

Jan—Feb 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

So what will 2013 bring Wythall Radio Club?

As I write this the Xmas Contest is in full flood, with numbers being reached after only 5 days that would have taken the whole contest a couple of years ago. The excellent contest spreadsheet prepared for us by Lee G0MTN and Chris G7DDN is no doubt adding to the pressure to work more contacts but it has a further use, it quickly tells us the name of the holder of the call-sign we have heard and that way club members are getting to know each other much better than they might do at a club night. I think this contest is a big part of the magic that make this club so successful and a fun place to play RF in. People have been going to great lengths to participate even if they know they are not going to win it. For example, Darren, Carol and Phillip going up to the Lickey Hills on a Xmas visit to Droitwich from their home town of Cardiff and giving us all a rare multiplier; Ian visiting Broadway tower in the vilest of weather; Jon travelling around the Midlands looking for high points; Jim not leaving his radio for nearly 9 days; other working via repeaters

which resulted in more than one of us getting the rig manual out to find out more about CTCSS tones etc, and there are many more examples of people going that extra mile.

The New Year is upon us. What does 2013 hold for the club? Hopefully more of the same enjoyment that made 2012 so special. Chris G7DDN has a number of very interesting talks lined up and we have our 28th Radio Rally to look forward to. This will be on Sunday March 10th and we will be looking for club members to volunteer their services over that weekend to make it as successful as it was in 2012. We intend to sell of a lot of club unwanted items at the rally. Bookings are going very well.

We shall be busy with a few domestic chores such as sorting out the store and making space for items from the caravan which we will be selling in the New Year. It is just possible that we will be

investing in a new floor surface in the club meeting/class room. We have small EMC problem to sort on 80m with the car park lights and we have plans to put up a new low band antenna as a replacement for the long wire. Barry M0DGQ is working on a circuit which we can make in the classroom as a home brew project.

The website is looking great and attracting lots of favourable comments. It is being updated every week by Chris G7DDN with club news. Our traders are using the Rally section to book tables and new students use the training section to pick up on our courses, the next one being the Intermediate Course which starts on the 26th of January.

The Yahoo reflector has become the main communications channel for club members and we have had none of the nastiness that sometimes prevailed on the old reflector.

The morse classes are going well and we hope to see some competition from members of the CW class for the Lew Williams shield awarded by the club for CW progress. I spoke to Lew's widow Cynthia at Christmas and she was touched that we had honoured Lew in this way and I was happy to send her a picture of the shield for her and her daughters to see.

So let me wish all club members and their families a Happy, Safe and Prosperous New Year.

Chris G0EYO



Don't forget the Wythall Rally on Sunday 10th March

Simple Metal Detector

This simple metal detector is cheap and easy to build, all of the parts used here came from the junk box. It will not detect a difference between ferrous and non ferrous metals so you take your chance as to what you dig up, it could be buried pirate gold or a rusty coke tin, it will however provide hours of fun for children on the beach.

Now for the science bit

The heterodyne principle is used in this detector. Two oscillators run at the same frequency and their outputs are mixed together in a simple mixer, the output of this mixer feeds a crystal earpiece. One oscillator is fixed in frequency, the other oscillator known as the search oscillator can change in frequency when a metal object is placed near the search coil of the search oscillator due to the inductance of the search coil having changed. When the two oscillators are running at the same frequency (i.e. no metal near the search coil) no difference frequency will be produced (i.e. zero beat) resulting in no audio output from the mixer to the earpiece. However, when the frequency of the search oscillator changes due to the presence of metal a difference frequency is now produced by the mixer, the result being a audible note in the earpiece, the audio frequency being the difference in frequency between the two oscillators. An example being the fixed oscillator running at 455kHz, the search oscillator

running at 454kHz resulting in a audible difference of 1kHz.

The circuit is built on some copper clad board with islands cut into the board using a pad cutter (G - QRP club). The board should be mounted in a plastic / ABS box. Electrical conduit is used for the "arm" of the detector with the search coil mounted using a small screw that screws into a wooden plug in the bottom end of the conduit arm.

The search coil is made from 30 swg (approx) enamelled copper wire wound on a plastic container lid. The lid is 220mm in diameter, mine was removed from a empty "fence guard" container. Twenty eight turns of wire are wound onto the lid, the finished inductance is 400uH.

The photographs show how everything is put together, as said earlier the unit is

cheap to build so no need to worry about it getting wrecked, if it does then it is easy to fix.

Setting up

Once the unit is built it has to be correctly adjusted. Access to a frequency counter is a great help. Switch on the detector and let stabilise for a couple of minutes. Set the " set zero " control to mid travel. Keep the search coil well away from any metal objects (at least a meter or so), Check frequency of waveform at Tr3 emitter, it should be 455 kHz (plus or minus 1 kHz) - if it is not then adjust the value of the 200pF capacitor across the search coil.

The 200pF could be made partly variable by placing a 60pF trimmer in parallel with a 150pF fixed capacitor. Now adjust IFT1 core for zero beat i.e. no audible note in earpiece. If you adjust the core correctly

you will hear a high pitched note gradually decreasing in frequency until no note is heard. Once zero beat is achieved, turn the core back the way it came until a note of approximately 1kHz is heard in the earpiece

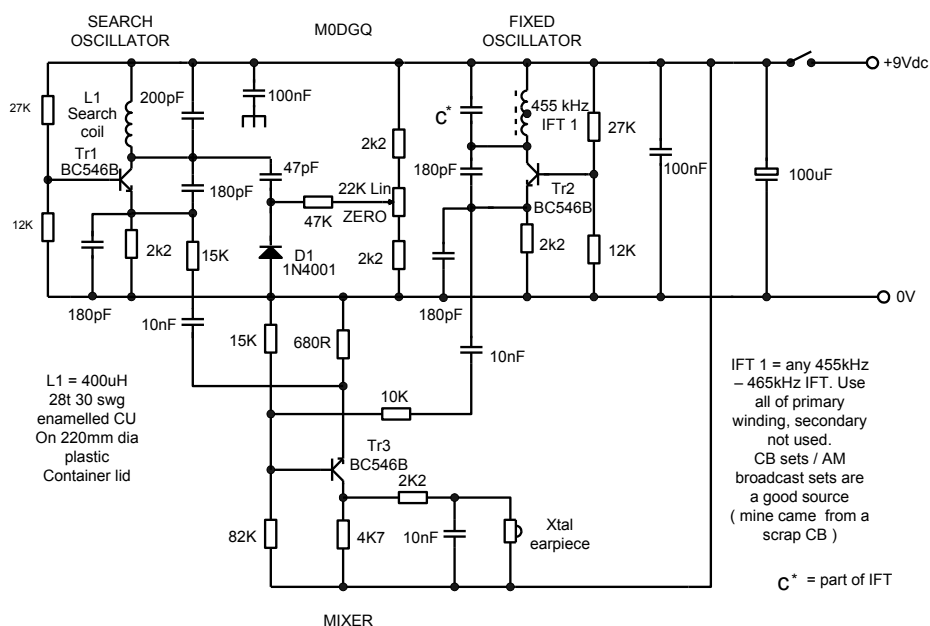
This set up is only done once, from now on use the zero beat control for a preferred note when away from metal objects at switch on. The circuit is designed to run off 9Vdc, current consumption is 5 mA so a PP3 will last a long time.

IFT 1 = any 455kHz - 465kHz IFT. Use all of primary winding, secondary not used. CB sets / AM broadcast sets are a good source (mine came from a scrap CB)

C* = part of IFT

This detector is not intended for any serious use as it is not sensitive enough, however it is fine for general use / fun.

Barry M0DGQ



DI-DI-DI-DAH-DI-DAH?

MORSE CODE IS DEAD, OR IS IT?

"Why on earth are people coming to club nights *early*?" I overheard one member say a few months back. Well that's a good question! The answer though is simple; a resurgence of interest in Morse Code.

"Morse Code?" I hear you say. "But that's of no interest these days and we don't have to take that dratted test to get on HF anymore." That is very true when it comes to the old 12 wpm test, but when it comes to interest in the Code, worldwide, as well as in Wythall Radio Club, there seems to be a real movement of amateurs wanting to get on the mode.

Now this could just be down to computer technology advancing to the point where Morse can be read and sent by computer (though the reading of it, even by computer, is very often poor). I suspect though that it is more down to the kind of places we live in.

HOUSING PROBLEMS

Let me explain. Most of us in the 21st Century live in fairly small houses on fairly small plots of land. The modern trend has been to cram as many houses as possible on as small a piece of land as possible. The net effect of this is that it is more and more difficult to erect efficient antennas.

It is easier on VHF and UHF of course and a small rotatable 2m beam can often be erected and mistaken locally for a TV antenna. But what about HF? You may only have 50-100 feet of length of wire to play with. That makes for tough going on SSB. The dream of a tower with 3 element HF beams such as we have at the club is, for most of us, a pipe-dream at home.

THE ADVANTAGES OF MORSE

Enter CW! The signal-to-noise ratio advantage of CW over SSB is estimated (depending on who you listen to!) to be anything from 12-20dB. (Remember 10dB is what takes you from 10 Watts output power to 100 Watts output power).

What this means in effect, is that just using CW is like having your own high power linear amplifier (at no cost!). In addition, antennas do not have to be as

efficient in order to receive and transmit the on/off signals that comprise the code. Most CW enthusiasts in this country use simple wire antennas (often with low power) and many have DXCC scores that look like they had 400 Watts and a beam! Isn't that enough reason to give you a push to learn the code? Well, that is just one reason why 12-15 or so members now come down to the club classroom at 1945 each Tuesday.

HOW IT ALL BEGAN

The classes began in response to myself and Barry M0DGQ using some CW to make contacts during the Christmas Contest of 2010. Interest was piqued and the first class began in January 2011 with quite a few members "having a go". The class settled down to a handful numbers-wise and by the summer, at least two members were making contacts on air.

Because people learn at different paces, the class had to learn to allow people the freedom to learn at a speed which suited them. As time has gone by, we have tried new techniques, different speeds and so on.

However, one thing has always been insisted upon; that is that Morse characters are sent at a fast speed (around 15-20wpm) but with long gaps of silence in between. That way, students hear the sounds at the speeds that are likely to hear on the bands, but have, in the early stages, plenty of time to think.

A LESSON FROM DRIVING

What we aim for is instant recognition of the characters upon hearing them. Of course that takes time. When you learned to drive, I will wager you had real trouble co-ordinating hands and feet with clutch and gearstick! Now though, you drive places and don't even give that a thought! That's the kind of instant recognition we aim for in the Morse Class.

Students range from teens to senior citizens and we have both genders too. We do strange things like playing individual and team games as well as the usual learning stuff, but basically anything goes and learning is made as much fun as it can be.

HOME HELP

While we have a basic structure to the course, it does naturally rely on students

practising at home in the week. There's no better way than listening on air of course but there is plethora of learning materials around these days, probably the best of which are the website at lcwo.net and Ray Goff, G4FON's free Windows program. Have a look at them for yourself.

THE FUTURE?

This year we hope to see more members on the air trying CW in the Christmas Contest and by next summer hopefully yet more members sending CQs in Morse and making contacts.

On that note, we also encourage students to join the FISTS club as they have members willing to meet up with you on the bands and go as slow as you need. The excitement of making your first CW QSOs though is palpable and there truly is no feeling like a CW QSO. It is just *different* from any other kind of QSO you have.

REAL RADIO?

This article isn't an advert for the CW class – to a large extent it advertises itself. What I would say though, is do not underestimate the power of this great mode.

In many ways it takes you back to the earliest days of experimental spark transmitters, back to the days of Marconi, back to the days when each contact was cherished. In other words, back to *real* Amateur Radio!

Chris G7DDN



Three men in a field on a dark night

Team G7WAC/P Club Calls 2012 Stu, M0NYP, Jon, M0JMM & Callum, M0MCX

With a call to arms from the club to put on four great stations for this 160m event, I was prompted to drop an email to Paul Marland, the owner of Ford Hill Farm in the Cotswolds, asking his permission to put a /P station on. Thankfully, he agreed. Not only was the location free of electrical noise, but it's also free of passers by, ensuring a quiet place to work from.

Technically, the plan was to simply put up a 160m dipole at around 60 feet. On paper, this is pretty easy to do; join two light-weight aluminium tubes together and put them on top of the hydraulic tower. Press a button and bingo. In practice, we found it extremely difficult since we did this in total darkness with only the generator lights to assist. Further, the lights only shine down – not up, so most of the time, we were clueless as to how much sideways pressure there was on either element. Picture a just a couple of kilos of sideways force and you will appreciate how much bend the mast was under – often bending 10 or more feet from the vertical.

Trimming each dipole leg was also a chore. We had 60 meters of paracord extending from the end of each element. Say you want to trim the antenna a couple of metres? No problem, run 100m down the lane (that's a single 40m dipole element + 60m of paracord). Release the guy from the guy stake in the ground, run back up 60m metres to where the end of the element was – more now since it will spring back 10 metres or so. Trim the leg and re-attach the wire to the paracord then run back 60 the metres to find the end of the paracord and find the guying stake. Kick it a few times to spring it out of the ground and then hammer it back in at the right place, hoping not to put too much strain on the mast at the centre. Receiving instructions from a "mast watcher" 100 metres away was also difficult with the noise of the generator masking the conversation! Finally, get back to the centre of the dipole, another 100m. In all, that's a 320m jaunt so far. Now for the other leg: 640 metres of dipole trimming.



But before we even got to that point, we tried to coordinate a man on each paracord end, 200 metres apart, to tension the dipole at the same time so to not bend the mast. As Jon pointed out, if only we had brought some walkie-talkies – and we're radio amateurs! Next time.

Earlier in the week Barry, M0DGQ had popped around to get some D10 military wire off me. When we were measuring his wire out, we also measured 88m of wire out for this 160m dipole, that's 2 x 44m to allow for some trimming and cutting. I marked the wire with tape so that I knew exactly where 40m of wire was, once I had built the choke balun. Stu, M0NYP also assisted in unwinding the D10 from

twisted pair to two lengths of single wire. We used my Black and Decker drill to do the unwinding. On Friday night, I built a home-brew dipole centre and made a choke balun as part of the assembly. This increased the weight, but I had no option.

Arriving on site at about 4:30pm, we had only 30 minutes of light. Enough time to unload the car, erect the tables and chairs and fire up the logging computer and FT1000MP. Darkness was upon us as we put up the first 5m lightweight pole and guyed it off, before we added the second section on the ground.

Jon arrived about 6:00pm with a take-away and we used up what was to become valuable time having a social dinner because getting the now 10m of pole in the vertical position and then putting it on top of the lowered hydraulic tower was to become an engineering nightmare in the dark. For those that haven't witnessed my erections, I guy off the first pole with the hydraulic tower in the down position and keep the guys in place when we take the pole down temporarily, so that when we put up the second section, as long as I am quick and offer the pole up to the mounting point quickly, the guys hold the mast vertical whilst I faff about with my spanners. Normally elegant – but more difficult with a mild crosswind which really hindered our efforts. We also caught one of the dipole legs on an old jubilee clip that I had left on one of the poles but after some more mucking about, we finally had the dipole, feedpoint and balun up the top, swaying about. At this point, I wished I had guyed the very top too. Grrr.



Three men in a field on a dark night (cont'd)



leg and taped it up. We couldn't get a tune on 160m, even with the on-board FT1000MP tuner which is a surprise since it tunes almost anything. The analyser though showed a tune at around 1.65MHz. I therefore needed to take out 250 kHz out the equation. The maths are as follows:

Current frequency: 1.65
Wavelength 181m
Desired frequency: 1.9
Wavelength of 158m
Difference: 250 kHz
Length difference: 23m

I mentioned the business of trimming the dipole earlier, what I didn't mention was the disparity between the computer

That meant we needed to cut off 5.75m off each leg (since each leg is one quarter wave); $4 \times 5.75 = 23$.



At the time, this seemed too much, even for my analytical mind so I agreed to trim the legs by 3m each. Actually, I cheated and without telling my colleagues, I

modelled and the real-world. I "cut" the dipole at 41m each leg. It was still 44m long, but I doubled back the end of each

trimmed 4m off each leg and cut the blighters off. The antenna did indeed move up 16m of total wavelength to

1.85. I wish I had gone another metre to get a tune slightly up the band. Remind me the next time I unwind this antenna to take off another half a metre or so! So we were finally on the air with just 6 minutes to go, in the dark with wet feet, cold hands and slightly out of breath after running

a couple of miles up and down Paul Marland's driveway!

The rest is history; 125 QSOs from my very old and trust FT1000MP. The radio is showing her age these days in comparison to fancy new radios, we get crammed by the K3 and FT5000MP brigade and the noise floor is a bit high in the electronics, but overall we had a great station. We were all back in our cars by midnight, having started the tear-down at 11:00pm dead and I find myself writing this report on the Sunday night in case I forgot how complex and hard work it was. But the memories are great and I will do this again. There's nothing like mucking around with radio in the field. I find I really get a "fix" from doing this.

The conclusion for the club is that collectively, we seemed to put on a fabulous show. Several stations were amazed to have worked so many WYTH stations and I was again, proud to be running one of the club calls. Thanks to Stu and Jon. They were great fun and extremely willing and didn't take offence at my barking orders! Because of this, they get several extra house-points

Callum M0MCX

Ian G0WYT SK

It is with great sadness that we record the death of ex-club member Ian G0WYT, who died on 30th November after losing a long battle fighting pancreatic cancer. Ian had not visited us for a couple of years because of his illness and he was only an occasional visitor before that. We offered the club's deep condolences to Valerie his XYL.



Wythall Radio Club: Winners of the Martin Lynch & Sons Hamfest Raffle

Saturday 1st December was a day that will live long in the memory of the members of Wythall Radio Club. Not only was it the Birmingham area club's first ever visit to Martin Lynch's shop in Chertsey, Surrey, but it was the day that the club were presented with a £600 voucher to spend on Goodies in his store!

Six Wythall Club members (Chairman Mike Pugh G4VPD, Treasurer Ian Reeve M0IDR, Secretary Anita Richards M6DUO accompanied by Club members Pete Richards M5DUO, Phil Newth 2E0WTH and Chris Rolinson G7DDN) made the trip down a frosty, foggy M40 *very* early in the morning to enjoy the ML&S open day & hog roast and were not disappointed!

Wythall Club Website editor Chris G7DDN takes up the story... "We arrived around 8.30am to find a Car Park space *reserved* for our Chairman Mike G4VPD. He won't live that down in a hurry! We then spent a happy few hours browsing the shop, enjoying a breakfast of unlimited free bacon sandwiches, free drinks & chocolates and very friendly chat with the ML&S staff."

Chairman Mike Pugh G4VPD continued... "This was also the day when we were presented with our £600 voucher, won in the ML&S raffle at the National Hamfest in September, to spend in store. Kenwood's David Wilkins G5HY was on hand to present the voucher, which was very promptly exchanged in part payment for a Kenwood TS-590S!" Needless to say, there were a few other pre-Christmas deals done between ML&S and Wythall Club folk and



Santa obviously came VERY early for all the members who travelled down! Club member Phil 2E0WTH commented... "The hog roast lunch was fantastic and really warmed us up on a very chilly but dry day. When the time came to leave, it felt like we had made a few new friends in the South-East."

Wythall Radio Club would especially like to thank Martin, Richard and all the staff and Martin's family at [ML&S](#) for their most generous hospitality.

Chris G7DDN



Do you remember when we ... “ran the G4WAC Worked Midlands Clubs”

Sorting through some files in the club I came across a bunch of blank certificates for the “Eddystone Radio Worked Midlands Clubs Award” which was run by Wythall Radio Club in July 1986. As the name suggests this was an award sponsored by Eddystone Radio in West Heath Birmingham (of which I was the Managing Director from 1984 to 1998) given to radio amateurs who worked the callsigns of clubs in the Midland Region. The aim was to promote the existence of amateur radio clubs and societies. It was a VHF/UHF award covering 6m, 4m, 2m, and 70cm. It was a bit like the club calls contest we entered recently on top band. You got a point if you were a member of a club but used your own call sign, 2 points if you used the club's call sign and 5 points if you worked G4WAC. Only one contact per club could be claimed. Mick Pugh was the Award Manager and claimants could apply for BRONZE @ 20 points, SILVER @ 35 points, GOLD @ 50 points and PLATINUM @ 65 points. Applicants had

to send in £1.50 to cover costs and postage.

I don't remember how many people applied for a certificate, we were certainly never in danger of running out of the 500 we got printed. I suspect the number issued was less than 20, older members might remember. Of course publicising an event such as this in those days was more difficult than today. No internet, reflectors, websites. I remember Radcom needed about 2 months notice to publicise an event. However it was a time when people seemed to chase awards, there was even an expression for them, but I can't remember what it was. In the 80's there were more clubs than we have today. In the area covering Staffordshire, Shropshire, Hereford and Worcester, West Midlands, Warwickshire, Leicestershire and Northamptonshire we listed 77 clubs that you could work.

Chris G0EYO

Training Notes

On December 5th our four Advanced Course students (plus an outside candidate) took their examination at Wythall House.

I am pleased to say that four students passed the examination and now have the following M0 callsigns.

Chris was 2E0ETH now M0NAK

Tony 2E0TKS now M0TKS

Carl was 2E0CWC now M0SER

Ext candidate Shaun 2E1BWN now M0IMM

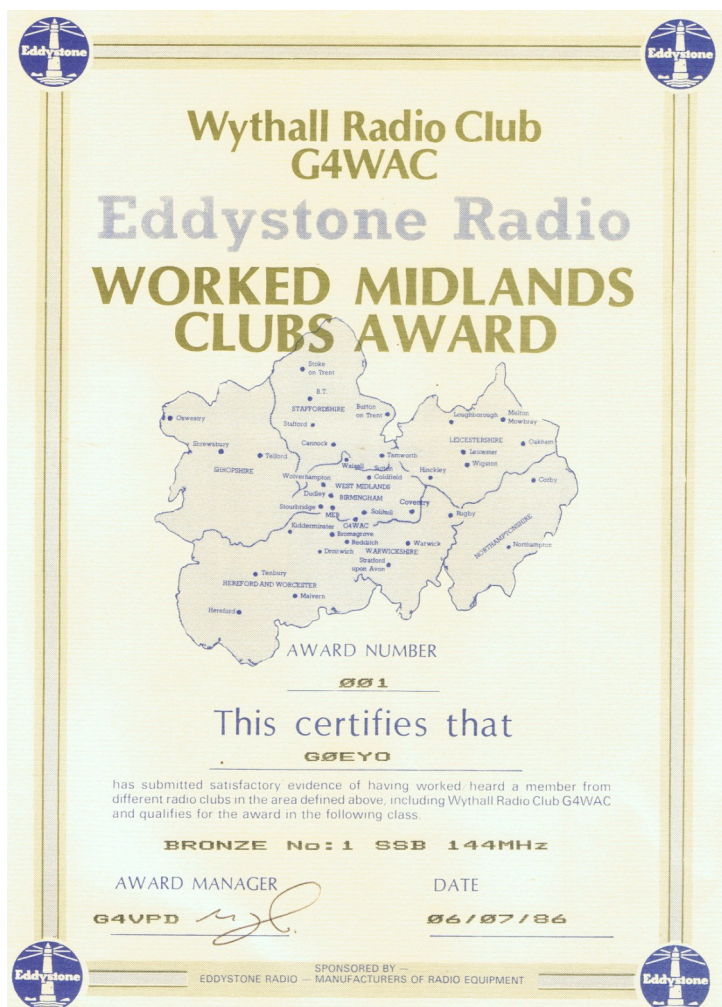
Jim 2E0BLP didn't quite make it but may have another go at it.

The Advanced Course covers a large number of technical topics in some depth and passing the exam is a real achievement, essentially equivalent to an NVQ qualification. It is also the longest course the club runs with 15 two hourly sessions on Monday evenings and a couple of Saturday mornings. We can run these courses because of the commitment and expertise of Lead Instructor & Training Coordinator, Chris G0EYO his fellow tutors, Peter G4LWF, Barry M0DGQ and Dave G3YXM together with invigilators David G0ICJ and Mike G4VPD. It surely is a team effort.

As a club, we are lucky to have the facilities of a classroom with multimedia technology at our disposal. Our next Advanced course will commence in September 2013.

Wythall Radio Club will be running an Intermediate course at our well-equipped club shack at Wythall House, Silver Street, Wythall, B47 6LZ starting with a Saturday morning session on 26th January, and then every Monday 8-10pm until the examination, which will be on Monday 18th March. The cost for this course is just £50. This includes the examination fee, the course book, course notes and project work. There are small concessions for those under 18 or unemployed and on benefits.

Contact Chris G0EYO on g0eyo@blueyonder.co.uk for more details and let Wythall Radio Club help you to the next stage of your license.



Xmas Foxhunt 2012

There was a wet start, to this years' Fox-hunt, but 12 intrepid members turned up at the Barley Mow, Studley, with no talk of it being rained off. Unfortunately Chris G0EYO's wife, Wendy, was not too well & Chris decided it best to stay & take care of her. So after 18 years continuous attendance had to give this year a miss.

This years' teams were :-

Jon MØJMM & Phil 2EØWTH
Stuart MØNYP & Walter MØGRO
Steve 2EØSDD & Stacey M6STJ
Anita M6DUO ,Colin G6ZDQ, Peter
M5DUO & David GØICJ
Colin MØGJM & Brother Rob

Having distributed the area maps Jon & Phil were given 15 mins start as the first



fox. They were eventually found, after several transmissions by Colin & Rob. During the time taken to locate Jon & Phil the rain had stopped. So conditions were not too bad after this wet start. Having taken a longer than expected time over first fox, we went as Fox 2 to a location where we thought we would be quickly found, in order that more teams get to go as Fox. We were found by Jon & Phil after only a couple of transmissions. Steve & Stacey were pressed into service as Fox 3 & again were found fairly quickly by Jon & Phil, using the tape measure yagi.

Next fox was team Anita, Colin, Peter & David, who had chocolate biscuits as an incentive to find them (well done Anita, nice idea). I think Colin made 2 transmissions to give radio fix before being found by yet again Jon & Phil!! But this time only seconds before Colin & Rob located them, using our 3 element Aluminium tube yagi along with a seriously good switchable 10 – 30 dB attenuator.

However the best feature of Team Anita's turn as fox was the content of the transmission. Colin G6ZDQ advised all

us foxhunters that he could not think of 2 minutes speech, off the cuff, so read an excerpt of " Fifty Shades of Grey" from Anita's Ipad ! As we were all concentrating on getting a good directional fix we did not take too much notice of the content, but I don't recall it being a naughty bit.

As it was approaching lunchtime & not being far away, we returned to The Barley Mow, for a carvery lunch, where we were joined by Chris G7DDN. The morning , clearly, belongs to Jon & Phil who had most success in locating foxes, but we can all report that we had a lot of fun , with directional rf, & a good morning out maintaining the traditions of Wythall Radio Club.

Colin MØGJM



Another great Xmas Party

Sometimes club life is just plain fun! Last night Wythall Radio Club held its annual Christmas Party. Over 60 members, family and friends all came together for a fun-filled evening at Wythall House. Now "homebrew" to Radio Amateurs usually refers to making radios from parts and building your own receivers and transmitters. Last night it was more about food. Home-brewed curries, tagines and savouries were supplemented by homemade cakes, brownies & all manner of other kinds of bites. No surprise then that we were all stuffed and there was still food left over by 11pm.

Perhaps we should also start a Wythall Baking Club!



With the Wythall House bar serving anything from Cappuccinos to real ale to wash it all down, we disproved our own club motto by having tons of fun, but without any RF being transmitted (for once).

Even Ian our Treasurer was happy as the evening actually made a profit, thanks to many folk's efforts! We should especially mention Jim 2EØBLP who ran, single-handedly, what must have been the longest raffle known to mankind! As one local West Midlander once sang... "Oh I wish it could be Christmas every day!"

Chris G7DDN

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

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