

Caught in a Trap:

One of my greatest pleasures in life is to build new and better antennas (and other stuff too). As I mentioned in my blurb from last week, I put up some new “saddles” in the trees around the yard. That project was extremely successful and I’m very pleased with the results. However, my delta loop came down in the 120 km/hr winds the night after we put them up and I decided to buy some new wire for that particular antenna that can handle the strain. So, I called Bob VE3WY at Maple Leaf Communications and bought some 13-gauge, super duper, high velocity, large calibre, insulated, copper weld, 19 strand antenna wire to replace it. While on the call with Bob he mentioned that he had sold that part of the business to someone else, and I’ll tell you about that at another time. Bob was the guy that used to make wire antennas and other items for ham radio stores for many years, but he’s trying to retire, and we had some great conversations on how well that is going. He told me that a couple of years ago he hung up the tool belt and then two weeks later he was working again. I told him that I had him beat because the day after I officially retired, I started my photography business by going down and buying my business license. That was 20 years ago. I’m still in business and so is he. Anyway, the wire is on its way, and I look forward to getting the delta loop back up.

However, in the meantime, I decided to restring my off centre fed antenna that I built a couple of years ago up on the side of the tower and an Alpha Delta DXLB on the top of the tree. It was a bit of a struggle because you have to be able to get the wires over branches, but I managed and got it up in the clear.

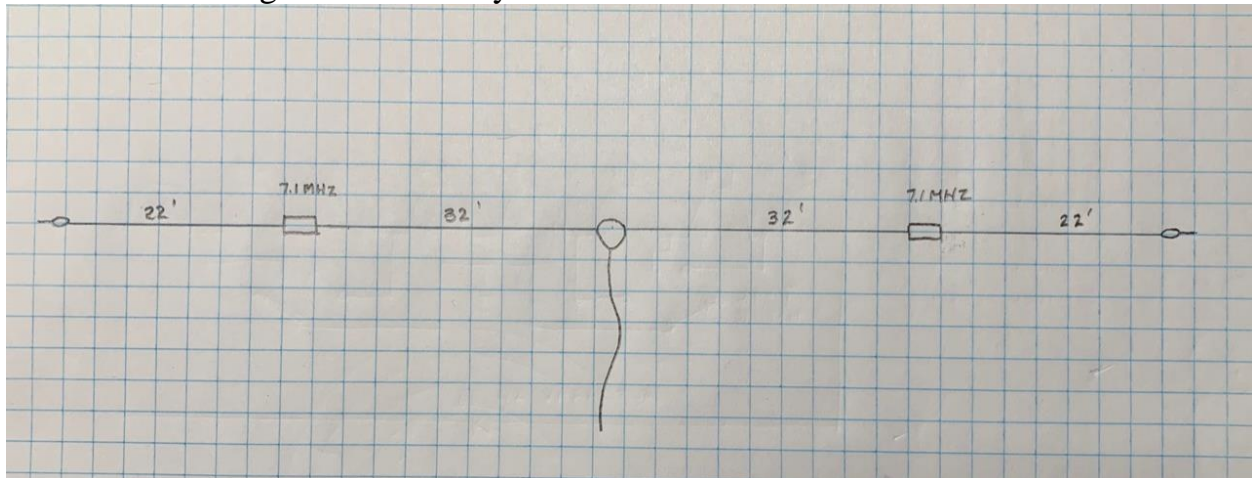
The OCF works perfectly, and I have used it over the last week every day for most of my low band operations. That antenna just plain works and is simple and easy to tune when necessary. It is 130’ long with the 4:1 home-brew balun at the 40’ point and then 90’ goes up to 45’ on one of my trees in the front yard. The antenna slopes up from about 15’ at the west end and the balun is suspended off a brace on the tower about 2.5’ from the side by the balun. This antenna, as my friend Bruce VE6HII says, hears well and transmits even better.

The Alpha Delta was another story that I am not going to go into right now. Instead, I’ll tell you about another project that needed some TLC to get going.

Some of you might remember a few years ago I wrote about making some 40M traps for an all-band antenna that I wanted to try. If you remember I wound some RG8X around a form that resonated at 7 Mhz right out of the gate. When I put that antenna up it worked pretty well but was a bit underwhelming. The other day I pulled it back into the shack and decided to look into the reason it may not have been a good performer. It turns out that in my haste, I had forgotten to take into consideration the

fact that in order for a trap to work properly and have a high Q you should pay attention to the capacitor/inductor reactances. It turned out that the reactance we were working with was about 140 ohms and simply was too soft to provide much of a choking condition. The idea is to have it up around 300 - 400 ohms to provide a higher impedance from the rest of the antenna elements. So, what to do?

I decided to pull the old traps apart and wind some 12-gauge magnet wire with good insulation around the form instead with about 28 turns which provided me with around 8.5 uH in terms of inductance and then attached a piece of RG8X across it as a capacitor. The voltage breakdown on that RG8X is listed at 2,700 volts so we will see how it works in practice. I'm expecting only low power like 100 W will be able to be used. I trimmed the RG8X while watching the resonant frequency on an old emitter dip meter set for 7.1 Mhz. I double checked the resonant frequency with my Rig Expert, and it came out exactly where I wanted it to. The reactance measures 350 ohms so we are right on the money.



Then the job of sealing the whole thing was done with some really big heat shrink tubing around the coil first and then the capacitor wrapped around the other end from the coil. After shrinking it tightly around the two elements of the trap, I used a hot glue gun to seal everything and plug the holes where the wires.



So now I just have to build the other trap and try the antenna with them both. Hopefully it will work perfectly. By the way, the original

design came from an old ARRL Antenna Handbook. It used 75-ohm twin lead that might not be available anymore that I know of so the antenna will likely only work on 80 and 40 meters. That's all I wanted it for anyway and over the next little while I will figure out how to get it to work on all bands as it was originally designed to. However later designs in the more modern handbooks show them using 50-ohm coaxial cable directly with good results. In the meantime, it will be another fun project to play with.

If you have questions, don't hesitate to ask. ve6arg@shaw.ca.

73

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