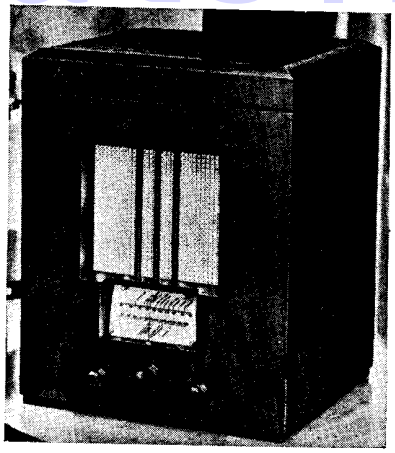
COSSOR 737 TABLE RADIOGRAM

CIRCUIT.—The signal from the aerial is fed to V1, the frequency changer, through a series aerial condenser and a band-pass filter.

The couplings between V1 and V2, which is an H.F. pentode, and V2-V3 (a double-diode-triode) are air-cored I.F. transformers.

A switch, shunted across the primary of the first I.F. transformer, is closed when the gramophone is used, to prevent signals breaking through.

One diode of V3 is used for detection and the other for applying A.V.C. to the grids of V1 and V2 in the usual manner. V3 is tone controlled by a condenser and a variable resistance connected in the anode circuit.



The second of two table radiograms produced by A. C. Cossor, Ltd., the 737 is a five-valve A.C. instrument.

The L.F. output of V3 is fed via a resistance-capacity network to the output pentode, V4, which passes it to the output transformer. This has a shunt resistance and condenser across the primary as pentode compensation.

Mains equipment consists of transformer, full-wave directly-heated rectifier, the speaker field and electrolytic condensers.

Special Notes.—The external speaker is connected on the high resistance side of the output transformer. The dial lamp is rated at 6.5 v. .3 amp.

R20 and C22 are located on the output transformer fixed to the speaker.

In some models the switch shown across the primary of the first I.F. transformer is omitted, and a resistance and shorting switch are inserted on the cathode lead of V1.

Removing Chassis.—Remove screws holding the screened pick-up and gramophone motor leads to the *side* of the cabinet, the screw holding the speaker lead to the front, and the two screws in the top of the tuning dial.

Remove the three knobs from the front and the four bolts underneath.

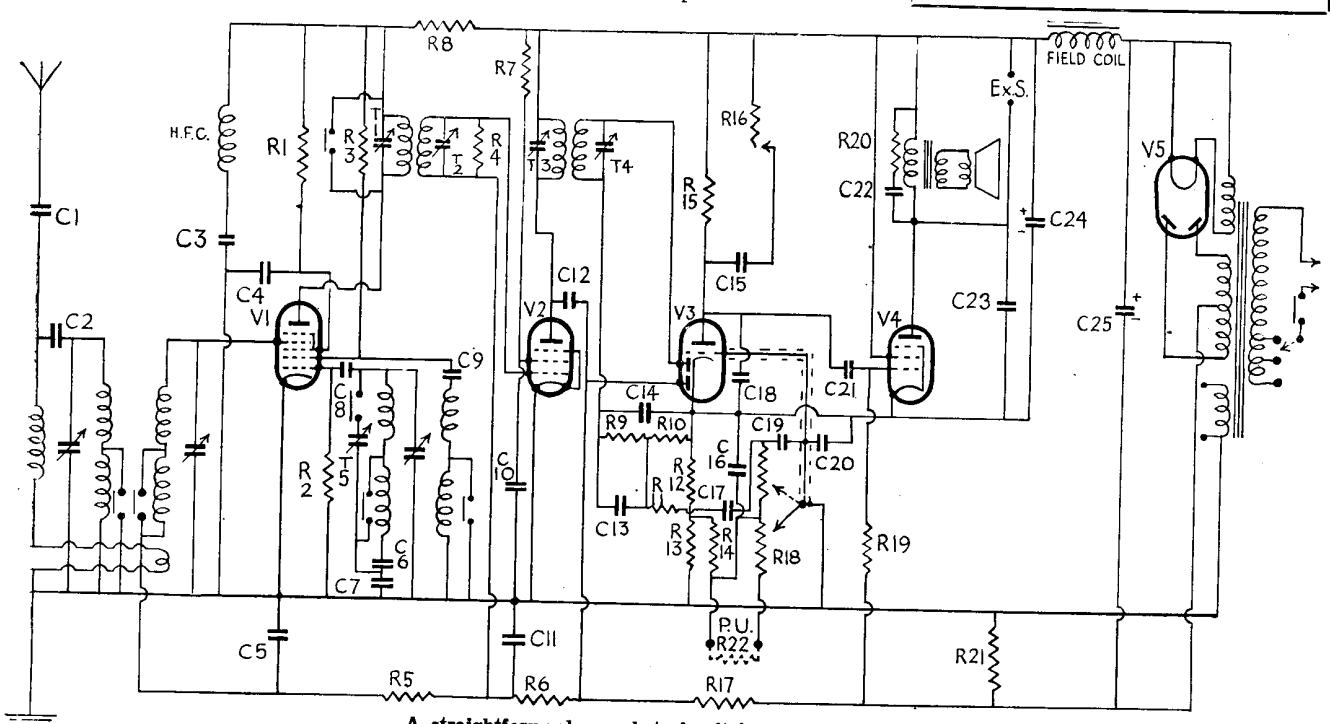
(*Continued on next page.*)

RESISTANCES

R.	Purpose.	Ohms.
1	V1 screen decoupling ..	50,000
2	V1 grid leak	50,000
3	V1 oscillator anode decoupling	50,000
4	I.F. shunt	.25 meg.
5	V1 A.V.C.	.5 meg.
6	V2 A.V.C.	1 meg.
7	V2 screen decoupling ..	.1 meg.
8	H.T. decoupling	4,000
9	Part H.F. filter circuit ..	.25 meg.
10	Part H.F. filter circuit ..	.25 meg.
11	Part H.F. filter circuit ..	.1 meg.
12	V3 bias potentiometer ..	75
13	V3 bias potentiometer ..	150
14	Part H.F. filter circuit ..	2 meg.
15	V3 anode decoupling ..	25,000
16	Tone control	20,000
17	A.V.C. decoupling	.5 meg.
18	Volume control	.5+.5meg.
19	V4 grid bias	.5 meg.
20	Pentode compensating ..	12,000
21	A.V.C. load	30
22	Pick-up shunt	50,000

CONDENSERS

C.	Purpose.	Mfd.
1	Series aerial	.003
2	Aerial coupling	.000025
3	H.T. decoupling	.1
4	V1 screen decoupling ..	.1
5	A.V.C. decoupling	.1
6	Long-wave padding	.00102
7	Medium-wave padding ..	.00208
8	V1 grid decoupling	.00025
9	V1 oscillator anode decoupling	.002
10	V2 screen decoupling ..	.1
11	A.V.C. decoupling	.01
12	A.V.C. diode coupling ..	.0001
13	H.F. by-pass	.0005
14	H.F. by-pass	.0002
15	Tone control	.02
16	V4-V5 L.F. coupling ..	.05
17	A.V.C. decoupling	.1
18	V3 anode by-pass	.002
19	H.F. filter	.0002
20	H.F. filter	.0001
21	V3-V4 L.F. coupling ..	.01
22	Pentode compensating ..	.01
23	V4 anode by-pass	.001
24	H.T. smoothing	8
25	H.T. smoothing	8



A straightforward superhet circuit is employed in the 737.

COSSOR ALIGNMENT NOTES (Continued)

First disconnect the A.V.C. diode.

I.F. Circuits.—(1) Connect modulated oscillator tuned to 128 kc. to the control grid of V2 and earth, and output meter across external speaker terminals. Adjust T3 and T4 for maximum response.

(2) Connect modulated oscillator to control grid of V1 and short oscillator grid to earth. Adjust T1 and T2 for maximum on output meter.

(3) Check the above adjustments.

Note : Care should be taken to see that signal from the modulated oscillator is kept below A.V.C. level.

Medium-wave Band.—(1) Connect modulated oscillator, tuned to 214 metres, via a .0002 fixed condenser, to the aerial and earth terminals, keeping output meter connected across external speaker. Tune set to 214 metres, adjust oscillator trimmer for maximum response on output meter.

(2) Adjust aerial and H.F. trimmers for maximum.

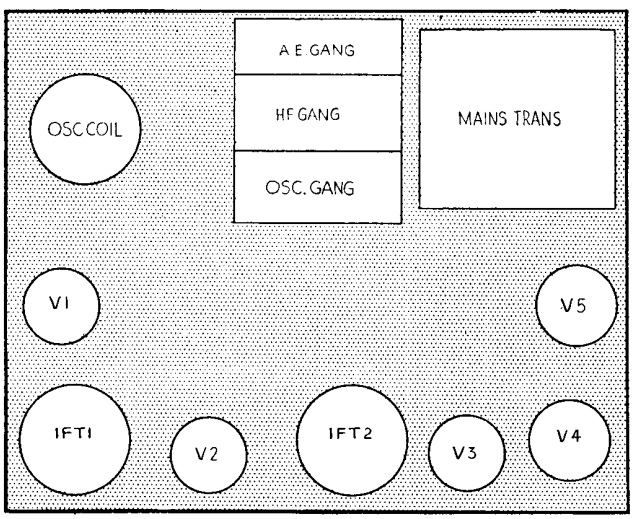
(3) Check the above adjustments at 500 metres.

Long-wave Band. — Tune modulated oscillator and receiver to 1,000 metres and adjust long-wave padding condenser T5.

QUICK TESTS

Quick tests are available on the terminal strip on the speaker. Readings between this and the chassis should be :—

Red lead, V4 anode, 210 volts.
Blue lead, unsmoothed H.T., 368 volts.
Yellow lead, smoothed H.T., 240 volts.



On the left, the tinted diagram shows how the components are disposed on the top of the 737 chassis. Below, right, is the underneath layout. Tables of component values are given, together with circuit, on the previous page.

VALVE READINGS

No signal. Volume and tone controls turned fully clockwise. 200 volt mains.

V.	Type.	Electrode.	Volts.	Ma.
1	41 MPG (met) (7)	Anode ..	215	1.4
		Screen grid	70	3
		Osc.anode	90	2.5
2	MVS/Pen(met) (7)	Anode ..	240	5
		Screen grid	90	1.4
3	DDT (met) (7)	Anode ..	170	2.75
4	41 MP/Pen (7)	Anode ..	210	35
		Screen ..	235	7.5
5	442 B.U. (4) .. (All Cossor)	Filament	360	—