Subject Another Ugly Choke Balun by G4APL

This article has been updated in October 2009 with Paul's experience with half a TA31jnr driven element used as a HF vertical that has been laying around in the garden. (back yard).


Don has brought together some excellent examples on how to construct and build a Choke Balun.

In September 2007, Paul decided to build two or three of them, depending on what material could be found in the shed.

The idea was to add a balun to the HF beam a Mosley Mustang Mark 3 3 element 10,15,20 metre trapped yagi. This is fed with co-ax and has the Mosley earth strapped at the feed point. The beam has been adjusted for the low end of the HF (High Frequency) bands.

Paul had used a commercial balun in the 1970’s before and burnt this one out. Supposed to be rated to 1 kilowatt pep. (peak envelope power).

Using the information material from Don's web site http://www.hamuniverse.com/balun.html time was to see what was in the shed.

Found a short length of 4 inch drain pipe. Left over from the 90 foot of drain pipe laid underground that carries the RF cables. Also found a 2 inch piece of down pipe.

Materials
HF Beam Balun
12 inches length of 4 inch diameter PVC drain pile
18 foot of RG58
two suitable cable plugs

Having got all the required tools out. Took Paul and hour to build the Ugly Choke Balun as pictured below

The HF Balun is attached vertically to the Stub Mast about the Mosley Mastang Mark3 beam

Paul was very surprised with the results. Testing the aerial and Balun with 250 Watts the standing wave was surprisingly good.

Never seen this beam produce these results before
14.005MHz to 14.150MHz 1:1
14.200MHz 1.2:1
14.250MHz 1.4:1
14.300MHz 1.9:1
21.005MHz to 21.300 1:1
21.400MHz 1.2:1
28.005MHz – 28.400MHz 1:1
28.500MHz 1.2:1

Now to do some dxing and see how the aerial performs.
In October 2009 after experimenting during the summer with half of a Mosley TA31jnr trapped dipole.

That was used in the 1970’s as part of a TA33jnr HF beam (Which has been replaced with a Mosley Mustang Mark2 and Mark3 3 element beam since then) as a 10, 15, 20 metre trapped vertical . This is used with the GB7CIP HF PACTOR HF mail forwarding system.

There are no radials used with this. Though some tests were carried out and no noticeable improvement was noticed. Not enough room to lay a ground mat of radials.

Half of the TA31 driven element (TA31jnr) was mounted to a section of aluminium attached to 2 feet of aluminium pole driven in to the ground using an SDS hammer drill so as not to damage the pole.

The element was attached to the insulating blocks with screws. Cable ties are used to add additional strength and reduce the strain on the element feed point due to movement caused by strong winds.

A spare feeder about 16 Metres long was removed from the Tower to it’s base. 15 Metres of Aqua 1 ½ Inches (40mm) diameter flexible water pipe was purchase from a local garden centre.

This was laid under the lawn to the base of the vertical. The cable was pulled through using 16 metres of drain rods, which took 20 minutes from taking the rods out of the bag and replacing them.
Paul was disappointed to find that having removed about 70 feet (21 Metres) of cable attached to the tower feeder. That the SWR was reading over 3:1 on 15 and 20 Metres.

Time to build another G4APL Ugly Choke Balun.

![G4APL Feeders at the base of the tower]

G4APL TS-480SAT Tuned to 21.110.40MHz
SWR showing two bars < 1.5:1

Bingo a good match, as seen in the photographs of the Kenwood TS480SAT with a 100 Watts of FSK on 20 and 15 Metres display and SWR less that 1.5:1 instead of over 3:1

Hope the above of use to you and allow you to experiment.

73 Paul G4APL