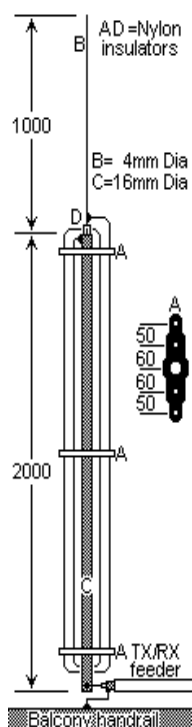


SHORT ANTENNA

by Harry Lythall - SM0VPO

"QRP" operation often means operating in remote places where a decent full-sized antenna is not possible. I personally live in an apartment where I am unable to erect large antennas. For QRP operation a reasonable antenna is a necessity on the HF bands. I have had a lot of success with vertical dipoles on balconies and window ledges, and I have worked as far as Japan & Tasmania with only 50 watts on 14 and 18 MHz. These HF bands can be worked with an Aluminium tube "fishing-pole-style" poked out of the window, but if you want to go below 14MHz. then there is a problem with the length of the pole exceeds the practical limit of about 5 meters.



The "fishing-pole" can be taken down to 10MHz, 7MHz & 3.5MHz by adding some extra wire, as shown above. The lengths shown are all in millimeters and the antenna shown will operate at 7MHz. VSWR is about 1.2:1 across the 7MHz band using a 5 meter handrail (and other metal contained in the building) as a groundplane. When I lived in Eskilstuna I was fortunate enough to live in an apartment where the outside walls of the building were metal-clad. The VSWR went down almost to 1:1 on 14MHz. On 3.5MHz use double the length of wire and form 4 turns instead of the two shown.

The insulators at A are cut from a nylon chopping-up board (stolen from the kitchen) and the aluminium pole C is 16mm Dia aluminium tubing, 2 meters or so long. In my experiments I found that the TOTAL length of wire + pole + top-section should be about one meter LONGER than a calculated 1/4 wave but the wire may be "pruned", & the lower "A" spacer moved up the pole a little to compensate.

The nylon insulator D is a 16mm x 30mm lump cut from the same "chopping-up" board as the A insulators. Drill a 4mm hole down the length of it to accept the upper section. I just trapped the end of the wire loop in the 4mm hole to make the connection to the upper section.

This type of antenna can be easily stowed on a car roof, or broken into two or more sections and transported in the back of the car. Results on-the-air are very impressive, for such a short antenna.

Have fun, de HARRY, Lunda, Sweden.