



SURREY RADIO CONTACT CLUB

80th Anniversary Year - Founded in 1935

SEPTEMBER 2015 — No: 877

CLUB NET 1.905 MHz Sunday 9:30am
 CLUB NET 145.35 MHz +/- 25kHz Friday 8:00 pm

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

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

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

**1st MEETING: Monday 7 September. Fix-it, Move-it-On, Advice Clinic
 led by John G8MNY**

**2nd MEETING: Monday 21 September. Antenna Modelling
 presented by Quin G3WRR**

SRCC Committee 2014/15

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Dear Members & Friends,

Hello and welcome to the September 2015 issue of the Newsletter, edited by John G8IYS. No-one spotted that this piece, last month, opened with the words: "welcome to the July 2015 issue". If they did, they kept quiet about it. Anyway, this issue has some novelty in that it may well be the first to attract a "Fabrique in France" label (forgive the absence of the acute accent) since I am writing this whilst on holiday in Grenoble, Rhone-Alpes. You might think that a little sad, but it is raining outside and just as well since the temperature yesterday was 36 C. The meetings, this month, come in an unusual order. The first is the informal and the second is the structured talk. We hope you will attend both of these, in order not to miss anything.

THIS MONTH'S MEETINGS

First Meeting: Monday 7 September Chat and Fix-it Evening.

We hope that this will be led by John G8MNY as usual, but I have had reports that he has been poorly recently

Second Meeting: Monday 21 September HF Antenna Modelling – An Introduction

This will be presented by Quin Collier G3WRR. I understand that it will be a gentle introduction to software-based antenna modelling and will emphasise: "the model may not be a perfect representation of your antenna, but without a model you cannot predict the affects of any physical changes you might make to it".

LAST MONTH'S MEETINGS

First Meeting Monday 3 August: The Crystal Palace Story. Report by Quin G3WRR

A presentation entitled *The Crystal Palace Story* was given by Barry McKay of the Crystal Palace Museum, who has previously addressed the SRCC on the subject of *The Crystal Palace at War*. 19 members were present.

The Crystal Palace was designed by Joseph Paxton. (The name, incidentally, was first used in *Punch* magazine satirically!). Paxton came from a relatively humble background but his work as a horticulturalist caught the attention of the Duke of Devonshire, who employed him as head gardener at the ancestral home at Chatsworth in Derbyshire. In due course, Paxton's horticultural expertise led Kew Gardens to seek his assistance in persuading a fussy giant lily to flower. This task (ultimately successful) influenced the design of the Crystal Palace: the lily's thin but strong vein pattern supporting large areas of leaf material persuaded him that a similar approach, offering less obstruction and more light, could advantageously be adopted in architecture – and at this time advances in cast iron and glass technology were making this achievable. The approach (which is well suited to pre-fabrication and modular construction) was adopted in a Chatsworth greenhouse made to house the troublesome lilies, and the design of that greenhouse can in turn be seen in the design of the Crystal Palace.

Paxton's work plus his association with the Duke led to progressive professional and social advancement. In 1850, at an - evidently tedious - meeting of the Midland Railway (of which he was by now a Director) he spent some time doodling and came up with a design for the building for the forthcoming *Great Exhibition of the Works of Industry of all Nations* (generally known simply as the Great Exhibition), which he submitted as an entry to the competition for its design. He was advised that entries had by then closed: but, undeterred, he arranged for the design to be published in the *Illustrated London News*. As a result of strong public support, the adjudication committee were persuaded to change their mind (in part because Paxton's prefabricated design, being essentially temporary, got round an Act of Parliament which forbade permanent structures in Hyde Park). Fox, Henderson and Co. were appointed as contractor, and most of the

materials were shipped to London from the Midlands by canal and thence to site by horse and cart. The time from conception to ready for opening was a remarkable 17 weeks.

The Great Exhibition opened on time on 1st May 1851 and closed on 10th October in the same year. After a very successful 6 months, it had attracted around six million visitors (from a broad spectrum of classes, and facilitated by the growing railway network) and had made a healthy profit. The latter was used to fund the museums and colleges in South Kensington that attracted the label *Albertopolis* (after the Prince Consort). Despite pressure to retain the building at Hyde Park, the inconvenient Act of Parliament made this impossible, and a group of businessmen decided to find a site, buy the structure and rebuild it there as a centre for "recreation and enlightenment". One of these business men, Leo Shuster – a Director of the London, Brighton & South Coast Railway (LB&SCR) – was prepared to sell 200 acres of his property at Penge Park in South London to the consortium for £70 000: and because of his position as a Director, he was able to arrange for a spur of the LB&SCR to be built into the site, with obvious advantages. Interestingly this site was always referred to by the Victorians as being in Sydenham although it was actually in Penge, largely because Sydenham was felt to be a better area.

In the event, only the iron from the building in Hyde Park was purchased – the glass was not – and this provided around two thirds of the total iron requirement for the rebuild at Sydenham, the one third shortfall being a result of the new Directors wanting the new building to be substantially larger than the old. Work at Sydenham took around two years - much longer than it had at Hyde Park, despite approximately 2000 navvies being employed (of whom 12 were killed in a single accident when a platform collapsed in gales – no Health and Safety in those days). This increased build time had two main causes: firstly, the building itself was designed to have a long operational life, which necessitated the provision of concrete bases for the pillars, and also a false floor to allow services and heating to be installed underneath: and secondly the building was not to be stand alone, but part of an overall complex including the park, which required substantial landscaping, including terracing on which the building itself was erected and the construction of Crystal Palace Parade. The works were finally completed, and the

complex was formally opened by Queen Victoria and Prince Albert on 10th June 1854.

External changes to the building from the original Hyde Park design included an enlarged central transept and two additional transepts at the ends of the nave (main axis), and a new off-white and grey colour scheme replacing the yellow and blue used at Hyde Park. Internally the design offered space for permanent exhibitions at the periphery, with the large space in the centre to be used for special activities such as sporting events and concerts. When set up for concerts, the central transept was able to hold audiences of 6 000, choirs also of 6 000 and orchestras of 2 000. The permanent exhibitions were organised into themed “courts” including Egyptian (holding a half size replica of the figures at the Abu Simbel temple which were relocated in 1968 when the Aswan High Dam was built), mediaeval, and the Alhambra.

Features of the park at the time of opening included:

- fountains based on those at Chatsworth and designed to rival those at Versailles
- statues (with the Rude Bits removed and replaced by fig leaves) and cascades, again based on those at Chatsworth
- boating lakes
- a representation of the earth’s geological strata
- models of dinosaurs and ichthyosaurs (surprisingly similar to current paleontological orthodoxy – and now class 2 listed structures!).

Supply of feed water for the fountains posed a problem due to the location at the highest point of South London. To overcome this two water towers were built, one at each end of the main building. The water tanks themselves were polo mint shaped, allowing a chimney from the pumping engines to pass through the middle: and in accordance with Victorian economy of function the space below the water tanks was used as office or storage space. The legendary I.K. Brunel assisted with the design of these. Once discharged by the fountains (which were able to project to a height of 150ft), the water was piped down into a boating pond named the

“tidal lake” because the water level in it went up and down as the fountains were discharged and the water progressively back-pumped to the water tanks.

Changes to the site, features added and significant events occurring over the years are as follows:

- balloon flights (from 1864)
- death of Joseph Paxton in his home, Rockhills (where the Crystal Palace caravan park is now located) in 1865 (subsequently buried at Chatsworth)
- weekly (Thursday night) displays by Brocks Fireworks (from 1866)
- a major fire in 1866 (caused not by the fireworks but by a boiler explosion). In the two hours it took for fire engines to reach the site (Southwark to London Bridge station to Crystal Palace High Level station via Nunhead), the North Transept had been totally destroyed. Funds were not available for its reconstruction, so in a classic act of “closing the stable door”, a fire station was built on its site
- aquarium (sea water was regularly shipped up from Brighton by train)
- replacement of the fountains by a football pitch (1895 – 1914, including an FA Cup Final) and stadium
- bowling green
- motor cycling
- Festival of Empire with separate areas per country, with its own railway linking them (1911)
- Concert Bowl – to recreate historic scenes, battles, etc. (also 1911)
- funfair.

With the advent of WW1 in 1914, the site was turned over to the Admiralty and public access ceased for the duration. It was used for training

cadets, and in line with normal naval practice of calling shore establishments ships, was designated "HMS Victory VI" but apparently more normally called "HMS Crystal Palace". Emulation of life on a dreadnought was apparently not assisted by the continued presence of statues and other ephemera from the park days! With the return of peace, the building became the first site of the Imperial War Museum before it moved to its current site in Lambeth. But by this time the world had moved on and the site was becoming a bit of a white elephant, and cost cutting had to be undertaken – including closure of the fire station.

Nonetheless traditional activities continued on the site, including dog and cat shows, religious events, Scouting events, circuses. Two new activities were, provision of show houses for estate agents, and early television work by J.L Baird (from 1933), using his 30 line system. Antennas on the South Tower provided a range of around 35 miles, but as there were very few private TV sets at this time, most of the recipients were cinemas who found transmission of racing events an effective crowd puller. (I may be mistaken here, but believe I have read somewhere that the late Ray Herbert G2KU – an SRCC member – worked with Baird at this time. Longer term club members may be able to confirm or deny this).

On 30th November 1936, a fire started (or, on some local stories, was started). In the short term, nobody thought to call the Fire Brigade. Eventually up to 500 firemen arrived but by then it was far too late and the whole structure burnt to the ground, the glare from the fire being visible for many miles. But by one of those strange ironies that sometimes happen, the (by then closed) fire station building survived. The public, on payment of sixpence, were allowed onto the site to scavenge. The water towers were subsequently destroyed (the North one by explosive, the South by hand to avoid debris on Anerley Hill). Although there are claims that this was to avoid their being used as landmarks by German bombers, the truth is that it was due to structural damage, and so that the iron could be used for the war effort. Apparently this was sent to Sheffield (centre of the British steel industry) – but another of those local rumours (almost certainly untrue) tells that it was sold to Germany, and ultimately recycled to London by the Luftwaffe in the form of bombs!

2nd Meeting Monday 17 August 2015 Chat and fix-it. Report by John G3MCX

Another second Meeting. Although there were only ten Members present, there was still plenty to talk about. John G8MNY had brought a laptop which was running Vista. Ray G4FFY was checking to see if it was possible to get it to run on Windows XP.

John was also working on an FT 100 HF, 6m, 2m and 70cm Transceiver which appeared to have a faulty mic PTT switch.

John G3MCX brought along three Morse keys and a multimeter. The key currently in use is a Bencher paddle with an ETM9COG-X3 memory keyer. This was running rather slowly and most likely needed the batteries changed. It was planned to do this but unfortunately it had 3 x AA which were dated 2006 and John brought in 3 x AAA so that was not possible. The other keys he brought in were an RAF Type D on which he learnt during National Service and used for several years afterwards. The third key was a bug which he always thought was formerly a US Navy key. This key was given to John by the late Ron G6LX and used for about twenty-five years. John and Rick M0LEP hitched it up to the multimeter but the continuity test was not quick enough to cope with the dots!

Rick sent John an e-mail later in the evening to more correctly identify the key as a BUZZA BK-100 - made in Australia. August A Kraus (Gus) was born in 1904 in Germany, became an engineer and moved to Sydney in 1927. Gus and his brother Victor set up Buzza Products in 1939. It appears they made copies of American keys rather than design new ones! Google 'BUZZA BK-100' to find out much more.





Pics above courtesy of Rick M0LEP

VHFNFD 2015 North East Surrey CG

North East Surrey CG came 3rd Overall in the Restricted section of VHFNFD. The best placed of our 4 stations was that operating on 2 metres under the callsign G4WGE/P. This was placed 1st by a substantial margin, and the team of Alun G4WGE, Denis G0OLX, Andrew G1KAG and Jim G4WYJ are to be congratulated on their achievement. They also receive a rather nice parchment from the RSGB Contest Committee.

Yet Another QRP Transceiver! By Steve G4FYF

I'm a sucker for these things! You remember the Pixie 500mW transceiver I described a couple of months ago? Well, this is its big brother, again from Banggood.com that is essentially the crystal controlled 'Frog Sounds' transmitter (Google it!). The kit again includes a quality PCB (7 x 7.5 cm), all the bits including two ferrite cores and enamel wire, heat sink, and the same 1W 51Ω dummy load resistor, circuit diagram, parts placement diagram and parts list.



There is also an on-board oscillator to provide a side tone to monitor sent code via the 'phones; nice touch! All delivered for about £6. The circuit is a direct conversion receiver using a NE602 for the oscillator ($\pm 7.023\text{MHz}$) and balanced mixer and a FET PA.

In the antenna/receive chain is another crystal and a pot with the idea of providing some front end selectivity. The Chinglese 'manual' boasts "3W output with 12V supply, selectivity can be compared with super heterodyne receiver" – we will see!

Although simple in concept, it requires a bit more construction expertise than the previous kits in that; 1) it requires two ferrite toroid inductors to be wound but the number of turns is not specified, only the inductance. This required my reference to toroidal inductance charts to wind to the specified inductance and checking with my LC meter. 2) The part ref on the PCB did not correlate with the parts list which didn't correlate with the circuit diagram in a couple of instances! 3) The pinout of the bi-coloured LED was not identified. All not too taxing, but it did need a bit of thought and Googling to work things out, together with a bit of logic!

After putting all together, there were a handful of capacitors, resistors and duplicate transistors remaining. That's always worrying! A check, then another check suggested all bits correctly soldered in place leaving some extras for my collection!

This picture is the completed board.



The bi-coloured LED (green for receive, red for transmit) I've left on its legs with a view (maybe) to housing it in a box - making removal easier.

Upon connection to my dipole and powering up, clear, strong CW signals were heard BUT, at only one far end of the freq adjust pot travel. Much angst ensued and prodding with 'scope and test meters didn't seem to give a clue. Then a moment of reflection, I noticed that the freq pot supplied was 500kΩ where it should have been 47kΩ. What's the 'FYF mantra? Check, check and check again! Correct value pot installed and back in full operation. Into my dummy load, clean CW signal was generated at about 1.5W. Due to professional abstraction (the stuff of nightmares I may tell you about next month) that's as far as I've got. Next stage, use in anger on the air!

Chairman's Blog by Pat G4FDN



After a 3 week holiday in the USA, followed by another week at home, it came as bit of a shock having to return to the world of work, but after the first week it was business as usual again. I have also been on the club's 2m and

Top Band Nets.

On our visit to the USA this year I didn't undertake any amateur radio operation. We had rented lakeside houses in Maine and Massachusetts, and also visited relatives in New York and New Hampshire. However, while in New Hampshire I did take the opportunity there to visit Ham Radio Outlet in Salem, which I had also done on previous visits, but restricted my purchases this time to small items because of baggage constraints.

The time at the lakesides and on the lake too were very relaxing and the locations were very peaceful, quiet and dark at night too, so one could appreciate the Milky Way while hearing the haunting calls of Loons.

I'm not particularly avid of water sports but I put some time in on a kayak, and also in a canoe with my wife Cece, on both the lakes we were at.

Unfortunately, on the last day at Lake Winnekeag, on a very cloudy morning, I recklessly went out without any sun screen. But of course the sun came out and in the 10 minutes it took me to paddle back my legs had become sunburnt and I'm still peeling from that now.



G4FDN on Lake Winnekeag, near Ashburnham, MA
At Ham Radio Outlet I picked up two MFJ-1979 Stainless steel telescopic whips, which I intend to use in future MF/HF portable operation. They are just a tad under 17 feet long with a 3/8" UNF male connector at the base and collapse in ten sections to 27 inches. So a single whip is ideal for a ¼ vertical on 20m and a pair as a ½ wave dipole. In New Hampshire there is no sales tax, and I paid \$59.95 each which equates to £40. Had I bought them from a UK dealer I would have paid at least £67-96 each, so I saved £56 overall, which is quite a significant saving.



MFJ-1979 Telescopic Whip Antenna (collapsed)

When I put the extended whip on a base at ground level the top of the whip was a gutter level on my house. (pic on next page – Ed.)

There are several independent reviews of the MFJ-1979 on eHam.net here: <http://www.eham.net/reviews/detail/9945> most seem positive about the quality, flexibility and use.

Not everything is cheaper in the USA. Having last been there 3 years ago I was surprised at how the cost of basic foodstuffs in supermarkets had gone up with many items costing around 30% more compared to the UK. The reductions we have seen in food prices in Europe over the last couple of years apparently have not been replicated in the USA.



Club 4m FM net?: Dave 2E0EBK and I are interested in getting a net going on a weekly basis. Any other takers out there? Any suggestions on day and time?

[Well, I am in the queue. Currently, I can run 25 W to a mobile whip, but have a multimode transverter, a 160 W Linear amplifier and an 11 ele 6m/4m yagi all on the building blocks. How about Sunday morning, when the 160m Net has finished? I suggest this on the simple premises that the more nets that are run means each one is more thinly populated and several members do not have/cannot manage 160 m operation - so this could provide a common interface point for our membership – Ed.]

That's all from me this month, and I hope to see you all at Quin G3WRR's presentation on antenna modelling at our second meeting on the 21st September, as well as the Fix-It led by John G8MNY on the 7th.

Message from Pat re Clifton ARS

All, This may have been on GB2RS, but I haven't been listening recently. Clifton ARS, covering New Cross, Greenwich areas, folded on the 6th August. See: <http://www.g4rfc.co.uk/history.htm>

Message from Pat re Local Repeaters

You may be aware, but I just had a few QSOs through GB3XP. Biggest 2m signal on the band here. Located on top of St Helier Hospital in Carshalton. Now I'll have a use for my 2m handhels again. Well done to the Sutton club. Details here: <http://scrs.org.uk/repeater/>

[I can confirm that this is a **big** signal at my QTH in Sanderstead – unsurprising, since St Helier Hospital is line-of-sight from here. However, it does seem to be suffering from annoying breakthrough to its input by unidentified signals – certainly speech, but unreadable Ed.]

Also GB3LW is back on the air. Details here: http://www.ukrepeater.net/my_repeater.php?id=105 I have just had a QSO with G/KA5MGL in Victoria. (He is probably using the wrong prefix – I think OFCOM are insisting on M)

FOR SALE Items at QTH G4DDY.

Contact Maurice G4DDY 020 8669 1480 or Mobile 0781 568 3335

REDIFON Linear Amplifier Type GA 406 complete with hand book (untested) 750 W PEP 4 channels, 3 pre set 2-18 MHz, 1 continuously variable. V1&V2 QY-400. Weight 53 Kg.



£200 ono

The following items are donated and from the estate of the late G3JQN. Offers are invited for

Uniross Multi-charger, A box of 15 glass-encapsulated Quartz Crystals and an SWR Meter – probably HF.



ICOM IC-728 HF Transceiver. All mode.

General Coverage Receive: 500 kHz - 30 MHz.
 Triple conversion superhet.
 Transmit 1.800 – 29.700 Amateur Bands.
 Extended coverage 7.0 – 7.4 MHz
 100 watts adjustable.
 Complete with ICOM separate dedicated PSU.
 Complete with manual.

£250.

DONATED CLUB ITEMS STILL FOR SALE

The following are lodged at QTH G8IYS



Heathkit SB200 Linear Amplifier. Complete with Assembly Manual and Circuit Diagram.

Tested to full-UK legal output. and fully working.
 Covers 80, 40, 20, 15 and 10 meters ie non-WARC. Specification says 1200 W out for 100 W in !! 2 x 572B Valves in parallel. Integral PSU.
 Lots of info available on the web. Modification to include WARC Bands should be simple.

£200. Bargain.



Nevada TM1000 High Power ATU. Complete with manual.

Fully functional, but damaged centre knob – not very elegantly repaired with a Jubilee clip - should be simple to replace/do a better job of repair.

£80.

FUTURE SRCC MEETINGS

7 Sep 2015	Fix-it, Move-it-On, Advice Clinic
21 Sep 2015	Antenna Modelling
5 Oct 2015	Autumn Surplus Equipment Sale
19 Oct 2015	Fix-it, Move-it-On, Advice Clinic
2 Nov 2015	Short Talks Evening
16 Nov 2015	Fix-it, Move-it-On, Advice Clinic
7 Dec 2015	SRCC Construction Contest
21 Dec 2015	Informal pre-Xmas Social and sampling of various tinctures

SICK REPORT

We have been advised that Bill 2E0WYO is poorly as I go to press. No doubt all members will want to wish him a speedy recovery.

OTHER CLUBS' MEETINGS

I am sorry, but I am unable to produce this section, because of limited speed and reliability of internet connection at my temporary location which would permit me to verify announcements. Normal service next month.

Sign Off. That's all folks. I hope the distribution will go smoothly.

73. John F/G8IYS Editor – but minus equipment!