SURREY RADIO CONTACT CLUB

85th Anniversary Year - Founded 1935

DECEMBER 2020 – No 940

SRCC supports the RSGB Child Protection Policy

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Face-to-face meetings are currently suspended for the duration of the COVID-19 pandemic. The current plans are detailed in this Newsletter – but the national COVID-19 situation remains volatile, so please keep an eye on the SRCC website at https://www.srcc.uk

SRCC COMMITTEE 2020/21

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EDITOR'S OPENER

Dear Members & Friends,

First, a welcome to Ian Schofield M0CGF who has recently become an SRCC member and lives in Sanderstead having (I think) recently moved there. We look forward to meeting you face to face – but at present that may be some time ahead!

On that subject, at the time of writing this we are back in full lockdown until December 2nd, with no information from Trinity School as to when we could restart holding "real" meetings there. (This is not meant as any criticism of Trinity as they are as much at the mercy of the evolving situation as any of us). But the Committee are trying to back the horse both ways by organising meetings which will work either face to face or via Zoom: we will continue with that approach until it is clear that we can return to an environment in which face to face meetings are possible.

Our friend and member John G8IYS has been in hospital again with an infection (but fortunately not COVID). At the time of writing he is back home in Sanderstead and I'm awaiting a call back from him to get an update. But I'm sure we all send him our best wishes for his continued recovery.

One item from the interesting virtual visit by Terry G4CDY to the Marconi Museum at Poldhu (more details later) got me thinking (an unusual event, you might think…). It relates to an aspect of the first bridging of the Atlantic by wireless in 1901 which has always puzzled me. The tale as generally told has the pre-arranged letter S transmitted from Poldhu and received at Glace Bay in Nova Scotia, where "both Marconi and Kemp (his assistant) heard it". Nowadays we would be most unlikely to trust the outcome of a trial for which the sole evidence of success is the word of those who had a vested interested in it succeeding! Instead we would almost certainly insist on a double blind trial (such as they are no doubt using in COVID research), in which the decision on what to send would be made at the sending end without the receiving end being notified, with the receiving end then passing what was received back to the sender – with success of the trial only accepted if the two matched. Perhaps I'm turning into a conspiracy theorist (heaven forbid) - or maybe I'm just overthinking this…..

Anyhow, on to the Newsletter….

73, Quin G3WRR

FUTURE MEETINGS

The December A meeting on Monday 7th is traditionally the Construction Contest. As the usual face to face arrangement is not currently possible, the meeting will take place via Zoom and will consist of a Construction Contest without the Contest bit…..an arrangement we are calling the Construction Roundup. There will be no prizes, but it will be an opportunity for members to show and talk about any items they have built that they think will interest their fellows.

The December B meeting on Monday December 21st will consist of the now normal Round Robin, but given the closeness to Christmas, members are encouraged to get into the spirit of things by consuming their own mince pies and cheering liquids. Wearing of party hats, or indeed silly costumes, is encouraged ….

While investigating another matter, it came to light that around a third of SRCC members were not members of the RSGB – a surprisingly low level of RSGB membership. As a result, the January 2021 A meeting (on Monday 4th) will consist of a virtual presentation on the role and work of the RSGB by Alun G4WGE who is the RSGB District Representative covering the area which includes Croydon.

The January 2021 B meeting on Monday 18th will be the now traditional Round Robin – but to get us into trim for 2021, this time without comestibles.

PREVIOUS MEETINGS

The November A meeting consisted of a virtual visit to the Marconi Museum at Poldhu in Cornwall presented by Terry G4CDY, who first became an SRCC member over 50 years ago. This consisted of pre-recorded videos from outside the museum and inside, supported by a commentary from Terry. The museum is based on the site at Poldhu from which the first transatlantic radio message was sent in 1901.

The original intention had been to transmit from Poldhu to Cape Cod in Rhode Island USA, with similar antennas (200 wires in a conical formation suspended by 20x200ft wooden masts constructed by shipwrights) at both ends. But the masts at Poldhu collapsed in a gale and were replaced by a simpler structure of 2x200 ft wooden masts supporting a fan of 54 wires. The masts at Cape Cod also collapsed but by that time the decision had been made to move the American end to Glace Bay in Nova Scotia. The spark transmitter was designed by Ambrose Fleming of Imperial College and was powered by a (seriously underpowered) petrol engine driven alternator. The receiving station at Glace Bay consisted of an untuned coherer receiver fed from a 500ft kite borne antenna.

It had been agreed that the letter S (three dots) would be sent as this was kindest to the generator at Poldhu, and in the early afternoon of the second day of transmissions (12th December 1901) the letter S was received on three occasions by both Marconi and his assistant George Kemp, and again eleven times on the following day. This successful reception has since been questioned on the grounds of verification (see earlier under “Editor’s Opener”) and also on the fact that in the middle of the day, the path would have been totally non-viable at the very long wavelengths intended. But it has since been suggested that harmonics of the intended frequency had been getting through to the untuned receiver, using a frequency of around 1MHz. However later (1902 onwards) more scientifically verifiable tests were conducted using ships – and we all know where that has led us now!

Six acres of the original 52 acre site were later donated to the National Trust by the Marconi Company, and it is on that site where co-operation between the National Trust and Poldhu ARC has led to the establishment of the current museum. In addition to a coffee shop, bust of Marconi himself and large number of exhibits of radio equipment over the years (including EF50 and 807 valves which will be familiar to our more senior members), there are two stations (named “Kemp” and “Paget” after two of the early Marconi pioneers) using the call GB2GM.

Terry concluded by running a kind of mini (six question) version of the traditional Annual Quiz but using questions answerable by information contained in the presentation. The winner, correctly answering all six questions, was Ray G4FFY, who received the prize of a Marconi Museum T-shirt.

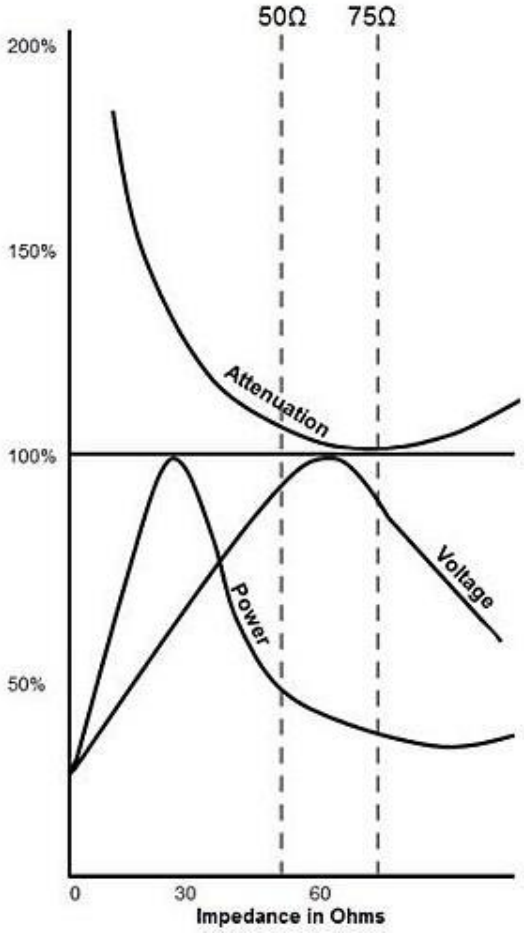
The November B meeting on Monday 16th consisted of the now familiar Round Robin, in which 19 members participated.

HERE AND THERE

A couple of items this month….

Mike M1CCF, who often flags interesting items for the Newsletter, recently came up with one from the *hflink* reflector entitled “Why 50 ohms?”. This struck a chord with me as I have often wondered why there were two standard impedances for coaxial feeder - 50Ω for communications type applications and 75Ω for broadcast reception. My own experience at BT and having to attend standards meetings (although never a “standards person” myself) was that if you put n standards people in a room together they will manage to come up with at least n+1 different standards. And of these, two will predominate and a lengthy fight to the death for superiority will ensue – with the winner decided on commercial rather than technical grounds! A good example is the battle between VHS and Betamax a couple of decades ago - and not forgetting a Philips (?) standard that many thought to be technically superior to both. But I digress…. Mike’s reference was certainly interesting, but probably best understood by those who already had a fair understanding of the topic. So I have done a bit of digging in various (not always mutually consistent) sources and come up the following brief explanation …..

We are probably all familiar with the fact that the characteristic impedance (Z_0) of coaxial cable is dependent on its physical properties – mainly inner conductor diameter, inside diameter of outer conductor and dielectric constant of the spacer. What may be less apparent is that other electrical characteristics – in particular attenuation, power handling capacity and breakdown voltage – are also dependent on those physical properties. If a graph of these three against Z_0 is drawn, a general shape as shown on the left is obtained, although the actual values will depend on the dielectric constant. This analysis was first carried out around 1930 by either designers of high power (multi kilowatt) broadcast systems or Bell Labs working on the early 4MHz multiple voice channel coaxial line systems, depending on which information source you believe! Based on an air dielectric, the point of lowest attenuation was found to be 77Ω, the highest breakdown voltage 60Ω, and the of highest power handling capacity 30Ω.



The key point is that the optimum value for each of them is found at a different value of Z_0 – so there has to be a compromise! The compromise reached by the engineers was for 50Ω, close to the average of the optimum Z_0 figures for attenuation and power handling. And once coax cables were being manufactured for 50Ω, that value became the de facto standard for both the cables and the equipment they connected. And then by fortunate chance, when PTFE became available about a decade later, cables using it as a dielectric came out with a minimum loss around 52Ω! (Sources do not seem to state the impact of PTFE on power handling capability). This does not answer the question of why the 75Ω value became adopted for TV and VHF radio antenna downleads: the most logical explanation for this is that in purely receiving environments power handling capacity can be ignored and it is adequate to simply go for a value close to the optimum – i.e. 75Ω.

I must admit to not being 100% comfortable with some aspects of this explanation and will be delving further. For those interested, an excellent starting point is here:
https://www.microwaves101.com/encyclopedias/why-fifty-ohms

And now for something a bit lighter. A personal view is that most radio amateurs take their hobby very seriously (no bad thing) and as a result some, but certainly not all, can be a bit lacking in humour. I was therefore very pleased to pick up the following from the *Elecraft K3* reflector back in August (which I have impolitely copied without seeking permission first):

Question "I just put three right angle UHF connectors in series with my antenna feed. Which way should they be tilted for circular polarization?"

Response 1 - "If you are in the northern hemisphere and they are all facing to the left as observed you will have clockwise circular polarisation, facing to the right counter clockwise circular polarisation. Obviously in the southern hemisphere these are reversed (just like water going down the plughole in the sink)".

Response 2 – "It's easy. In the US, we can just note which way the water circles when flushing a toilet. But in the UK, toilets are far more complex. I understand some of them are actually reversible".

That rather appealed to me…

73, Quin G3WRR

LINE OF SIGHT by RICK M0LEP

May Hill as seen from my home on the other side of the Severn a bit over 14 miles away (March 2019)

Almost every day when I look out of my kitchen or living room window I can see May Hill. It's been two years since I moved here from Orpington, and the closest I'd been to it was driving past on the way towards Ross-on-Wye. It's a prominent landmark, at least partially because it has a curious clump of trees on top of it that give it a very distinctive appearance (as you can see in the photo above which I took from home some time ago).

On the first Saturday of this month I finally got to take a close look at it. It's a SOTA (Summits On The Air) summit, and I've chased activators on it a few times. I had another reason to be driving over that way, so on Friday evening I put up an alert, put my rigs on charge and also charged my small SLABs, and packed what I could. On Saturday morning we weren't quite as organised as I'd have liked, and we were late out of the door. Even so, I was in parked and ready to walk up the hill shortly after 11am. It was around this point that I realised my Kenwood TH-D72 V/UHF FM handy was still at home, charging. I removed the relevant frequency entries from my alert, and set off up the hill. Apart from the grove on the top, most of the summit area is grass and bracken, and there are ponies and cattle who graze there. There were also quite a few other people on the summit wandering around in small scattered groups. I wandered up the broad grass path, through the grove on the top, and found myself a patch of ground that looked like it wasn't in the middle of a path. I chose a patch on the leeward side of a small bush where the grass was short. There I set up my pole and strung my linked dipole from it. It has links that allow it to be used on 80, 60, 40, 30, 20 and 17 metres. At a pinch it can also be used on 15 metres with the links set for 40 metres, but at this stage in the sunspot cycle I wasn't expecting to need that option.

A view of the summit from the path up the north flank

As the links were all closed, I started by calling CQ on 80 metres CW to see what happened, though it was late enough in the morning that I wasn't expecting much. To my surprise Allan GW4VPX came back to my call, so that was the activation started. After a few more minutes it seemed time to move on. I had a listen on 80 metres SSB, but there wasn't much activity, and none of it strong, so I decided to go up to 60 metres straight away. The standard UK frequency for SSB SOTA is 5.3985 MHz USB. I checked the frequency, put up a spot, and soon had four contacts in the log (including Allan again). From there I moved to the usual SOTA spot for more international 60 metre activity, 5.3545 MHz, and switched to CW. When a few minutes of calling brought no responses, I checked the spots and added a new one manually. That brought me four more contacts, two from Germany, and one each from France and Belgium. My next stop was 30 meters, and that brought me another five contacts (Finland, Portugal, Spain, Switzerland, and Germany again). My next band was 18 metres, and I called CQ for a while there. I did get a very brief response, but not enough even to get a complete callsign, let alone complete a contact, so I guess the band was right on the edge of usability. I decided it was time for lunch.

My operating position on May Hill

After lunch I decided to try 20 metres. This is a busy band for SOTA and can be quite competitive. Rather than trying to find myself a frequency I decided to tune around a bit to see whether there were any other SOTA activators busy on the band. Sure enough, I found OK1CHP/P on 14.063 MHz, and listened long enough to find out what summit he was on. I started to answer his call, and my rig shut down. That happens when the battery voltage gets too low. I tried the rig on internal battery alone, but the voltage was very borderline. I checked all the connections to the SLAB. The voltage was better, but still a bit low. I turned the power down and tried answering again. This time I got through the contact, and was happy with the 449 he gave me, which wasn't bad given the low voltage and consequently reduced power I was putting out. After that contact I decided to call it a day and packed my kit away. I then amused myself for a little longer by hunting down a couple of geocaches on the summit before wandering back to my car.

In SOTA, your chances of having a successful activation are greatly increased if you are spotted. With most modes, self-spotting is the best option, but one of the things that make SOTA with CW easier is the automatic spotting system. Provided there's a suitable alert set, the system monitors the RBN (Reverse Beacon Network), and when it sees a CQ that matches an alert it automatically spots the activator. RBN relies on a large number of skimmer receivers around the world, and at least in Europe the HF bands are pretty well covered. If you compare the SOTA spots with the RBN ones you'll see that I was spotted automatically on 80, 30 and 17 metres, and only spotted myself manually on 60 metres.

A view back towards the Severn and my home from the edge of the grove

showing spots for DX call: M0LEP/P
search spot by callsign

rows to show: 15

de	dx	freq	cq/dx	snr	speed	time
EA8/DF4UE	M0LEP/P	18081.5	CW CQ	16 dB	13 wpm	1252z 05 Sep
EA8/DF4UE	M0LEP/P	18081.5	CW CQ	11 dB	13 wpm	1241z 05 Sep
HB9DCO	M0LEP/P	10117.4	CW CQ	8 dB	13 wpm	1227z 05 Sep
DM6EE	M0LEP/P	10117.5	CW CQ	20 dB	13 wpm	1227z 05 Sep
SE5E	M0LEP/P	10117.5	CW CQ	11 dB	13 wpm	1220z 05 Sep
OE9GHV	M0LEP/P	10117.5	CW CQ	12 dB	13 wpm	1220z 05 Sep
OL7M	M0LEP/P	10117.5	CW CQ	11 dB	13 wpm	1218z 05 Sep
EA8/DF4UE	M0LEP/P	10117.5	CW CQ	18 dB	17 wpm	1213z 05 Sep
SE5E	M0LEP/P	10117.5	CW CQ	9 dB	13 wpm	1208z 05 Sep
OL7M	M0LEP/P	10117.5	CW CQ	8 dB	13 wpm	1207z 05 Sep
OE9GHV	M0LEP/P	10117.5	CW CQ	18 dB	13 wpm	1207z 05 Sep
G4ZFE	M0LEP/P	3555.5	CW CQ	11 dB	13 wpm	1101z 05 Sep

RBN spots during my activation

12:42 Sat **M0LEP/P** on **G/WB-019** 18.0815 cw
[RBNHole] at EA8/DF4UE 13 WPM 11 dB SNR *(by RBNHOLE)*

12:08 Sat **M0LEP/P** on **G/WB-019** 10.1175 cw
[RBNHole] at OE9GHV 13 WPM 18 dB SNR *(by RBNHOLE)*

11:38 Sat **M0LEP/P** on **G/WB-019** - Edit | Repost | Delete 5.3545 cw
(by M0LEP)

11:21 Sat **M0LEP/P** on **G/WB-019** - Edit | Repost | Delete 5.3985 ssb
(by M0LEP)

11:02 Sat **M0LEP/P** on **G/WB-019** 3.5555 cw
[RBNHole] at G4ZFE 13 WPM 11 dB SNR
(by RBNHOLE)

My spots on SOTAWatch during my activation

There were a number of minor issues that might have made for an activation with more contacts:

+ I left my U/VHF FM handy on charge at home...
+ I forgot to pack any pens. Luckily there was a sharp pencil in the bag from whenever way back, along with a spare logbook, so I had some way to keep a log. If there hadn't been...
+ I'd forgotten how touchy my key can be if it isn't firmly magnetically latched to something. That made my morse even shakier than usual.
+ I forgot sunscreen. There was a pair of thin gloves in my activation bag, so I wore them to avoid getting sunburned hands. However, that didn't help my morse much either and also rendered my mobile's touch-screen problematic.
+ I clearly need to exercise (or replace) my batteries, as they ran flat after only a couple of hours (and 14 contacts). I scratched a 15th and final contact (my only summit-to-summit of the day) by cranking the power down and hoping.

Still, with 15 contacts logged, it was a successful and enjoyable activation, and clearly saved by things I'd simply left in the bag for next time after my last outing, even though I didn't get any locals into the log using VHF or UHF FM.

There are several other relatively nearby summits on my "To Be Activated" list. Maybe I'll remember everything next time.

73, Rick M0LEP(/P)

SRCC LEAGUE TABLE – OCTOBER 2020

The number of entries in the **CONTACTED** section of the League Table for October 2020 was eight - two up of the number for September. Once again, there were no entrants in the **HEARD** section. The monthly tabulation is shown below.

ENTRANT	WORKED DXCC / SQUARE	WORKED SRCC MEMBER	WORKED IN CONTEST	POINTS THIS MONTH
G4FFY	93	2		190
M0CGF	63		42	168
G4LZE	65	1		132
G3WRR	31		31	93
G4FYF	20	1		42
G3EUE	18			36
G3ZPB	5	3	5	21
M0LEP	6	1		14

The increased entry since September is due firstly to the return of Ted G3EUE – good to see Ted entering again as that suggests that he and his family are regaining a degree of stability following their recent bereavement – and secondly to a first-time entry from Ian M0CGF who has recently joined the club. Ray G4FFY moves up to top position displacing Colin G4LZE, who moves down two places to third with a very competitive first-time entry from Ian M0CGF slotted in between them. Quin G3WRR and Steve G4FYF take fourth and fifth positions, a reversal of their October placings. They are followed by Ted G3EUE, Peter G3ZPB and Rick M0LEP taking sixth, seventh and eighth place.

85% of Ray's 95 scoring contacts were on FT8, the majority of the rest being on FT4 but there were also two using SSB. All his contacts – which included 14 new DXCCs for him - were on HF, the greatest number being spread equally between 160m and 20m (23% each) followed by 40m, 15m and 12m clustered around 14% - but he made at least one scoring contact on each of the HF bands. 61% were with European stations but included all continents, with North America, Asia, South America, Africa and Oceania in descending numbers. Best DX (and quite rare) was VP8 (Falkland Islands) on 20m but he also managed W2 (USA), VO (Canada) and UA9 (Asiatic Russia) on 160m which is pretty good for that band with his limited antenna. However interesting "gotaways" were 8J (Antarctica), 8Q (Maldives) and VK2 (New South Wales) on 40m FT8.

The great majority of Ian's 63 scoring contacts (94%) were made using SSB, but included three on FT8 and one on FM. With the exception of one contact on 2m (the FM one), they were all on HF (mainly 40m & 20m) but included all the HF bands except 160m & 30m. Many were made in the CQ WW SSB contest and the UK/EI DX contest. As with this month's other leading entrants, the majority were with European stations (64% in Ian's case) and included all continents except Oceania – Africa, North America, South America and Asia in descending order. Interesting ones included 6W (Senegal), S7 (Seychelles), VP2M (Montserrat) and VP8 (Falkland Islands).

Colin's 66 scoring contacts were as usual all on FT8 apart from his regular JS8 sked with Peter G3ZPB. 80% were on 40m followed by 11% on 20m and 9% on 17m. Like Ray, most of his contacts (72%) were European but he too made contacts with all continents (Asia, Africa, North America, South America and Oceania in descending order) – and all on 40m which is good going, including a rare one - 4S7 (Sri Lanka). Alas like Ray, Colin also missed a contact with the station in Antarctica.

Quin's 31 scoring contacts were all made in contests, twenty in the RSGB DX contest (HF) and eleven on VHF in either the 4m UKAC or 6m AFS contest. Although (on HF at least) contests are always a good way of picking up countries, there was little of particular interest, with only one contact – ZF2 (Cayman Islands) on 20m – outside Europe.

Steve's ability to participate was limited by a number of domestic glitches – his comment "Normality restored in time for a couple of short sessions during SSB contest weekend just to get some points on the board" probably says it all! Nevertheless his 21 scoring contacts included one with 3V8 (Tunisia).

Ted's eighteen scoring contacts were, as usual, all on HF CW although further details on bands and countries are not to hand.

Peter's eight scoring contacts were made in the 2m UKAC contest (one of which was in IO94 square, the North Yorkshire area at around 350km and quite a good distance), or on the SRCC DSTAR net.

Rick's seven scoring contacts were all with European SOTA stations with the exception of one with John G8MNY (South Croydon being for some reason not regarded as a SOTA summit….).

The cumulative scores are shown in the table below. The relative positions of entrants at the end of October are the same as those at the end of September apart from the appearance of Ian at eighth position and Steve and Quin exchanging fifth and sixth.

:

ENTRANT	01/ 20	02/ 20	03/ 20	04/ 20	05/ 20	06/ 20	07/ 20	08/ 20	09/ 20	10/ 20	11/ 20	12/ 20	SUM
G4LZE	101	125	124	182	356	176	128	166	118	132			1608
G4FFY				6	124	480	357	302	94	190			1549
G3EUE	98	104	114	87	129	18	76			36			661
G3ZPB	24	42	38	84	53	78	141		28	21			509
G3WRR		24	57	24	141	102	8		30	93			479
G4FYF	23	32	62	48	42	50	60	42	35	42			436
M0LEP	16	7	10	10	56	30	22	18	36	14			219
M0CGF										168			168
G3SRC	78	12					63						153
G4WGE	6												6

A few thoughts:

- as we approach the end of the year it is time to consider potential changes to rules for the 2021 League Table …if there are any tweaks you think could be useful, please let me know so that they can be considered. (One thing in my mind is that we have had no entries at all this year in the “heard only” section – so is it time to let it go?)
- in addition to the purely numerical data, the varying level of information provided for each entrant in the commentary is not a case of favouritism towards anyone – rather that I can only include information that is provided to me! But mentioning this is definitely not a subliminal way of shaming entrants into providing more – as much or as little as you want to tell your fellow members is fine
- comments on what is “interesting” is highly subjective and I suppose that in picking on particular countries or squares I am really saying “Wish I had got that one myself…”

So much for Deep Thinking – on to the usual closure of this item by ranting about the state of the solar cycle….. In fact things are looking quite promising at last. For almost all of October, the SFI (Solar Flux Index) was languishing in the 70s but as of 27th it did a kind of step increase into the 80s – and although it has been teasing us by varying quite widely (typically +/- 3) on a day by day basis, the trend has been gently up, actually reaching 106 today (27th November) – the first time it has been that high since September 2017. With the CQ WW DX CW contest at the end of November it will be interesting to see whether the actual HF conditions reflect the theoretical basis! So watch this space….

73, Quin G3WRR (SRCC Leaguemeister)

SRCC NETS

The following is a list of structured nets on which members of SRCC meet regularly. They are sometimes joined by members of other local clubs, who are always made most welcome. The net is not usually led by a nominated controller, but stations normally transmit cyclically in the chronological order in which they sign in. If any member wishes further occasions and frequencies to be added to the table, please let me know at g.g.collier@btinternet.com.

BAND/FREQUENCY/MODE	DAY OF WEEK	START TIME (clock)
160m / 1905 kHz / LSB	Sunday	9.30 am
10m / 28.078 MHz / JS8	Wednesday	10.00 am
4m / 70.30 MHz / FM	Thursday	8.00 pm
6m / 51.55 MHz / FM	Tuesday	8.00 pm
2m / 144.6125 MHz / D-Star	Friday	7.30 pm
2m / 145.35 MHz / FM	Friday	8.00 pm

In addition to the regular Club Nets, several members monitor the local repeater channels, particularly GB3XP (145.6875MHz 82.5Hz CTCSS FM)

THAT'S ALL FOLKS…..

That's all for this month. Apologies to Ray G4FFY, Paul G7VAK and Steve G4FYF who also kindly provided me with material but it has been stood it over until next month firstly to keep Newsletter issues at roughly the same length and secondly to try and keep some variety in "one off" topics covered (as opposed to the regular items, which you are stuck with…)

See you on the Zoom calls or on the air…and keep COVID free!

73, Quin G3WRR