

# **USING WILSON FGT-2 VERTICALS AS A 10 Meter MONOPOLE:**

**Makes a great stealth balcony antenna!**

**by Yukon John HI3/KL7JR**

**Updated 12 - 03 -2011**

I saw an article in QST Magazine (August 2011) where W1IS experimented with a 40 meter quarter-wave vertical monopole antenna, and the first thing I thought of was why wouldn't this work using Wilson FGT-2 verticals (3 if you have them).

It all started here years ago:

**<http://www.hamuniverse.com/kl7jrverticals.html>**

Using just a pair of radials in line, 180 degrees apart yields omni-directional coverage which is what I sought for my small antenna space. This is a simple design and a simple build. Here's where things get complicated.

The manufacturer advertises the antenna as 5/8 wavelength, so I knew I'd have to experiment a bit with the radial lengths. The vertical radiator without a whip shows some good numbers when just used as a stand alone vertical (27.6 MHz, SWR under 2 and an R of around 60).

The question is then is this a true 5/8 WL antenna if I use wire (or metal clothes hangers) for the two radials? Beats me, but if it works it will be at least 1/4 WL and very compact besides the omni-directional coverage that was important to me!

I then can compare the 10m monopole with my 3/4 WL 20m loop to see how much of a difference there will be. [I'm thinking the loop should exhibit a 2 "s unit" stronger signal on transmit and receive.....we'll see!]

This just could turn out to be a good balcony antenna for those of us living in a restricted space environment.

To avoid stray RF I'd recommend an air choke (6-8 coils coax 6" diameter) at the feed line.

I should point out that this antenna on a 5 foot tall mast stuck in the sand with 3 or 4 short radials laying on the ground yielded me a lot of DX from KP2 land on 15, 17 and 20 meters a few years a go! So I already knew how versatile these verticals are on the ham bands!



Note the old rum barrel on wheels in the photo above used as my "antenna test table" complete with antenna connectors. I bonded the first two metal rings together and to the antenna connectors to broaden the ground plane.

I started out with a pair of 102 inch long radials ( $1/4$  WL on 10m) then I started chopping and taking readings with my MFJ 259B analyzer (no whip tip was used on the FGT-2 nor did I use the ground strap...just let it dangle). Results were:

<u>MHz</u>	<u>SWR</u>	<u>R</u>	<u>X</u>	<u>Radial length</u> (each)
27.7	2.4	78	44	102 inches (#14 wire)
28.3	1.9	47	34	72 inches “ “
28.3	1.7	86	8	60 inches “ “
28.3	1.5	76	9	46 “ clothes hanger”
28.5	1.6	44	21	40” “ “
28.375	1.1	59	3	34 ½ “ “
28.500	1.2	52	9	34 ½ “ “
28.600	1.4	40	13	34 ½ “ “

Notice the "good" numbers on the last 3 rows in the chart above!



**The metal clothes hangers visible in the photo above were painted white. The FGT antenna is white (also available in black and red). The background color of the patio is white....you know where I'm going with this! Okay, so the numbers look good but what is the monopole really like on 10 meters?**

**On-the- air comparison on November 7, 2011, with the monopole vs. my restricted space loop really floored me! The monopole was an honest 2 "s units" stronger on receive with all 3 stations (OH, IL and NC) I compared. I now know which antenna I'm using in the upcoming ARRL 10 Meter contest!**

**Update...11-08-2011**

**Gave the monopole a good work out today on 10m. Made 26 QSO's in a 35 minute period. 7 contacts gave me 5x5s, 5 gave 5x7s and 14 gave**

**5x9s. Worked the following states: ME, MD, WA, OK, MA, WV, DE, PA, IL, TN, AL and GA. DX worked: S58, I0, 3, G0, 3, PD5, OZ3, DL7, EA1, 3 and F8. Condx QSB/QRM. Received signal was about the same as sent signal most of the time. I put a plastic lawn chair in front of the monopole to conceal it even more. See photo below.**



**I swapped 5x9s with the OZ3....he was running 5 elements on 10 and 1kw and really laughed when I told him what I had, hi hi!**

**Update 12-03-2011**

***On 12 Meters (using ATU)***

***In a few hours I easily racked up: DH3, ES1, PA3, I7, SM5, ON4, 7, F4, US5, UR6, UT1, VE2, 3, RW3, UA2, 4, IW6, OK1, CT1, EA3,4,8 etc. etc. plus***

***25 states! The band was in pretty good shape and many 5x9s were exchanged both ways. What a hot little antenna on 10 and 12 meters!***

***Ps: DXing in the Caribbean is a tough job, but someone has to do it, hi hi!***

**Good luck and have fun antenna experimenting.  
73 JOHN, KL7JR**