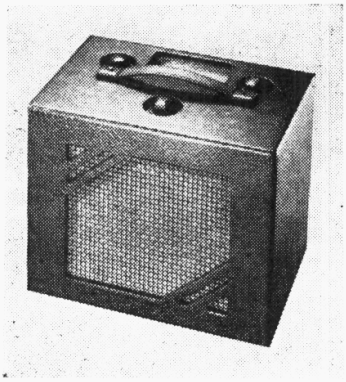
'TRADER' SERVICE SHEET 321

EVER READY 5041

4-VALVE BATTERY PORTABLE



THE Ever Ready 5041 is a 4-valve battery-operated portable receiver using a variable-mu hexode RF amplifier, a triode detector, a triode first AF amplifier, and a pentode output valve. The controls are at the top of the cabinet, with a carrying handle, and there is a turntable on the bottom of the cabinet.

CIRCUIT DESCRIPTION

Tuned frame aerial input **L1, L2, C13** to variable-mu hexode valve (**V1, Ever Ready metallised K50N**) with second and third grids strapped to operate as pentode RF amplifier. Gain control by potentiometer **R15** in series with limiting resistance **R16** across automatic GB potential divider.

Tuned-anode coupling by **L5, L6, C16** between **V1** and triode detector valve (**V2, Ever Ready metallised K30K**) which operates on the grid leak system with **C4** and **R4.** Reaction is applied from anode via coils **L3, L4** and controlled by variable condenser **C15.** RF filtering in anode circuit by **C6.**

Resistance-capacity coupling by **R8, C7, R9,** via RF filter **R10, C8,** between **V2** and triode AF amplifying valve (**V3, Ever Ready metallised K30K**). RF filtering in anode circuit by **C9.**

Parallel-fed transformer coupling by **R11, C10, T1,** via RF stopper **R12,** between **V3** and pentode output valve (**V4, Ever Ready K70B**). Fixed tone correction in anode circuit by **C11** (two condensers connected in parallel). GB potential for **V4** is automatically obtained from junction of resistances **R13, R14,** which form a potential divider in parallel with **R15, R16** in HT negative lead to chassis. Auto GB circuit decoupling by large capacity electrolytic condenser **C12.**

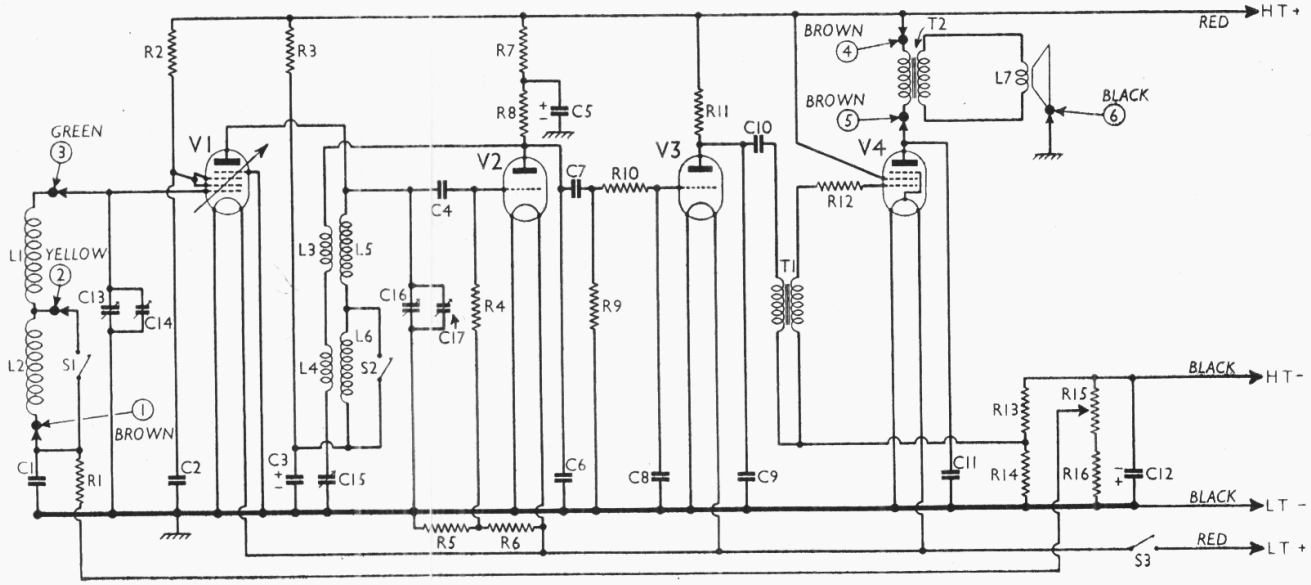
COMPONENTS AND VALUES

	CONDENSERS	Values (μF)
C1	V1 CG decoupling	0·1
C2	V1 SG decoupling	0·1
C3*	V1 anode decoupling	2·0
C4	V2 CG condenser	0·0001
C5*	V2 anode decoupling	2·0
C6	V2 anode RF by-pass	0·0003
C7	V2 to V3 AF coupling	0·1
C8	V3 CG RF by-pass	0·0001
C9	V3 anode RF by-pass	0·001
C10	AF coupling to T1	0·01
C11	Fixed tone corrector	0·003§
C12*	Auto GB by-pass	50·0
C13†	Frame aerial circuit tuning	—
C14‡	Frame aerial MW trimmer	—
C15†	Reaction control, ganged R15	—
C16†	V1 anode circuit tuning	—
C17‡	V1 anode MW trimmer	—

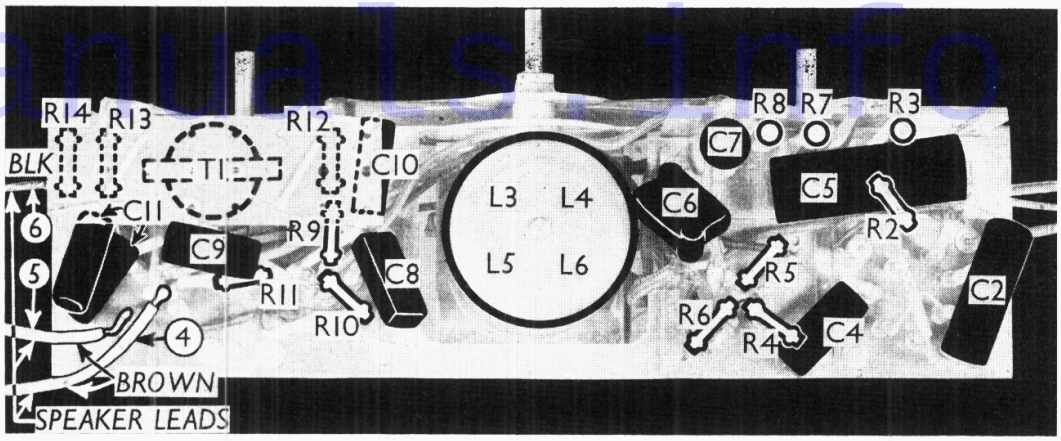
§ One 0·002 and one 0·001 in parallel.
* Electrolytic. † Variable. ‡ Pre-set.

	RESISTANCES	Values (ohms)
R1	V1 CG decoupling	510,000
R2	V1 SG HT feed	51,000
R3	V1 anode HT feed	11,000
R4	V2 CG resistance	2,100,000
R5	V2 GB filament pot.	1,500
R6	V2 GB filament pot.	1,500
R7	V2 anode decoupling	41,000
R8	V2 anode load	31,000
R9	V3 CG resistance	1,100,000
R10	V3 CG RF stopper	110,000
R11	V3 anode load	51,000
R12	V4 CG RF stopper	110,000
R13	V4 auto GB potential divider	1,000
R14	V4 auto GB potential divider	450
R15	V1 gain control, ganged C15	5,000
R16	V1 fixed GB	2,100

	OTHER COMPONENTS	Approx. Values (ohms)
L1	Frame aerial windings	1·75
L2	Frame aerial windings	30·0
L3	Reaction coils, total	8·0
L4	Reaction coils, total	
L5	V1 anode circuit tuning coils	2·75
L6	V1 anode circuit tuning coils	13·0
L7	Speaker speech coil	2·0
T1	Intervalve trans. Pri.	2,000·0
	Intervalve trans. Sec.	8,000·0
T2	Speaker input trans. Pri.	1,000·0
	Speaker input trans. Sec.	0·2
S1, S2	Waveband switches	—
S3	LT circuit switch	—



Circuit diagram of the Ever Ready 5041 battery portable.



Front view of the chassis. The speaker leads are coded.

DISMANTLING THE SET

Removing Chassis.—To remove the chassis from the cabinet, first remove the three control knobs (pull off), then the back, batteries and **V1.** Now unsolder the leads to the frame aerial and speaker, including the black "earthing" lead to the speaker frame.

Next remove the four bolts holding the chassis to the top of the cabinet, when the chassis can be withdrawn.

When replacing, connect the frame aerial leads in the following order, starting with the tag furthest away from you :—1, brown ; 2, yellow ; 3, green. Take the two brown leads (4 and 5) to the outer tags on the speaker transformer and the black "earthing" lead (6) to the soldering tag on the top right-hand speaker fixing screw.

Removing Speaker.—To remove the speaker from the cabinet, first remove the chassis as described above, then unsolder the tinned copper "earthing" lead to the tag on one of the speaker fixing screws and slacken the four clamps holding the sub-baffle to the front of the cabinet.

When replacing, see that the transformer is on the right, connect the leads as above, and take the tinned copper "earthing" lead to the tag on the top right-hand speaker fixing screw.

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating with a new HT battery reading 91V, on load. The receiver was tuned to the lowest wavelength on the medium band and the combined volume and reaction control was set so that the potentiometer slider had just reached the end of the element but the vanes of the reaction condenser were not in mesh. There was no signal input, the frame aerial connections being shorted.

Voltages were measured on the 400 V scale of a model 7 Universal Avometer, chassis being negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 K50N ..	70	0·9	53	0·3
V2 K30K ..	46	0·5	—	—
V3 K30K ..	48	0·6	—	—
V4 K70B ..	80	3·2	84	0·5

GENERAL NOTES

Switches.—**S1, S2** are the waveband switches, and **S3** the LT circuit switch, ganged in a single unit beneath the control panel, and identified in our under-chassis view. **S1** and **S2** are *closed* on MW and *open* on LW, while **S3** is only open in the "off" position.

Coils.—**L1** and **L2** are the frame aerial windings, incorporated in the cabinet, the three connections being brought out to tags inside the left-hand side of the cabinet. These connections are numbered 1 to 3 in our circuit diagram, and the wires are colour-coded.

L3-L6 are in a screened unit projecting through the valve platform, and shown in both our chassis illustrations.

Components R15, C15.—The gain and reaction controls are combined in a single unit, so arranged that only after the gain has reached its maximum is the reaction increased.

Condenser C11.—This consists of two units in parallel in our chassis.

Batteries.—LT, Ever Ready J203 2V 20 AH celluloid-cased jelly-acid cell. HT, Ever Ready Portable No. 61 90 V HT battery. GB is automatic.

Battery Leads and Voltages.—Black lead, spade tag, LT negative ; red lead, spade tag, LT positive 2 V ; black lead and plug, HT negative ; red lead and plug, HT positive 90 V.

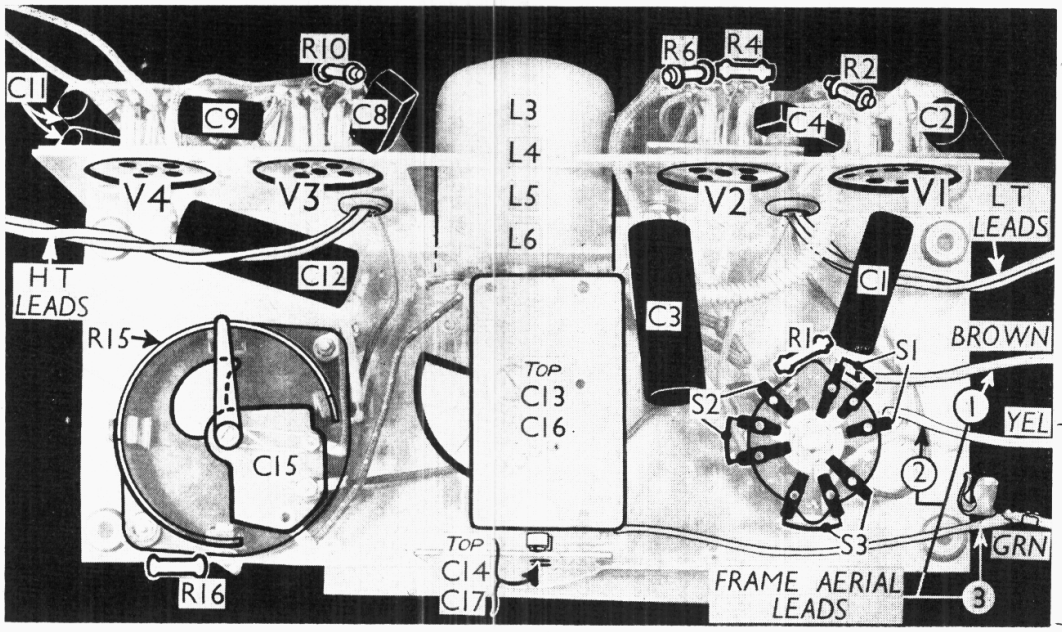
CIRCUIT ALIGNMENT

With gang at maximum, the pointer should cover the horizontal line at 2,100 m.

Couple the output from the signal generator loosely to the frame aerial windings by one or two turns of wire wound round the outside of the cabinet.

Switch set to MW, tune to 250 m on the scale, feed in a 250 m (1,200 KC/S) signal, and adjust **C17** and **C14** for maximum output, keeping the combined gain and reaction control just short of the oscillation point.

Finally, readjust **C14** slightly if necessary on an actual station of low power.



Under-chassis view, showing the switches and the frame aerial and battery leads.