VH/F Receiver, Type 2—Naval Addendum No. 1.

1. NAVAL TITLE

This receiver is to be referred to as VH F Receiver "P42" (Patt. W.9184A) in Naval communications.

2. VALVES

The following table shows the valves supplied with receiver "P42" and their Service (Navy, Army and R.A.F.) substitutes:

Valve No.	Description	Reference to valves in this Manual	"Naval substitute" Name	Patt. No.
V1	R.F. Amplifier	Z90	VR91	CV1091
V2	1st Det.	Z90	VR91	CV1091
V3	Local Osc.	K.T.W.63	NR86	CV1195
V4	Multiplier	Z90	VR91	CV1091
V5	1st I.F. Amplifier	K.T.W.63	NR86	CV1195
V6	2nd ,, ,, ..	K.T.W.63	NR86	CV1195
V7	3rd ,, ,, ..	K.T.W.63	NR86	CV1195
V8	2nd Det. and Noise Limiter	VR54	ARDD5(VR54)	CV1054
V9	L.F. Amp. and A.G.C.	DH63	NR68	CV587
V10	Output	KT63	NR85	CV1186
*V11	Rectifier	U52	5U4G	CV1071

Note: Throughout this Manual read VR54 for D63 and note that a 62 ohm shunt resistance across heater of V8 is included to compensate for the difference in heater loads. This resistance is not, however, shown on the circuit (Fig. 1).

* V11 in the above list is not in the receiver itself, but in the associated power pack used for A.C. operation of the receiver.

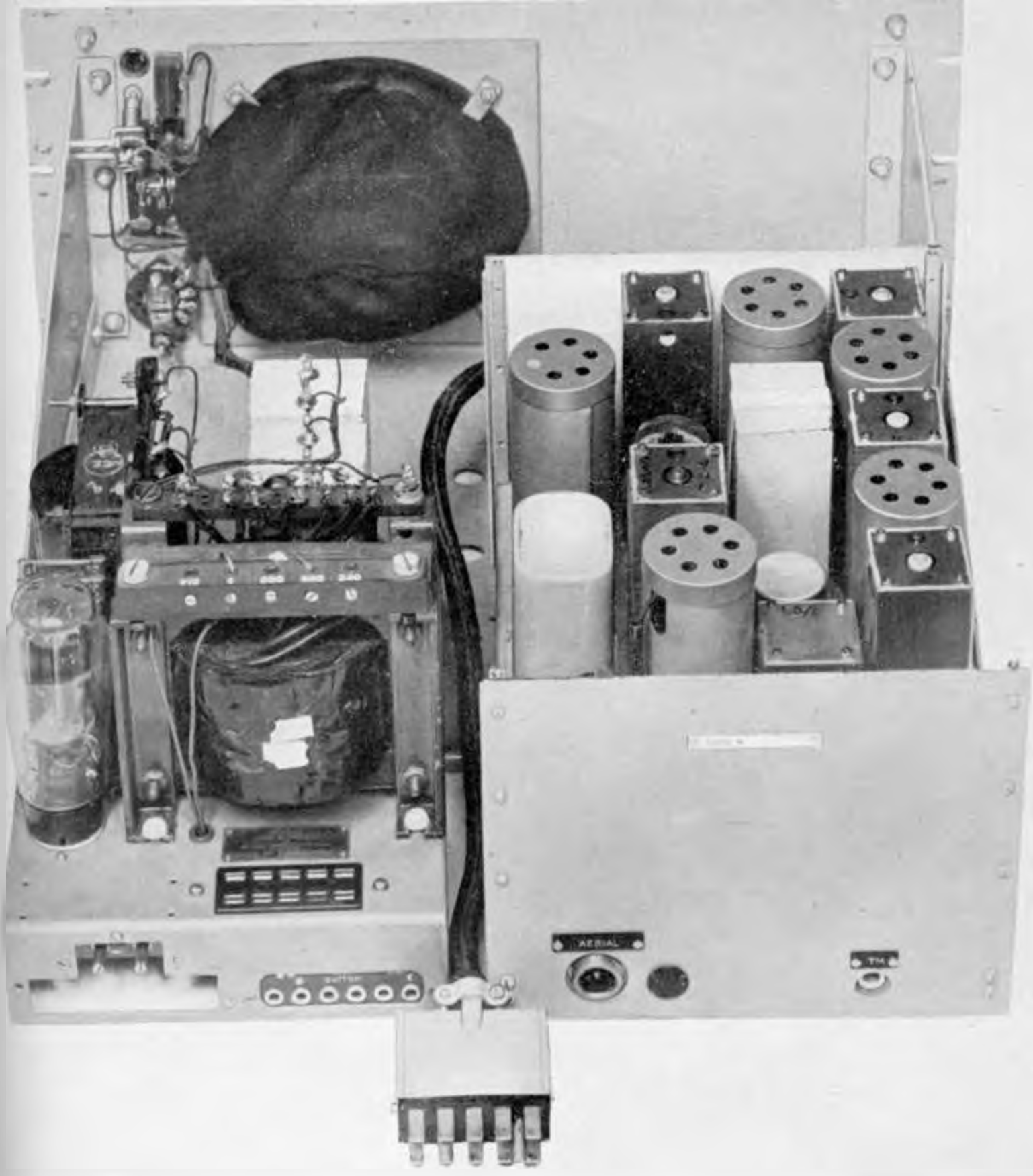
When replacement valves are required, they should be demanded as follows:—Patt. No., type, quantity, etc., e.g., "CV1091, valve VR91, quantity," etc. As from December 1st, 1943, the "CV" number is used, and this is common to Navy, Army and R.A.F. for all equivalent valves.

3. In this Manual, which has been prepared by the Manufacturer for general use, and not only for Naval use, it will be seen that there are two types of receiver:—
(*a*) Headquarters and (*b*) Mobile, (*a*) being A.C. operated and (*b*) being battery operated. For Naval purposes only the former model is used, in its "Cabinet Model" form, and is known as "Receiver Outfit CDJ." If, however, battery operation is required, the necessary rotary converters, batteries, etc., will be supplied. This battery supply outfit, known as Power Supply Outfit "D.W.C." also supplies the power for operating the 7W transmitter associated with this receiver.

4. Receiver "P42" (Patt. 9184A) must not be confused with receiver "P42" (Patt. 9184) an earlier and now obsolete experimental model, the valves and components of which differ substantially from the standard type.

5. On page 1 of this manual will be found a table giving the manufacturer's equipment groups, with their appropriate frequency coverage bands. It is emphasised that, with one or two exceptions, any Naval equipment will be in the 85.0 Mc/s to 95.0 Mc/s band, *i.e.*, part of Group 10, Groups 11 and 12 and part of Group 13 ONLY, as this band has been allocated for Naval use.

6. For additional information, particularly as regards aerials, see S.S. 143 "Handbook on VH/F Communication."



RACK MOUNTED MODEL

CABINET MODEL

SERVICE MANUAL

FOR

V.H.F. RECEIVER TYPE 2.

DESCRIPTION

The receiver is designed for mobile or headquarters operation on telephony, modulated or interrupted C.W. at a fixed frequency in any one of the following groups:

Group 1	...	126.5	–	131	Mc/s
„ 2	...	122	–	126.49	„
„ 3	...	117.5	–	121.99	„
„ 4	...	116	–	117.49	„
„ 5	...	113	–	115.99	„
„ 6	...	110	–	112.99	„
„ 7	...	107	–	109.99	„
„ 8	...	105.5	–	106.99	„
„ 9	...	101	–	105.49	„
„ 10	...	94.9	–	100.99	„
„ 11	...	88.9	–	94.89	„
„ 12	...	87.4	–	88.89	„
„ 13	...	83.1	–	87.39	„
„ 14	...	78.5	–	83.09	„

CIRCUIT

The receiver is a 10 valve superheterodyne, with one stage of signal frequency amplification employing a ring-seal pentode (Fig. 1). This is followed by a ring-seal pentode operating as first detector. The oscillator is crystal controlled, being a triode connected pentode in which the crystal frequency is tripled in the anode circuit. This is followed by a ring-seal pentode acting as a multiplier which gives as the injection frequency the twelfth or eighteenth harmonic of the fundamental frequency. There are three stages of intermediate frequency amplification followed by a normal diode detector and A.V.C. circuit with two L.F. amplifying stages. A carrier operated noise limiter is permanently in circuit, and both Signal and Intermediate Frequency circuits are A.V.C. controlled.