



**RAGCHEW**

**JANUARY 2020**

**RING OUT THE OLD, RING IN THE NEW!**

**HAPPY NEW YEAR!**

## **FROM THE EDITOR**

Soon after the November "Ragchew" was published, we heard the sad news that another Life Member of the Society had passed away - **Don G0HBB**, who died on 14<sup>th</sup> November. I've managed to find a couple of photos of Don in the archives and they appear in this issue.

**Tony G4HBV** continues his **RF Notes** series and in this issue delves into the limitations of small antennas.

**Malcolm G6UGW** concludes his **HF Bands** series, and this month takes a look at the **13 metre Broadcast band**, and finally the **10 metre Amateur band**. In the next issue of "Ragchew", Malcolm will be starting a new series reviewing the Radio Spectrum from 300Hz - 300GHz and the first article will cover the Extra Low Frequency Band 300Hz - 3kHz.

In **Contest Round-Up**, I review the club's results in the various contests we've taken part in during the past year.

**Amplitude modulation (AM)** enthusiasts are now catered for with a Club net on **Tuesday evenings at 2030 local time, 144.550 MHz**.

The various club nets cater for a variety of bands and modes but some of our newly licensed members may feel a bit shy about joining in so in this issue I have summarised a list of hints in **Net Etiquette**. This will also be covered in a forthcoming Club Workshop.

On **January 13<sup>th</sup>** I will be giving a talk about **Heathkit**. Please do bring along any Heathkit equipment you possess as it will no doubt be of interest to our newer, younger members.

As we enter 2020 we look forward to what the year will bring - hopefully better conditions on the HF bands!

**73 Brian G4CIB**

**The Editor wishes  
A Happy New Year  
to all GARES Members  
and their families  
Good DX in 2020!**

**Radio 4** is a permanent feature of the **G4CIB / G4RHK** household and only occasionally do we resort to the "off" switch. One of my favourites is "The Life Scientific" presented by Professor Jim Al-Khalili who talks to leading scientists about their life and work, finding out what inspires and motivates them and asking what their discoveries might do for us in the future. I never cease to be amazed how many of his interviewees did not have particularly glowing school or indeed university careers. The episode I have just listened to - the last in the current series - featured Elizabeth Fisher who carried out what initially was a three year project studying chromosomal abnormalities in mice and humans, which turned out to take thirteen years to bear fruit, in particular research into the genetic abnormalities in Downs Syndrome children. She admitted that she wasted her time at school, partied her way through her three years at Oxford, narrowly avoiding being thrown out. She realised that she needed to get some sort of qualification and went to Secretarial College where she learnt to type, then worked at a theatrical agency. Her "light-bulb" moment came at a "red-carpet" theatrical premiere when she realised she did not want to spend the rest of her life in this environment and started her career in the world of science. You may ask what has this to do with Amateur Radio? The technology available to us now is light-years ahead of what was the norm when I started in the hobby over 50 years ago. As part of our self-training it behoves us to acquaint ourselves with at least an understanding of modes and bands we are perhaps unfamiliar with. You never know - you may have a "light-bulb" moment in 2020 and discover the delights of a new band or mode!

### **WANTED!**

**Your articles for "Ragchew"**

Built anything recently? Let other members know!

Tried out a new antenna? Tell us how it performed!

Been out /P recently? Let the members know how you got on!

**Submit copy at any meeting or email to me [g4cib@outlook.com](mailto:g4cib@outlook.com)**

## RF Notes by Tony G4HBV

Small antennas - these are defined by the radiating elements being electrically short, nominally less than a quarter wavelength. Following on from the last "RF Notes" it can be seen that a physically small antenna will be less efficient at coupling into the transmission medium. This is another way of saying the antenna's radiation resistance is too low. The problem is that losses in the antenna become more significant when compared to a low radiation resistance and hence efficiency is further reduced. In terms of the fields around the antenna, maximum energy needs to be transferred to the radiation zone (far field) whereas energy stored in the induction fields within the "near zone" needs to be minimised.

If the antenna is brought to quarter-wave resonance by lumped inductance or capacitance, the bandwidth of the antenna will be reduced. There is no exception to this rule: **if short antenna has a wide bandwidth, then something is wrong!** Note that once lumped loading components are added to a radiating element, this destroys the element's ability to resonate on higher harmonic frequencies through its own inherent inductance and capacitance.

Suppliers of small, commercial antennas in their adverts always seem to stress the SWR "of the antenna" as if this was some indicator of its efficiency. It is certainly **NOT**, as I have explained before in these notes.

Being small it is likely that the antenna will be erected close to the ground. As well as the primary radiation from the antenna element, there will exist ground reflection from around the antenna in what is known as the Fresnel zone. The ground reflections from this area will distort the primary radiation pattern and can lower the radiation resistance still further.

In the past I have used short, loaded antennas on 1.8 and 3.6 MHz and they were always at least several S-points down on full-sized antennas. On 1.8 and 14 MHz I also experimented with home-made magnetic loops, using micro-bore copper tubing or coaxial cable with receiver-type tuning capacitors. Although not the best components for construction, the loops seemed to work quite well, though bandwidth was extremely narrow. I believe that there are theoretical reasons why these loops perform better than the ordinary wire elements of short antennas.

### The Bands Explained - 13 Metre Broadcast Band and 10 Metre Amateur Band

By Malcom G6UGW

#### **13 Metre Broadcast Band - Frequency range 21.450 MHz to 21.700 MHz**

Signals in this band are subject to changes in sunspot activity. At times this band will have stronger signals than the 16 metre band due to build-up of ionospheric return from frequencies higher than 21 MHz.

#### **10 Metre Amateur Band - Frequency range 28.000 MHz to 29.700 MHz**

Likewise, this band is subject to changes in sunspot activity and during solar sunspot maxima, normal distance ranges from 1000 to 5000 miles with occasional openings of up to 10,000 miles or better. Summer time produces a phenomenon commonly referred to as "short-skip" with intermediate distances of 200 to 800 miles. During winter evenings the band is normally closed with ground wave signals limited to 25 to 50 miles. During this period the waves act in a similar manner to VHF frequencies.

# Net Etiquette

By

Brian G4CIB

Members of GARES now have a wide range of options to join the various club nets through the week.

On Bank Holiday Mondays and school holidays when there is no club meeting we have Monday Club on the Air (COTA) on 2m FM, Tuesday 2m AM net, Wednesday 2m FM Club net, Thursday COTA 2m FM/80m SSB and Friday 70cm SSB. The details of all these nets can be found on the club website.

For the benefit of our newer licensed members here are a few hints and tips on the etiquette of net operating.

Rule number 1 is **Listen**. I know you've just acquired your first licence and keen to join in but like all amateur radio activities **you cannot beat listening**. In fact the experienced DXer will tell you that a high proportion of their time is spent listening. So listen in to the various nets to get the feel of the procedure and when you feel you understand what's going on, then it's time to join in. But how's that done?

The best time to join a net is right at the start. The net controller, having established that the frequency is clear, will call for any members wishing to participate to call in. Obviously at this point there may be plenty of "doubling" with the strongest caller winning so you may have to call several times. Having eventually been heard by the net controller, who will acknowledge your call, a list of call signs in order of operating will be read out, so do **make a note of who you will be following and who to pass it on to**. During the initial rounds of the net, it's good practice to leave a pause between overs so that any latecomers can call in. In these circumstances the net controller will advise the latecomer who to follow.

Be aware of any members of the net you have not worked before and give them your name, location and a report. Obviously for net regulars the exchange of reports is not usually necessary unless something has altered e.g. new antenna, rig etc or something has drastically changed e.g. a much weaker signal than normal, distorted audio etc.

As more people join the net, be aware that the time to get round to your turn will increase so do try and **keep your overs short and relevant to the net**. If there is some specific topic of interest to perhaps just one other member then rather than tying up valuable time during the net, do please arrange to continue the discussion after the net has formally closed.

Do not be afraid to leave the net before it is closed by the net controller - you may have other urgent duties to attend to! It keeps it tidy if you can sign out when your turn comes round but if for some reason you are unable to wait until then, just interrupt the flow and advise the net controller you have to sign - **but keep it short as you will be interrupting the flow of the net**.

Building up experience operating on the club nets will give you confidence to join in nets on the HF bands such as the **Worked all Britain (WAB) net** and the many nets specific to special interest groups.

So to repeat - the key is to **listen before joining** so that you get a feel for the net's etiquette and style.

And of course, the object of the exercise is to **have fun and enjoy your Amateur Radio!**

## Contest Round-Up

During the past year, the following club members have submitted logs in the **80m Club Championship** and GARES came in at a very creditable **11<sup>th</sup> position** out of 49 entrants, up 3 places from last year.

**G4ENZ Martin** (Data, CW, SSB)

**M0NQN Bob** (Data, CW, SSB)

**M0XAC Gary** (Data, CW, SSB)

**G4IZZ Mike** (CW, SSB)

Just two members supported the **Autumn Series 80m contests** (now in its 3<sup>rd</sup> year), the club coming in at **28<sup>th</sup> position**. This series of contests offer enhanced scoring for Foundation and Intermediate licence holders so it would be great to see some of our newer club members submitting logs

**G4IZZ Mike** (CW, SSB)

**G4CMY Tony** (CW)

Also during the past year the following club members have submitted logs for the regular VHF UKAC contests:-

**M0XAC Gary** (50MHz, 70MHz, 144MHz, 432MHz)

**G4IZZ Mike** (50MHz)

**G0ULH Les** (50MHz, 70MHz, 144MHz, 432MHz)

**G4CIB Brian** (50MHz, 70MHz, 144MHz, 432MHz)

**G4BCA Dave** (70MHz)

**M0HFX Barry** (144MHz, 432MHz)

**M0XGL Graham** (144MHz)

**2E0MFH Matt** (432MHz)

All the scores submitted are combined and the year is closing with the club currently in **24<sup>th</sup> position** in the **Local Clubs UKAC Table**.

The more members we can encourage to submit logs then the higher we can climb in the table. Do think about having a go! Any of the regular participants will advise you on how to go about it.

A small group of members were able to participate in **National Field Day** at the QTH of **Cliff G8CQZ**, coming in at **6<sup>th</sup> place** in the **Low Power Assisted Portable** section. In the **Low Power Contest** held a month later at the same QTH the club notched up **4<sup>th</sup> place**.

Many thanks to all the members who have supported the various RSGB Contests during the past year and keeping GARES on the map!

## From The Archives



**NFD 1986 on the Gordon League Rugby Ground, Hempstead. Don G0HBB is in the front row on the left. His good friend Stan G4YYR is on Tony G4HBV's left.**



**Group photo recording the club's visit to BBC Radio Gloucestershire in 2005. Don G0HBB and Stan G4YYR on the far right.**

## G4CIB/P Alderton Hill, IO92AA

On Boxing Day 2019



**G4CIB/P in QSO with Malcolm G6UGW on 2m FM at 11.00 UTC**

**FT817ND into a vertical hand-held dipole - which has the advantage you can easily move around for best received signal!**



**Later in the day, returning to Dumbleton from Alderton, with the light beginning to fail, I had 2m SSB QSOs with Anne 2E1GKY and Dave G4BCA**