 |
| L2A | H.F. range anode coil | B3 |
| L2B | H.F. range anode coil | F7 |
| L2C | H.F. range anode coil | G5 |
| L3A | L.F. range anode coil | B2 |
| L3B | L.F. range anode coil | F7 |
| L3C | L.F. range anode coil | G4 |
| L4A | Filament choke | D3 |
| L4B | Filament choke | D4 |
| L4C | Filament choke | C4 Fig. 1001<br>D3 Fig. 1002 |
| L5A | L.F. range LO coil | D6 |
| L6A/1 | H.F. range LO coil (tuned winding) | D6 |
| L6A/2 | H.F. range LO coil (coupling winding) | D7 |
| L8A | L.T. R.F. choke | G16 |
| L9A | HET. TONE control coil | H9 |
| L10A/1 | Beat oscillator coil (tuned winding) | H8 |
| L10A/2 | Beat oscillator coil (coupling winding) | H8 |
| L10A/3 | Beat oscillator coil (control winding) | H9 |
| L11A | Modulation choke | H4 |
| L12A | PA anode choke | G3 |
| L13A | Aerial tuning inductor | G3 |
| TRANSFORMERS | | |
| T1A | 1st I.F. transformer | B3 |
| T2A | 2nd I.F. transformer | B8 |
| T3A | 3rd I.F. transformer | B9 |
| T4A | Microphone transformer | D11 |
| T5A | Output transformer | B13 |
| T6A | Rotary transformer, 11W | F15 and F16 |
| T7A | Aerial current transformer | G2 |

**Table 1001—List of components, Wireless set No. 62 (continued)**

| *Circuit reference* | *Type* | *Description* | *Location reference (Figs. 1001 and 1002)* |
|---|---|---|---|
| VALVES | | | |
| V1A | CV1331 (ARP12) | Receiver R.F. amplifier | C2 |
| V1B | CV1331 (ARP12) | Receiver mixer | C3 |
| V1C | CV1331 (ARP12) | Local oscillator | C5 |
| V1D | CV1331 (ARP12) | 1st I.F. amplifier | C7 |
| V1E | CV1331 (ARP12) | 2nd I.F. amplifier | C9 |
| V2A | CV1306 (AR8) | Detector, A.V.C. and modulation amplifier | C11 |
| V3A | CV65 | Receiver output and sidetone amplifier | C13 |
| V3B | CV65 | Modulator | G11 |
| V4A | CV1347 (ARTH2) | Beat oscillator and sender mixer | G7 |
| V5A | CV1091 (ARP35) | Buffer amplifier | G5 |
| V6A | CV1510 (VT510) | Power amplifier | G3 |
| RECTIFIERS | | | |
| W1A<br>W2A | | Selenium | F2<br>F2 |
| SWITCHES | | | |
| S1A | Rotary multi-wafer | RANGE switch | C2, C2, D5, C5, G7, G5 and G4 |
| S2A | Rotary wafer, 1-bank 2-pole, 2-position | XTAL/MO switch | C5 and C6 |
| S3A | Double-toggle (rotary-operated) | ON/OFF switch | G16 and H15 |
| S4A | Rotary wafer, 3-bank, 3×3-pole, 3-position | CW/NET/RT switch | F14, G14, F9, F8, E13, G13, D12 and E12 |
| S5A | Rotary wafer, 1-bank, 2-pole, 6-position | Meter switch | F3 |
| RELAY | | | |
| A/2 | 600 type 100Ω coil 2C | SEND/RECEIVE relay | Operating coil G14<br>Contacts A1 D12<br>A2 F14 |
| FUSE | | | |
| F1A | 250mA cartridge | Main H.T. | F14 |

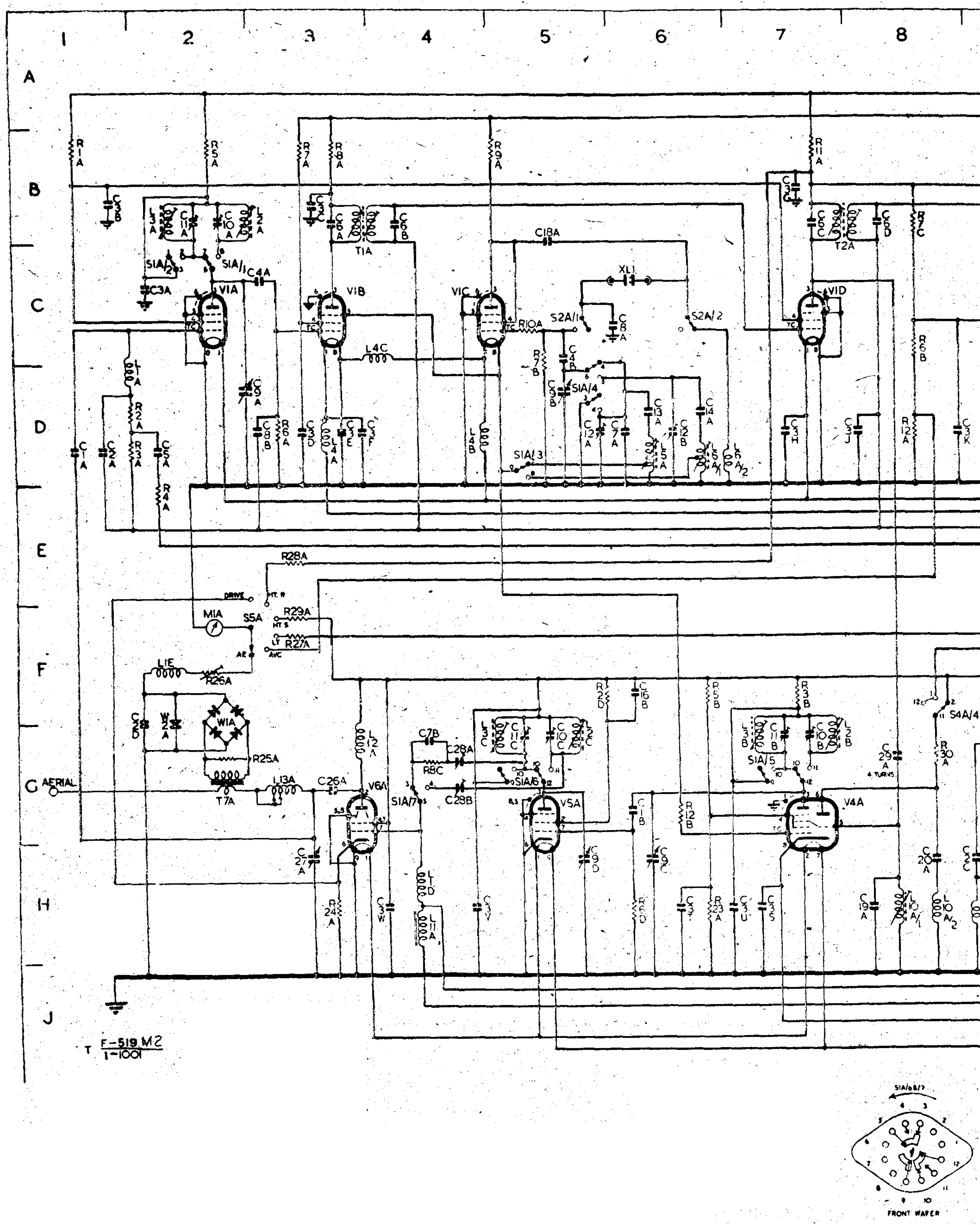
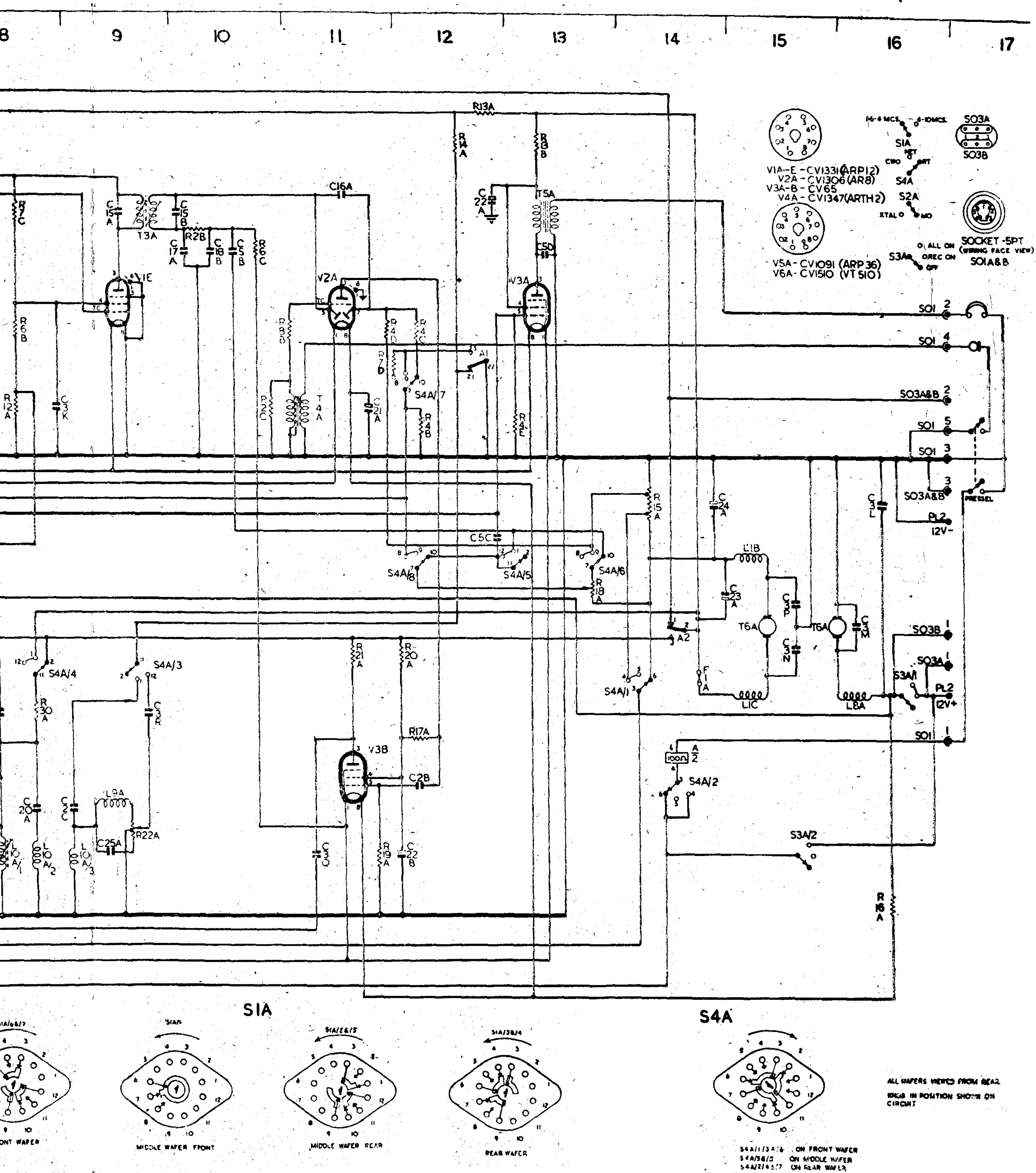
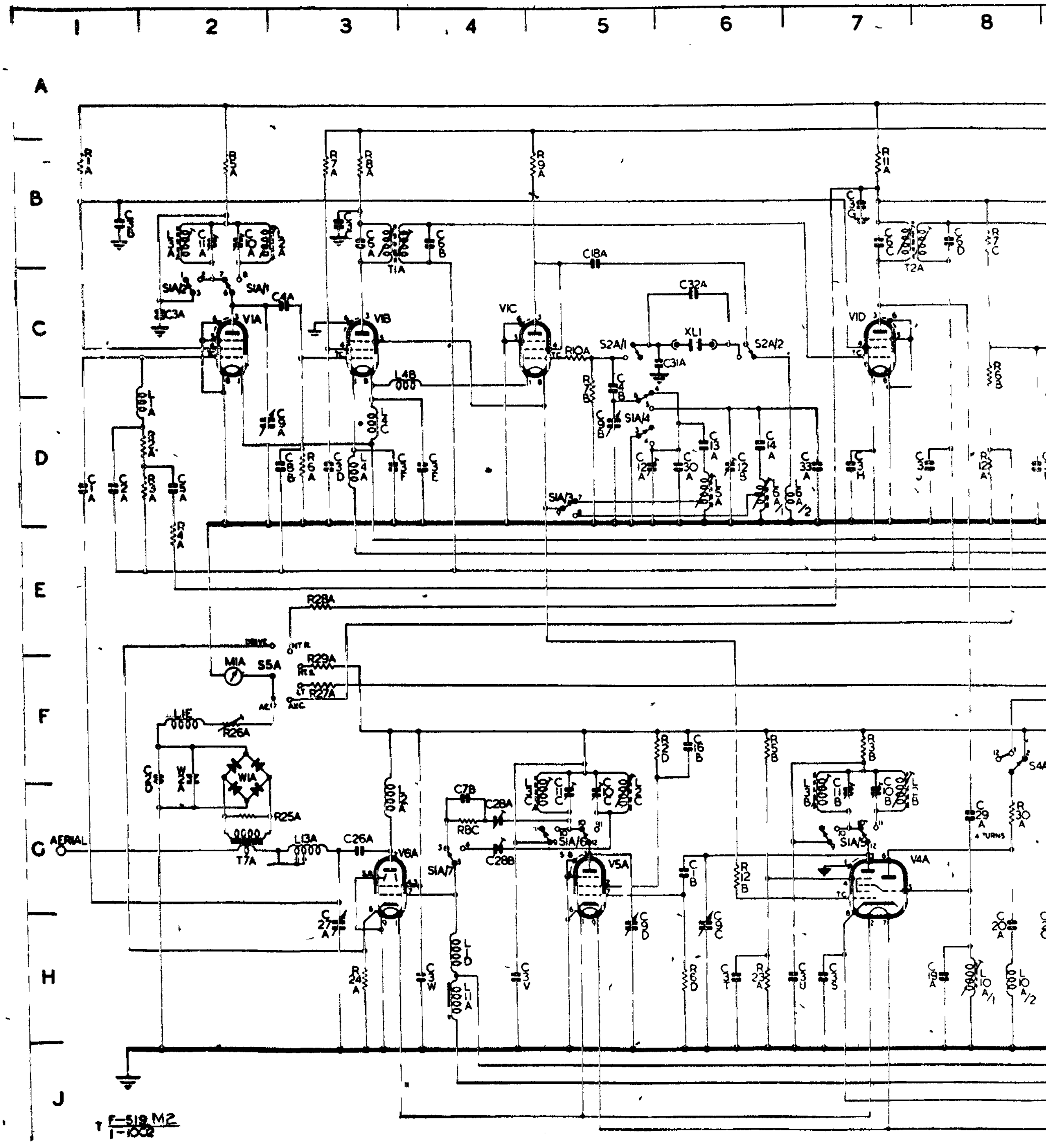



Fig. 1001—Circuit diag




**rcuit diagram, Mk. 1 to 1000**

Fig. 1001
Circuit diagram, Mk. 1 to 1000



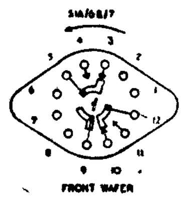
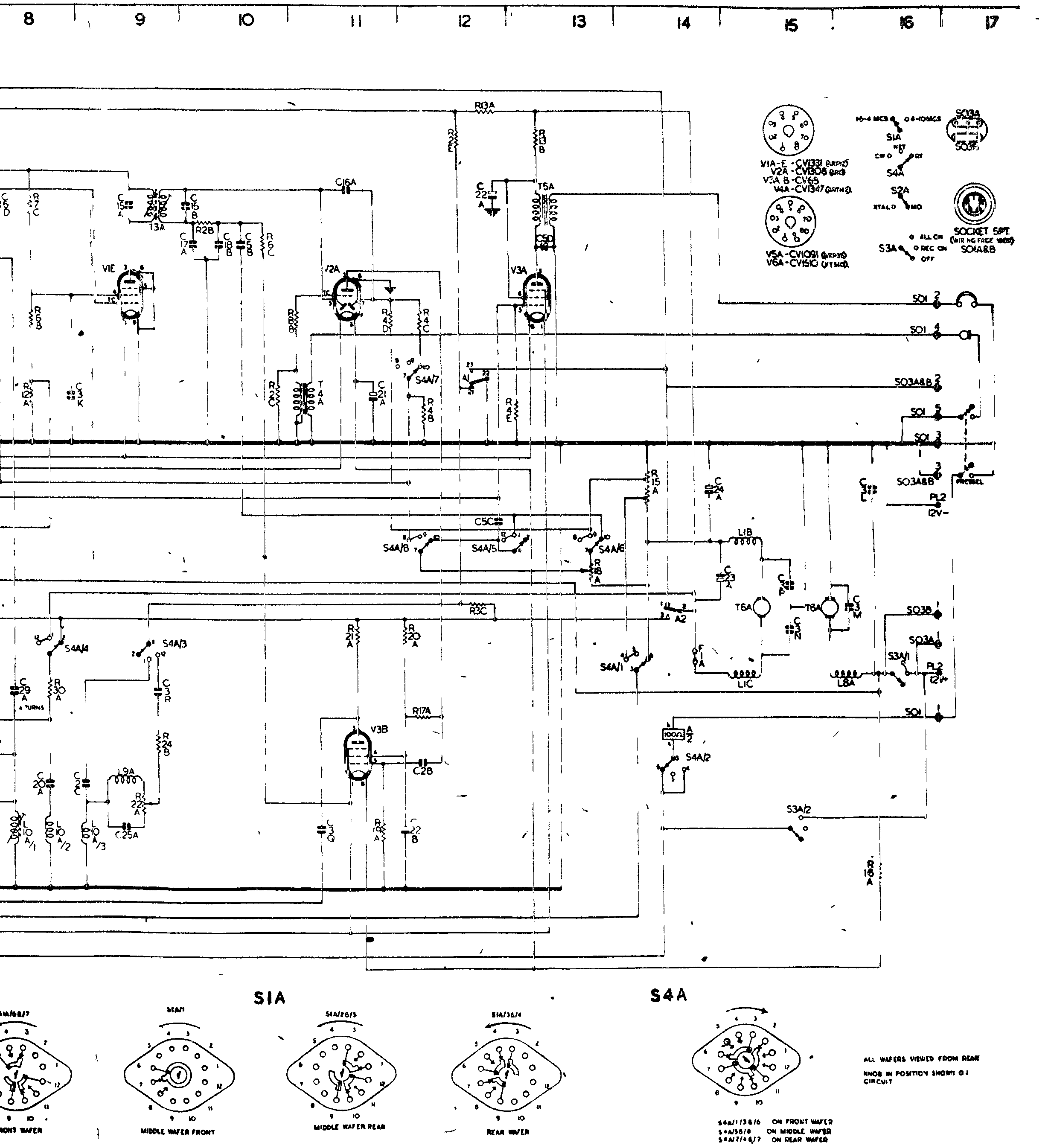





**Fig. 1002—Circuit diagra**




uit diagram, Mk. 1 to 1800 onwards, and Mk. 2

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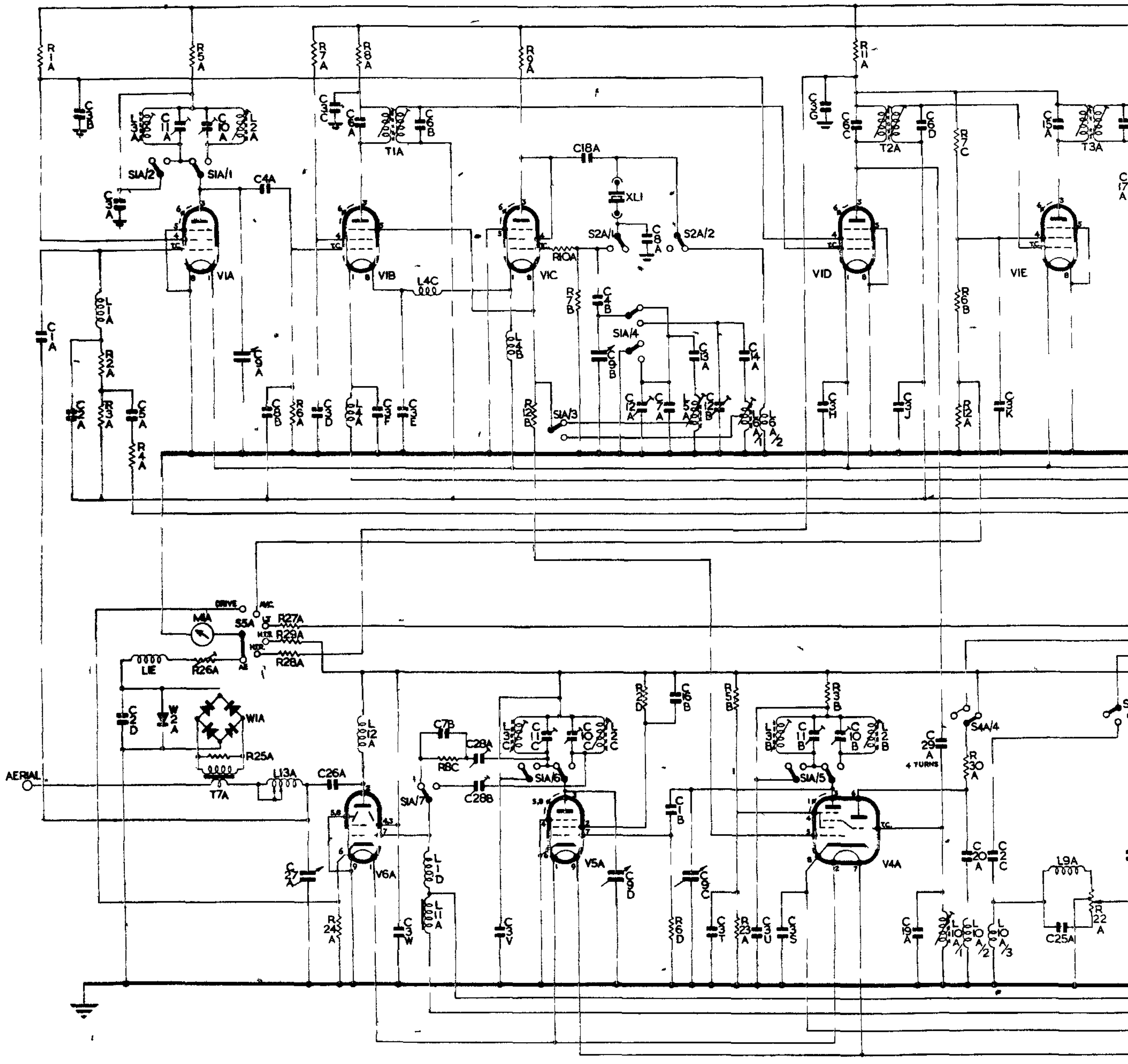
Fig. 1002

Circuit diagram, Mk. 1 to 1800 onwards and Mk. 2

**Note:** This page, Page 100



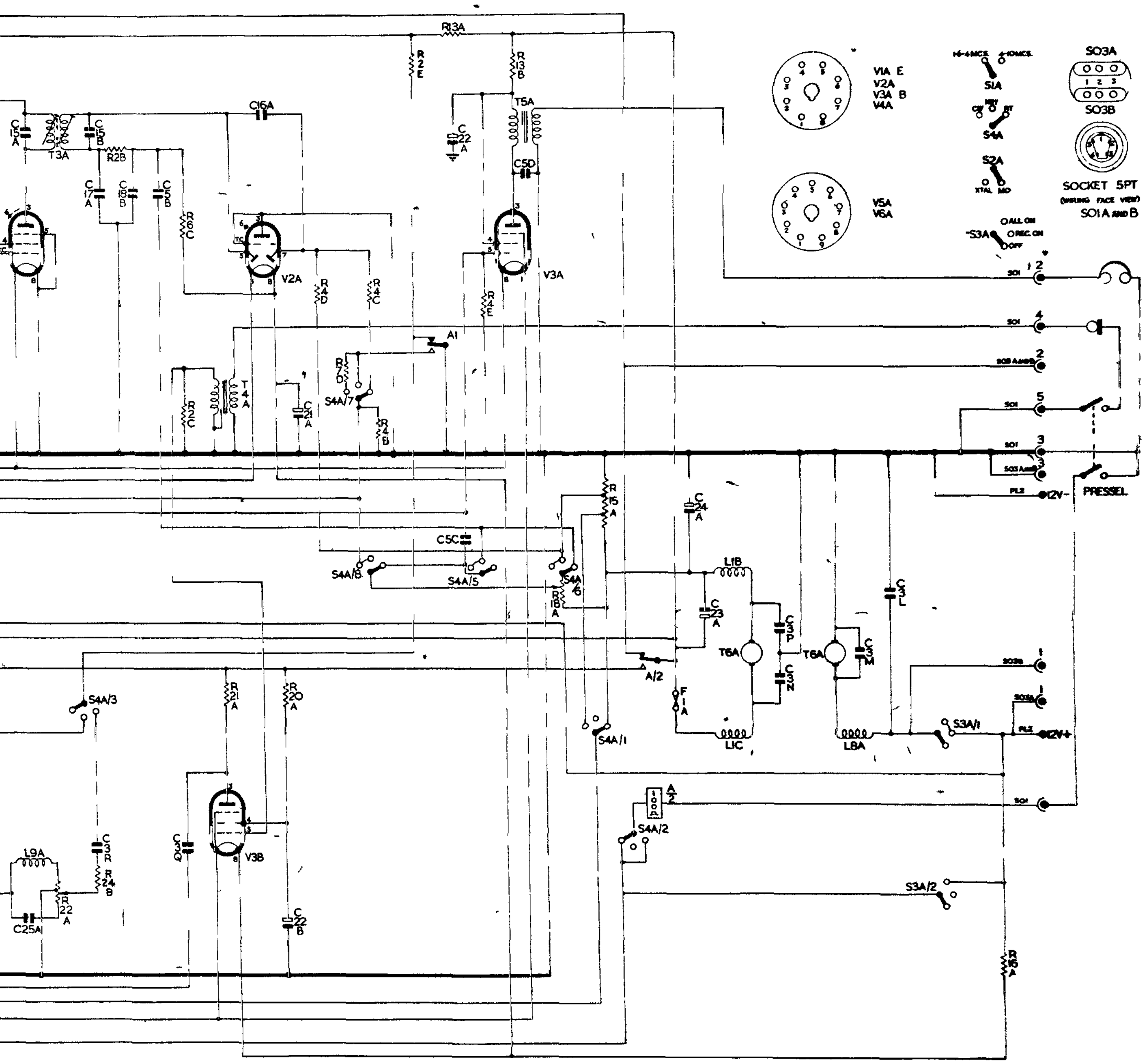

F 519 M2 / 002A

T2240 T3378



Fig. 1002A - Circuit diagram for Wireless set No. 62 after m

Distribution - Class 870.




after modification as detailed in Tels. F 517 Mod. Inst. No. 6

ss 870. Code No. 4 (Double)

TELECOMMUNICATIONS
F ~~519~~ 649 Misc. Inst. No. 2

RESTRICTED

Fig. 1002A -
Circuit diagram for Wireless set No. 62
after modification as detailed in Tels.
F 517 Mod. Inst. No. 6

Improved speech quality modification

Note: This issue, Pages 1008 and 1009, supersedes Pages 1008 and 1009 of Issue 2, dated 4 Nov. 1948. Table marked thus ● has been amended.

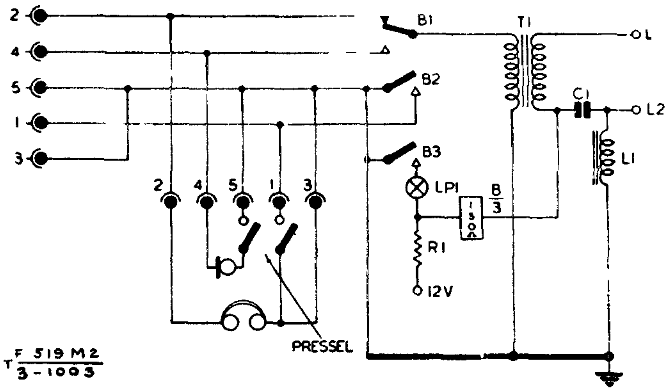



Fig. 1003 - Junction, remote control, No. 1

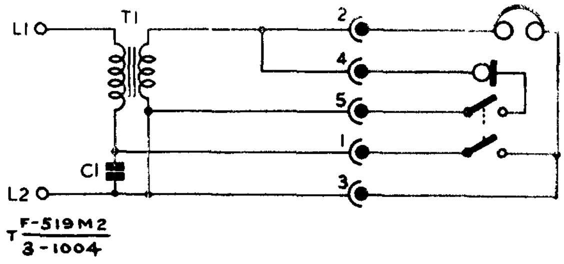



Fig. 1004 - Junction, remote control, No. 2

Table 1002 - Junction, remote control, No. 1 - components

| Circuit reference | Value | Tolerance | Rating | Type |
|---|---|---|---|---|
| RESISTOR R1 | 20Ω | | ½W | |
| CAPACITOR C1 | 200μF | ± 20% | 12V | Electrolytic |
| TRANSFORMER T1 | Primary resistance, 10Ω ± 10%<br>Secondary resistance, 18.5Ω ± 10% | | | |
| INDUCTOR L1 | 0.5H<br>D.C. resistance, 6Ω ± 10% | | | |
| RELAY B/3 | Type 3000 Coil resistance, 150Ω | | | |

Table 1003 - Junction, remote control, No. 2 - components

| Circuit reference | Value | Tolerance | Rating | Type |
|---|---|---|---|---|
| CAPACITOR C1 | 75μ. | + 50%<br>- 20% | 12V | Reversible electrolytic |
| TRANSFORMER T1 | Primary resistance, 10Ω ± 10%<br>Secondary resistance, 18.5Ω ± 10% | | | |



Distribution - Class 870. Code No. 4 (double)

● Table 1004 - Remote control unit, L, No. 1 - components

| Circuit reference | Value or type | Circuit reference | Value or type |
|---|---|---|---|
| RESISTORS | | SWITCH | |
| R1 | 22Ω | S1 | 3-pole, 3-way, rotary WORK/IC/CALL |
| R2 | 470Ω | | |
| R3 | 1kΩ | | |
| R4 | 330Ω | RELAYS | |
| R5 | 330Ω | A/2 | Type 3000 |
| R6 | 470Ω | | |
| CAPACITORS | | | |
| C1 | 1μF | B/2 | Type 3000 |
| C2 | 0.1μF | | |

Table 1005 - Remote control unit, L, No. 2 - components

| Circuit reference | Value |
|---|---|
| RESISTOR | |
| R1 | 2.2kΩ |
| CAPACITOR | |
| C1 | 1μF |

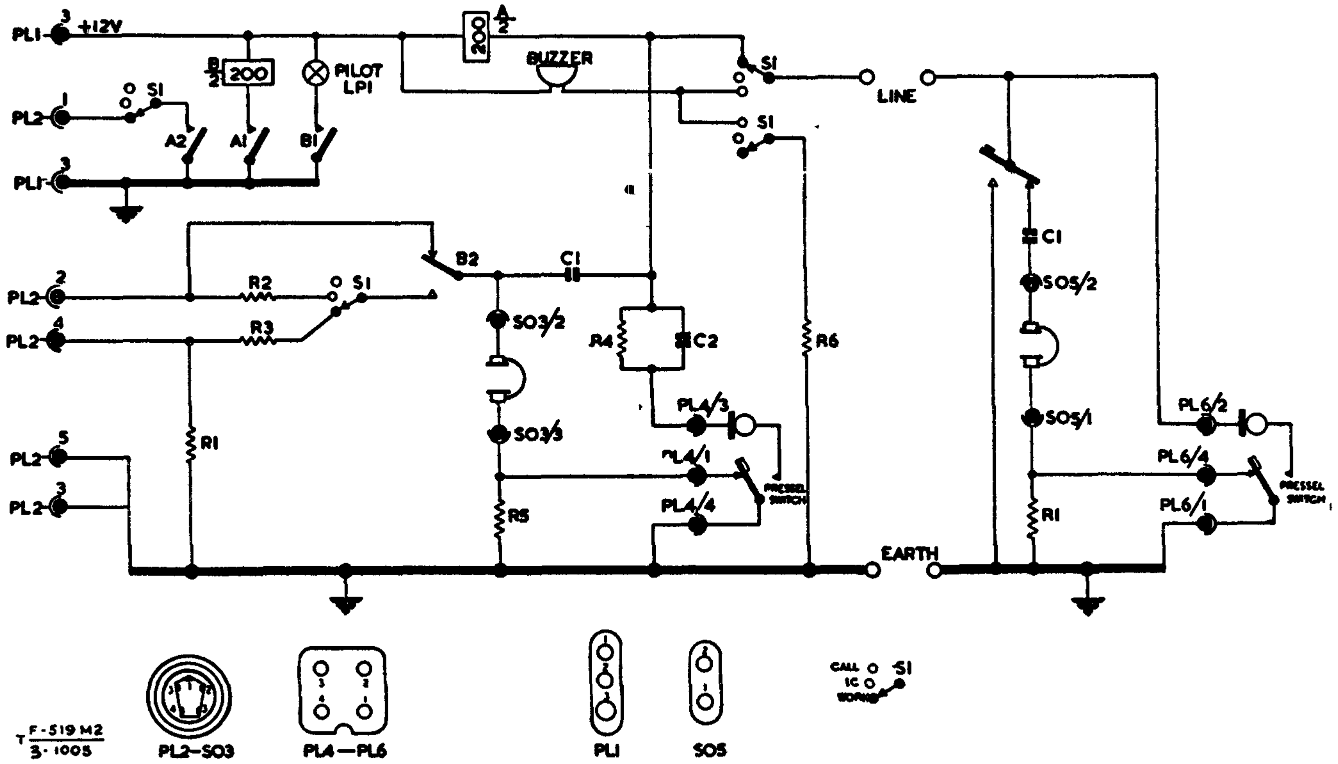



Fig. 1005 - Remote control units, L, Nos. 1 and 2 - circuit diagram

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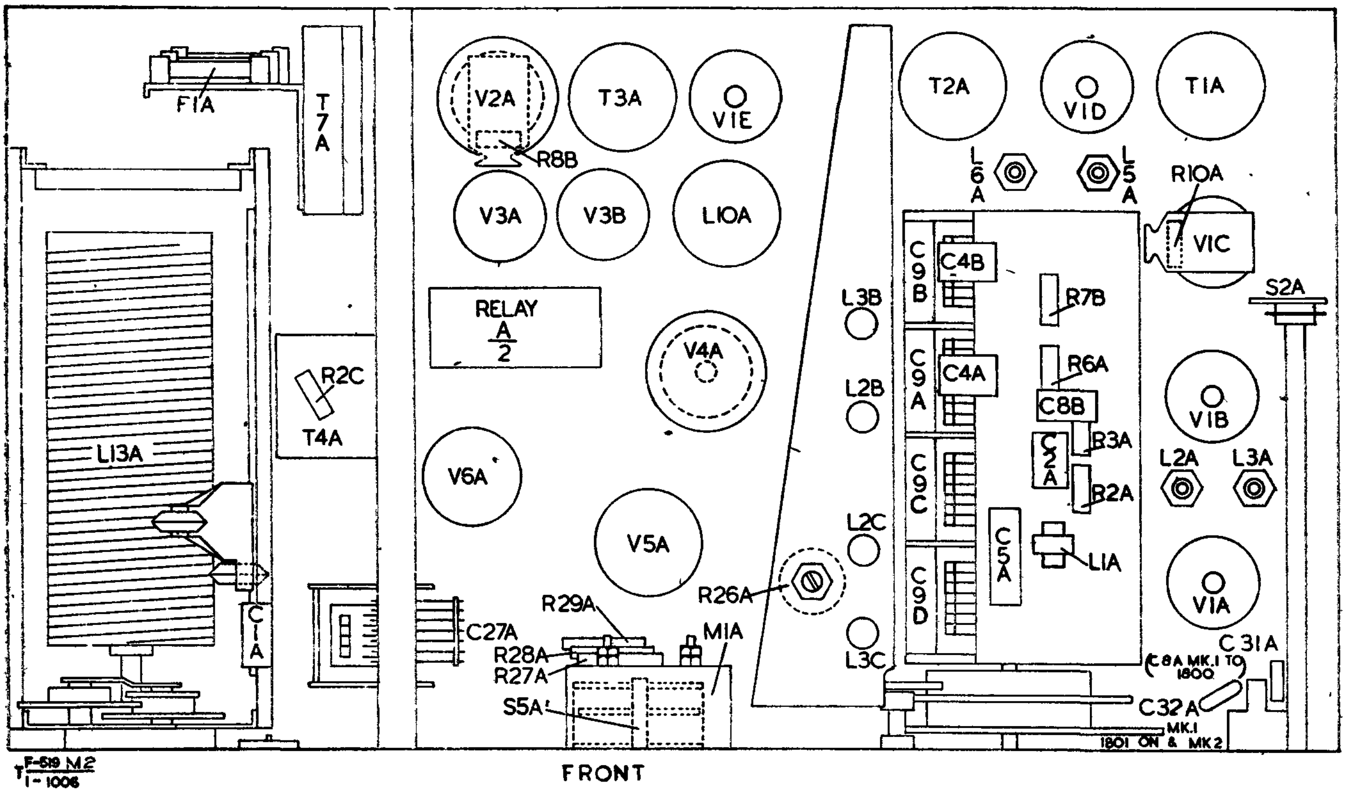


**Fig. 1006—Component layout of Wireless set No. 62, top view**

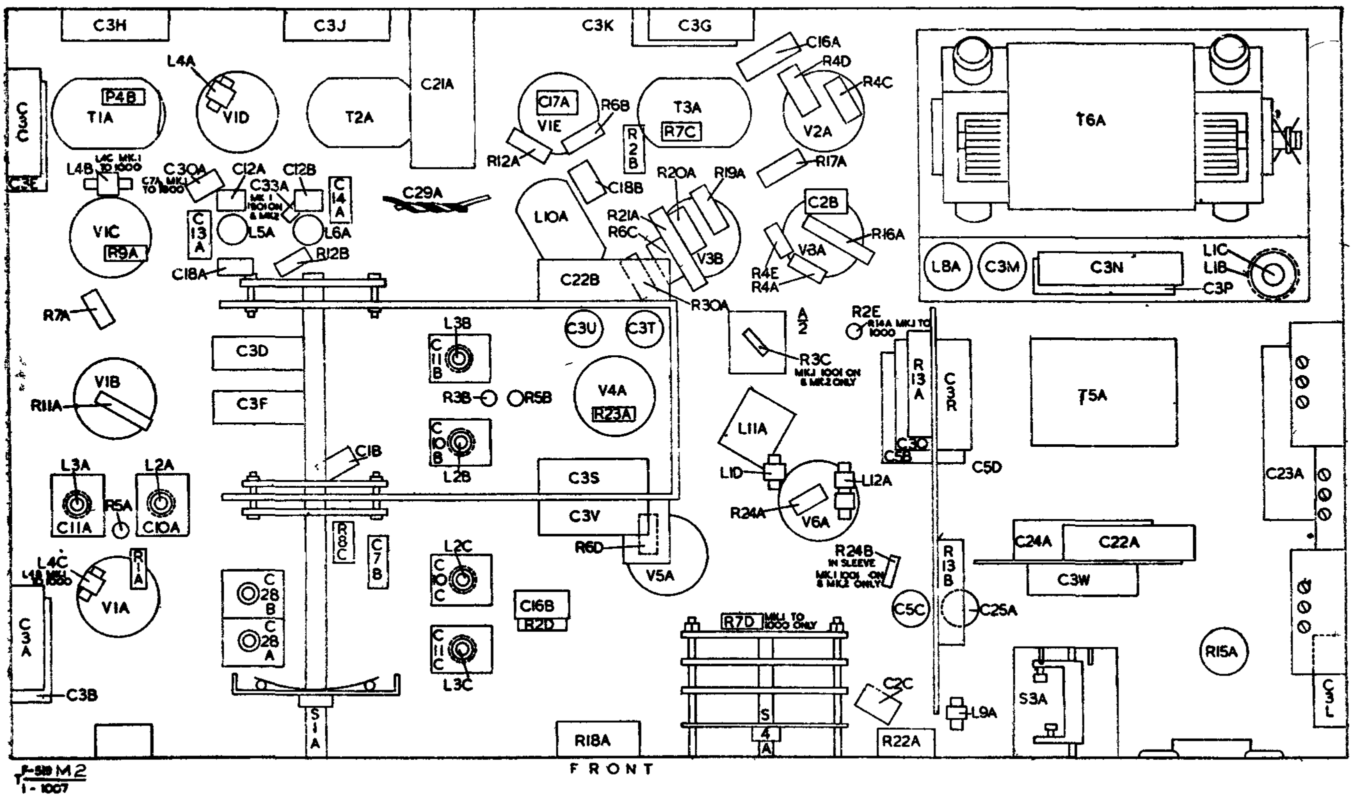


**Fig. 1007—Component layout of Wireless set No. 62, bottom view**

# WIRELESS SET NO. 62

## SERVICE DATA - SECOND TO FOURTH ECHELON WORK

### MECHANICAL REPLACEMENTS AND ADJUSTMENTS

#### Frequency range switch S1A

1. To dismantle the switch S1A, remove the knob by removing the centre screw and loosening the grubscrew. Take off the knob and prise off the metal cap and the Neoprene seal, and then detach the escutcheon by removing the fixing screws. Turn the set upside down and unscrew the two screws holding the click plate to its mounting frame. By rotating the click plate and pulling the shaft forward, the shaft and click plate can be detached. This will allow the wafers.to be removed separately as required.

#### Services switch S4A

2. To dismantle the services switch, remove the knob and sealing as in para. 1, and unscrew the two screws holding the switch to the front panel. To remove the switch, it will be necessary to unsolder the shorter leads to it before it can be withdrawn.

#### R.F. coils

3. To remove an R.F. coil, unsolder the connections to the coil and remove the nut and shakeproof washer, on the top of the chassis, which holds the coil in place. The coil, complete with dust core and trimmer, can now be removed.

#### Resistor R6D

4. The grid-leak, R6D, of the sender buffer amplifier, V5A, is mounted in a screened box which partly covers the valveholder of this valve. To reach this resistor, or the pins screened by the box, remove the lid of the screened box by unsoldering it at the three soldering tags.

#### 4-gang condenser C9A-D and flick mechanism (see Fig. 1)

#### Preliminary

5. (a) Remove the dial assembly, slow-motion and flick knobs and clamping nuts.

(b) Remove the three screws holding the main gang to the side plate of the flick mechanism.

(c) Slacken all holding screws on the front panel and remove the crystal holder completely. This allows the front panel to be eased away from the chassis.

6. To remove the condenser

(a) Unsolder the leads connecting C4A and C4B to the gang

(b) Unsolder the earth connection from the junction of R6A and R7B on the tag panel on the top of the gang.

(c) Unsolder the two earth leads at the gang frame.

(d) Unsolder the lead connecting C1A to L1A.

(e) Unsolder the leads connecting S1A/1, S1A/4, S1A/5 and S1A/6.

(f) Ease the 4-gang condenser out sideways.

7. To remove the flick mechanism

(a) Remove the three nuts and bolts holding the flick assembly to the chassis.

(b) Undo the nut holding R26A to the flick mechanism frame and leave the resistor suspended in the wiring.

(c) Ease the front panel forward from the chassis so that it clears the flick indicators.

(d) Then carefully ease the flick assembly straight up from the chassis so as to clear the trimmers.

8. To replace the gang and click mechanism reverse the procedure.

Flick springs.

9. To replace the flick indicator springs with the flick mechanism in position on the chassis, a special tool must be used (see Tels. F 514). Thread the spring through the eye provided and then by careful manipulation the spring can be removed and replaced as required.

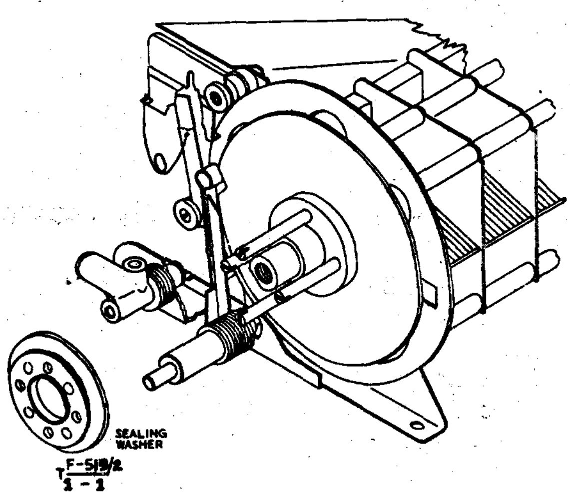


Fig. 1 - Flick mechanism

TEST AND ALIGNMENT PROCEDURE.

10. Test equipment required:-

Oscillator, beat frequency, No.1

Meter, output power, No. 3 (150 Ω impedance)

Dummy aerials, receiver, 0.1uF ± 0.5MΩ 60pF (+ 2%)

Dummy aerial, sender, 60pF (± 2%) air dielectric in series with 10Ω (± 5%) non-inductive, 5W

Generator, signal, standard, No. 1

Crystal calibrator or Wavemeter SCR-211

Voltmeter, valve, 150V, No.1

R.F. ammeter, 0-500mA

Trimming tool (see Tels. F 514)

11. Table 1 gives the alignment and test procedure in two columns; the left-hand column details the method of alignment, while the right-hand column gives relevant extracts from the R.E.M.E. Specification (Tels. A 820), giving performance to be achieved.

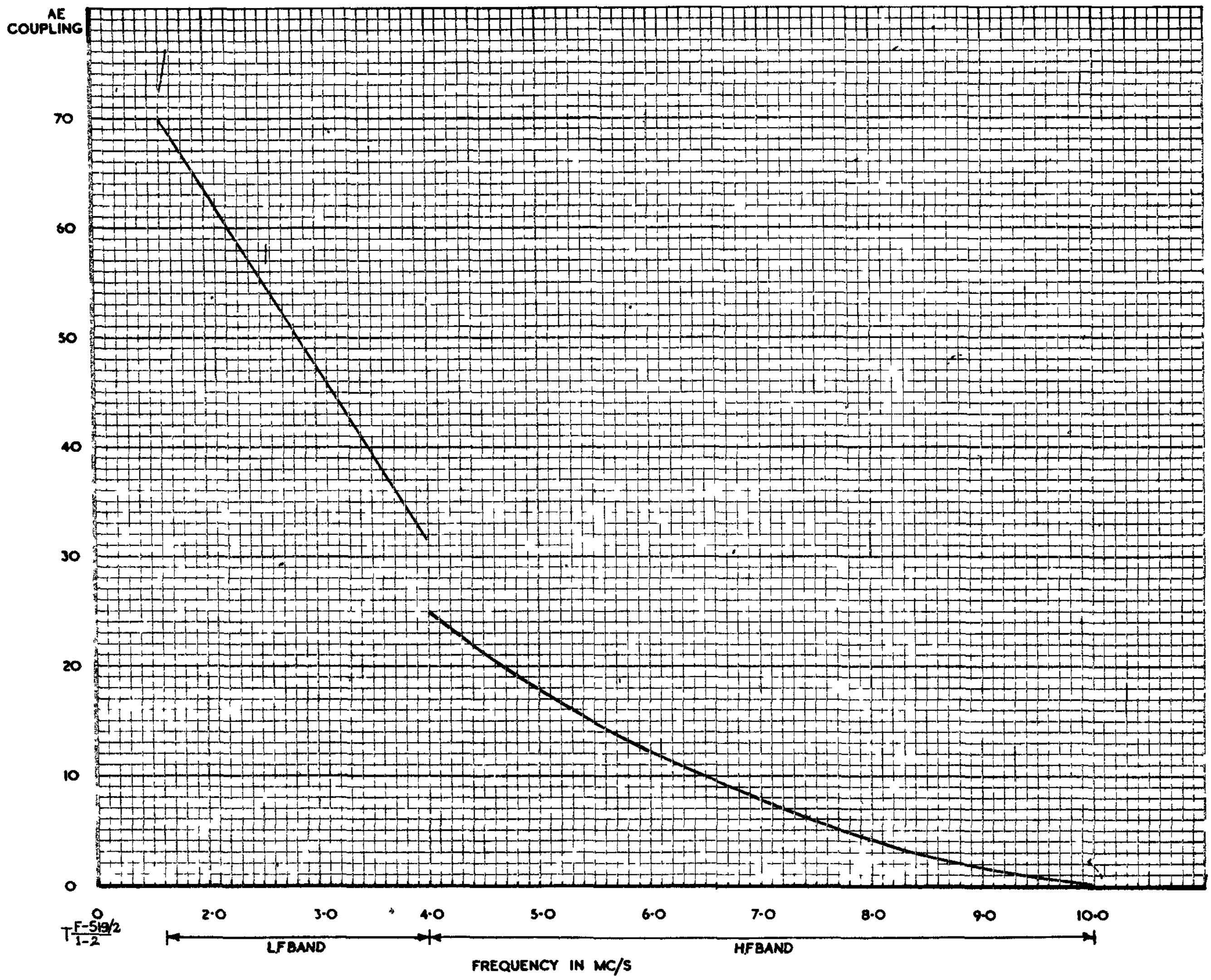


Fig. 2 - AERIAL COUPLING settings

Table 1 - Alignment and test procedure

| RECEIVER | General conditions: OFF/REC ON/ALL ON switch to REC ON except when the set is switched to NET or when checking the beat oscillator<br>Output meter of 150Ω impedance: headset disconnected when measurements are made. L.T. input at 12V, measured at set input socket |
|---|---|

| Item | Method of alignment or testing | Test R.E.M.E. Spec. |
|---|---|---|
| A.F. amplifier | Connect a B.F.O. between junction of C5C and S44/8 and chassis. Switch to R.T., GAIN control to max. | 1. Output. Audio output not less than 200mW at 1kc/s |
| Beat oscillator | Set a signal generator to 460kc/s exactly by beating it with a crystal calibrator. Connect the signal generator, unmodulated, to the grid of V1B through 0.1μF with 0.5MΩ to earth. Switch to NET and ALL ON. Allow the set to warm up and adjust L10A for zero beat | 2. Het tone range. At NET, and with an unmodulated input at the aerial socket of 20μV at any frequency within the coverage of the set, the tuning control will be adjusted for zero beat. Switch to C.W. With the HET TONE control at either end of its travel, the beat note should lie between 2 and 5 kc/s.<br><br>3. Pulling. With input increased to 10mV and the GAIN control set appropriately, it should be possible to tune through zero beat with no evidence of pulling. Smoothness of variation of the beat frequency by the HET TONE control should be satisfactory |
| I.F. amplifier | The signal generator is used, set at exactly 460kc/s, modulated at 400c/s to 30%, feeding through 0.1μF to the valve top cap, with 0.5MΩ to chassis and grid lead disconnected With input to V1E, adjust diode (top) and anode (bottom) coils of T3A for maximum output | With the frequency dial of the set at 1.6Mc/s and with a 100μV modulated signal at approximately 460 kc/s applied to V1B top cap through 0.1μF, with 0.5MΩ connected between top cap and chassis and normal grid lead disconnected, tune the signal generator for maximum output |

| Item | Method of alignment or testing | Test | R.E.M.E. Spec. |
|---|---|---|---|
| I.F. amplifier (contd.) | With input to V1D, adjust grid (top) and anode (bottom) coils of T2A for maximum output<br><br>With input to V1B and damping circuit of 0.1μF and 20kΩ in series connected between grid V1D and chassis, adjust grid and anode coils of T1A for maximum output. Remove damping circuit | 4.<br><br><br><br>5. | Sensitivity. The input required at this peak frequency for an output of 50 mW must not exceed 120μV<br>Adjacent channel selectivity. With signal generator output at 100μV, set VOLUME CONTROL for output of 10mW. Increase signal generator output to 200μV and note frequencies on either side of resonance for 10mW output. The difference between these two frequencies will be the band-width at 6db. down. The mean of these two frequencies should lie between 458 and 462kc/s and within 1kc/s of the peak.<br>Repeat with an input of 100mV to find the band-width at 60db. down.<br>The band-width at 6db. down should be between 5 and 8kc/s and the average slope between 6 and 60db. should not be less than 4.7db./kc/s<br>The specification also quotes maximum band-width as follows:-<br>20db. 13.5kc/s max.<br>40db. 19.0kc/s max.<br>60db. 28.0kc/s max. |
| Local oscillator | Replace baseplate<br>Switch to 4-10Mc/s RANGE and to NET. Set tuning to 9Mc/s and inject an accurate 9Mc/s signal (from crystal calibrator) to grid of V1B. Adjust C12B for zero beat. Tune to 4Mc/s and adjust L6A for zero beat. Check the error at Mc/s points on the dial and repeat till satisfactory. Seal core and trimmer and recheck. Switch to 1.6-4 Mc/s RANGE. Tune to 4Mc/s and adjust C12A for zero beat. Tune to 2Mc/s and adjust L5A for zero beat. Check at 3 and 4Mc/s and repeat until satisfactory. Seal core and trimmer and recheck. | 6.<br><br><br><br><br>7. | Calibration. The calibration error of the tuning dial at any salient point should not exceed ½% between 1.6 and 8Mc/s, or 1% between 8 and 10Mc/s<br><br>Coverage. The frequency coverage should be from 1.6 to 10Mc/s with an overlap of not less than 2% between the two bands. |

| Item | Method of alignment or testing | Test, R.E.M.E. Spec. |
|---|---|---|
| Local oscillator (contd.) | If it is impossible to align the set, slacken the dial stops, at the top and bottom of the front plate of the main tuning condenser, and turn condenser to maximum capacity. Adjust the cursors to take up the average errors on L.F. and H.F. bands. Fix the dial stops so that the condenser is prevented from fully opening or closing, but covers the frequency band. | |
| R.F. amplifier | (Aerial coupling condenser set to reading in Fig. 2 and aerial tuning inductance adjusted for maximum sensitivity)<br><br>Switch to 4-10Mc/s RANGE and to NET. Inject a signal at 9Mc/s to the aerial and tune for zero beat<br><br>Modulate signal 30% at 400c/s and adjust C10A for maximum output. Inject a 4Mc/s signal, tune receiver to it and adjust L2A for maximum output. Repeat until satisfactory. Seal core and trimmer<br>Switch to 1.6-4Mc/s RANGE. Inject 4Mc/s signal, tune receiver to it and adjust C11A for maximum output. Inject a signal of 2Mc/s, tune receiver to it and adjust L3A for maximum output. Repeat until satisfactory. Seal core and trimmer | 8. R.F. Sensitivity. With an input of 5μV at 1.7, 2.5 and 4.0Mc/s on the L.F. band, it should be possible to obtain an output of at least 50mW With an input of 8μV at 4, 6 and 9Mc/s on the H.F. band, it should be possible to obtain an output of at least 50mW<br><br>9. Signal-to-noise ratio With an input of 3μV, the signal-to-ratio should be greater than 20db. at any frequency within the coverage of the set. For this test the GAIN control should be adjusted to give an audio output of 10mW; the modulation is then switched off and the noise output measured<br><br>10. Second channel selectivity. With an input of 10μV from the signal generator, the receiver should be tuned to resonance and the GAIN control adjusted to give an output of 10mW. The signal generator will then be adjusted to the second channel. |

| Item | Method of alignment or testing | Test R.E.M.E. Spec. |
|---|---|---|
| | | frequency and, with the receiver controls unaltered, the signal generator tuned for maximum receiver audio output of 10mW. The various inputs from the signal generator should be noted and the second channel ratios obtained. These ratios should not be less than the figures below |

| Signal frequency Mc/s. | Second channel frequency Mc/s | Second channel ratio db. |
|---|---|---|
| 1.6 | 2.52 | 67 |
| 2.5 | 3.42 | 57 |
| 4.0 | 4.92 | 47 |
| 4.0 | 4.92 | 52 |
| 6.0 | 6.92 | 42 |
| 9.0 | 9.92 | 25 |

11. I.F. breakthrough. At any frequency within the coverage the sensitivity to the intermediate frequency should be at least 80 db. below the sensitivity to the signal

12. Over-all audio response. Inject a 10μV signal at 1.6Mc/s, externally modulated at 1kc/s to 30%. Tune the receiver and set the GAIN control to give an output of 10mW. The modulation frequency will then be varied, keeping the modulation level constant, and the output noted at the frequencies below. The output should be between the limits given

| Modulation frequency | Output mW | Output db. |
|---|---|---|
| 400c/s | 6.3 to 15.8 | ± 2 |

| Item | Method of alignment or testing | Test R.E.M.E. Spec. |
|---|---|---|
| Over-all (contd.) | | (see output table below) |

| Modulation frequency | Output mW | Output db. |
|---|---|---|
| 750c/s | 8.0 to 12.5 | ± 1 |
| 1kc/s | 10.0 | 0 |
| 2kc/s | 1.6 to 2.5 | -6 to -8 |
| 3kc/s | 0.2 to 0.5 | -13 to -17 |

| Item | Method of alignment or testing | Test R.E.M.E. Spec. |
|---|---|---|
| | | 13. L.F. hum. With no signal input, the reading of an output meter due to L.F. hum should not exceed 10μW |
| Crystal operation | | 14. Sensitivity. Switch XTAL/MO switch to XTAL, tune set and insert appropriate crystal (signal + I.F.) in holder. Set meter switch to DRIVE, system switch to C.W., and depress pressel switch on microphone. Tune FREQUENCY dial near frequency to obtain maximum deflection on meter, approaching from L.F. end of the band. Switch to receive and check sensitivity<br>Over the L.F. band, an output of at least 50mW should be obtained with a modulated input of 4μV. Over the H.F. band, an output of at least 50mW should be obtained with a modulated input of 7.5μV |
| C.W. operation | | 15. Amplitude. Switch to R.T. and M.O. Inject a small signal at 4Mc/s, modulated 30% at 400c/s, to the aerial through 60pF Tune set on L.F. band, and with GAIN control at maximum, adjust signal input for 20mW output from receiver. Switch off modulation, switch to C.W. and adjust HET. TONE for maximum beat note output at a frequency not greater than 1kc/s. The output so obtained should be not less than 60mW<br>With the signal increased to 1mV, and GAIN and HET. TONE adjusted for maximum output at a frequency not greater than 1kc/s, the output should be not less than 200mW |
| | If the output is low, tune the set accurately with an input giving 20mW output, switch off modulation and to C.W., adjust HET. TONE and then adjust the twisted wires joining C29A for maximum output (about 100mW). Reseal | |

| Item | Method of alignment or testing | Test | R.E.M.E Spec. |
|---|---|---|---|
| A.V.C. | | 16. | A.V.C. characteristic. Switch to R.T. With a modulated input of 2μV at 4Mc/s, the receiver should be tuned. Increase input to 100mV with the GAIN control adjusted to give 50mW output. With the signal reduced to 50μV, the output must not fall below 2.0mW |
| Meter Calibration A.V.C. | | 17. | With no signal applied to the set, the meter reading should lie between 3 and 6½V on the low-voltage scale. When tuned to a signal of 20μV at 4Mc/s, this reading should increase by not less than 3/4V and should show a progressive increase with input signals up to 0.1V with only a single tuning peak. At C.W., with GAIN control fully anti-clockwise, the meter should read not less than 9V |
| SENDER | General conditions:- The dummy aerial should consist of a 60pF (± 2%) air-dielectric condenser in series with a 10Ω (± 5%) non-inductive resistor capable of dissipating 5W. The resistor should be in the earthy side<br>The valve voltmeter should be connected across the 10Ω resistor<br>If an R.F. ammeter is used, the sum of the dummy aerial resistance and the meter resistance should be 10Ω ± 5%, and the meter should be inserted between the resistor and the set earth terminal<br>To tune the set to any frequency, adjust the AERIAL COUPLING condenser to the setting in Fig.2 and tune the AERIAL TUNING inductance for maximum output<br>(This setting of the AERIAL COUPLING condenser will not be the same as that for maximum signal on receive) | | |
| Sender amplifier | Switch to NET and tune set to 9Mc/s. Switch meter to AE and set to R.T. Press pressel switch and adjust drive trimmer C28B near to maximum capacity, but so that aerial current rises on modulating. Switch meter to DRIVE and adjust C10B and C10C for maximum drive. If three peaks are obtained, choose the centre one<br>Release pressel switch, switch to NET and tune to 4Mc/s | 18.<br><br>19. | Drive. The drive voltage shall be consistent with meeting the sender output and modulation requirements<br><br>Drive meter calibration The reading should be satisfactory from an operator's point of view |

| Item | Method of alignment or testing | Test R.E.M.E. Spec. |
|---|---|---|
| Sender amplifier (contd.) | Press pressel switch, switch to R.T. and adjust L2B and L2C for maximum drive. Repeat until satisfactory tracking is obtained. Seal cores and trimmers<br>Switch to 1.6-4Mc/s RANGE and repeat above, adjusting drive trimmer C28A, and then adjusting C11B and C11C at 4Mc/s and L3B and L3C at 2Mc/s<br>Repeat adjustments until sender circuits track and drive is reasonably constant | |
| | | 20. Pulling. With the set tuned to any frequency within the coverage, the change in emitted frequency as the sender P.A. circuit is tuned fully through resonance should not exceed 100c/s |
| | | 21. Power output. With the dummy aerial specified, the AERIAL COUPLING condenser set as in Fig. 2 and the AERIAL TUNING INDUCTOR tuned for maximum, the following figures should be obtained. |

| Frequency Mc/s | R.M.S. voltage across 10Ω resistor | | Dummy aerial current in mA | |
|---|---|---|---|---|
| | R.T. (No Mod.) | C.W. | R.T. (No mod.) | C.W. |
| 1.7 | 2.3 | 2.7 | 230 | 270 |
| 2.5 | 2.6 | 3.1 | 260 | 310 |
| 4.0 | 2.5 | 3.0 | 250 | 300 |
| 4.0 | 2.4 | 3.0 | 240 | 300 |
| 6.0 | 2.4 | 3.1 | 240 | 310 |
| 9.0 | 1.9 | 2.5 | 190 | 250 |

| Item | Method of alignment or testing | Test R.E.M.E. Spec. |
|---|---|---|
| Aerial current metering | Adjust by R26A for required results. If they cannot be obtained, the spacing of turns on T7A will have to be adjusted | 22. Meter reading. With a current in the primary of T7A of 350mA at 8Mc/s, the meter should read 10 ± 1V on the low-voltage scale. With the same |

| Item | Method of alignment or testing | Test | R.E.M.E. Spec. |
|---|---|---|---|
| Aerial current metering (contd.) | | | current at 3Mc/s, the meter should read 12± IV. |
| Crystal operation | | 23. | Power output. For output frequencies below 6Mc/s, the output with crystal control should not be less than 90% of the output with M.O. control, and for frequencies between 6 and 8Mc/s it should be not less than 75% of the output with M.O. control |
| | | 24. | Tuning. When using crystal control, correct adjustment of the tuning condenser should be indicated by a distinct peak in the drive reading |
| Modulation and sidetone | | | An attenuator as shown in Fig. 3 should be connected across the output of a B.F.O. monitored by a valve voltmeter, and the voltage across the 50Ω fed to the microphone terminals of the snatch plug. The modulation should be examined on an oscilloscope connected to produce a trapezium pattern |

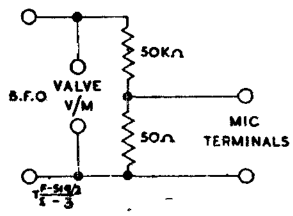


Fig. 3 - Attenuator

| Item | Method of alignment or testing | Test | R.E.M.E. Spec. |
|---|---|---|---|
| Modulation and sidetone (contd.) | | 25. | Stability. With B.F.O. frequency at 1kc/s, the pattern should show no trace of instability as the modulation depth is varied from 0 to 100%. As there is normally some flattening of the output modulation peaks at high modulation depths, 100% modulation is considered to occur when the apex of the triangle is formed. |
| | | 26. | Modulation voltage. The B.F.O. output at 1kc/s, to give 100% modulation should lie between 25 and 50V. |
| | | 27. | Sidetone. The sidetone should lie between 5 and 20mW with the sender modulated 100% |
| | | 28. | Audio response. The B.F.O. input voltages required for 50% modulation should be within the following limits:- |

| Modulation frequency c/s | Input limits for 50% modulation db. |
|---|---|
| 400 | 0 to + 6 |
| 750 | 0 to + 2 |
| 1,000 | 0 |
| 2,000 | 0 to - 3 |
| 3,000 | 0 to - 3 |

| Item | Method of alignment or testing | Test | R.E.M.E. Spec. |
|---|---|---|---|
| | | 29. | Modulation distortion. The set will be modulated by speech, using a Microphone and receiver headgear assembly No. 10. A trapezium trace of approved shape should be obtained with no deterioration of the trapezium into a cotton-reel shape |
| | | 30. | Hum modulation. When fully tuned with the dummy aerial, the hum modulation on the carrier should not exceed 5% |
| Keying | | 31. | Keying. A listening test should determine that keying chip is negligible. The keying relay must be capable of operating at 30 w.p.m. A mechanical sender should replace the key and the output of the sender should be viewed on a C.R.O. |

| Item | Method of alignment or testing | Test | R.E.M.E. Spec. |
|---|---|---|---|
| Keying (contd.) | | | The mechanical sender will be arranged to send groups of five dots, the dot length being approximately 50mS. Under these conditions, five dots should be observed on the screen of the C.R.O; the shape of the keyed waveform should be sensibly square and free from spurious spaces due to bouncing of the relay contacts, the spaces being approximately equal in length to the marks |
| | | 32. | Spacing wave. No spacing wave should be observed on the fundamental output frequency by any method of test, including using a remote receiver for C.W. reception |
| | | 33. | Break-in working. When keying the sender at any speed up to 30 w.p.m. with the receiver at any sensitivity, there should be no aurally noticeable receiver recovery time, and during keying there should be no spurious oscillations such as to cause a howl in the headphones |
| Netting | | 34. | Netting error. At any frequency within the range 1.6 to 10Mc/s inclusive, a test signal should be injected from the signal generator, using the dummy aerial. The netting error, defined as the difference in frequency between the applied test signal and the emitted frequency of the sender immediately after the conclusion of the netting procedure, should not exceed 1.0kc/s at any input signal level between 3µV and 10mV, and at any L.T. voltage between 10.8 and 13.2V |
| | | 35. | Netting tone. Under these conditions, it should always be possible to adjust the beat note continuously through zero beat, i.e., no receiver saturation may occur. |

| Item | Method of alignment or testing | Test | R.E.M.E. Spec. |
|---|---|---|---|
| Netting (contd.) | | | The beat note should always be of reasonable intensity, and there should be no spurious responses |
| GENERAL | | | |
| Flick controls | | 36. | Flick resetting accuracy. Engage one of the flicks. With the flick lever at SET, unlock the setscrews and tune to zero beat a steady 8Mc/s C.W. signal. Tighten the setscrews and set the lever to FLICK. Turn the dial in alternate clockwise and anti-clockwise directions and retuning to the set value ten times in all, each time on coming to the set value, setting the flick lever to SET and measuring the beat note frequency. The frequency should not exceed 3kc/s<br>Repeat with the other flick |
| Calibration of set meter: L.T. | Adjust input to set to exactly 12V. Read set meter to nearest 1/4V. and mark in appropriate place on front panel | | |
| Calibration of set meter: HTR and HTS | | 37. | The H.T. voltage recorded should be accurate to within ±20% |
| Power consumption | | 38. | Current consumption. The current consumptions should not exceed the following values:- |
| | | | REC. ON, GAIN at max., no signal input — 3.0A<br>ALL. ON, GAIN at max., no signal input — 3.7A<br>SEND, tuned with dummy aerial, R.T., no modulation — 4.7A<br>SEND, tuned with dummy aerial, C.W., no modulation — 5.0A |

| Item | Method of alignment or testing | Test | R.E.M.E. Spec. |
|---|---|---|---|
| H.V. and L.V. operation | | 39. | The operation of the set should be satisfactory and it should be possible to obtain satisfactory operation of all controls, with any supply voltage between 10.8 and 14V measured at the set input socket |
| Suppression | | 40. | Noise E.M.F. in battery leads. For this test, the L.T. batteries should be connected to the set by Connector, twin, No. 274. Using the dummy aerial, tune the receiver to any frequency within the coverage of the set. Switched to C.W. and with no signal input, note the residual noise on an output meter. Disconnect the chassis side of the dummy aerial and join it directly to the negative terminal of the battery. Again note the maximum residual noise on the output meter, retuning the A.T.I. if necessary. The two readings should not differ by more than 1 db. |

END

# WIRELESS SET NO. 62

## TECHNICAL HANDBOOK - MISCELLANEOUS INSTRUCTION

### Loose plugs and sockets

INFORMATION

1. The 2-point plug connecting the power supply to the Wireless set No. 62 tends to work loose in its socket when the equipment is subjected to vibration e.g., in vehicle mounted equipments.

2. A suitable clamp to prevent this is described in this Misc. Inst.

Time required to complete instruction - 2 man-hours.

3. Items affected:-

Plugs, 2-point., No. 44
Connectors, twin, No. 274

ACTION

4. Action required by R.E.M.E. personnel concerned at the request of units holding the equipment.

5. A small quantity of brass rod and sheet will be required.

6. Manufacture the components Nos. 1, 2, 4 and 6 illustrated in Fig. 1 from rod and sheet brass or a similar easily worked metal.

7. Assemble the two supporting pillars and swing clamp, as shown in Fig. 1 (assembly), with items No. 3 and 5 (spring washers of internal diameter $\frac{1}{4}$ in. and 5/16 in. respectively).

8. Check that the clamp is gripping the plug firmly.

9. For accounting purposes this Misc. Inst. will be referred to as T/W/DB/15.

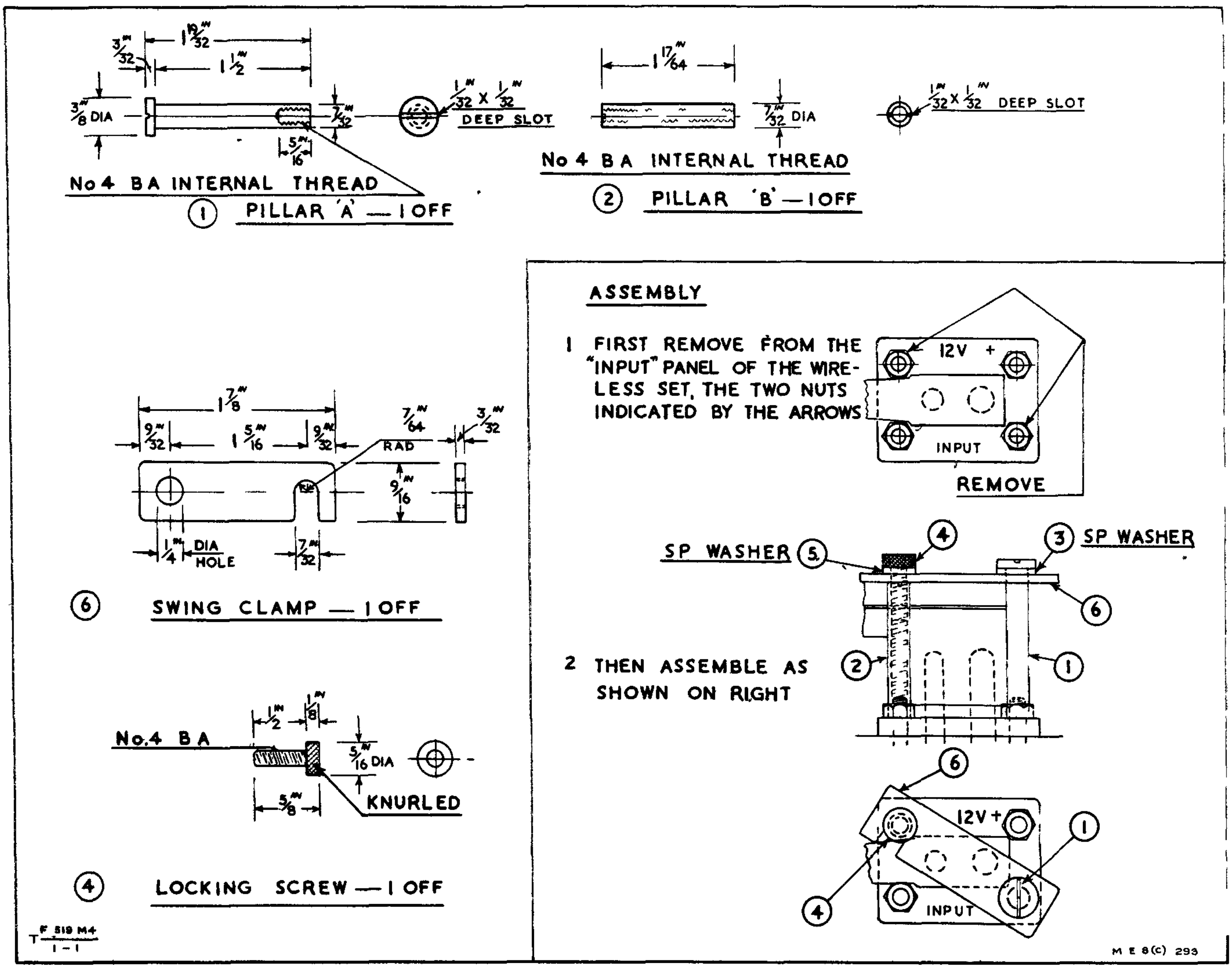


**Fig. 1 - Clamp for fastening plug on to "input" panel**

57/Maint./3987
57/Maint./3719

END

# WIRELESS SET NO. 62

## TECHNICAL HANDBOOK - MISCELLANEOUS INSTRUCTION

## Replacement of heterodyne control

SUMMARY

1. The new heterodyne control potentiometer, which is being supplied as a spare, will not fit into the existing panel hole, owing to the increased diameter of the fixing bush. This instruction details the method to be adopted, when replacement of the component becomes necessary.

Estimated time required to carry out this instruction - ½ man-hour.

2. Item affected:-

Heterodyne control potentiometer

3. Action required by:-

R. Signals and R.E.M.E. workshop units, all lines.

(i) When replacement of the control becomes necessary.

4. Priority: Group 'C' (A.C.I. 878/49 refers).

5. Stores required:-

| Cat. No. | Designation | Schematic ref. |
|---|---|---|
| ZA 35676 | Potentiometer, miniature, W.W., 1W linear, 20Ω, No. 2 | R22A |

Demanded in the normal way when replacement becomes necessary.

6. Stores removed:-

| Cat. No. | Designation | Schematic ref. |
|---|---|---|
| ZA 30151 | Resistance, variable, W.W., 20Ω | R22A |

DETAIL

7. After removal of the old type component, the panel hole should be enlarged from the present 9/32 in. clearance, to $\frac{3}{8}$ in. clearance, before fitting the new type.

Encl.9 to 57/Maint./3988(ME8)

END

ELECTRICAL AND MECHANICAL
ENGINEERING REGULATIONS
(By Command of the Army Council)

TELECOMMUNICATIONS
~~F 519~~ Misc. Inst. No. 6
F649

# WIRELESS SET NO. 62

## TECHNICAL HANDBOOK - MISCELLANEOUS INSTRUCTION

### Re-positioning of R.F. choke L1A

SUMMARY

1. The R.F. choke L1A fitted on the paxolin panel mounted above the tuning condenser becomes damaged on some equipments when the set is removed from its case. To prevent this the choke is to be re-positioned below the paxolin panel.

Estimated time required to carry out this instruction: ¼ man-hour

2. Item affected:-

Choke, R.F., 470μH, No. 1 (schematic ref. L1A) - Cat. No. Z1/ZA 30063

3. Action required by:-

R.E.M.E. field and base workshop units



Distribution - Class 870. Code No. 3

(a) Carry out instruction during repair or overhaul when either:-

(i) Choke is replaced
or
(ii) Choke is not fully protected from possible damage by the adjacent capacitor C5A.

4. Priority: Group 'C' (A.C.I. 878/49 refers).

5. Stores required: Nil.

6. Stores removed: Nil.

DETAIL

7. (a) Remove the set from its case. Locate the R.F. choke L1A (see Tels. F 513, Fig. 1001, Issue 2) and un-solder it completely from the two tags.

(b) Re-position the choke underneath the paxolin panel utilizing the same two tags as previously and re-solder.

(c) Check the set for correct functioning.

Encl.11 to 57/Maint./3988

END

ELECTRICAL AND MECHANICAL
ENGINEERING REGULATIONS
(By Command of the Army Council)

TELECOMMUNICATIONS
~~F 519~~ Misc Inst No. 7
F649

# WIRELESS SET NO. 62

## TECHNICAL HANDBOOK - MISCELLANEOUS INSTRUCTION

### Fitting of H.T. brushes to the rotary transformer

SUMMARY

1. On recent types of rotary transformer, the construction of the H.T. commutator differs slightly from that used on the earlier types, in that flush mica insulation between segments has been used instead of the undercut form of construction. This necessitates the use of a harder grade of carbon brush on the later types, to wear down the mica.

2. Items affected:-

(a) Transformers, rotary, H.T., 11W, No. 1 (Z1/ZA 27484)
(Made by Hoover, Ltd. and a few by Frigidaire, Ltd.)

(b) Transformers, rotary, H.T., 11W, No. 1A (Z1/ZA 42170)
(Made by Newton Bros., Ltd.)

(c) Transformers, rotary, H.T., 11W, No. 1B (Z1/ZA 42169)
(Made by Frigidaire, Ltd.)

H.T. brushes

(d) Brushes, carbon, grade EG3, 5/16 in x $\frac{1}{8}$ in x $\frac{1}{8}$ in (X2/ZA 30210)
(Formerly known as Brush, dynamo or motor, No. 41)
(Soft brush for use with undercut commutators)

(e) Brushes, carbon, grade IM6, 5/16 in x $\frac{1}{8}$ in x $\frac{1}{8}$ in (X2/ZA 42191)
(Formerly known as Brush, dynamo or motor, No. 41A)
(Hard brush for use with flush mica commutators)

3. Action required by:-

REME field and base workshops when fitting new brushes to rotary transformers.

DETAIL

4. When replacing H.T. brushes in the rotary transformer, examine the designation plate and, if necessary, take action as follows:-

(a) Machines made by Hoover, Ltd. (Z1/ZA 27484)

These are correctly designated, and use H.T. brushes - X2/ZA 30210

(b) Machines made by Newton Bros., Ltd.

Amend nameplate to read 'Transformer, rotary, H.T., 11W, No. 1A
Delete existing catalogue number and mark the correct No. - 'ZA 42170' on the body of the machine, using white paint, etc. These should be fitted with H.T. brushes - X2/ZA 42191.



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(c) Machines made by Frigidaire, Ltd., with undercut commutators.
(Z1/ZA 27484)

The first batch of Frigidaire machines had undercut commutators, and were correctly designated. These should be fitted with H.T. brushes - X2/ZA 30210.

(d) Machines made by Frigidaire, Ltd., with flush mica commutators.
(Z1/ZA 42169)

All later machines made by Frigidaire, Ltd., have flush mica commutators, and have been correctly designated. These should be fitted with H.T. brushes - X2/ZA 42191.

5.- All makes of rotary transformer have recessed mica L.T. commutators, and have been fitted with the correct type of L.T. brushes, which are:-

Brushes, carbon, grade CM3H, $\frac{1}{8}$ in x 11/64 in x $\frac{1}{8}$ in (X2/ZA 30209)
(Formerly known as Brushes, dynamo or motor, No. 40)

57/Maint/3988

END

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TELECOMMUNICATIONS
F 649 Misc Inst No. 8

# WIRELESS SET NO. 62, MKS 1 AND 2

## TECHNICAL HANDBOOK - MISCELLANEOUS INSTRUCTION

## Redesignation of EMERs

### Information

1. To maintain the proper sequence of EMER numbers, it is intended that:-

   (a) all future issues of EMERs on this equipment will be published in the series Tels F 640 - F 649 and

   (b) the current EMERs will be redesignated.

### Action

2. The following EMERs will be redesignated as shewn.

| | Present designation | | | | New designation |
|---|---|---|---|---|---|
| | EMER designation (a) | Pages (b) | Issue No. (c) | Date (d) | (e) |
| 1 | Tels F 510 | 1 - 2 | 1 | 21 Jul 45 | Tels F 640 |
| 2 | Tels F 512 | 1 - 8<br>1001 - 1008<br>1008A<br>1009 - 1010 | 3<br>3<br>1<br>6 | 15 Jun 46<br>15 Jun 46<br>3 Jul 51<br>18 Feb 50 | Tels F 642 |
| 3 | Tels F 513 | 1 - 15<br>1001 - 1002 | 2<br>2 | 27 Feb 47<br>27 Feb 47 | Tels F 643 |
| 4 | Tels F 514 | 0<br>1 - 27 | 1<br>2 | 16 Sep 53<br>30 Mar 47 | Tels F 644 |
| 5 | Tels F 515 Waterproofing Inst No. 1 | 1 - 19 | 1 | 1 Jan 54 | Tels F 645 Waterproofing Inst No. 1 |
| 6 | Tels F 517 Mod Inst No. 1 | 1 - 2 | 2 | 12 Nov 51 | Tels F 647 Mod Inst No. 1 |
| 7 | Tels F 517 Mod Inst No. 2 | 1 | 3 | 20 Dec 54 | Tels F 647 Mod Inst No. 2 |
| 8 | Tels F 517 Mod Inst No. 3 | 7 - 8 | 1 | 11 Mar 47 | Tels F 647 Mod Inst No. 3 |



Distribution - Class 870. Code No. 3

| | Present designation | | | | New designation |
|---|---|---|---|---|---|
| | EMER designation (a) | Pages (b) | Issue No. (c) | Date (d) | (e) |
| 9 | Tels F 517 Mod Inst No. 4 | 1 | 2 | 17 Mar 54 | Tels F 647 Mod Inst No. 4 |
| 10 | Tels F 517 Mod Inst No. 5 | 1 - 2 | 1 | 16 Nov 47 | Tels F 647 Mod Inst No. 5 |
| 11 | Tels F 517 Mod Inst No. 6 | 1 - 3 | 1 | 3 Jul 51 | Tels F 647 Mod Inst No. 6 |
| 12 | Tels F 519 Misc Inst No. 1 | 1 | 1 | 21 Nov 47 | Tels F 649 Misc Inst No.1 |
| 13 | Tels F 519 Misc Inst No. 2 | 1 - 6<br>1001 - 1007<br>1007A<br>1008 - 1009<br>1010 | 1<br>1<br>1<br>3<br>1 | 5 Mar 47<br>5 Mar 47<br>3 Jul 51<br>14 Feb 50<br>5 Mar 47 | Tels F 649 Misc Inst No.2 |
| 14 | Tels F 519 Misc Inst No. 3 | 1 - 15 | 1 | 19 May 47 | Tels F 649 Misc Inst No.3 |
| 15 | Tels F 519 Misc Inst No. 4 | 1 - 2 | 1 | 21 Jul 50 | Tels F 649 Misc Inst No.4 |
| 16 | Tels F 519 Misc Inst No. 5 | 1 - 2 | 1 | 8 Aug 52 | Tels F 649 Misc Inst No.5 |
| 17 | Tels F 519 Misc Inst No. 6 | 1 - 2 | 1 | 15 Dec 52 | Tels F 649 Misc Inst No.6 |
| 18 | Tels F 519 Misc Inst No. 7 | 1 - 2 | 1 | 1 Jun 53 | Tels F 649 Misc Inst No.7 |

57/Maint/6670

END

# WIRELESS SET NO 62

## TECHNICAL HANDBOOK - MISCELLANEOUS INSTRUCTION

## Inductance, variable, No 25

SUMMARY

1. The aerial tuning inductance (L13A) of the Wireless set No 62, (W.S.62) is catalogued as Inductance, variable, No 25 - Part No Z1/ZA 30065. This sub-assembly comprises a number of items, many of which have their own individual part number for catologuing purposes. Some of the items are also separately scaled as maintenance spares in particular: Inductors, r.f., 110 turns, 20 s.w.g. Part No Z1/ZA 41687 to which this present instruction has particular reference.

ACTION

2. Where a part, or parts of Inductance, variable, No 25, are faulty and these are shown in the identification list for the W.S.62 as being separately catalogued, the scales document appropriate to the Unit repairing the equipment will be consulted to find out if the items required are provided as maintenance spares, and if so, they will be demanded individually as required. In no circumstances will the complete Inductance, variable, No 25, be demanded when the required individual items (or sub-assemblies incorporating them if they are not separately catalogued) are scaled as maintenance spares.

57/Maint/6134

END

ELECTRICAL AND MECHANICAL
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TELECOMMUNICATIONS
F 649 Misc Instr No 10

# WIRELESS SET NO 62

## TECHNICAL HANDBOOK - MISCELLANEOUS INSTRUCTION

### Provision of extra stop on XTAL/MO switch

SUMMARY

1. If the XTAL/MO switch (S2A) on the front panel of the Wireless set No 62 (all marks) is turned to the MO position with undue force the stop of the switch is liable to be overridden and the switch as a whole damaged. Replacement of S2A involves considerable time, labour and expense, and to avoid damage to it or to prevent recurrence, an additional stop is to be fitted to the front panel when (a) a new switch S2A is being fitted, or (b) when the set is under repair and is in such a condition that this stop can be fitted without further dismantling. No additional stop is necessary in the XTAL position of the switch as the internal mounting bracket acts adequately in this respect.

DETAIL

2. When the conditions at (a) or (b) of para 1 apply mark out and drill a hole No 4 BA clearance (No 27 drill) in the position shown in Fig 1. This hole lies on the circumference of a circle of radius 0.75 in., centred on the switch spindle, and on a radius line which is inclined at 57° anti-clockwise from the horizontal on the left-hand side of a vertical line through the switch centre.

3. Fit a Screw, steel, BA, cheese-head, No 4 x 3/8 in., rustproof, into the hole drilled at para 2 with its head on the front of the panel and secure it with a No 4 BA steel nut, and shakeproof washer. Ensure that when the knob of S2A is replaced the screw head effectively limits the travel of the switch without impairing the switching action.

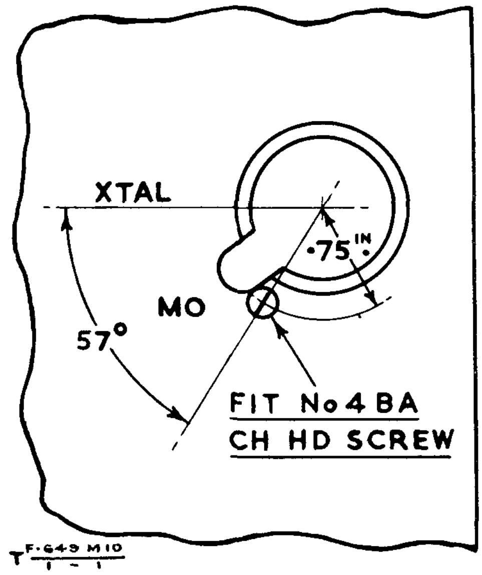


Fig 1 - Position of new stop

57/Maint/6134

END

ELECTRICAL AND MECHANICAL
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(By Command of the Defence Council)

TELECOMMUNICATIONS
F 649 Misc Instr No 11

# TRANSMITTER-RECEIVER, RADIO, NO 62

## TECHNICAL HANDBOOK - MISCELLANEOUS INSTRUCTION

**SUB-TITLE:** Identification notice

### SUMMARY

1. The rotary transformer power supply unit (p.s.u.) of Transmitter-receiver, radio, No 62, is wasting out and being superseded by Power supply, transistorized, No 36 - Cat No Z1/5820-99-102-2776. Provisioning of the main item of the p.s.u., the rotary transformer, has been discontinued and maintenance stocks of bearings and other small components only are being kept up. As there will be an overlap period during which both types of supply unit will be in service, this regulation details the action required to distinguish those equipments which are fitted with the transistorized unit. No action is required on the others.

ACTION

2. Carry out the following action on all TR No 62 equipments which are fitted with Power supply, transistorized, No 36:-

(a) In the space above, and slightly to the left of the front panel meter, paint the words 'TRANSISTORIZED P.S.U.'. The letters are to be in red, be approximately 3/16 in. high and the complete notice must occupy a length of about 3 in.

(b) When the notice painted at (a) is dry, apply one coat of a suitable clear varnish over it to ensure permanency. Do not return the equipment to service or to store until the varnish is dry.

T/61125(D & M)

END

ELECTRICAL AND MECHANICAL
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(By Command of the Defence Council)

TELECOMMUNICATIONS
F 649 Misc Instr No 12

# TRANSMITTER-RECEIVER, RADIO, NO 62

## TECHNICAL HANDBOOK - MISCELLANEOUS INSTRUCTION

**SUB-TITLE: Protection of battery socket spring retainer**

Note: These Pages 1 and 2, Issue 2, supersede pages 1 and 2, Issue 1, dated 8 Nov 65. Para 1 and 2.b. have been amended.

## SUMMARY

1. Tels F 649 Misc Instr No 4 gives details for manufacturing a clamp to retain the 2-point battery supply socket in plug PL2 which is mounted on the front panel of Transmitter-receiver, radio, No 62. Reports indicate, however, that some equipments are still fitted with the original spring retainer, and that this often becomes burnt and destroyed by dropping across the pins of the plug while the socket is being removed and before this is clear of the pins. This regulation gives details for insulating the spring retainer to prevent this happening. No further action is required on equipments already dealt with under Issue 1 of this instruction.



Distribution - Class 335. Code No 3

ACTION

2. a. Remove the screw securing one of the springs of the battery socket retainer.

b. Fit three 1 in. lengths of sleeving (5340-99-910-7067) over the length of the retainer, overlapping the ends of the sleeves. Compound, silicone (H1/HA 6850-99-943-3472) may be used as a lubricant while doing this.

c. Refit the retainer with the securing screw which was removed at a.

T/61125/3(TELS)

END

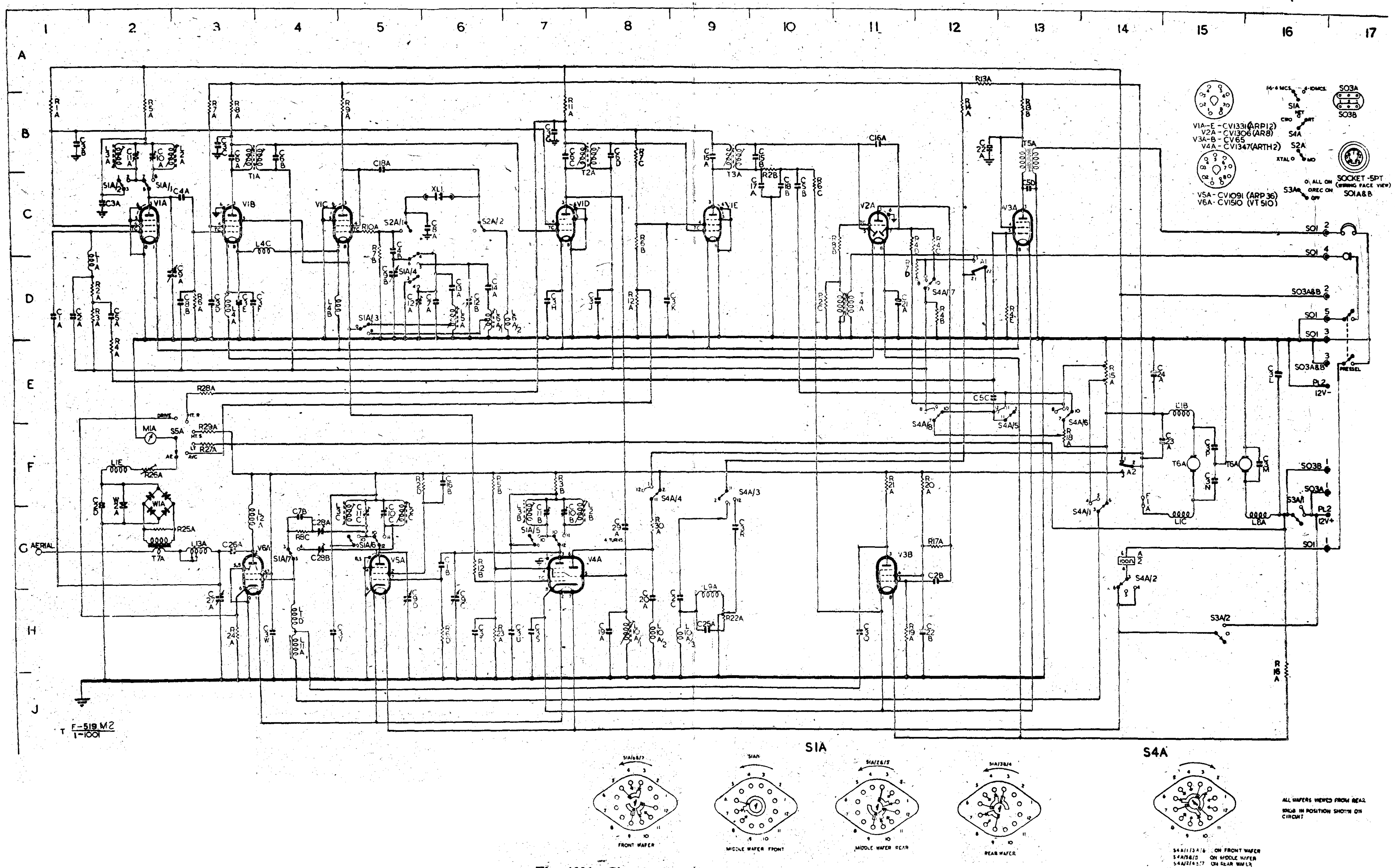



Fig. 1001—Circuit diagram, Mk. 1 to 1000

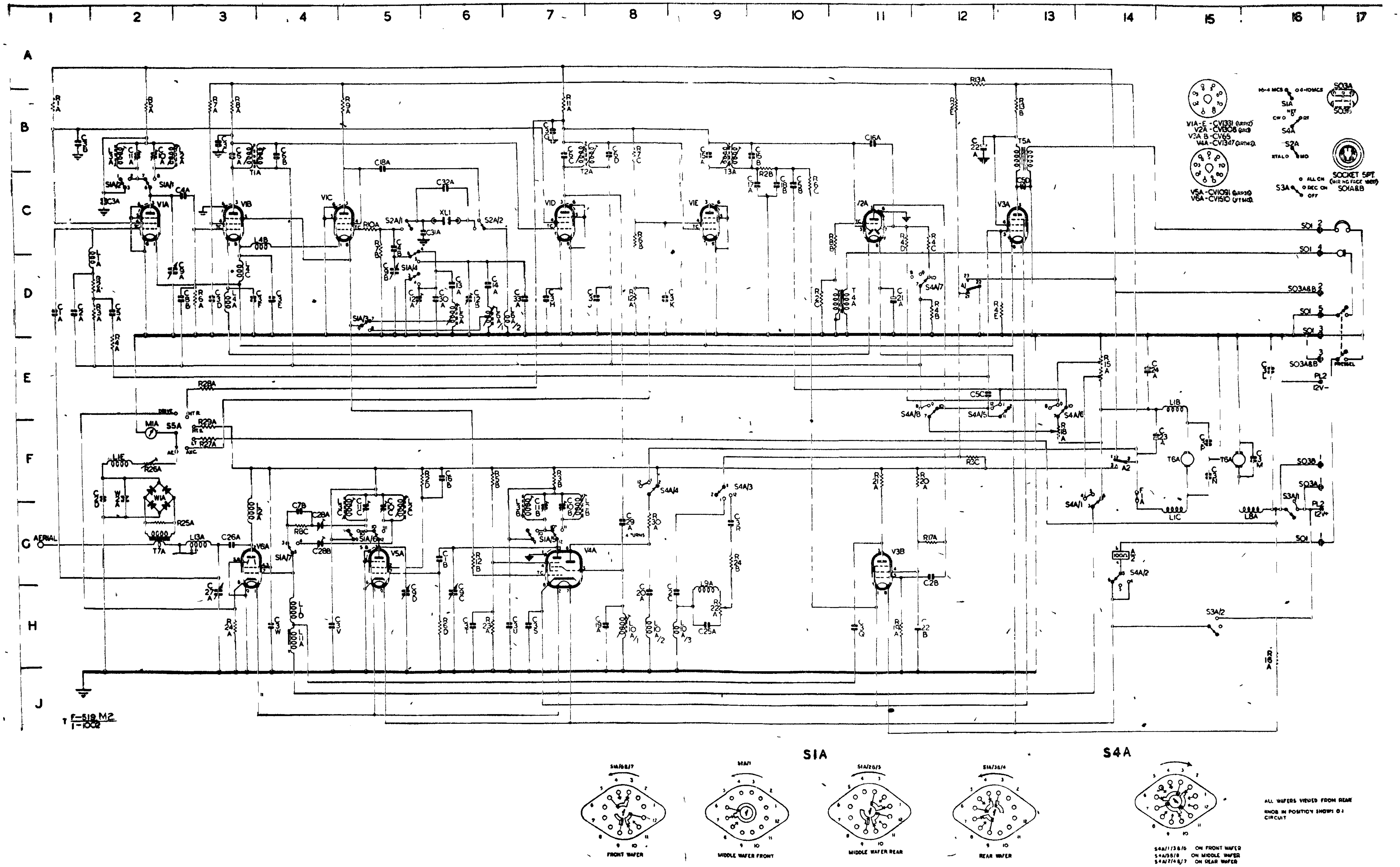
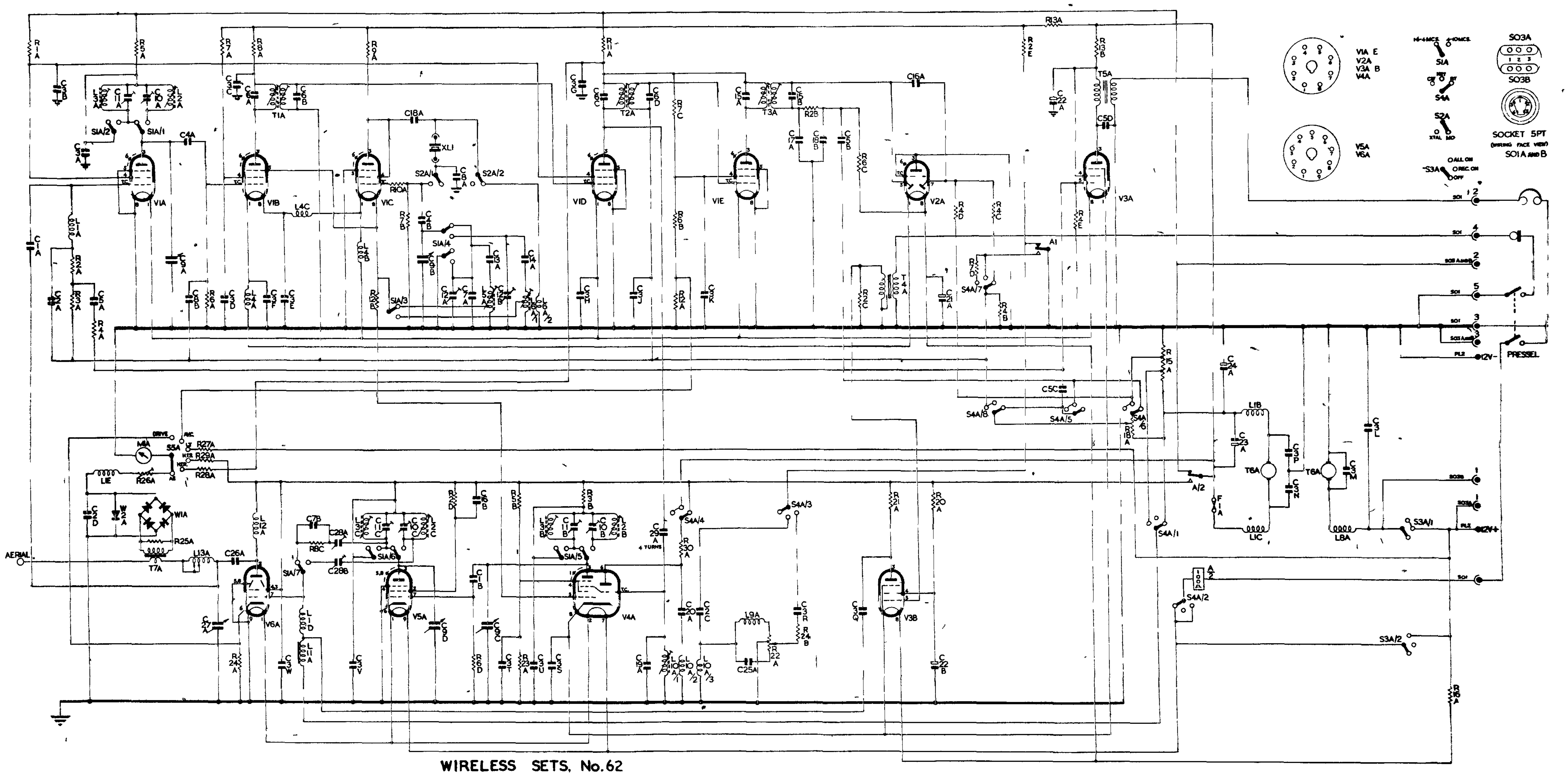


Fig. 1002—Circuit diagram, Mk. 1 to 1800 onwards, and Mk. 2

**Note:** This page, Page 1007A is additional.



WIRELESS SETS, No.62

T F 519 M2 / 002A

Fig. 1002A - Circuit diagram for Wireless set No. 62 after modification as detailed in Tels. F 517 Mod. Inst. No. 6