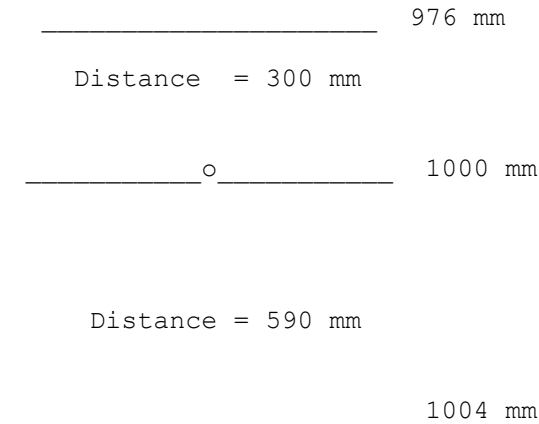


A simple 3 ele Yagi for 144MHz

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(Updated Mar 08)

Here is a simple 3 ele yagi for 2m /P work which I made up from an old Band 2 FM antenna with elements about 5mm diameter.



Construction notes:

The reflector & director are touching the metallic boom in the centre.

A coaxial matching stub is used to match the driven element to 50Ω due to the coupling effect of the other elements. Attach a length of approx 20cm RG58 coax at the feedpoint of the dipole (in parallel with the feeder cable & leave it open ended).

Some trimming will no doubt be needed of the matching stub for best match. I find it best to start off with a slightly longer length than required & trim by \*5 mm\* each time. It is essential to trim by 5mm because the exact point of matching is quite narrow.

(I recently changed from a coaxial stub to a 5-15pf trimmer across the) (feedpoint. This too works a treat. - Andy -)

For UK readers I've also purchased some of the old style Beehive trimmers, 0-30pF for 10 pence each from WH Westlake. They do the job too, and are great for making VHF/UHF ATU's if you are that way inclined.

Earlier on I scribbled some figure in my notepad about element size on this 3ele design.

With elements @ 2.5mm diam = 7.34dBd gain  
 With elements @ 5mm diam = 7.01dBd  
 With elements @ 10mm diam = 7.42dB

R changes by about 2 ohms but j varies a bit more.  
 Not a problem with a coaxial stub or capacitor across the feedpoint.

You may vary the length of the driven element slightly & it will not impair performance, but you will have a slightly different length needed for the tuning stub or value of feedpoint capacitor.

As a matter of interest, I entered the Practical Wireless 2m QRP Contest with this 3 ele yagi attached to my radio trolley, all of about 1.5m above ground level.

I came 54/80, however consider these two factors:

- \* The leading single operator used 22 elements compared to my 3 ele.
- \* I only operated for 1 hour out of the 6 hours (I think it was 6!) that the contest runs for!

Full details in the Practical Wireless November 2007 edition.

- Andy -

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73 de John G8MNY @ GB7CIP