



SURREY RADIO CONTACT CLUB

87th Anniversary Year - Founded 1935

APRIL 2022 – No 956

SRCC supports the RSGB Child Protection Policy

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Club Equipment Loan:	equipment@srcc.uk	
Club Website:	https://www.srcc.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 4th April: Annual General Meeting

2nd MEETING Monday 18th January: Fix-it, Move-it-on and Social Chat with John G8MNY

SRCC COMMITTEE 2021/22

Chairman	Vacant	
Acting Chairman for April	G3ZPB Peter Burton	01737 551413
Vice Chairman	G3ZPB Peter Burton	01737 551413
Hon. Secretary & Newsletter Editor	G3WRR Quin Collier	020 8653 6948
Treasurer & Membership Records	G4FFY Ray Howells	01732 357474
Resources & Liaison	G4DDY Maurice Fagg	020 8669 1480
Events	G6JXA Kim Brown	07812 735507
Fund Raising & Resources	G4LZE Colin Lugard	07533 174388
Publicity	G3MCX John Kennedy	020 8688 3322
Committee Member	G7VAK Paul Beaumont	07818 660493
Webmaster (Co-opted)	G4FYF Steve Jones	01424 584143

EDITOR'S OPENER

Dear Members & Friends,

Since the onset of COVID I have usually opened with a statement to the effect that I hope the membership are well and keeping COVID free. Well, all of a sudden it's got personal! Last weekend I made a spur of the moment decision to visit the Imperial War Museum site at Duxford Aerodrome, followed by a visit to a (non-amateur radio) friend in Northampton. In fact, it didn't quite happen like that. Having got my plans in place, I discovered that Duxford doesn't open seven days a week until 1st April, and although it was open 5 days a week until then, Tuesday (my chosen day) wasn't one of them. But making a virtue of necessity, I looked around for alternative

sites in the same general area and came across the de Havilland Aircraft Museum at London Colney (just off the M25) which I had read about a while ago. And having moved to a museum further south, I rescheduled my meet-up and accommodation to Bedford.

Being (I hope – you will have your own opinions) a socially responsible individual, before setting off I took a Lateral Flow Test which showed up as clear. After meeting my friend for a meal and extended natter, I fell asleep in the hotel room and woke up at about midnight feeling very cold and with my teeth chattering, and hardly slept thereafter. Got home OK and felt very cold with teeth chattering again so took another Lateral Flow Test – which showed up positive. And having repeated it today, it's still positive with the T bar showing up much more strongly than yesterday. (Actually, I'm not alone in this as Peter G3ZPB and Colin G4LZE have also been affected, but I believe they have now recovered). I do hope I am clear before Monday to allow me to attend the AGM in person.

(Did you see the clever inter-topic link there?) Next Monday's A meeting is the SRCC Annual General Meeting. Although the AGM seems like one of the drier meeting topics, it IS important as it allows the membership to question the Committee on actions in the previous year, and to give their views on future direction and topics for meetings. So please do come along if you can, and, time permitting, have a think about things you would like to see SRCC doing in future. The Agenda and Notes of the last AGM were sent round on the *membermojo* distribution list on 26th March, and these might act as a "starter for ten".

Later in this issue of the Newsletter is an article by Paul G7VAK, which I have had "in the stack" for several months now. As it contains some aspects that may be unfamiliar to some members, I thought it would be prudent to hold it off until after Paul's lecture last December on Spy Communications which would act as a kind of primer. I'm pleased to include it now, with apologies to Paul for the delay!

So, onto the stuff you actually wanted to read....

PREVIOUS MEETINGS

The 7th March A meeting was a continuation of the January A meeting at which the G8IYS Silent Key sale as time had run out in January before all the gear was offered for sale. The logistics worked rather better this time. As before, Peter G3ZPB and Ray G4FFY handled the financials, Gareth G4XAT acted as auctioneer and Prue G4RWW and Quin G3WRR ferried the gear from the pile to Gareth and back to the lucky (?) purchasers. A total of very nearly £200 was raised at this sale.

In fact, this isn't the end of the G8IYS SK story – although what follows is not strictly a "previous meeting" a brief summary is included here for completeness. The following Sunday a band of intrepid SRCC volunteers (Andrew G4ADM, Maurice G4DDY, Pat G4FDN, Ray G4FFY and Colin G4LZE) took the majority of what didn't sell at the March A meeting (as well as a certain amount of SRCC stock) to the exotically named Hamzilla Radio Fest near Sandwich in Kent. The sum raised from sales was not far short of £1000 – and all for the expenditure of £36 on three tables (plus fuel costs of course...).

The story doesn't really end there as there is still a certain amount of Simkins gear remaining unsold – but there are several "channels to market" (to use a dreadful marketing term) we could use, including CATS Bazaar and eBay. So, watch this space...

The March B meeting (21st) was the usual Fix It / Social Chat session led by John G8MNY.



**PAT G4FDN IN “HARD SELL”
POSE AT HAMZILLA**



**“SELFIE PLUS” AT
HAMZILLA – G4FFY, G4LZE
AND G4DDY**

FUTURE MEETINGS

The April A meeting (on the 4th) will be the Annual General Meeting. As the Newsletter has been banging on about this for a couple of months there’s really nothing to add here – so I’ll say nothing!

The May A meeting will be on the 9th - please note that this is not the first Monday of the month as that is the May Day Bank Holiday. It will be a repeat visit from Chris Deacon G4IFX of the UK Six Metre Group, who has previously presented his video on 6m via Zoom, and kindly joined us to answer questions. This time it will be a face-to-face presentation: it will revisit some of the material

covered previously, but will focus on sporadic E (Es), and particularly on his research on this fascinating mode. The timing is quite opportune as it will coincide with the summer sporadic E season.

The 6th June A meeting will be a Video Evening.

Looking further ahead (date still to be finalised), Steve Shorey G3ZPS will be giving us a lecture on older equipment, broadly from the 1960s and 70s. He is particularly interested in rigs from the old KW marque (I gave him my old 1960s KW Valiant for spares – so much more worthwhile than taking it to Factory Lane..), and it is hoped that he will bring some working rigs along.

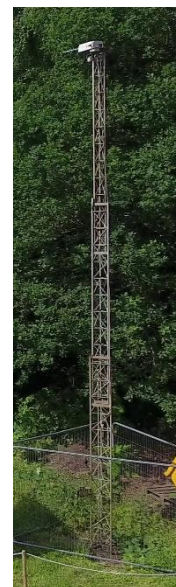
Another summer event will be the annual barbecue (although last year it took the form of a Pasty Session - dubbed “Pastyrama Croydon” as I recall - with not a grill in sight). It will probably be held on a weekend afternoon, which seems to be a user-friendly option.

All the B meetings (third Monday) will take the now standard Fix It / Social Chat sessions.

MEMBERS' ADS

30ft 3-section Lattice Mast.

This “standard” 3-section lattice mast is currently situated at Brooklands Museum and needs collecting from there. In its stowed state it is 13ft long and the base section is welded to a 2ft x 2ft base plate. Being a steel mast, it is very heavy, but help can probably be made available to assist in loading. Free to good home (yes FREE). Contact Peter G3ZPB for further details.

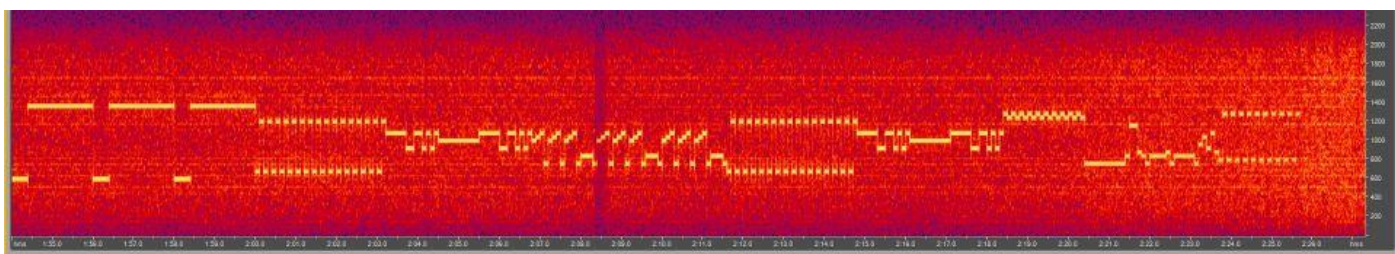


DON'T KNOCK THE LOOP AND OTHER NOVEL ANTENNAS! by Paul G7VAK

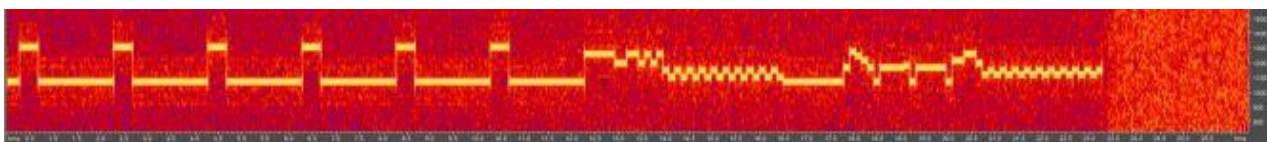
It's fairly well known that my interest lies in the communications of espionage, number stations. Whilst the voice messages that can be heard can give the listener an insight into the counting systems of different languages, the Morse stations are in plenty and outnumber others completely. Using Morse was put paid to for me by neurosurgery following a motorcycle accident; short term memory permitting I'll happily decode M01, believed to be a training station and the now defunct M10 that was of Slavic origins.

There are known training stations on air; I refer to M51/M51a or FAV22 often found on 3881 and/or 6825kHz at all times of day. The traffic consists of *en clair* messages, five-character alpha or numeric groups with a decent spattering of some punctuation and prosigns.

Other systems used consist of FSK and MFSK modes termed XPB1 and XPA, the latter called polytones. There are two different modes of XPA being XPA1 and 2. These modes are my favoured stations.

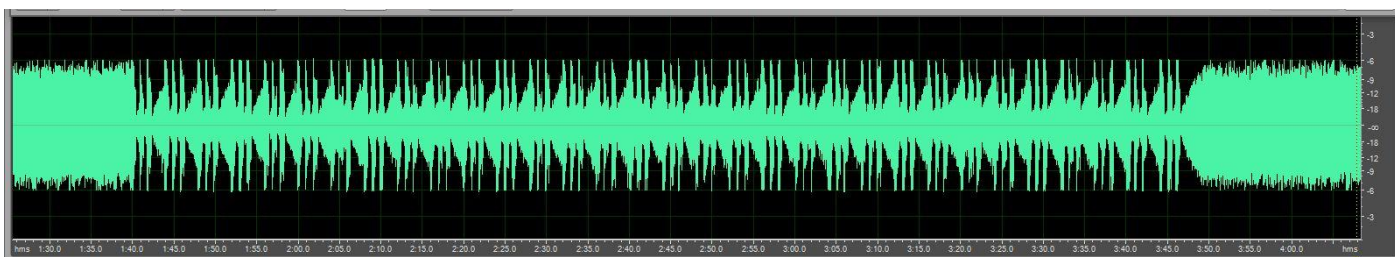


**XPA1 SENT 11409KHZ 0700Z 19/03/2018: 456 456 456 000 456 456 456 000 456 456 456 000
08810 00001 00000 35261**



XPA2 SENT 12138KHZ 1840Z 24/04/2018: 07530 00001 00000 33662

The only voice station I follow religiously is the 'English Man' designated as E07a and which has its Wednesday and Thursday Summer schedules at 2000, 2020 and 2040z [GMT] and 0430, 0450 and 0510z [GMT].



**COMPLETE SENDING OF E07A 7933KHZ 0430Z 03/06/2021: 912 912 912 000 REPEATED
EIGHT TIMES**

In the winter they are an hour later. In June, as I write this, the frequencies of interest are: 12166, 10766 and 9266kHz in the evening and 7933, 9133 and 10233kHz for the early morning transmission. They are usually very strong.

The only other voice station I followed was E06 with its robotic voice. The schedule I followed was sent at 0030 and 0130z in summertime and at 0130 and 0230z in winter time on a Saturday and repeated Sunday. Many late nights indeed.

5837kHz0130z 05/11[759 102 34 65378 ... 87709 102 34 00000(f)] Strong (10m02s)
 SAT
 0130z 06/11[759 102 34 65378 ... 87709 102 34 00000(f)] Strong (10m02s)
 SUN

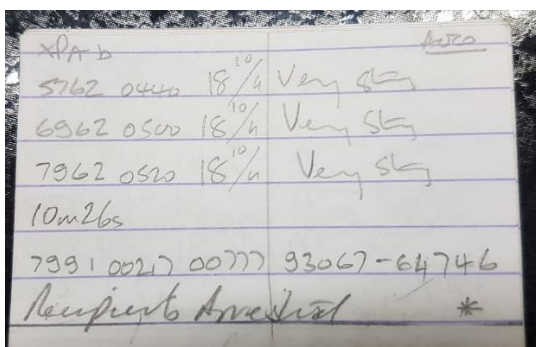
759 102 34
 65378 67751 83534 55464 49811 29848 88383 58919 01172 53120
 37132 65620 19284 61209 27406 74428 43497 70567 66449 93497
 03389 18185 20917 76746 09424 24823 24825 09915 80128 98915
 46465 57806 10619 87709
 102 34 00000

A full message as regularly received by myself and another monitor [located near Hull] followed this format until its closure on 16th June 2012. This corresponded with the arrest for espionage of the Dutch diplomat Raymond Poeteray. He was supplying Russia with classified and secret documentation from the EU and NATO. For this he received around £61000 from his Russian masters and a twelve-year gaol sentence for his activities.

Poeteray passed his product to the husband and wife team Heidrun and Andreas Anschlag, located in Marburg, who then arranged its transfer to Russia.

The Anschlags received their messages from Moscow using a system known as 'Radiogramma' or XPA1 [polytones]. The frequencies were 5762, 6962 and 7962kHz.

Consisting of twenty tones the messages were sent at 0440/0500/0520z Tuesday and Thursday. At the time of their arrest Tuesday 18 Oct 2011 Heidrun was in the process of receiving a 777 group message that took 10m28s to send. At the time XPA1 schedule b was the only number station on air. The GSG-9 officer stated "as the headphone plug came out the room filled with musical tones." He described the sound of a polytone transmission exactly.



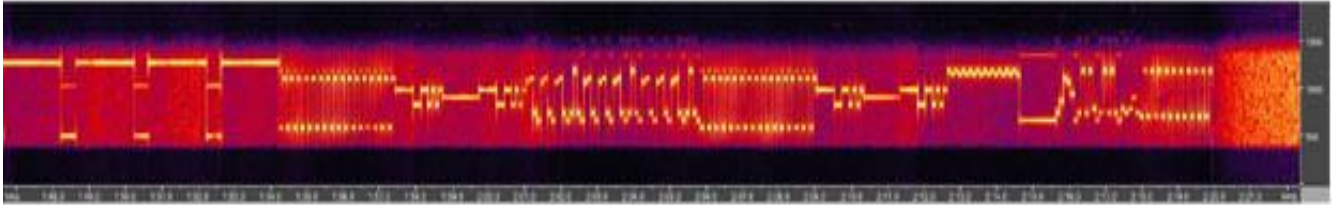
799 799 799 1 799 799 799 1
 799 799 799 1
 00217 00777 93067

AS WRITTEN IN LOG

MY ORIGINAL LOG OF INTERCEPT 18/10/2011

The next scheduled message Thursday 20th October 2011 was a null message, but the next two, sent on 25th and 27th Oct 2011, were full messages: 583 and 367 groups long respectively. After that the schedules sent nothing but Null messages until the 7th June 2012 when the schedules closed.

It is likely the two messages sent on 25/27th October were dummy messages. Such messages were decrypted by a SVR bespoke program named SEPAL.



ANSCHLAG 'NULL MESSAGE'



EAST BERLIN TEMPORARY RECEIVING SET UP

I had received the messages intended for the Anschlags using a Ten-Tec RX320 computer controlled receiver in my drawer at work. I had previously visited East Berlin with another monitor, the hotel about 500 metres away from the late STASI headquarters in Normanstrasse and carried out an intercept of this station. I noted at the time the impressive strength received.

The Anna Chapman group of US illegals [for which Sergei Skripal of Salisbury Novichok attack was swapped to secure an exchange] also received their messages using a modified polytone, XPA1 is usually 10bd; theirs was 20bd and sent on a peculiar schedule. The winter being 2100, 2120 and 2140z and summer as 1730, 1750 and 1810z and sometimes difficult to intercept.

No real detective work to discover these Russian spies; they were handed over by a defecting CIA asset, Alexander Poteyev, a Russian intelligence officer who was recruited by the CIA in the 1990s and who dobbed this lot in to secure a life in the US in 2010.

This interest takes a lot of time; using the computer controlled RX320 at work with a 6 metre long antenna strung between two buildings I managed time adequately; however, retirement meant I no longer had that facility [or the time].

I had previously purchased a G31DDC SDR receiver marketed by WINradio. Excellent receiver with an easily usable program. Conveniently it has a scheduler and can be left to its own devices; what more could I want? An antenna.

During my travelling days a home brewed loop antenna originally shown in RadCom p55, July 1996 in Eurotek by PA0KSB was used. At 400mm sq and tuned it functioned well with the Yupiteru MV7100 across the HF bands. Sadly, I had dismantled it for another project and looked elsewhere for an alternative.

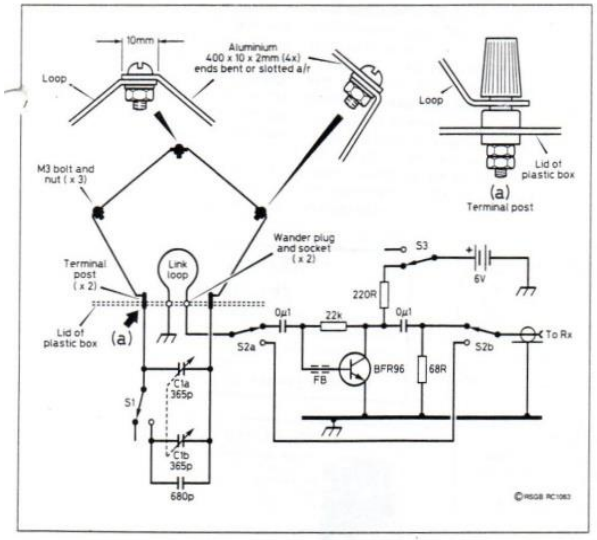


Fig 1: PA0KSB's 3.5-30MHz receiving loop and pre-amplifier.

RADIO COMMUNICATION July 1996

'TRAVELLING' LOOP AND SCHEMATIC FROM RSGB'S RADCOM

With my garden there was no problem; two antennas, a horizontal and a vertical already erected. The vertical has put in good service since my retirement receiving my number stations any time, the relevant sound files downloaded for analysis as I wish.

The problem is one of lightning. Living near the apex of Crystal Palace the exposure to this phenomena seems to be more than usual. The only other place I saw such lightning was in Guyana [British Guiana].

I used to dash to the Radio Room [read Set Room here] to hastily unplug and I showed my wife how to do the function if I were not around. I realised that using an active loop indoors would provide some solution to that of lightning.

Finding a circuit for an active loop I started to amass the bits; the requirement of a new bathroom put that on hold since this also required the moving of the radio room.

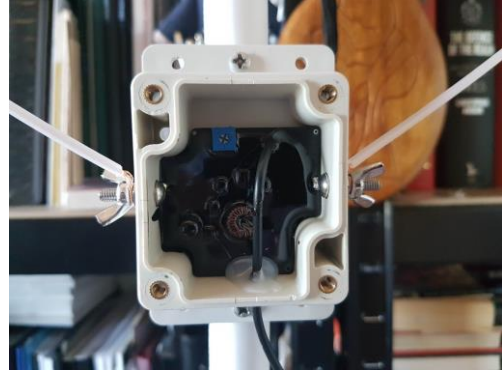
On sight of a commercial offering at £17.00 introductory price from one of the Chinese outlets [Banggood] I purchased the MLA30 loop, tried it and well impressed I purchased another.



AS ADVERTISED, NOW £29.47

The loop element is a piece of hard drawn wire. Couldn't form a loop with it so I ditched it and used a centre core from a piece of RG58; works well in the stated frequency range of 500kHz to 30MHz and I've looked at frequencies up to 50MHz.

Bit of noise and some paging. The manufacturers state it can be used down to 100kHz as well and S8 on DDH47 on 146kHz seems to prove that nicely. Here we see the loop mounted on a tripod and the working parts.



According to a note on a website the pot is to do with gain. I haven't tried that theory and I suspect it's a balance control.

The loop proximity to metal shelving doesn't seem to affect reception. On test with signals received on my HF225 receiver [particularly 5450 and 5505kHz all the way up to China Radio International on 17490kHz] there is no noticeable difference. There is the occasional noise issue but when the background is variable from S6 at best and S9 at worst rotating the loop to a null point is the way to go. The one thing missing is static protection and two back to back 1N400n series diodes are to be fitted across the terminals to provide some protection.

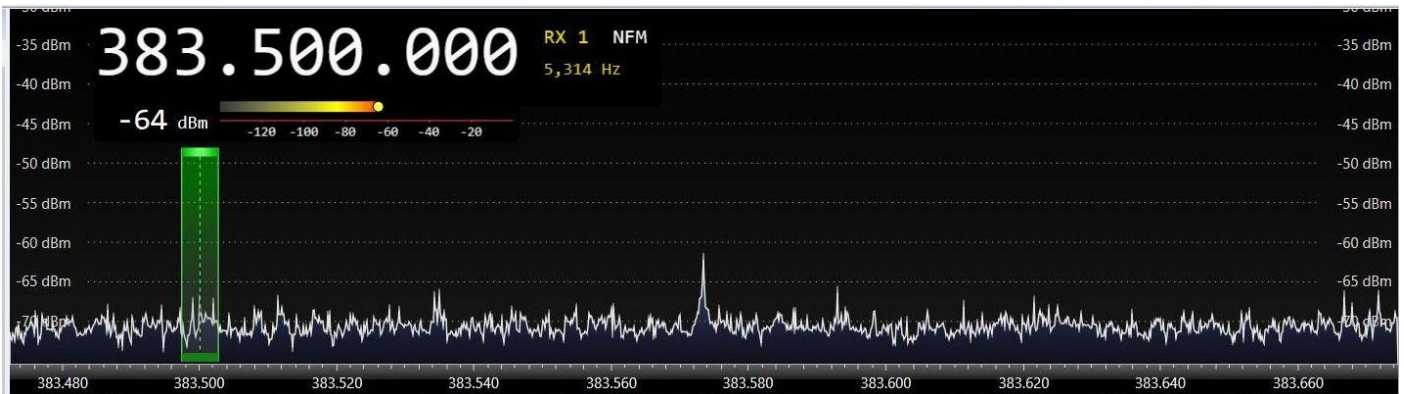
After moving my radio room, I sorted through the unwanted treasures and found two copper clad disks, each circa 202mm diameter. This was my never completed Planar Antenna experiment and being short of a decent VHF antenna until my 2m/70cm coax run reaches the Radio Room [which it finally did today] I was at a loss for such an antenna.



CLOSE UP OF PLANAR ANTENNA

Doing the calculation, the Planar antenna would be expected to operate from 370MHz to around 3700MHz. Strange lower frequency you may well say but the frequencies of interest are a little higher, 380 to 385 and 390 to 395MHz for the Airwave frequencies.

As we all know the listening to the emergency services and especially the police, can no longer be done by the 'scannerist,' legally or technically. However, there is no offence committed by viewing the signals on a spectral display and that is what I have done. Some time back, I think December 2020, I noted activity was very low and seemingly it appeared Airwave had partially failed.



NOT A LOT OF ACTIVITY TO BE SEEN

But why would I even need to look at these frequencies?

A device, called Python, is used to predict the nearness of Police [or any other user in the Airwave Bands] for motorists www.pythondetectors.com

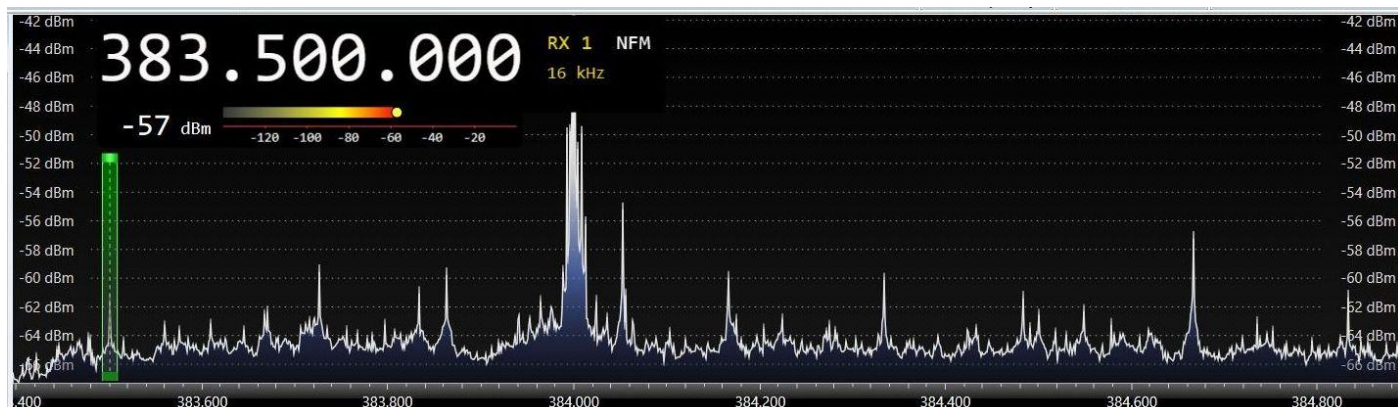
Another version called 'Target Blue Eye.' www.targetblueeye.co.uk seems to work in a similar manner and is fairly new to the market.

They obviously work on signal strength and this little descriptive piece from the Managing Director of Target says it all:

"TARGET BLU EYE IS A TETRA RADIO RECEIVER, NOT A POLICE DETECTOR"
Last week, The Daily Mail and other media in the UK published several articles in which our Target Blu Eye was described as a possible police detector. We firmly reject this suggestion. Target Blu Eye is a traffic safety system based on the reception of TETRA radio signals. It is NOT a police detector.

TETRA stands for Terrestrial Trunked Radio, a worldwide standard for digital communication, used for the Airwave's Emergency Services Network (ESN) in the UK. Based on the TETRA protocols we developed Target Blu Eye as an early warning device that informs motorists in advance about all types of approaching emergency vehicles. It is important to know that Target Blu Eye does not make any difference between police vehicles, ambulances or fire engines. Moreover, Target Blu Eye is not able to decode, manipulate or interfere with the radio messages broadcasted by the Airwave network. As such an early warning device, Target Blu Eye is completely useless for possible criminal purposes.

Statistics proved that on a yearly base thousands of accidents occur between emergency vehicles and civil vehicles. The idea behind Target Blu Eye is to prevent such accidents and to improve the safety of motorists and emergency services. *Everyone who believes the device can be used for other purposes does not understand the functionality of Target Blu Eye and the principles of TETRA radio as used by the UK emergency services.*



WITH AIRWAVE FUNCTIONING AGAIN ONE CAN SEE THE VARIATION OF SIGNAL STRENGTH DEPENDING ON TRANSMITTING UNIT LOCATION.

Obviously, the device would be using the mobile frequencies 380-385MHz and obviously scanned for the nearest of programmable strengths to illuminate a sequence of lights: for £999.

“Can’t be used to indicate police approaching a crime in commission?” I’d let the Judge decide that.



With this sort of reception and no use of preamplifiers I decided to apply this antenna to my small RF Explorers Spectrum Analyser across 415 to 470MHz; I was surprised to say the least [see above]:

With the 55MHz span displayed on such a small screen I thought a look at the 70cms band alone was in order, again a pleasant surprise:



70CMS. NOTE STRONGEST SIGNAL

Once again the antenna was working well. I understood from descriptions of such an antenna that 1296MHz would be within its range but I've heard so many reports of the sale of 'Electronic Doorstops' I didn't bother to check.

However, I considered out of design frequencies; one where there used to be plenty of activity was 118 to 136MHz, the Airband.

Like other bands there is an issue of legality here. Many years ago with my son being interested in Airband Radio and aircraft I wrote to the CAA asking for permission to listen. I received an interesting reply from their Solicitors Department. It acknowledged there was no right to listen and then said they understood why persons listened; there were so many persons active they would not seek to address the matter legally and that if my son was to listen, then that was acceptable by them.

The results across the diminutive screen for Airband were like impressive given the reduction in ATC transmissions due to COVID reductions:



AIRBAND SIGNALS

Then came Two Metres.

A look across 144 to 148MHz captured a quick peak; not bad given the frequency was outside the design spec of the antenna. For it to be included [70cms too] then disks of around 520mm diameter would easily suffice.

Frequency	SWR
430	2.0
435	2.0
440	1.8



TWO METRE SIGNALS

I've written a lot about receiving with this little planar antenna and it's more than adequate for anything that I care to do but what about transmission?

Using my antenna analyser I looked at 70cms with the first reading 1 to 7.7 definitely not a good figure. A swift rub with a rounded Swiss file to the lower support hole allowed me to move the disks closer together resulting in a figure of 1 to 2.0. Much better and doubtless if I had taken a smidgen more off, I could have achieved much better.

70 cm results

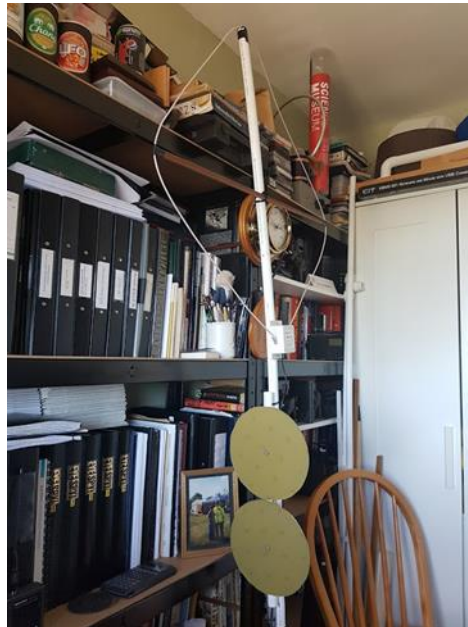
Deciding to try my luck I opened the Caterham Repeater with 5W output. Well within the Ofcom revisions to our licences.

Interestingly other frequencies were better:

Frequency	SWR
415	1.2
420	1.3
425	1.9
70cm as above table	
445	1.2
450	1.5
455	2.1

460	2.5
465	2.5
470	2.0

A decent antenna from PCB offcuts costing nothing and an effective HF loop originally £17 and still a viable option at the current price of £24.99 if receiving is your thing.



HF LOOP AND PLANAR ANTENNA DOING GOOD SERVICE IN THE SHACK

I no longer use the outdoor 40m $\frac{1}{4}$ wave vertical for my automated listening since the magloop performance is more than adequate.

I considered protection for the loop in the form of a couple of back to back 1N4001 diodes across the loop connection points.

Not a bad idea but addition of protection introduced a slight increase in noise. I removed it on the basis if static was of that magnitude it would probably ruin the loop anyway.

My next project being lined up and time permitting will be a switching protection device.

73, Paul Beaumont G7VAK

HERE AND THERE

The Editor's Opener above mentioned the de Havilland Aircraft Museum, which I had stumbled upon almost by accident. For those who like old technology, and particularly aircraft, it really is well worth a visit. It is unusual for an aircraft museum in that it focuses on one manufacturer's products. de Havilland is possibly best known for the WW2 DH Mosquito fighter-bomber – the "wooden wonder" made largely of wood to reduce the demand for aluminium. The museum displays three of these including the original 1939 (?) prototype plus many other DH planes. It is staffed by very enthusiastic volunteers who are very happy to answer questions. It's a fairly easy journey (half a mile from junction 22 of the M25). Their website at <https://www.dehavillandmuseum.co.uk/> is well worth a look! **Quin G3WRR**

Sad to see that Giles Read G1MFG, RadCom Technical Editor, died recently. Out condolences to his family. **Quin G3WRR**

SRCC LEAGUE TABLE – FEBRUARY 2022

The number of entries received for the February 2022 League Table was eight – the usual suspects. Ted G3EUE is taking a break from the Table due to a few health issues, but we hope to see him return in due course.

ENTRANT	WORKED DXCC / SQUARE	WORKED SRCC MEMBER	WORKED IN CONTEST	POINTS THIS MONTH
G4FFY	59	5	32	153
G3ZPB	50	2	20	123
M0CGF	40		7	87
G4LZE	24	4	21	73
G3WRR	19	3	22	66
G4FYF	20	1		42
M0LEP	8	4	2	26
G3SRC	4	1	5	15

Once again I regret that time has not permitted the write-up on entrants' contributions....it is hoped that normal service will be resumed as soon as possible. (As an aside, I remember a shaggy dog story from about 50 years ago which concluded with the punch line "Norman Jervis will be exhumed as soon as possible. Can any of the SRCC's humourists recall the patter that led up to that line?)

The 2022 cumulative table is shown below:

ENTRANT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOT
G4FFY	166	153											319
G3ZPB	90	123											213
M0CGF	102	87											189
G3SRC	66	15											81
G4FYF	36	42											78
G4LZE	0	73											73
G3WRR	0	66											66
M0LEP	18	26											44

Congratulations to Peter G3ZPB for moving into “big three” territory!

Well, now that Sol has finally got itself together, it does seem to be behaving ahead of expectation. At the time of writing (well, typing actually) the SFI is 149 – all but twice what it was a year ago, and 50% up on the predictions for this stage of cycle 25. More please!

My chum Dave G3TBK – a seasoned DXer (he had worked over 100 countries in 2022 before the end of January) – is of the opinion that conditions are often good on the HF bands but there simply isn't anybody on. That seems to line up with the “activity begets activity” argument – in which bands that seemed dead in the run up to a major contest suddenly spring into vibrant activity during it. Food for thought...

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 q.g.collier@btinternet.com.

BAND/FREQUENCY/MODE	DAY OF WEEK	START TIME (clock)
160m / 1905 kHz / LSB	Sunday	9.30 am
80m / 3710 kHz (+/- QRM) LSB	Monday	9.00 am
10m / 28.078 MHz / JS8	Wednesday	10.00 am
6m / 51.55 MHz / FM	Tuesday	8.00 pm
4m / 70.30 MHz / FM	Thursday	8.00 pm
2m / 144.6125 MHz / Digital Voice *	Friday	7.30 pm
2m / 145.35 MHz / FM	Friday	8.00 pm

* The Friday night Digital Voice net usually starts with D-star.

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.....

73 and I hope to see you on Monday,

Quin G3WRR
SRCC Newsletter Editor