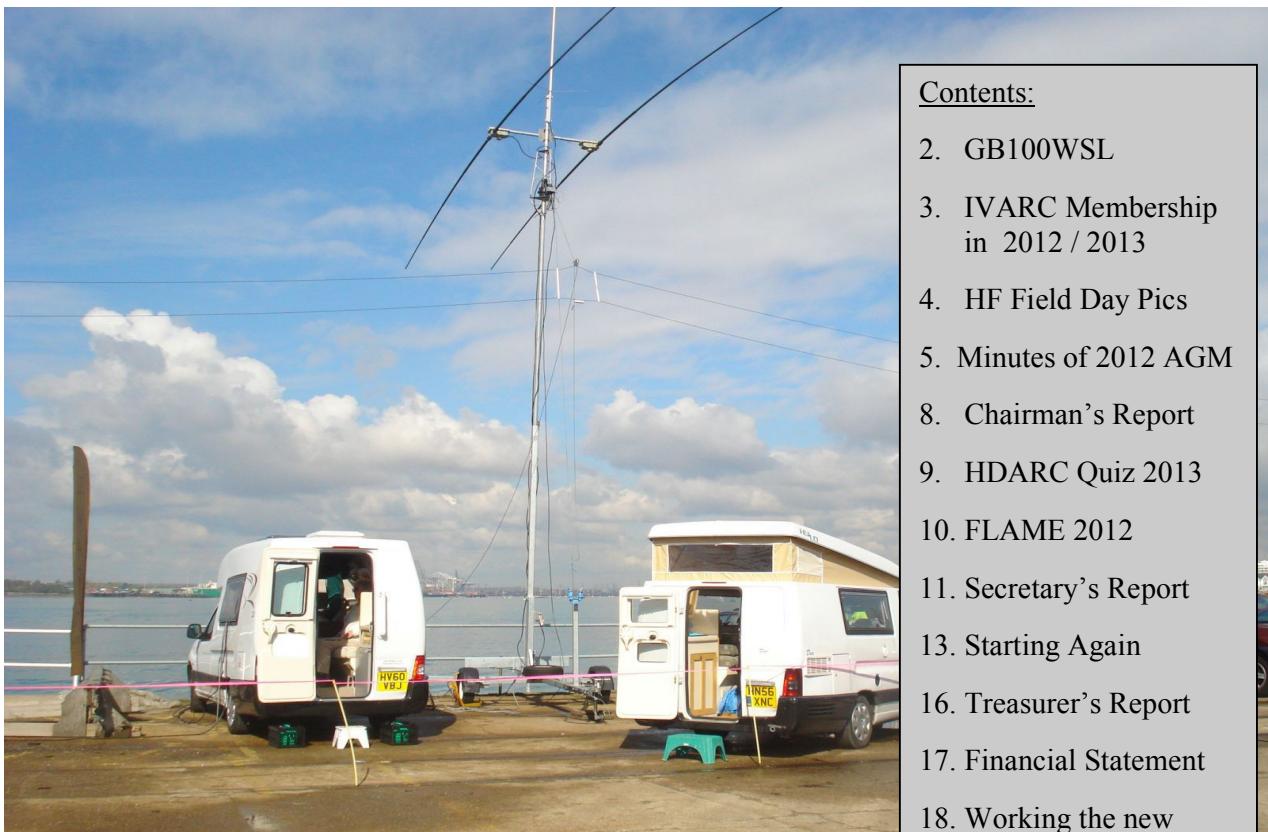




Itchen Valley Amateur Radio Club

Annual Report

2012 / 2013



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GB100WSL

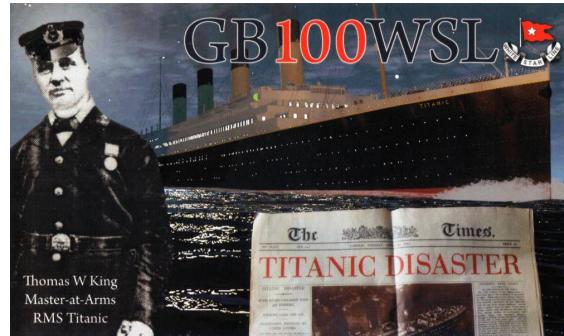


GB100WSL was a special station run by members of the Itchen Valley Amateur Radio Club to commemorate the centenary of the foundering of RMS Titanic. The station was active from berth 42 Ocean Dock (formerly White Star Dock) Southampton, which is directly next to berths 43/44 from which the ship sailed on that fateful journey in April 1912. We operated from April 10th, which is when the ship left Southampton, until the early hours of Sunday 15th, when the ship finally broke up and sank.

The station was operated from inside the Southampton Dock gates, and so was in a working dock. This prohibited night time operation, and it was understood operation could be curtailed at any time by request of dock security, or if local QRM from working vehicles and ships became excessive.

Several Club members have connections with the ship. My own link is my great-grandfather (mother's mother's father) was Thomas King, Master-at-Arms on the vessel. It does give me vicarious pleasure when watching the scene in the movie 'Titanic' where Leonardo DiCaprio is locked below decks that, if that were real life, it would have been my great grand-father :-)

The QSL card opposite depicts my great grand-father in uniform, standing in front of RMS Titanic.



GB100WSL QSL Card

Although GB100WSL was not an exotic DX station we certainly had the experience of organising one. Working with dock security to ensure the station could take place within the dock gates must be akin to managing some of the permissions for exotic locations. There were no hardships of travel, but working on a sea wall in April squalls is no great joy. In fact the weather was so wet and cold on Monday 9th April we actually abandoned a complete antenna set up and station check after having completed the important part - getting the main trailer mast and antennas rigged.



Sheila G0VNI at the microphone

What a success – we achieved over 1400 HF QSOs and over 100 VHF QSOs. We have VKs and ZLs in the log, and had the rare chance to get called by a PJ2 station – usually they're the ones on the end of a pile-up. Mike's (G0WIL) huge 15 foot 2mtr collinear antenna got him as far as Radstock in Somerset, and Brighton to the East – not bad for a VHF station at sea-level!

I won't replicate the final figures here - take a look at GB100WSL's entry on qrz.com - I've updated it with several more photographs

and some final commentary. Oh, and we got over 4000 qrz.com lookups too.



Here the two stations – HF & VHF were operated from members' camper vans

It was great to have Graham G3XSD and Duncan G3RQF working some CW, and poor Geoff G3ROG got a real baptism of fire with huge pile-ups on a buzzing 40m band earlier in the week. Pleased to say he handled it extremely well. He gets my personal award for the pile-up breaking method of the week. Having explained the story of our special event station for the umpteenth time he resorted to calling "This is GB100WSL calling CQ, and only looking for stations that know what the Red Funnel is" - priceless!



In the picture above our stations had to temporarily close down as this huge container ship was towed past the antennas. (see the camper vans on the quayside centre right)

Brian Jones G0UKB

IVARC Membership 2012 / 2013

Callsign	Name	Surname
G0BHK	Ted	Stiles
G0BXI	Derick	Hitchens
G0EBK	Rod	Bickley
G0UJP	John	Fleetwood
G0UKB	Brian	Jones
G0VNI	Sheila	Williams
G0WIL	Mike	Williams
G2DSY	Lawrence	Dale
G3HRH	Ray	Hills
G3KXE	Eric	Bettles
G3NVB	Vic	Bryant
G3OFX	Peter	Welch
G3OTK	Richard	Harris
G3REN	Vic	Webb
G3ROG	Geoff	Morgan
G3RQF	Duncan	Keith
G3XSD	Graham	King
G4EOW	Peter	Baxter
G4GBP	Colin	North
G4UEL	Geoffrey	Hollebon
G4YUP	Peter	Thurlow
G6AAZ	Keith	Woodward
G6FRT	Steve	Wedge
G6TRW	Andy	Toas
G7VQV	Allan	Cook
G8XIX	Cheryl	Turner
M0ACL	Liz	Jones
M0IED	Andy	Wedge
M0NSA	Graeme	Bragg
M0UGH	Andrew	Stevenson
M0XIX	David	Henley
M1AFM	Anthony	Mori
M1CNK	Paul	Wilton
M1ENU	Quintin	Gee
M5MDH	Mark	Hampton
M6CHE	Robert	Darke
	Andrew	Zhao

37 Members



Minutes of the Itchen Valley Amateur Radio Club AGM held at the Scout Hut, Chandler's Ford on Friday 23rd March 2012

The Annual General Meeting opened at 20.14 after the distribution of the Annual Report.

1. Apologies

26 Members were present, as noted in the Attendance Register.

Apologies for absence had been received from Andrew Stevenson M0UGH, Felix Ploeger 2E0SGP, DL1SGP, AK4LT, Ray Hills G3HRH, Peter Baxter G4EOW, Peter Thurlow G4YUP, Peter Welch G3OFX and Eric Bettles G3KXE.

Our Chairman Brian Jones G0UKB took the Chair.

2. Minutes of the AGM held on Friday 11th March 2011

These Minutes were agreed by the members as a true record of that meeting.

Proposed by Vic Bryant G3NVB
Seconded by Richard Harris G3OTK

Signed by the Chairman.

3. Matters arising from those Minutes

11.1 Printed programme cards had been instituted immediately the current committee assumed its role.

11.2 Direct basic instruction was being provided in some way with the new Forums, and with the technical lectures, but education for newcomers is only being provided in the Southampton Club

11.3 Several building sessions had been promoted, but the projects had not yet inspired enthusiasm.

4. Chairman's Report

The Chairman's Report was submitted as part of the Annual Report. Brian G0UKB gave a special thanks to Ted G0BHK for keeping the

meetings going during the committee difficulties earlier in the year, and for his 100-mile round trip to attend both Club and Committee Meetings. Brian also thanked Colin G4GBP, Geoff G3ROG and Vic G3NVB for their donations to the Club and for equipment for sale for Club funds.

He stated that he would be pressing the Club to undertake more external activities, of which the following is a selection of possibilities currently being planned.

Guides' Thinking Day on the Air.
Guides' annual event from Foxlease, Lyndhurst.
Titanic Special Event Station.
Museums on the Air from Crofton Beam Engines.
Mills on the Air from Wilton Mill.
Mills on the Air from Botley Mills.
VHF Field Day.
HF Field Day.
Contests: 2m, 70cm, 23cm, 6m, 80m CW, 80m SSB, 80m Data.

Proposed by Malcolm Butler G0LMD.
Seconded by Colin North G4GBP.

5. Treasurer's Report

The Treasurer's Report was submitted as part of the Annual Report. After explaining each of the entries for both income and expenditure, Ted G0BHK highlighted that the Club was £280 down on its subscription income even though we showed a surplus of £189. Since we now owed the Scouts £96 for rent (that they seem unable to bill us for), the current account situation did not look so healthy. Geoff G3ROG suggested we make a donation to the Scouts in lieu of the owed rent.

Our insurance is due for renewal on 25 May, but our insurers have told us they will not be writing any more club insurance. Strenuous efforts need to be made to find a replacement insurer.

Ted thanked the auditors for an efficient job.

Mike G0WIL asked why the Treasure Hunt was so expensive. This year had encompassed a cup and several bottles of wine. The floor felt that prizes were not expected by participants, just a good day of fun, and that no further expenditure should be incurred.

Proposed by Geoff Hollebon G4UEL
Seconded by Geoff Morgan G3ROG

5.1 Membership subscriptions for 2012 / 13

Ted G0BHK proposed that, since the Membership subscription had not been changed for 5 years, the subscription for the year should be raised to £18 for individuals, £27 for families and £9 for students.

Approved *nem con.*

5.2 Sponsorships in 2012

Brian G0UKB and Colin G4GBP proposed that we continue our £18 subscription to the Chiltern DX Club, CDXC.

Approved *nem con.*

6. Membership Report

In the absence of the Membership Secretary, a statement was made on his behalf by the Treasurer that in this past year we had lost 23% of our membership. All clubs (not just amateur radio) are experiencing a downturn in attendance, but in our case this may be due to not offering training courses. Brian G0UKB suggested that more activity may help. Suggestions from the floor included the possibility of using a prestige guest speaker and advertising this widely.

7. Field Events Report

The Guides Thinking Day on the Air was undertaken twice, but we did not enter JOTA, nor will we this year Oct 20 / 21.

8. Secretary's Report

The Secretary's Report was submitted as part of the Annual Report, listing all the events that had been undertaken.

Proposed by Paul Wilton M1CNK
Seconded by Rod Bickley G0EBK

9. Appointment of Auditors for 2012 / 13

Auditors were agreed as Paul Wilton M1CNK (second year) and Vic Bryant G3NVB.

10. Election of the Committee for 2012 / 13

Our former President Larry Dale G2DSY was invited to chair the meeting.

Graham King G3XSD had notified the Committee that he was unwilling to stand for election, although he would complete his current duties. Geoff Morgan G3ROG volunteered for committee service. After some canvassing, the committee proposed was:

Ted Stiles	G0BHK
Brian Jones	G0UKB
Duncan Keith	G3RQF
Peter Thurlow	G4YUP
Quintin Gee	M1ENU
Geoff Morgan	G3ROG
Andy Wedge	M0IED
David Henley	M0XIX

Brian G0UKB thanked Graham G3XSD for all his hard work.

Proposed by Colin North G4GBP
Seconded by Sheila Williams G0VNI

Approved unanimously.

Brian G0UKB resumed the chair.

11. Election of President

Two candidates submitted themselves for election: Vic Bryant G3NVB and Larry Dale G2DSY. Voting slips were handed out and collected, but each candidate received equal votes. The Chairman suggested that Larry Dale become President for one year, and next year's AGM review this. This Received unanimous approval.

12. Any other Business as notified to the Secretary

12.1 Presentation of Awards

The Chairman first thanked all contributors to the Annual Report. He also honoured the Treasurer with a cheque for £50 from Club funds towards petrol expenditure in attending the Committee Meetings.

12.1.1 The Clubman of the Year was awarded to Ted Stiles G0BHK.

12.1.2 The Newcomer of the Year to Graeme Bragg M0NSA

12.1.3 The DX Ladder was won by Graham King G3XSD

12.1.4 Honorary membership was conferred on Mike Williams G0WIL and Sheila Williams G0VNI in recognition of the outstanding contribution they have made to the Club in all departments over many years, for which they were presented with framed certificates.

12.2 Property Manager

Graham G3XSD volunteered to continue in this role until the audit of equipment is complete.

12.3 Titanic Special Event Station

Since this is urgent, Brian G0UKB raised it at the AGM. The Club has permission from ABP to locate a Titanic special event station on the dockside at Berth 42 from 10 – 15 April. On 11 April, a flotilla of commemorative vessels will be leaving Berth 43 alongside, covered by the Press and national TV. ABP has limited the number of participants to 6 (or so) because of the hazards of working in the confined area allocated to us without railings. Two more CW operators are being sought. Operating times are expected to be daylight hours. Ofcom has issued the call sign GB100WSL. The station hopes to gain permission to operate until the time the Titanic sent its last radio communication.

David M0XIX notified us that Southampton Club would be hosting a Titanic special event station at Mayflower Park, Southampton, with

the call sign GB1HMGY on Easter weekend and the following weekend.

12.4 Net Controllers

If the Club wanted the Net to continue, then more controllers needed to volunteer.

The Chairman closed the meeting at 21:29.

Chairman's Report 2012 / 2013

I joined the committee mid-way through the year and firstly would like to give my extra thanks to all those who served on the committee in 2011-12. How is it that those who lead the busiest lives are usually those most prepared to somehow try to find additional time to serve? Sadly business and work commitments did mean that we lost both the incumbent Chairman John Noden G8IOK and Andrew Stephenson M0UGH. Thanks to both of them for stepping into the breach at a time when they were already so busy. All the committee members work hard for the Club so it is totally unfair of the Chairman to single out one member for praise, but I would like to particularly thank Ted Stiles for the work he has done in helping the Club through 2011/12. Ted has a round-trip of over 100 miles and hasn't missed a committee meeting and very few club meetings and was instrumental in ensuring continuity of the club meetings last summer.

I have always had an open question to all members, and also to locals who hold an amateur radio license but are not members of Itchen Valley ARC – what exactly is it you want from your club?

The Friday evening meetings have, as always, been interesting and informative, but is that the end all and be all of IVARC, a twice monthly lecture club? During our travels Liz and I have looked in on other clubs. Many are fortunate to have a dedicated shack where the club can amass both radio and test equipment and members can go during the daytime or at weekends and play radio or set up special event stations. Often these clubs have enough space to have far better antennas than many people have in their own gardens, so they get used regularly. Sadly, IVARC is not in that fortunate situation, and even if we could get decent antennas the industrial estate has a somewhat interesting QRM problem. During 2012 we will be looking into erecting antennas at Brickfield Lane once again, and if you have any thoughts please let Andy M0IED know,

The Club does, however, have excellent portable equipment. We have a good, modern HF rig, the Kenwood TS-570S, a decent 2m FM rig and an excellent trailer mast with 2 element beam for 20mtrs upwards, a decent collinear for 2mtrs and 70cms and the opportunity to host a 2mtr Yagi or 80mtr and 40mtr dipoles. In fact, the recent

Thinking Day On The Air station GB0CFG showed just how easy it is to be on air with decent antennas on all bands within just a couple of hours. Watch out for a push in 2013 to try and get the club working more portable stations or special events – I think we already have 4 or 5 in the pipeline. Again, if you have any thoughts of how we should be using this equipment have a chat with anyone on the committee.

Another alternative to not having a dedicated shack is to make the club more functional from members' own shacks. Liz M0ACL was inspired by how the RSGB contests helped transform an ailing Bolton Wireless Society into one of the UK's most thriving new clubs. I'm sure everyone is aware of the push to try and get IVARC onto the contest map by entering as many RSGB contest events as possible, with as many club members as possible. I know it's not good for the score but, personally, I'd rather see 10 members entering with 5 QSOs each rather than one or two with 100 or so. So don't expect the badgering to drop in 2013!

We've been fortunate again to get an interesting and varied array of Friday evening presentations through 2011/12, but booking speakers is getting harder and, as our ex-Chairman G3NVB knows only too well, getting speakers who don't cancel at the last minute is much harder indeed. Consequently, the committee decided a change to the meeting format; one meeting each month would become a forum meeting. Note the words 'forum meeting', not 'natter night'. These meetings are not intended to be sit-around discussions on geraniums and the joys of growing old but practical problem-solving meetings. Stick a shout on the website or raise a question during a previous meeting and let's see if someone can come up with an answer or, even better, bring in the equipment for a practical demonstration at the next forum. Let's use these meetings to grow our operating skills, improve our shack efficiency, learn new techniques and propose club activities.

So, back to my earlier question – what do I, personally, want from a Radio Club? I think I can answer this in one simple word "Involvement". I want to get involved in all aspects of this huge amateur radio hobby, to grow my skills, learn and play with new modes, build better antennas etc. But there should also be "Involvement" from

others. I want a club where members want to be Involved, want to help steer the club's future by serving on the committee, want to grow other people's skills by sharing their own experiences, want to organise special events and activities beyond the Friday night meeting. So, if you want the club to grow - get Involved; never ask the question, "Why doesn't the club do", instead ask "What do I need to do to enable the club to do".

Knowing is not enough; we must apply. Willing is not enough; we must do. – Goethe

Horndean & District ARC Quiz 2013



The IVARC Team

Horndean and District amateur radio club held their annual quiz on Jan 16th 2013 and I'm pleased to inform you that IVARC were once again winners. This year's team consisted of Quintin M1ENU, his XYL Sonya, Ray G3HRH, Liz M0ACL and myself G0UKB.

We beat off stiff opposition from the Fareham club who came second, and several teams from the home club. It was a tricky quiz, who knows the author of Pinocchio? But the IVARC team had a good balance of general knowledge and amateur radio expertise which saw us through in the end.



Brian receives the trophy for IVARC

Girlguiding Hampshire West Flame International Camp

Approximately every four years Girlguiding Hampshire West hold Guide camp with the title FLAME, which stands for fun, laughter, activities, memories and enjoyment. Flame 2012 was centred around the Olympics and the Olympic & Paralympic values which are respect, excellence, friendship, courage, determination, inspiration and equality. As well as Guides from the western side of Hampshire there were Guides (and a few Scouts) from Sweden, New Zealand, South Korea, Oman, Egypt, Hong Kong, Singapore, St Vincent and the Grenadines, Trinidad and Tobago, and Canada.



Along with Itchen Valley Amateur Radio Club, I have been involved in providing an amateur radio/electronics activity at all of the camps. For this year's project we decided on an audio amplifier from Rapid Electronics education range. We found an interesting 'origami' box made from corrugated card designed to take the amplifier, which supposedly fitted together using the lugs and slots already pre-cut.



So during the five days of activities we helped 109 children of all abilities and from numerous countries to solder the components of an amplifier for their phone/CD player/computer. The girls soldering was very good, some completed boards would rival professional soldering. Only three appeared not to work when first completed, and all of those were because of faulty components, not bad soldering. It was interesting to see that those girls who had never done soldering before often produced the best results in a session. All girls must have listened carefully to the safety talk by lead instructor Brian, G0UKB, as we had only one slight burn during the whole event.

We also put on an amateur radio station using the call GB0HWG and were able to make quite a few contacts around the world when we were not running the activities. It was great that Gill Slocombe, Chief Guide of Girlguiding UK, was able to visit the station and witness the Guides soldering their amplifiers. Two surprise visitors to the radio room were Guide leaders from Oman who hold the radio licenses A41NB & A41NC, unfortunately their timetable didn't allow them time to go on air.



Where a group was too large for everyone to make the amplifier, we also set up a radio orienteering course around the site. We were able to borrow the RSGB's 80 metre set of transmitters to use with our existing set of matching receivers. So we had four transmitters deployed around the site carefully hidden in the undergrowth. The transmitters were on air in sequence for a minute each and could just about be heard all across the site so, with the aid of a map, the girls could decide whether to try to visit the sites in order, or look for the shortest route. Each site had a traditional Orienteering punch which the girls used to punch a record card as proof of finding the transmitter. Some groups discovered that once the receiver had led them close simply hunting around was the fastest way to find the transmitter.



Over the years we have become famous for our 'flashing LED' projects so, for this camp, we had a campfire badge simply put together by taping an LED to a button cell battery. Nearly 200, at least a third of the camp, found time to 'drop in' to the station and make a badge during their 'free time'. There were also a number of discussions about variations to the design for Christmas decorations.

Liz Jones M0ACL

www.guides-on-the-air.co.uk



Secretary's Report 2011 / 12

The Club has held 23 meetings over the year, including 13 talks, 8 Members' Forums, the AGM and the traditional Christmas Social.

Raffles have been run very ably on 5 occasions, mostly by David M0XIX, and have yielded the grand total of £137.00.

The following is a summary of the year's meetings.

Apr 13th 'Radio and Astronomy' by Bert Roberts G4XBZ.

Once again Bert delighted us with a startling presentation lavishly illustrated with the wonders of the universe. It is always a treat.

Apr 27th Members' Forum

May 11th Tabletop Sale. The evening was devoted to a grand sale of Books, Components and Equipment. It was a great opportunity to discover many 'must-have' gems for future projects. Much radio and computer junk exchanged hands. The Treasurer was highly delighted with the £75.00 donated to Club funds. Our thanks go to everyone who supported the event.

May 25th 'After Enigma: the move to electronic Ciphers' by Richard M1CFW.

This was a complex and fascinating insight into what encryption methods were available at the time, and the equipment used to encode/decode them.

Jun 8th Members' Forum

Jun 22nd Looking differently at radio: SDR and Panadapters by Brian G0UKB

For those not already familiar with Software Defined Radio this was an eye-opener. But it does mean that even the hardware we have become so used to is now obsolescent, and a general purpose computer can take over.

July 13th 'Radar' by Quintin M1ENU

This time Quintin discussed the uses of radar, concentrating on remote sensing. It covered everything from polarisation to satellite interferometry, and concluded with seismic mapping of underground features.

Jul 27th Video: 'The Spies Who Lost the Battle of Britain'

This DVD started with the Chain Home top secret radar network. Just before World War II, the Graf Zeppelin dirigible crossed the North Sea on a daring spy mission, shadowing the eastern coastline all the way up to Scotland. They were searching for activity on the bands for evidence that Britain had a working radar system. German wireless experts could only find a 'mains hum', and assumed that no-one could possibly be running a radar at 50Hz. How wrong they were!

Aug 10th Members' Forum

Aug 24th HF Field Day and the N1MM Logging Program by Liz Jones M0ACL.

This was an introduction to contest operating and how the logging program works.

Sep 14th 'What's New in Antennas' by Vic Bryant G3NVB

Vic is always an interesting speaker on antennas, forever experimenting, in the traditional amateur fashion. For this talk he set about 'unravelling the loop' aerial and showed how easily one can be built with minimal costs, but warned of the high voltages across the capacitor.

Sep 28th 'Data Myths, Broadband and Mobile' by Geoff G3ROG

Oct 12th Members' Forum, chaired by Ted G0BHK.

Graham, G3XSD, led a lively discussion about what we can expect regarding ground wave propagation on 160mtrs. This has subsequently resulted in a regular Sunday evening net.

Oct 26th 'A New SDR for only £14.00, receive only' by Brian G0UKB

Brian demonstrated the cheap software package RTL-SDR, as much fun as you can get for £14.00! Instead of using expensive purpose-built hardware you are using a PC and a USB dongle.

Nov 9th Raynet by David M0XIX

David explained the importance of Raynet in the South Hants area and how we can help.

Nov 23rd Member's Forum, 'Low Band Antennas and Contesting' by Peter G4YUP

Peter explained how he had been encouraged to enter an 80mtr club contest. This got him hooked on contesting and led to him upgrading his antenna and buying an auto ATU. He also constructed an 'ugly choke balun' which appeared to improve his antenna performance considerably. He was now able to tune top band and was keen to try working other members. He soon proposed a Sunday evening top band net which is beginning to become a regular event.

Dec 14th Christmas Social, organised by Brian G0UKB and Liz M0ACL

There was a good turnout. Liz provided wonderful savouries and sweets, assisted by Sheila G0VNI, while Brian did his usual to flummox us with an ingenious Quiz.

Dec 25th Christmas Day call-in chaired by Peter Baxter G4EOW

Jan 11th Video: T32C chaired by Brian G0UKB

This documentary explained the expedition to Christmas Island (Kiritimati), covering the planning, transportation, execution and results of the trip. When tonnes of equipment was stranded on another island, waiting for transport and clearance, a backup plan was initiated which meant that the whole operation was with a system cobbled together at the last minute. It shows what can be done if you have to, (like most of OUR field stations!)

Jan 25th Antenna Design by Mike Parkin G0JMI of Alton Antenna Arrays.

Mike brought along implementation of his designs for 2mtr and 6mtr Mini-Beams, intended to reduce the space required for a dipole antenna. The ends of the driven and reflector elements are bent into the form of a rectangle, while a short stub was all that was required to produce effective matching.

Feb 8th Members' Forum by Duncan G3RQF

Your ideas for the future: what should IVARC be doing in 2013?

Feb 22nd 'A Radio Amateur's Swiss Army Knife' by Duncan G3RQF

This covers the design of the Club Project board and its use to build a range of different projects.

Events

Club members have also been involved in events away from our usual meeting venue, including a visit to the Horndean ARC for their annual quiz, that we won, and the Girl Guides 'Thinking Day on the Air.' Some are listed below.

10th – 14th April Titanic Special Event Station

The station operated as GB100WSL. In general, the weather was very poor, and propagation was variable, with some good 20 minute slots, followed by complete loss. Operating on the Sunday was deemed unnecessary in view of the stormy conditions. Six operators took part.

Some 1500 contacts were made, of which 1400 were on HF, 64 countries being worked. The 100 on VHF reached only Brighton in one direction and Radstock in another. Associated British Ports were thanked for their cooperation.

May 12th-13th 'Mills on the Air' was operated by Andy M0IED and father Steve G6FRT, with the assistance of Southampton University Wireless Society, at Botley Flour Mills using the callsign GB0BFM.

June 16th-17th 'Museums on the Air' was operated by Colin G4GBP and other members of the Club at Crofton Beam Engines using the callsign GB0CBE..

July 7th-8th VHF Field Day was rained off at Pinsent Scout Campsite, Winchester.

July 23rd-30th 'FLAME' Camp was operated by Brian G0UKB and Liz M0ACL at Foxlease, Lyndhurst, for the Girl Guides.

Aug – The Olympic Special Station 2O12L was operated by Brian G0UKB and Liz M0ACL at the Cray Valley Radio Society site at New Eltham.

Sep 1st-2nd HF Field Day – was organised by Liz M0ACL and held at the Ramalley Girl Guides' Centre. A number of Club members assisted, it went well, and was well received. An improvement for next year might be a better antenna for the location.

Oct – GB2GP operation by Brian G0UKB and Liz M0ACL

Quintin Gee M1ENU

Secretary

Starting Again

Vic Bryant **G3NVB**

Introduction

Many of you will be aware that I moved recently from the QTH at Waltham Chase to Oliver's Battery just outside Winchester. This latter place is supposedly quite historic as Oliver Cromwell sited a battery of guns there and fired on to Winchester during the English Civil War. Winchester was supporting the king. There is no record of any damage but much is made of the event.

You will also remember my constant moaning about Waltham Chase being a poor radio site. The location is part of the Meon Valley and is surrounded by hills, which is not good for aspiring DX operators. The site at Oliver's Battery is on a hill, in fact one of the highest in the district and so I am hoping it will turn out to be a good radio site. The only snag I can see at the moment is that there are a couple of houses to the North and to the West. Time will tell.

The move has given me the opportunity to make a fresh start with the radio installation and I am now able to plan and assemble a station in a much more effective manner. The start is to decide what arrangement I wish to have around the operating position. Coupled with this consideration is the need to have a proper "System Arrangement". This is derived from the "Requirement" which is one of the most important aspects of our life generally. So what do I want to have in my shack?

Shack Arrangement

The starting point is layout of the various items of kit at the operating position. And much can be learnt from previous arrangements, mistakes in my case, as well as what other people do. The arrangement that I had in the last QTH was, to say the least, a mess, with equipment scattered about on the operating desk interspersed with all the interconnecting cables. Clearly a better arrangement must be possible.

Looking at what other operators do, it is clear that the operating desk needs to have a number of "Levels" for equipment so that the kit can be laid out to suit operator access. In my case it must have a flexible arrangement because it will probably be altered in six months time. This will coincide with an exciting article in RADCOM demanding immediate building of a new gizmo. Future changes that can be foreseen are the introduction of Data modes (PSK31, RTTY JT65 and variants etc.), WSPR and Computer logging.

Thus far the main operating desk is sited about 2 ½ feet from the wall of the "Radio Room". This will allow access to the rear for change and also the cabling is all arranged around the rear of the desk. This allows a cleaner and uncluttered front. The desk pedestal and equipment stand carries all the small items of kit such as the odd power supply.

Details of the arrangement are shown in the Photo which follows.



Aerial Considerations

VHF.

Clearly as a keen 2mtr contester there is the need for a good horizontally polarised aerial and I now have my 7 elements Yagi on a 20ft pole on the top of the chimney, fed by low loss RG213. To add completeness, I also have a 2mtr vertically polarised collinear on another pole nearby. This is for local work and, being 2mtr, will also handle 70cms. So far, repeaters as far away as Aylesbury and Somerset have been heard, so there is promise. See picture below.

A good home is awaited for the 6mtr 3 element and 70 cms 10 element Yagis. I may have to think of some other arrangement as the roof is becoming a bit crowded and I don't want to frighten the neighbours who seem to be quite laid back about my activities so far. A four way co-axial switch ex junk box allows a selection of the various aerials at the operating position. See picture above, top centre. Consideration can be given to putting an aerial in the loft.



HF.

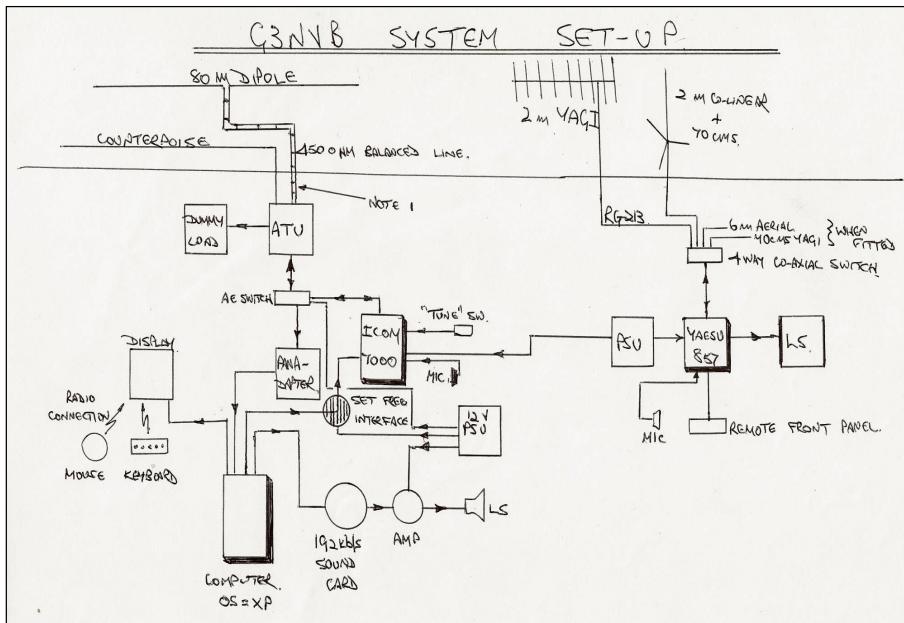
There seems to be quite a following of contesters in the club, and as of now (January 2013) it is frustrating to hear the activity and not be able to join in.

The starting point as ever is the need for some sort of effective aerial and the small to average size garden suggests a wire dipole for 80m with possibly the ends folded down if required. Getting supports up in the winter weather is not a quick job and may have to wait until the spring. The feed point can be fed to the shack ATU which will allow operation over the whole of the HF band but with indeterminate radiation patterns. An alternative could be an inverted 'L' with consideration being given to feed point and access to the shack.

The previous installation used a 600-ohm open wire line from the dipole centre. This was connected to the balanced input of the ATU. Each of the two wires inside the shack was carried in coax to prevent radiation within the shack.

System Description

The system block diagram is shown in the figure overleaf, and the layout is shown in the picture at the top of this page. The right hand side comprises the VHF part and uses the YAESU 857, originally used for portable operation and rescued from the car. The 4 way co-axial switch, seen on the green panel in the centre, selects VHF aerials. Two ways are already taken for the 2mtr



Yagi and the 2mtr collinear. The other two connectors are optimistically reserved for the 70cms Yagi and the 3 element 6mtr Yagi. The 857 front panel is detached and sited in front of the operator, with the main equipment sited on the lower deck over the power supply. The upper deck on the RHS carries the speaker.

The HF part is on the centre and left hand side of the desk, and uses the ICOM 7000 transceiver. The 857 and 7000-share one power

supply, on the grounds that only one item of equipment is in use at any one time. The output of the 7000 starts with the SWR meter, sited on the right hand side of the green panel, prominently in front of the operator. The main feature of this part is the Panadapter, the SDR receiver using surface mount components that was shown at the club last year. This receiver displays a 200kHz.width of any band and allows any signal on the band to be selected. A particular feature is that it also commands the Tx/Rx to track the frequency you are looking at. Thus it is possible to monitor a channel and then immediately transmit on that channel. A separate send/receive box, controlled from the ICOM, prevents the Panadapter from being overloaded on transmit. This is sited on the LHS of the green panel.

The 192kb/s sound card sits just to the right of the display with a small audio amplifier over it, and the dummy load is sited behind.

The ATU is on the upper deck on the left, conveniently to terminate the HF aerial which emerges into the garden through a hole in the wall together with the VHF aerial leads. Provision is made in the connections to have the whole HF aerial worked against a counterpoise which consists of wires strung around the garden, hopefully, so that in time, the top band net can be worked.

The twin wire feeder from the HF aerial centre is fed into the shack through two separate co-axial leads to provide screening inside the shack to reduce the possibility of RF floating around the shack.

What of the Future?

What has been constructed is a fairly basic arrangement providing an easy way to get on to both HF and VHF. The next action will be to get an aerial connected for HF and to get it all going. Then obtain some experience on the contest front both for VHF and HF and find out what is happening on the bands. What is of particular interest is what the site has to offer in terms of "DX" capability.

Further plans include the introduction of PSK31 and other data modes, JT65, WSPR and computer logging.

For this reason it is important that no part of the system is permanently fixed and can be modified as new features become of interest in this fascinating hobby of ours.

Watch this space.

Working the new 5 MHz allocations

Background

The “**60 metre**” or **5 MHz band** is a relatively new amateur Radio Allocation (not strictly a band), first introduced in 2002, that was originally only available in a few countries, such as the USA, UK, Norway, Finland, Denmark, Ireland and Iceland, all members of NATO.

Over a number of years however, an increasing proportion of countries' telecommunications administrations - together with their government and military users - have permitted Amateur Radio operation in the 5 MHz area on a short or longer term basis from discrete channels to a frequency band allocation. At present there is no worldwide common International Telecommunication (ITU) frequency allocation as is the case with other amateur radio bands. Allocations are made by individual administrations in accordance with Article 4.4 of the ITU Radio Regulations, *which requires non-interference with other radio services*.

Where two-way amateur radio communication is authorized on 60 mtrs, it has generally been within the frequency range 5250 – 5450 kHz, but the whole of this range is not necessarily available and allocations vary significantly from country-to-country.

In many countries, including the UK, the allocation is channelized at present. Voice operation is generally in Upper Sideband mode to facilitate inter-communication by non-amateur service users. *In the UK the Primary user is the Ministry of Defence, MoD.*

The amateur radio service is unusual in the fact that it is regulated by international treaty. Worldwide amateur allocations are determined by the International Telecommunication Union (ITU), which allocates global radio spectrum and satellite orbits and develops the technical standards that ensure networks and technologies work seamlessly. This is done through successive World Radiocommunication Conferences (WRCs) which take place approximately every 3 – 5 years, when telecommunications administrations and organisations from all around the globe meet to make decisions on these elements.

At the conclusion of the ITU 2012 World Radiocommunication Conference (WRC-12), a Resolution was ratified as being placed on the Agenda for the next WRC in 2015 (WRC-15). This resolution invites WRC-15 to consider:-

"The possibility of making an allocation of an appropriate amount of spectrum, not necessarily contiguous, to the amateur service on a secondary basis within the band 5250 - 5450 kHz"

Noting that:-

- a) that the band 5250–5450 kHz is allocated to the fixed and mobile services, except aeronautical mobile, on a primary basis;
- b) that an allocation of an appropriate amount of spectrum, not necessarily contiguous, to the amateur service at around 5300 kHz would be adequate to better satisfy its needs associated with use for providing communications in disaster situations and during relief operations;
- 2) to carry out sharing studies on the impact to other services currently allocated in the band referred to in invites ITU-R 1 and in the adjacent bands;
- 3) to complete studies in time for WRC-15.

The Notice of Variation, NoV

Operation on the 5 MHz channels requires an NoV to be issued to a Full Licence holder; it is not available to holders of a Foundation or Intermediate Licence. The NoV initially issued to UK Amateurs involved submission of a form to OFCOM. Those issued prior to 31st December 2012 required feedback on propagation to the RSGB 5 MHz Working Group. Also power levels were limited to ERP. Seven narrow channels were available, six of which were limited to 3 kHz and one at 3.5 kHz, a total of 21.5 kHz available bandwidth. This NoV is still valid and, in the UK, the NoV procedure was simplified on 1st January 2013, and a Full Licence holder can obtain the NoV on-line via the RSGB. This NoV is valid to January 2018.

See RSGB link:- <http://www.rsgb.org/committees/spectrumforum/operating-on-5mhz-in-the-uk.php>

The allocation now totals 71 kHz spread over eleven channels. Operating restrictions are now similar to the Full Licence, though there is a strong emphasis from OFCOM on non interference with the Primary User,

Lower Limit kHz	Upper Limit kHz	Channel Width kHz	RSGB recommendation on Current Usage
5258.5	5264.0	5.5	CW activity. 5258.5 kHz international use
5276.0	5284.0	8	USB dial frequency 5278.5 kHz international use
5288.5	5292.0	3.5	Experimental beacons on 5290 kHz
5298.0	5307.0	9	All modes, highest USB dial frequency 5304 kHz
5313.0	5323.0	10	All modes, highest USB dial frequency 5320 kHz
5333.0	5338.0	5	Highest USB dial frequency 5335 kHz
5354.0	5358.0	4	Highest USB dial frequency 5355 kHz
5362.0	5374.5	12.5	Digital modes activity. Highest USB dial frequency 5371.5 kHz. International use
5378.0	5382.0	4	Highest USB dial frequency 5379 kHz
5395.0	5401.5	6.5	Highest USB dial frequency 5398.5 kHz
5493.5	5406.5	3	USB dial frequency 5403.5 kHz international use

Getting going on 5 MHz

Amateur equipment made in Japan and surrounding countries often did not support this allocation, since it is not currently available in those countries. However, it is usually possible to modify....

.... equipment to work correctly on these frequencies within the terms of the individual's licensing conditions. More recently, commercial amateur radio equipment manufactured in Asia destined for the North American market has begun to include provision for US 60Mtr / 5MHz operation.

In my case, it involved a small modification to "broadband" the Kenwood TS-870s. I had this done by ML&S when they were replacing the optical encoder, as I was concerned that the job should be documented. It just required the removal of an SMD device. A potential issue with "broadbanding" is that my rig can now transmit, in addition to the whole of 60 metres, anywhere from 500 kHz to 30 MHz! On newer rigs, it can be a simple menu driven option, or require the cutting of links and in some cases, just opening up of the 5 MHz range is effected.

Before transmitting it is advisable to check the frequency calibration of your rig. I did this by monitoring the 5 MHz reference on WWV when available, and, better still, the 4.996 MHz transmission from RWM in Moscow. RSGB also sponsors three sequential beacons on 5.29 MHz, i.e. GB3WES, GB3ORK and GB3RAL , which give a good indication of propagation conditions. A useful web site is <http://qrg.globaltuners.com> which lists spot frequencies for Military services, the USA amateur 60Mtr band channels and also some other European Amateur allocations.

Finally, once you have everything going nicely into a dummy load, the final step is to set aside 5 minutes to apply for the NoV, most of which is taken up by finding the OFCOM reference on your existing paper licence!

The Operating Experience so far

My 33 metre end fed inverted 'L' at 8.5 metres height tuned up easily on 5 MHz, using the GX-3000 ATU, I get regular reports of 9+ 30dB from around the British Isles and good reports from mainland Europe. Many other stations using 100 W PEP appear to put out similar signals, which poses the question, why has the power limit been extended? I dwell on this point later! I have not tried PSK31 or RTTY on 5 MHz yet, but I am anticipating data QSO's to North America.

Since the introduction of the new arrangements for the NoV, the 5 MHz band has come to life. There are always UK stations on the air, on CW, Data, Upper Sideband and even Amplitude Modulation, in day-time, but less so in the evenings. As to be expected on a band that requires some effort to get operational, the absence of continental QRM allies results in a very relaxed experience. Many stations comment that, "It's like the old days, very little background noise, and No Contests"

There are a few Continental stations to be heard, many of these stations cannot net in on you as many are limited to a spot frequency.

The Primary user in the UK is the MoD and occasionally you may come across Cadets operating using Military protocol. QSO's can be held with these stations, however, if you are of the school of Able, Baker, Charlie, be prepared to give phonetics in Alpha, Bravo etc! These stations are not allowed to give names or precise locations. I suspect MoD stations are unlikely to hold nets in the channels allocated to UK Amateurs, but if they do, it would be inadvisable to compete for the channel!

Some potential issues in operating on 5 MHz channels

The NoV imposes a discipline on Radio Amateurs to maintain transmission within a channel, which has never been the case in the conventional bands. The RSGB has made it clear that the Primary User may monitor Amateur activity from Baldock; breaches of the..

...NoV are potentially a breach of the main licence and could result in OFCOM withdrawing the 5 MHz NoV or the licence of a persistent offender.

There is potential confusion in published material on what mode one can use in a channel. Ideally common sense will apply, but I suggest a few obvious precautions should be observed:-

- Avoid using the 3 kHz and 3.5 kHz channels for Upper Sideband (USB). The signals are so strong that much of the suppressed LSB transmitted WILL fall below the bottom edge of the channel.
- Avoid operating USB too close to the upper edge of the channel. Many rigs can be adjusted to reduce the transmitted bandwidth.
- If you must use DSB, or AM, keep out of those channels less than 6.5 kHz.
- If you are getting a report of 9+, turn the wick down. The 100W limit is more than enough in view of the low noise level at 5 MHz. The unwanted sideband suppression of 40-50 dB is only a few 'S' points below 9+ 40 dB!

And the biggest No-No is to fail to keep the carrier, i.e. dial frequency, of any mode sufficiently above the lower edge of the channel. I avoid calling those stations who can be heard in between channels or even straddling two very close channels!

Hopefully RSGB will clarify a Code of Practice to maintain the privilege, not available to many European Amateurs, of an exciting new part of the spectrum.

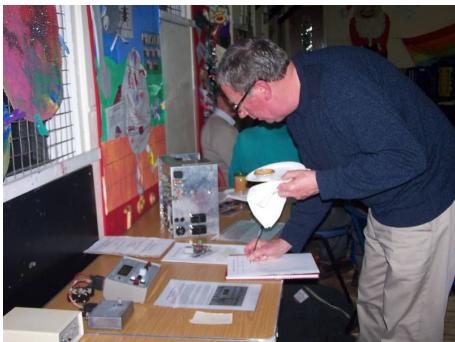
Acknowledgements

Most of the above material can be found, in more detail on the OFCOM and RSGB web sites, also I have borrowed some detail from Wikipedia!

Geoff Morgan, G3ROG



Pictures from our Christmas Social 2012





Power Line Telecommunications

As I was delivering a Christmas card, the door opened and my neighbour said he had a problem and asked if I could help ?

He then explained that he had installed a telephone facility which comprised a unit which plugged into a 13amp mains socket, his telephone line was plugged into the unit. This unit was able to transmit the telephone signal around the house ring main. A second unit, which had his telephone attached, could be plugged into any convenient socket around the house.

While my neighbour and his wife were out, an incoming message was left on their answer phone. This played back quite normally and began "Hello Mary.....etc".

After this, my friends began to hear every half hour or so, a disembodied voice saying "Hello Mary". This had gone on for three days and Mary was beginning to think she was haunted.

I waited a while and, sure enough, I heard a small voice, "Hello Mary". It seemed to come from a corner of the lounge. I sensed that it was not a telephone but a speaker that was emitting the sound.

There was a sideboard in the corner and hidden from site on the top shelf was a smoke and carbon monoxide detector. It was a loud speaking unit which gave a spoken warning, not an alarm, and this was the source of the ghost.

I guess that in production the program in the alarm was loaded using Wi Fi. It may have the same chip and program as used in the telephone PLT units and was using the same channel.

As to why it only recorded "Hello Mary" and caused it to play every half hour, I don't know. They have now purchased a non-speaking smoke detector.

The word that came into my mind was "kiss" - Keep it Simple Stupid !

Larry Dale G2DSY

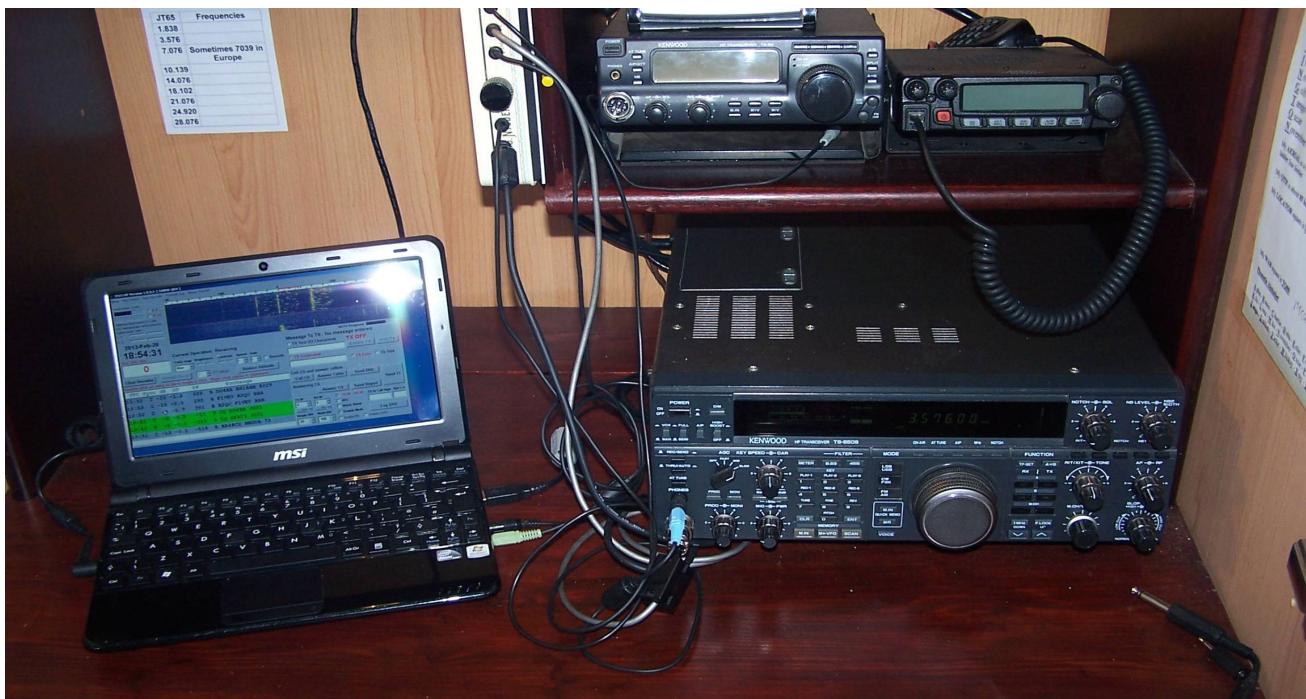
'Technical Topics'

Like me, I am sure that countless Radio Amateurs around the world were saddened to read about the recent death of Pat Hawker, MBE, G3VA. Pat had held an amateur radio licence since 1936. He was involved in many aspects of radio, from WW2 with UK military intelligence organizations through to time working for the RSGB, the IBA and as the editor of Electronics Weekly and the Royal Television Society Journal. In particular he was responsible for the hugely popular 'Technical Topics' column which appeared in RadCom for 50 years – I always found this column to be the most interesting part of the magazine.

I strongly recommend the RSGB publication 'Technical Topics Scrapbook – All 50 Years.' It includes all 50 years of words, pictures and line drawings, all exactly as they first appeared, but now available as PDF files on a CD. Also included is a real 'hard copy' book which contains the fifth and final compilation covering the years 2005-2008. ISBN 9781-9050-8639-9

You might also be interested in the book 'A bit of a Controversy, Pat Hawker – A Radio Life' written by Steve White, G3ZVW, which covers Pat's extraordinary radio career. ISBN 9781-9050-8640-5.

First Impressions from running JT65-HF



JT65-HF first came to my attention from reading updates to the IVARC Yahoo Group last December, originally posted by Chris N9JCA, who was trying to drum up some interest in this fascinating weak signal mode. From reading various articles I soon determined the only requirements are –

- 1)** The JT65-HF software (available free) from – <http://sourceforge.net/projects/jt65-hf/>
- 2)** A timing program to accurately sync your PC clock to a standard time source. Some specify ‘Dimension 4’, but I could not get it to work with Windows 7. Instead I took G4ILO’s advice and installed ‘Meinberg NTP for Windows.’ It is free, easy to install, and once installed you can forget about it – http://www.meinbergglobal.com/english/sw/ntp.htm#ntp_nt_stable
- 3)** You will need a PC with a reasonably fast processor, the faster the better, but at least 1.5GHz.
- 4)** A suitable interface to enable you to connect your PC to your transceiver. I had already cobbled together a homebrew interface for earlier experiments with PSK31, and it seemed likely this would do the job.
- 5)** Unfortunately the program’s author designed JT65-HF software for use on a computer with a serial port, so I had to purchase a USB-serial adapter, available for just a few pounds from eBay or Amazon (I already had this from my PSK31 experimenting)

The JT65-HF software was very easy to install and get running. I discovered I could decode some of the stronger signals even without an interface – my PC microphone was picking up audio from the rig loudspeaker.

When finally installed, I have to admit, JT65-HF performance is really impressive. It will decode signals which are so weak they are barely perceptible on the display waterfall – it is not unusual to successfully copy signals which register as low as -24dB.

As the program transmits a continuous sinusoidal signal for 46.8 seconds at a time, it is necessary to reduce your rig output considerably – most stations run 25 watts or less, and you will encounter quite a few stations running less than 5 watts. I usually run my TS-850S at 10 watts output – I don’t need any more.

My preferred operating time is evenings while the XYL is watching her favourite ‘soaps’ on TV. I usually work 30mtrs up to about 8pm, then move down to 80mtrs. Even when the band is

horrendously noisy you will nearly always find stations to work – the signals seem to penetrate through everything. I can always work Europe and beyond into Asiatic Russia. Often, as the evening draws on, stations on the east coast of the USA start appearing – I often get hooked and carry on into the early hours. A good example of the capabilities of the mode is VA3WLD in Ontario. He runs just 10 watts using an aerial hooked up in his attic – I see his signal frequently and have worked him on both 30 & 80mtrs. Other European stations I have worked claim to be using as little as 2watts.

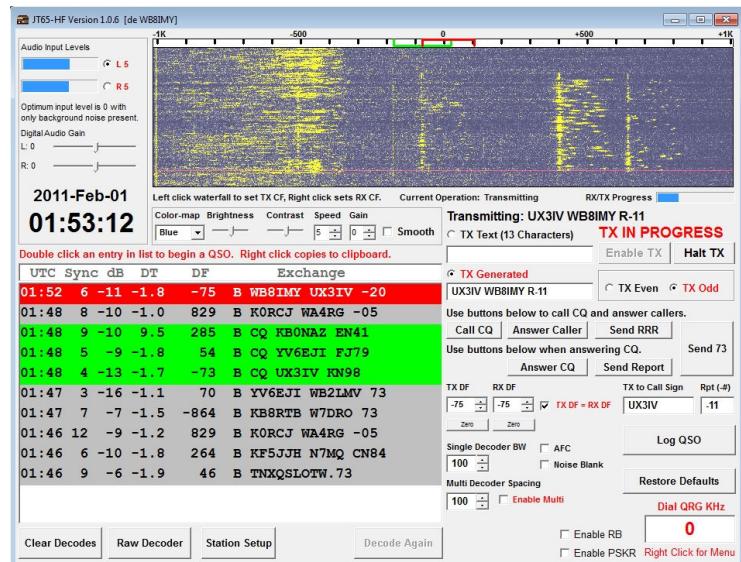
How Does it Work ?

JT65-HF uses sophisticated digital signal processing. It relies on redundancy and sends the information over and over. It uses a 1270.5Hz synchronizing tone and 64 additional tones to carry the information. It sounds like someone playing music. Each transmission lasts precisely 46.8 seconds, allowing about 13 characters to be sent, so a typical QSO for exchanging only signal reports will take several minutes. Station clocks must agree within about 2 seconds. As much as 80% of the transmission can be lost and still be decoded. Stations take turns in transmitting, and transmit on either even or odd minutes, then listen on the following minutes.

A typical exchange –

----- CQ WB8IMY FN31 ----->	WB8IMY calls CQ with his locator	time 01:05
<----- WB8IMY W0RSB EN34 -----	W0RSB responds with his locator	time 01:06
----- W0RSB WB8IMY R-09 ----->	WB8IMY returns signal report -09dB	time 01:07
<-----WB8IMY W0RSB R-13 -----	W0RSB responds with -13dB	time 01:08
----- W0RSB WB8IMY RRR ----->	WB8IMY acknowledges receipt	time 01:09
<-----WB8IMY W0RSB 73 -----	W0RSB sends 73	time 01:10
----- 10W LW TU 73 ----->	WB8IMY sends station details + 73	time 01.11

It can be seen that sending just the basics – callsign, locator, signal report and greetings has taken at least 6 minutes. However, with a bit of forethought it is possible to reduce the number of exchanges. When you consider each transmission is active for the first 46.8 seconds of each minute that only leaves 13.2 seconds for the remote computer to decode the message and for the operator to respond. Fortunately, most of the normal responses can be activated by pressing a single key, or using a pre-programmed macro. Even though it all sounds very slow you need to keep an eye on the display and anticipate what is coming and how you might respond. Because of the need to make quick decisions, messages which appear on the screen are colour coded. A 'CQ' call will show up **GREEN**, traffic between stations which are in contact shows up **GREY**, and any message which is directed at you appears **RED**.



JT65-HF is an excellent mode for low power or antenna restricted stations – you can get truly amazing results with the simplest of equipment and aerials. The mode appears to have a large number of devotees – I have worked several hundred different calls in a couple of months. JT65-HF contacts are valid for most awards including DXCC. 'Worked all States' and 'Worked all Continents.' They are also supported by the ARRL's Logbook of the World.

If you want to start working DX this is the way to go, but sadly, it is no good for anybody who enjoys a good 'rag-chewing' session.

Ted Stiles G0BHK