newsletter

wythall radio club

"having fun with rf"

wythall contest group

facebook.com/wythallradioclub
facebook.com/wythallradioclub

July—August 2013

Wythall Radio Club meets from 8pm every Tuesday evening at Wythall House, Wythall Park, Silver Street, Wythall, B47 6LZ, near Birmingham. Visitors are very welcome. **Wythall Radio Club** is affiliated to the Radio Society of Great Britain. Contact g0eyo@blueyonder.co.uk

2013 VHF NFD - Phew what a scorcher!

The club has entered the RSGB VHF NFD contest for many years. Held on the first weekend of July it is an opportunity for clubs and individuals to set up portable stations on the VHF/UHF bands and work as many stations as possible over a 24 hour period. The past few years have been affected by bad weather which meant we could not use the field we normally use at the back of Wythall Park. The event has, in previous years been a great social gathering with a Summer BBQ on the Saturday evening for club members and their families.

With the hope that the weather this year was going to be much better the club started planning for this years event some months earlier. Members can enter up to 4 of five bands, 6m,4m,2m,70cm and 23cm with categories for;
Open (no antenna restrictions and max UK power limit - 400W)
Restricted (single antenna at less than 10m, max power 100W)
Low Power (single antenna at less than 10m, max power 25W- (10W on 4m))
Mix and Match (different sections for different bands)
Single Transmitter (different limits for each band but only one transmitter can operate at any one time).

Callum M0MCX volunteered to be project leader and the committee decided to operate on the 6m band on the Saturday and the 4m band on the Sunday in the Restricted Section with a "fun" station on the 2m and 70cm band in the open section for the full 24 hours operation (although it was recognised that they would probably close down overnight).

The 6m antenna was built up and put on Callum's Tower/Generator at about 30ft. The 2m and 70cms antennas were installed on a guyed mast that Callum designed to be hauled up using the "Falling Derrick" method.

We met at the shack on the Saturday morning to load up Rob's van with tables and some bits of kit and met up with Callum on the far football field a little while later. Various members set to work to build antennas, masts, put up tents and gazebos and various catering equipment was installed for the comfort of the members.

Jim 2E0BLP did a great job as head of refreshments with bacon sarnies and cups of tea and coffee when required. During the day various other stations got built around member's cars for some non-contest experimentation and operation on the hf bands. Much fun was had at the Saturday Night Barbecue organised by Anita M6DUO, Peter M5DUO and Michael G4VPD with around 64 folk attending, making this year's Field Day one of the best in living memory, according to some of the longest standing members. The fun we had and the people whose company we enjoyed will live long in the memory.

Another highlight this year was a prize raffle for club funds with prizes donated to the club from Kenwood (UK). It has to be said that the Kenwood items were the most coveted in the raffle and were the first to be gone!

These are the unaudited scores for the various bands

VHF NFD 50 MHz
Section :R (Restricted Section)
QSOs :106
DXCCs :8
WWLs :22

VHF NFD 70 MHz
Section :R (Restricted Section)
QSOs :46
DXCCs :6
WWLs :17

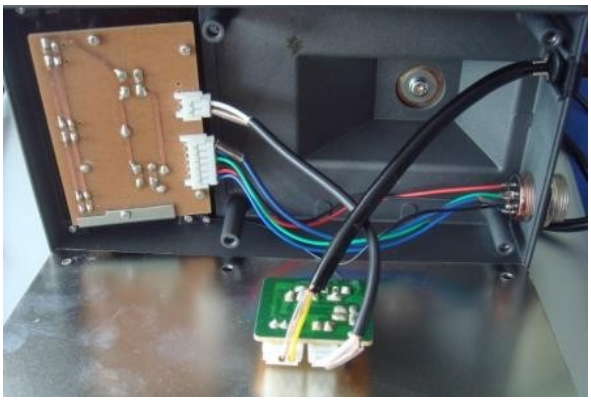
VHF NFD 144 MHz
Section :Open
QSOs :51
DXCCs :11
WWLs :25

VHF NFD 432 MHz
Section :Open
QSOs :30

Chris G0EYO

All that glitters isn't gold.

I bought a Kenwood TM-V71 Dual Band rig earlier in the year and am happy with its function and performance. However, its accompanying fist mic had such a strong PTT switch spring that occasionally when slightly relaxing my grip I dropped carrier. Once this had been pointed out to me I decided to buy a base mic with a better PTT switch that I could lock if I chose to. After a few weeks missing Kenwood base mics on E bay I eventually bought an as new MC-90 Kenwood dynamic mic for £140 (about £60 lower than the new price). I also had to buy a MJ-88 8pin to RJ45 lead which cost £15. When they arrived I quickly connected it up to the TM-V71 rig and awaited reports of good audio and nice dynamic range. Not a bit of it. The mic output was so low I could hardly be heard at all. At first I thought it was a faulty mic but Mike G4VPD brought his MC-90 around for me to connect to the rig and it was just the same. Low output. What to do?. Sell it on E bay or fit a mono preamp?. I summed up enough courage to take the base plate off and see what sort of space there was in the base of the mic. Sure enough there was quite a lot of space. Stuart M0NYP mentioned a Maplin mono amp kit he had built with good results so I quickly ordered one and when it arrived assembled the few components on the small pcb. I worked out that I could power the amp from the 8v that the radio supplies on the RJ45 socket which ended up in an unused pin the base of the mic.



I cut the audio feed from the XLR socket and connected them to the input of the preamp. I soldered a screened wire on the preamp output and connected the free end of that to where I had cut the audio. I connected a dc lead to the pin 5 (+8V) and pin 7 (gnd) on the input socket of the mic and plugged it into to the rig. Gave a shout and Mike G4VPD came back and said it sounded fine. Job done so I postioned the little preamp pcb on some double sided tape on the metal base plate and re-assembled the mic. Result happy G0EYO. Anyone want to buy a fist mic?

Chris G0EYO

RSGB Centenary Station G100RSGB coming to Wythall end of October

2013 marks the Centenary of the Radio Society of Great Britain (RSGB) the body that represents Britain's radio amateurs. Starting life as the London Wireless Club the RSGB has since its inception brought together people with an interest in radio communication. The Society provided the framework within which the pioneers and experimenters of radio technology have thrived.

RSGB members have been at the forefront of the major contributions made to radio technology. Radio intelligence, television, radar development, re-designing the Iron lung and the discovery of Pulsars, have all had radio amateurs working on them. The influence of amateurs across, science, technology, medicine and the communications industry has been huge. One hundred years later, the RSGB still provides a platform for the exchange of ideas amongst experimenters and, although the technologies may have changed, the amateur spirit has not. With this background many thousands of

radio amateurs in the UK are proud to celebrate the Centenary of their organisation, the Radio Society of Great Britain (RSGB).

Throughout 2013, Ofcom have agreed to what is a very special arrangement for the use of the Special Event Station call sign G100RSGB. The very special nature of the station's licence is that the RSGB are allowed to operate the call at a number of different locations in sequence through the year.

Each RSGB region has had its allocation and our region (R5) was allocated 8th October to 4th November. Competition for the callsign in the region has been fierce but Wythall Radio Club was able to get use of the callsign on Thursday the 31st October and 1st November.

The club intend to make this a major event in the club's calendar. We will operate from the shack over the two days from 8am until 11pm and will operate on all bands from 160 down to 70cms and all modes including data. We reckon to get at least 5 stations operating simultaneously with the possibility of other, perhaps QRO stations, in the park.

We will be planning this event over the next couple of months and already some good ideas have been proposed which will make is a very visible and exciting event with automatic log uploads, website updates, live webcam from the shack, etc.

We may well invite visitors to come and see us over the two days and hopefully make a video of the event to put on our website. We shall be looking for volunteers to form a rota of operators and make it one of the best G100RSGB stations in the country.

Many operators are chasing G100RSGB contacts for the four category of awards that the RSGB are offering for its centenary event.
There is a Basic and an Gold award for both the VHF/UHF bands and the HF Bands. Each award requires you to work the G100RSGB Special Event Stations (SES) in a given number of RSGB Regions/Bands. Each contact with the SES per Region and Band counts. There are a total of 13 RSGB Regions.

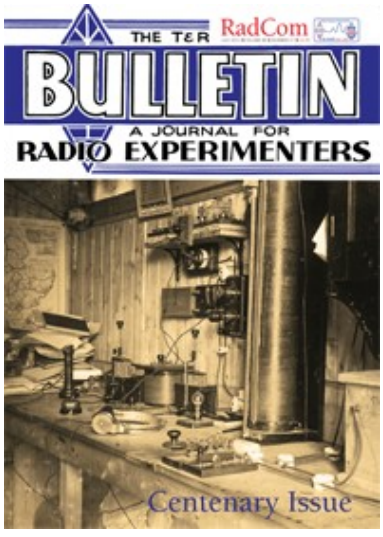
The Award requirements have been set as follows:

- VHF/UHF Basic = 3 Regions/Bands
- VHF/UHF Gold = 6 Regions/Bands
- HF Basic = 7 Regions/Bands
- HF Gold = 10 Regions/Bands

In addition to the above minimum number of contacts with the SES on a Regional/Band basis each award requires you to gain a number of points which are collected by working other stations. Details of the awards can be found at http://rsgb.org/main/operating/amateur-radio-awards/rsgb-centenary-award-2013/

If you can help us with this prestigious event at any time over the two days please contact Chris G0EYO or any other committee member. We are also looking for good ideas to make this a great Special Event Station

Chris G0EYO



Going Mobile

How do you go about fitting a mobile rig into your car?

Those who drive vehicles with plenty of rig sized spare space in the cabin will find it relatively easy I suspect to locate and fix their chosen rig, but after some time of using my rig perched in the open glove box with a fist mic and then only with the xyl driving, it was high time to do a proper job.

The vehicle in question is a Vauxhall Astra which has (apart from the glove box) no usable space to mount the removable front panel let alone the rig so a bit of home brew was required.

Firstly the shopping list:

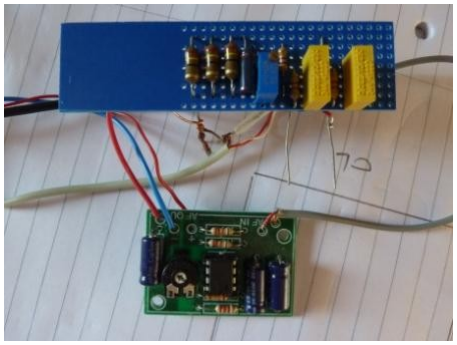
- One Mobile Rig
- One mounting and separation kit (oem=expensive) or home brew via the auction sites buying as required.
- One External Speaker suitably terminated for the rig
- A home brew or proprietary PTT and microphone assembly
- Access to a 12v vehicle supply of sufficient rating
- Suitable Antenna Mounting and Antenna

The front panel mounting moulding for my rig – a Yaesu FT7900 is available via the auction site for a few $ free postage as is the separation cable, so with those to hand we were off and running or were we?

Problem 1)
On the Astra, there was no where within reach that was really satisfactory to mount the front panel

Problem 2)
No place suitable to mount the external speaker

Taking the second problem first, I decided to route the rig's audio through the vehicles entertainment system. Hooking up my MiniDisk Player (remember those) to the stereo jack produced really good audio, so a standard line out would seem to be fine. As I was not going to use an external speaker, I had to simulate a speaker load for the rig and used a simple matching circuit to act as speaker load and line output for the car. Worked fine as speaker load but could not get sufficient audio in to be able to equate the volume levels when switching between Radio and Auxiliary (Rig). To boost the audio level, I had to use a pre-amp and this was accomplished by using a made up Vellerman mono preamp that I found in a rummage box at a rally for 10p.



Audio level now really good and clear,the preamp giving a little boost to the treble end on the audio spectrum.

Problem 1)
Mounting it in front of the Dash Panel display was not acceptable to my xyl and anyway there was no way of fixing it securely without drilling fixing holes. Nowhere else provided a flat surface….*Being curvy is of course a desirable attribute, but not for a car dashboard!*

I decided therefore to mount the removable head in a space just in front of the manual gearchange and home brewed a piece of wood to fit which gave me a

reasonable mounting.

Attention now turned to the PTT and microphone requirements. PTT is easy- a micro-switch between the appropriate pins on the mic socket will do the job perfectly and so a suitable candidate from my "man store" appropriately wired was fitted inside an old 35mm film reel container. Discreet enough in use and the red finger button was easily located without having to take your eyes off the road.

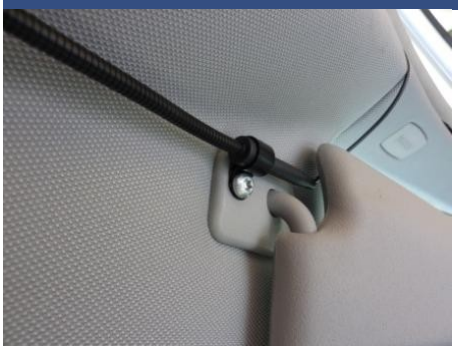
With regard to the microphones, there are lots of different styles available to the Base Station operator but for mobile you really are restricted to lavaliere type(lapel mount) or flexible miniature gooseneck types.

Base station rigs generally have tx equalisation adjustment so in broad terms "any old mic can be made to sound ok" but of course mobile rigs do not. It is therefore important to choose a mic that conveys your natural voice without adding in any undesirable colouration. Most fist mics are made to do the job adequately- but how do you achieve good natural audio from your lavaliere or gooseneck mic?

There is a host of information out on the Internet for those who would like to find out more but for the purposes of mobile transmission, we are restricting ourselves to electret or dynamic types.

Electret: These are essentially the same as a capacitor mic but using specially adapted construction to achieve a decent frequency response giving decent results at low cost. Not studio quality as offered

Going Mobile cont'd



by the Yaesu MD200A8X but more than acceptable given the transmission width available to us on FM.

Dynamic: very much a "loudspeaker in reverse" these microphones are generally the standard type supplied as fist mics, certainly by Yaesu and Kenwood but a study of the mic circuit will show they need a supply of DC and so strictly should be regarded as electret.

A compromise between audio quality, cost and physical size usually determines that electret will be the winner and indeed a lot of the decent communication style PC mics are electret. Communication syle mics can be found for very low cost, a majority have gooseneck or similar flexible mounting and ideal for adaptation to mobile use.

Lavaliere or lapel mounted mics are a good choice and again you can pay as much or as little as you want.

Experiment to see which gives cleanest audio in your particular vehicle, but I found a sun-vizor mounted gooseneck gave superior results both in terms of road noise pickup and audio quality.

Electrets are not created equal and in my experience cost has little bearing on performance!

For mine, I used a very inexpensive Japanese gooseneck mic for skype where I found it was easy to part the base from the gooseneck, leaving a slender lightweight and flexible mic to fit to the sun-vizor fix by a plastic P clip.

The rig itself is located under the driver's seat where again Vauxhall have made things difficult by putting in a cross brace diagonally. Room for passengers feet but the rig does just fit in.Frustrating at times and making life more complicated by wanting to route the receive audio through the car entertainment system, the finished result works and good reports are received from the Roof bar mounted Watson W7900.

The audio interface was developed with the kind assistance of Barry and is a really effective solution that I tweaked to match the strange input characteristics of the Vauxhall (aka Philips) entertainment system.
The circuit is available within the files section Yahoo.

Having fun with mobile RF now!

73

Ian
M0IDR
http://uk.groups.yahoo.com/group/g4wac/files/Construction%20Projects/Rig%20interface.pdf

WRC Support Wythall Carnival

Wythall Radio Club members were busy in August at the annual Wythall Carnival.

A number of folk gave up their Sunday to put on a first-rate demonstration stall which ran effectively all day long!

With many "hands-on" exhibits, such as Morse Keys & oscillators to 3 amateur stations on all bands from 40 metres – 10 metres (as well as 2 metres), there were even computer screens for the public to engage with and see what the stations were working. All in all, the day was a great success.

And a special thanks to the brilliant team who helped to put this on, to whom I am greatly indebted.
Mark M0MSE - Radios, Publicity, Deputy Generator Supplier & Deputy Project Manager!
Dave G3YXM - Antenna-meister & General Fixer
Phil 2E0WTH - Gazebo & Generator Maestro
Colin G6ZDQ - Morse Keys, PR Guru and WCA Liaison
John G4OJL - anything he was asked, especially Banners and Tables
Stan G4JGV - High Speed CW and top operator
Lee G0MTN - More High Speed CW and top operator!
Roger M0RXV - Support
Mike G4VPD - Support
Sylwia M3SSP - Support
Jim 2E0BLP - Support
Les G0HOR - Support
Oh yes and we also supported the WCA with organising the parking of visitor's cars.
- a real team effort!

Chris G7DDN

IOTA 2013 "CQ Contest- Mike Five Whiskey"

Rain didn't stop play but we certainly had our fair share of cats and dogs during the night of 27th/28th July 2013 for IOTA in Wythall Park. The Islands On The Air (IOTA) contest is a popular contest that dove-tails into the IOTA award system. Many DXpeditions "light up" various qualifying islands around the world and the activity on the bands is proportional to the popularity of this award.

This is the first year that Wythall have put in a 24-hour stint and we chose to go "field-day" style in the park with my new Command tent, generator and a simple wire fan-dipole for 80m, 40m and 20m. We could get a tune on 15m (albeit at 3:1 SWR) and 10m was possible on low power using the FT1000MP's in-built-tuner although most of the power was probably reflected back! In the main, we ran high power through an Acom 2000 amplifier and used N1MM as the logger with a neat addition for this contest, a voice-keyer operated by the computer.

Saturday morning, some keen members of the "build team" turned up with the tunnel tent and gazebo whilst Dave G3YXM and I assembled the Command tent and levelled the generator. I'd like to thank all those that helped and I'm not brave enough to list them in case I missed some out but I recall the operators: Rob 2E0MEX, Mark M0MSE, Stan G4JGV, Dave G3YXM, Lee G0MTN, James M0YOM and myself Callum M0MCX.

Memorable moment 1: Stan periodically shouting DX entities out the side of the tent each time he worked some major DX. We were setting up the BBQ at the time and Stan's head would pop out and a country would be shouted. INDONESIA! A round of applause then a few moments later, CHINA! and then JAPAN and we all fell about in giggles. Stan really earned his stripes holding the station for probably getting on for 12 of the 24 hours. Stan also ran the key for much of the night making sure that we're in line for a minor award as a MIXED (CW and SSB) entry.

Memorable moment 2: I showed off the voice keying capabilities of the voice keyer which not only read out the other stations call but also gave their signal report and even finished off with a "73 GOOD LUCK". I completed a couple of complete QSOs without speaking and we all fell about in giggles, particularly when a BY (China) called and I was terribly upset because I wanted a nice loud EU station to pop up to show off with but had to voice the whole QSO with him and clear him down quickly to continue the demo!

Memorable moment 3: The heavens opened a couple of hours before nightfall and it seriously tipped down in floods. It had rained a couple of times during the day but this time, it was pretty serious. We had pulled the table holding the radio next to the back wall of the tent nearly into the middle of the tent because the darned windows leaked on the Command tent. We all thought that the windows on the Command tent should be sewn onto the outside rather than the inside. Had they done this, the tent would have been perfect! Suddenly Mark M0MSE suggested in a moment of enlightenment that the tent was inside-out!? Well, I completely cracked up. It had been staring us in the face for hours and we'd finally worked it out. Hysterical (read maniacal) laughter ensued. There was a bunch of highly-trained technical people who had taken exams as part of their dangerous hobby, totally missing it. Very funny.

Two minor show-stoppers. The first was that the voice keyer completely stopped working as did the footswitch. I disassembled the RigBlaster Plus and found no visible fault. I did discover though that the 12V gel battery that was powering the emergency 12V light (which was being kept on charge by the 12V PSU) was powering the PSU and the light was failing. We had pulled the plug earlier to do some fault finding and after 6 hours of powering the light, the voltage dropped to a level where the RigBlaster refused to function. Duh. Plugging the PSU back in brought everything to light (a pun that works).

The only other issue was high SWR on the main feed to the tower just after a major rain storm. It was a strange SWR that had a rise time from 1:1 up to very high SWR in about 500ms. We swapped out the coax totally and it went away. I have since checked the coax under high-load conditions and all is good but we did run a small patch lead from near the outside of the tent to the amplifier, maybe a small amount of moisture got in where we'd taped it all up. Bottom line of course, heavy rain will always find a weak link in this game. Score was 843,310 with 580 QSOs and some healthy multipliers with Stan's use of the key.

73, Callum, Self-styled "Field Captain"

6m Loop Fed Yagi - 6m Contest

A few years ago, I bought a 6m yagi from Moonraker and James and I used it on one of our private field days. We found it difficult to get a great match but I thought I'd resurrect the project earlier this year to enter some random Saturday contest that was taking place on 6m.

Unfortunately, for love nor money, although I managed to assemble most of the bits, I couldn't find the gamma match arrangement in all my Tesco boxes. I needed this because unfortunately the impedance of a three element yagi is well under 50 ohms so unless I went for just a two element beam, I would have to re-engineer things. I recall that a folded dipole loop had a higher impedance, about 300 ohms. Using a closed loop system with a reflector and a director would bring the loop impedance down, probably by about half (according to the modelling) to achieve 50-75 ohms. I modelled it and things looked very promising. Wide bandwidth and pretty good gain.

In the end, this became an expensive experiment in that I used up lots of spare parts including a couple of meters of copper tube, an old half wave CB vertical *and* most of the old three element yagi in the process. I managed to slot the copper tube inside one of the sections of the CB antenna and using some 90 degree copper bends (B&Q), I soldered the copper up and jubilee clipped the rest together.

The whole thing ended up 4% too big. Most infuriating. No amount of shuffling the modelling around could replicate this issue as to why but it was resonant at around 48 MHz not 50.15MHz as planned. I've still not bottomed this out and have recently taken to factor in a 4% difference between computer models and the real McCoy these days. Maybe I should learn how to use NEC V5 (although the last I heard you're not allowed this outside of USA).

The good news is that it worked. I fired up 100 watts via my TS2000 and I made a number of interesting contacts on the Saturday. Conditions were pretty flat but I still worked several contacts at greater than 100 miles or so and I also recall some EU contacts too. Nothing spectacular - but good fun at only 10m AGL.

The bad news is that the solder joints I made snap and crack under small moments of bending pressure so it's now scrap. Also beware that for a long term project, copper is relatively heavy for an antenna and in any case, putting copper and aluminium together isn't good practise. Dissimilar metals tend not to get along side-by-side.

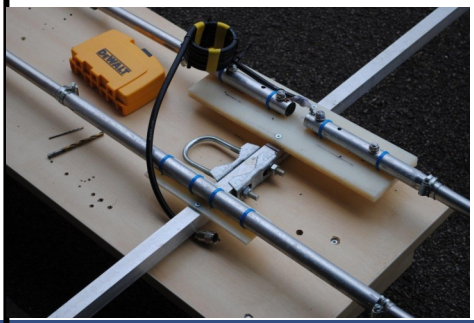
.. and all in the name of "having fun with RF".

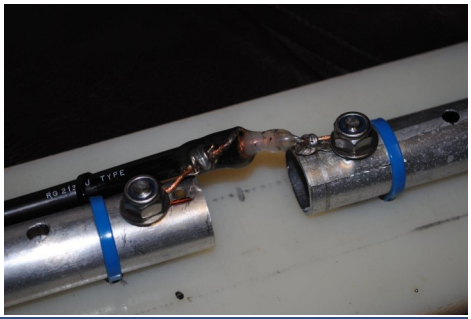
73 Callum.

M5W continued

Score - 845,310 Points

Band	Mode	QSOs	Pts	IOT
3.5	CW	5	62	4
3.5	LSB	96	816	29
7	CW	29	292	16
7	LSB	107	877	40
14	CW	12	37	1
14	USB	230	1578	64
21	USB	89	698	32
28	USB	12	89	4
Total	Both	580	4449	190
Score:	845,310			





HF SSB Field Day 7/8th Sept

SSB Field Day is a superb RSGB HF SSB event that coincides with both the "All Asia Contest" as well as the DARC Region 1 Field Day, a German organised contest. This means that many portable (/p) stations all over the world compete for fun in a competitive environment. High powered stations typically make over 1,000 QSOs over the 24 hours. We give serial report (typically 5 and 9) and a serial number (that is generated by the computer logger). To make life interesting, the Asia contesters are giving out their age (like a serial number but typically under 100!). For these people, instead of giving out our serial number, we give an agreed age, say 44 (for example).

In terms of equipment, we'll use the new Command tent, the lighting rig with a pole supporting our fan dipole as our fall-back antenna with an FT1000MP and Acom 200 amplifier. I will also endeavour to roll-out either the A3S tri-bander on three scaffold poles or the "seagull" nested rotatable dipole to give us some great gain on the three higher bands. We'll use N1MM and a laptop with voice keyer.

Of interest, Stan G4JGV has studied the logs from last year and he's convinced (as I am) that with some over-night effort and by genuinely running the whole 24 hours, there's a good chance we can do very well!

Last year, we all had a lot of fun and many people stayed overnight. The call to arms starts at 9:00 on Saturday 7th Sept. The contest kicks off at 2:00pm local time and we'll work the whole 24 hours.

See you 7th September!

73 Callum, Field Day Captain

Training News

As this newsletter is published we will be starting the 2013 Advanced Course on September 2nd. This is a 16 session 14 week course with an exam on Friday Dec 6th. We have three club members starting this course plus an external candidate who is going to have a go at home using our materials.

As I prepare the materials for this course, I notice that this is the 25th course the club has organised since 2007. And looking back at my records I can see that we have got 122 people through the Foundation/Intermediate and Advanced courses during that time. In addition, of the 83 call-signs listed as members of the club, some 40 have been through courses run by the club in the last six years.

Finally, after several years development, the RSGB and RCF are changing from manual marking of exam papers to optical marking. The changes arise from the coming on-stream of a new computerised examination administration system. This will allow full introduction of the new syllabus elements introduced in 2009 and 2011.

For the Foundation and Intermediate examinations, local marking continues but on an indicative basis only. The formal confirmation of a pass will now come from RSGB, once the Optical Mark Sheets have been automatically processed. Local indicative marking is to be carried out using the answers on the OMS, then the “Candidate Feedback and Indicative Marking” sheet should be used to record answers given against the syllabus topics and to give the indicative mark (top right of the sheet). This sheet replaces the Pass Slip and Candidate Feedback Forms used in the past

The OMS is completed by blacking in, in ink, a rectangle against the chosen answer for each question (see documentation referenced below). The answers on the OMS are to be used for any local indicative marking. Immediately the local marking is completed, the OMS are to be placed in a sealed envelope and mailed to RSGB HQ together with the other documents currently returned. For the Advanced Examination the OMS is sealed at the end of the Examination in front of any remaining candidates.

The RSGB will process the OMS on receipt, send each successful candidate a pass certificate and upload the results to Ofcom. The timeline for uploading to Ofcom has now been set at six working days to allow for any appeals etc. The RSGB hope that the new arrangements will reduce the overhead of administering the examinations and provide much needed statistical data and quality control on the whole process .

Chris G0EYO

The next issue of the Wythall Radio Club Newsletter will be published at the beginning of Nov 2013

Editor: Chris Pettitt G0EYO, 23 Dark Lane, Hollywood, Birmingham, B47 5BS. Phone: 07710 412 819, E-mail: g0eyo@blueyonder.co.uk