

Magnetic Loop from the 1928

Note from I.G.: "Radio vsem" (# 9, 1928 pp.: 43- 44, "QRP for Summer") is described several antennas that was used at a military training at 1927. Another antenna that worked well is antenna that for now named as "Magnetic Loop" Antenna. In the old times the antenna was named as "Frame" Antenna. In the article were described two such antennas. **Figure 1** shows Transmitter with Frame Antenna with capacity adjustment.

Description of the antenna: Antenna has 3 turn, length of the each size of the square is 60- cm. Antenna wound by insulated wire, diameter of the wire 1.5... 2.5- mm (15- 10- AWG). Capacitor C1 has capacity up to 250- pF, capacitor C2 has capacity up to 500- pF. Antenna covered wavelength from 40- to 120- meters. Wavelength is switched (roughly) by choosing turns of the loop (1, 2 or three), then smoothly by C1. C2 is tuned by maximum power (checking by the glow of the bulb) going to the antenna.

The capacitors should work at 500- V. L2 and L3 are RF- Chokes. Those ones are identical with each other. RF choke contained 200 turns by wire in diameter of 0.5- mm (24- AWG), wound on the form in diameter 3/4-inch. R2- 10.000 Ohm.

Figure 2 shows simplified version of transmitter with frame antenna. Tap is taken from the middle of the loop. The transmitter is tuned to the needed frequency just with help of capacitor C1.

Transmitters with the Frame Antenna had strong directivity. Each turning of the frame caused to the small changing of the wavelength. Transmitter should be placed far from any metal subjects. The transmitters provided confident radio communication to 20-km.

The transmitters with the frame antennas has small sizes, easy to hide and has directivity in transmission that is useful in military application. At the TX there were used Russian tubes UT- 1, R-5.

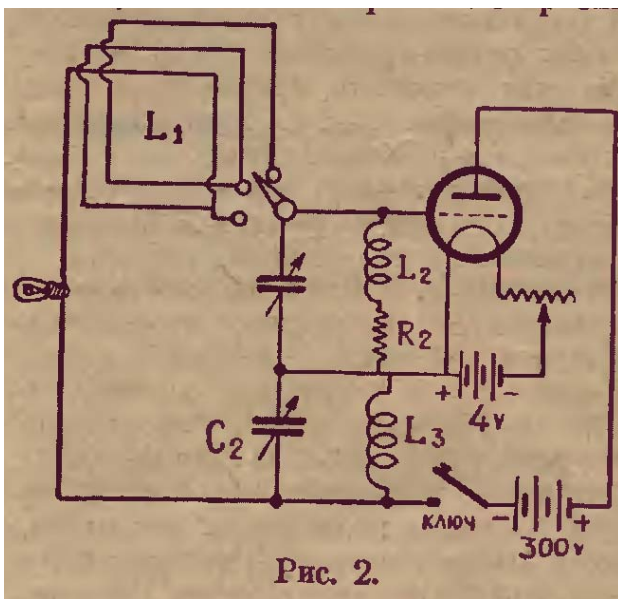


Figure 1 Transmitter with Frame Antenna with capacity adjustment

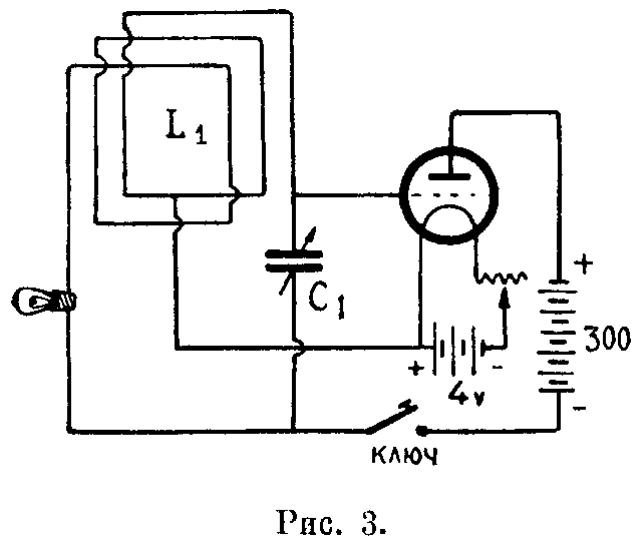


Figure 2 Simplified Version of Transmitter with Frame Antenna

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