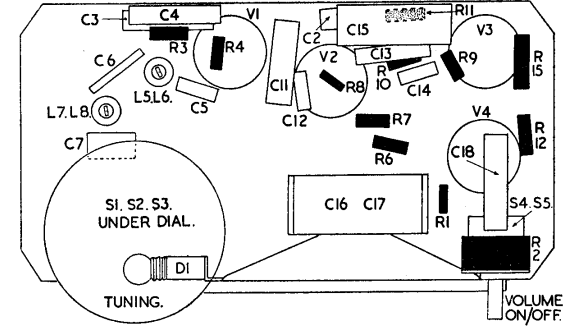
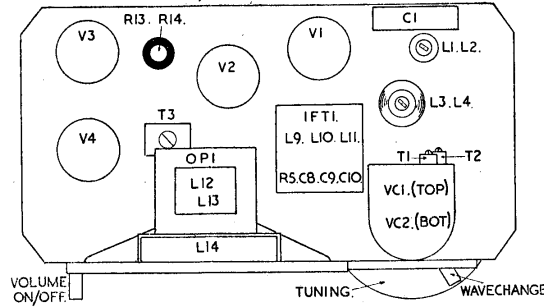
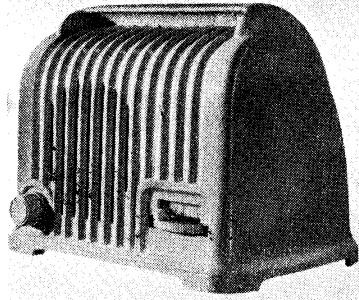


SOBELLETTE

Four-valve, two wave-band superhet with permanently attached aerial wire and provision for earth connection. Housed in transportable cream-finished moulded cabinet and designed for 200-250V AC-DC mains. Made by Sobell Industries, Ltd., Slough, Bucks.



AERIAL.—A permanently attached aerial consisting of approximately 7½ ft. of PVC wire is provided for normal reception areas. In localities where reception is poor, an external aerial may be used. An earth wire, isolated from the chassis by C2, is also fitted for use when desired.

Signal from aerial is fed through isolating capacitor C1 to series coupling coils L1 (MW), L3 (LW). S1 shorts out L3 when receiver is switched to MW band. The series coupled grid coils L2 (MW), L4 (LW) are tuned by VC1 and connected to g1 of triode-hexode frequency changer V1. T1 is MW aerial trimmer. Cathode bias is provided by R3 decoupled by C4.

Screen (g2, g4) voltage is obtained from potentiometer R2, which with R1 forms a bleeder network across the HT supply. Variation of the screen voltage between zero volts and approximately 65 volts positive gives volume control. C3 is screen

(Continued overleaf)

V1—14S7.	V2—12J7GT.	V3—35L6GT.	V4—35Z4GT.	DIAL LAMP.
<p>Gt G3 G2 G4 A1 155V 54MA AL 155V 9MA H H H H O-1.6MA G2</p>	<p>G2 20V 15MA G3 A 40V 4MA H O H S K O V TOP CAP GRID.1</p>	<p>155V G2 G1 A 3MA 182V 51MA H O H K H</p>	<p>A 210V RMS H O H K H 200V 62MA</p>	<p>12 VOLT. 2.2 W.</p>

RESISTORS

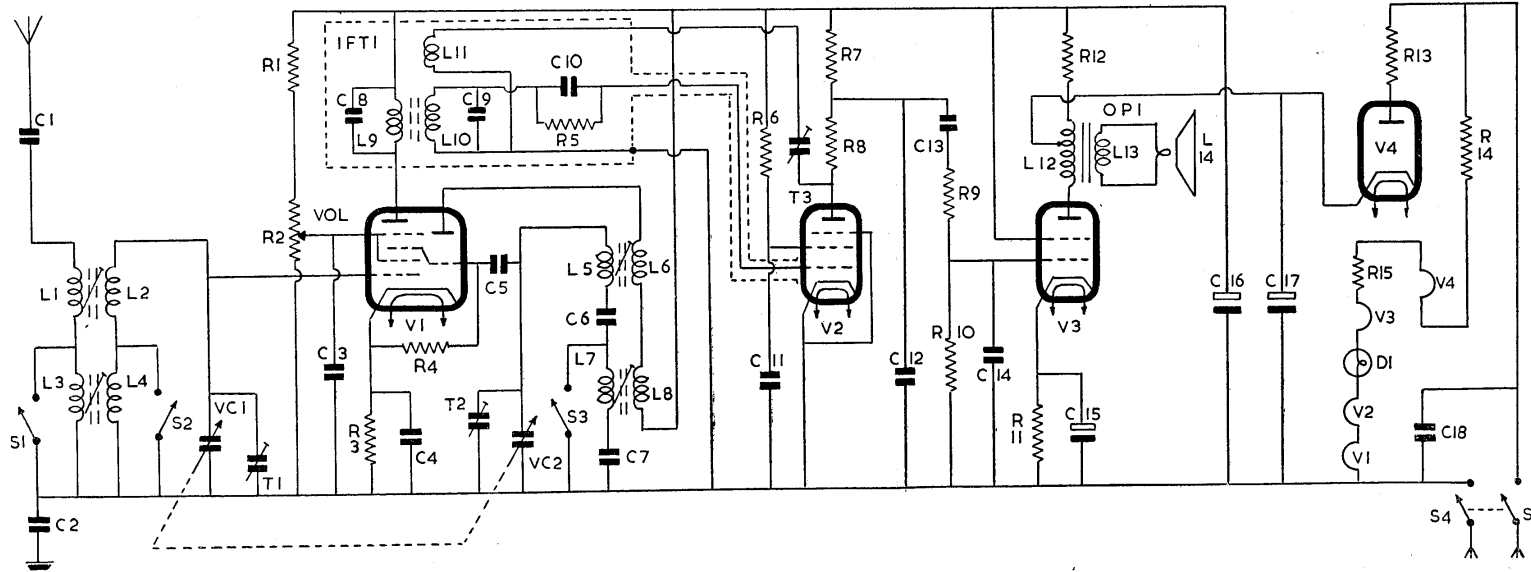
R	Ohms	Watts
1	33K	1/4
2	100K Pot. fitted with DFST switch	1/4
3	220	1/4
4	47K	1/4
5	1M	1/4
6	1M	1/4
7	220K	1/4
8	22K	1/4
9	47K	1/4
10	470K	1/4
11	220	1/4
12	4.7K	1/4
13	280	1/4
14	745	1/4
15	100 Thermistor	1/4

CAPACITORS

C	Capacity	Type
1	.01 Tubular	500V
2	.01 Tubular	500V
3	.1 Tubular	350V
4	.1 Tubular	350V
5	100pF Tubular	Ceramic
6	350pF	Silver Mica
7	100pF	Silver Mica
8	100pF	Silver Mica
9	90pF	Silver Mica
10	100pF	Silver Mica
11	.1 Tubular	350V
12	100pF Tubular	ceramic
13	.01 Tubular	350V
14	100pF Tubular	Ceramic
15	50 Electrolytic	12V
16	32 Electrolytic	250V
17	32 Electrolytic	250V
18	.01 Tubular	500V

INDUCTORS

L	Ohms
1	43
2	187
3	6
4	30
5	3.7
6	2.5
7	11.5
8	3
9	14
10	14
11	.5
12	380 Total (Tap 30)
13	.5
14	2.5



TWO PUBLICATIONS FOR ENGINEERS

TWO books of importance to service engineers and electrical contractors just published by ELECTRICAL AND RADIO TRADING are **Service Chart Manual** and **The Practical Electrician's Pocket Book, 1950**.

The **Manual** is a reprint of the service charts which appeared in this supplement from January to August this year. The 32 charts are bound in manilla covers with an index on the front.

Readers possessing copies of the pre-war quarterly reprints of service charts will know that the bound form is exceptionally handy to use in the workshop—required charts are easy to find, they do not get lost or torn, and they remain in use for years.

The 48-page **Service Chart Manual** just issued is available at 3s., post free, from the Publisher, 6, Catherine Street, London, WC2.

The **Practical Electrician's Pocket Book, 1950**, now in its fifty-second year, contains practical

information for the working electrician on many aspects of installation work—covering motors, wiring, lighting, electricity in farms and dairies, space heating, water heating, ventilation and refrigeration. Apparatus explained ranges from electric clocks to battery vehicles; instructions are given for winding resistances and rewinding small motors.

Electronics in principle and in industry are dealt with in two chapters and intercom. systems and interference suppression are explained. The **Measuring Instruments** chapter contains quick-guide tables of value to both student and practical man.

Not least among the 30-odd sections is one listing the supply voltages at over 5,000 places and giving the addresses of the appropriate sub-area offices.

Only 5s., post free, the **Pocket Book** is also available from 6, Catherine Street, London, WC2.

SOBELLETTE—Continued.

decoupling capacitor. Primary L9, C8 of IFT1 is in the heptode anode circuit.

Oscillator is connected in a tuned grid series fed HT circuit. The grid coils L5 (MW), L7 (LW) which are series connected and tuned by VC2, are coupled by C5 to oscillator grid (gt, g3) of V1. T2 is MW trimmer and C6 (MW), C7 (LW) padders. S3 shorts out L7, C7 when receiver is switched to MW band.

Automatic bias for oscillator grid is developed on C5 with R4 as leak resistor. Anode reaction voltages are obtained inductively from L6 (MW), L8 (LW), which are in series with oscillator HT circuit.

IF amplification.—No separate IF amplifier is used. The amplification given by V1 at 465 kc/s, together with positive feedback from anode to grid of V2, which is introduced by secondary winding L11 incorporated in IFT1, being sufficient.

Signal rectifier and AF amplifier.—Secondary L10, C9 of IFT1 feeds signal to g1 of V2 which is operated as a leaky-grid detector. Rectified signal is developed on C10 with R5 as leak resistor. Cathode and suppressor grid are connected down to chassis. Screen voltage is obtained from R6 and decoupled by C11.

R7 is anode load and R8, C12 form an RF filter. Reaction voltages from anode are fed by T3, L11 to the grid input. T3 gives control over the amount of feedback.

Output stage.—C13 feeds signal at anode V2, through R9 to beam tetrode output valve V3. R10 is its grid resistor and C14 a filter capacitor. Cathode bias is provided by R11 and decoupled by C15.

Screen voltage is obtained direct from HT line to V1, V2. Primary L12, of output matching transformer OP1 is in the anode circuit, the HT for which is obtained direct from reservoir capacitor C17. Secondary L13 of OP1 feeds signal to a 5 in. PM speaker L14.

High tension is provided by an indirectly heated half-wave rectifier V4 with anode voltage is obtained from the mains through limiter resistor R13. Smoothing is given by R12, C16, C17, together with a portion of primary L12 of OP1 connected in a

hum backing circuit. C15 is a mains filter capacitor.

Heaters of V1 to V4 and dial light are series connected and obtain their current from the mains through dropper resistor R14. Thermal surge limiter R15 is fitted to protect valve heaters from excessive current when switching on. S4, S5 which are ganged to the volume control spindle switch the receiver ON/OFF.

Chassis removal.—Remove the push on volume control knob.

Unscrew the four bolts securing fibre base cover panel to bottom of cabinet.

Undo and remove the two screws at each side of chassis. Tilt chassis so as to give clearance for tuning dial and lift chassis out of cabinet.

TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune receiver to	Trim in order stated for max. output
(1) 465 kc/s to gl of V1 via 1mF.	MW band	Core L9, L10.
(2) Test for instability by LW bands.	tuning over w	hole of MW and
(3) 465 kc/s as in (1)	550 metres	T3.
(4) Retest as in (2) for an point reduce capacity o	y instability. I f T3 very slig	f unstable at any htly.
(5) 1.450 mc/s to AE via dummy aerial.	200 metres	T2, T1.
(6) 600 kc/s as above.	500 metres	Core L5, L2.
(7) Repeat operation (5) metres.	and then ch	eck 300 and 550
(8) 334 kc/s as in (6).	900 metres	Core L7, L4.
(9) 150 kc/s as above.	2,000 metres	Check and ad-just if necessary.
(10) Repeat (8) and (9) until a satisfam 1,000 to 2,000 metres with least attenuation below 1,000 metres.		ctory balance is

NOTE.—Operations (1) to (4) should be carefully carried out as receiver sensitivity depends on correct IF and feedback alignment.



**Dealers concerned
with service work
are requested to
turn to pages 166
and 167**