

COSSOR MODEL 370U A.C.-D.C. THREE

CIRCUIT.—Aerial signals are fed to V1, an H.F. pentode, through a series condenser and an inductively coupled H.F. transformer. On medium waves they are capacity coupled by C5.

Volume is controlled by varying the bias on the cathode of V1 by means of R1.

Coupling to V2, an H.F. pentode, is through a second inductively coupled H.F. transformer. Reaction is fed back from the anode in the usual manner.

V2 acts as the detector and the rectified output is fed through a capacity coupled auto-transformer to the output valve, V3, which is a triode, and after amplification to the moving-coil speaker.

The usual chokes are included in each mains lead, and the chassis, which is connected to one side of the mains, is isolated from the earth terminal by a fixed condenser, C19.

Mains equipment consists of half-wave

rectifier, voltage dropping resistances, electrolytic condensers and the speaker field.

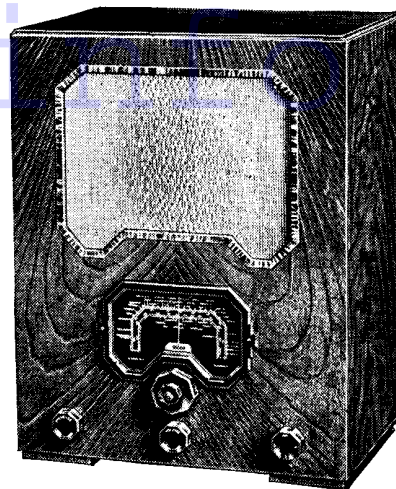
Special Notes.—The dial lamps are rated at 8 volts .2 amp. Those used in the receiver are Cossor catalogue No. 222. They are fixed to the dial assembly by spring clips and may be easily removed.

The small knob concentric with the tuning knob is a vernier control, and varies a single vane of the gang condenser, for a fine adjustment of the tune point. In practice, the required station is first tuned in on the main control and the vernier or trimmer control adjusted for greater output.

Removing Chassis.—Practically all the work necessary on this receiver may be done without taking the chassis out of the cabinet and by removing the false fibre bottom from the cabinet. This is secured by two bakelite-headed bolts.

Complete removal of the chassis is as follows: Remove five knobs from the front of the cabinet (grub screws). The trimmer-knob grub screw is in the front of the knob.

Next remove two screws in the top of the dial assembly and then four bolts from



A.C. Cossor's model 370U is a straight three-valve and rectifier set working on medium and long wavebands and is for A.C. or D.C. mains operation.

RESISTANCES

R.	Purpose.	Ohms.
1	Volume control	12,000
2	V1 cathode bias (part)	350
3	V1 screen decoupling potr.	25,000
4	V1 screen decoupling potr.	50,000
5	V1 anode decoupling	10,000
6	V2 grid stabiliser	200
7	V2 grid leak	1 meg.
8	Reaction modifier	300
9	V2 anode load	100,000
10	V2 anode decoupling	50,000
11	V2 screen decoupling	500,000
12	V3 grid stopper	250,000
13	V3 cathode bias	600
14	H.T. bleeder	3,000
15	Mains dropping	100
16	Mains dropping	90
17	Mains dropping	90
18	Mains dropping	440

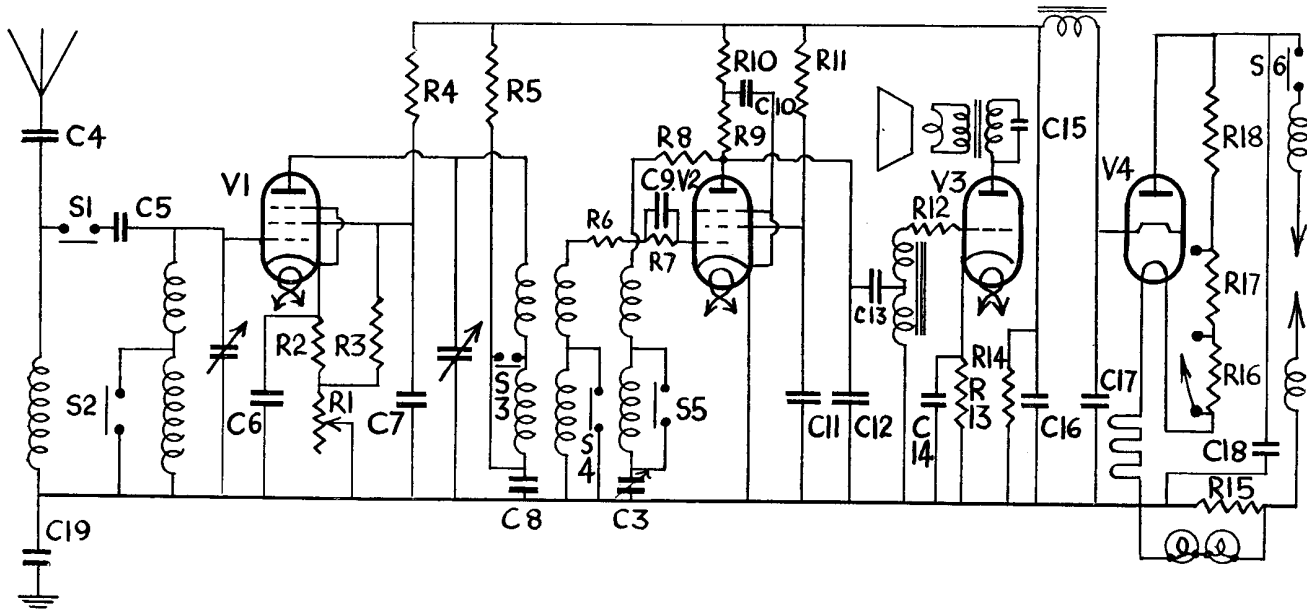
VALVE READINGS

No signal. Volume maximum. 200 volt A.C. mains.

V.	Type.	Electrode.	Volts.	Ma.
<i>All Cossor.</i>				
1	13VPA met. (7).	Anode	95	3
		Screen	30	.75
2	13SPA met. (7).	Anode	20	1.1
		Screen	20	.35
3	402P (7)	Anode	135	20
4	40 SUA (5)	Cathode	170	—

CONDENSERS

C.	Purpose.	Mfd.
3	Reaction	.0005
4	Aerial isolating	.0005
5	Aerial coupling (M.W.)	.000015
6	V1 cathode bias shunt	.1
7	V1 screen decoupling	.1
8	V1 anode decoupling	.1
9	V2 grid	.0001
10	V2 anode decoupling	.25
11	V2 screen decoupling	.1
12	H.F. filter	.0001
13	L.F. coupling	.1
14	V3 cathode bias shunt	50
15	Pentode compensating	.0005
16	H.T. smoothing	8
17	H.T. smoothing	8
18	Mains filter	.1
19	Chassis isolating	.1



In the Cossor 370U, H.F. pentodes are used in the first two sockets for R.F. amplification and detection respectively. The output valve is a triode. The chassis is isolated from earth by means of a fixed condenser C19, since it is connected to one side of the mains.

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underneath the cabinet. The heads of these are covered by fibre cases. Finally, remove the speaker leads.

The speaker leads are secured by small bolts on the transformer; reconnection

will be as follows, reading from top to bottom: 1, blue lead; 2, red lead; 3 and 4, yellow lead.

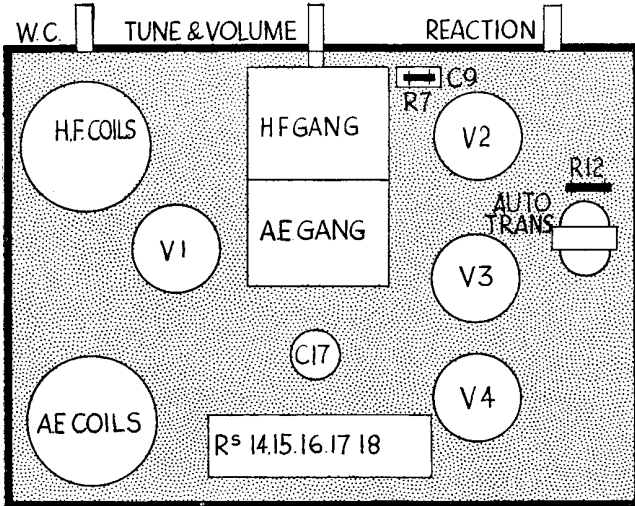
Alignment Notes.—The inductances of the various coils are correctly adjusted before the receiver leaves the factory, and no realignment is necessary.

QUICK TESTS

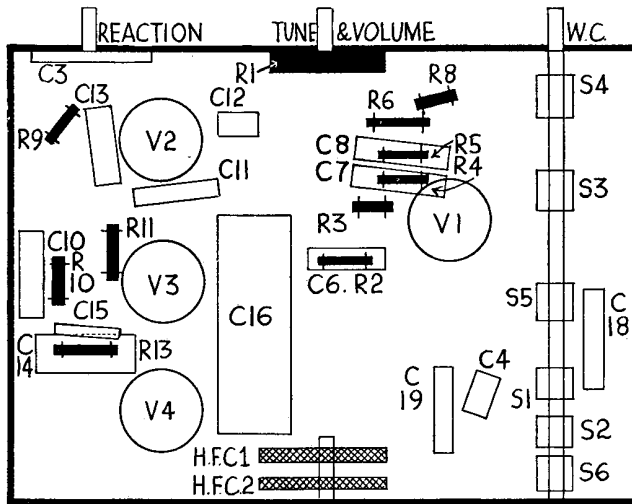
Quick tests are available on the terminal strip on the speaker transformer. Volts measured between this and the chassis should be:

- Blue lead, 170 volts, unsmoothed H.T.
- Red lead, 135 volts, smoothed H.T.
- Yellow lead, 140 volts, smoothed H.T.

Exact replacement condensers made for the Cossor 370U by A. H. Hunt, Ltd., of Garratt Lane, Wandsworth, London, S.W.18, are the following: C17, list 3055 (6s.); C16, list 2947 (3s. 9d.); C14, list 2915 (1s. 9d.).



The chassis of the Cossor 370U as seen from the top. Instructions for removing the chassis from the cabinet are given on the opposite page. Note that the four bolts beneath the cabinet are covered by fibre cases.



Practically all necessary work on the 370U can be done without taking out the chassis. Removing the false fibre bottom of the cabinet reveals this underside view. As in all these layouts resistors are shown in solid black, whether fixed or variable.

Cossor 370U on Test

MODEL 370U.—Standard model for 200-250 volt A.C. or D.C. mains working. Price 7 gns.

DESCRIPTION.—Two-waveband, "straight" mains universal three-wave plus rectifier table model.

FEATURES.—Wood cabinet; rectangular dial; tuning with concentric trimmer. Separate volume and reaction controls. Screened pentode used as reactive detector and a Cossor 402P triode for output.

Sensitivity and Selectivity

MEDIUM WAVES (195-550 metres).—Sensitivity good for valve combination employed. Reasonable selectivity by careful use of volume and reaction controls. Gain sufficient for an ordinary room with reasonable aerial.

LONG WAVES (725-2,225 metres).—Performance very similar to medium waves. Usual stations easily separated.

Acoustic Output

Volume representative for valve combination and adequate for an ordinary room. Well balanced tone and no unduly marked colouration.

G.E.C. A.W.6 Alignment

(Continued from page 53.)

gang condenser, and in its place connect an external .0005 mfd. variable condenser. Inject a signal of 1,820 metres (165 kc.), and tune it in by means of the gang condenser and the external variable.

When resonance is obtained, disconnect the external condenser, temporarily reconnect the oscillator gang, and without altering the setting of the tuning control trim T8 for maximum output.

Return to 1,000 metres and check the adjustment of T5, T6 and T7.

Medium Waves.—Tune the receiver and the oscillator to 214 metres (1,400 kc.), and adjust T9, T10, and T11 for maximum.

Using the external variable condenser as before, tune in a signal of 500 metres (600 kc.), and adjust T12 for maximum.

Return to 214 metres and check the adjustment of T9, T10 and T11.

Resolder the lead to the oscillator gang.

NOTE.—On both medium and long waves, the adjustment may have to be repeated several times to obtain the best results—in all cases the final adjustment must be made on 214 and 1,000 metres respectively.

Short Waves.—1 (29.4-81.2 metres). The dummy aerial for both short wavebands should consist of a 400 ohms resistance.

Tune the receiver and the oscillator to 31.2 metres (9.5 megacycles) and trim T13, T14, and T15 for maximum output. If two peaks are found while adjusting T13, use the lower capacity setting.

Short Waves.—2 (13.6-30 metres). Tune the receiver and the oscillator to 15 metres (20 megacycles), fully unscrew T16, and then screw it in until the first peak is obtained. This is the correct one.

Adjust T17 and T18 for maximum output while rocking the gang condenser.

Replacing Awkward Chassis

WITH certain types of sets, replacing a chassis in its cabinet can often be a very awkward job to do single-handed, as when the chassis and cabinet are placed on the bench on one side, the fixing screws and their respective screw-holes often will not meet, owing to the awkward size and weight of the chassis.

A method which reduces this difficulty considerably in many cases is to place the chassis in its cabinet in the normal position and then to fasten on all the knobs, making sure that the grub screws are very

securely fixed. Unless the spindle holes in the front of the cabinet are very large, the holes for the fixing screws will now be immediately underneath the holes in the bottom of the cabinet when the chassis and cabinet are carefully turned on one side.

One hand should be kept firmly on the chassis all the time, as it is unwise to rely on the control spindles entirely to keep the chassis in its place, but this method will at least assist the operation in nearly every case.—M. B.