INDEX OF VALVES

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INDEX OF VALVES.

Valves as scheduled herein are in use in the Royal Navy, the Army, and the Royal Air Force. They are divided into certain classes or geometrical types, and a photograph is given of the most used specimen of each type.

The first column of the schedule gives the number by which each particular valve is referred to in this pamphlet.

The second column gives the geometrical or bulb type together with the figure number for reference.

The third column gives the official title of each valve. Columns 4, 5 and 6 state in which arm of the service the valve is in use, and

The seventh column indicates the number of the Chart or curves of characteristics of the valve.

Spaces have been left for additions to be added by hand as occasions arise.

NOTE.—The words "Bulb Type" in second column refer to the geometrical appearance only, and have no reference to electrical or mechanical details or characteristics, thus A. B, R are all of the French type.

SCHEDULE I.

THREE ELECTRODE VALVES.

Valve No.	Bulb Type and Photo Fig. No.	Valve Name.	Service.			Characteristics. See Figs.
			R.N.	Army.	R.A.F.	
1	French, Fig. 1	French	—	Army	R.A.F.	1, 2, 3, 4.
2	,, ,,	R	—	Army	R.A.F.	*1, 2, 3, 4,
3	,, ,,	B	—	Army	R.A.F.	8, 9, 10.
3A	,, ,,	B_2	—	Army	—	10A.
4	,, ,,	R (with wings)....	—	—	R.A.F.	1, 2, 3, 4.
5	,, ,,	A	—	—	R.A.F.	14.
6	,, ,,	A_2	—	—	R.A.F.	15, 16.
* 7	R horned 2	French horned valve (low capacity)	—	Army	—	
8	Q 3	Q Marconi, called R3 in Navy	R.N.	Army	R.A.F.	6, 7.
9	Q 3	V24 Marconi (low capacity)	—	Army	R.A.F.	
* 10	N 4	N Marconi	—	Army	—	
* 11	T 5	T ,, ...	—	Army	R.A.F.	
12	T2B 6	T2B	R.N.	Army	R.A.F	13.
13	,, 6	T1	R.N.	—	—	
14	,, 6	T3	R.N.	—	—	
15	,, 6	T4	R.N.	—	—	
16	R4 7	R2	R.N.	—	—	19, 20.
17	,, 7	R4	R.N.	—	—	21, 22.
18	150-watt 8	150-watt	—	—	R.A.F.	17.
19	8	500-watt	—	—	R.A.F.	18.
20	U1 9	U1	R.N.	—	—	
21	U2 9	U2	R.N.	—	—	
22	U3 10	U3	—	Army	—	23.
* 23	11	Erect (Marconi)	—	Army	—	

* These valves may only be used in old pattern sets, and are little used.

SOME CONSTANTS OF THE VALVES.

TABLE II. VALVES FOR RECEPTION.

No.	Valve.	Fil. Volts.	Fil. Current.	H.T. Volts.	H.T. Current.	Vacuum.
			Amps.		m.a.	
1	French	4	0·67	80	2·5	Hard.
2, 4	"R"	4	0·67	80	2·5	Hard.
7	French (low capacity)	4	0·67	80	2·5	Hard.
3	B	4	0·67	80	0·4	Hard.
8	Q	6	0·50	200	0·5	Hard.
10	N	4	2·3	50	?	Soft.
9	V24	6	0·80	24	0·6	Hardish.
16	R_2	3·7	1·2	25	0·5	Soft.
17	R_4	3·7	1·2	50	0·6	Hardish.

TABLE III. TRANSMISSION VALVES.

No.	Valve.	Fil. Volts.	Fil. Current.	Max. H.T.D.C. Volts.	Fil. Emission.	"Rating."
			Amps.		m.a.	Watts.
1	French	5·5	0·81	330	60	7
3	B	6·0	0·86	600	50	27·0
3A	B_2	7·0	1·5	1,000	100	50
11	T	6·0	4·00	7,000	?	?
12	T, B	10·5	3·55	1,500	340	250
5	A	6·0	0·86	400	70	27
6	A_2	6·0	0·86	400	70	27
18	150-watt	10·6	3·4	1,200	250	150
19	500-watt	12·0	6·25	2,000	500	500
13	T_1	14·5	4·5	700	320	150
14	T_3	17·5	5·2	2,000	340	250
15	T_4	17·5	5·2	3,000	340	400

TABLE IV. GIVES PARTICULARS OF THE TWO-ELECTRODE VALVES.

No.	Valve.	Volts Fil.	Fil. Current.	Fil. Emission.	Rating.	H.T. Volts for. Saturation.
			Amps.	m.a.	Watts.	
20	U1	14·5	4·5	330	150	300
21	U2	18·0	6·2	550	?	?
22	U3	6	1·5	100	27	270
23	Erect	6	5·0	?	?	?

NOTES.

Rating.

The rating in walls is the maximum permissible value of the product of the current through the valve and the voltage between anode and filament. When the product of the voltage and the current is equal to the given rating the valve can be worked continuously for ten minutes under these conditions without damage to the anode or to the vacuum. (See also Columns 5, 6, 7, Table II.)

Characteristics.

R.—The characteristics of receiving valves are given over only a small range of grid volts. Figs. 1, 2, 3, 4 apply equally to French, R (Army), R (R.A.F.), and French horned valves, as the geometry of these valves is the same.

B.—This is a very hard valve, the grid helix is twice as close as that of the R, otherwise the geometry of the valve is the same.

Q.—The Q valve has a fine mesh grid and requires a fairly big anode voltage for most efficient working.

N.—The N valve is a "soft" valve, and is much more "sensitive" than a hard valve, but, like all soft valves, it requires skill in adjusting for maximum efficiency.

French Horned.

V24.—These valves are constructed so that the anode and grid leads pass out through the sides of the bulb. This avoids the crowding together of the four leads usually passing through the base of a valve, and reduces the electrical capacity of the valve. The V24 is similar in shape to the Q valve, but has a more open grid than the French. The "grid filament capacity" of the ordinary French, the horned French and the V24 are respectively 12, 6, and 8 cms.

T.—This is a close grid transmitting valve. High voltages can be used on it efficiently, in spite of the fact that the vacuum is not absolutely hard.

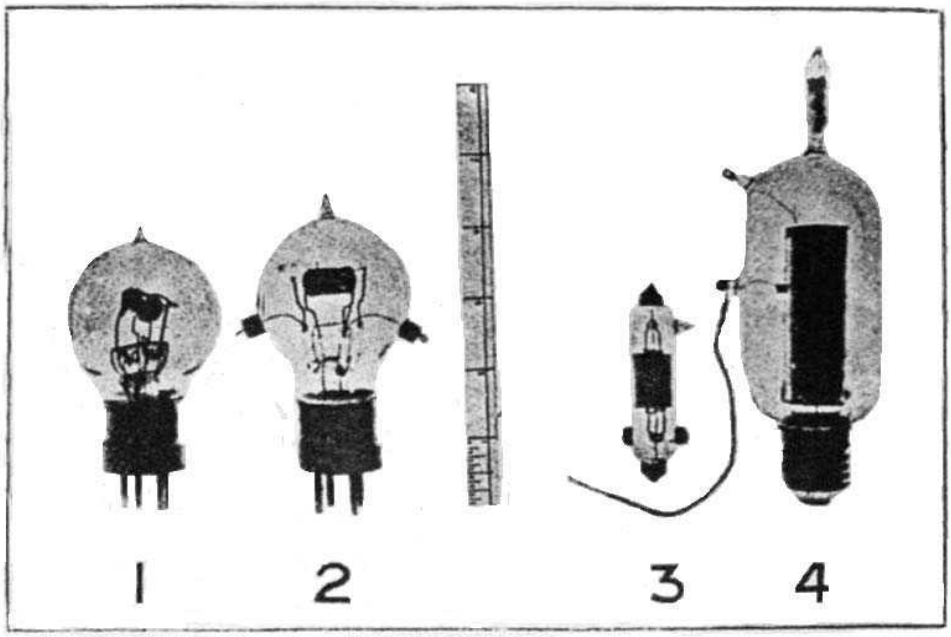
T_2B, T_1T_3, 150 and 500 watt.—Valves 12, 18, 19, 13 and 14 are high power open-grid transmitting valves.

A, A_2.—These are very hard valves, very similar to the French in geometry. The A_2 has a more open grid than the A.

R_2.—The R_2 is a soft valve like the N, but it is manufactured in such a way that the vacuum is almost constant.

R_4.—This valve is not quite so hard as the French.

U_3.—Fig. 23 shows the anode current through valve U_3, No. 22, with different anode voltages.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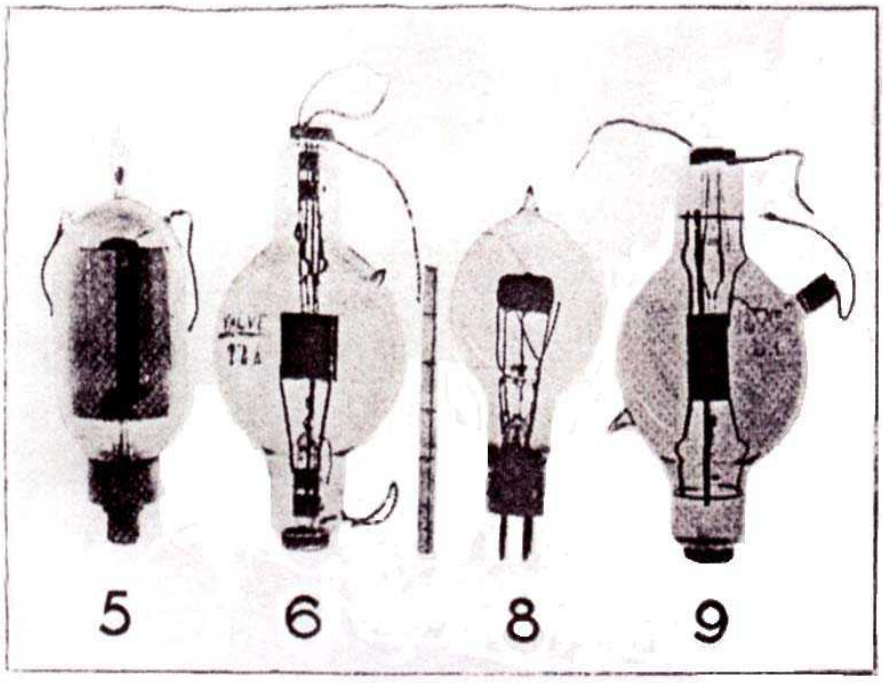
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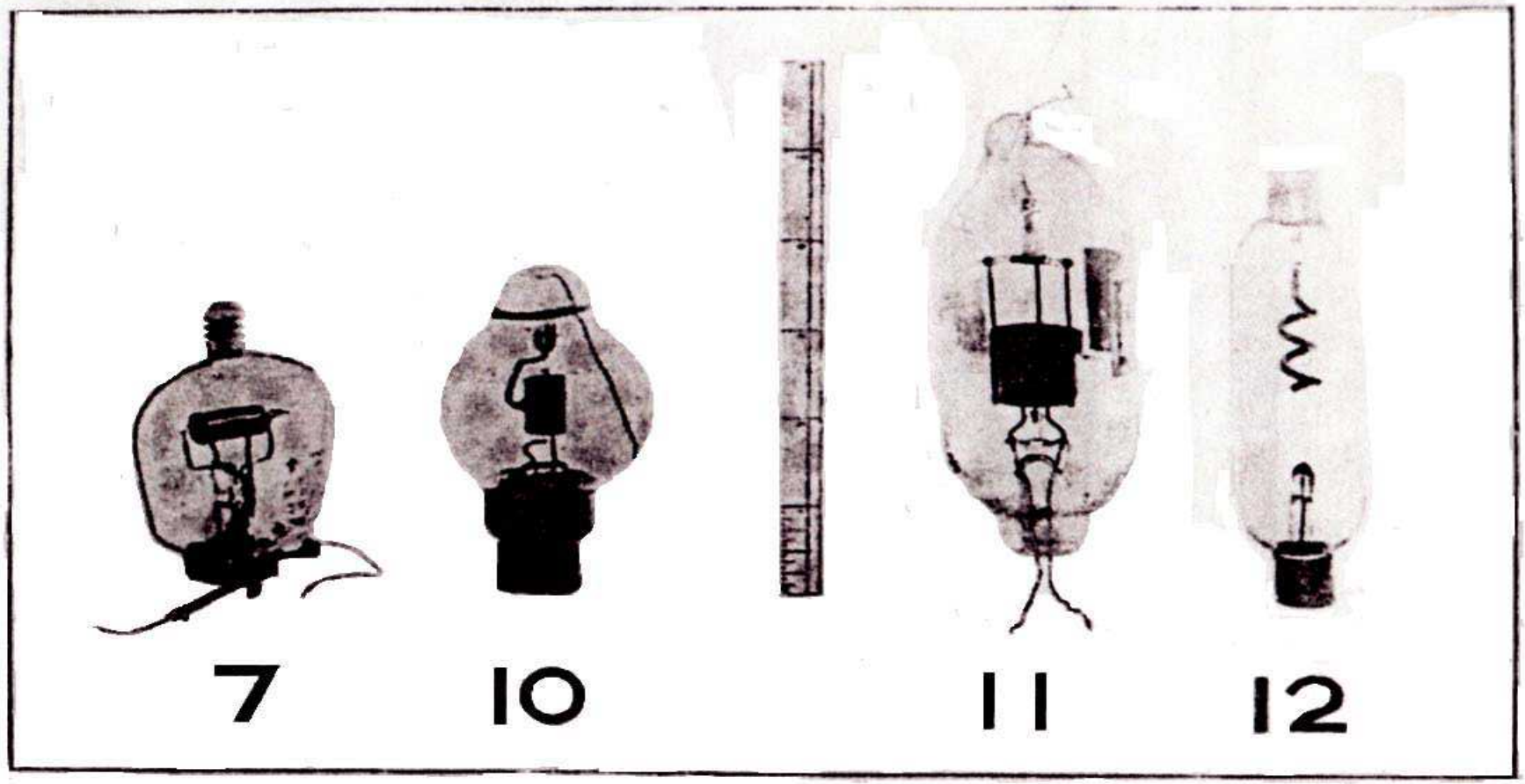
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