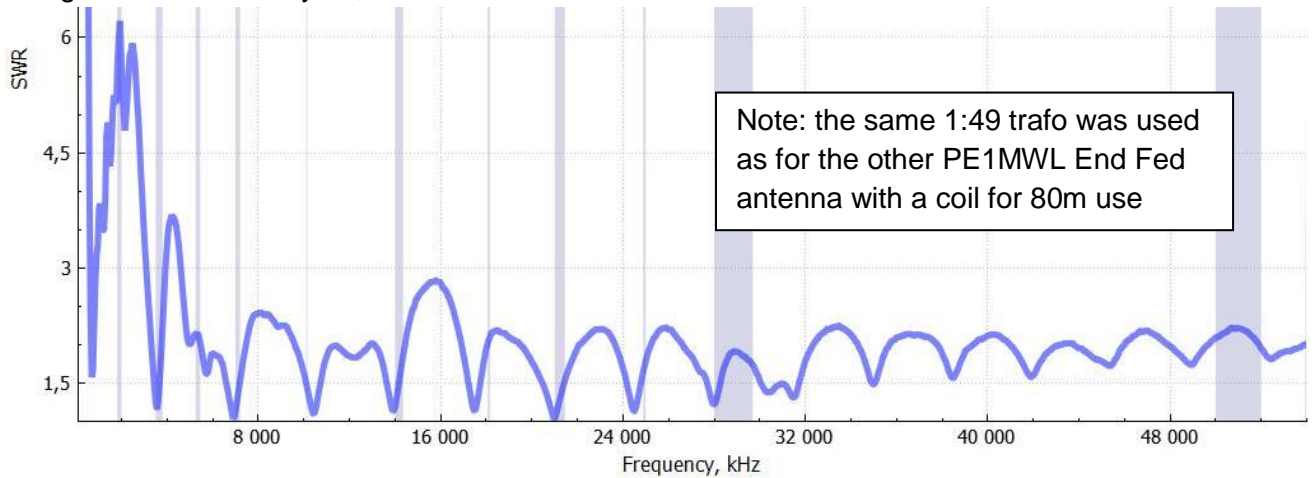


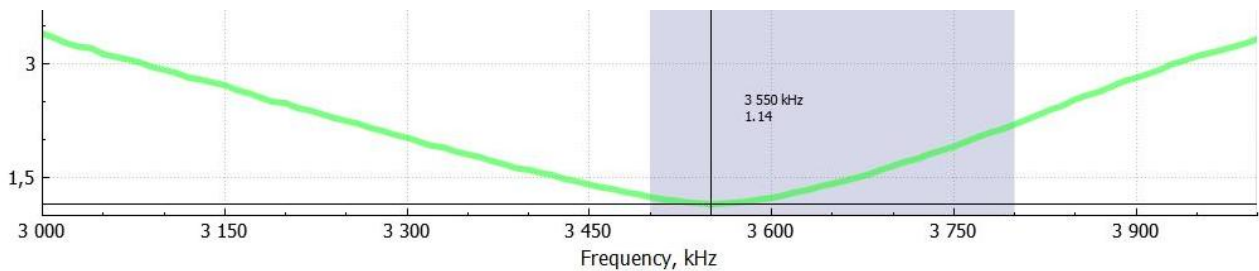
# Measuring full length 80m Half Wave End Fed Antenna - PE1MWL

Carlo PE1MWL acquired a **40 meter long antenna**, including isolators and fixation wires. Using an Antenna Analyzer, we made a first assessment:

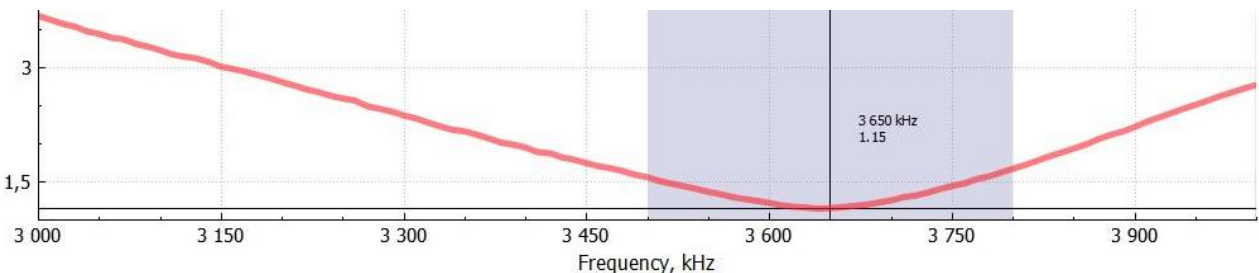


Just to have an impression. Clearly 160m is very high as there the 40 meters form a quarter wave. Further each multiple of 3,5 MHz forms another low on the SWR. Note that the antenna 'peaks' low in all amateur bands. First measurements for 80m:

## 80m:

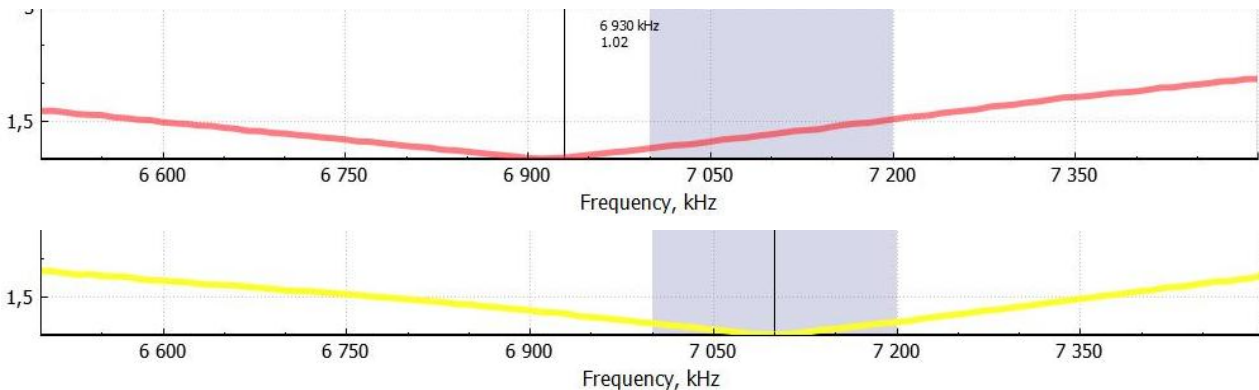


As Carlo intends to use the antenna solely in the phone part of each band, we decided to cut off about 1 meter. The result:

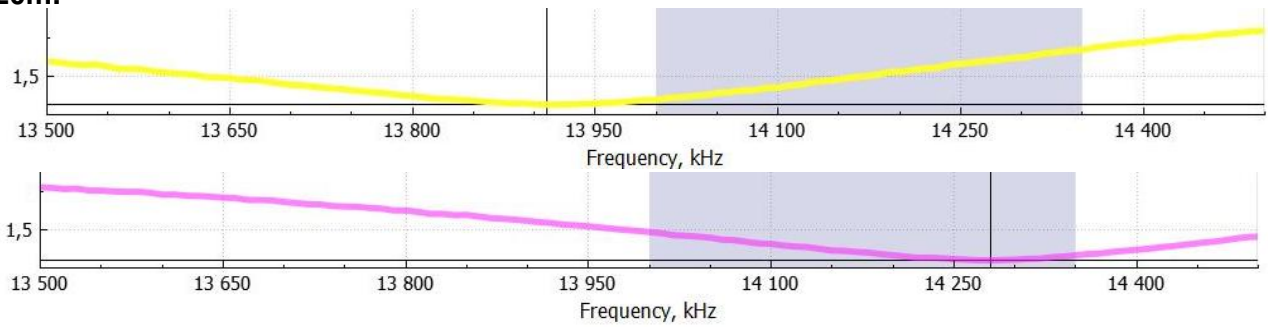


The other bands were also measured **before** and **after** the 1 meter cut off:

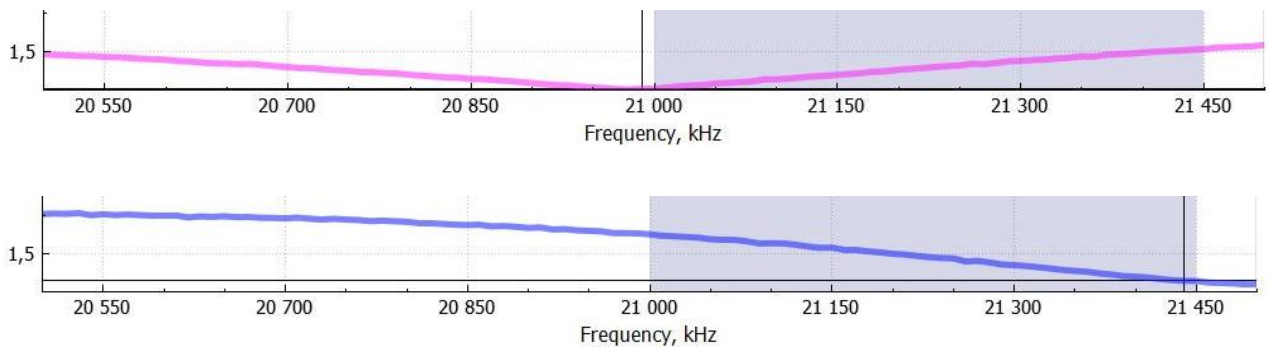
## 40m:



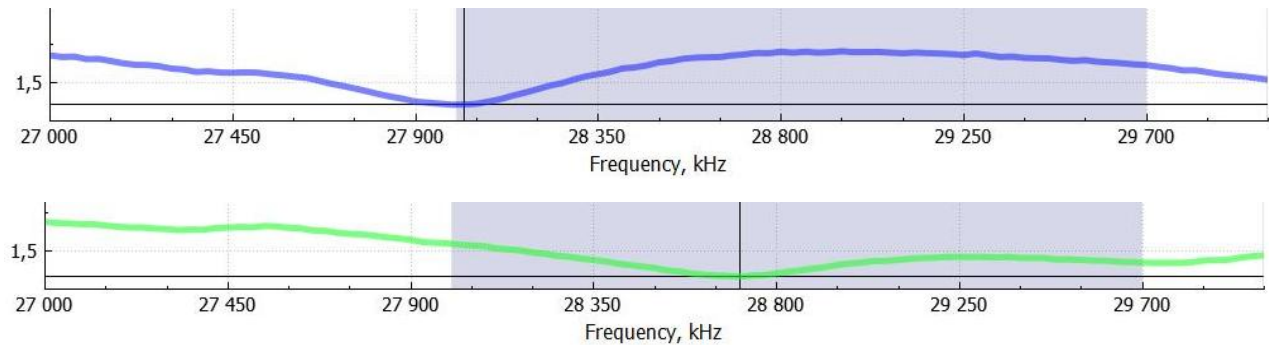
### 20m:



### 15m:

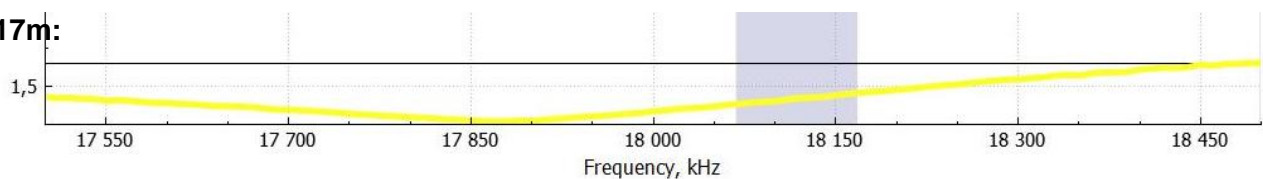


### 10m:



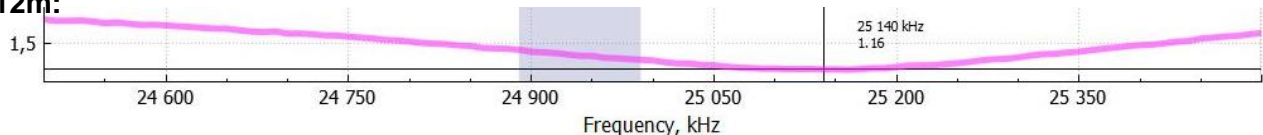
This is a very beholding overview of the effect of cutting 1 meter off the original wire length. We were curious about the behaviour of the antenna on other (WARC) bands. This is what we found:

### 17m:



Bonus points! on 17m the antenna feels good as well!

### 12m:



More bonus points!

Only 10 MHz (30m) was no success.

## ***Epilogue***

We used a borrowed RigExpert AA-54 Antenna Analyzer and the program RigExpert AntScope2.

We 'did' the antenna on a sunny day (July 20, 2020) in the dunes of Zandvoort, The Netherlands, at the port-a-cabin of Scouting The Buffalo's, where our Project Group PG.540 resides on Friday evenings every two weeks.

Only for 15m (21 MHz) the antenna is now somewhat critical, but starting at 21.150 the SWR is under 1 : 1,5, and use without antenna tuner is well possible

This 40m length (Carlo: please advise the exact length....) End Fed antenna looks ideal for those who can put the wire in the backyard. It gives troublefree operation without the requirement for a tuner. Even 12m and 17m are within the capabilities.

### **Discussion:**

In presentations of Steve Dick (K1RF) he mentions the addition of a capacitor, to be able to use the antenna on 80m for phone, and to stay 'in tune' for the other bands. Our measurements suggest that such capacitor is not necessary.

I tried to figure out why he mentions the capacitor, and am now convinced the this lies in the bandplan for 80m in the USA: the phone part runs up to 4,0 MHz! Because for Region 1 this antenna fits perfectly for all classic HF bands and two of the three WARC bands.

Hans, PA0SNY, Fred PA0FMS and Carlo, PE1MWL did the job