



Circuit Symbol.	Unit.	General Description.	Power.		
			5 w.	50 w.	250 w.
L_o	Antenna inductor	see Art. 44 (a)			
C_o	Antenna series condenser	{.0003 to .003 mfd.}	8000 v.	8000 v.	8000 v.
L_p	Plate coupling coil	4" dia.	30 t.	30 t.	30 t.
C_p	Plate tuning condenser	variable, .0005 mfd.	500 v.	1500 v.	3000 v.
C_1	Grid condenser002 mfd.	1500 v.	1500 v.	1500 v.
R_1	Grid resistance	{5000 to 10,000 ohms}			
X	R.F. choke-coil	see Art. 44 (d)			
C	Oscillating circuit condenser001 mfd.	2000 v.	4000 v.	8000 v.
L_2	Oscillating circuit plate coil	6" dia.	7	9	10
L_1	Oscillating circuit grid coil	6" dia.	7	5	4
R_2	Filament rheostat		2 a.	8 a.	16 a.
A	Antenna ammeter		2 a.	4 a.	8 a.

Note.—The construction of coils L_1 and L_2 is the same as that of the antenna inductor L_o . (See Art. 44 (a).)

CIRCUIT NO. 7

MASTER-OSCILLATOR ARRANGEMENT

This circuit is adapted for use with either direct ground or counterpoise, or with any combination of direct grounds and counterpoises by the method of Art. 26. The condenser C_p is a convenience for tuning and may be omitted if desired. An inductance of approximately 60 micro-henries will be required in L_p for any of the three types of tubes used singly, with an antenna resistance of 15 ohms at wavelengths from 200 to 300 meters and an oscillator efficiency of 50 per cent. The choke-coil X serves to reduce the grid loss by preventing the flow of radio frequency currents through the biasing resistance R_1 . The master oscillator employs the Hartley circuit with two coils L_1 and L_2 shunted by a condenser C . This condenser may be made variable for convenience, or should at least be shunted by a variable condenser if precise adjustment of the wavelength is to be made. The coils L_1 and L_2 are constructed in the same way as the antenna coil as described in Art. 44 (d). For the excitation of the 5, 50 and 250-watt tubes the master-oscillator tube should be an overloaded receiving tube with 300 volts or so on its plate, capable of supplying 0.2 watt, a 5-watt tube, and a 50-watt tube in the respective cases. For a general discussion of this circuit and instructions for its adjustment see Art. 48.