



Carrier Wave

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Volume 3 Issue 1

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February 2007

Club News

RSGB AFS Contest Entries.

Club members entered both the RSGB-AFS CW & SSB contests again this year.

The CW event on Sunday 14th January 2007 from 14:00 to 18:00 on 3510-3590 kHz with eight entries generated two teams with Team A achieving 6290 points & team B 1380 points.

The SSB event on Saturday 20th January 2007 from 14:00 to 18:00 on 3600-3750kHz with five entries generated two teams with Team A achieving 4170 points & Team B achieving 960 points.

News from Down Under.

Norman, GM3WJ reported on 25th January that he is now in Auckland for 10 days before driving to the South Island via relations on the way and will stop at Waikawa for a three day break before heading to Christchurch. He will get his 817 fired up there and try to work EU with 5 watts. So far he has had several aborted QSO's with DL's heard, most of Sothern EU but nil G's at all!!!!

He has also visited the ZL1ZLD club. They lease their version of Stonehaven Radio. Some site! Some antennas!

He Still hasn't seen comet McNaught. His brother in laws neighbour and ex Air NZ pilot are to take him to a good location in the city but it has been cloudy since he arrived there. However, still 25C Hi.

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Coming up soon:-

- Round House

CLUB PROJECT: THE 1:4 BALUN

This provides an unbalanced 50W input and a balanced 200W output. It will work the other way around, with a 200W balanced input and a 50W unbalanced output but it will not transform from 50W down to 12.5W. That requires a completely different approach.

The design is a Guanella transmission line transformer, as before, but this time the line required is 100W. The two lines in parallel give 50W in for the input, and the output is taken from the lines in series, giving 200W.

Spacing the lines to obtain the necessary impedance was done by wrapping four layers of PTFE tape around each and then binding them close together with another layer. I built a wrapping machine as I had so many experiments to do. It speeded the process greatly. The length of wire used is the same as before but on a larger core, chosen only to get all the wire on. Again, there is no magnetic coupling during operation. Sevick shows a similar balun, with slightly thicker wire, rated at 5kW. Fitting it into a suitable box has been left to the imagination of the builders.

Tony Langton, GM4HTU

IMPROVE YOUR G5RV.

Have you a G5RV either full or half sized? Are you happy with its performance?

It is well known that a G5RV is very much of a compromise as an HF 80 to 10M antenna. Full size, 102ft top and 34ft stub, it is of course originally designed as a 1.5 wave doublet centered on 14.150 MHz. Perhaps you have just erected one and attached a co-ax feeder and put up with the end result?

HALF SIZE.

Many amateurs have very limited space and can only shoe horn a half sized G5RV antenna. It has a 51ft top and a 17ft of 300 ohm ribbon stub feeder and many commercial units have a rather small lossy balun or none at all to interface with the necessary 50ohm co-ax feeder.

Cont.



HOW TO IMPROVE IT.

Take another look at your real estate, could you get in more than the standard 51ft top, if yes...extend the top by as much as you can e.g. if you can get 85ft in, extend the top to the total of 85ft. Have you an enormous run of 50 ohm co-ax? If yes buy more 300 ohm ribbon and extend the 17ft supplied direct to the shack if you can. If you do need a section of co-ax to get into the home, make it as short as possible by using the maximum use of ribbon feeder. Remember to purchase the new black slotted type which has a very low loss.... Ideally the 300 ohm ribbon should be taken direct to the ATU, preferably a fully balanced Z match type....If not the ribbon should be attached to the ATU's balanced output.

If you must use a balun, build a 4:1 balun using a nice large T200 toroid which has a very superior performance than the small balun Mr MFJ has fitted to his standard 100 watt ATU's

If you find you have RF problems in the shack or problems with RFI (radio frequency interference) an alternative is to fit a choke balun will minimize RF current on the co-ax outer (screen). This can be constructed using RG58 wound round a length of ferrite rod or tubular ferrite cores over the co-ax. Or coil up the co -ax feeder, about 10 turns should do, as large as practicable.

If you haven't an antenna analyzer, borrow a friends or the club's (via a committee member), and see what your changes have done? If you have plenty of 300 feeder left over, try adding or subtracting to the feeder length. Try and tune it to your favourite band/bands. Remember the feeder can be rolled up if necessary, as long it is kept away from any obstructions. To improve the half sized version for 80M

Loading coils could be added on. If you have enough real estate for a full size G5RV, again check your plot dimensions, could you further extend the 102ft top, if so add to the top and again extend the 300 ohm feeder to reduce losses and vary the resonant frequency.

Another option is to replace the 300 ohm ribbon with 450 ohm ladder line; this has an even lower loss factor than the 300 ohm type and is much less affected by rain or snow. Or construct an open wire feeder which could be made at minimum cost.

In all cases of center fed antennas get the center as high as possible, this is where R/F current is at its maximum and should be as high as possible for max efficiency.

The nearer you get to a 133ft (half wave on 80M) the more efficient the antenna will be. By now we should be forgetting the G5RV name tag and calling our much modified antenna a homebrew doublet.

Did you know amateurs have reinvented the G5RV many times? Here are some variants e.g

G6RV	116.5ft top
G7RV	187ft top
G8RV	252ft top

Norman MacKenzie, GM3WIJ.



Post for Sunday

I was surprised when I came in the other day to find a message on my answering machine from the Sunday Post regarding the Aberdeen Amateur Radio Society. I returned the call and it was from a lady called June A'Hara who writes for the Sunday Post Magazine. She was doing an article on unusual pastimes and hobbies and wondered if I would like to do a short telephone interview regarding Amateur Radio, so I told her about the hobby this being quite difficult to try and include all the different aspects.

I gave her as much details of the club activities regarding the meetings, talks, construction, field days and special event stations etc, as I could. I also told her about the RSGB and that the club was affiliated to the society. June also requested a photograph of someone operating a typical station. I took a photograph of Colin our President at the club rig and sent it to her next day. June replied saying that the photo was fine and just what was needed.

June has no say as to how much space the article would get in the magazine or if it would get published at all but said she thought it would. The powers to be have the final say. The article is due to be published on Sunday February 4th. By the time you read this it may well have gone to press.

Lewis Donaldson GM4AJR



Technical

USB or Serial?

Radio transceivers with a serial interface usually use relatively slow data interchange (ie Below 19.2kBits/sec) Fine if your PC has the now dated UART serial interface. Modern laptops seldom have serial ports, however, there are now a number of USB to serial port conversion units available commercially which can handle up to 254 serial port allocations. When searching for these units be aware that not all units support all the required RS232 interchange parameters. Most radio software & hardware usually requires a minimum of TX, RX, GND, DTR & CTS. Very few require a timing element. This results in a simple 5 wire solution for connection (usually 5 pin D-type) for most interfacing applications.

As technology progresses where rigs & PC's will merge, direct, fast USB2 connection will become available allowing true real-time PC control of amateur transceivers.

George Anderson, GM0VGI

Snippets

Digital TV, like it or loath it, is here to stay. Satellite & Freeview are no longer the only contenders for delivery. BT Vision takes digital TV into a new era. Their new broadband service puts the viewer in control allowing viewers to watch what they want when they want it. BT's set top V-Box allows viewers to move between broadcast TV, on demand programming, digital recording (Up to 80 hours) and interactive applications. This unique service does not require monthly charges, billing instead on a pay as you view basis.

George Anderson, GM0VGI



For Sale **Ian Munro GM4GVK (01224 316787)**

- Pair of Magnum–K Speakers 25 Hz to 20 kHz, 3 speakers with 12” Bass unit gives excellent quality. Dimensions 15” x 24” x 11.5”
- Heathkit HW-8 QRP Rig. 80-10m approx 2W o/p. Includes mains PSU and Manual.

£100.00

- Goldring variable speed turntable, Shure 75 pick-up

Wanted Articles for inclusion in future newsletters.

- Please submit articles for inclusion in the April issue by Thursday 1st of March

73 from GM3BSQ

Aberdeen Amateur Radio Society

Club Calls **GM3BSQ** & **GS3BSQ**