



Itchen Valley Amateur Radio Club

Annual Report

2013 / 2014



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Peter's Treasure Hunt at Wickham

Friday 28th & Sunday 30th June 2013

The IVARC Treasure Hunt for 2013 took place at Wickham, a place even I was not familiar with.



Bridge Street, Wickham

As several friends and family of mine wanted to attend I picked Sunday 30th June as the date, however, as the Club wanted to run the event on a Club night, I decided to run the Treasure Hunt twice, Friday 28th, then again on Sunday 30th June.

The Friday weather was not too good and it did drizzle a little. However, 13 hardy Club members set out from the Community Hall car park and walked into Wickham Square, solving over 40 written clues and 9 photo clues.



Liz MOACL & Brian GOUKB venture out

Wickham turned out to be ideal for a Treasure Hunt as the total distance walked was probably no more than a mile and, apart from one uphill section, was mostly on the level.

As well as a Treasure Hunt the event was also a mini history lesson. The second part of the name Wickham – “ham” actually meant village or estate, and “wick” is derived from the Latin “vicus” meaning district or vicinity.

In 1086 the population was around 120 and the village had two watermills which ground flour for bread making.

In 1269 the villagers were granted the right to hold weekly markets. Wickham also had a Fair once a year which attracted buyers and sellers from the surrounding area.

Records indicate in 1334 Wickham was worth 6 pounds, 8 shillings and 6 pence in taxes paid to the crown, this was a greater sum than for Fareham, indicating it must have been a very busy and prosperous place.

By 1700 the population had grown to 500 and the village had brewing and tannery industries.

At the start of the 19th century the population was recorded at 901, a very large village for those days.

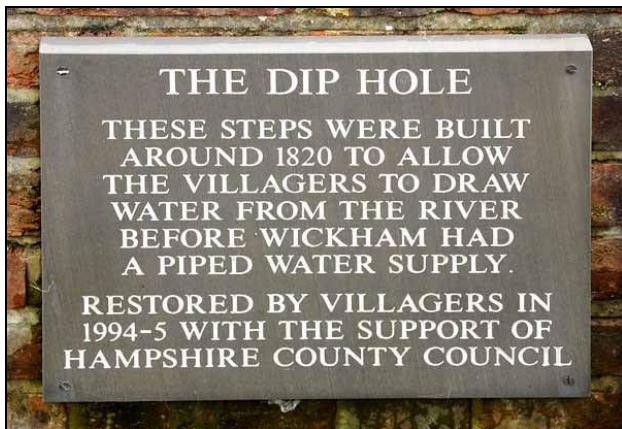


Chesapeake Mill

In 1820 the Chesapeake Mill was built from the timbers of an American ship, the USS Chesapeake, which had been captured in 1812 during the war between USA and Britain. (here a lot of the Treasure Hunt clues were to be found).

By 1901 Wickham's population had risen to 1200 and the village had its own branch railway line. 1931 saw Wickham gain a gas supply and Electricity followed soon after.

Returning to the Treasure Hunt, one of the clues showed where, in days past, the residents of Wickham had drawn their water. This was locally known as the "Dip Hole."



After completing their question sheets our valiant 'Treasure Hunters' retired to the "Black Dog" pub at Waltham Chase for refreshments and to have their answers checked. Some of us had walked back & forth many times, so we were pleased to be able to sit down again.



Daisy, Pat & Ted G0BHK

The landlord of the pub, another Peter, was most helpful and the food was good.

The final results were as follows:

- 1st Brian G0UKB and Liz M0ACL (previous winners).
- 2nd Ted G0BHK, Pat & Daisy
- 3rd Sheila G0VNI & Mike G0WIL
- 4th Ray G3HRH, Geoff G3ROG & Jo
- 5th John 2E0KCL & Callum
- 6th Richard G3OTK



Peter presents the 1st prize to Brian & Liz

The Plaque was presented (returned to) Brian & Liz to keep for another year and Certificates were presented to the runners-up.

About 9pm we were treated to an unusual sight, a semi-tame Fox came into the pub garden and was fed by the kitchen staff; apparently he is a 'regular' at the pub.



Thank you to all who attended, I hope everybody enjoyed the Hunt.

The Sunday saw a further 16 turn out on a very warm & sunny day – overall, a successful event.

Peter Baxter G4EOW



Thinking Day on the Air Report 16/17 February 2013

It is very interesting to read the reports of units' activities for each year's World Thinking Day on the Air (TDOA), and to view the varied photos taken and submitted to the local press. The description of the trials and tribulations that Leaders and radio amateurs face and overcome will, I hope, inspire others not to be daunted by any obstacles they might encounter when deciding to offer their girls this unique experience.

Once again this year over 30 stations took part either for one day or all weekend, and gave over 1,000 members of Girlguiding the opportunity to experience a technical hobby which is well within the capabilities of all members of the movement from Brownie to Trefoil Guild. Exposure to this form of technology has the potential to inspire girls into more scientific careers. It was exciting to have new countries on air this year, especially the station from Lithuania courtesy of a Radio Scouting team from Denmark

It is encouraging to note that all the radio amateurs who sent in reports felt they had been well looked after by the units they were helping, and plan to take part again next year.

Brownies celebrate their Centenary in 2014, and OFCOM, agreed to allow stations to apply for the very special GB100 prefix to their callsigns for TDOA 2014.

GB0CFG - Chandlers Ford, Hampshire

Over 100 Brownies from Chandler's Ford Division celebrated World Thinking Day by participating in activities representing Girlguiding's four World Centres in India, Switzerland, Mexico and the UK.

The day was split into three separate sections, including TDOA in the UK activities. We had a steady stream of girls - about 20 at a time into the shack. A challenge for just two radio operators, but a couple of young Leaders easily organised the changeover of groups. However, all the girls got the chance to speak on the radio. One of the highlights was a radio amateur from Germany who spoke extremely good English and conversed at length with the girls and the Division Commissioner, Mrs Janet Skiba. We were lucky enough to be visited by the South West England Region



Photo: Russell Sach

photographer, Russell Sach, who took some memorable photos, including the one above.

We also managed to talk to the research station in Svalbard in the Arctic Circle and were told it was -20 there, so no more complaints about our cold weather!

Liz Jones M0ACL
Girlguiding TDOA Coordinator

Minutes of the Itchen Valley Amateur Radio Club AGM held at the Scout Hut, Chandler's Ford on Friday 8th March 2013

The Annual General Meeting opened at 20.00 after the distribution of the Annual Report.

1. Apologies

26 Members were present, as noted in the Attendance Register. Visitors were Ken Hastie G4DKH and Phil Crump M0DNY.

Apologies for absence had been received from Eric Bettles G3KXE, Mike Hayward G3LGA and Peter Baxter G4EOW.

Our Chairman Brian Jones G0UKB took the Chair.

2. Minutes of the AGM held on Friday 23rd March 2012

With minor renumbering of section 12.1, these Minutes were agreed by the members as a true record of that meeting.

Proposed by Richard Harris G3OTK
Seconded by Allan Cook G7VQV

Signed by the Chairman.

3. Matters arising from those Minutes

5.1 Insurance cover for third parties and members will be dealt with under the Treasurer's Report.

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 his 100-mile round trip to attend both Club and Committee Meetings. He also thanked him for putting together the Annual Report, and Allan Cook G7VQV for its production. Brian also regretted the loss to the Club of John Noden G8IOK and Andrew Stevenson M0UGH due to the pressure of work. He thanked Ray Hills G3HRH for initiating the Yahoo IVARC Group, to which all members are encouraged to join.

He reported that the Club had been active on contesting and had undertaken more external activities, of which the following is a selection.

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

No Treasure Hunt had been planned and our participation in VHF Field Day had been cancelled due to atrocious weather.

Proposed by Vic Bryant G3NVB
Seconded by Ray Hills G3HRH

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 your Club showed a deficit of £120 for the year.

The subscription income was £50 down and we also failed to run sufficient raffles, which almost halved that income source, but sales and donations continued to hold up well. There was no immediate cause for concern, but a systematic approach to recruitment, retention and also to raffles would mean an improving situation.

An exceptional item was the replacement of the projector lamp bulb at £126. Insurance cover had to be extended to £1m covering injury to third parties and to members, the premium rising steeply by 76% to £259.

Ted thanked the auditors for an efficient job.

Proposed by Paul Wilton M1CNK
Seconded by Quintin Gee M1ENU

5.1 Membership subscriptions for 2013 / 14

Ted G0BHK proposed that the Membership subscription would not change, the subscription for the year remaining at £18 for individuals, £27 for families and £9 for students.

Approved *nem con.*

5.2 Sponsorships in 2013

Brian G0UKB and Colin G4GBP proposed that we continue our £18 subscription to the Chiltern DX Club, CDXC. Also that we continue to support the Girl Guides' web page (£23.99 every other year).

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 more of our membership and we now had 37 paid-up members. Brian G0UKB suggested that your Committee appoint a Publicity Officer to coordinate a significant attack on this problem. Suggestions from the floor included: car stickers, mention on the Hampshire County Council website, mention in local newspapers and free sheets, leaflets at INTEC, and some special event stations.

7. Field Events Report

No separate report was submitted for this, but a section of the Secretary's Report covered the items, as well as the Chairman's Report above.

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 Geoff Morgan G3ROG
Seconded by Colin North G4GBP

9. Appointment of Auditors for 2012 / 13

Auditors were agreed as Vic Bryant G3NVB (second year) and Ray Hills G3HRH.

10. Election of President

As a result of the equal voting at last year's AGM, Vic Bryant G3NVB is instantiated as our new President for a term of one year. At next year's AGM, an election will take place as usual.

11. Election of the Committee for 2013 / 14

Our President Vic Bryant G3NVB was invited to chair the meeting.

Brian Jones G0UKB had notified the Committee that he was unwilling to stand as Chairman, although he would be happy to remain on your Committee, if the membership approved. After some canvassing, the committee proposed was:

Ted Stiles	G0BHK
Brian Jones	G0UKB
Quintin Gee	M1ENU
Duncan Keith	G3RQF
Peter Thurlow	G4YUP
Ray Hills	G3HRH
Geoff Morgan	G3ROG
Andy Wedge	M0IED
David Henley	M0XIX
Graeme Bragg	M0NSA

Proposed by Colin North G4GBP
Seconded by Sheila Williams G0VNI

Approved unanimously.

Brian G0UKB resumed the chair.

12. Any other Business as notified to the Secretary

12.1 Presentation of Awards

- 1 The Clubman of the Year was awarded to Ted Stiles G0BHK, together with a £15 Amazon voucher
- 2 The DX Ladder was won by Colin North G4GBP, together with a £15 Amazon voucher.

12.2 Property Manager

Your Committee will address this appointment Internally.

12.3 Auditors

Ray Hills G3HRH raised the question whether the Auditors of our accounts should not be rather called Independent Financial Examiners.

The Secretary replied that Version 11 of our Constitution states only:

11[b] Audit of the Club funds shall be completed before the AGM. The selection of 2 auditors from the ordinary membership shall be appointed at the AGM.

Should any member wish to alter the wording in the Constitution, then a proposal should be submitted in writing to the Secretary, in time for circulation with the Agenda 28 days prior to the next AGM in March 2014.

12.4 Notified Events

16th March Southampton University Wireless Society Open Day.

9th – 10th March Commonwealth CW Contest BERU.

21st - 22nd September British Wireless for the Blind event.

The Chairman closed the meeting at 20:59.

IVARC Christmas Social

Thanks to Liz M0ACL for organising the excellent Christmas goodies she presented at our Social. Thanks to Brian G0UKB for organising the Quiz, and thanks to Paul G6MCX for remembering to take along his camera - I have to admit I completely forgot mine.



The LAST followed by the FIRST

Normally a last event would come after a first event, but in the case of our Club meetings, our last meeting at the Chandlers Ford Scout Hut was followed by our first meeting at the Otterbourne Village Hall.

It certainly was an historic move as the IVARC Club had been meeting in the Chandlers Ford Scout Hut for more than 20 years.

Thanks to Paul G6MCX for recording those two meetings with his camera.



Our last meeting at the Scout Hut on 10th January 2014 was a presentation by Mike from Alton Antennas 'Understanding the G5RV HF multi-band Antenna.' The talk was well received and generated a lot of discussion.



Our first meeting on 24th January at the Bianchi Suite at the Otterbourne Village Hall was a Members' Forum. It was warm & cosy inside, in contrast to the cold & rain outside. First impressions were very good with many positive comments from our membership.

Chairman's Report 2013 / 2014

I joined the IVARC Committee in about 2010 and "volunteered" at the 2013 AGM as Acting Chairman for 3 months. Since then, thanks to Brian G0UKB coming forward as Deputy Chairmen, the 3 months has become nearly 12, my difficulty being that I am away for nearly 3 months a year!. However, the Club now has several volunteers to take this job forward!

Summary

I would like to thank the Committee for a lot of hard work, there were challenges arising during the year which have been overcome.

The last 12 months has been very interesting, due to several developments. At the start of the year we discussed what activities should be encouraged, including more emphasis on younger members, maintaining and if possible increasing the membership and arranging interesting speakers, not an easy task! A lot of debate was held about expanding the use of Web based information sources, and social networking. Bearing in mind that a significant proportion of members are of G2 and G3 vintage, the suggestion has been that we have one Nostalgia evening a year run by us Old Timers! Bring your memorabilia in; large bins are available at Otterbourne! Also two nights a year might be undertaken by younger members.

- Firstly the increased enthusiasm for contesting, triggered off by our entry to the Commonwealth CW Contest, established originally as the British Empire Radio Contest in the late 1920's hence the title, BERU. The enthusiasm generated has spun off into the Club doing much better at 80 metre HF contests. In March 2014 we entered BERU again; the same team of Brass Pounders as last year and also several Digital Mode enthusiasts took part to demonstrate what can be done with limited CW skills.
- Portable Field Day contests were very popular during the year, glorious weather allowed both the VHF Field Day to be entered in July followed by the SSB Field Day in early September,

and it's possible we might enter all three RSGB Field Days in the coming Club year.

- These Field days are very challenging to the organisers, both on equipment and logistics, but we now have a core team of nearly half the Club that participated in them. The Yaesu Rotator and Step-IR beam in particular were not working when used at the VHF event, this has required extensive effort by Duncan G3RQF and others to get everything back together again. This accounted for much of the Club's expenditure on repairs, fortunately the Step IR assembly was repairable and the main cost was spare parts.
- In November, the Scouts dropped the bombshell that we had to vacate the Brickfield Lane hut by the middle of January, IVARC's home for at least 20 years. As usual I was out of the country and returned to find the problem fixed by Brian G0UKB ably assisted by other members, who visited virtually every suitable premises in the area. Our new home at Otterbourne Village Hall, which we first occupied on 24th January, is proving popular. Unfortunately, we had to accept it with a few void dates which were already booked, but there is only one occurrence prior to Xmas where we will be homeless!

Club equipment has been surveyed by newcomer Paul, G6MCX and is generally in good condition. We continually debate whether more VHF gear is needed but the consensus is that, taking into account existing gear and loan of Members' gear, we have enough.

As is usually the case, getting outside speakers was not an easy task, but we were fortunate to get excellent presentations from Alton Antennas and G3WGM on Microsats/AMSAT; also, we again had very good talks from Club members, such as Software Defined Radio, from Graham G3XSD. Also we had two in-house quizzes from Brian G0UKB and Quintin M1ENU.

Outside of the Club, IVARC was again victorious in the inter-club Quiz. Liz, M0ACL, Brian G0UKB and I attended the excellent RSGB Horwood House National Convention, this October's event is going to be at a much larger venue, again near Milton Keynes, and is worth attending as a day visitor. In April Liz, Brian and I operated the G100RSGB Centenary station from our respective homes; pile-ups on both days, about 200 contacts were made.

The Forum meetings appear to work well; it's an opportunity to air a variety of subjects. Our thanks are due to David, M0XIX for conscientiously running raffles at Forum meetings; this raises quite a contribution to Club Funds. Due to a successful Sale last autumn the Club managed to avoid a deficit at year-end. We expect to hold several of these well attended events in the coming year.

Peter G4YUP has compiled a very useful summary of RSGB contest participation by IVARC. In the HF bands, 80 metres league, IVARC raised its overall position by two places to 13 out of 54 Clubs from 15th in 2012. In VHF UKAC SSB contests. IVARC has come up thirteen places to 30 out of 113 Affiliated Clubs. In many of these events, just a few points entered by new entrants in these SSB contests would have put us even further up the tables.

The future

The Club membership seems to have stabilised and is slightly increasing. I suspect that the recent trend to software driven rigs and applications will accelerate, anyone considering an upgrade of their rig should look at its interface capability for integration with computers, it's the way things are going! Contesting in the Club continues to be a key area, with a growing emphasis on Portable stations.

Training and publicity are also important. IVARC has run courses in the past, but Southampton Club is doing this very well. This emphasises the importance of close contact with other clubs in the area, we should get out more often!

Geoff Morgan G3ROG

IVARC CLUB NET

by Peter G4YUP



Well over a year ago the Club 2mtr net ceased, probably a factor was often, due to our locations, it was difficult to hear everybody. I'd been experimenting with my 160mtr aerial so I could take part in a couple of RSGB contests for the Club. Out of a discussion with Brian, G0UKB, the Top Band Net was born, primarily so we could develop our aerial systems. I currently use an Icom AH3 tuner down the garden with 58 ft of aerial wire in an 'L' shape, the control cable is 35 metres (different ruler!), and works fine. A nostalgic factor was; when first interested in wireless sets, everyone was on Top Band AM, just detune a broadcast RX and you could hear stations.

Geoff, with his King of Licensing conditions hat on, discovered you could run 100 watts on 1.845 Mc/s, hence the frequency. I was surprised and delighted the Net was active on this frequency for over a year, just missing a couple of dates, mainly due to contests and not wanting to cause QRM. During this time we all improved our aerial systems, and probably learnt a lot, I know I did. An interesting development was one member finding a means of remote switching the power supply feeding his long wire ATU, my power simply goes down the control cable.

High background noise was becoming a problem and coincidentally a member purchased a TS-590 and several of us had bought 6mtr Mini Beams from Mike at Alton Antenna Arrays. I think I had the first ruggedised version which also has a 4mtr aerial added to the same frame. Geoff suggested using 50.545 as it's an all mode part of the band. We opted to try FM, but could use SSB on the same frequency. Vic, G3NVB, with his head out of a window, somewhere in Winchester, clutching his FM hand held and waving his Slim Jim around, observed we maintained horizontal polarisation over the distance.

My interest was to use the net to experiment with our aerials etc., so if any member wants to change band, no problem. Neither band has, so far, proved to be perfect for a Club net, but experimenting is what our licence is about. Oh, yes, someone said starting at 21:00 is an odd time - hospital visiting time finishes around 20:00, so by the time you get home it's 21:00.

International ARDF Championships 2013



RSGB President Bob Whelan congratulates Liz

On Sunday 19th May 2013, I became the UK W60 ARDF champion and have the gold medal to prove it. This was my first competitive event, the bi-annual International ARDF Festival. There were 20 overseas competitors plus UK participants. Even the British weather rose to the occasion and, instead of rain on the Sunday, fine, warm sunshine greeted the President of the RSGB, Bob Whelan, when he came to present the medals and trophies.

Brian and I took part individually in the 2mtr event on Saturday and the 80mtr event on Sunday. I had difficulty with the 2mtr event, in not being able to decide which were reflected signals, but had a wonderful weekend walking (alright, the serious competitors run) through the Surrey forest outside Dorking.

For those not in the know, ARDF is radio orienteering, so listening for radio beacons to find the orienteering flag. OK, I have to admit I was the only female in the over 60 age group, but I think I am the first ever 60 female UK champion. We also went to Rushmere Country Park, Leighton Buzzard in June and took part in an 80mtr event. Again I was the slowest, but had a lovely walk and hopefully improved my technique!

If I can do it, including walking stick, then why not think about having a go. There is a calendar of events at -
<http://www.nationalradiocentre.co.uk/ardf/events.html>.

This year's events seem to all be 2mtrs, but I'm sure Brian and I will take part again, even if it's just to have a pleasant walk.

Liz M0ACL

IVARC Membership 2013 / 2014

Callsign	Name	Surname
2E0KCL	John	Jopson
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
G3LGA	Mike	Hayward
G3NVB	Vic	Bryant
G3OTK	Richard	Harris
G3ROG	Geoff	Morgan
G3RQF	Duncan	Keith
G3XSD	Graham	King
G4DKH	Ken	Hastie
G4EOW	Peter	Baxter
G4GBP	Colin	North
G4UEL	Geoffrey	Hollebon
G4YUP	Peter	Thurlow
G6MCX	Paul	Garland
G7VQV	Allan	Cook
G8XIX	Cheryl	Turner
M0ACL	Liz	Jones
M0DNY	Phil	Crump
M0NSA	Graeme	Bragg
M0XIX	David	Henley
M1AFM	Anthony	Mori
M1CNK	Paul	Wilton
M1ENU	Quintin	Gee
M5MDH	Mark	Hampton
M6CHE	Robert	Darke

34 Members

TEAM ITCHEN VALLEY

entry to the Commonwealth Contest (BERU)



In March 2013, IVARC entered a scratch team for the first time, as part of an initiative to encourage more members to use limited CW skills. Also to try a variety of CW approaches including electronic reading and sending, straight keys, paddles with and without integrated software, electronic logging programs, and to get some DX not frequently on offer to those members with sub-marginal antennae in suburban gardens.

BERU is the oldest Radio Amateur Contest and dates back to the late 1920's. It is a civilised event, at relatively low speed; the UK is in demand as most of the players are DX, the majority being in Canada, Australasia and the Caribbean. If you send slowly, chances are the other guy will respond in kind.

Forget your typical contest, if you want a short chat, go ahead, and work the DX countries you are unlikely to get in your typical contest. However, IVARC is concerned that BERU is showing signs of age, as CW is no longer a mandatory requirement for a full licence, hence we have decided to widen our entry by encouraging software decoding and transmitting.

In 2013 we managed to assemble a motley crew, the maximum number, albeit with a concession that time off to watch the 6-Nations Rugby games, whilst not encouraged, would be tolerated! The attached photo was taken at the meeting wearing a representative display of BERU hats, Panama, Bush, Canadian Trapper, Coolie, but in hindsight I confess I should have been wearing a scrum cap!

The results achieved, i.e. 17th in the UK, while of some satisfaction to the team, reflected a lack of contest expertise but, as in international Rugby, a new team is always welcome as someone has to be towards the bottom! However, much was learned, we had a lot of fun and made some interesting DX contacts, as far south as Central Africa. We are looking to improve our position by several places, particularly as the weekend's 6 Nations Rugby fixtures are not until the contest is over!

A surprise result was that Brian, G0UKB, with limited Morse experience, made more contacts than many other entrants. He treated CW as potentially another data mode and used free software to both decode and transmit the CW signals. He also found that watching the crudely decoded text while listening improved his CW listening skills!

IVARC will be entering 'Team Itchen Valley' again in March 2014, again with the maximum team of 5 operators. A second team using Data Mode software was considered, but Brian G0UKB and several others might enter as Digital Mode contestants.

More on how we got on by the AGM!

Geoff Morgan G3ROG

Secretary's Report 2013 / 14

The Club has held 24 meetings over the last year, including 13 talks, 7 Members Forums, the AGM, the traditional Christmas Social, a Summer Treasure Hunt, but the DF Hunt and barbeque were cancelled.

The monthly raffle has been run very ably 7 times, mostly by David M0XIX.

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

Mar 22nd A Teenager's Dream... by Paul Wilton M1CNK

Apr 12th Member's Forum: Data Modes Ted G0BHK & Duncan G3RQF

Apr 26th Valves, a historical perspective by Alan Stepney G8BGW, Poole ARC

A startling presentation lavishly illustrated with the wonders of the universe. It is always a treat.

May 10th Member's Forum: BERU and the CW Contest by BERU Team and G3HRH

May 24th Hackerspaces by Tyler Ward M0UAV

Tyler discussed the uses of a workshop in Millbrook that anyone can turn up and use, from lathes to 3D printer, and get programming help and computer solutions from other specialists.

Jun 14th Member's Forum: Network Security. Graeme Bragg M0NSA was brilliant in giving an off-the-cuff talk on many interesting aspects of the topic, ably aided by other club members.

Jun 28th Treasure Hunt by Peter Baxter G4EOW

Jul 12th Contesting All Modes by Ray Hills G3HRH

Ray gave lots of examples from his experience with contesting and covered the pros and cons of lots of logging programs.

Jul 26th Arduino project platform and shields by Brian, G0UKB

Aug 9th Members' Forum: VHF Field day report back. Paul's IC7100 rig with detachable front was demonstrated.

Aug 23rd Cybersecurity by Chris Richardson, Bournemouth University

This talk was attended by 18 people. Chris as usual was an outstanding speaker and emphasised that "Nothing is safe on the internet", and "TCP/IP was designed to be open and not secure."

Sep 13th VHF Propagation by Paul Wilton M1CNK

Paul discussed the various different modes of VHF/UHF propagation and how they affect our radio signals. As always Paul managed that skilful art of presenting some quite technical concepts in a way that everyone was able to understand. Everyone went away with thoughts not only on VHF/UHF propagation but also on how to optimise their antenna systems to take maximum advantage of the various modes.

Sep 27th Members' Forum: HF Field day report back

Oct 11th Current status of microsats by Jim Heck G3WGM of AMSAT-UK

Oct 25th High Altitude Balloon experiments by Phil Crump M0DNY

Nov 22nd Multi-Club Quiz by Quintin M1ENU

Dec 13th Christmas Social, organised by Brian G0UKB and Liz M0ACL. There was a good turnout, and Sheila G0VNI and Liz provided wonderful savouries and sweets, while Brian did his usual to flummox us with an ingenious Quiz.

Jan 10th Understanding the G5RV HF Multi-band Antenna – Mike, Alton Antennas

Jan 24th Member's Forum: New Venue

This was the first meeting in our new venue, Otterbourne. The turnout was 19 and we had a good look at the facilities. Good well-lit car parking; excellent galley with boiling water on tap; built-in screen; seating for 60. Vic raised the problem of tracing the far field near his QTH, and suggested a Club Project to create the equipment necessary. Even micro-helicopters are ruled out in the Southampton CMA at the heights to measure the 80m far field. What to do?

14th Software Defined Radio – Graham King G3XSD

Graham discussed the origin and theory of digital encoding as well as sampling rate and how I and Q can be extracted. This has given rise to many inventions based on the now-plentiful FPGAs and FFT solutions to the digital signal processing.

Feb 28th No club meeting, but a BERU interest group training session.

Mar 14th More Raspberry Pie by Brian Jones G0UKB

Mar 28th Annual General Meeting

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 always win, and did so again. Some are listed below.

Apr 24/25 The centenary of the RSGB was celebrated with the Special Event station GB100RSGB, and this was allocated to: Ray Hills G3HRH, Brian Jones G0UKB, Liz Jones M0ACL, Geoff Morgan G3ROG & Rod Bickley G0EBK, over these two days. Over 180 contacts were made.

Jun 1/2 CW National Field Day held at Compton Down with 9 operators.

Jun 28th Treasure Hunt at Wickham organised in his imitable fashion by Peter Baxter with 12 participants. Results were announced at The Farmer's Home.

Jul 6/7 VHF Field Day held at Compton Down.

Aug 27th 6m UK Activity Contest: participants Ray Hills G3HRH and Peter Thurlow G4YUP.

Sep 21st Foxhunt at University of Southampton. This replaced the 28 Sep ARDF Event and Andy's barbeque at Farley Mount, but was too difficult to arrange and was called off.

Nov 8th AUCTION Good turnout by members, but few from other Clubs.

Dec 25th Christmas day call-in chaired by Peter Baxter.

Colin's Sky Hook

Real sky hooks were in short supply, but back in late June Colin G4GBP was considering another possibility – would it be possible to raise a full size G5RV antenna (102 feet in length) by using three kites? The venue was Stoney Cross in the New Forest.



Colin's first attempt was unsuccessful due to lack of wind, but the following morning he was out again, this time with a much better result.

"Just got back from a reasonably satisfactory foray. When the wind was strong enough and consistent enough the G5RV stayed up, with its 35ft of downlead, 6 turns of RG213 choke balun and 15-20 feet of RG213, but sometimes the whole lot was on the ground!

Suffered from RF on the audio and it was suggested that this might be because I was trying to run 100 watts from two 12volt 110AH leisure batteries. When I turned the power down to 50 watts apparently the problem pretty much disappeared. I contacted one MM station twice, Coventry, Badbury Rings and an F/G6 just south of Paris.

I was chuffed, the method works, and I just need to sort out the power problems.

What I have learned:

- 1) Use a tried & tested aerial
- 2) Choose a consistently windy day
- 3) Take at least 200ft of coax
- 4) Sort out a better power supply, maybe a generator.

I had a very enjoyable few hours, and I will definitely be trying again."

RF Ground, Counterpoises, and Elevated Radials

Graham King G3XSD

Ground is ground, right?

Not really! There is a notion of 'ground' as the 'big zero', a charge reservoir that is so huge that no matter how much current is sunk into it, the electrical potential cannot be raised above zero volts. This does apply at DC and at Power Supply frequencies. But the full story is more complex. Amateurs will use ground connections for three main purposes:

- To earth the rig in power supply terms
- To earth antennas to protect against static charge build up
- To act as a substitute limb of an unbalanced antenna

Earthing the rig may generally use the power supply ground. Very often this involves a connection to earth through a stake driven into the ground. Actually, there can be some issues with this too but that's a different story. Earthing antennas against charge build up can also be achieved with stakes driven into the ground and the addition of a spark gap of some kind. We will return to this.

Where ground needs special thought is when we seek to sink or source RF current into it.

RF flows along the surface

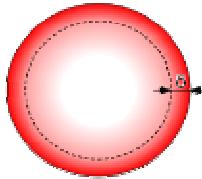


Fig 1

Because of eddy current produced by AC, current is forced to flow close to the surface of conductors. At power supply frequencies 60Hz/50Hz the depth δ in fig 1 above is about 9 to 12mm in copper. The higher the frequency the smaller is δ . The actual value depends on the permittivity and permeability of the conductor.

In unbalanced antennas such as a $1/4\lambda$ vertical, or derivatives like the inverted L and T, the RF currents in the aerial element use ground as a virtual element, i.e. identical currents must flow in the ground. This leads to a misunderstanding, perhaps caused by typical illustrations as shown in fig 2. taken from the RSGB Handbook. Ground is shown, and the above ground element is complemented by a mirror element in the ground.

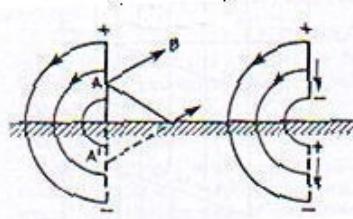


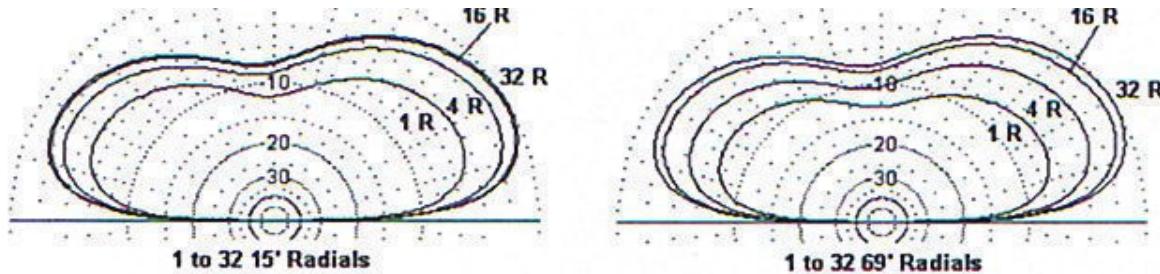
Fig. 2

This leads us to think that the ground is a perfect conductor and is not affected by skin effect. Neither of these are true. The RF 'balancing currents' needed to make the antenna work actually flow horizontally, close to the surface. At Top Band or even 80m, the conductivity, permeability and permittivity of typical ground will result in the **RF currents only flowing within a few inches of the surface**.

How does this affect my 'Earthing' method?

Firstly, the notion of driving one or more earth stakes into the ground is seriously flawed. At RF only the top couple of inches of the rod will be effective. The rest is a waste of time (and of rod!). Also we want to make a 'good' low resistance earth connection to keep losses down and increase radiation efficiency. If we use: vertically driven in; virtually 2 inch long earth rods, they are not going work very well at all.

In normal circuitry, if we only have a given resistor but want half the value, what do we do? We use two in parallel. To reduce the loss inherent in a ground connection we could also use more than one! Also, burying longish wires just under the surface would be an answer. But the questions are: how many radials? And how long must they be. See Fig 3 below.



Maximum Gain Elevation Patterns: 69° Base-Fed Inverted-L With Different Size Radial Sets

Fig. 3 (Cebik W4RNL)

L.B.Cebik, W4RNL was a great experimentalist and analyst of antenna systems. In a highly detailed and complete analysis of the Inverted L worked against ground for 80m, part of his published result is shown in Fig 3. Generally the advice you will get from antenna handbooks says that ideally 120 long radials are needed. These figures are historically rooted in the engineering of broadcast station antennas on medium wave and are not entirely relevant. Cebik shows that you will get out with just one radial 15 feet long. You will be 6dB down (1 's' point) on 32 radials of 15ft. Interestingly, there is clearly a law of diminishing returns and the difference between 16 and 32 radials is small. Going from 1 radial to 4 however does give a 3dB gain (½ an 's' point). That is worth having. The results for longer (69 ft) radials show little difference from 15 ft radials.

Given that amateurs usually have space restrictions and have to compromise on antenna systems, it seems that for an inverted L operating at 80m and upward in frequency, four 15ft radials will do quite well. Cebik's average soil results suggest you will be just 2dB down on a dipole but this may be acceptable if you have squeezed everything into a small garden. The size of wire used for radials is not critical, nor does it matter if they are insulated or not, (more on this later).

Must I dig up my patio?

The best way to bury radials is to slit the ground and push the wire down an inch or two. However, radials can be left running along the surface. Dangerous for pets, children and lawn mowers, but it will work. Why is this? What happens is that the wire capacitively couples to the earth and RF bridges the problem easily. This is also why it doesn't matter if insulated wire is used.

Now we have suggested that an antenna ground need not be in the ground we soon encounter the term 'counterpoise'. This term is a problem because it does not describe anything in particular. The thesaurus offers counterbalance to mean the same, so any way of providing the balancing earth return for an antenna worked against ground is a counterpoise. Since we have to have a name for each technique we use, I will use it to describe a substitute earthing system of radials that are up to 0.05 wavelengths above the ground. For 80m, this is 9 to 12 feet! The reason for this is that the ground still has more influence through capacitance than the wire has the properties of an independent aerial element.

Counterpoises

Where it is difficult to bury wires the slightly elevated radials of a counterpoise system will do the job. Bearing in mind that it is a good thing to make the capacitive reactance of the wires to ground as low as possible i.e. capacitance to be as high as possible, the system should be as low to the ground as reasonable and of the greatest cross sectional area (capacitance is proportional to AREA and inversely proportional to DISTANCE). Between a few inches and 18 inches is common though it has been shown that it all still works up to the 9 to 12 feet mentioned before. This has some practical benefits, for instance, the counterpoise wire can be run along a fence.

Counterpoise wires need not be resonant because the close coupling to ground swamps this out. This is why 15' radials perform very nearly as well as 69' (resonant) radials in Cebik's experiments.

Elevated Radials

I shall use this term to describe radials that are well above the ground, for example, at a height above say 0.1 wavelengths or more above ground. At this height the radials are an integral part of the antenna and the ground is far less effective than the other properties of the antenna. A classic example of this type would be the ground plane. See fig. 4

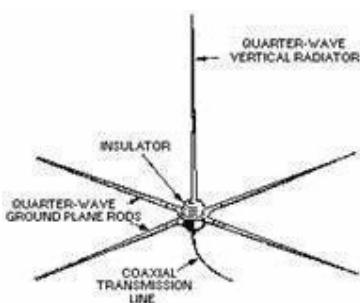


Fig. 4
Ground plane normally mounted on a mast

Note that the radials will resonate when they are well above physical ground. This then means they need to be cut to be quarter waves.

What about Static build up?

This can be done with earth stakes! As no AC is involved an earth stake system will be effective as a separate circuit. Do not use elevated radials for this whatever their height above ground. However, an additional component is needed and that is a spark gap. These can be bought built in to a coax connector about the size of an adapter. Alternatively, you can build your own as demonstrated in the RSGB Handbook, see fig 5, a design for an open wire feeder.

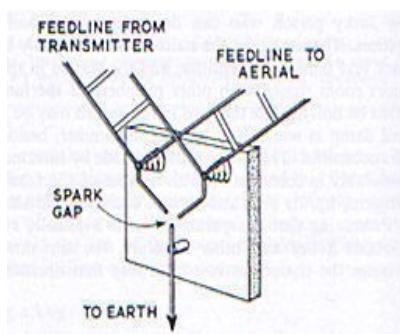


Fig. 5 Spark gap for open wire feeders (RSGB Handbook)

How do I know if my ground system is working?

In an antenna worked against ground, the current flowing in the actual antenna wire can only be as good as the balancing current flowing in the ground itself. Therefore, measuring the antenna current at the base of the antenna will be an excellent indicator. For this you need an RF ammeter. Alternatively it is just possible to measure the field strength using an absorption wave-meter or a hand-held receiver, though it must be appreciated that the local or proximity field will be very strong and if using a receiver it would be best to measure the radiation field a couple of wavelengths from the antenna, probably with the attenuator switched on! The preferred method though is current measurement because the interpretation of field strength is extremely difficult.

What conclusions can be drawn?

The term 'counterpoise' has been used and abused and since it describes nothing in particular it is an unhelpful word.

When using antennas worked against ground, we can use radial wires buried shallowly (ground rods or stakes are fairly useless for this RF purpose).

If this is inconvenient we can use insulated or non-insulated wires mounted above ground, up to about 9-12 feet, to couple capacitively with the ground and thus act like shallow buried radials.

We can, at the higher end of HF, have resonant radials well above ground.

In all of these cases the number of radials used is subject to a law of diminishing returns. Using 4 radials gives a good advantage over a single wire but after about 16, little further gain in efficiency will be had. As far as the length of radials goes, there is no critical length and no great advantage past 15-20 feet except for the case of elevated radials well above ground where they must be tuned (a quarter wave).

Static charge build up is essentially DC, so earth stakes will work but you need to use a spark gap.

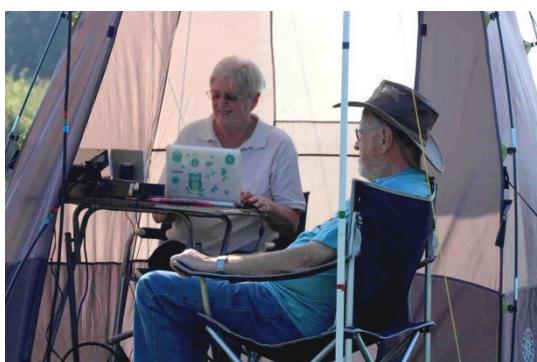
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<http://w4ml.net46.net/>

The RSGB Handbook

The ARRL Antenna Handbook

VHF National Field Day - thanks to Geoff & Paul for photos



Into Contesting and /P

by Peter G4YUP

I joined the Club after moving down from Essex, I'd not been active for a long time, and Alan, G7VQV encouraged me back on air. Some time later Brian and Liz spoke to me about 80mtr CC. I'd never been interested in contests, their participants were usually rude foreigners running kilowatts, but I thought it would be an opportunity to try my old Tonno. This is a pre PC days keyboard for sending and receiving RTTY, Morse and other modes, I used it for Amtor.

I connected it up to my Yaesu FT-897, and it worked. I managed to '*sort of*' tune my 40mtr dipole on 80mtrs, God knows what was actually radiating, but I managed to make a few contacts. I had entered a contest for the very first time and it was a good feeling. Next I tried using two mobile whips as a dipole, which worked. I later upgraded to an Icom IC-7410, which was considerably better than the Yaesu. I added an Icom AH 4 ATU to tune a long wire which radiated better, later I replaced it with an earlier AH 3, which also tuned 160mtrs.

The Tonno was difficult to use in RTTY contests, well, that's my excuse for low scores, and eventually it died. It's a pity because it was a good morse decoder. So I started using a PC with various interfaces and discovering the delights of wiring a 13 pin DIN plug. Later I thought it would be nice to get a few extra points for the Club by entering the CW section. I had problems learning Morse. When I passed my test at North Foreland Radio, after all that effort, I was disappointed to receive just a tatty bit of paper to show I had passed. These days I just get a mental block, so I thought I'd treat it as a data mode and use software. I tried many CW programs, having them simultaneously decode side by side, but to cut a long story short, I now use CWget with Windows XP.

All my logging was on paper, I should have studied the rules properly, as I thought all scores were submitted via my mentor, Brian, I must have driven him mad! Later I manually typed everything in Cabrillo format, even with my low scores it took longer than I'd been operating. I used CWtype to send, it has a logger, but I could never get it to automatically increment the contact number in the macros, so I still did paper logging!

One day I bought a used Icom IC-7000, intending to use it mobile, it has 2mtr and 70cm, which I had lost when I sold my FT-897. I only had a dual band collinear, but thought I'd try UKAC, which is VHF and above. Despite being vertically polarised, I made a few contacts, the most memorable was a single local 70cms contact, but it put the Club up one position in the table. Since then I've spent a lot of time trying different horizontal aerials. Recently Vic said it would be nice to know how your aerial is influenced by your surroundings, rather than a theoretical plot. When you upload your UKAC score, you can view all your contacts on a map, a true indicator of its performance. Some members are interested in propagation; many stations operate regularly, giving a good indication of conditions.

All my equipment was on a shelf in a wardrobe, not much space, so I took a boot load of equipment to Nevada and came out with an Icom IC-9100, all HF bands, 2mtrs and 70cms, all in one box, plus I could now use the local D Star repeater run by Allan, G7VQV. As an interface for RTTY and CW I bought a MicroHam, which I ordered direct from Slovakia late one Thursday evening. Much to my surprise it arrived Monday morning, a nice piece of kit, but not well publicised.

Mentor, Brian, introduced me to Minos logger, which I now use for all UKAC contests, it has all contest dates for the year already programmed, gives distance and bearing and calculates your score, then outputs in the required format ready for uploading. He also showed me N1MM, which I use for logging 80mtr CC contests. It integrates with MMTTY, which I use for sending and receiving RTTY in conjunction with N1MM Macros. There's another set of Macros for sending CW, but my ears are replaced with CWget to decode. On 80mtr CC data nights you can use PSK and RTTY.

Being a one finger typist, I prefer the pace of UKAC and the way distance is multiplied by the number of different squares you work, increasing your score. They are another nice bunch of chaps, but I wanted higher scores than from my home location, so I decided to go portable and bought an Icom IC-7100. I spent a lot of time just sitting

in my car trying to work out the best way to operate, I'm sure my neighbours thought I was mad. Whilst the Icom head would go anywhere, the laptop wouldn't. Also where do I operate from? I'm an Essex person, without that vital local knowledge so, when I could, between hospital visits, I spent a lot of time studying maps and driving round. I found a couple of locations, including my current one IO91IB, which has a fence I could tie a pole to.



Inside Car layout

The solution to installing everything in the car was simple; my Ford has two fold up trays behind the driver and passenger seats, so I put a plank of wood across them, securing it with two wing bolts through the cup holders. Obviously a push down would tip everything on the floor, so I simply put a piece of plastic tubing between the floor and the underside of the plank, which makes it very secure. As you can see in the photo, I have a desk mike, the Icom head and the laptop for logging sitting on the shelf. I also added another piece of wood to the rear of the passenger seat with extension speakers screwed to it. I also devised a simple way of attaching the mike and Icom head so they're firmly in place on the shelf when driving, but are instantly removable for security reasons. Finally, I covered the wood with felt. If I want to totally remove everything, I only have to unscrew four wing nuts.

I wanted to avoid being stranded with a flat battery in the middle of nowhere, so I bought an 88 amp hour leisure battery, housing it in the boot with the other half of the 7100. The battery has proved to be more than adequate for UKAC. I have a clipboard for notes; originally I used

battery powered LED lights to illuminate this and the laptop keyboard. Looking on Ebay, I discovered a small box with two cigar lighter sockets and two USB connectors; this allows a vast range of PC USB lights to be attached.

First time on site, in November, I was concerned that someone would be parked where I wanted to, but the cold and darkness didn't make it a good location for sight seeing! The aerial was easily erected and attached to the fence, so I was ready for the start on 144. It proved to be a good night and I was pleased with my score working G8PNN/P, 466km. The following week was 432, but it was a disaster, the very high SWR resulting in just a few watts output. I checked everything but couldn't find the problem, so I decided to carry on, achieving a reasonable score.

Summarising my experiences to date; the rain always seems to be the same polarity as my aerial, horizontal, and I have frequently been soaked. Fortunately, so far, it has been mainly when I'm de-rigging. The wind often blew my ladder down the road, but I have since replaced it with a camera tripod to rest the polls on. One night when I was taking the aerial down, soaking wet in the almost horizontal rain, a Police car stopped and asked what I was doing? My response, '*playing wireless sets*', wasn't what they expected, I suggested they joined me in the rain to look, but they declined and left after some friendly banter.



Aerial ready for erection in the dark

The aerial in the photo breaks into two fully assembled parts, one metre long, easily fitting on the back seat, but I wanted more ERP. Mike, at Alton Antennas, made me an 8 element, 2mtr Yagi, which breaks into three parts to fit in the car. I was eager to try it, but when I got out of the car on site it was blowing a gale, and difficult to stand up, too dangerous to try and erect it. Fortunately, I had one of Mike's small 2 element mini beams with me, so I used it on a short pole. The conditions were poor but, look at the map, good going for a few feet of wire on a bit of plastic. Later the strong wind was causing the car to buffet about alarmingly, but I carried on.



I remember the Club's leading portable operator saying he once left a necessary connector behind, so I go over the top taking spare coax, data cable, power lead, fuses, replacement screws and nuts, mike, all which I may lose. A vital accessory is a flask of tea.

Having worked on Outside Broadcasts, I knew you had to make the rig as simple as possible and think of a quick de-rig. The problems were difficulty seeing everything in the dark, cold hands making it very difficult to screw connectors in and attach a pole to a fence and not realising you've cut yourself. Yes, I now take a plaster with me. The most unexpected problem was after turning the aerial for best signal, you'd turn it later, but were unable to distinguish the front from the back, I know that sounds ridiculous.

When I first started I was worried about making mistakes and looking a fool, in reality, UK contestants are nice people, helpful and pleased to add you to their score. It's better to take your time and just make one contact. At first you may be down the bottom, but we all started there and, as I said earlier, one contact can help elevate the Club's position. I also think doing well in contests can help raise the Club's profile. If you have never been interested in contesting, just give it a go for a few points, like me you may find something you hated is addictive and great fun. You can compete from the warmth and comfort of your home, without knowing what hell some of those portable operators are going through to give you a few points. I hope you join other members and maybe I will work you one evening – just have a go.



The First Year



Being a report on G3NVB's first year of radio operation from his new Oliver's Battery QTH.

1. Introduction and Background.

Many readers will remember my constant moans about the difficulty of operating from my last QTH in Waltham Chase. My bungalow was in a valley and, although the surrounding hills were not particularly high, they were sufficiently high as to interfere significantly with any serious attempts to participate in any DX operations where signals arrive at low angles. Indeed, I have said more than once that aerial site is everything. The surround of mature trees, houses, and overhead electric and phone wires did not help with aerial and site performance.

As a result of the environment, my attempts to participate in various events were never outstandingly successful. This was despite, over the years, trying various types of aerials which included a 3 element 20m beam - at 30ft wide and at 30ft high it was a formidable structure which impressed the neighbours. I also tried a 20m vertical Moxon, and various other verticals, finishing with a standard 80m dipole fed with balanced open wire line. All seemed to perform about the same, in fact I used to say rather bitterly that they all included a filter that only allowed me to receive Italians!

The same comments applied to VHF and, although I had a collinear on the chimney stack for local work, the use of a beam did not improve matters very much. In desperation I took part in the monthly 2m activity contest by going portable on Cheese Foot Head just outside Winchester. This site has a car park and, most importantly, a good unobstructed view to the North. With the radio (Yaesu FT-857) wired into the car and a 7 element Yagi on a 15ft pole, success was achieved with contacts all over the UK, GM, GI, GW, F and so on. It was gratifying to see the monthly position creeping up the results table. The only downside was the cold, even though I was wrapped up inside the car. I have to admit a certain envy of the players who could just nip upstairs to go on the air from a warm shack.

2. The Change.

November 2012 saw my move to Oliver's Battery which is on a hill just outside Winchester. The name comes from the legend that Oliver Cromwell sited a battery of guns on the hill and fired on the city during the English civil war, Winchester was supporting the king. It is not recorded whether there was any damage but much is made of the story. A small copse and some earthworks mark the site on the hill-top. My QTH is opposite the copse and there are houses to the North, West and South. The view to the east is outstanding, and one can see the rolling hills of Hampshire stretching away into the distance.

A modest size garden offers the possibility of some form of aerial assembly, and a couple of chimney stacks offered the possibility of masts and VHF aerials.

The Picture to the right shows the aerials at my new Oliver Battery QTH



3. System Planning.

It is not often that one has the opportunity to start from scratch, so my first action was “System Planning”. Here was the chance to have a Shack fitted out properly instead of the rather piecemeal assembly I had left behind and did not regret. Such system planning fell into two parts – ‘the outside’ for aerials, and ‘the inside’, consisting the shack proper. For the latter I decided to sacrifice the rear bedroom to make a proper “Radio Room” to contain the “System” and ancillary computers. As I suffer from an urge to build the latest gizmo published in RADCOM, there must always be the possibility of introducing changes without too much upheaval. This capability of introducing change is a feature of my installation as I believe in keeping up with modern techniques. Restoring old radios has no interest for me.

3.1. The Shack.

Guidance was drawn from what other people had developed for their own installations as well as my own experiences. The first requirement was to have plenty of mains power sockets. Indeed, any new plug board that I put in seems to be filled almost immediately. Next, was to site the operating desk way from a wall so that I have access behind to run cabling, and to keep everything, hopefully, neat and tidy. Finally, I wanted one or more shelves on the operating desk to house smaller items of kit and space for one or more computer displays with a keyboard and mouse.



A major consideration was how to get through the walls for connection to the aerial(s). Should I drill through the window frames, the glass, or the wall? I finally decided the least damaging and most flexible route was to drill through the cavity wall, so I made a series of holes to allow for 5 coaxial cables. I could only see the need for 3 at this stage, but you never know.

3.2 Off The Air.

For the first few weeks after moving in I had the awful experience of being “Off the Air”. It was quite agonising listening to the Club using the ICOM 7000 receiver and a piece of wire and being unable to communicate. I tried various emergency rigs with indoor aerials, such as a loop, but without much success.

3.3. The Outside.

Turning to the outside, my big problem was deciding what aerial(s) I could put up and where?

3.3.1. HF

The obvious starting point was to erect an 80m Dipole, which had served me so well in the past, fed with my favourite open wire feeder. I pass this through the wall in two separate coaxial feeders to eliminate RF in the shack as much as possible. This required a couple of masts in the garden. The distance between them was just sufficient to enable the wire to be fitted in with a bit of adjustment at the ends. Putting up the mast (an old dinghy mast left over from my sailing days) resulted in a bang on the door half an hour later with a shrivelled and dishevelled woman from over the road demanding, in a broad Northern Irish accent, “Are you going to put a flag on that pole?” The accent says it all! She went away happy after I gave her the sales pitch for Amateur Radio. Similarly, 20 minutes after the mast in the back garden went up, a little face appeared over the back fence, again happy with the sales blurb. The moral is: ‘if you want to meet your neighbours - put up a mast.’

With a standard MFJ tuner the dipole covers 80m to 10m.

At this stage the object was to get on the air as soon as possible, and any thoughts of beams were considered future projects.

3.3.2 VHF.

Considering my success with my contest expeditions to Cheese Foot Head, the logical route for VHF aerials would be to have my well-loved 7 element 2m Yagi erected as high as possible. I engaged an enthusiastic aerial erector to mount it atop a 20ft pole on the chimney stack with RG213 (Low Loss) cable taken down through the roof space in as direct route as possible into the Shack. The reason for using low loss was the result of my past bitter experiences with cable and connector losses. The moral here is – ‘Don’t take chances with cable and connector losses at VHF, use low loss cable and eliminate connectors as far as possible.’ I don’t yet feel the need for a rotator, so I have the Yagi pointing north.

I supplemented this by mounting a 5/8 wavelength vertical for 2m, which also covers 70cms and 6m, on another smaller stack,

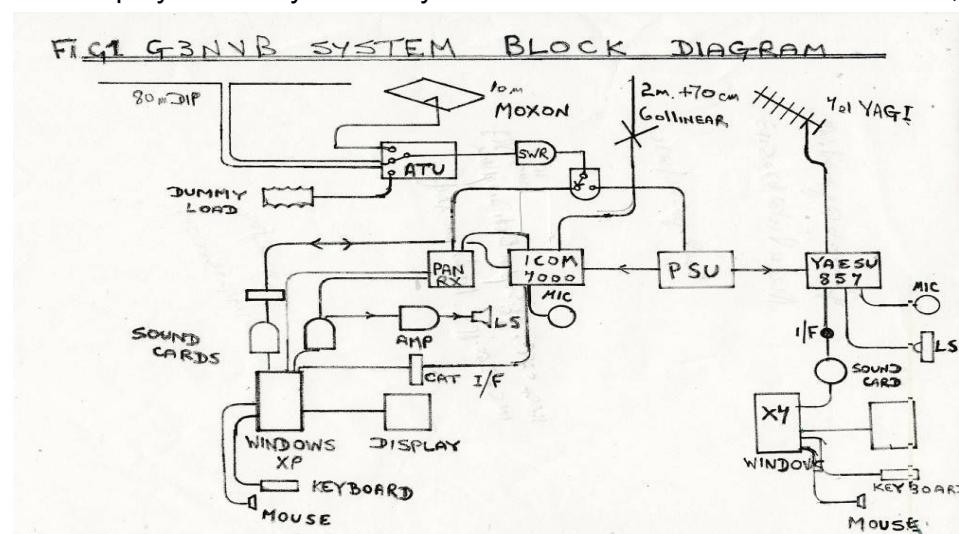
Thus far I was in business to get on the air - Joy and great relief!

The photo on the first page shows the aerials on the roof.

3.4. The Initial System

The equipment complement comprises two Tx/Rxs - An ICOM 7000 and a YAESU 857. The latter was originally bought because I had the idea that one rig would be permanently installed in the car for portable working. A shelf was built and fitted to the operating desk, and the arrangement was populated with the various items of kit including the computer display. This would be used for HAM RADIO Deluxe logging (as yet unknown), a Panadapter (An SDR receiver which is wide band and provides a panoramic display) and possibly other applications. The computer was sited on the floor out of the way. I also fitted a loudspeaker, an audio amplifier, the odd power supply and, most importantly, an aerial switch (future proofing) and an SWR meter, the latter is permanently wired in.

One high current power supply was fitted to supply the two rigs on the basis that only one will be transmitting at any one time. The block system diagram below shows the arrangement. The photo on the previous page shows the set up as it is at present. The LHS shows an oscilloscope - one of the best pieces of test gear for experimenting and trouble shooting. Next to it is the No.1 computer display showing the panoramic display of a busy Saturday afternoon on 40m. In the lower centre, reading from left to right, are the sound card, an interface unit for JT65/9, the two Tx/Rxs and a cheapo signal generator. The upper row carries the ATU, a CAT interface unit (behind the green aerial switch panel and SWR meter) and on the right, a noise cancelling speaker, and two other speakers.



4.0 On the Air at last.

4.1. 2m.

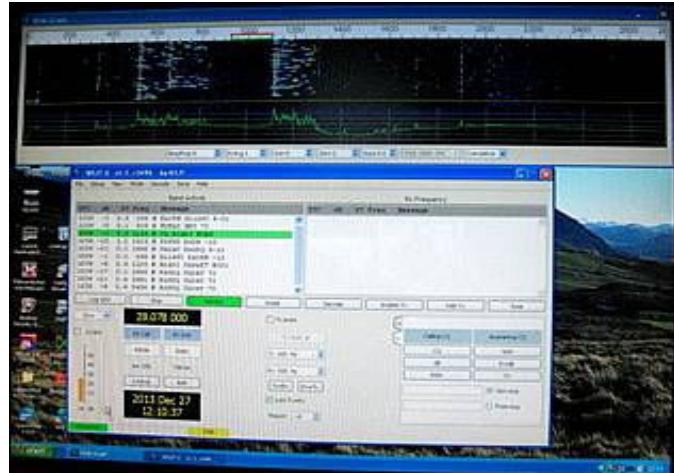
My first ‘on the air’ activity was participating in the 2m monthly Activity contest. Results were disappointing to say the least. Not as much DX was heard or worked as was experienced at Cheese Foot Head, which had been an outstanding site. I don’t know whether the situation was due to conditions, or site limitations. This has been left on the “Back Burner” for the moment. My main VHF activity has been on the Wednesday net run by G0BHK. However, my new location must be quite good as repeaters have been heard from all over S. England. .

4.2. HF.

4.2.1. Initial Experiments

Early in 2013 I started getting interested in datamodes, initially JT65 by Joe Taylor W1JT. This mode uses multiple tones over individual channels extending over 180 HZ per channel, on a one minute cycle. That is, the system transmits for about 48 seconds, leaving the remaining 12 seconds of the minute for decoding the formatted signal. The next 48 seconds is used for receiving. Timing is obviously important and the computer clock needs to be accurate to much better than 1 second. Various free programmes are available.

The clock in my No.2 computer, running Windows 7, drifts over a second a day and it is interesting to see the time jump from the drift value to somewhere about a millisecond after switching on. The photo to the right shows a waterfall, a spectrum covering the 2kHz of the JT65 band, plus all the parameters needed for operating the system, including who is on (white bar on the screen), who is calling CQ (green bar on the screen) and, most importantly, who is in contact with you. (red bar on the screen). What is most interesting is that you can see who is on in the whole of the 2kHz band, follow the progress of other people’s QSOs and see the effects of e.g. fading.



Initially my favourite band was 15m, although the top main HF bands were employed at times, an activity that I had never previously explored. On 15m propagation was amazing and I racked up many JAs (over 40 at the last count) and LUs, although Asia and South America contacts were plentiful. This was good for the club DX ladder. The 80m dipole seemed to have a lobe pointing NE (for Asia) and SW (for South America). This was confirmed by a bit of modelling using MMANA-GAL which showed lobes in those directions. Oddly there were no Ws out to the West.

Signals can be decoded down to some 24dB below the noise level and, with the “Cumulative” mode on the spectrum display, the signals can be seen building up as the minute progresses.

Later in the year JT9 was added. This is an even slower and narrower band mode, using only 9 tones and occupying only 18Hz bandwidth. It is slightly more sensitive than JT65. The photo above shows JT65 activity on the screen of No.2 computer (out of sight on the opposite side of the room). Reading from top to bottom, shows the waterfall, with a strong signal and a number of weaker signals. Below is the spectrum. The pane below shows, on the left, the received signals decoded, with one calling CQ in green. Below are the various controls buttons and indicators.

4.2.2. Later developments.

Come the middle of the year I was feeling the need for alternative aerial designs which might bring in stations from other parts of the world. Alternative aerials were built, including a Cob Web and a 10m vertical. As all performed about the same I concluded the only way to improve performance of the Site + Aerial was to have a beam of some sort, and a lucky visit to the Andover rally produced a Clark pump-up 30ft mast. This coincided with my discovery that 10m was open during the day. This enabled me to put a Vine Antennas 10m Moxon on the top of the pump up mast.

A Moxon is a 2 element beam comprising two half wave dipoles, with their ends folded in towards each other, forming a rectangle. The spacing is critical and allows the front driven element to energise the rear parasitic element with the same current flowing in both elements. This aerial was developed by Les Moxon G6XN (SK) who was employed at the Admiralty Surface Weapons Establishment, Portsmouth, in the communications department. He was a genius and an outstanding experimenter.

Forward gain can be approaching 6 dB, and in the rear, around -25dB.

This has brought in Ws by the barrow load. As the aerial matches into 50 ohms directly, I can switch between the Moxon and the 80m dipole on 10m without any re-tuning, which opens up another area of interest because I can compare aerial performance.

It is a my hope that at some stage I shall be able to plot signal strengths and directions to get some sort of indication as to what the site + aerial are doing by way of a crude calibration. Again, this is something put on the back burner for the time being.

With the advent of winter the ionospheric conditions have changed markedly, and now the only signals on the bands are Europeans and Western Russians, with only the very rare DX signal.

4.2.3. The Panadapter

Some years ago I built a Hunter Panadapter from Radio-Kits, which is a panoramic receiver utilising all surface mount components. Assembling the unit is an experience in itself, and needs a different approach to that taken with full size components. I have never made very much use of the Panadapter. Now, however, I have realised that the ability to see what the bands are doing by way of a combined waterfall and spectrum display is preferable to tuning up and down in the hope of finding anything. Coupled with a 192kHz sound card, large chunks of a band can be seen, especially the 7MHz band. The photo below shows a busy Saturday afternoon on 40m. The upper part is the waterfall, with the orange lines being strong signals. The colour denotes the signal strength, white being the strongest, moving down through red and orange to blue, which is the weakest and depicts noise. The spectrum can be seen below, and the various 2.7kHz wide speech bands can be seen quite clearly. The lower part of the picture shows, on the left, the controls and indicators, while the right hand side shows a waterfall and spectrum of the audio passband, as selected by the sound card.



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As a final feature, the panadapter provides a CAT service, controlling the Tx/Rx frequency. It is slightly eerie to see the TX frequency following as one tunes across the display.

G100RSGB – The RSGB Centenary Special Event Station



The RSGB celebrated its Centenary Year in 2013 and, by special arrangement with OFCOM, the callsign G100RSGB was issued for use by Special Event Stations around the U.K.

In IVARC I believe the call was allocated to Ray Hills G3HRH, Brian Jones G0UKB, Liz Jones M0ACL, Geoff Morgan G3ROG and Rod Bickley G0EBK, for use over the two days of 24th & 25th April.

Brian reported, "Liz and I worked from home but we didn't get on air until gone 10am and discovered 80m closed and 40m in very poor shape. Liz did manage to work a couple of GM stations including our friends in Shetland.

After just 4 contacts, and checking the other bands were in similar poor shape, we gave up until after lunch.

By 3pm the 40m band had improved and we soon had a pile-up. Propagation was fascinating as we worked several stations to the north, then suddenly we were only working Devon & Cornwall. A little later Wales and N. Ireland were the strongest signals.

We had to go QRT around 5pm, but Liz came back on air at 8.30pm to work mainly 80m until it went quiet an hour later.

So nowhere near as much operating as we'd hoped – just about 4.5 hours for 86 contacts in 7 countries (GI, GW, GM, G, ON, PA and DL)."

Geoff G3ROG, reported, "Itchen Valley had a great time with the G100RSGB call, working about 200 QSOs in very poor conditions. On both days 80 and 40 were in bad shape until the short skip opened up about late afternoon / early evening.

Then operation Pile-Up started in earnest. What surprised me was the interest shown in working me on 160m after I had hinted it was possible. After QSYing I was soon experiencing pile-up conditions again, 160 mtr contacts were in high demand.

Also I was very impressed with the enthusiasm of all those U.K. stations I worked, even after 100 days of the call being operational. The idea of moving the call across the Regions, with a league table, was brilliant!

Thanks for your efforts in helping organise the event."

The First Year

.....continued from previous page.

5. What of the future

Whether we like it or not, we live in a world that is constantly changing, and none more so than in our hobby. I believe there will undoubtedly be movement in the future for more processor involvement with new techniques appearing for experiment. The comments by Professor Peter Cochrane at the RSGB dinner points one way in which techniques could advance - that is moving towards more wide band communication instead of the present increasing bandwidth reduction as demonstrated by the advent of JT9.

While I can see regulatory problems - the dead hand of bureaucracy, I would certainly wish to be up there with anything new. There is so much to do. Try a bit of experimenting in 2014.