

KOLSTER-BRANDES 817

Four-valve, two-waveband, all-dry battery-operated portable superhet. Made by Kolster-Brandes, Ltd., Cray Works, Sidcup, Kent.

Circuit.—The medium-wave grid coil of V1 also forms the frame aerial. A connection is provided by C1 for an external aerial. An iron-dust cored loading coil is brought into circuit for long-wave reception.

V1 is a frequency-changer and the oscillator circuits are a simple tuned

grid arrangement with coupling coils actually in the anode path. Tracking is obtained by the shape of the gang condenser vanes and there is no padding.

A trimmer-tuned intermediate-frequency transformer passes the signal on to V2, the amplifier. A second similar I.F. transformer leads to V3, a single-diode triode.

The volume control forms the diode load. The "steady" modulation voltage is tapped off by R4 and taken to V1 and V2 for A.V.C. The L.F. component is tapped off by C8 and introduced to the grid circuit of V3. R5 and C7 form an H.F. filter.

V3 biases itself. The amplified signal is developed across R7 and injected via C9 to the grid circuit of V4, which consists of an auto-transformer with a series stabiliser R8. Bias is obtained by the voltage drop of the common anode current through R9 between L.T. negative and H.T. negative.

V4 is an output pentode. The H.T. battery is decoupled by C13, an electrolytic, with a H.F. by-pass C11.

Batteries.—The L.T. unit is an Alpha type 217 providing 1.5 volts and the H.T. is an Alpha type 233 giving

90 volts. The total H.T. consumption should be about 9.6 ma., and the L.T. .25 amp. Bias is provided by R9, the voltage drop being 7.3 volts.

VALVE READINGS

V	Type	Electrode	Volts	Ma.
1	1A7EG	Anode	80	.42
		Screen	31	.57
		Osc. anode	80	1.04
2	1N5EG	Anode	80	.66
		Screen	80	.16
3	1H5G	Anode	39	.05
4	1C5EG	Anode	76	5.5
		Screen	80	1.2

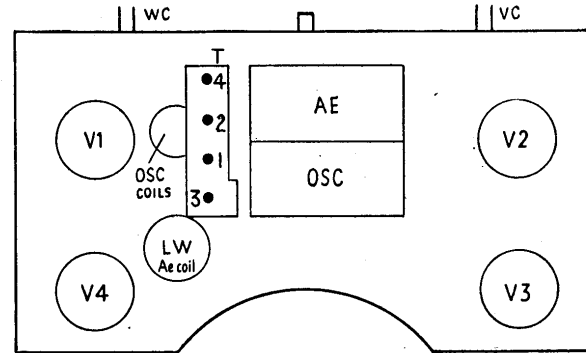
RESISTANCES

R	Ohms.	R	Ohms.
1	.. .25 meg.	7	.. .25 meg.
3	.. 50,000	8	.. 50,000
4	.. 1 meg.	9	.. 800
5	.. 50,000	VC	.. 1 meg.
6	.. 2 meg.		

CONDENSERS

C	Mfds.	C	Mfds.
1	.. 5 mmfds.	8	.. .02
3	.. 100 mmfds.	9	.. .02
4	.. 100 mmfds.	10	.. .005
5	.. .1	11	.. .1
6	.. .1	12	.. .2
7	.. 200 mmfds.	13	.. 2

This is a neat little all-dry portable superhet covering two bands only. Trimmers must be finally adjusted with the chassis in the cabinet.



GANGING

I.F. Circuits.—Inject 464 kc. to the grid of V1 via a .1 mfd. condenser. Tune the set to 580 m. Adjust I.F. trimmers for maximum, keeping the signal below A.V.C. level.

M.W. Band.—Tune to 214 m. (spot). Inject 1,400 kc. to aerial. Adjust T1 and T2. There is no padding.

L.W. Band.—Tune to 1,200 m. Inject 250 kc. and adjust T3 and T4.

Then, with set mounted in cabinet, batteries in position and back replaced, connect generator to a short length of wire trailed a foot or two from the set.

Tune to 214 m., inject 1,400 kc. and adjust T2 through aperture in back.

Tune to 1,200 m., inject 250 kc. and adjust T4 through aperture in back.

EVER READY 5103

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Tune to and inject 500 m., and adjust T8.

Repeat both trimming and padding. **S.W. Band.**—Inject and tune 15 mc. Screw T9 right in, and then set to the first peak heard from light (one with higher capacity). Adjust T1.

Tune to and inject 7.5 mc. and adjust top turn of S.W. oscillator coil.

Readjust T9 and T10.

PUSH-BUTTONS

With the P.B. trimmers, the oscillator one should be adjusted first.

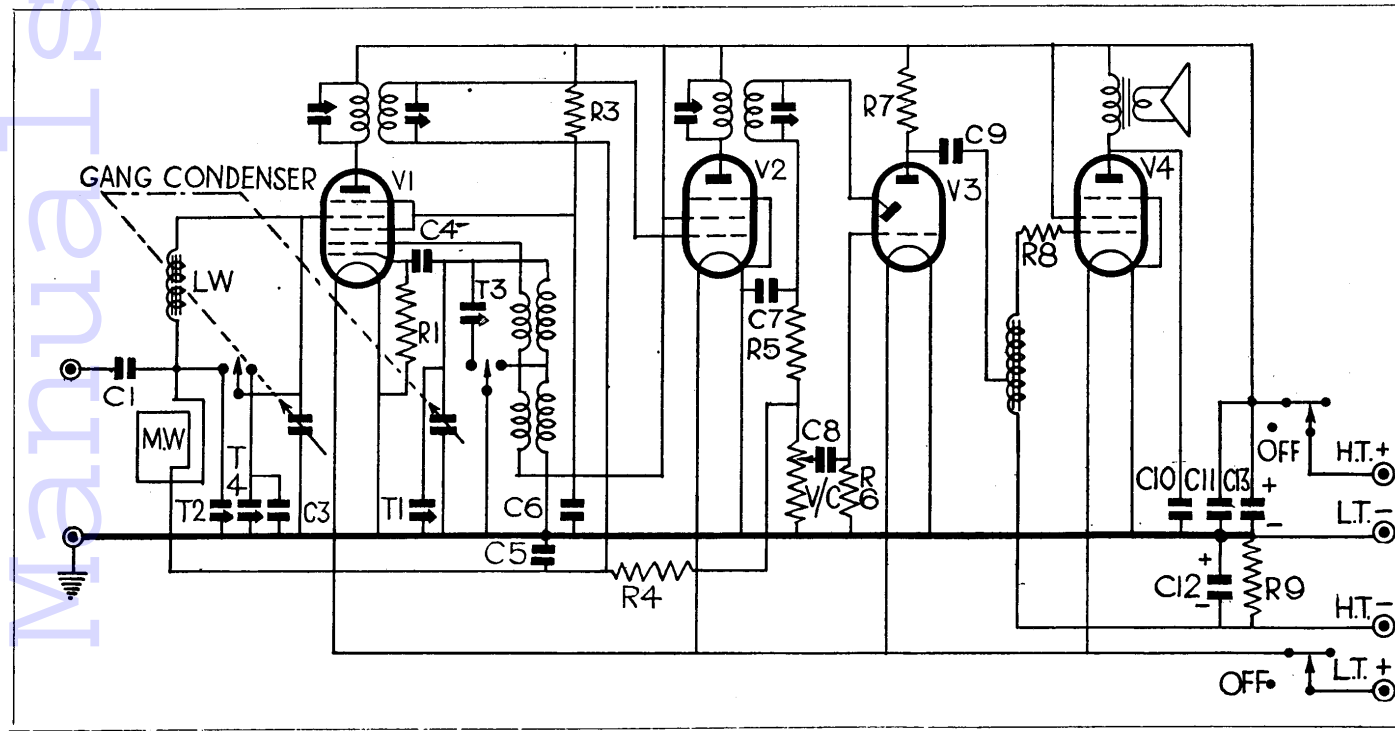
The coverage of the buttons is:—

Button	Range
1	... Mains On-Off
2	... 200—300
3	... 200—300
4	... 290—445
5	... 350—480
6	... 470—535
7	... 850—1,460
8	... 1,300—1,665

Fuses Blowing

THE fuses of a set continually blew. There was no short circuit to be found and the rectifier was replaced without success.

Checking the rectifier circuit, however, disclosed that a carbonised leakage path had formed between the wafers of the valve-holder.



Points of interest are the aerial loading coil for long-wave reception and the simplicity of the combined L.F. and A.V.C. diode circuit. An auto-connected L.F. transformer increases gain.