1 Slim Jim for 2m

The "Slim Jim" antenna is a variant of the venerable J-pole. Its big advantage over a J-pole or a $1/4\,\lambda$ ground plane is low take-off angle, reportedly around 15°.

The top section is about $1/2\,\lambda$; the bottom matching section is $1/4\,\lambda$. The gap separating them should be about an inch or 25 mm. The opposite side will obviously be about $3/4\,\lambda + 25$mm.

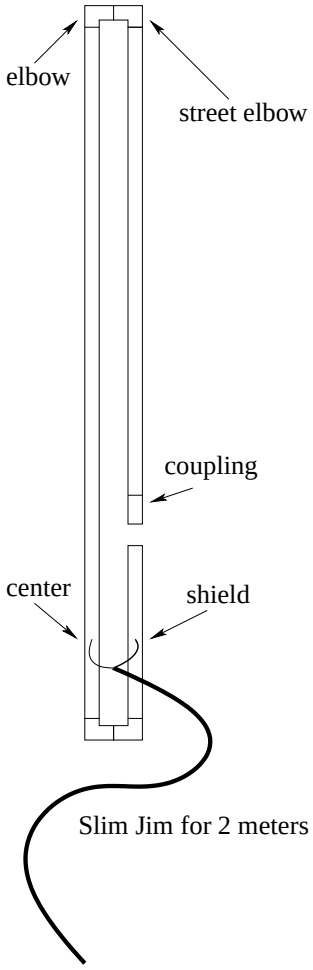
The version on the right is patterned after one published in the *CQ* magazine (or *Popular Communications*?) in the early 2004. The article suggested the length of the top section to be about 990 mm (39 in), and the bottom section of 495 mm or 19.5 in. Assuming $V_F = 0.95$ and my target frequency of 147.130, I decided to make them slightly shorter: 38.4 in and 19.2 in respectively.

I used a 10 foot half-inch copper pipe to cut the three pieces and soldered them together using copper elbows. When cutting the three straight segments remember to account for the 0.5 in or so that the elbows will add at each end. Also make sure to buy one pair of ordinary elbows and one pair of 'street elbows', which have one end wider than the other. This way the elbows at each end can be fitted together without the need for any horizontal pieces.

The feedpoint in the magazine version was about 100 mm from the bottom. Another plan of this antenna, which you should be able to see by clicking here, has it only about 75 mm from the bottom, with a slightly longer bottom section. This may just be for more flexibility in selecting the feedpoint. The exact place where coax should be connected will of course have to be determined empirically, by adjusting it for the lowest SWR while the antenna is suspended in the air.

For fine tuning after assembly one may try to adjust the gap. I put a tight-fitting copper coupling (the 'no-stop' kind) onto the end of the top section. It can be slid up and down, and secured with some solder when tuning is done.

The other plan suggests a capacitance plate mounted on an insulator between the top and bottom section. I have not tried this. Yet another version uses regular wire supported by a length of a plastic pipe.



to be continued...