Klystrons

(Int. of Dr. Hechtel, Neugebauer, Gothel and Wahl D.V.L.)
Asses. Rep. K1/A

A Klystron had been built for λ = 10 cm, operating at 500 volts anode, 0.5 ma. starting current, 0.25 watts output. Another tube had been built for 3.7 cm. operation but had not been tested. A feature of those tubes was the use of a ceramic Ergon in the assembly of the copper cavity and electrodes. Another feature was the use of three reentrant glass-ergon on tubes sealed to the glass envelope and extending into the cavity. Into one reentrant tube a copper rod was inserted for coarse tuning and a Kalit rod was inserted into another tube for fine tuning, both in an axial direction. Into the third reentrant tube, which was radial, was inserted a shielded Lecher output coupling line. Information on these tubes is given in BHF reports 1) No. 1953, "Das Klystron mit endlichen Laufzeiten und Aussteuerungen in Steuer- und Arbeitsraum" by Dr. Hechtel; 2) No. 1807, "Über die Anregung von Hohlräumen" by Dr. Dahlke, 1943; 3) No. 1615 "Konzentrische Kugeln etc.", by Dr. Dahlke 1942; 4) "Die Erzeugung von Elektronenstrahlen hoher Stromdichte" by Dr. Hechtel 1943; 5) Manuscript on "Hohlraum Messungen" by Dr. Dahlke 1945. The only project underway appeared to be a study of characteristics of cavity resonators in the cm. wave range using disc triode oscillator and pyrite crystal frequency multiplier.

(25) **List of Centimetre Valves**

(Elect. Int. Rep. No.23/45)

See also Section 1.2 Para. 32

A document *picked up in the Munich area lists the following high frequency tubes, all but two of which are below 5 cm. in wavelength:

Magnetrons (Impulse)

Type	Firm	cm.	Segments	Power	Status
LMS12a	Tel	3.5-3.6	18	10 kw	Development stage
LMS13	Tel	1.6-1.7	13	4 kw	Lab. work finished
LMS14	Tel	1.1	18	1-2 kw	Development stage
LMS15	Tel	1.7		0.5 kw	Development stage
LMS16	Tel	3.5-3.6	Tunable	50-100 kw	Development not yet begun
LMS22	Tel	3.2	18	10 kw	Development stage
LMS32	Tel	3.2-0.4	24	0.5 kw	Development stage first model
LMS33	Tel	2.4		50 W	Development not yet begun

LMSX	Tel	3.2	12	4 kw	Experimental lab. model 10 per month planned
LMSY	Tel	3.15		8-10 kw	Lab. work finished
LMSZ	Tel	3.15-3.25		10 kw	5 per month planned Lab. work finished
LMSZa	Tel	3.5-3.6		10 kw	Development of Prototype
RM4022	FFO-OPTA	3.8	8	10 kw	BHF Development model being produced
RM4041	FFO-OPTA	1.8	8	51 kw	In production, 60 per month planned
LMS100	Tel		9	100 kw	10 made
LMS101	Tel		9	1000 kw	One experimental Model
LMS86	Tel	3.8		1.5-3 W	Development stage
LMS87	Tel	4.5-5.1		3-6 W	Development not yet begun
RD2Mg	Tel	2.9-3.4		50-150 mW	In production, 50 per month planned
RM4021	PTR S&H	1.5	2		BHF in production Preproduction of 50
RM4023	PTR S&H	1	2		BHF in production Preproduction of 50
RM4025	PTR S&H	2			Development of prototype - Prepro--duction of 50
RM4031	FFO-OPTA	Aspired to 1.2 Attained 1.5, 1.9 2.3	2		Development of prototype 20 per month planned
RM4032	FFO-OPTA	2.4-12	0 Tunable		BHF Development of prototype, 20 per month planned
RM4101A	ENK S&H	1.4-2	Tunable		BHF Development of prototype, pre- production of 50
RM4101B	ENK S&H	0.8-1.4	2 Tunable		BHF Development of prototype
RM4122	PTR S&H	0.5	2		BHP In production Preproduction of 50

	Blaup	5	12 Tunable	0.5-0.8 W	BHF Development stage
	Tel	3-4		1.5 W	BHF Development Stage
	Dr. Fr. PTR Zeulenroda	1.6-3	Many	1.6, 0.5, 0.1 W	BHF Development stage
LD 23	Lor	3		3-5 W	Development stage
RD121b	Lor	5		25 W	Development stage
RD121c	S&H	3.1-3.3	Tunable	60 W	Development stage
LD24	Tel	1		10-50 mW	Preproduction
LDX	S&H	3.2			In production
	(Reflex Klystrons)				
LD20	Tel	3.15-3.6	Tunable	6 mW	In production, 50 per month planned
LD21	Tel	1.5		0.2 W	Predevelopment
LD29	Lor S&H	3-6	Tunable	5 mW	Development stage
	(Magnetrons (CW))				
LDX	FFO	1.75			Predevelopment
	FFO	2.2-4.2	Tunable	20-60mW	BHF Development
	FFO	3.4-5.4		5-100mW	BEF Development
LD22	Fkstr	3	Barkhausen-Kurz Osc		Predevelopment
LG77	Tel	3	Nullode		Laboratory work finished 50 per month planned
LG78	Tel	3	Transmitter de tuner (Verstimmr.)		Laboratory work finished 40 per month planned
LG79	Tel	3	Receiver T & R box (Sperröhre)		
LG80	Tel	3	Transmitter de tuner (Verstimmr.)		20 per month planned
LG81	Tel	1.5	Receiver T & R box (Sperröhre)		10 per month planned
LG82	Tel	1			6 per month planned
LGXE	Tel	3			15 per month planned

Reliability of Information: Excellent

Tel --- Telefunken
OFTA --- Opta Radio A.G.

FFO ---	Flugfunk Forschungsinstitut, Oberpfaffenhofen	*Source : Captured Document (obtained by A.D.I. (Sc)
Lor ---	Lorenz	
S&H ---	Siemens and Halske	
PTR ---	Physikalisch Technisch Reichsanstalt Zeulenroda	
Blaup ---	Blaupunkt	