Q5

Affiliated

North Bristol Amateur Radio Club
S.H.E.7, Braemar Crescent, Northville,Bristol.

DECEMBER 2011

A Merry Christmas All Readers

Not much to report this Q5.

Silent Key's. Kip. W J F Humphries M0IHL.
John Lowe M0LOE.

Slow Morse:- Dennis G4CQI 144.250. Mon, Tues, Thurs, Fri. 1400 to 1430.

The RAE courses are still running. Chris M0GBH is doing a great job, thanks to all those that are helping. The next exams are 18th December, we have candidates for the foundation and intermediate.

EVENTS:
23rd December Greetings on the air night.
26th December. RSGB Bristol group on the air night Try 28MHz.

A reminder that the RSGB News GB2RS is broadcast live on ATV via BATC Live web page at 9.30 am Sunday morning.

Some of the club members are now making various kits. Talks that have taken place have gone down very well thanks to those involved. We will try to get more talks by members next year. G4CJZ Dr Tony Hawker has sorted a project for the club, making some direction finding equipment. Ready for a transmitter hunt next year.

Notes from talk by Tony G8CKK and Dick G0XAY.
Resonance and antenna length:- For any antenna there is only one frequency (This is called the resonant frequency). The antenna is in electrical balance. The resonant frequency is a function of electrical length , which may not bear a relationship to the physical length in feet and inches.

1 Wavelength in feet = 984 / Frequency in MHz.

This is the fundamental formula.
In real life situations many factors exist that alter the physical length, end effect, thickness of elements, material used.

The long wire end fed:-

A single wire fed directly from the back of a transmitter is not an ideal antenna. Reason:-Close proximity to equipment, house wiring and other domestic equipment. On the plus side it is cheap and easy to erect, and can be fitted in most gardens. OK when portable or in emergency operation. In practice to get the best results you must use a length that suits your needs. It is essential that a random wire antenna has a real or substitute earth. The best alternative is a radial or counterpoise comprising a single ¼ wave wire from the antenna feed point. An earth spike although less efficient is convenient for use in portable operation. (Use an ATU. 2 wires will cover eight bands)
The long wire:- this requires a very long length to get gain comparable to a beam. The resonant length for a long wire is.

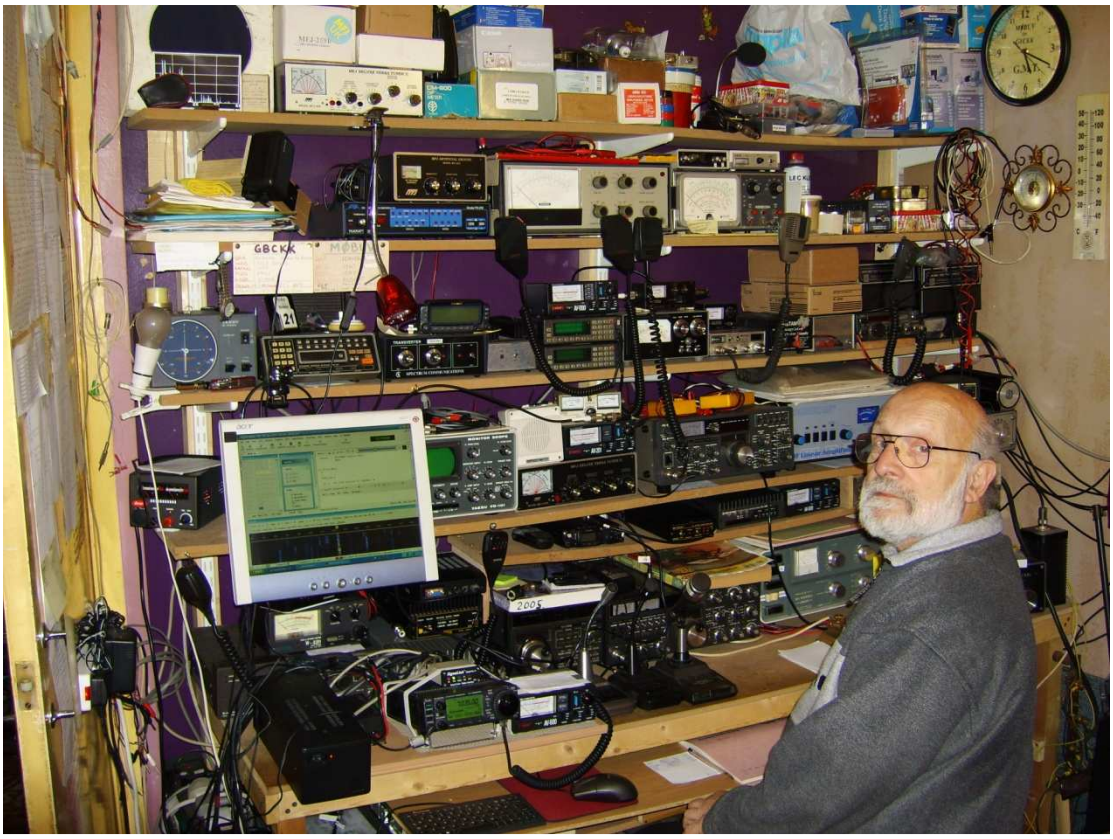
Resonant length = (n-0.05) wavelength/2

n = the required number of ½ wavelengths
.
Height above ground determines the angle of radiation from the antenna.

Radial ground wires:- when run underground are more of an earth mat, radials should be above ground not touching it. (1 foot is a good height)
Radials above ground can be tuned . Usually 4 radials are a good compromise.

Other antennas for the small garden are verticals. In the 50s 22' Vertical with 92' co-ax (depending on velocity factor) covered 10 to 80 mtrs. 160 mtrs would require 184'. Then the extended vertical, 1/2 and 5/8 wave.
½ wave;- The dipole ends are high voltage and high impedance, so matching is required. No radials are required. Power gain is about 1.8dB over a ¼ wave ground plane.
5/8 wave;- The extra length provides a Power gain of 3dB over a ¼ wave ground plane. See previous Q5s for dimensions etc.
Contaminating jackets, on some co-ax. RG – 8/U and RG-58/U life span 5years.
We also talked about the miser antenna analyzer. Information can be found in sprat 103 and 148 also on page 7 of the GQRP antenna hand book. Go to GQRP on the net and find out how to join, there is also other information.
I have since made a 5/8 wave vertical for 10 mtrs. The dimensions are given in a previous Q5, I did need to trim the vertical element and radials to get it to tune to 28-29 MHz. SWR 2;1 noise level with pre –amp S7. TX reports 59 to 59+ stations worked SV, LZ, YO, RX,OH, G, Ks. Heard others Jas etc. Comparing signals with my G5RV at 18' in a loop, the Butternut vertical.
Signals G5RV S7. Butternut S6-7. 5/8 wave vertical S9.

The 3 band dipole that was shown at the talk was made from Hustler mobile whip antennas. The bands were 40,20 and15 mtrs (see photos). The mast is shown in earlier Q5s. The antenna is working well 40mtrs Gs 59+ , DLs 59+, could hear plenty of station. 20mtrs TF, LA, CN, OH, 9A, C31, S9 signals. 15mtrs 7x4, KN signals S9. QRP 1 Watt SSB, EA, SQ, signals S9. I have heard lots of stations but did not try to work them. The beam was up about 16 feet.
I also fitted an 80mtre Hustler mobile whip above the dipoles this is vertical and also added an 80 metre radial. Worked EI, DR S9 signals, only tried a couple of stations. Seems to work OK. Height about 15 feet. (See photos).
PHOTO G8CKKs Shack.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