

The New Design G4TPH Magnetic Loop Antennas

When I was contacted by Rob, PW's Editor, I was pleased to accept the job of reviewing Tom Brockman G4TPH's new design for his Magnetic-Loop antenna.

As some readers will know, I have quite a few ex-military man-pack radios here at my 'Kidderminster Kollection' private museum and often operate them portable. Usually I use the man-packs' whip or maybe a random wire antenna, so the Editor and I thought the chance to try a tuned loop antenna would be quite interesting.

Tom G4TPH sent me an example of the two versions he makes, the ML-40 MkII and the ML-20 MkII, which cover the 7 to 21MHz (40 to 15m) bands and the 14 to 28MHz (20 to 10m) bands respectfully can handle up to 35W of s.s.b. or c.w. carrier for Morse operations. They differ only in the size of the loop the kit produces, approximately 1.1m diameter for the ML-40 MkII and 900mm for the ML-20 MkII.

The Kit

The kit for each antenna, **Fig. 1**, comprises several lengths of cut and drilled aluminium strip, a plastic box housing the tuning capacitor and another plastic box housing the coupling for the coaxial cable connection. A sheet with written instructions on how to assemble the loop along with pictures of it assembled are also provided. The kit of parts is very compact and light and would easily fit in a holiday suitcase or such without any trouble.

Assembly of the loop is straight forward and I had it done in a matter of minutes. As it was a sunny day I first

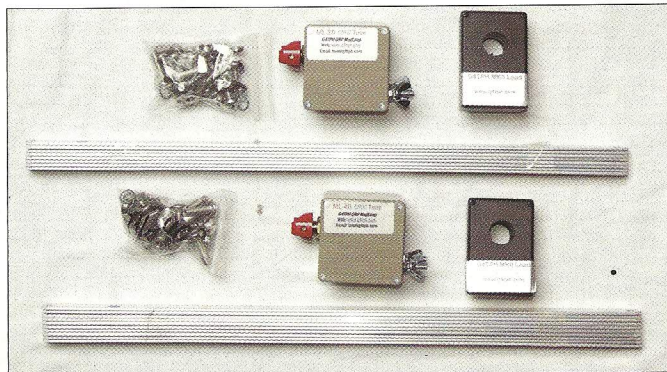


Fig. 1: The kit for each of the two loops has different number of aluminium strips and has one box for the tuning capacitor and another for coupling the feeder to the loop.

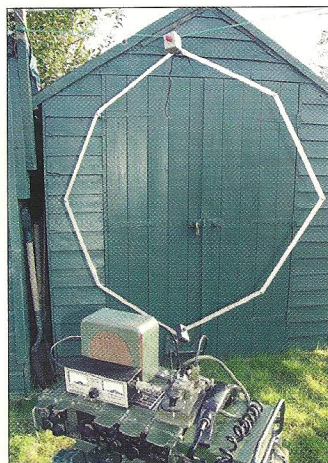


Fig. 2: On test, hanging from the washing line!

tried the loop hanging from the washing line, **Fig. 2**, and using my PRC320 transceiver on 14MHz. Receive wise the loop is very good. You just rotate the tuning control to peak the received noise, on doing this I heard quite a few stations at good strength.

For transmitting purposes I think it's really necessary to insert a standing wave ratio (s.w.r.) meter in the feed line. Then, with the transmitter keyed the tuning knob is adjusted for minimum s.w.r., bearing in mind though that your body slightly affects the tuning. So, you might need to trim then move away then trim again until you're



Fig. 3: The two additional boxes, Ben would have preferred the coaxial socket to have been on the bottom of the coupling box.

satisfied with the results.

Tom G4TPH's website at **www.G4TPH.com** has full details of the s.w.r. figures you could expect – but suffice it to say – once tuned for the middle of the 20m band no further tuning was needed. I would have liked the BNC connector to be mounted at the bottom of the coupling box though, **Fig. 3**. This would then allow the coaxial cable to hang vertically. I understand from Tom that they work equally well when hung in a horizontal position – thus providing an omnidirectional radiation.

I also tried the loop inside my attic shack and, while it did work, it must be remembered other items in the shack, house wiring, window frames, etc., will all affect the performance of any indoor antenna. Also, it's best to keep the loops as far away

Product

The G4TPH Mag-Loop

Supplier/Manufacturer

Tom Brockman G4TPH

Contact

1 Dalby Crescent
Newbury, Berkshire
England RG14 7JR
Website **web:** www.g4tph.com

Pros

Lightweight, easy assembly,
Covers several bands with good s.w.r. values.

Cons

Needs supporting or hanging off suitable fitting.

Prices

ML-20 MkII	£75
ML-40 MkII	£79

Tom Brockman G4TPH

comments: I would like to thank Ben Nock G4BXD for a comprehensive review of my portable MKII range of Magloop antennas. Designed originally for my use at my Spanish apartment: no ground plan, counterpoise or ATU is needed. Tune for maximum noise, tweak s.w.r. and away you go! 73s Tom.

from mains wiring to reduce r.f. getting into the wiring.

Although I heard stations in VK, ZL2, WA9 – and many more DX stations – actual contacts were mainly within Europe, a YU1 at 1850km and S56 at 1400km being typical. As a tuned antenna of small size and being easy carried – the G4TPH loop certainly works and for anyone not wishing, or not able to make their own wire dipoles or tuners – then I think they provide a very viable option. My thanks go to Tom Brockman G4TPH for the loan of the review units.