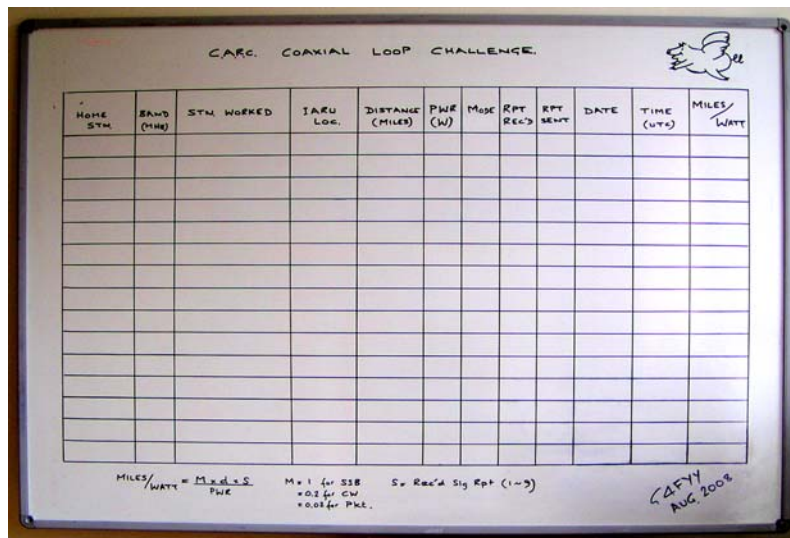


The CARC Coaxial Loop Antenna (CLA) Challenge



Following the successful CARC Buildathon evening on 23rd July, several CARC members have expressed surprise at the results they have achieved with this simple antenna using modest power. Subsequently, the idea has been discussed of mounting a simple Club Challenge to assess the effectiveness of this simple antenna.

The suggestion is that members enter their best '*miles per watt*' DX directly onto a white board. The first line of the table in the photograph above reads as follows:

Home Stn.	BAND (MHz)	Stn. Worked	IARU Loc.	Distance (Miles)	Pwr (W)	Mode	Rpt Rec'd	Rpt. Sent	Date	Time (UTC)	Miles/Watt

Contacts are ranked in '*miles per Watt*' rather than absolute distance so that low power contacts are not disadvantaged. Similarly, a 'correcting factor' according to signal bandwidth is proposed so that, for example, Packet Radio contacts using a few tens of Hertz bandwidth are not unduly advantaged when compared to the wider bandwidths of SSB. The received signal report is also taken into account according to the following formula:-

$$\text{Miles/Watt} = \frac{M \times d \times S}{P}$$

where

P = transmitter power in Watts

M = Mode = 1 for SSB, 0.2 for CW and 0.02 for Packet

d = distance in Statute miles, derived from the 6-character IARU Locator (see below).

S = received signal strength report, (1 ~ 9).

There are several web sites that will convert from IARU Locator to distance, e.g.

<http://www.carabus.co.uk/jscalculators.html> by Roger Muggleton, GØHZK

The above method for calculating '*miles per watt*' for the Challenge favours QRP operation because signal strength decays *exponentially*, not linearly, with distance. A more accurate assessment of the performance of the CLA may be made outside of the Challenge if desired.

G4FYV 19 Aug. 2008