



SURREY RADIO CONTACT CLUB

83rd Anniversary Year - Founded 1935

February 2018 – No 906

SRCC supports the RSGB Child Protection Policy

CLUB NET 1.905 MHz LSB Sunday 9:30am
 CLUB NET 70.30 MHz FM Thursday 8.00pm
 CLUB NET 145.35 MHz +/- 25kHz FM Friday 8.00pm

Hon. Sec. John Simkins G8IYS
 18 Riding Hill
 Sanderstead
 South Croydon
 Surrey CR2 9LN
 020 8657 0454

CLUB Internet WEB Site: <http://www.g3src.org.uk>

E-mail: secretary@g3src.org.uk

MONTHLY MEETINGS NORMALLY ON 1ST AND 3RD MONDAYS 7.30 FOR 7.45pm

Meetings at Trinity School, Shirley Park, Croydon CR9 7AT

**1st MEETING Monday 5 Feb: Have Computers Killed-off Amateur radio as We Know It?
 with Peter G3ZPB**

**2nd MEETING Monday 19 Feb: Fix-it, Move-it-on and Social Chat
 with John G8MNY**

SRCC Committee 2017/18

Chairman & Club Meetings	G3ZPB Peter Burton	01737 551413
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Dear Members & Friends

Hello and welcome to the 906th edition, the February 2018 Issue, of the SRCC Newsletter - edited by your Hon Sec John G8IYS.

No doubt in common with many others, I have spent this past month looking out at the rain and/or listening with trepidation to the gale howling over the house roof. Although no damage has ensued, my 11 ele 4m/6m yagi and 22 ele 70cm yagi are currently

pointing in different directions – neither compliant with that indicated on the rotator! Annoyingly, whenever the wind and rain are absent, thus permitting the safe luffing of the mast, a new domestic task becomes added to the list.

HF explorations have taken me to 60m, where propagation shifts from several hundred km to at high strength to nil, and back again, on a so far unpredictable basis. Yet another set of mysteries awaits solution, it seems.

NEXT MEETINGS

First Meeting Monday 5 February. Have Computers Killed-Off Amateur Radio as we know it? with Peter G3ZPB

This somewhat light-hearted talk will explore ways that computers have impacted on some aspects of Amateur radio. It will explore simple aspects like log-keeping up to a fully digital radiocommunications system. There will be time for interaction with the audience and may or may not have answered the question by the end of the evening!

Second Meeting Monday 19 February. Fix-it, Move-it-on, Social.

PREVIOUS MEETINGS

First Meeting 8 January. SRCC ANNUAL CONSTRUCTION CONTEST

The meeting was attended by 15 members and visitors. A total of twelve entries were submitted, as follows:

Digital oscilloscope (entry 1) – Peter G3ZPB: This entry was a digital scope, built from a Chinese kit, one of the designs which had been selected for the 2017 SRCC Construction Project. It worked first time!

Rubik cube solving machine (entry 2) – Roger G8HDP: This entry was a machine which allows a randomised Rubik cube to be solved and reconfigured to the final state. It is based on Lego components, and includes:

base and framework

actuators to manipulate the cube (in whole or in part)

colour detector

software, running on a micromanage the me's operation.

The actuators initially rotate the cube, under software control, to allow the colours of the faces to be read by the colour detector. When all the colours have been read, the software "solves" the cube, and then instructs the actuators how to rotate the cube to display the finished state. This was demonstrated several times – successfully in all cases - and took around 30 seconds to do the job!

Susy radio antenna (entry 3) – John

G8MNY: It was not possible to demonstrate the entry itself as it is currently in use – but John was able to demonstrate some of the materials used in its construction, together with a map of its intended catchment area and the catchment area actually achieved. A fairly tight specification for the system had been set by Ofcom, including:
power of 25W in band 2

horizontal & vertical polarisation

maximum power radiated to the South

minimal (<1W) power radiated to the North

minimal skyward radiation.

The designed implemented was:
based on a halo mounted on a single pole (to minimise windage)

constructed from copper tube with tight fitting plastic hose inserted between the open ends to damp out wind induced oscillations which might otherwise lead to fatigue failure

fitted at the feed point with a lightning arrester and 4:1 balun (matching the 12.5Ω of the antenna to the 50Ω feeder). This is at variance with the normal practice of feeding halos via a gamma match

angled slightly downwards to minimise upward radiation

fitted with upward facing cable ties to prevents birds roosting on it.

The design has clearly proved successful as after seven years a 1:1 match is still there.

Variable power supply (entry 4) – John G8MNY: this entry was a rebuild of a scrap power supply which unusually has a variac on the mains input to control the output voltage. It can supply between 0 & 35 V at between 10 μ A and 10A. Another interesting feature is that the supply automatically constrains the relationship between output voltage and current to ensure that power dissipation is not exceeded. It was demonstrated driving a substantial resistive “dummy load”.

HF common mode suppression choke (entry 5) – Frank M6KUQ: this entry was made from an RSGB design and consists of 18 turns of 50 Ω coax wound on a ferrite ring, and terminated in two PL259 plugs. It provides a 3 S-point reduction in noise.

Noise canceller (entry 6) – Paul G7VAQ: this entry was built to provide suppression of radiated noise from VDSL systems between 160m & 10m, and is based on the Timewave ANC4 design. The basic idea is to have, in addition to the main antenna, a “noise antenna” to pick up the interfering signal. By suitable adjustment of the amplitude and phase of the signal from the noise antenna so that it is 180⁰ out of phase with the noise from the main antenna, complete cancellation of the noise is (in principle at least) achievable. Paul displayed both the prototype and final versions, which he uses with his SDR receiver and finds typically provides a noise reduction from S8 to S4 – comparable with the Timewave unit.

Switched mode power supply (entry 7) – John G8IYS: having attempted to build a transformer based PSU for his 4m & 2m linears, John decided on weight grounds to try a switched mode approach! Accordingly, he bought a mains driven unit off eBay that provided 50V at 50A (yes, that’s right – 2.5kW!) for around £35. It is built into a metal cabinet which also contains the necessary switchery, voltage and current meters, voltage adjustment capability, dc and mains

connectors and plugs . The unit is electrically silent between 472kHz and 432MHz.

Travel antenna set (entry 8) – Gareth G4XAT: The entry consisted of a selection of items assembled to allow SOTA - or holiday - activity to take place. It consisted of :

- two 40m – 6m doublets $5\lambda/8$ for 80m made from lifeboat aerial wire, with $\lambda/4$ counterpoises for 80-10m, sledge kite and attachments

- copy of Band Springer (very lightweight) 45ft end-fed antenna

- switched 20m / 10m dipole

- 20m dipole (reserve)

- short “Travel Pole” (10m)

- Velcro ties

- Nexus 5 Android phone (for running PSK31)

- 98 Wh laptop battery – supports >3.5 hr of continuous 5W transmit

- spare NiMH pack for FT817

- flatscreen PSU and charger

- spare coax feeders

- patch leads.

Gareth noted that he had he had taken the kit plus his FT817 on holiday to Lanzarote – but had left the microphone behind! In a period of poor conditions, he had one contact with EA using PSK31.

4m transverter (entry 9) – John G8IYS: this entry takes an input of 1mW at an IF of 28MHz, and produces an output of 25W at 70MHz. It uses two commercial boards produced by OZ2M, a transverter board producing 0.5W and an amplifier board producing 25W, capable of driving a linear. It is built in a metal case, topped by a substantial heatsink, which also contains all

the necessary switchery and provides the necessary external connexions.

160/80m ATU (entry 10) – Quin G3WRR: this entry was a last minute substitute from the reserve bench, as the intended item (a 6m Moxon antenna) would, after repair following an overly gravity assisted lowering, have needed taking apart to go in the car. The displayed replacement was a simple parallel tuned ATU for balanced antennas (typically in HF (CW) NFD) covering 160m and 80m (and capable of going up to 5.2MHz at a pinch). The capacitor was a commercial one, but the inductor was the PA coil out of a wartime T1154 transmitter (recovered from beside G3SJX's dustbin many years ago). Miniature wander sockets soldered onto the coil allow wander plugs to provide suitable tapping points for the capacitor and antenna. Although a wide range of inductance and capacitance combinations will resonate at the same frequency, care has to be taken in getting the right L/C balance to avoid the coil cooking up as a result of circulating currents! The item was assembled in a plastic box, using the G3WRR construction ethos that "if it works, that's good enough"....

"MiniTiouner" receiver for Digital ATV (wide and reduced band) (entry 11) – Gareth G4XAT: Following the move to digital TV by broadcasters, amateurs are now following suit. The item demonstrated was built on a PCB produced by BATC, and worked first time. The PCB comes with a parts list that can be uploaded to Farnell or Digikey in the USA – and the parts are posted back bagged and labelled, and are packaged in the unit's case- all in all a nice approach! The unit can receive from 142.75 MHz up to 2450MHz (including all amateur bands from 2m to 13cm) at bit rates down to 125kb/s. It can also receive Freesat signals. It was demonstrated displaying reduced band (RB) pictures generated locally by software running on a Raspberry Pi 3 processor – part of BATC's Portsdown initiative. The latter may result in an entry for next year's Construction Contest....

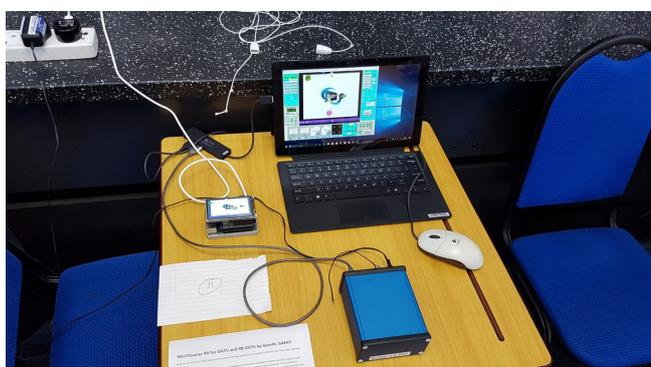
Cycle safety light (entry 12) – Gareth G4XAT: Gareth's son is a keen cyclist and although well equipped with safety devices, can only benefit from more! The device is based on strings of "LED tape" in which wasted power is minimised by having their 330Ω series resistors replaced by 22Ω, and being fed from 7.2V rather than 12V. The 7.2V to drive the LEDs is obtained from the output of a boost converter which steps up the 5V output of a Powerbank. In order to make maximum visual impact a flash pattern (generated by a microcontroller) in which opposing pairs of LED strings are flashed alternately is used. Ingress of water is prevented by feeding the LED strings inserted into a plastic tube closed with silicon sealant. The LED strings are twisted during insertion to ensure that the 120° beamwidth of the LEDs provides even illumination.

Following a voting session, in which those present voted for up to three favourite entries, the results were as follows: A small financial prize was awarded to each of the winners and presented by the SRCC Chairman Peter G3ZPB.

1st – entry 2 – Rubik cube solving machine – Roger G8HDP. The SRCC Coronation Cup will be presented to him later in the year.



2nd – entry 11 – DATV receiver – Gareth G4XAT. The Basiil Wardman Tankard will be presented to him later in the year.



3rd – entry 7 – 4m transverter – John G8IYS.



73, Quin G3WRR

Thanks to Ray G4FFY for the pics.

ERRATA!

I have noticed a couple of errors in recent SRCC Newsletters and it's worth putting the record straight...

In the January 2018 Newsletter, the write-up of George Emsden's excellent lecture on SETI referred to his callsign as M6TPH. This should have read M0TPH. Mea culpa!

In the November 2017 Newsletter, there is a reference to "contest normalised scores" in the article on the RSGB UK Activity Contests (UKACs). This refers to scores being normalised against the score of the leading station: this is true for some RSGB contests, but in the case of the UKACs normalisation is based on position in the results table. The reason why normalisation is used is interesting, and the relative merits of points based normalisation and position based normalisation (both have advantages and disadvantages) are distinctly arcane. This is definitely not the place for discussion of the subject, but if you are interested, please collar me at one of the meetings and I will try and enlighten you!

73, Quin G3WRR

2nd Meeting: Monday 22 January. Fix-it, Move-it-on and Social Chat led by John G8MNY.

No Report.

CHAIRMAN'S RAMBLINGS

Hello everyone. Christmas seems a long time ago as we look forward to a busy period coming up for SRCC in March and April with the Surplus Equipment Sale, AGM and our first organised outside visit for many years.

But let's first review events at G3ZPB during the past month....

The results of the last 2017 70cm UKAC Contest were announced. I finished in 40th place out of 85 which was my best result of the year with a normalised score of 541 (also a personal best!). And a 100% accurate log again. Overall, taking the whole 2017 year, I finished in 124th place from 242 entries.

Considering I only entered the last 3 month's contests I am quite pleased with that (in fact it is the highest score of anyone who only entered the last 3 contests!!!).

In terms of the SRCC entry, with the help of G3WRR and G8IYS, the Club finished the year on 3202 points giving us 25th place from 32 in the "Local Club" section. This gives us plenty of scope to improve during 2018, particularly as our nearest rivals (CATS) finished 8th!!! Come on everyone who is active on 70cms???

I entered the January contest but only scored 3114 points from 21 QSOs - one of my worst results ever. I don't really know why - except there seemed to be a high level of QRN (interference noise) which I haven't yet identified. One hopes I can only improve!

Most of my other radio time has been compiling my talk for the February meeting. As many of you know, I have been involved with computers nearly as long as PCs have been around and it is only natural that I should combine this knowledge with my radio activities. Computers can have a significant impact on several aspects of Amateur Radio and I shall explore some of these during my talk.

A significant amount of my other "spare time" has been taken up with computing - I am responsible for over 50 different Domains (websites) and am in the process of moving them all to a new Hosting service. There is quite a lengthy process involved in moving each one, even if the site only redirects web traffic to another site. Actually moving a full website with all its files takes several hours spread over the course of a day (part of the day is waiting for the Domain Registrars to action the changes before I can carry out the next stage)..

Part of the reason for changing is that there is now a move on the part of the internet industry (including Google) to move all websites from HTTP: to HTTPS:. This is to give better security Using HTTPS, the computers agree on a "code" between them, and then they scramble the messages using that "code" so that no one in between can read them. This keeps your information safe from hackers and has been a requirement for websites handing credit card data (for example) for many years. They use the "code" on a "Secure Sockets Layer" (SSL), sometimes called Transport Layer Security (TLS) to send the information back and forth between computers. Many hosting companies including my old one, charge many hundreds of pounds per year to supply SSL Certificates for 50 websites. No thank you, I thought, so I am moving to a hosting company with a much better SSL Certificate deal.

On Monday (22nd January) I moved the www.g3src.org.uk site and if you look carefully at the location bar in your web browser, you should now see it reads "<https://www.g3src.org.uk/>". Depending on your browser, you might also see a small green padlock symbol before the address confirming the site has a valid SSL certificate. By the way, you only have to type the shortened form "g3src.org.uk" to access the site. Other than for a few hours during the actual file transfer, hopefully, you will not have noticed any difference in access.

That's all for this month.

Hope to see lots of you at the next meeting on 5th February.

73, Peter G3ZPB

LAST SESSION 2017/18 AFFILIATED SOCIETIES SUPER LEAGUE (432 MHz)

Date	Time UTC	Contest	Band	Mode
Sunday 04/02/18	0900 – 1300	432 MHz AFS	432 MHz	99% SSB

Future SRCC Meetings

05/02/18	Have Computers Killed-off Amateur Radio as We Know It? by Peter G3ZPB
19/02/18	Fix-it, Move-it-on and Informal Social
23/02/18	SRCC Dinner
05/03/18	Spring Surplus Equipment Sale
19/03/18	Fix-it, Move-it-on and Informal Social
02/04/18	Annual General Meeting
16/04/18	Fix-it, Move-it-on and Informal Social
14/05/18	The Role of an RSGB Regional Manager by Mick Senior G4EFO
21/05/18	Fix-it, Move-it-on and Informal Social

Other Local Club Meetings.

27 Feb	<p>Bromley & District ARS</p> <p>Club Meal.</p> <p>Normal Meetings are held on third Tuesdays 7.30 for 8.00pm @ Victory Social Club, Kechill Gardens, Hayes, Bromley, Kent.</p> <p>Contact Andy G4WGZ on 01689 878089 or enquiries(at)bdars.-co.uk. Web: www.bdars.co.uk</p>
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12 Feb	<p>Coulsdon ATS</p> <p>Pool Plant Operations and Filtration</p> <p>Meetings are held at 8pm on 2nd Monday each month at St. Swithun's Church Hall, Grovelands Rd, Purley.</p> <p>Contact Terry Giles G4CDY via secretary@ catsradio.org</p>
15 Feb	<p>Sutton & Cheam RS</p> <p>Digital Voice by Martin M0SGL and Chris M0TCH</p> <p>Meets 8pm on 3rd Thursday every month. Contact John Puttock G0BWV on 020 8644 9945 or email info(at)scrs.org.uk Web: http://scrs.org.uk/. They also run a practical group most Monday evenings at the Banstead Scout Hut.</p>
01 Feb	<p>Horsham Amateur Radio Club</p> <p>FDGA Programmable Logic with G3ZBU</p> <p>Normally meets on the first Thursday of each month at the Guide Hall, 20 Denne Road, Horsham, West Sussex, RH12 1JF. NRQ TQ172304 at 20.00hrs local time. Contact Alister Watt G3ZBU at g3zbu(at)hotmail.com or http://www.harc.org.uk/</p>
27 Feb	<p>Dorking & District Radio Society</p> <p>Practical Session. Making Antenna Traps with Tim G4FDA</p> <p>Meetings at 7.45pm. Contact: David Browning (M6DJB) at djb.abraxas(at)btinternet.com. Web site: http://www.ddrs.org.uk</p>

2 Feb	<p>Crystal Palace R&EC</p> <p>AGM</p> <p>All Saints Church, Beulah Hill (Normally meets monthly on first Friday). Contact: Bob G3OOU 01737 552170 (http://www.g3oou.co.uk)</p>
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No info	<p>Wimbledon & District Amateur Radio Society</p> <p>Meets at Martin Way Methodist Church Hall, Martin Way Merton Park, London, SW19 9JZ at 19:30hrs for 20:00hrs. Contact: Andrew G4ADM on 020 8335 3434 or andrew.maish(at)ntlworld.com</p>
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Signing Off:

Well. That is the end of another one.. Next copy date is 25 February..

Vy 73 from John G8IYS. Editor & Hon Sec.