newsletter

wythall radio club

"having fun with rf"

wythall contest group

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www.wythallradioclub.co.uk

Jan-Feb 2015

Wythall Radio Club meets from 8pm every Tuesday and Friday 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

Everyone loves a Xmas Party

I hope you all had a good Xmas and are ready to face whatever 2015 has to bring you. The club held its Xmas Party on December 13th in the Britannia Room at Wythall Park and about 60 members and their families braved the cold night to have a great time. We followed the well established pattern of an American Style supper, where each person brings some food and shares it with others. We had quite a variety of curries, tagines and hot pork rolls to accompany the more usual fare of sandwiches, crisps, pork pies, quiches and pizzas. Stewie's sister, Amanda makes cakes for a living, and she brought a fantastic selection of cup cakes which didn't stay around too long.

Stewie M0NYP undertook organise the evening and arranged a sound system and we did the usual games of skittles, stand-up bingo and "pound nearest the bottle". The club raised about £125 in raffle and bingo sales and new member John G3VRF was the stand-up bingo winner of a cash prize of £25. Jan

M3YXM had the best ladies score on the skittles and Terry G7NWA's son Matthew. won the man's. Anita's grandson Elliot won the best childrens score prize.

Anita, as always was very active in setting out the food buffet, selling the raffle tickets and making sure everything ran smoothly.

Members had generously donated a large collection of raffle prizes and each table seemed to win one or two prizes. Thanks to everyone for their generosity. The "coin nearest the whiskey bottle" prize was won by Steve 2E0SDD. The evening seemed to go very quickly and before we knew it, it was 11pm and going home time.

Thanks to Stew for the excellent pictures; there are more on the club's website

Chris G0EYO

Amanda's cakes :
www.amandassugarboutique.co.uk

A Personal Portable Repeater for D-STAR

An avenue of exploration

It has been, and continues to be, a personally gratifying journey for me, getting involved with D-STAR.

The protocol allows for much in the way of experimentation and it links into computer technology in a way I find both interesting and fairly easily comprehensible (once a few challenges have been overcome!)

The success of the talk I gave at the club last October, with around 40 members attending, was very pleasing, but to see almost 20 members give up their Saturday for a hands-on practical workshop was indicative of the fact that D-STAR, while it may have the occasional detractor or two(!), has its own attraction and makes for a unique Amateur mode, with which many Wythallians are having lots of fun. Some have even had D-STAR radios for Christmas! J

The DVAP Dongle

Recently I had been thinking around the possibilities of making more use of the DVAP Dongle.

This little device (also known as the "Red" Dongle, though some people use other versions known as a DVMega) is a great boon to the D-STAR enthusiast.

It allows low power access to the Internet using any available D-STAR radio. The DVAP in effect, acts as a very low power (10mW) personal simplex repeater (known also as a Gateway)

Since these are available in either 2m or 70cms flavours (and I have a 2m one at home already as my personal access point) I thought I would take advantage of the superb offers at the Martin Lynch open day that 10 of us attended at the end of November, to grab a 70cms version purely for "experimental purposes"!

But what to do?

As is often the case however, I had bought it partly on a whim, knowing there were lots of things I *could* do with it but with no particular preconceived idea about what I really *wanted* to do with it.

However, one thing that has intrigued me over the past few months, was the possibility of setting up a completely self-contained Simplex D-STAR Repeater that could be used portable.

Inspiration from Dayton

Back in May, I had been listening to the Dayton Ohio D-STAR Reflector while the Dayton Hamfest was taking place. I noticed that some US Hams were saying how they had driven the hundreds of miles to Dayton and had never lost D-STAR coverage, even though there were no D-STAR repeaters along the route!

How was this possible?

It turned out that they were using DVAPs in their cars and using their mobile phones' data capability as the Internet part of the system.

I have been on a long learning curve personally with D-STAR, so this was something I immediately put on my mental "to do" list for some day in the future, but with the knowledge that I have gained over this year, I realised that this was now not *that* difficult to implement, at least in theory.

What was more, I already had most of the bits to try it out!

Sourcing the ingredients

While a DVAP will plug in to any computer with a USB socket, most hams like to use the Raspberry Pi Computer.

This is because it is small, compact and efficient, a perfect match for the DVAP and it can be totally dedicated to just the one task - just what the doctor ordered for this project!

I use a free image OS customised for D-STAR provided by Brian GW6WTK from http://www.westerndstar.co.uk and then adapt the settings to suit. I needed a new version though, as for this project, I would be using the new improved Raspberry Pi model B+.

The Raspberry Pi doesn't have wireless capability as purchased, so I popped over to Amazon and picked up an "Edimax" Nano Wi-Fi USB dongle for about £7 which was already known to be supported on the Pi "out of the box".

For tidiness, I also sent off for some extra short USB connecting leads, one to connect the Pi to the DVAP and the other to power the Pi, again just a few pounds.

Finally, I picked up a top quality Anker 13Ah 5v USB battery on special offer from Amazon for £19.99 reduced from around £70 – don't we all love a special offer?

Getting it all together

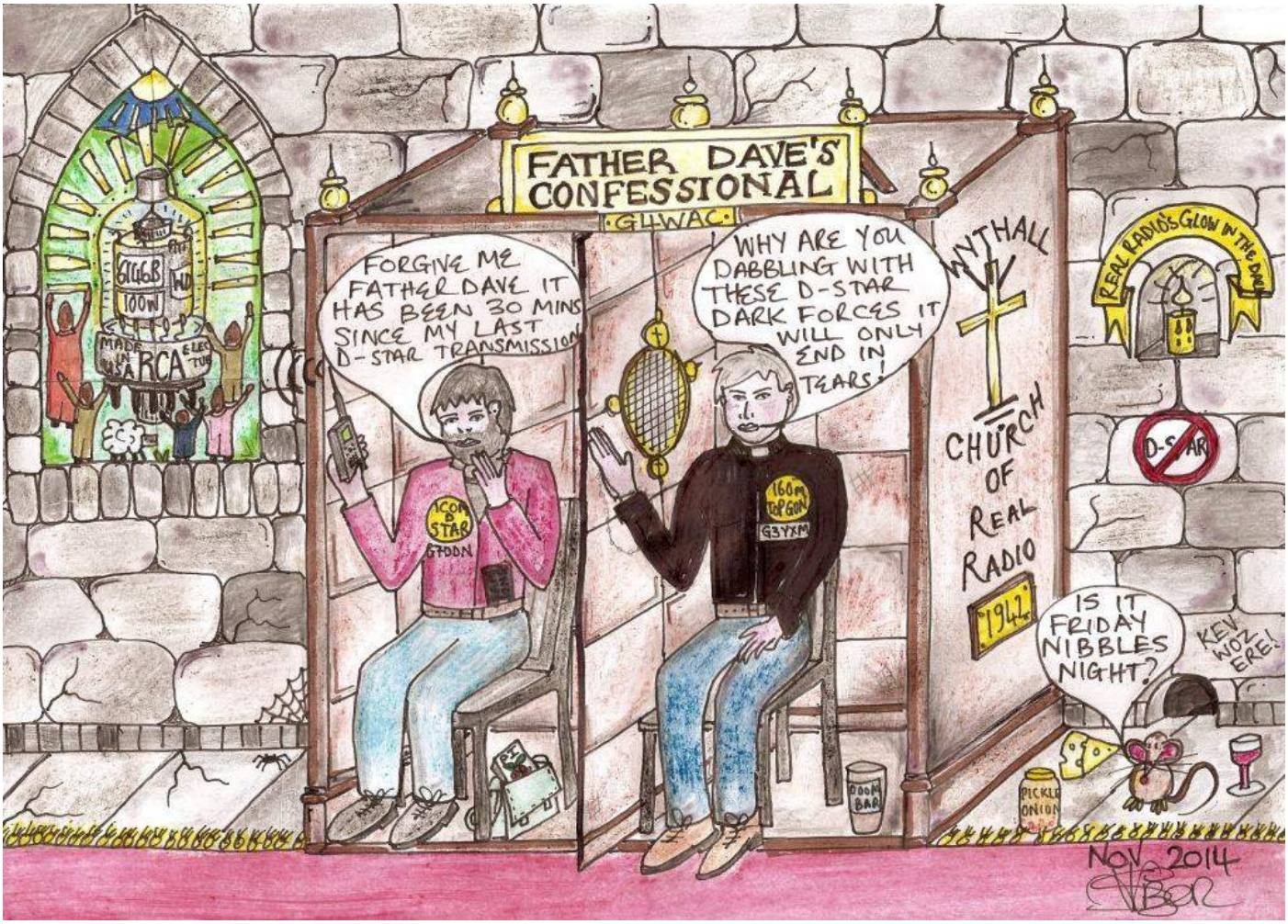
Once all the parts arrived, it was just a case of connecting everything together, entering the correct software settings and enabling the Mobile Phone tethering. I did hit one snag where it seems you need to have the Phone in Wi-Fi Hotspot mode *before* booting up the Pi, but with that solved, everything was up and running great.

Testing, testing...

The first test was while driving from Solihull to home. I called through the Midlands DCS005M reflector and worked G0TPZ with hardly any dropout at all.

Speech quality was pretty much as standard, but you might expect that as D-STAR is a narrow, low bandwidth mode anyway. A little dropout occurs once in a

(continued on page 3>>>>)



A Personal Portable Repeater for D-STAR... Cont'd

while but it really is not that bad - it is probably related more to the level of signal received in the car from the cell-phone tower or maybe even the swapping from cell to cell.

Other amateurs have tested the demands on your data plan - I understand it to be around 40MB over about 5/6 hours of almost constant use. That's plenty to play with, even if you have a relatively stingy data allowance on your mobile phone plan.

So... a G7DDN Portable Repeater is born!

All in all, the homemade D-STAR Mobile Repeater is a fantastic addition to the armoury. I can now be mobile *anywhere in the world where there is mobile phone coverage* and work the world (or indeed, just back to Wythall!)

There is also something ironic and just a little quirky about using the commercial cellphone data network to "piggy back" my QRP Ham signals!

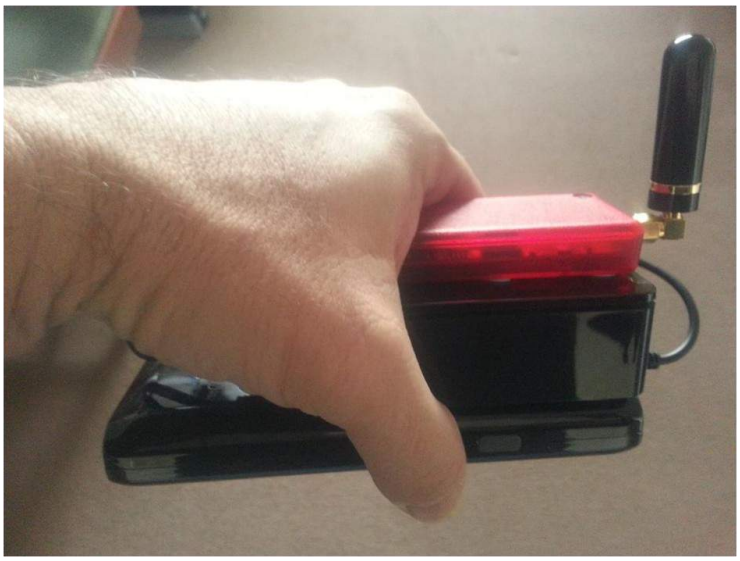
Wherever next?

Something like this would be have unthinkable a few years ago and is, for me, just another example of the flexibility and adaptability of D-STAR.

In my October talk, I referred to D-STAR being a good example of an "emerging technology" and this project is a good instance of how the protocol adapts to developments.

Indeed, perhaps the greatest advantage of digital radio is exactly this; that there is so much that you can play with, when signals are in the same binary language spoken by computers themselves!

Chris G7DDN



Trying to Build a Successful HF Contest Station Episode 5

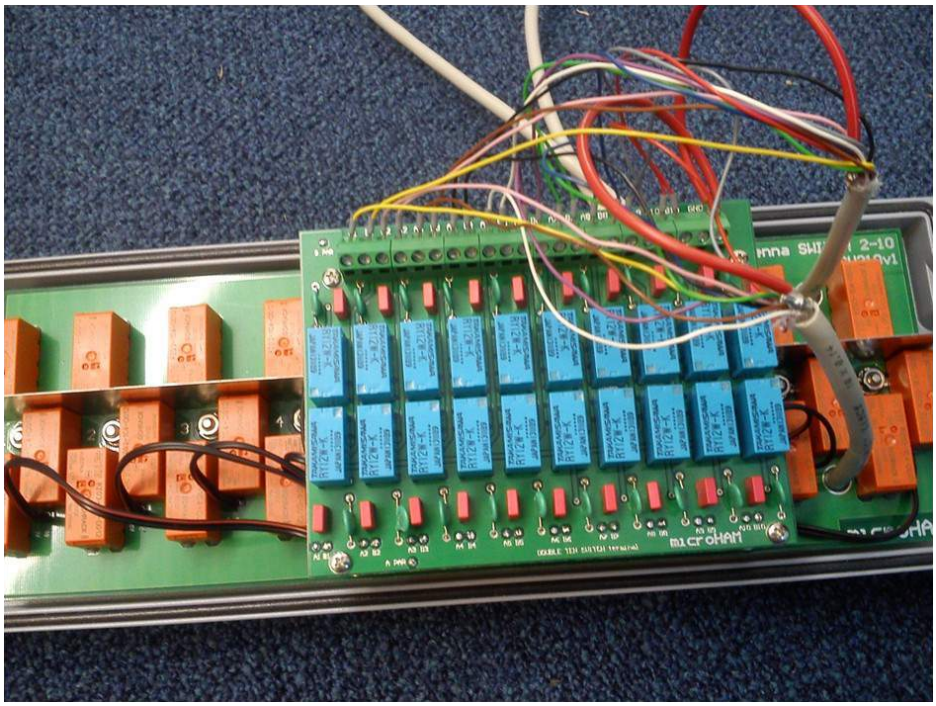
This newsletter's update is split into two parts. Firstly, the progress (a relative term!) of the planning permission application, and secondly, the latest work done inside assembling parts of the station.

Planning Permission

You may remember that I submitted my planning application at the end of September, with the expectation of a decision by the end of the year following the expected turnaround time for applications. However, there was a backlog of applications following a re-organisation at the council. In late November I heard that I had been assigned a case officer, and in early December I had a site visit from a planning officer.

To assist with this I again put up a temporary fibreglass mast at 35 feet, which would be maximum height of the retracted mast and antennas. Despite being at pains to explain the need for a particular antenna height and size in layperson's terms in the planning document, I was asked several questions about the details of my application. I was also asked if I would consider appealing if the application was unsuccessful, which was interesting. The planning officer indicated that there was a lack of experience within the department for dealing with these types of application, which is understandable.

Although it was conceded that the tower would be well screened from neighbours, the planning officer explained that for a Green Belt application this might not necessarily be sufficient to guarantee success. I would need to demonstrate that the 'special conditions' necessary for approval in Green Belt were met. I was asked if I could source other examples of successful planning applications in Green Belt land to help the council ensure their response was correct and proportionate. A quick email to the HF Contesting and CDXC Reflectors produced a number of valuable replies, including other planning application documents from stations in the more restrictive Areas of Outstanding Natural Beauty and Conservation Areas, presentations made to planning committees, a number of successful appeal documents, some interesting statistics about appeal success rates, and contacts with the RSGB Planning Advisory Committee. I sent on some appropriate information back to the council, along with a slideshow I created showing many other amateur radio stations of similar, and in some cases much larger scale, from all over the UK, to put my application into context.



Picture of Antenna switch – lots of relays of course. Careful wiring of the control cable is needed.

Over Christmas I have had a further phone call and email from the planning officer. I now need to supply additional measurement details of both the tower and antennas. I had already contacted the tower and antenna vendors and given various height / width / weight / materials information in the application document. This now needs to be done in more detail e.g. I had listed the width of the widest telescopic tower section and explained that they taper in width with each section, but now the details of each section need to be specifically listed. Similarly the length of each antenna element is now needed. I can ask the vendors to supply the extra information of course, but it is slightly frustrating that this level of detail is not consistent with my own previous successful Green Belt application with the same council, nor that of other applications I researched whilst preparing my own….

During the site visit I discussed with the planning officer how the application would be communicated to neighbours. As the information given would be relatively brief, giving the impression that a

Picture of the front of the switch. Two coax connections for the two radios, two control lines for the two radios, and then coax connections for the antennas.

Trying to Build a Successful HF Contest Station Episode 5 cont'd

Picture of RF sensor

Picture of power / SWR meter. The Station Master unit above it controls the antenna switch.

huge pylon would be erected, without much detail of the retractable nature of the antennas, positioning was made to limit visibility, that I can't listen to their telephone calls, and the risks and solutions of RFI etc. it is here that neighbours can understandably become (overly) concerned. I asked that I be told which neighbours would be written to so I could ensure that I had spoken to them or provided them with more information beforehand. I had already spoken with the two nearest neighbours whose houses or fields surround mine. I now have another **thirteen** or so properties to go door knocking on. We'd already introduced ourselves to the nearest half dozen last year, but for the rest it will be a cold call. The neighbours are of course entitled to object about the application, and from research I should be expecting a large number anyway, but it should help the planning staff if any hysteria caused by not knowing enough facts can be avoided.

Getting the information from the tower and antenna vendors will take a week or so given their holiday shutdowns, and preparing some info and going to see the rest of the neighbours will also take a little time. After that the application will become public, the neighbours, parish council etc. contacted for comments, and then potentially a decision might be made.

Shack Build

Inside the shack, I have finally connected up the remaining units looking after station control. I spent a couple of days slowly making up RF patch cables and putting PL259's on them. For the long feeder runs going outside I'll use W103 which has low loss at HF and some of the newer style compression fit PL259's. Inside the shack the cable loss isn't quite so important – instead the bend radius of short cables becomes a bigger factor. I have learned that standing in the garage on a cold winter's day results in a very low production rate of new cables.

I have also connected up the antenna switch box. The idea is that a coax cable comes from both radios, and then can be remotely switched to connect to the available antennas. The antenna switch is weatherproof, so could be mounted outside by the tower, thus reducing the amount of long coax runs needed back to the shack. A control line is needed as well as the RF carrying cable. Instead I've decided to keep the switch box in a box room next to the shack. Antenna coax will be fed in from the outside to the switch box, and just two coax feeds and control lines will then go through the wall into the shack itself. The transmit band pass filters have now also been connected, which also take a band-data input so they can be automatically switched to the correct band.

Next steps inside the shack will be to configure logging software to work with the hardware, so I can switch receive and transmit audio / CW / RTTY etc. between the radios as needed. And then I really hope I'll be in a position to focus on putting up some antennas as we move into spring and summer.

With the RF patch leads made up, I could also connect the new power / SWR meter. This has a nice design in that it has individual sensors to measure the power, which is fed to the separate display unit. No more problems trying to keep an SWR meter from flying off the desk because of the weight of the coax.

Lee G0MTN

Xmas Fox Hunt

Five teams joined the annual Xmas Fox hunt on the day after Boxing Day. Starting from the Barley Mow in Studley were;

Steve 2E0SDD and Stacey M6STJ
Callum M0MCX and Wendy
Kevin 2E0NCO, Marian and Stuart M0NYP
Phil 2E0WTH and John M0JMM
Colin G6ZDQ, Peter M5DUO and myself

The first fox were Steve and Stacey who won the trophy last year. After listening about man flu from Steve (hope you feel better soon) and how to tow using her vehicle from Stacey, they were found by

Callum and Wendy who had been in the right area but had driven past them after the first over.

Callum and Wendy went off and were our second fox We listened to the story of Esmerelda and the brick wall, then all of a sudden he went to 5min overs which meant most of the teams hadn't had time to reposition themselves. They were eventually found by Steve and Stacey.

John and Philip were the third fox. Colin, Pete and myself found them nestled down a country lane while they were mid flow on their 4th over. Nearly 50 miles were covered by our team today and a good time was had by all

We retired to the carvery and bar where we presented Colin with the trophy.

Anita 2E0DUO

GB3WL now operational
from 8th December 2014
GB3WL is a wide-split 70cms repeater
Input Frequency: 438.550 MHz
Output Frequency: 430.950 MHz
(+7.6MHz split)
CTCSS Tone: 67Hz (Midlands region Tone A)
Location:
Silver Street, Wythall B47 6LZ

Operated & underwritten by the members of Wythall Radio Club, GB3WL is housed at the Club's Headquarters in the cellar shack at Wythall House in Silver Street, Wythall.

ENJOY

Peter Jones G4EQV SK

We have only just heard that honorary member Peter Jones G4EQV died last August. Peter was a lovely man and a long time and very active member of the club up until about 10 years ago when blackouts and other health problems restricted his movements. The last time we saw Peter was about 3 years ago when he came to Frank G3MZU's funeral. Peter has suffered from dementia for past few years but he apparently died peacefully in his sleep. Peter was part of the holy trio of Frank, Peter and Alan Sammons G0HBC. He had us in fits with his stories of working for Lucas on pace maker development and was such a hoarder of junk, and parts, that they could have made a tv programme about it. He had to dispose of it all when he moved to their apartment in Kings Heath. There were sheds of the stuff. RIP old friend.

Chris G0EYO

Ofcom Statement on Amateur Licence Review

Ofcom conducted a review of the Amateur Licence terms and conditions which we referred to in the last newsletter. They received some 2000 consultations, the following summarises their decisions with regard to changes to the licence;

1. Provide Full Licence holders access to additional frequencies in the 470 kHz and 5 MHz bands respectively. Hitherto, these bands have been available to licensees only by way of an individual Licence variation. We have decided to incorporate the terms and conditions of those variations into the Licence, amended in line with comments received from consultees, notably concerning radiation hazards.

2. Provide a mechanism by which an Amateur Radio club's call sign can remain with the club, by expanding the grounds for revocation to include cases where a licensee ceases to represent that club, so allowing us to reassign the call sign to a new licensee.

3. Update the provisions on revocation byintroducing a further ground of revocation where the licensee has been convicted of an offence under the Wireless Telegraphy Act 2006 ("the WT Act") and amending the provision enabling a Licence to be revoked if the licensee fails to revalidate the Licence every five years by removing the reference to this process happening "automatically".
4. Ensure consistency with other Ofcom licences in the way that the Licence makes reference to fees

5. Clarify certain provisions relating to the transmission of call signs, namely requiring the station to be identifiable at all times and requiring that a call sign to be transmitted as often as is practicable, rather than at fixed intervals. We also intend to include a requirement that a call sign be transmitted in voice or other appropriate format consistent with the modulation in use

6. Clarify the rules around the use of the Licence in multiple locations; and update certain provisions to better facilitate RAYNET3 operation.

7. update the tables of frequencies in Schedule 1, to reflect changes in the status of allocations, resulting from World Radio Conference 2012.

In the Consultation Ofcom also proposed to make changes to clarify the use of Regional Secondary Locators ("RSLs") and suffixes for Foundation, Full, Full (Club) and Full (Reciprocal) Licences, and to clarify the use of RSLs in the call signs of Intermediate Licences. Following responses from consultees however, Ofcom will not be making any of the changes it was proposing in this regard.

Ofcom also intend to update their published Guidance in due course. This will address a number of areas identified by stakeholders where guidance would be helpful but where they do not believe that amendments to the Licence are needed (for example,in relation to Unattended and Remote Control Operations; and in assisting overseas officials recognise the UK Amateur Radio Licence as an official document).

(from Ofcom Statement *Updating the Amateur Radio Licence - Maintaining Licence terms and conditions)*

Not to be taken too seriously!

A famously successful Contester had the misfortune to suffer a fatal stroke while aggressively defending his run frequency against a would-be interloper.

Having crossed the great Divide, he opened his eyes to see a man wearing a white coat who was carrying a clip-board.

"Welcome" said the man. "Right on time! Your operating position is prepared and I'm sure you won't want to waste a moment. Please follow me."

The Contester followed him through several corridors until the man opened a door and ushered him in. "This is your shack", he said. "Instructions for using all the equipment are on the desk. If there's anything you want just press the red button by the door."

The Contester could not believe his eyes. All the latest equipment was there. The finest rigs, one for each band, each with its own amplifier – no tuning required. A full suite of computers running every conceivable kind of soft-ware. Wonderful antennas, all selected automatically for best results depending upon his choice of band and the prevailing conditions. And in an ante-room, a comfortable bed and a serving hatch to a kitchen which provided food and drink all day every day. He could not think of anything extra that he wanted.

He sat down at the rig. The bands were wide open and full of DX. Every station he called came back first call ... a CQ produced any number of quality replies ... he was truly in Heaven.

But after a while he felt a bit down. Things were too easy! He tried to set himself new challenges, by deliberately using the wrong an-tennas, switching off the amplifiers and so on, but he found that he couldn't. No matter what he tried to do, the station automatically set itself up to the best configuration. Most annoyingly, even when he purposely sent his callsign incorrectly, the other stations always seemed to receive it correctly.

Finally, he pressed the red button by the door.

The man in the white coat soon appeared and listened sympatheti-cally to his complaints.

"I'm very sorry that you're not satisfied", he said, "we've done the very best we can for you."

The Contester pondered spending eternity as things were at pre-sent before plucking up courage: "I appreciate everything you've done, but I think I might prefer to be in the Other Place." he said.

"I'm sorry!" said the man in the white coat. "Where exactly is it that you think you are?"

(from Contesting Forum by Steve Knowles G3UFY)

Training News

Eight candidates took the Advanced Licence Examination on the 8th of De-cember but only two passed, Dawn now M0LIJ and Kevin M0HTM. Dawn's pass shows that no previous electronics ex-perience apart from that learnt at Foun-dation and Intermediate levels can result in a pass at Advanced level provided the candidate puts in the necessary com-mittment. Kevin's background meant he was a certainty to get through but it is disappointing that so many other candi-dates did not. The trainers put in a lot of hours preparing and teaching this class over 15 weeks and this is the worst re-sult we have had in seven years of do-ing the Advanced courses. I have asked the candidates to get reports from RSGB to see how close they were to a pass before deciding what we need to do about re-sits and further training.

The on-line Foundation Course planned for the end of January has, to date, some 13 people interested in taking it and I expect we will get a few more en-quiries before the shut off date. The classroom Foundation course only has 4 people expressing an interest in doing it and if the number falls below that figure then we might consider asking them to take up the on-line course instead.

The recent Ofcom licence change pro-posals will not affect the current Founda-tion, Intermediate and Advanced licence Examinations although existing licen-sees will see the changes take effect from March/April 2015. New licensees will see the changes incorporated into their licences with effect from January 2015. It is intended that the Exam Ref-erence booklet will be updated but no-tice will be given and once the new ref-erence booklet is issued with the exam paper the examination answers must be to the new conditions. The RCF have promised that questions which would have been correct under the old licence conditions will not be used as a distractor (ie available wrong answer) for a period of two years from the date of the change. The syllabus and the licence text books are undergoing review and will eventually be changed to reflect later licence condi-tions and technical changes (ie analogue tv emc information will be out)

Chris G0EYO

PS if you know of anyone interested in doing the Foundation Course, either on-line or in the classroom get them to contact Chris G0EYO on g0eyo@blueyonder.co.uk

The next issue of the Wythall Radio Club Newsletter will be published at the beginning of Mar 2015

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