

BURNDEPT 267 A.C. FOUR BAND

CIRCUIT.—The aerial is coupled to the grid of V1, a triode-hexode frequency changer, by an aerial transformer. The signal, converted to the I.F., passes via an I.F. transformer to the grid of V2, an H.F. pentode. V1 and V2 are both A.V.C. controlled.

The output of V2 passes to a further I.F. transformer, the secondary of which is tapped and connected to the demodulating diode of V3, a double-diode valve. The other diode is fed by a coupling condenser connected to the anode of V2 and provides a D.C. potential for the A.V.C.

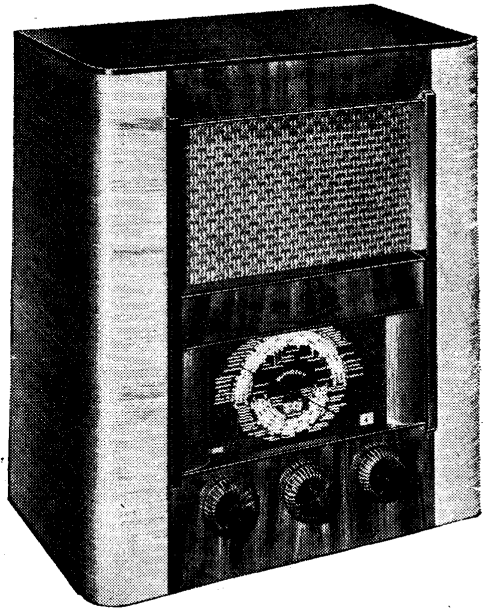
The coupling to V4, an output pentode, includes a manual volume control. A pentode compensator condenser connected between the anode of V4 and chassis modifies the tone.

Mains equipment consists of a mains transformer, a full-wave rectifying valve V5, electrolytic smoothing condensers and a smoothing choke consisting of the

speaker field energising coil. A mains suppressor condenser is connected between one of the leads to the primary of the mains transformer and the chassis earth line.

Chassis Removal.—A false bottom on the cabinet enables the underside of the chassis to be inspected. Remove the back of the cabinet, the three control knobs (grub-screws) and the four chassis-securing bolts. The underside of the chassis can then be serviced.

For complete removal unsolder the leads to the speaker panel and chassis frame. When replacing connect the black lead to the top two tags, the blue lead to the one below and the red lead to the bottom tag. The green lead is connected to the speaker frame. The red lead from the electrolytic condenser is connected to



The model 267 four-band five-valve A.C. superhet made by Burndeft Ltd. of Light Gun Factory, Erith, Kent.

the top two tags and the yellow lead to the bottom tag.

Special Notes.—The receiver has two dial lights mounted in screw-in holders

RESISTANCES

R.	Purpose.	Ohms.
1	V1 grid stopper	50
2	V1 screen decoupling	20,000
3	Oscillator anode load	30,000
4	Oscillator grid leak	50,000
5	V1 A.V.C. feed	500,000
6	V1 cathode bias	200
7	V1 A.V.C. decoupling	500,000
8	SW1 regeneration modifier	50
9	SW2 regeneration modifier	500
10	V2 A.V.C. decoupling	500,000
11	V2 cathode bias	200
12	A.V.C. diode load	1 meg.
13	H.F. stopper	10,000
14	Volume control	500,000
15	V4 cathode bias (part)	150
16	V4 cathode bias (part)	100
17	Demodulating diode load	500,000

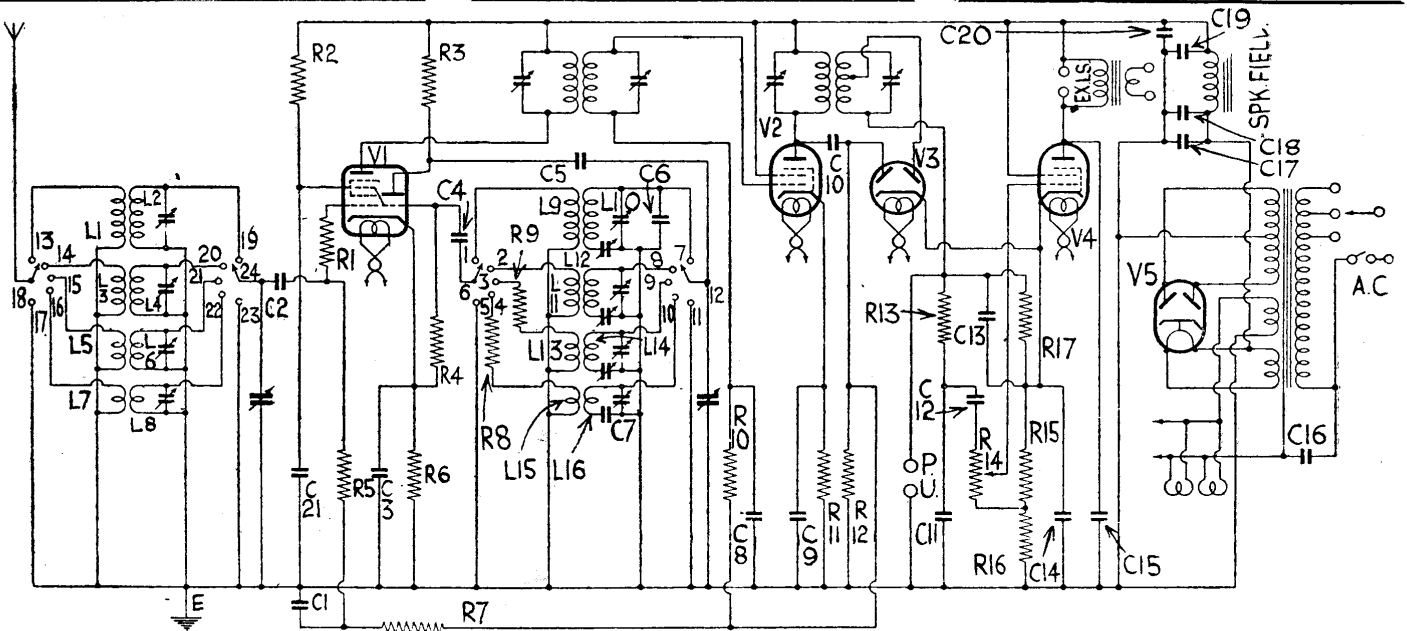
CONDENSERS

C.	Purpose.	Mfd.
1	V1 A.V.C. decoupling .. .. .	.1
2	V1 grid isolating .. .. .	.0001
3	V1 cathode bias shunt .. .. .	.1
4	Oscillator grid .. .. .	.0002
5	Oscillator anode coupling .. .. .	.0002
6	L.W. oscillator fixed trimmer .. .. .	.00004
7	SW1 fixed padder .. .. .	.005
8	V2 A.V.C. decoupling .. .. .	.1
9	V2 cathode bias shunt .. .. .	.1
10	A.V.C. diode coupling .. .. .	.0001
11	H.F. by-pass .. .. .	.0005
12	I.F. coupling .. .. .	.05
13	H.F. by-pass .. .. .	.0001
14	V4 cathode bias shunt .. .. .	.25
15	Pentode compensator .. .. .	.005
16	Mains suppressor .. .. .	.01
17	H.F. by-pass .. .. .	.01
18	H.T. smoothing	8
19	H.T. smoothing	16
20	H.T. by-pass .. .. .	.1
21	V1 screen decoupling .. .. .	.1

VALVE READINGS

No signal. Volume maximum. Bottom M.W. band. 200 volt A.C. mains.

V.	Type.	Electrode.	Volts.	Ma.
1	AC/TH1 ..	Anode ..	210	5.5
		Screen ..	100	5
2	VP4B ..	Osc. anode ..	80	4.5
		Screen ..	210	3.5
3	2D4A ..	Diodes ..	—	—
4	PEN4 ..	Anode ..	200	31
		Screen ..	210	4
5	R3 ..	Filament ..	340	—



A conventional superhet arrangement is used in the 267. A single-tuned input circuit is employed and the second detector feeds a high-slope output pentode direct.

clamped one each side of the wavelength dial assembly. The bulbs have M.E.S. bases and are rated at 6 volts .3 amp.

A pair of sockets at the rear of the chassis enable an external speaker to be operated. This should be of the high-impedance type. An adjacent pair of sockets are for a pick-up.

C19 and C20 are located on the side of the cabinet by the speaker.

Circuit Alignment Notes

Connect an output meter across the extension L.S. sockets. Remove the grid connection to the top cap of V1, connect a service oscillator and also a 25,000 ohms resistance between the top grid cap of V1 and chassis. Turn the volume control to maximum, switch set to M.W. and fully mesh the vanes of the gang.

Tune the oscillator to 473 kc. (634.2 metres) and adjust the trimmers of I.F.T.2 and then I.F.T.1 for maximum, reducing the input from the service oscillator as the circuits come into line, so as to prevent operation of the A.V.C.

Signal Circuits.—Replace normal grid connection to V1 and remove 25,000 ohms resistance. Connect oscillator to the A. and E. sockets of the receiver, preferably

through a dummy aerial or fixed condenser. Only feed sufficient input from the service oscillator to obtain definite peaks in the output meter.

Long Waves.—Tune set and oscillator to 750 metres (400 kc.) and adjust first T1 and then T2 for maximum.

Tune set and oscillator to 2,000 metres (150 kc.) and adjust P1 for maximum, simultaneously rocking the gang. Repeat both operations.

Medium Waves.—Tune set and oscillator to 200 metres (1,500 kc.) and adjust T3 and then T4 for maximum.

Tune set and oscillator to 550 metres (545.5 kc.) and adjust P2 for maximum, simultaneously rocking the gang. Repeat both operations.

Short Waves.—Tune set and oscillator to 50 metres (6 mc.) and adjust T5 and then T6 for maximum.

Tune set and oscillator to 170 metres (1,765 kc.) and adjust P3 for maximum, simultaneously rocking the gang. Repeat both operations.

Connect the service oscillator to the A socket via a .00003 or .00004 fixed condenser.

Tune set and oscillator to 13.5 metres (22.2 mc.) and adjust T7 and then T8 for maximum.

The padding is fixed, but check for calibration by injecting signals throughout the range covered.

Replacement Condensers

Two exact replacement condensers for the 267 are available from A. H. Hunt, Ltd., Garratt Lane, London, S.W.18. These are: For C14, unit 2915, price 1s. 9d.; for the block containing Cs 18 and 19 there is unit 1931 at 8s. 6d.

Burndept 267 on Test

MODEL C.N. 267.—Standard model for A.C. mains operation, 200-260 volts, 50-100 cycles. Price £11 0s. 6d.

DESCRIPTION.—Four-band, five-valve, including rectifier, table superhet.

FEATURES.—Airplane full-vision scale. Micro dial providing for short wave operation. Controls for tuning, combined volume and on-off, and wave selection switch. Volume control and wave switch operate indicators on scale. Sockets provided for external L.S. and pick-up.

LOADING.—66 watts.

Sensitivity and Selectivity

SHORT WAVES (13.5-51 and 50-180 metres).—Very good gain and selectivity, easy handling, no appreciable drift. A good all-round performance.

MEDIUM WAVES (175-580 metres).—Representative gain well maintained. Selectivity adequate, local stations only spreading on adjacent channels. Background contains a number of whistles.

LONG WAVES (750-2,100 metres).—Representative selectivity and gain. All main stations easily received.

Acoustic Output

Very well balanced tone on both speech and music with little coloration and pleasing orchestral reproduction. Adequate output for an ordinary room.

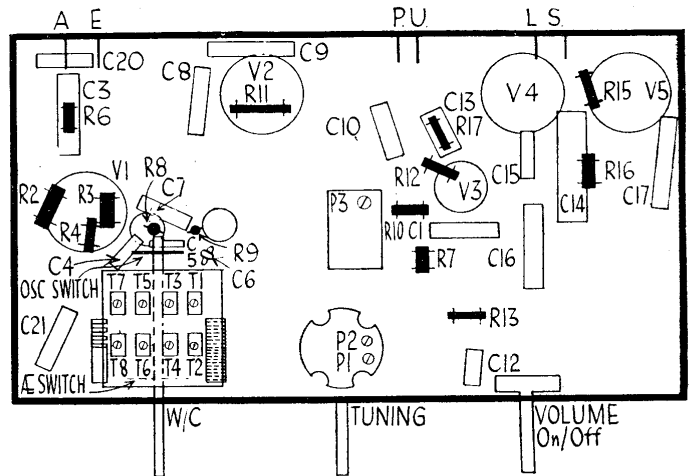
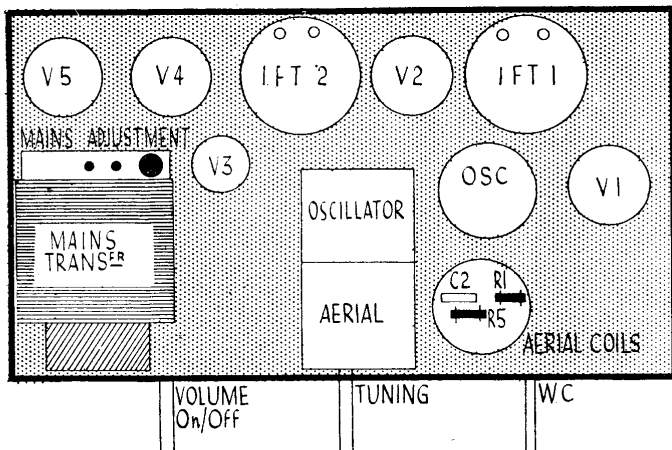
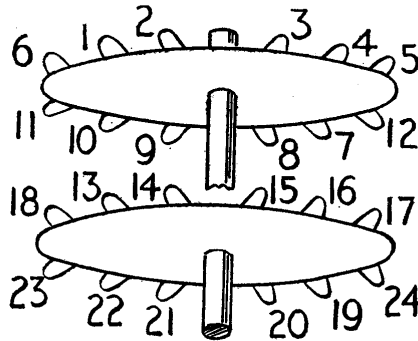
QUICK TESTS

Quick tests are available on this receiver at the leads to the speaker panel. Voltages measured between these and the chassis should be:—

- Red lead, 340 volts, unsmoothed H.T.
- Black lead, 210 volts, smoothed H.T.
- Blue lead, 200 volts, smoothed H.T.

WINDINGS

Winding.	Ohms.	Winding.	Ohms
L1	100	L13	40.6
L2	8.8	L14	.4
L3	2.8	L15	.7
L4	2.2	L16	.2
L5	.8	I.F.T.'s	5
L6	.5	I.F.T.2 secondary (part)	3
L7	.5	Speaker field	1950
L8	.1	Speaker trans. prim.	470
L9	1.3	Mains trans. prim.	20
L11	64.4	Total H.T. secondary	334



Chassis layouts of the 267. The trimmers are grouped underneath near the switches, diagrams of which, lettered to correspond with the circuit, are given above.