

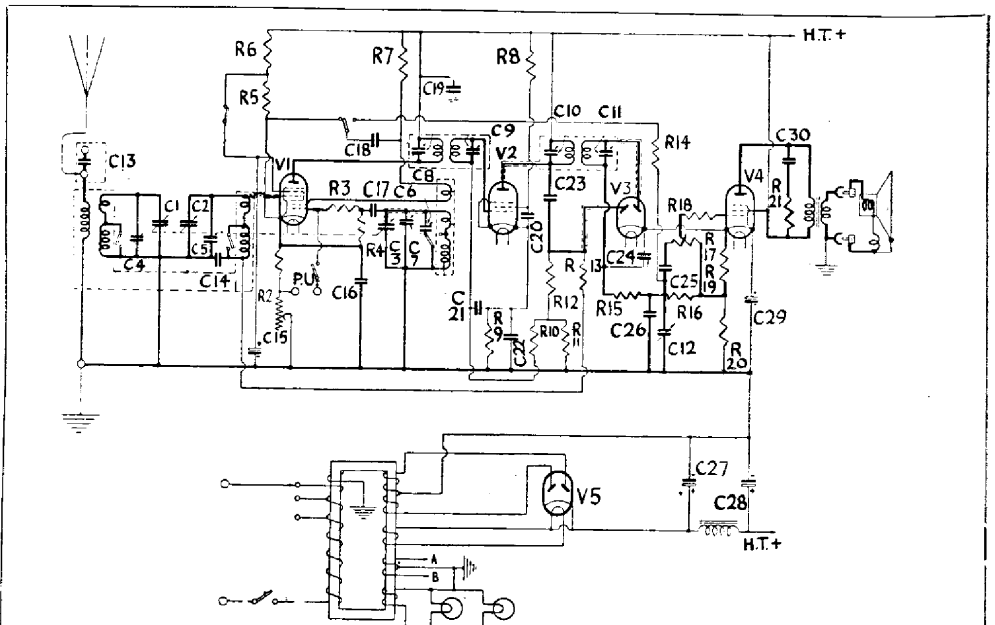
LISSEN MODELS 8111, 8116 AND 8117

Circuit.—The combined first detector-oscillator valve, A/80/A met. (V1), is preceded by a band-pass aerial coupling. Bias for the H.F. pentode section is by cathode resistance (variable) and A.V.C. and coupling to the next valve is by band-pass I.F. transformer (frequency 127 kc.). The oscillator tuning is in the grid circuit.

The I.F. valve, A/50/N met. (V2) is also biased by A.V.C. and cathode resistance, and is followed by a second band-pass I.F. transformer.

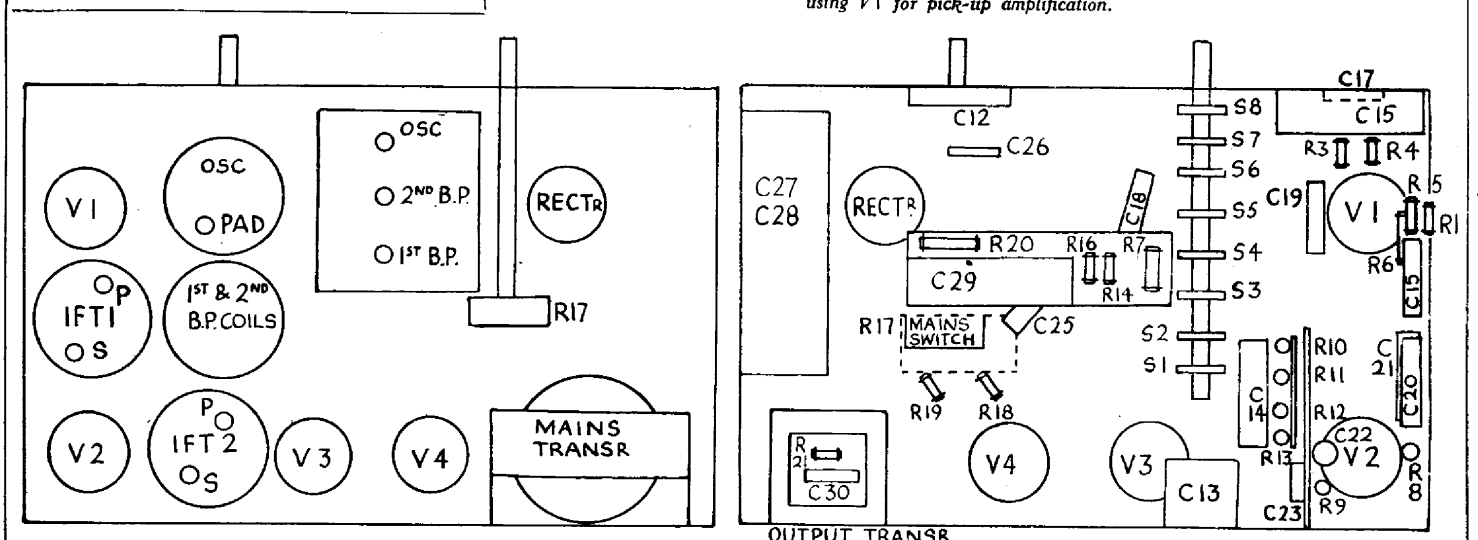
The second detector valve, A/20/B met. (V3), is a double diode. The A.V.C. diode anode is fed from the primary of I.F.T.I. and the load resistance is in two sections, R12 and R11.

Delay is applied by connecting the cathode



The circuit of the Lissen 8111, 8116 and 8117 receivers includes a very interesting way of using V1 for pick-up amplification.

| VALVE READINGS | | | | |
|-------------------------------|-----------------|------------|--------|-----|
| Ever Ready valves. No signal. | | | | |
| Valve. | Type. | Electrode. | Volts. | Ma. |
| 1 | A/80/A met.(7) | anode | 275 | 1.2 |
| | | aux.grid | 72 | |
| | | osc.anode | 77 | 2.2 |
| 2 | A/50/N met. . . | anode | 275 | 6 |
| | | aux.grid | 105 | |
| | | diode | 258 | 27 |
| 3 | A/20/B met.(5) | anode | 258 | 27 |
| 4 | A/70/C met. | aux.grid | 275 | 3.1 |



The long-wave oscillator padding trimmer is on top of the oscillator coil. All components below the chassis (right) are easily accessible.



The Lissen 8111 table model superhet A.C. "four."

to that of V4, and the L.F. coupling is a resistance capacity filter. Tone control is provided by a variable condenser, C12, across diode output.

Output pentode, A/70/C (V4), has a grid stabilising resistance and is tone compensated by a condenser in series with a resistance across the primary of the output transformer.

Mains equipment consists of transformer, full-wave A/11/B rectifier, the speaker field in the positive H.T. lead for smoothing, and two electrolytic condensers.

Special Notes.—Pilot lamp is a 3.5 volt .3 amp. flash-lamp bulb.

CONDENSERS

| C. | Purpose. | Mfd. |
|----|---|------------|
| 13 | Series aerial | .000015 |
| 14 | Decoupling V1 grid | .25 (350) |
| 15 | V1 aux. grid by-pass | 2 (300) |
| 16 | V1 cathode by-pass | .1 (350) |
| 17 | V1 osc. grid reservoir | .001 (350) |
| 18 | Gram. feed from V1 to V4 | .1 (350) |
| 19 | V1 anode decoupling | .1 (350) |
| 20 | V2 screen by-pass | .1 (350) |
| 21 | V2 grid decoupling | .1 (350) |
| 22 | V2 cathode by-pass | .1 (350) |
| 23 | I.F. feed to A.V.C. diode | .0001(350) |
| 24 | H.F. by-pass from diode | .0001(350) |
| 25 | L.F. coupling | .05 (350) |
| 26 | H.F. by-pass from diode | .0001(350) |
| 27 | H.T. smoothing | 8 (450) |
| 28 | H.T. smoothing | 8 (450) |
| 29 | V4 cathode by-pass | 20 (30) |
| 30 | Part of tone compensating circuit | .01 (450) |

Bracketed figures denote D.C. working voltages.

The variable resistance R2 is at the back of the chassis and provides a certain amount of control over inter-station "noise."

An extra speaker should be used without a transformer and should have an impedance of between 3 and 5 ohms.

Quick Tests.—Between the right-hand terminals on the speaker and chassis:—

Outside, 450 volts, H.T. unsmoothed,

Inside, 275 volts, H.T. smoothed.

Removing Chassis.—There is no need to remove the knobs. Simply undo the screws holding the fibre cover on the bottom of the cabinet to reveal all the under-chassis components.

When the chassis must be removed, undo

RESISTANCES

| R. | Purpose. | Ohms. |
|----|--|------------|
| 1 | V1 cathode bias | 300 (4) |
| 2 | Sensitivity control .. var. | 2,000 |
| 3 | V1 osc. grid harmonic suppressor | 1,000 (4) |
| 4 | V1 osc. grid leak | 100,000(4) |
| 5 | V1 aux. grid ptr. | 40,000 (4) |
| 6 | V1 aux. grid ptr. | 40,000 (1) |
| 7 | V1 osc. anode decoupling | 100,000(4) |
| 8 | Voltage dropping to V2 aux.grid | 80,000 (4) |
| 9 | V2 cathode bias | 200 (4) |
| 10 | Decoupling V2 grid | 510,000(4) |
| 11 | A.V.C. load ptr. | 510,000(4) |
| 12 | A.V.C. load ptr. | 510,000(4) |
| 13 | Decoupling A.V.C. to V1 | 510,000(4) |
| 14 | H.F. stopper in gram. feed | 100,000(4) |
| 15 | H.F. stopper from diode | 100,000(4) |
| 16 | Diode load | 260,000(4) |
| 17 | V.C. | 500,000 |
| 18 | V4 grid stabiliser | 25,000 (4) |
| 19 | V4 cathode bias | 150 (4) |
| 20 | Providing relay bias for A.V.C. | 500 (1) |
| 21 | Tone compensating V4 anode | 10,000 (4) |
| | Speaker field | 3,000ohms |

Bracketed figures denote voltage rating.

the four holding bolts, pull off the knobs and free the speaker lead from the clip.

General Notes.—The condensers C27 and C28 are of identical value and working voltage.

The oscillator section of V1 is converted into an L.F. amplifier for gram. by switching the decoupling condenser C18 over to the grid circuit of V4. The connection of the pick-up prevents V1 oscillating.

Replacing Chassis.—Lay the chassis inside the cabinet, replace the bolts, the cover underneath, and the knobs (springs opposite rounded sides of spindles).