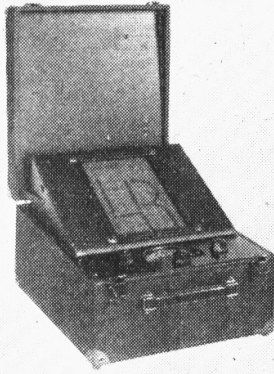


'TRADER' SERVICE SHEET

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# EVER READY 5010

## BATTERY PORTABLE RECEIVER



**I**N the Ever Ready 5010 4-valve battery portable receiver the panel carrying the speaker also forms the cover for the battery compartment and it is arranged so that it is automatically inclined when the lid of the case is raised. The gain and reaction controls are ganged on one spindle.

### CIRCUIT DESCRIPTION

Tuned frame aerial input **L2, L3, C14** to variable-mu pentode valve (**V1, Ever Ready metallised K50M**) operating as RF amplifier with gain control by potentiometer **R2**, which varies GB applied. Provision for connection of external aerial and earth via coupling coil **L1**.

Choke-capacity fed tuned-grid coupling by **L4, C3, L7, L8, C17**, between **V1** and

triode detector valve (**V2, Ever Ready metallised K30K or K30C**) which operates on the grid leak system with **C5** and **R3, R4**. Reaction is applied from anode by coils **L5, L6** and controlled by **C15**. RF filtering by **R7, C7**, and **C8** in anode circuit.

Resistance-capacity coupling by **R6, C9** and **R8**, via RF stopper **R9**, between **V2** and triode AF amplifying valve (**V3, Ever Ready metallised K30K or K30C**). RF filtering by **C10** in anode circuit.

Resistance-capacity coupling by **R10, C11** and **R11**, between **V3** and pentode output valve (**V4, Ever Ready K70D**). RF potential is obtained from junction of **R12, R13**, which form a potential divider across GB section of HT battery.

### COMPONENTS AND VALUES

CONDENSERS		Values (μF)
C1	V1 CG decoupling .. ..	0.1
C2	V1 SG decoupling .. ..	0.1
C3	V1 to V2 RF coupling .. ..	0.00005
C4	V1 anode LW trimmer .. ..	0.000005
C5	V2 CG condenser .. ..	0.00005
C6*	V2 anode decoupling .. ..	2.0
C7	V2 anode RF by-pass con-	0.0002
C8	densers .. ..	0.001
C9	V2 to V3 AF coupling .. ..	0.025
C10	V3 anode RF by-pass .. ..	0.001
C11	V3 to V4 AF coupling .. ..	0.025
C12	V4 anode RF by-pass .. ..	0.001
C13†	Frame aerial MW trimmer ..	—
C14†	Frame aerial circuit tuning ..	—
C15†	Reaction control, ganged R2 ..	—
C16†	V1 anode circuit MW trimmer ..	—
C17†	V1 anode circuit tuning .. ..	—

\* Electrolytic. † Variable. ‡ Pre-set.

RESISTANCES		Values (ohms)
R1	V1 CG decoupling .. ..	110,000
R2	V1 gain control, ganged C15 ..	3,000
R3	V2 grid leak and filament {	2,100,000
R4	potential divider resistances {	2,100,000
R5	V2 anode decoupling .. ..	30,000
R6	V2 anode load resistance .. ..	30,000
R7	V2 anode RF stopper .. ..	50,000
R8	V3 CG resistance .. ..	510,000
R9	V3 CG RF stopper .. ..	50,000
R10	V3 anode load resistance .. ..	50,000
R11	V4 CG resistance .. ..	260,000
R12	V4 GB potential divider resis-	300
R13	tances .. ..	1,400

OTHER COMPONENTS		Approx. Values (ohms)
L1	External aerial coupling .. ..	0.2
L2	Frame aerial windings {	1.8
L3		16.0
L4	V1 anode RF choke .. ..	550.0
L5	Reaction coils .. ..	8.6
L6		—
L7	V2 grid circuit tuning coils {	3.0
L8		19.0
L9	Speaker speech coil .. ..	2.4
T1	Output { Pri. .. ..	840.0
	trans. { Sec. .. ..	0.3
S1, S2	Waveband switches .. ..	—
S3	GB circuit switch .. ..	—
S4	HT circuit switch .. ..	—
S5	LT circuit switch .. ..	—

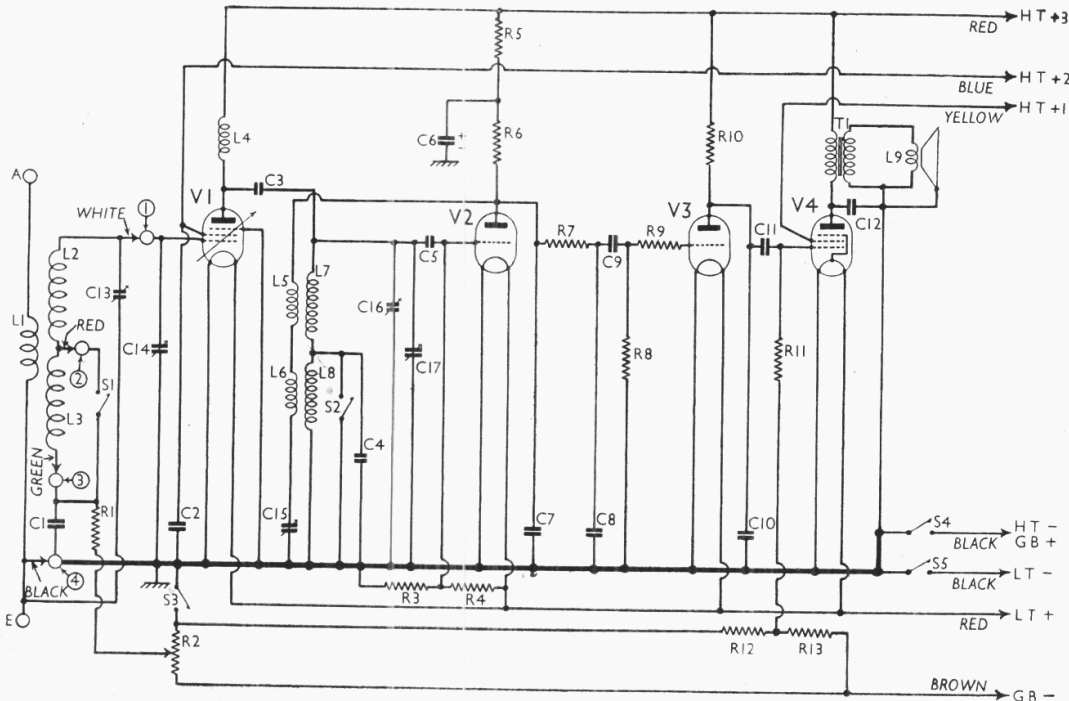
### DISMANTLING THE SET

**Removing Chassis.**—To remove the chassis from the cabinet, raise the speaker panel, and disconnect and remove the batteries. Now remove the two valves on the right, disclosing the terminal panel for the frame aerial leads, which disconnect

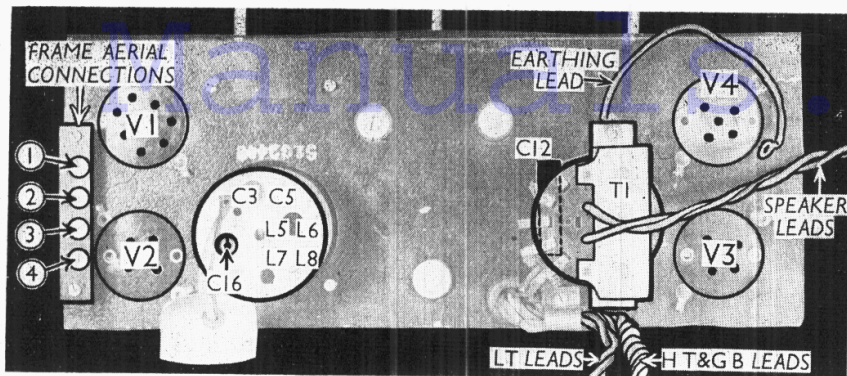
(screw terminals). Then remove the four round-head wood screws holding the control panel to the fillets in the cabinet, when the chassis and speaker can be withdrawn together.

**When replacing.** connect the frame aerial leads as follows, numbering the terminals from bottom to top:—4, black; 3, green; 2, red; 1, white.

**Removing Speaker.**—To remove the speaker from the cabinet, lift the speaker



Circuit diagram of the Ever Ready 5010 battery portable. The numbers in circles refer to the frame aerial connections, which are indicated in the plan chassis view.



Plan view of the chassis. The frame aerial connections are numbered in accordance with the circuit diagram.

panel up vertically, unsolder the leads and remove the four screws (with washers and lock washers) holding the speaker and the sub-baffle. When replacing, see that the terminal panel is on the left and do not forget to replace the earthing lead on the bottom right-hand screw and the earthing lead and cleat on the bottom left-hand screw.

**Removing Frame Aerial.**—If it is desired to remove the frame aerial from the lid of the cabinet, remove the four screws (two with rubber cushions) holding the covering panel, unsolder the connecting leads and remove the four round-head wood screws holding the frame assembly to the lid. When replacing, see that the terminal panel is on the right and connect the leads as follows, numbering the tags from bottom to top:—1, black and tinned copper earthing lead in black insulating sleeving; 2, green; 3 and 4 joined, red; 5, white and tinned copper lead in black insulating sleeving which goes to the trimmer. Do not forget to replace the rubber cushions on the two bottom screws holding the cover over the frame assembly.

**VALVE ANALYSIS**

Valve voltages and currents given in the table (col. 2) are those measured in our receiver when it was operating with a new combined HT and GB battery reading 128 V overall, on load. The receiver was tuned to the lowest wavelength on the medium band and the combined gain

and reaction control was at *minimum*, but there was no signal input as the top three frame aerial terminals (white, red and green leads) were shorted.

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

In our receiver V4 was grade C.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 K50M	119	Nil†	64	Nil‡
V2 K30K	52	0.8	—	—
V3 K30K	61	1.1	—	—
V4 K70D	116	3.8	100	0.7

† 0.7 mA } With combined gain and reaction control  
 ‡ 0.2 mA } at a position just short of oscillation.

**GENERAL NOTES**

**Switches.**—S1, S2 are the waveband switches, and S3-S5 the battery circuit switches, ganged in a single unit beneath the chassis, the individual switches being identified in the under-chassis view.

The table below gives the switch positions for the three control settings, starting from the off position, and turning the knob clockwise. A dash indicates open, and C, closed.

Switch	Off	MW	LW
S1	C	C	—
S2	C	C	—
S3	—	C	C
S4	—	C	C
S5	—	C	C

**Coils.**—L1, L2 and L3 are the external aerial coupling and frame windings, in the lid of the cabinet. L4 is an RF choke beneath the chassis, and L5-L8 are in a screened unit, partially sunk in the chassis deck. This unit also contains the trimmer C16 and the fixed condensers C3 and C5.

**Components R2, C15.**—The gain control R2 is ganged with the reaction control C15, and matters are so arranged that the gain reaches its maximum before reaction begins to be applied.

**Trimmer C13.**—This is inside the frame aerial in the lid, to one side of the paxolin connection panel (which also carries the external aerial and earth sockets).

**Batteries.**—LT, Ever Ready 2 V 20 AH celluloid cased jelly-acid cell, type J203. HT and GB, Ever Ready Winner 126 V combined HT and GB battery, tapped in 1.5 V steps from negative to 12 V, and then at greater intervals.

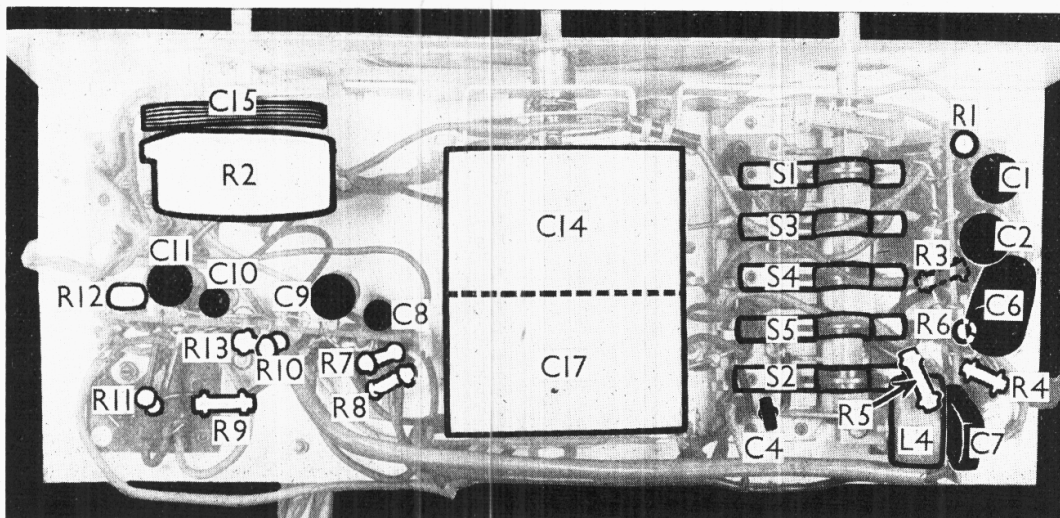
**Battery Leads and Voltages.**—Black lead, spade tag, LT negative; red lead, spade tag, LT positive 2 V; brown lead and plug, GB negative, in negative socket of battery; black lead and plug, HT negative and GB positive, in 9 V positive socket of battery; yellow lead and plug, HT positive 1, voltage socket depending on letter on V4; A, 124.5 V; B, 117 V; C, 108 V; D, 99 V; blue lead and plug, HT positive 2, 70 V socket; red lead and plug, HT positive 3, 126 V socket.

**CIRCUIT ALIGNMENT**

To adjust the pointer, remove the chassis and rotate the gang until pointer is at the higher wavelength end of the scale. The gang should now be fully in mesh. If it is not, release the two grub screws which fix the rotor drive to the condenser spindle, and adjust the rotor while keeping the pointer at the stop at the top of the scale. Tighten the two grub screws.

To align the set, it is not necessary to remove the chassis. However, remove the fibre cover from the cabinet lid, exposing the frame aerial MW trimmer C13. Switch the set to MW, and set pointer to 200 m on the scale. Connect signal generator to external A and E sockets, feed in a 200 m (1,500 KC/S) signal, and adjust C16, then C13, for maximum output. The volume control should be in a mid-way

position so that the slider of R2 is at the chassis potential end, while C15 is at minimum capacity. There are no LW adjustments.



Under-chassis view. C15 and R2 are ganged, C15 only beginning to increase in capacity after R2 has reached the position giving maximum gain. The switches are individually indicated.