



# Wythall Radio Club

## Wythall Contest Group

G1WAC G4WAC G7WAC G0WRC M5W



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<http://www.wythallradioclub.co.uk>

**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

### Officers

Chairman: Martin G8VXX

Secretary: Chris G0EYO

Treasurer: David G0ICJ

### Committee -

Chris G6KMQ

Vaughan M0VRR, Deputy Chairman

Lee G0MTN Contest Liaison

Peter M5DUO Antenna maintenance.

Mike G4VPD

Mel M0MAJ

Martin G7WBX

Colin M0GJM QSL manager

Neil 2E0TUX IT manager

### Chairman's Message

It's here again, March that is, and that means Rally time, as if you didn't already know. Please remember that this is the **ONLY** why the club makes any money and thus it is essential that as many club members as possible turn out over the weekend to help make it a success. Help is needed on Saturday 7th and Sunday 8th. I have now turned down all work for Rally weekends for the last 5 years so you can see what my commitment is. I am not suggesting that any of you do the same but it is only one weekend a year and it is the only way the club can survive. So those of who can please help, try to drag friends and relatives along too if possible (kicking and screaming if necessary!) All help will be greatly appreciated.

Thanks in advance

Martin  
G8VXX

## Newsletter

### March–April 2009

### Jim 2E0BLP wins the Reg Brown Xmas Contest Trophy

At the February Committee Meeting, members gathered to get the official results of the 2008 Reg Brown Xmas Contest Trophy from Lee G0MTN, Contest Club Chairman.



For the second year running, Jim 2E0BLP was declared the winner and received the trophy to keep for another year from Pauline, Reg's widow. Believing that Jim must have been on drugs to keep at the radio so long without sleep over the Xmas period, Lee declared that he would propose the introduction of dope testing in next years contest. Lee also told the

members present that this was one of the most supported Xmas contests with something like half the membership coming on to give away points.

Second (again this year) was Chris G0EYO and Third was Peter M5DUO. Lee presented

them both with their certificates.

Club Chairman, Martin G8VXX presented Pauline with some flowers as a thank you from the club. Lynne M6FAB got the Certificate for the Leading Foundation entrant

The Xmas club contest is a particularly Wythall tradition and provides a pleasant alternative to the traditional Xmas entertainment that we all indulge in.

Well done Jim, if you win it a third year running we will make you buy the trophy (only joking!)

### Another 100% success for Intermediate candidates

Congratulations to Alan M3SXB, Walter M6WJC, Stuart M6STU and Steven M6STE on passing their Intermediate Examination on 24<sup>th</sup> February following a 5 week course at Wythall Radio Club. Alan at 86 is the oldest candidate to have taken a course and examination at Wythall Radio Club and may well be one of the oldest in the country. Especially well done to him. All four candidates received their pass slip from Club Chairman

Martin G8VXX and our thanks go to exam invigilators, Mike G4VPD and Tom G3PQP and the tutors who did a sterling job. Our next course will be a Foundation one which is planned to run from Saturday April 18<sup>th</sup> to Saturday 2<sup>nd</sup> May as a mixture of Saturday mornings and Tuesday evenings. If you are interested in this course or know of someone who may be, then contact Chris G0EYO on [g0eyo@wythallradioclub.co.uk](mailto:g0eyo@wythallradioclub.co.uk)



# Dynamic Microphone Pre-amplifier

Another exciting project  
from Barry's Bench

Recently I was playing around with Windows sound recorder on my PC. The children wanted to record some correspondence/ messages onto CD to send to their Gran. Best results were had using a microphone preamp prior to feeding the sound card input. Described here is a simple but good quality dynamic mic preamp that has many uses.

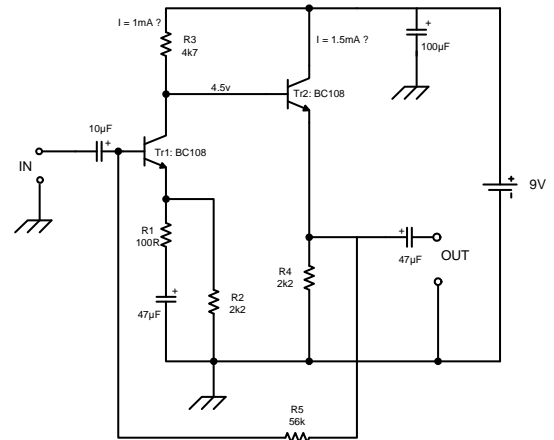
Transistors were chosen mainly because of the lack of good quality op amps to hand and also as a design exercise. Being battery operated in my case, low current consumption was also a priority. The total current drain is 2.6mA using a 9v PP3 battery (The circuit will operate happily with 9 – 20 volt supply), so the PP3 will last a very long time. Looking at the circuit diagram, two transistors are used. Tr1 provides all of the voltage gain for the amplifier ( approximately 30dB ) while Tr2 acts as an emitter follower to provide a low impedance output ( less than 300 ohms ) and due to its high impedance input, it does not load Tr1's collector load resistor R3 , thereby allowing Tr1 to produce maximum gain. Tr1 and Tr2 are DC coupled which provides bias stabilisation, the bias for Tr1 being taken from the emitter of Tr2 via R5. The bias circuit relies upon Tr1 collector voltage being at roughly half of the supply voltage (4.5 volts) which is set using the component values shown. Approximately 10dB of negative feedback is also introduced by R5 to the circuit whole and a small amount of emitter degeneration is also introduced into Tr1 due to R1. This

also raises the input impedance of this first stage to roughly 4K ohm (a good match for dynamic mic's whose output impedance is usually 200 – 600 ohm). With all negative feedback included the amplifier gain is about 30dB, more than sufficient to raise dynamic mic level (20 – 50 mVp-p depending on the mic) to 1 – 2 Vp-p. The gain of the circuit can be made variable from 6 – 30dB by replacing R1 with a 10K ohm linear pot.

The output of the circuit can be driven to 3Vp-p before clipping occurs, this is due to the relatively low supply voltage, if you can achieve this using a microphone above (I had to shout into the microphone at a distance of 1cm before it clipped), under normal use it is very unlikely to clip.

For a simple preamplifier it sounds very good, using a high quality microphone (Sennheiser e825s robbed from work) it sounded clean and transparent, no nasties could be heard when driving a good quality powered monitor speaker, seems a shame to feed thru a sound card!

The simplicity of the circuit and low component count makes the preamplifier good for many applications where mic level needs to be increased (do not be tempted to use this as a line amplifier as it does not have sufficient output voltage swing). As you can see from the photo, mine was



Drawn by G0EYO

MICROPHONE PREAMPLIFIER by M0DGQ

built using dead bug style. It did not seem worth while making a PCB, however I would recommend putting it in a screened enclosure. Included on the circuit diagram are some key voltages and currents that give an idea of how some of the component values were worked out. Barry M0DGQ



# The Miser's 2m Mag Mount

Want a cheap 2m magmount whip? Read on. The five eighths whip section is described in the ARRL handbook. The only difference here being the loading coil, the Perspex rod I used is 15mm in diameter and has thirteen turns of 2.5mm copper wire (I stripped some gash 2.5mm twin and earth cable) and is tapped at nine turns from the bottom end of the coil. The whip section is made out of 3mm brazing rod (two lengths were joined together to form a 1.4m length). The centre of the Perspex rod was drilled out to allow



the tap wire to pass thru to the centre connection of the p1259 plug. The series of photos shows how it is put together. The magnetic mount is made from a large speaker magnet, the speaker had

an open circuit voice coil so I did not feel guilty about dismantling it. As you can see a strip of stout aluminium is screwed

to the magnet using self tapping screws, a so239 socket is also mounted on this strip. Using this



method allows different whips to be used with the mount. A sheet of acetate is glued to the underside of the magnet to avoid scratching the car roof; some thin felt would be better. Large heat shrink or self amalgamating tape should cover the loading coil to keep the weather out. The whip is cut for



minimum SWR; make the whip some 10cm larger than necessary to allow for trimming. I achieved a 1:1 SWR at 145.300 MHz for a whip length of 1.3m.

Barry M0DGQ.



## Understanding the licence conditions

Another bit of useless information  
from Chris's Classroom

There has been a continuing debate on the RSGB tutors website about who can operate amateur radio equipment and who cannot. This also includes club stations. Alan G8TKV wrote what I thought was the definitive statement as to what the current License Schedule issued by Ofcom states. (Please throw your old BR68 booklets away they are way out of date)

*ANY UK licensee (at any level) may supervise ANY other UK licensee (also at any level, up or down) using the supervisors call sign and obeying the terms of the supervisors licence.*

*ANY UK licensee may use anybody's equipment as if it were their own, the fact that it may be owned by another licensee or is on that person's premises is totally irrelevant.*

*A Full licensee may allow a non-licensed person to speak into the microphone but the licensee must OPERATE (includes pressing the*

*PTT) and must identify the station - now properly called Radio Equipment.*

*A Full licensee may also supervise a non-UK amateur - again, by definition - if supervising, the supervisors call and licence terms may be used. If said non-UK amateur is allowed to operate in UK under own steam then he/she may do so using own equipment or borrowed equipment and identify M/<own callsign>.*

*A Full licensee may supervise a non-licensed person registered on a recognised training course; then additionally, the trainee may speak AND operate AND identify the station.*

*A normal club licence is identical to a normal Full licence with the added proviso that the holder (who must have a personal*

*Full licence) may allow another Full licence holder club member to use or supervise exactly as the holder may do. A club member is whoever the club says is a member.*

The key change from BR68 is the ability of Foundation and Intermediate licensees to supervise any other UK licensee. One may ask so what, how does that help? It does in a contest where the entry and thus the identification is that of an M3/6 or 2E. The contestants are limited to the terms of that licence.

## Intermodulation and the "rusty bolt effect"

A recent thread on an American tower reflector reminded me of a type of intermodulation called the rusty bolt effect.

Intermodulation as you will all know is the mixing of two or more frequencies to generate a another interfering frequency. We are taught about it in transmitter and receiver theory as it can be the cause of harmonics and other birdies and spurious that you can hear on your receiver.

In broadcasting it is not uncommon to be presented with spurious generated by the mixing of two broadcast transmissions to give an interfering signal out of the broadcast band (and sometimes in the amateur band). One such example quoted on the tower reflector thread talked about an intermodulation problem that took the form of  $2 \times F1 + F2$  from no less than 6 strong AM stations that were completely wiping out reception on the 80m band at a strength that varied from S9 to S9+20dB. The medium-wave AM broadcast band stretches from 525kHz up to 1605kHz. So if there were two broadcast stations in the vicinity of our ham friend, one broadcasting on 1050kHz (f1) and the other on 1450kHz (f2), the  $2 \times f1 + f2$  intermodulation would give an interfering signal of  $2 \times 1050 + 1450$ kHz which I reckon to be 3650kHz, right in the middle of the 80m band.

This still doesn't mean that you will have a problem because for the interference to exist there has to be some form of mixing to occur. This is where the rusty bolt effect comes in. It is a fact that two dissimilar metals touching

each other cause a galvanic effect, that is to say a potential difference can occur between them allowing a current to flow and one will corrode away and deposit itself on the other. One acts as an anode and the other a cathode. This is called bimetallic corrosion. The rate of corrosion depends on the environment and which metal is in contact with which metal.

The dissimilar metal contact can also act as a rectifier which is a very simple form of mixing. Rust on a bolt will offer a dissimilar metal contact and hence a rusty bolt can rectify an intermodulating signal and cause it to be radiated. The dissimilar metal contact acts as a semi-conducting junction. This phenomena can happen in many different ways, bad connection or corrosion in a connector, The possibilities are endless. Usually the offending junction is relatively close by.

Read these comments Pat AA6EG about his experiences with the problem

"I am not an expert, just an older, wiser ham, but vividly remember an intermod elimination project years ago done by a Master RF Engineer Dr. Dick Alder, then K3CXZ, at the Navy School's K6LY repeater tower on Huckleberry hill in Pebble Beach CA. Over time we noticed the Intermodulation seemed to get worse with long dry spells, and usually disappeared with heavy rain.

Dick brought a spectrum analyzer, set it up inside the repeater building, watched a broad spectrum, in the ham bands, I think VHF

mostly, and dispatched the young climbers of the club up the tower, instructed to bring a small hammer, and look for and bang or tap on, loose, rusty or corroded joints anywhere in metalwork on the tower, which had many, transmitters, including high power commercial transmitters, all over the spectrum. MW broadcast station transmitters were nearby. I was in the site shelter watching and listening to the Master comment on the spectrum display while hearing climbing and tapping noises above us on the tower.

At some stage, we saw the whole spectrum analyzer screen jump wildly upward. Professor Adler yelled: Whoa! What are you guys doing? Where are you? Then we stepped outside the building and looked up. A couple of the guys were standing on a large, very rusty, triangular I beam guy wire torque amplifier, about 80 ft up. Rust flakes showered down whenever the guys hopped on the I beam brace.

Dick (Reverently called Radio Richard) had a Eureka moment, and smiled. He yelled... jump a little on that bracket you are standing on... Sure enough, the spectrum analyzer screen went VERY animated with each bounce. I remember distinctly the repeated harmonic nature of the rectified intermod signals on the display.

Radio Richard found the problem he predicted existed, (rusty diode junctions, and rectification). I think the commercial tower owner replaced the complete steel guy triangular brace which was very rusty.

Chris G0EYO

## I've just got my 2E0 licence! Now what am I going to do with it?

In my opinion the Foundation Licence is great because it does "exactly what it says on the tin." It allows new licensees to experience all aspects of HF and VHF amateur radio and make some contacts. However, the 10 watt output power limit can be quite frustrating, especially for anyone who is limited with their antenna setup at home (and who isn't limited in some shape or form !?) For the keen new ham there will hopefully be a large incentive to upgrade their licence and then enjoy the extra privileges this will bring. With the Intermediate Licence, the scope for making contacts is significantly improved. Let's have a quick look at what we might now do on HF...

The first time someone starts operating on HF, everything is a novelty. Every single contact is exciting as you greet a new person in a new country. With most domestic wire or vertical HF antennas and present band conditions, in a lot of cases the 10 watts of your Foundation Licence won't allow that many 'armchair copy' voice contacts. Many M3 and M6 stations are using data modes like PSK31 which are suited to weak signal and low power operation.

With a 50 watt licence, those voice contacts will be a lot easier to achieve, and of course so will the data (or CW) contacts. Many people will turn on their radio of an evening or weekend, and just see who is there to work each time. Others wish to chart their progress, and try to achieve some of the many operating awards available to radio amateurs. Many people refer to this as "DX Chasing."

The most well known programme is the DXCC – or DX Century Club. Contacting 100 DXCC 'entities' and getting proof of the contacts qualifies you for an award. The entities are so-called instead of countries, because places like Guernsey, Jersey and the Canary Islands all count separately, although they are not countries in the official sense of the word. At the extreme end of the scale, the UN Building in New York, a mountaintop in Greece, and a very small pile of rocks in the South China Sea also qualify as separate countries. There are reasons for all of these (honest!), but not enough time to go into it now.

For the basic award, you can contact your different 100 "countries" over all HF bands, and use a variety of modes as well. Then, if

you choose, you could try to work 100 on a single band, or a single mode. Additional challenges appear by trying to contact every single entity on the list (presently #337), or trying to contact 100 on 5 or 6 different bands. (Google for: DXCC)

To qualify for the award, you can exchange QSL cards with the stations that you work. Increasingly now electronic QSL'ing is used, sometimes instead of, and other times as well as traditional paper QSL'ing. Electronic QSL'ing works by sending an data file of your contacts to a central database. Instead of sending a paper card, you send your contact details as a piece of data. It's quicker and cheaper than sending a real card, but many people like to receive QSL cards by post. QSL'ing can become a hobby in itself. (Google for: "Logbook of the world" and "EQSL")

Other famous award programmes are Worked All States, and Worked All Zones, which is achieved by contacting stations in the 40 'zones' of the world as defined by CQ magazine that administer the award. The RSGB's Islands on the Air programme also have a large number of awards. There are thousands of other awards available – try looking on the Internet, or awards directories are available to be purchased. Some are very easy to qualify for, and others may take years of patience. With 50 watts and a wire antenna, it should be possible to contact 100 DXCC entities in a single big contest weekend. The same may be true for the basic Islands on the Air award during the IOTA contest weekend.

Some people never bother with QSL cards, or applying for these awards, but still enjoy seeing how many different stations, entities, islands or counties they can contact. This may be a lifetime endeavour, or alternatively the clock may be reset each January 1<sup>st</sup> to see what each year will bring. At Wythall we've run informal tables between the membership in the past, just for fun.

If you start to make a number of contacts on HF or VHF, if you're comfortable with the idea then recording your contact log on computer can reap benefits. There are many free programs available for different platforms. These programs can sometimes control your radio as well, maybe allowing data modes operation too. An electronic log can be backed up safely, and easily searched.

Maybe you could make your whole log accessible online. It's also then quite trivial to export your contacts to submit for electronic QSL'ing. Also it provides a way to track incoming and outgoing paper QSLs as well. Some examples are: Ham Radio Deluxe, WinLog, Logger32, and DXKeeper. Try these and see which one works for you.

One feature of many of these programs is the DX Cluster. A long time ago, groups of friends would simply telephone each other to alert them of an unexpected band opening, or a rare station appearing on air. In the 1980's and 90's VHF packet radio became very popular, offering free mail and bulletin board type access over the air, as well as one to one contacts. One of the application packet radio was used for was the "Packet Cluster." Different stations would connect to a Cluster node, which then listed the DX 'spots' submitted by different users. The cluster nodes themselves were linked, so a station you spotted could filter through the UK and Europe in a matter of minutes. This could often result in a huge 'pile' of stations all trying to contact the rare station all at once. With the advent of always-on broadband internet, almost all cluster activity is now carried over the Internet. It's a useful tool when looking for stations to call, and for judging band activity, but should never replace tuning the bands for yourself.

Perhaps in the next newsletter we can consider VHF operation instead, or look at other specialities such as SSTV, portable operation or satellite working. All of the above is still very relevant if you are an M3 or M6, or even a G3 callsign holder. No expensive radios are required, and I'm assuming very modest antenna installations. Don't forget the club shack can be at your disposal if you want to play with some different antennas.

Of course, you could not go on the air at all, and instead spend your free time studying for your Full Licence where even more opportunities await!

73,  
Lee G0MTN

### Bletchley Park Trip Saturday 9th May

The club are organising a trip to visit Bletchley Park near Milton Keynes on Saturday 9th May in conjunction with the Wolverhampton Linux Group. We shall arrange for a coach to take us there and bring us back. Cost not known yet but likely to be in the region of £30-£35 per person.

**Wythall Radio Rally Sunday 8th March 2009 at Woodrush Sports Centre**  
We need your help to set up on the Saturday and of course on the Sunday. Remember a successful rally means that the club can keep going for another year!. Please give us your support. Contact Martin G8VXX or Chris GOEYO if you can help

## Changes to Intermediate Syllabus

From June 2009 the examinations for Foundation, Intermediate and Advanced licences will reflect the changes in their respective syllabus'. The changes were published in June 2008 and the rationale behind the changes is to satisfy Ofcom's requirement that the Intermediate examination is sufficiently robust as to justify the privileges that Intermediate Licence holders enjoy and to make the transition from Intermediate to Advanced less onerous.

Generally a small number of syllabus items have been removed from the Intermediate level syllabus and placed in the Foundation syllabus. A larger number of Advanced syllabus items have been introduced into the Intermediate Syllabus. Thus the examination that will see the biggest changes will be the Intermediate There will be a new edition of the Intermediate Licence book to incorporate these changes. The changes cover additional information on supervising other UK amateurs; more on technical basics such as series and parallel circuits; construction and properties of capacitors and inductors, capacitive and inductive reactance, magnetic and electrical fields rising and collapsing therein; transistors and vari-cap diodes, plus a bit on antenna and feeder impedances and waveguide safety.

There will be some small additions to the Foundation syllabus and some reductions to the Advanced syllabus.

## Intermediate Passes

You will see from the front cover that all four candidates were successful in achieving Intermediate Licence passes in the recent examination held at Wythall House. Well done again to:

Alan M3SXB  
Walter M6WJC  
Stuart M6STU  
Steven M6STE

By the time you read this they will have got their 2E0 callsigns (if they can work out how to navigate the Ofcom website)

## Advanced Passes

We had four candidates take the December Advanced examination at Wythall, all of whom had gone for self study. Two of the candidates were from outside the club and two were club members. Three managed to pass the exam and congratulations to them. David Passey now M0MYA  
Robert Townsend now M0NQN  
Roger Mansell now M0RXXV

Unfortunately Peter 2E0PWM didn't get a pass so he will have to get the books out and try again. We shall be running an Advanced Class in the Autumn in time for the December examination.

## New Foundation Course planned

Our next licence course will be for foundation level. This will be a short three week course using two Saturday mornings and two Tuesday evenings with the examination being taken on a Saturday morning. The proposed course schedule is shown below. If you know of anyone who might be interested in taking the course get them to contact Chris G0EYO at g0eyo@blueyonder.co.uk

The course will cost just £40 or £25 if under 18. This includes membership of the club for one year and also covers all exam fees, books and course materials.

## New course materials

We are in the process of reviewing the course material (slides) to make them more relevant to the syllabus requirements and the first course we shall apply this to will be the next Foundation course.

Eye have a spelling chequer,  
It came with my Pea Sea.  
It plane lee marks four my revue  
Miss Steaks I can knot sea.

Eye strike the quays and type a word  
And weight four it two say  
Weather eye am write oar wrong  
It tells me straight a weigh.

Eye ran this poem threw it,  
Your shore real glad two no.  
Its vary polished in it's weigh.  
My chequer tolled me sew.

A chequer is a bless thing,  
It freeze yew lodes of thyme.  
It helps me right all stiles of righting, And  
aides me when eye rime.

Each frays come posed up on my screen  
Eye trussed too bee a joule.  
The chequer pours o'er every word  
Two cheque sum spelling rule.

Neil 2E0TUX

FOUNDATION COURSE 3WEEKS				
	session 1	session 2	session 3	session 4
<b>Saturday 18th April</b> shack 9am-10pm week 1	Nature of Amateur Radio 1  Chris G6KMQ	Licence Conditions 2 Safety 9  Chris G6KMQ	Operating Practise and Procedures 8e 3-4 How to use an hf transceiver Chris G0EYO	Operating Practise and Procedures 8e 1-2 How to use an vhf transceiver Chris G0EYO
<b>Tuesday 21st April</b> dart room 8pm-10pm week 1	Transmitters and Receivers 4  Martin G8VXX	Technical Basics 3  Martin G8VXX	Repeaters and CTCSS  Vaughan M0VRR	
<b>Saturday 25th April</b> shack 9am-10pm week 2	Feeders and Antennas 5  Propagation 6  Chris G0EYO	EMC 7  Peter G4LWF	Operating Practise and Procedures 8f 1- 2 Connecting up the equipment and demonstrating vswr Peter G4LWF	Operating Practise and Procedures 8e 5 Demonstrate CQ call on VHF Chris G0EYO
<b>Tuesday 28th April</b> shack 8pm-10pm week 2	Operating Practise and Procedures: Morse Code 10  Barry M0DGO	Revision  Chris G0EYO	Mock Exam  Chris G0EYO	
<b>Saturday 2nd May</b> shack 10am-11am week 3	Foundation Exam  David G0ICJ			

We also have a copy of a Maths Primer for those who are considering taking the Advanced Licence. We will incorporate this into the course materials and seeing maths for the first time since school days can often be a barrier to many people. This refresher course will help those people who struggle with maths.

We are also going to try and set up more experiments with the clubs test gear so that we can show people some of the technical basics such as resonance of tuned circuits and capacitors charging up and discharging, etc etc. We hope also to be able to show harmonic generation on a spectrum analyser the club has on permanent loan.



## How I became a radio amateur: Tom G3PQP

My fascination with radio started at a very early age. I was about 9 years old when a friend of mine showed me a crystal set that his Dad had made him. I put the headphones on and was amazed that I could hear the Home Service, on the Medium wave, from a few bits and bobs connected together with wire on a piece of wood. From then on I was hooked; I went home and told my Dad about it and asked him to make one for me, he replied "You don't want one of them they're old fashioned, my Dad used to make them when I was a Lad". No matter how much I pleaded with him he refused saying the same thing every time. I realise now that was just an excuse, in fact he just didn't know how to do it, but was too proud to admit it. (Sorry Dad, if you're up there watching).

About 2 years past by when out of the blue my Mother and Father bought me a set of encyclopaedias for Christmas. I wasn't very excited until I got to volume 9 which was all science related subjects. Near the end I came across the Radio related section and lo and behold, there before me, was the circuit for a crystal set. I was elated and went around gathering the bits that I needed. Item one, a coil former (the cardboard centre of a toilet roll) Item two, wire for the coil. Now I was a bit stumped, where would I get that from? then I remembered that about ten minutes away on the main Coventry Road a place had just opened selling army surplus stuff. Off I went with my pocket money clutched in my sweaty hand to scout it out. I started to look around and it was not until I had searched nearly the whole site before I found exactly what I needed, a large, at least 1lb. roll of double cotton covered 24swg copper wire, I bought it for next to nothing and rushed home elated!

Next I had to get a crystal. I had already discovered G2AK Charlie Young's shop in Dale end and made the trip into town to see if he sold them. When I got there and looked in the window right in the middle was a chunk of crystal. The good Lord must have been smiling down on me because all I needed now was a holder for the crystal and a cats whisker (wound from fuse wire). The holder stumped me for a little while until I thought about it a bit, I could not buy one, so I made one from the metal cap of an aspirin bottle with a wood screw, screwed through the side to hold the crystal and a bracket made out of tin with another wood screw at the top to hold the cats whisker. I mounted all these bits on a piece of wood but then I was stumped, no headphones. I just had to go cap in hand to my Mom and ask her if she would buy me a set of headphones (there weren't any at the surplus store on the Coventry Road, but there was a beautiful pair of Ericsson Headphones in Charlie Youngs window. I don't know how,

but I persuaded my Mom to give me the money for them. I had already strung up an aerial from my bedroom window to the small tree at the bottom of the garden (24swg wire from my roll). I ran an earth from the cold water pipe in the airing cupboard on the landing to my bedroom and connected it all up to my now completed crystal set. Disappointment set in as no sound emerged. After what seemed like ages of fiddling around trying to find the right spot on the crystal, it suddenly burst into life, Sandy McPherson on the theatre organ was coming from my headphones. To say I was elated was the understatement of the century, I was beside myself, I rushed down stairs and dragged my Mom up to listen to it.



From that day in 1946 at the age of 11 until now at the age of 74 I have been home brewing radio gear and the bug has never left me. In the same book that I got the circuit for the crystal set from, was a one valve radio circuit. I thought, this is the next project. It did not give any details of what the valve type number was, so I went down to the local radio repair shop and asked if they had a 4 pin detector valve and a holder for it also a grid leak and condenser (.0001 capacitor and a 1 meg resistor connected in parallel with it). The man looked a bit quizzically at me and asked what I wanted it for (remember I was only 11 at the time) I explained about the radio and he disappeared into the back of the shop emerging a little while later with a valve, a holder and my capacitor and resistor all salvaged from one of the old radios in the back. If I remember rightly it cost me the princely sum of half a crown (12.5 pence in to-days money). I couldn't wait to get home and get started. The set was duly constructed but I needed a 120v HT battery and a 2 volt accumulator for the valve heater. I remember borrowing the ones from Mom and Dad's radio in the living room to try it out. It

worked fine first time off, the home service loud and clear in the phones, so loud you could put them down on the table and still hear it. I had to save for months to get my own HT battery but I got it in the end and also a 2 volt accumulator. I spent hours in my bedroom in the evening, listening to my very own radio totally gob smacked that I had made it all on my own with no help from anyone. (Oh the wonder of boyhood).

The next step on my journey came when I was looking in the window of "Hobbies" in town, there was a "Hobbies" magazine with an illustration of a one valve Short Wave radio receiver on the front. I couldn't get into the shop fast enough to buy it. It wasn't long before I had converted my medium wave radio into a short wave receiver. This one was much more sophisticated than my first one, it had a reaction control on it to ramp up the sensitivity and selectivity using positive feedback. It covered top band, I didn't know what top band was at the time. Whilst I was tuning round trying to get something other than the Home Service, which was so strong it was everywhere, I happened upon some rather faint but readable voices, they appeared to be talking to each other and when they put the transmission back to whom ever they were talking to they used letters and numbers to identify themselves; I had stumbled upon the local Hams on top band. To say I was amazed and mystified was an understatement.

I can remember vividly the first one I ever heard, it was G2BFT Billy Bastin (the squire of Catherine-de- Barnes as the locals referred to him). He used to talk to G2ACV (George) every night plus G3FGT (Frank) and some others whose names I don't recall. After listening to these lads night after night I spoke to a friend of mine at school telling him what I had heard, to my utter amazement he said "Oh those are radio amateurs, one lives almost opposite me". I was once again gob smacked, what a stroke of luck, I thought all my birthdays had arrived at once. I asked him if he would ask this man if I could go round and see his station and he said he would. A few days later he said "Iv'e seen him and told him about you and he said you could go round to see him on Sunday morning, be there around eleven, his name is Frank Robothan."

Could a 12 year old boy have any more birthdays? The rest of that week dragged past as I waited eagerly for Sunday to arrive. At eleven I arrived nervously at Frank's front door trembling with excitement. I was so nervous I could hardly summon up the courage to knock the front door of his house. I did, and a rather stern looking lady an-

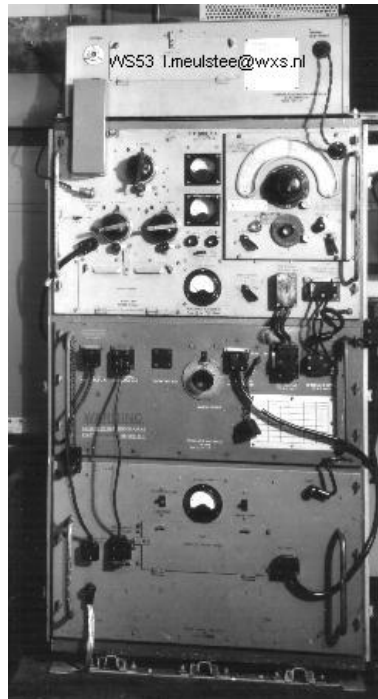
swered and said "Yes!", my mouth was dry but I managed to blurt out that Mr. Robothan had said I could come round and see his Radio Station. She turned round and shouted "Frank, somebody for you". This tall gentleman came to the door and said "Oh you must be Tom, the lad over the road told me about, come in". He led me down the hall past the living room through the kitchen and into the glass conservatory at the back of his house. I had walked into a wonderland, the scene has remained etched into my memory for the past 62 years. In front of me was a polished wooden desk on top of which was an AR88 Rx a D104 mike and a Vibroplex bug morse key plus an absorption wave meter.

On my left was a rack about 5ft high with 3 bays the top one was the Tx below it the Modulator and at the bottom the PSU. To the right of that, mounted on the wall, was the ATU and outside in the garden, the antenna, a Double extended ZEP fed with 500 ohm open wire line. The walls were adorned with QSL cards from all over the world, also framed awards, DXCC, WBE and WAC; this was a classic HAM Shack. Frank switched on the Rx had a look around 20m, there were quite a few stations on so he switched on the Tx tuned it to an unoccupied frequency loaded up the antenna and put out a CQ. A Spanish HAM came back to his call and Frank explained that he had a visitor with him. The Spanish guy gave Frank his report and a run down on his station said hello to me and put it back to Frank. Frank duly replied with his report and a run down of his own station, he then handed the mike to me and said "Say hello to him, give him your name and some details". At this point my memory fails me, I know I said something but what it was I don't know, I was so nervous. The Spaniard came back and said hello to me and a few words of welcome to the hobby. I was elated, I had actually spoken to someone on the air. From then on Frank became my mentor, he gave me an old ARRL handbook and told me to read it and have a look at the circuits etc. For the next six years he helped and guided me, he designed me a receiver and guided me step by step through the building process. The Rx was quite sophisticated, it covered 80, 40, 20 and 10mtrs. all the bands we had at the time apart from top band. It consisted of 2 RF stages a mixer/osc. 3 IF's an AM detector, BFO, noise limiter and 2 audio stages, I can't remember how long it took me to make, but that receiver served me well for years, I was now and well truly on the road to my ultimate goal, becoming a HAM. The years went by and I reached 18 years old, I was called up to do my National Service and was lucky enough to get in to the Royal Signals, due to my interest in radio. I was sent to Catterick where I did my basic training and then on to 1 TR where I trained as a Radio Mechanic. I passed my course with a high average mark and was offered a job as an instructor, however I had set my heart on going abroad and put in for a

## Club Diary

Tuesday	3rd March	Rally Preparation and 2m Club Contest
Saturday	7th March	Rally Set up (pm)
Sunday	8th March	<b>24th Annual Wythall Radio and Computer Rally</b>
Tuesday	10th March	Committee Meeting and 2m Club Contest
Tuesday	17th March	Home Brew Night
Tuesday	24th March	Martin G8VXX on his flying exploits
Tuesday	31st March	Making a Fox Hunt Antenna - Practical Demonstration by Chris G0EYO
Tuesday	7th April	Natter Night
Saturday	11th April )	<b>Evesham</b>
Sunday	12th April )	<b>Vintage</b>
Monday	13th April )	<b>Gathering</b>
Tuesday	14th April	Committee Meeting and 2m Club Contest
Saturday	18th April	Foundation Class 1
Tuesday	21st April	Foundation Class 2
Saturday	25th April	Foundation Class 3
Tuesday	28th April	Foundation Class 4
Saturday	2nd May	Foundation Examination
Tuesday	5th May	Demonstration of Kite Antennas Roger G4ROJ
Saturday	9th May	Coach Trip to Bletchley Park
Tuesday	12th May	Committee Meeting and 2m Club Contest
Tuesday	19th May	Homebrew Night

posting to Germany. I was posted to 1 Corps Royal Signals based at Hereford in northern Germany. As I had done well on my course I was put into the workshops in HQ squad-



ron. I was to replace a radio mech. who was soon to be demobbed. I loved it, working on the love of my life every day, repairing 53 sets (A 1KW Tx with a pair of 813's in the PA), 52 sets (one 813 in the PA), 19 sets, (every radio mech's nightmare) and R107 Rx's. After a while I asked if I could go on a course to be upgraded to an A2 radio mech. After several requests and refusals the TOT\* called me into his office and said, "You're obviously keen, the QSM doesn't think you will pass, I'll send you but don't you dare let me down" I didn't let him down, I passed with an average mark of 94%, top of the class. Again I was asked if I

would like a job as an instructor, this time I jumped at it. Unfortunately there was another lad who had come 2nd to me on the course and his Father was the CO of another Signals Regiment. You can guess who got the job. I was bitterly disappointed and was told by the chief instructor that he would have preferred me but it was out of his hands.

I returned to my Regiment and the TOT had me in his office congratulated me and promoted me to Chief Radio Mechanic and gave me a stripe. I had now reached the dizzy heights of Lance Corporal, considered by most squadies as the lowest form of life. I couldn't have cared less I was chuffed to bits. I continued my service and was duly demobbed. When I got out I started courting and this put the mockers on my radio. When the relationship had run its course and I found myself with time on my hands, thoughts turned back to radio, now was the time to get my Licence. Due to my army qualifications, had I applied within 12 months of leaving the service, I would have not had to sit the RAE exam. But several years had now past and I had to revise and apply. I sat the exam and passed OK, all I needed now was my morse. This I taught myself in 6 weeks and passed my test at the coast station at Mabelthorpe in Lincolnshire. On December 6<sup>th</sup> 1961 I finally got my licence. I met G2BFT, the first Ham I ever heard when I was about 26 and we became lifelong friends, he sadly died a few years ago at the ripe old age of 92, I miss him and Frank Robothan, who was my mentor and lifelong friend, more than words can express. I get a lump in my throat and tears in my eyes every time I think about these two dear friends who helped me so much and affected my life so profoundly. This truly is the HAM spirit

Tom G3PQP

\*Telecommunications Officer Technical

# Contest Group Report

## Wythall WPX Challenge

The weekend of 28<sup>th</sup> / 29<sup>th</sup> March is the CQ WPX SSB contest. This runs for the whole weekend on the main HF bands, with everyone exchanging a report and a serial number. Single Operators can operate for 36 of the 48 hours – so there is some strategy to decide when to 'rest' without missing out on the best band openings.

Last year we ran a little experiment at the club, running "a contest within a contest". Most club members would not be keen to operate for 36 hours. SSB contesting is hard. SSB contesting with low power or too low antennas is hard. SSB contesting at the bottom of the sunspot cycle is hard. So the idea was to see what could be worked in a single hour.

Brief rules: Operate as long as you like in the contest. Add up the highest number of QSOs you make during any 60 minute period. E.g. 10.00 to 11.00, or 22.18 to 23.18. Stations running more than 100 watts, and/or to a beam would divide their best hour by 5. Any stations running 10 watts or less operating could multiply their score by 3.

We only had a few entrants last year, but it did persuade at least one club member to take part who otherwise might not have done. As an alternative, perhaps some people would like to take it in turns to operate for an hour from the club shack, using their own call signs. This would level out any differences in radios or antennas – making it a real test of operator skill !

## VHF NFD 2009 – what should the club do ?

It's at this time of year I normally canvass the club membership to find out what sort of station we would like to put on for this summer's VHF NFD. Over the years we've moved from having 4 or 5 low powered stations, that required a large number of operators to keep manned, to a smaller number of stations in the higher power categories. As we've moved up into these higher power categories, we've certainly made more contacts, but we are not competitive with the other stations in these categories. I feel sure that from our site, we will only see the top placings if we return to the low power sections. Many people still prefer to have a 'radio activity weekend' and social rather than an out-and-out contest.

With that in mind, would people like to play on HF instead, putting up some competitive HF antennas ?

Last year after a request from Chris G0EYO the contest operators put in a good effort, although we still did shut down overnight. The rain had some obvious impact dampening enthusiasm in the small hours, although I think everyone enjoyed the weekend overall.

So with lots of time available before the summertime, what suggestions does everyone have? Please send suggestions direct to me, submit via the club email reflector, or bring up for discussion at the next club meeting night.

## Christmas Contest

Final placings of the Christmas Contest 2008/2009 are shown on the right. Congratulations to Jim 2E0BLP for another first place finish. Well done to Chris G0EYO for second and for giving Jim a run for his money. Also congratulations to Peter M5DUO for climbing into the top three for the first time. The leading Foundation entrant this year was Lynne M6FAB.

If anyone has suggestions for changes to the rules for the 2009 / 2010 running please let me know.

# Club Net 145.225 MHz Wednesdays and Sundays

The club has started a regular net on Wednesdays and Sundays for club members. Both nets can be found on 145.225 FM and the Wednesday net starts at 7pm and the Sunday net starts at 8pm. All are welcome to come in and say hello and talk about anything that takes your fancy.

Place	Callsign	Score	Mults	Total Score
1	2E0BLP	53	27	1431
2	G0EYO	51	25	1275
3	M5DUO	48	24	1152
4	G0ICJ	41	22	902
5	G0NES	36	24	864
6	M0AEJ	33	16	528
7	G0MLY	31	13	403
8	M0VRR	30	12	360
9	G4VPD	23	12	276
10	M0COP	13	9	117
11	M6FAB	9	9	81
12	G0MTN	9	9	81
13	M3SVR	11	7	77
14	EI2GYB	6	4	24

## Christmas Contest Scores

Date (2009)	Time GMT	Contest Name	Sections	Notes/Special Rules
Every 1st Tuesday	2000-2230 (Local)	<a href="#">144MHz UK Activity Contest and Club Championship</a>	AO AR	QTH Locators (M2), Activity contest (S8), Club Championship (S9)
Every 2nd Tuesday	2000-2230 (Local)	<a href="#">432MHz UKAC</a>	AO AR	QTH Locators (M2), Activity contest (S8), Club Championship (S9)
Every 3rd Tuesday	2000-2230 (Local)	<a href="#">UHF UKAC</a>	AO AR	QTH Locators (M2), Activity contest (S8), Club Championship (S9)
Every 4th Tuesday	2000-2230 (Local)	<a href="#">50MHz UKAC</a>		
7-8 Mar.	1400-1400	<a href="#">March 144/432MHz</a>	SF SO O 6S 6O	
15 Mar.	1000-1200	<a href="#">70MHz Cumulatives #5</a>	O SF	Cumulative contest (S5)
5 Apr.	0900-1200	<a href="#">First 70MHz Contest</a>	O SF	
12 Apr.	0900-1200	<a href="#">First 50MHz Contest</a>	O SF	Post Codes, Countries and Locators (M3)

Date	Time (UTC)	Contest Name	Dates - Mode - Frequency - Exchange
March	2000-2130.	<a href="#">80m Club Championships</a>	2nd - Data; 11th - CW; 19th - SSB.
Mar 14/15	1000-1000.	<a href="#">Commonwealth Contest</a>	3.5-28MHz, RST+Serial.
April	1900-2030.	<a href="#">80m Club Championships</a>	6th - CW; 15th - SSB; 23rd - Data.
Apr 5	0700-0900.	<a href="#">RoPoCo I</a>	3520-3570kHz, RST+Postcode Received.

### March:

7-8 Sat 0000-Sun 2400  
21-22 Sat 1200-Sun 1200  
21-23 Sat 0200-Mon 0200  
28-29 Sat 0000-Sun 2400

### April:

5-6 Sat 1500-Sun 1500  
5-6 Sat 1600-Sun 1600  
26-27 Sat 1200-Sun 1200

ARRL DX - SSB  
Russian DX (SSB/CW)  
BARTG Spring RTTY  
CQ WW WPX SSB

SP DX  
EA RTTY  
SP RTTY

### Rules & Info:

HF: <http://www.rsgbhfcc.org>  
<http://www.sk3be.se/contest>

VHF: <http://www.vhfcc.org>

The next issue of the Wythall Radio Club Newsletter will be published at the beginning of May 2009

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