

The Flywire Vertical for portable
operating
Andy - VK5LA

Welcome to my presentation on an antenna I have
recently adopted for activating Parks for the
WWFF/VKFF program...

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History

- .Wolf River Coil concept via various YouTube vids
- .Marty, VK4KC made a video about a homebrew
- .version he made from items available here in Australia due to the high cost of importing from OS.
- .One was constructed, and Ivan VK5HS became involved and made a base to suit.
- .Arond this time Michael, KB9VBR demonstrated using a replacement aluminium door screen as a ground plane in his YouTube video.
- .My first activation was in May 2023, at Moorook GR, VKFF-1729 with a total of 167 QSO's in the log including a CW P2P with G-Land...so far so good!

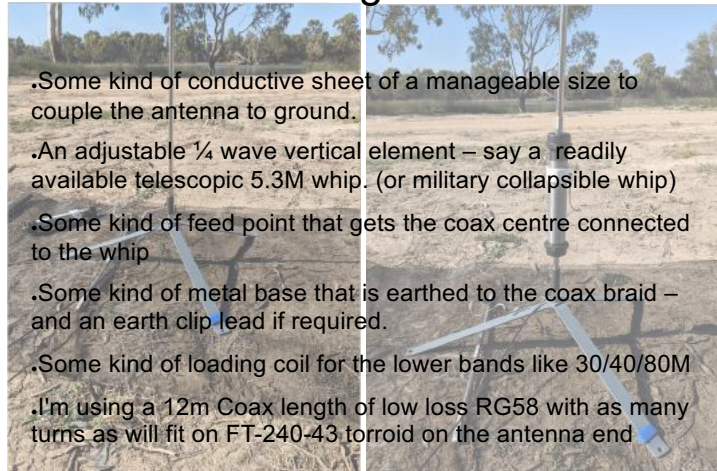
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Get yourself a VNA...

- .The commonly available low cost nanoVNA is invaluable for tuning this style of antenna as the graphical representation makes it easy to adjust the antenna to resonance, once set up.
- .Your Dad's MFJ will do
- .Rig Expert, Rig Expert Stick etc etc.
- .Even the SWR meter on you rig will work.

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The configuration...



- .Some kind of conductive sheet of a manageable size to couple the antenna to ground.
- .An adjustable $\frac{1}{4}$ wave vertical element – say a readily available telescopic 5.3M whip. (or military collapsible whip)
- .Some kind of feed point that gets the coax centre connected to the whip
- .Some kind of metal base that is earthed to the coax braid – and an earth clip lead if required.
- .Some kind of loading coil for the lower bands like 30/40/80M
- .I'm using a 12m Coax length of low loss RG58 with as many turns as will fit on FT-240-43 torroid on the antenna end

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The Coil

.Many options available, including, but not limited to...

.Home Brewed

.VK4KC “Mad Dog” coil

.M1ECC Slidewinder used by (2E0HPI) – usually sold with a “Military” style whip...

.Wolf River

.REZ antenna

.Commercial units usually sold as plug and play

.Single band Coils (40M) readily available, like WRC Sporty Forty, AliExpress etc etc, BUT!

.I've found Q is lower, inferior match



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Coupling to ground...

- .This is the other half of the antenna...
- .Aluminium Flywire replacements screen works very well, but it's difficult to manage, I attached wooden ends...you could tape the edges with gaff tape to avoid getting stabbed!
- .Foil backed picnic blankets are lightweight and easily managed, but weigh the ends down if it's windy...(walk in parks)
- .2 x Car Sunshades from Cheap as Chips...(walk in parks)
- ."Faraday Cloth" is popular in the USA
- .VK5TRM uses Chicken wire...
- .Type and size doesn't seem to matter, but the more area coupled to ground the better
- .Flywire better for drive-in activations

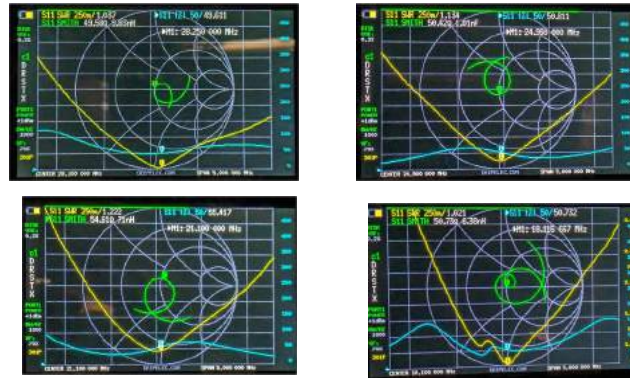
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Getting set up

- .Find a clear spot
- .Throw down your ground screen
- .Choose your band
- .Put your antenna on top
- .Connect your coax
- .Tune to resonance with your trusty meter of choice
- .Work stations!

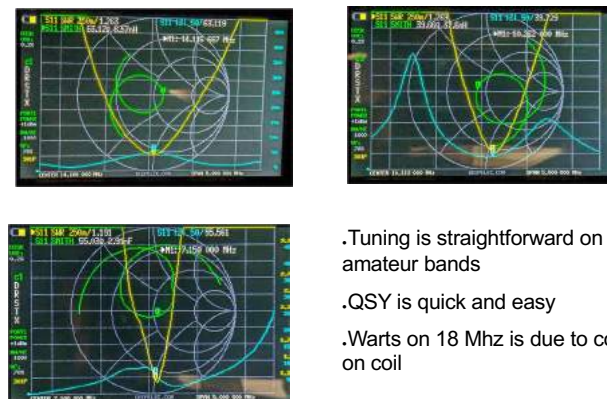
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What the tuning looks like...



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Tuning cont....



- .Tuning is straightforward on the amateur bands
- .QSY is quick and easy
- .Warts on 18 Mhz is due to collar on coil

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Observations...

- .In most parks, I've found the quality of the ground type presents no issues for tuning, a very acceptable VSWR seems readily achievable
- .The lower in frequency less bandwidth..
- .When using the coil, it the quality of the soil seems to matter in regard to the depth of the "dip"
- .The one time I used it in close proximity to salt water i.e right next to the waters edge the R component was at 36 ohms and VSWR was 2.5:1. (An internal ATU in the rig would have been handy) Perfect ground?
- .The AliExpress 40M add on coil seem to have a inferior match to my home brewed and Mad Dog coil. Much less of that "dip" maybe lower Q
- .Some of your power disappears in that coil as heat, when you use turns to get a match. The coil will be warm to the touch. Bypassing the coil for the higher bands and using the telescoping whip extended to the full $\frac{1}{4}$ wave is the way to go.
- .Experiments continue with base and "centre" loading.
- .Power Handling 100 watts SSB?CW seems fine, say 50 watts for data modes?
- .Coil gets rather warm @100 watts FT8!

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AliExpress coil



- .Usable but I'm concerned about losses and efficiency
- .Light weight and compact
- .It works!
- .I short mine out on 20m and above for quick band changes

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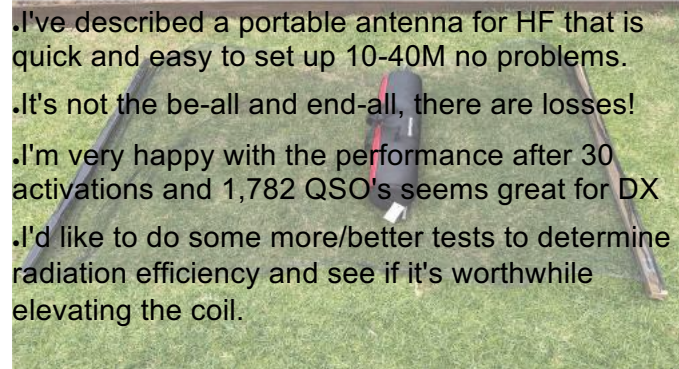
Centre loading



- .Early results with "centre" or elevating the loading coil show promise
- .Noticeably less heating of the coil comparing base and elevated loading when used on 30M FT8 @ 75 watts
- .More tests needed on WSPR at low 1 or .5 watt TX to compare radiation efficiency

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Summary



- .I've described a portable antenna for HF that is quick and easy to set up 10-40M no problems.
- .It's not the be-all and end-all, there are losses!
- .I'm very happy with the performance after 30 activations and 1,782 QSO's seems great for DX
- .I'd like to do some more/better tests to determine radiation efficiency and see if it's worthwhile elevating the coil.

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Thanks, and don't forget...

- .Have fun
 - .Stay safe
 - .Experiment
 - .Your well being is important! Get out and move your body
 - .Lift and elevate others instead of crush and deflate
 - .Be Kind always
 - .Gus the DX dog wants to know if you've got any treats!
- 
- A photograph of a white dog, likely a Weimaraner, sitting on a grassy field. The dog is looking towards the right of the frame. The background shows a line of trees and a fence.

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