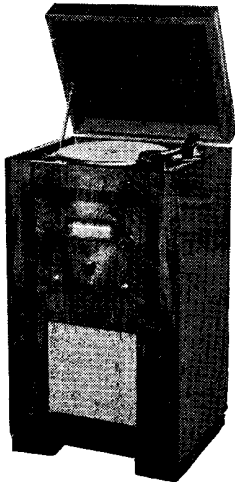


SERVICE ENGINEER



BURGOYNE "DRAGON" A.C. RECORDAGRAPH

The Recordagraph by Burgoyne Wireless (1930), Ltd., is a superhet radiogram with provision for home recording.

control. V4 is tone controlled by C27 and R21.

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

Removing Chassis.—Remove the four knobs from the front of the cabinet (grub screws), take out four long bolts that secure chassis to shelf runners, release mains cord from cleat and unsolder speaker leads from the transformer. The connections are as follows:—

Green-white, F, smoothed H.T.

White, 3, speech coil.

Green, F, unsmoothed H.T. (on right of transformer).

The chassis will then slide out of the cabinet far enough for the usual inspection. The speaker leads must be extended, as the field forms part of the H.T. smoothing equipment.

Special Notes.—The dial lamps are the normal 6-volt type for an A.C. mains receiver, and are easily removed by lifting the holder vertically.

(Continued on next page.)

CIRCUIT.—This receiver is an A.C. radiogram with provision for using the pick-up, in co-operation with a microphone, for home recording.

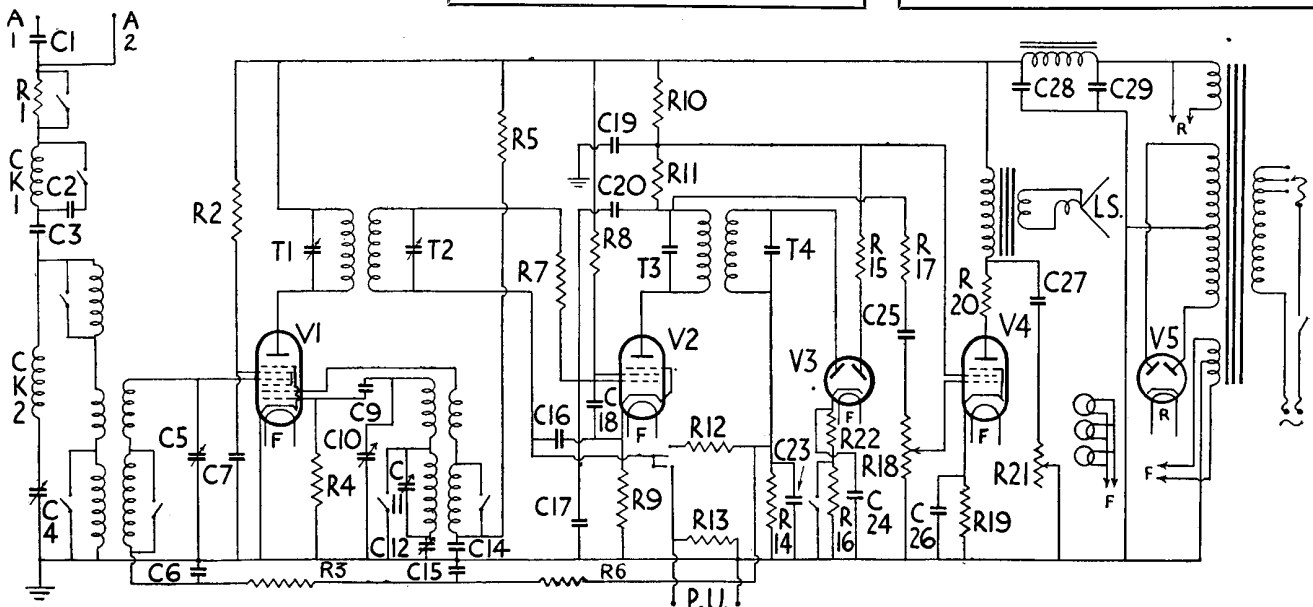
The aerial coupling to the grid of V1, a frequency changer, is through a series aerial condenser C1, a fixed resistance R1, shorted by a switch which acts as a sensitivity control, and a wave trap and an inductively coupled aerial coil.

V1 is coupled to V2, an H.F. pentode, through an I.F. transformer tuned to 465 kc. V2 is coupled to V3, a double diode, through a second I.F. transformer, a single diode of V3 being used to supply A.V.C. bias to V1 and V2.

After detection the L.F. output is fed back to the grid of V2, via R12 and R7, and after further amplification is passed to V4, the output pentode, via the volume

RESISTANCES		
R.	Purpose.	Ohms.
1	Sensitivity control	50,000
2	V1 screen decoupling	50,000
3	V1 A.V.C. decoupling	100,000
4	V1 osc. grid leak	250,000
5	V1 osc. anode decoupling	50,000
6	A.V.C. decoupling	500,000
7	V2 grid stabiliser	500
8	V2 screen decoupling	100,000
9	V2 cathode bias	200
10	V4 screen decoupling	5,000
11	V2 anode coupling	30,000
12	Diode output decoupling	100,000
13	Pick-up shunt	750,000
14	A.V.C. diode load	500,000
15	Idle diode feed	5 meg.
16	Sensitivity control	20,000
17	V2-V4 L.F. coupling	100,000
18	Volume control	500,000
19	V4 cathode bias	140
20	V4 anode decoupling	100
21	Tone control	10,000
22	V3 cathode bias	20,000

CONDENSERS		
C.	Purpose.	Mfd.
1	Series aerial	.00005
2	Wave trap	.00005
3	Series aerial	.0001
4	Wave trap	.0001
5	H.F. tuning	.0005
6	V1 A.V.C. decoupling	.1
7	V1 screen decoupling	.1
9	V1 osc. grid	.0001
10	Oscillator tuning	.0005
11	Long-wave trimmer	.00007
12	Long-wave padder	.00055
14	V1 osc. anode decoupling	.1
15	A.V.C. decoupling	.1
16	Diode	.001
17	V2 bias decoupling	.1
18	V2 screen decoupling	.1
19	V2 anode and V4 screen decoupling	2
20	H.F. by-pass	.0005
23	V3 A.V.C. diode decoupling	.001
24	V3 bias decoupling	.1
25	H.F. shunt	.01
26	V4 bias decoupling	25
27	Tone control	.025
28	H.T. smoothing	12
29	H.T. smoothing	8



An interesting reflex circuit is used in the Recordagraph. V2 is both an I.F. amplifier and an L.F. amplifier.

BURGOYNE "DRAGON" (Continued)

CIRCUIT ALIGNMENT NOTES

I.F. Circuits. — Connect modulated oscillator tuned to 465 kc. to the grid of V1 and earth and output meter across speaker terminals. Adjust T1, T2, T3 and T4 for maximum reading on meter.

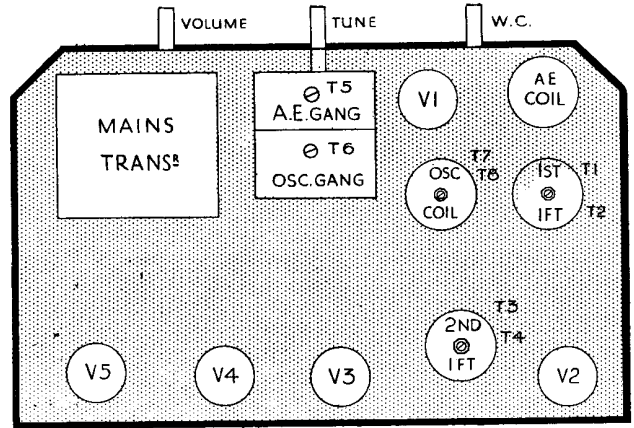
Medium-wave Band.—Transfer oscillator to aerial and earth terminals, and tune it and receiver to 210 metres. Adjust T5 and T6 for maximum reading.

Tune set and oscillator to 500 metres and retrim T5 and T6.

Repeat at 210 metres for check.

Long-wave Band.—Tune set and oscillator to 1,000 metres and adjust T7 and T8 for maximum reading on output meter.

To take out the chassis, the leads to the speaker transformer have to be unsoldered. The list of connections is given under the notes on "Removing Chassis." The adjoining diagram shows the top deck chassis layout.



QUICK TESTS

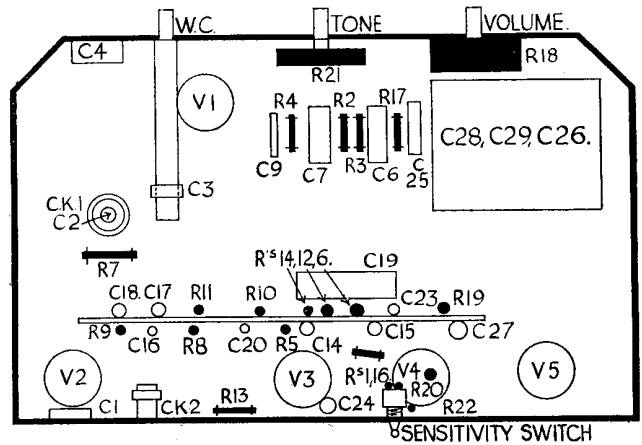
Voltages read between the terminal strip on the speaker and the chassis should be:—
Green-white lead, smoothed H.T., 280 volts.
Screen, unsmoothed H.T., 380 volts.

VALVE READINGS

No signal. Volume at maximum. Selectivity maximum, 200 volt mains.

V.	Type.	Electrode.	Volts.	Ma.
1	FC4..	anode ..	280	5
	(7) Met.	screen ..	110	3.2
		osc. anode..	100	2.7
2	VP4B	anode ..	80	1.7
	(7) Met.	screen ..	80	4.8
3	2D4A..	diode ..	—	—
4	Pen. 4VB ..	anode ..	260	29
	(7)	screen ..	230	3.3
(The above are all Mullard)				
5	R.3 ..	filament ..	380	—
(Micromesh)				

On the right is the diagram showing how the components are situated inside the Burgoyne "Dragon" chassis. The lists of components and the theoretical circuit are given on the previous page.



A PARTICULARLY thorough treatise on the subject of interference with radio reception and methods that can be used to cure or minimise the trouble is to be found in "Radio Interference and its Suppression," by J. H. Reyner. The book is published by Chapman and Hall at 9s. 6d., and is available from Odhams Technical Book Dept., 85, Long Acre, W.C.2, at 10s., post free.

At the outset Mr. Reyner deals briefly

Interference and Its Suppression

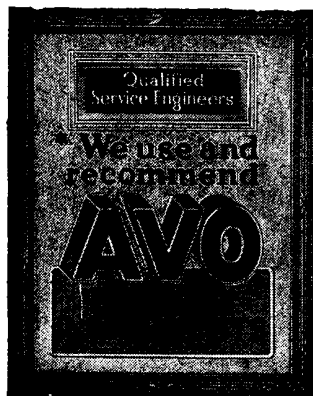
with interference between transmitters themselves, but quickly reaches the main object of the book, man-made static.

The chapters in the book follow an easy reference order, dealing first with how interference arises, then with methods by

which it reaches the set, and finally the preventive measures.

There is a section dealing with both simple and scientific methods to employ to trace the source of interference, and also hints on how to recognise the trouble from the noises that are heard from the set.

Modern suppressors of all types, together with anti-interference aerials, are dealt with, while information is given on the design of such apparatus.



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