

Q5

North Bristol Amateur Radio Club

The Proactive Radio Club
Page Community Association
Page Road, Staple Hill
Bristol BS16 4NE

May 2025



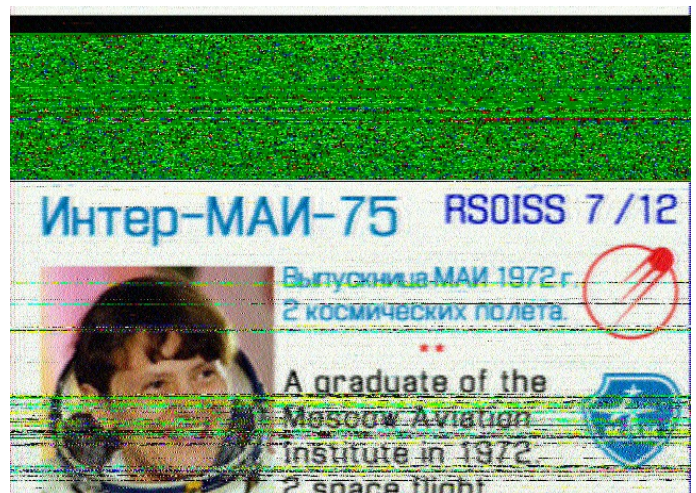
Theme in this Q5 is SSTV

To go with our theme in this quarter's Q5 we are going with Slow Scan TV. The header picture is quite high quality, normally, an HF received picture will, or can have interference lines across the picture. This is part of it's charm.

The picture to the right was received Part the way through transmission from, you guessed it, The ISS.

There are lots of ham stations transmitting SSTV pictures and there is a dedicated frequency on most bands for this purpose.

In this Q5 We go over what can be done to receive pictures. There are many simple interfaces that can be used for transmitting, either DIY or one of the many available from the suppliers. That will be left for another article.



Slow Scan Television

Yes, I know that it is an old mode of sending pictures. Remember though that it is very narrow band and you can not only send pictures, but maybe other information!

We can always send over the telephone network but where is the fun in that.

I know that Ian, G4TAH had been instructing on this subject a few months ago, so it is not a new subject in the club.

There are some good programmes to run on your computer for SSTV. The one I like for a Windows machine is **MMSSTV**. This is a free download and is very easy to use. In auto mode it will automatically switch to the transmission mode (There are lots of different modes) that is being received. Being I have migrated to Linux for most of my radio projects the programme here would be **QSSTV**. Android users could try **Robot36**. (Robot 36 is Receive only) I have used this on my Phone with some success using just the onboard mic. Latter in this article I will show you how to record direct to your phone.

Easy Receiving

Let us start receiving as this is the easiest thing to do. We can connect the audio from the receiver to the audio input of your computer. Ah, I hear you say that your new computer hasn't a audio in socket. I can remember a time when computers came with all sorts of connections, including Line In and line out. For now I will show you a cheap way of adding an audio input to your computer.

From your favourite electronics supplier, you can obtain an external usb sound card.



This little USB plug in sound card was bought a few years ago in a pound shop for, you guessed it, £1. I have seen them on sale at Ali Express for about £1.70p so I don't think it will break the bank.

To go along with this, if the software on your computer has not got a monitor function, a sound

Splitter with an extension speaker will allow you to monitor the sound output while tuning the radio.

Here, all you do is connect a splitter to the output from your radio receiver one o/p to the Mic input on your computer or plug in sound card. The other o/p from the splitter goes to an extension speaker. Remember to keep the volume low on the receiver as not to overdrive the sound card. Most SSTV software has a sound level display in the form of a bargraph.

There is now a better way of sound transmission to your chosen software.



Slow Scan Television Continued

This new way of connecting your computer or tablet completely wirelessly is using Bluetooth. Now, my radio haven't got Bluetooth, I hear you say. No problem. There are little rechargeable devices on the market like the one in the picture below. This device has a switch for TX or RX. This is so you can use the same device to send Bluetooth or Receive Bluetooth. We will set the device to TX, plug it into your receiver. Link it to your laptop or tablet (Most now have Bluetooth) Hay presto, connection to your software with no wires.



Again, if you can't hear the audio via the software, connect a splitter and extension speaker to the receiver.

Unfortunately, not all devices will receive this Bluetooth signal direct to the software. My Android pad and my Ipad refuse to connect the software, however my phone was OK.

The picture on the right is my newer sound card. This one has a "C" connector. Inset:- are the sockets on the end, one is for the headset, or audio output and Mic in. I found that when plugging this into my phone or Android pad it is the only way the internal microphone can be turned off.

I have yet to try a system like this on a Windows system.

We will be able to test out more of these devices on our event on Having fun with SSTV on May 23rd

I Hope to see you all then 73



Cosmonaut Worked By The POTA Pair

While working POTA at park No. GB-3958, Mat, G7FBD and I, Dave, G7BYN worked a Russian. Intrigued by his call sign, **U4MIR**. Back in 1989 I worked **U5MIR**, the MIR Space Station, so I gathered it had to be something to do with MIR. While Mat worked him, I looked him up QRZ.com. He was Alexander Volkov, a very important person from early space exploration.

Here is a list of his awards

Hero of the Soviet Union (1985)

Order of Lenin (1985)

Order of the October Revolution (1989)

Order of Friendship of Peoples (1992)

Medal 2nd class of the Order of Merit for the Fatherland (1996)

Medal "For Merit in Space Exploration" (2011)

Officer of the Legion of Honour (France)

Order of Merit 3rd class (Ukraine, 2011)



He flew into space three times. His first spaceflight was a trip to Salyut 7 in 1985 (64 days in space), followed by two flights to the Mir space station, in 1988–1989 (151 days) and again in 1991–1992 (175 days) as commander of flight Soyuz TM-13. On board the Mir space station, he controlled the docking procedures among other things.

The Soviet Union broke up in 1991 during his second stay on board Mir. At the time Alexander was orbiting Earth on Mir with Sergei K. Krikalev, "the last citizens of the USSR". Having gone into orbit as Soviet citizens, they returned to Earth as Russian citizens.

He worked as Commander of the Cosmonaut Team at the Cosmonauts Training Centre from January 1991 until August 1998. His work was to prepare Russian and foreign cosmonauts for future flights to space stations to Mir and the International Space Station.

He is the father of Sergey Volkov. The younger Volkov became the first second-generation cosmonaut when he was launched aboard Soyuz TMA-12 on 8 April 2008, his first of three flights; in total he spent over a year aboard the International Space Station.

So there you have it. You never know who you could find yourself talking to on the Amateur radio system.

Dave G7BYN

Meals On The Air



Richard, AKA Bodger our Chief Chef

This year, Our Bodgers on the hill, Sorry, Burgers on the Hill will be on Saturday, **JUNE 7th**. (Take a look at the calendar of events). We will meet at the normal place at Tog Hill. I would suggest that we meet at about 10am to set up the gazebo and radio. After this is set up, we can start the food prep. Last year we used 6m and joined the 6m contest just for fun. This year, we will be joining POTA as well as the 6m Contest, we can also register as a club station if necessary. We can use 20m or 40m depending on the band conditions for the POTA

Joining in the event

If you wish to join us, please let me know by May 30th at the club or by email (My details are on the contacts page). As last year, please bring your own mug. If you have any allergies, burgers, sausages, buns and sauces are all purchased from local supermarkets, please do your own checks before indulging in the feast. Although non members can join in with the fun, note, the food is for members only.

Any members who can help transport the kit to and from our HQ, will be much appreciated. To run events takes up a lot of time for a few, the more helpers the easier for all.

June 20th At Page Park

Note we will **not** be meeting at Page Community on this evening unless it is bad weather, **We will be meeting at Page Park**

If it is hot, remember to bring a drink to stay hydrated. Take the opportunity to Show and Tell your latest portable antenna system. Or just have a chat.

If you wish to activate the park for POTA, you have to work 10 other stations or it is a failed activation. The park number is GB-0715

Joining in is easy, first register on the POTA web site. Arriving at a park, you would Spot yourself on line so all other stations know where you are. Hunters can look for you and other parks can call a priority call to you "Park To Park".

For further information just ask our resident guru Mat, G7FBD for all the rules and regulations.

Dave G7BYN

An introduction to QRP

Definition

The internationally recognised definition of QRP is 5W or less output to the antenna so that is what I shall assume although some people seem to define it as anything less than a kilowatt these days!

Why QRP

Life is too short for QRP so the saying goes but I think that is missing the point. I am not dogmatic about it and I am happy to run high power when power supply and equipment availability is no object and I simply want to communicate in the most reliable way possible. Probable to rag chew with my friends about QRP! My experience is at HF so I shall stick to that. Obviously VHF/UHF QRP is a different ball game where very high gain antennas are possible. So here are my reasons for running QRP:

low power consumption for portable use.

5W with 50% efficiency is equal to less than 1A from a 12V supply on TX. Possibly less than 40mA on receive. It is therefore possible to operate for long periods on light weight lithium batteries or even solar power if you are a purest. This also enables you to be independent of mains carried noise and continue operating for emergency use where mains power is unavailable.

Small light weight equipment.

Even HF equipment can be pocket sized although the caveat is that although you may be seduced by HF transceivers that are not much bigger than a pack of cigarettes, all HF operation requires ancillary equipment such as antenna wire supports SWR meters, Morse keys, headphones batteries etc to be successful.

limited possibility of causing interference,

This can be an important consideration particularly in high density accommodation. Modern televisions may be reasonable to immune to RF but the myriad of other electronic devices around these days probable aren't particularly the sacred internet router. QRP may be the only alternative to divorce!

Able to use simple equipment

There is great advantage in using simple equipment possible home brew or at least kit built which can be easily understood and maintained. Any spurious emissions associated with simple designs will probable be at acceptable levels. With good kits available for less than £50 this provides cheap access to HF for those that would be forgiven for thinking on a quick browse through the adverts in Radcom that amateur radio is an exclusive activity.

Possible to use of inconspicuous wire antennas

There are no issues with high RF voltages ie safety and insulation requirements and RF currents are limited. It is therefore possible to use thin wire I regularly use 28SWG copper wire. This is only about a third of a millimetre in diameter is almost invisible a trick is to wrap it around fishing line for further support. Fishing line can also be used for insulation.

Efficiency

The use of QRP teaches efficiency in antenna construction, tuning and careful operating procedure. "You can't afford to waste it!"

Extra challenge

Even common place contacts can become a thrill when you have overcome the odds even better when using home brew equipment.

Why did I get interested?

Travelling in Europe I set myself the challenge of working friends back in the UK with simple hand carried equipment flying hand luggage only. Preferably with home brew equipment. I suppose the Romantic idea of a WW11 spy operating in secret was in the back of my mind although I would draw the line at the possibility of getting shot for anybody considering a Dxpedition to North Korea! I was once accused of being a spy by a fellow guest on a neighbouring balcony at a hotel in Croatia.

What Mode?

Mode and efficiency are inexplicable tied up so compromises need to be made the choices for HF operation are:

SSB

This is pretty inefficient in terms of use of bandwidth and unless you have a particularly good antenna and conditions will only give you a sore throat. If you must use SSB with QRP restrict QSOs to standard phonetics and short overs

Digi modes

I must confess I do not have much experience with these and they have limited appeal for me. Although they can be very efficient they do not comply with my criteria for simple equipment at the very least they require an embedded micro and probably a laptop computer.

CW

This is a subject in itself but suffice to say this is the obvious choice. Bandwidth requirements are less than a tenths of that for SSB actually minimum bandwidth is determined by rise and fall time and very narrow bandwidths are possible. Equipment requirements are as simple as it is possible to get and of course the romantic appeal of the spy radio is fulfilled!

Learning CW

This is intimidating to some but I can only say the challenge of learning and using this skill is a major part of the fun. Comparing it with learning a language it is only really necessary to be able to order your food in a restaurant and ask the way to have a standard CW QSO you don't need to be fluent. Good operators should always slow down to your speed unfortunately there are a lot of bad operators out there but if they don't accommodate you that is their failure. Most send too fast anyway for their receiving ability.

CW is a bit like skiing it is very easy to learn to go down hill fast but takes a lot more time and effort to learn to do and do so in a controlled manner and crucially stop when you need to! The real skill in my opinion is to be able to rag chew in CW and I always like to go a little beyond the basic exchange so I feel I am communicating with a fellow enthusiast and not just a machine. Of course there is the temptation to use a computer to send and receive Morse this seems to me to be a little pointless as you then end up with a rather inefficient digital mode and most computer programs struggle with hand sent Morse.

Choice of Rig

Many people will be drawn to the Yaesu FT817 though a great versatile little rig in my opinion it's main draw back is the current draw on receive which necessitates a bulky power source for any prolonged period of activity.

There are many simple dedicated QRP CW rigs many of them available in kit form. Most of them that are sophisticated enough to be more than a toy are basically the same design a superhet transceiver using NE612 balanced mixer ICs with a crystal filter in the IF using cheaply available 5MHz or 9MHz crystals. Older versions use analogue VFOs or crystal controlled varicap VFOs. Most nowadays have

DDS (Direct digital synthesis) VFOs these are marginally more power hungry and potentially introduce some noise into the simple receivers which are generally very quiet. The up side is that they are very stable and usually include a digital frequency readout

both of these are really essential for operating on the modern bands where most operators will be using digital controlled receivers with brick wall narrow filters. The NE612 has the disadvantage that it has a poor dynamic range therefore these rigs usually include a switched attenuator although this won't necessarily solve the problem and extra preselection filtering is required in practice this is harder to achieve with multi band rigs which require complex switching. The poor high signal handling can result in considerable crossmod and intermod interference for example from adjacent broadcast band signals on 40m lack of preselection can also allow the reception of loud image signals for example strong 15MHz broadcast signals can interfere with 30m (10MHz) in a rig using a 5MHz IF. Some of the original designs such as the Heathkit HW7 use a direct conversion receiver directly mixing down to audio the primary problem with this is the reception of both sidebands. However a new take on this is the recently very successful QCX transceiver from Hans Summers at QRP labs. His design uses a phasing detector to eliminate the unwanted side band combined with very narrow active audio filter.

Antennas

If you have a trailer mounted 100ft lattice tower with an HF beam and rotator this may be an option but it hardly meets the hand luggage criteria! In practice there are really only two options dipoles and long wires. Ground plains are also a possibility but the earth requirements generally make them impractical.

Dipoles

These have the great advantage that they are pre tuned and can be easily home brewed SOTA beams do various pre cut options. My preferred option is to use SOTA beams centre piece balun kit they also supply a 10m length of RG174 with a BNC plug fitted at one end this coax is only about 2mm in diameter and the loss is acceptable on HF also I hate fitting BNC plugs. A happy hour can be spent trimming it to length with your QRP rig and an SWR meter or an antenna analyser if you have one. Of course there will be some variation with installation but this will probably not be significant in practice.

Generally QRP rigs are pretty tolerant of high SWRs as they generally don't have SWR protection so they don't fold back power but are fairly tolerant to the higher reflected voltages as these are generally within the max working limits of the PA transistors. "I have heard the FT817 may be an exception to this?". Fan dipoles can be constructed for multiple band use or clip on ends although beware the basic law of string theory "if it can get tangled it will get tangled!" So the more ambitious you are the more time you will spend setting it up.

Long wires

How long is a piece of string? "Incidentally has anybody tried loading up wet string?" Coming back to actual wire well the obvious fundamental length is a half wave. Conveniently with the harmonically related bands a half wave on say 40m will be a quarter wave on 80m. I have pre cut half wave long wires for 20m ,40m, 80m and yes even 160m! These are 33ft, 66ft, 132ft and 264 ft respectively thus for say 80m operation a 132ft long wire can be tuned against a 66ft counterpoise. Having these length pre cut makes for a predictable impedance match, radiation pattern and a useful awareness of where the voltage and current points are. Having length pre cut saves reducing your stock of wire to a tangled heap of random lengths held together with dodgy twist joints and the frustration of trying to measure wayward lengths of wire with a tape measure that you have just recovered from a cow pat.

Until further down the log.

73s Paul G4CVD

Editor's note

Antenna wire on the cheap can always be obtained using lighting flex or figure 8 bell wire. Look out for reels of wire on Ebay. Dipole centres and insulators can be made from odd pieces of plastic. Use your imagination and things will start to come together. Before you know it you too can be working portable QRP.

There are newer Rigs for QRP since this was written, take a look at the adverts.

Suggestions made by Club Members

Talking to a couple of our members, they made a few suggestions of things that we should think about doing in the club.

The first one was from Dave, I Know, another Dave (The club has more Dave's than any other name) This time it was Dave G4FJH.

He suggested that instead of a table top sale, we should have, or bring Rummage boxes. That is, a box of bits and pieces priced at 50p or a £1. His reasoning was, he has money in his pocket too buy a few cheap items, but not enough to buy a rig or amplifier.

I have therefore added this to the calendar of events. This will be May 9th I hope you will all support this event by bringing your money and, or bits for sale. I certainly will.

The second suggestion when talking to Dave, M7KWC (Yes, yet another Dave) We were talking of how the club was doing, while he was in hospital. He was missing the club and wanted to know what we were doing.

I mentioned about the Balloon Project and the cost of things to the club, such as room hire, the FREE Christmas Bun Fight. So Dave suggested, why not have a separate fund for projects like the Balloon flight and other events where we pay fee for additional events or items.

We could have a pot for donations to help fund these events witch can be costly. The committee are looking into this and we will let you all know the outcome soon.

If you have any ideas like these, give me the nod. I personally will try to incorporate your thoughts into the club itinerary. Items may work or they may not. Sometimes we have to just give it a go.

Rumours, Just Rumours

During the WWII, there was a poster headed **Careless Talk Costs Lives**. Well I must say there is a similarity today. One of our trusted members contacted me and said that he heard on air that South Glous Council were to charge for parking at the car park used by the club. This rumour could cause membership to drop as nobody likes to pay parking charges.

The Truth.

South Glous are to introduce parking charges, but only up to 6pm therefore, **The Parking For The Club is FREE.**

Batteries For Portable Use

I often get asked what type of battery do I use for my portable use. Well, it depends on when you asked. If it were a few years ago I would have said a deep cycle lead acid or some people may know it as being a "Hobby Battery". The size was normally 70Ah. This was my go to system for years. I used my batteries at Mills on the air at Saltford Brass Mill with my friend Don, G0NQJ (SK). My last battery is coming to the end of life. It is used in my shack as a power source, charged by a solar panel. I have noticed that it's capacity is not what it was especially during the winter months when the sun is not at it's brightest and charge rates are down. This latter one has only lasted about 5 years and came from Halfords and cost about £60. A previous one bought from Go Outdoors lasted over 8 years. This one, I abused by not charging it for about 6 months.

Then John, G4WOD suggested a different chemistry. The Life04 was the choice. It is very powerful, light and can be discharged to a lower level without any harm. The old lead acid battery can usually only be used down to just over 50% of it's capacity. Therefore my 70Ah has only about 35Ah usable.

My 50Ah Life04 however can be drained to nearer 90% being 40Ah. These batteries are more expensive (over £150) however with the increase in usable capacity and discharge/recharge cycles increased from 500 for the lead acid to 10,000 for the Life04 it is a no-brainer.

If you work QRP, There are smaller batteries available 10Ah may be a good start. These are smaller and lighter than the old 7Ah alarm batteries.

Only time will tell, The main event that I used my battery was Railways On The Air back in September of 2024, running at 100w all day Saturday. I charged it up returning on the Sunday for a second go at ROTA. I have been using the battery when I go out working POTA (mainly 50w) so it has had a good workout.

The make of battery, Eco-Worthy. I purchased the High Power Fast Charger for it. That charges at 10A, although a cheaper one is available with an output of 5A. That charges slower, the choice is yours.

For those of you who know my shack power supply, the solar charger system will also charge my Life04 battery but, that will be a very slow charge of about 2.5A on a normal cloudy day to 7A on a good day.

On a high power battery like these, don't forget to fit a fuse as near to the terminals as possible as there is a hell of a lot of power available, and insulate the terminals against a short circuit if something metal should happen to fall across them.

If you want more information on what is available, Ian, G4TAH has one built as a PSU and Richard, M6TNH uses another version built in an Ammo Can. Both these are used for RAYNET use. I am sure that they wouldn't mind showing you their systems.

The Ubiquitous Baofeng UV5

The UV5 been in production since 2011/12 It started off costing about £8. it has appeared in several versions. The first ones having a very bad reputation for harmonics transmitting out of band and very low transmitted audio. They were so bad, the FCC in the USA banned the import. Here in the UK Ofcom, as usual did absolutely nothing. There is hardly a Radio Ham that hasn't, owned or previously owned one.

As time progressed, the Baofeng and it's other badges such as Pofeng improved and finally were type approved by the FCC.

The name Pofeng came about not as a re-badge or name change, but it was all over a law suit in the USA due to to the fact that Baofeng was not registered as trademark so a private individual registered it, I guess to make a bit of money.

After a court case Baofeng is now a registered trademark. Just in case I get this wrong, and get sued myself, here is a link to the full story.

<https://baofengtech.com/what-was-with-the-confusing-pofung-hype/>



Courtesy of Rigpix

Now for the real reason why I started the story. The Baofeng, being a cheap rig has been found in various locations.

The first time I noticed one, a soldier in Ukraine at the start of the conflict was interviewed on TV news. He was equipped with a UV5 clipped on his vest.

I regularly see Baofengs now. The next time was on the daytime soap "Doctors". An officer turned up to a crime talking on, you guessed it!!

The latest TV appearance, Episode 2 of "Death In Paradise". A film crew in the plot, were using Baofengs as communications on the set.

One thing I do notice is that the actors fail to use radios correctly. Shouting into the radio without pressing the PTT or keeping their finger on the PTT but managing to hear the other station. In one classic case of a top Hollywood Blockbuster, "Die Hard" using a Kenwood handie managing full duplex just like a telephone. Ah well, Continuity may get it right one day.

If anyone out there in Radio Land see anything like this please email me with the details.

Dave G7BYN

Calendar of events

May 2nd	Balloon Workshop and Mills Event Discussion
May 9th	Rummage Box Sale. Bring your items for £1 an item or less
May 10 th - 11 th	Saturday/Sunday:-Mills on the air
May 16 th	General Meeting
May 23 rd	Fun with SSTV (The Cancelled Event from April)
May 30 th	Planning for Bodger's Burgers (Who brings What)
June 6th	Collecting the kit for Tomorrow
June 7 th	Saturday:- Burgers With Bodger at Tog Hill
June 13 th	General Meeting
June 20 th	Longest Day (Well Almost) Meet at Page Park POTA & Radio Fun
June 27 th	General Meeting
July 4 th	Film night
July 11 th	General Meeting
July 18 th	Various HF antennas, How to set them up & what Balun to use
July 25 th	General Meeting
August 1 st	Q5 published Round Table at the Club

Items in **RED** are dates outside of the normal Friday Meetings

We do our very best to put on the events listed, but If an event is important to you, and are not at the previous Club Meeting to hear Announcements, Please make contact to check if the event is continuing or any changes to the details.

Secretary's Phone Number 07533933831

Club Nets & Contact Details

Please remember, we are trying to keep the Wednesday net a Technical net (If we can). Members may have a problem, or just want to know how something works, ask your question here.

This decision came about because some participants of our nets didn't want to spend the night talking about the weather and general chit chat. They said it was boring, so wouldn't come on any net. The Chit Chat evenings will be the Sunday net. We hope this will cater for all.

Participants of nets can always change the conversation of a net. Therefore, if the conversation said to be boring, you only have yourself to blame.

Wednesday net (This is the regular Net) GB3BS 20:00 to 21:00

Sunday Evening Net This is on GB3BS 20:00 to 21:00 However, GB3AC may be the repeater of choice in the forthcoming month or so. Stand by for an announcement at the club.

Additional nets By Dave G4FJH

Mondays 2m ssb (144.340Mhz) Vertically polarised @ 20:00

Thursdays 6m via the GB3ZY repeater @ 20:05

Club Contacts

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Please Note a reply may be from another email address as I use this as an inbox .

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Next Q5 August 1st

Q5 Publication

Last date for articles July 24th

Publication Date August 1st

I hope that I will get articles sent to me from time to time. I thank all of you that have submitted items over the past couple of years. All back issues are available on the club's new web site.

www.nbarc.org.uk