

Vertical for the 20- meter Band

R9WI ex RA9WFD, Boris Krivosheev

Credit Line: http://www.cqham.ru/ant83_72.htm

The antenna design is based on the known "Bazooka" antenna. Vertical part of the antenna is a half from the "Bazooka" antenna. Counterpoises are usual for any vertical antenna. I used two counterpoises because it is hard to place more at my 45- degree- slope roof.

Vertical part of the antenna made of fiberglass tube with diameter 14/10x2, 18/14x2, 23/19x2 (O/D/T). All tubes were in 2- meter length. The tubes were sandpapered degreased and coated with primer and enamel paint.

Figure 1 shows antenna's design. **Figure 2** shows design of part 1 from **Figure 1**. **Figure 3** shows design of part 2 from **Figure 3**. **Figure 4** shows design of part 3 from **Figure 1**. **Figure 5** shows way to insert coaxial cable into the tube.

Antenna is tuned to resonance with help of the length of the counterpoises. It needs to use counterpoises with length more the show at **Figure 4**. Then the counterpoises are shortened to the antenna resonance. The ends of counterpoises that connected to feeding coaxial cable are placed at one meter above the metal roof. Another ends of the counterpoises fastened through ceramic nut insulators at the hip of the roof.

My antenna was installed on the roof of the 5- level house that has height at 22 meters. The antenna has almost omnidirectional pattern. **Figure 6** shows data for the antenna . The data were taken off with help Antenna Analyzer AA- 330.

Antenna made from different types of coaxial cables (Russian coaxial cables: RK-50- 7- 13, RK- 75- 9- 16, RK75-4-113) was tried and tested in field conditions.



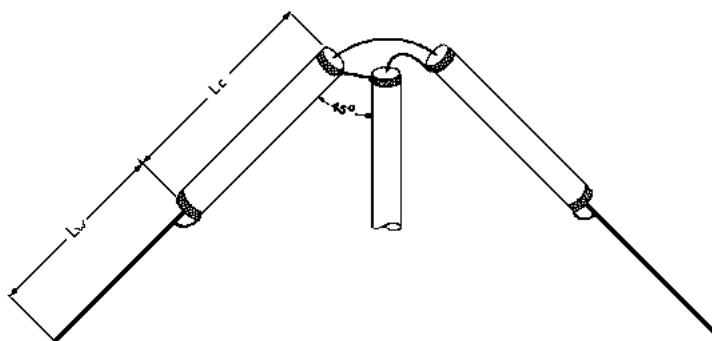
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There were almost no differences in the antenna operation for all of the antenna design. However for the real antenna coaxial cable (part 2 of the **Figure 1**) should be chosen on the antenna power. Antenna was fed through 50- Ohm coaxial cable with the length (it is noncritical) of 28- meter.

The antenna was tuned to resonance at the 20- meter band. However my ICOM-746PRO with help of the internal ATU could match the antenna on the upper HF- Bands (off course, with some losses!) from the 20 to 10 meter. With the the antenna I had QSOs with Japan (6500- km) at 17 and 15 – meter.

Antenna may be used in field operation when instead rigid tubes a plastic fishing rod would be used.

73! RA9WFD



Classical Antenna Bazooka. I.V.
Picture from Internet

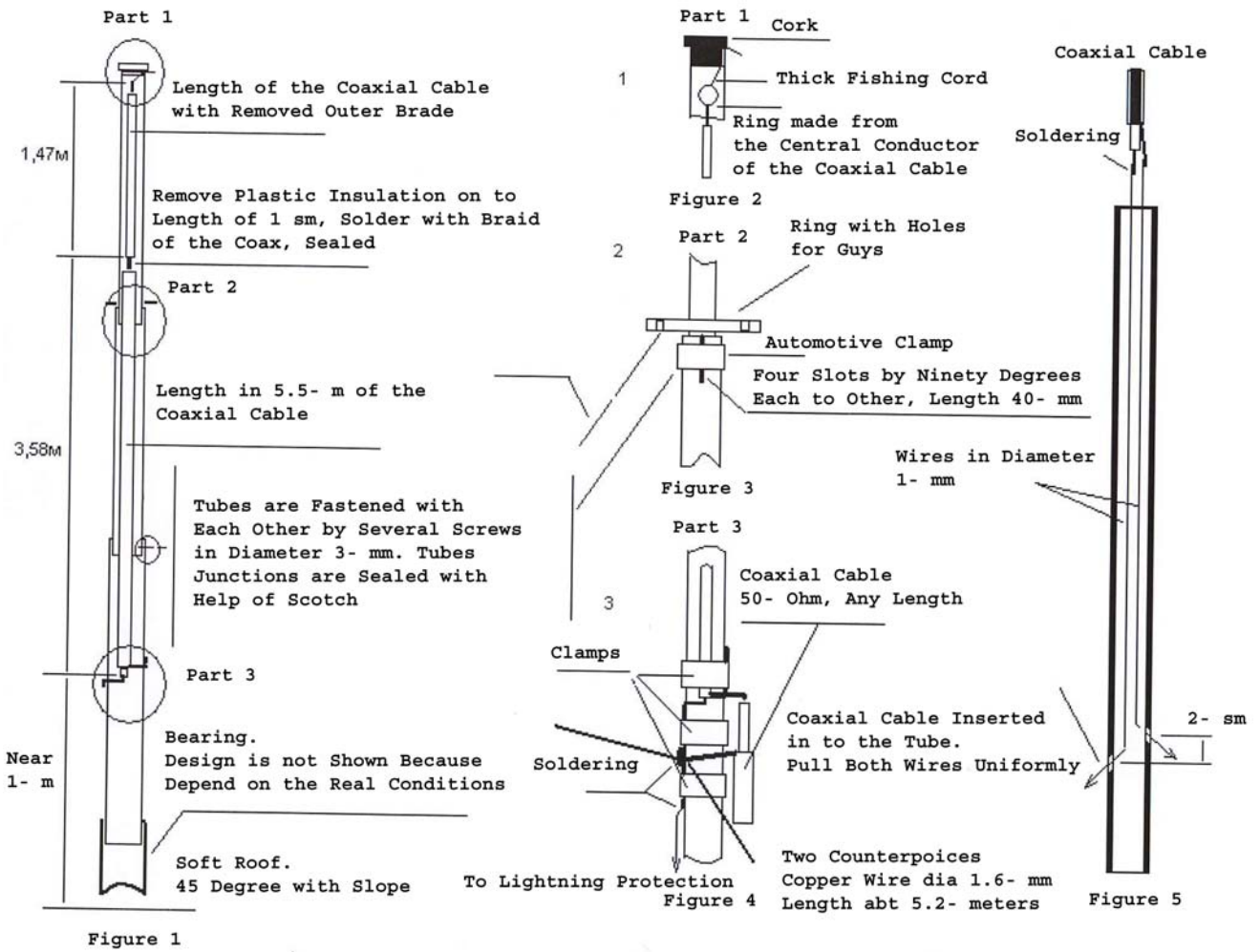


Figure 1- Figure 6 Design of the Vertical Antenna

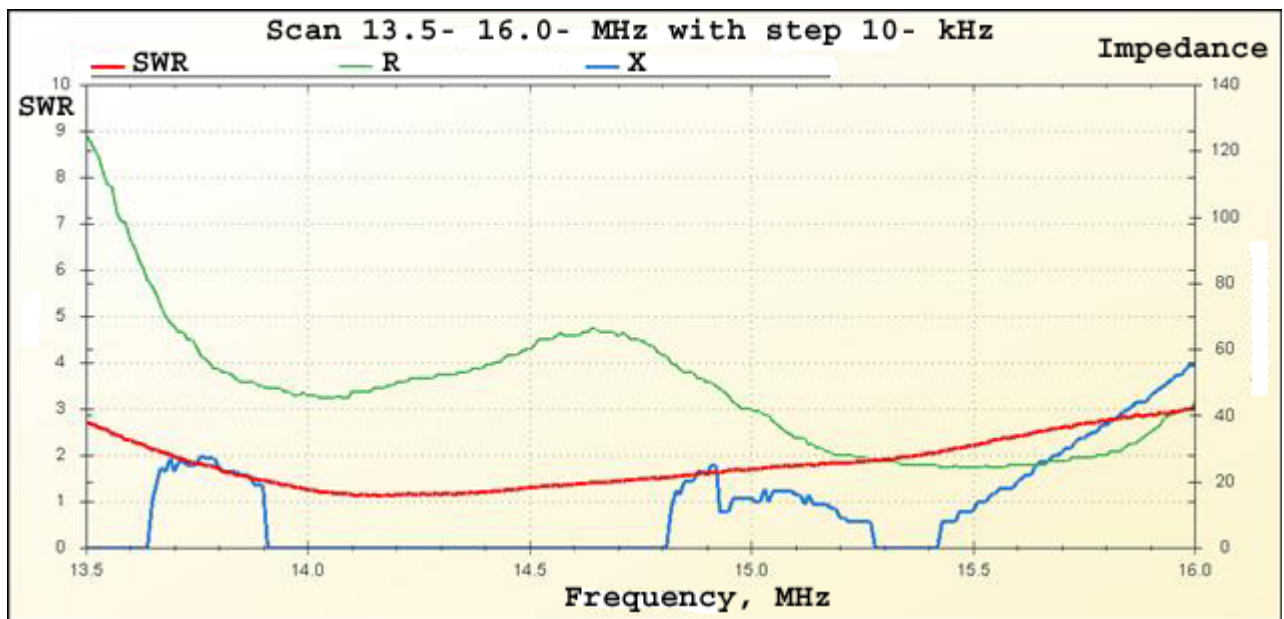


Figure 6 Data for the Vertical Antenna