'TRADER' SERVICE SHEET 175

EVER READY 5024 AND 5012

ALTERNATIVE aerial sockets and an arrangement whereby a Droitwich rejector can be brought into circuit are included in the Ever Ready 5024 3-valve battery-operated receiver.

The chassis is very similar to that of an older model, the 5012, the only apparent difference being that the 5012 has no Droitwich rejector.

CIRCUIT DESCRIPTION

Two alternative aerial input connections to coupling coil **L2**. **A1** includes Droitwich rejector **L1, C1** (which can be short-circuited by means of a plug and socket arrangement) and series condenser **C2,** while **A2** is coupled by a small condenser **C3.** Capacitative aerial coupling by small condenser **C4.** Single tuned circuit **L3, L4, C13** precedes variable-mu pentode H.F. amplifier (**V1, Ever Ready metallised K50M**). Gain control by variable G.B. potentiometer **R8**

Choke-fed tuned-grid coupling by **L5, C7, L7, L8** and **C16** between **V1** and triode detector valve (**V2, Ever Ready metallised K30C or K30D**) which operates on grid leak system with **C8** and **R3.** Reaction is applied from anode by coil **L6** and controlled by variable condenser **C15.** H.F. filtering by anode H.F. choke **L9** and by-pass condenser **C10.**

Parallel-fed transformer coupling by **R5, C11** and **T1** between detector and pentode output valve (**V3, Ever Ready K70B**). Fixed tone correction in anode circuit by R.C. filter **R9, C12**; two-point tone control by plug and socket arrangement, which enables resistance **R9** to be short-circuited.

DISMANTLING THE SET

A detachable bottom is fitted to the cabinet and upon removal (four round - head wood screws) gives access to most of the 'under-chassis components.

Removing Chassis.—If it is desired to remove the chassis from the cabinet, first remove the four control knobs (pull off) and free the accumulator leads from the two cleats on the side of the cabinet. Now remove the four bolts (with washers) holding the chassis to the bottom of the cabinet, when it can be withdrawn to the extent of the speaker leads.

Removing Speaker.—Should it be necessary to remove the speaker from the cabinet, remove the four screws (with spring washers and washers) holding it to the sub-baffle. Alternatively, the speaker and sub-baffle may be removed together by removing the nuts, lock washers and washers from the four bolts with ornamental heads, which hold the sub-baffle to the front of the cabinet.

COMPONENTS AND VALUES

	RESISTANCES	Values (ohms)
R1	V1 C.G. decoupling	110,000
R2	V1 S.G. H.T. feed	40,000
R3	V2 grid leak	2,100,000
R4	V2 anode decoupling	11,000
R5	V2 anode load	40,000
R6	G.B. potential divider	800
R7	G.B. potential divider	1,500
R8	V1 gain control	3,000
R9	Part of T.C. filter	31,000

	CONDENSERS	Values (μF)
C1	Droitwich rejector tuning	0·0003
C2	Aerial series condensers	0·0003
C3	Aerial series condensers	0·000008
C4	Capacitative aerial coupling	0·000005
C5	V1 C.G. decoupling	0·1
C6	V1 S.G. by-pass	0·1
C7	V1 to V2 H.F. coupling	0·00005
C8	V2 C.G. condenser	0·00005
C9	V2 anode decoupling	0·5
C10	V2 anode H.F. by-pass	0·0002
C11	L.F. coupling to T1	0·1
C12	Part of T.C. filter	0·01
C13†	Aerial circuit tuning	—
C14‡	Aerial circuit trimmer	—
C15†	Reaction control	0·0005
C16†	V2 C.G. circuit tuning	—
C17‡	V2 C.G. circuit trimmer	—

‡ Variable. ‡ Pre-set.

	OTHER COMPONENTS	Approx. Values (ohms)
L1	Droitwich rejector coil	20·0
L2	Aerial coupling coil	24·0
L3	Aerial tuning coils	3·0
L4	Aerial tuning coils	15·0
L5	V1 anode H.F. choke	550·0
L6	Reaction coil	2·4
L7	V2 grid tuning coils	2·2
L8	V2 grid tuning coils	15·8
L9	V2 anode H.F. choke	350·0
L10	Speaker speech coil	1·2
T1	Intervalve trans. Pri.	930·0
	Intervalve trans. Sec.	8,800·0
T2	Output trans. Pri.	830·0
	Output trans. Sec.	0·3
S1, S2	Waveband switches	—
S3	G.B. circuit switch	—
S4	L.T. circuit switch	—

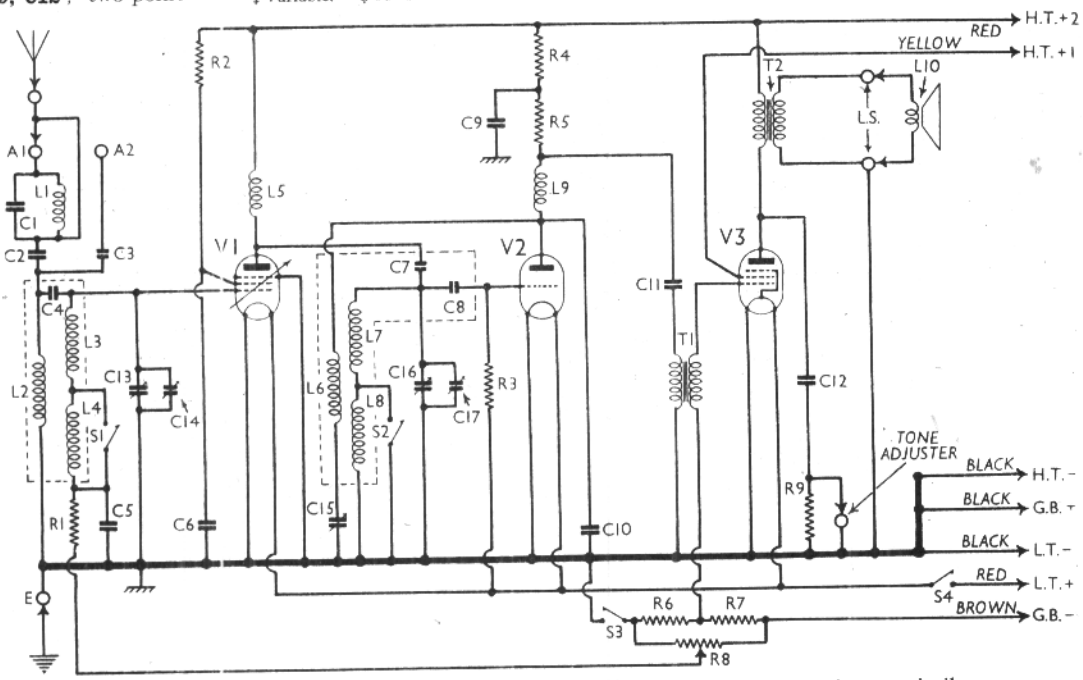
VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating with a new H.T. battery reading, 128 V on load. The volume control was at maximum, but the reaction control was at minimum, and there was no signal input.

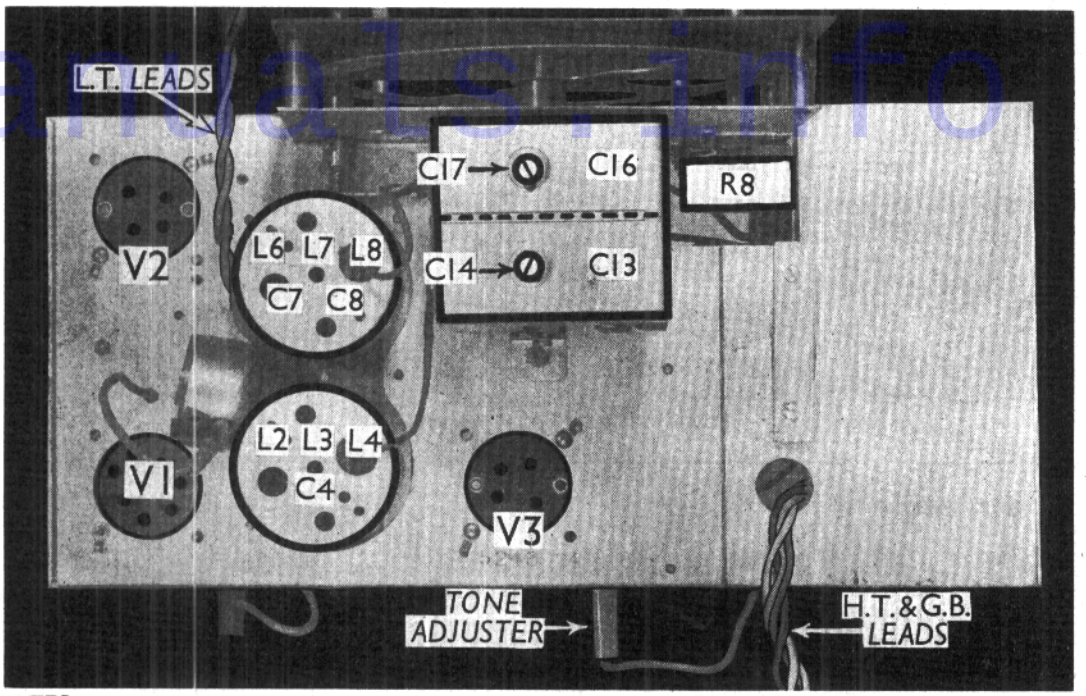
Voltages were measured on the 1,200 V scale of an Avometer, chassis being negative.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 K50M	126	1·8	95	0·5
V2 K30D	40	1·7	—	—
V3 K70B*	125	3·0	128	0·6

* Marked "A" in our case.



Circuit diagram of the Ever Ready 5024 battery receiver. The 5012 is very similar.



Plan view of the chassis. The first coil unit contains C4 in addition, while the second includes also C7 and C8. The tone adjuster is a plug and socket device at the rear of the chassis.

GENERAL NOTES

Switches.—**S1** and **S2** are the wave-change switches, both *closed* on M.W. and *open* on L.W. **S3** and **S4** are the G.B. and L.T. circuit switches, both *closed* when the set is on, and *open* when it is off. The switches are identified in our under-chassis view. **S1** is beneath **L1.**

Coils.—**L1** is in two sections on a tubular former beneath the chassis. **L2-L4** are in a screened unit on the chassis deck, also containing **C4,** while **L6-L8** are in a further screened unit, also containing **C7** and **C8. L5** and **L9** are two H.F. chokes, mounted beneath the chassis.

External Speaker.—A low resistance (1·5 to 2·5 O) external speaker may be connected to the socketed plugs of the internal speaker. If desired, the internal speaker plugs can be withdrawn, and the external speaker only may be plugged into the speaker sockets.

Tone Adjuster.—When the green plug is plugged into its socket on the chassis, **R9** is shorted, and the upper register is reduced. By removing the plug, the tone is raised.

Aerial Inputs.—When the red socketed plug is inserted in the **A1** socket, and the aerial plugged into its socket, the Droitwich rejector is shorted out. By letting the red plug hang loose, and using the **A1** socket normally, the rejector is brought into use. The **A2** socket brings the very small series condenser **C3** into use, and reduces the signal input. The Droitwich rejector is not adjustable.

Condenser C3.—This is a small capacity, and is formed of twisted insulated wires.

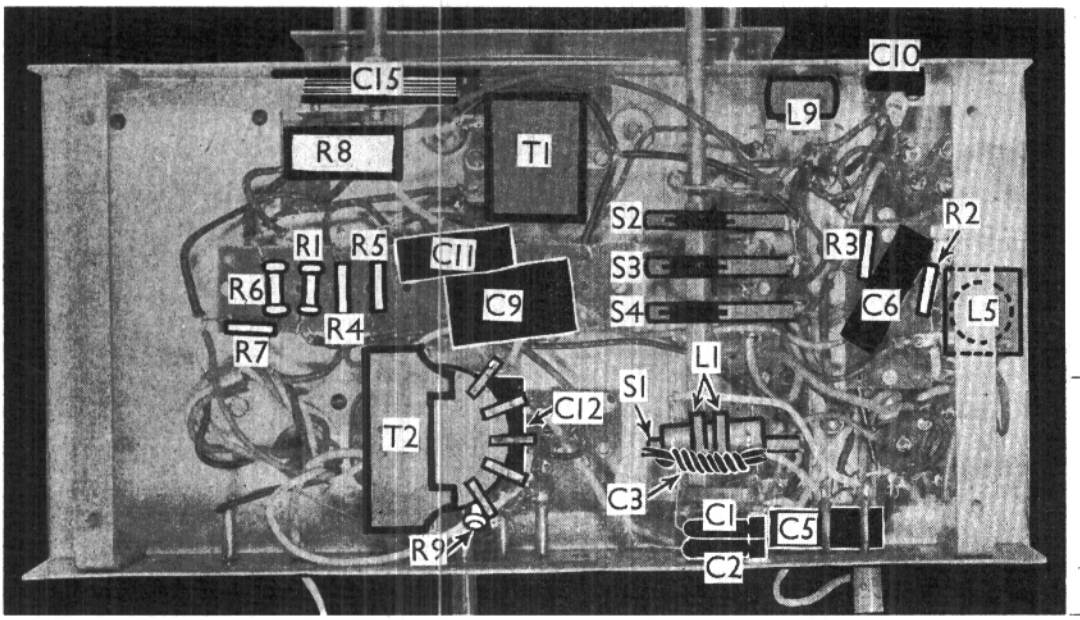
Batteries.—L.T., Ever Ready celluloid-cased 2 V 20 AH cell, type Y. H.T., Ever Ready Winner 120 V. G.B., Ever Ready Winner 16·5 V.

Battery Leads and Voltages.—Black lead, spade tag, L.T. negative; red lead, spade tag, L.T. positive 2 V; black lead with two black plugs, H.T. negative and G.B. positive; brown lead and plug, G.B. negative 12 V; red lead and plug, H.T. positive 120 V; yellow lead and plug, H.T. positive according to marking of **V3.** A, 120 V; B, 120 V; C, 108 V or 111V; D, 99 V or 102 V.

CIRCUIT ALIGNMENT

Rotate gang until pointer is at higher wavelength end of scale. Push a flat-ended rod through hole in side of gang cover and against the vanes. Rock gang until rotors can be felt to be fully in mesh. If pointer does not coincide with horizontal lines at end of scale, release centre fixing screw and adjust pointer suitably.

Rotate gang until pointer is at lower wavelength end of scale and switch set to M.W. Connect signal generator to **A1** and **E** sockets, feed in a 202 m. signal, and adjust **C14** and **C17** for maximum output.



Under-chassis view. S1 is beneath L1. C3 is a small fixed condenser.