

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

Summer time and the living is easy!

It is the club's AGM on the 10th of October and I understand the chairman, secretary and several of the committee are standing down this year. The continued existence of the club requires that these posts be filled by willing and competent people and whilst we have always been able to rely on those leaving committee and officer positions to find and encourage others to take their

place it is essential that all members do their bit to ensure the club survives with good leadership and not be left to operate with positions unfilled. So come on folks, volunteer and do your bit.

There has been a lot of activity in the club in the past couple of months. We have had an IOTA contest and BBQ in the park (see Lee's article), a stand and special event station at Wythall Community Associations 50th Anniversary Carnival and a Plug and Play weekend at the beginning of September. A major refurbishment of the club's antenna system has been undertaken with club members under the leadership of professional riggers Vinny and Craig to re-rig the antennas and to strengthen the stub mast to make it capable of supporting the five antennas.

On the 27th of September, John G3VRF has arranged another 3/15 evening. This is where 3 club members, each give a 15 minutes mini-talk on a topic of their choosing. The last one in April was very

interesting with topics such as SDR radios, how to radiate maximum RF and easy to use terrain mapping. The topics of the 3/15 talks are not pre-advertised so you have to turn up to learn what they are which makes it even more interesting.

The RSGB are holding their annual convention between the 7th and 9th of October in Milton Keynes and a number of our members usually attend. Roger will be representing the training team who will be discussing the proposed syllabus review as well as acting as an invigilator at the Foundation, Intermediate and Advanced examinations held over the same weekend.

This issue of the Newsletter also has articles from Tim MOURX about upgrading his QSL bureau software; from Jamie 2E0SDV on recent IOTA operation from the Orkneys; about David 2E0AAI and his small garden antenna problems and an update on what the Training team have been up to.

Chris G0EYO



New OQRS software at www.M0URX.com

Another month has passed and once again it has been busy here. After two years of discussion, asking, begging, inquiring, negotiating and then development I finally have a new OQRS (Online QSL Request System) live on my website. <http://www.m0urx.com/>

The problem with my old system was that it had far too much manual work for me to process each QSL request, every request had to be manually inputted into my logging software, which when you are managing a major DXpedition it meant hours and hours of data input from the OQRS to the logs.

I cannot use Club Log for the QSL manager work because this would involve having dozens of accounts and becomes very complicated when other people have access to the account uploading logs and interfering with the data that I needed.

I have discussed so many options with the Club Log team but what I was asking for was an application to automate all my QSL work from one account, and for it to upload to LoTW, and to do log searches, QSL requests for both direct and bureau, to take addresses, PayPal payments, donations for the DXpeditions, process QSL cards free for people that donate using the PayPal service of the DXpedition team and so much more data that I needed to be able to be recorded on the OQRS It was quite clear from the beginning that it was not going to be easy, as every addition meant something else would not work so it meant a complete rethink.

I had also looked around to find a professional coding, programmer that could do it from scratch, well certainly not in this country, I just could not afford the high cost involved, I could not expect it be done for free and in reality the going rate is anything from £50 - £100 an hour or more.

Two years ago I was asked by the Perseverance DX Group to be their "Mailing Consultant" I would advise them on the best way to mail all the QSLs from TX3X Chesterfield Island DXpedition and to put in a quote for all the materials to get the QSL work completed. They had decided that, as I had found, Club Log was not able to provide certain features that

major DXpeditions need. So they were going to develop their own OQRS and asked me if I would help by providing them with advice as to what would be needed on the OQRS and how it would work? Well, to be honest I couldn't believe my luck as this was something that I had been looking into for some time. I asked if I could have any access to such software in any future development and we continued for the next year or so to work on this idea. The priority though was to use it for TX3X and then go on from there.

The PDXG outsourced the development of the coding / programming to consultants in India, and this was vital for the success of the project. At US\$ 15 an hour it was the next best thing to being free as far as I was concerned. The TX3X OQRS / log search was tested for several months before it went live on the expedition website and worked very well. Yes there were bugs to fix but the programmers worked to fix it. As always in

Last QSO in the database 22 Aug 2016 09:33:00 UTC

Enter a callsign:

Log Search result for WA3I

MODE/BAND	160 m	80 m	40 m	30 m	20 m	17 m	15 m	12 m
CW	Red	Green	Green	Red	Red	Red	Red	Red
SSB				Grey		Red	Red	

Total of 2 QSOs with WA3I

projects like this as time goes on you realise that when X feature is added that means you need features Y and Z in there too to make it all work as you need it.

The problem was that this was an OQRS for ONE DXpedition, we then had to make it work as a multi logbook platform and provide seamless operation for all the DXpeditions that I was QSL manager for. PDXG were happy to draw up a contract with myself and also for Charles M0OXO, who I work with on the QSL management. That again took quite some discussion about how and what was in the contract and how it was to be paid. We decided that it would be a 3 way split on the cost of the initial development and then all features after that would be paid for by myself.

So at last the new OQRS is live, thanks to our very own guys at <http://www.barclayjames.co.uk/> for the hosting, and server updates, Fellow club

member

Edit QSO Records

Select DX Station:

id	Callsign	Mode	Band	Date	Time	RST RCVD	RST SENT	Operator	QSL In	QSL Out	QSL Sent	LoTW Sent	Action
63399	N8SYC	SSB	20	2016-08-22	23:17	57	55				N		delete Edit
63398	HA5NP	SSB	20	2016-08-22	23:16	59	59				N		delete Edit
63397	N8EPG	SSB	20	2016-08-22	23:16	59	59				N		delete Edit

New OQRS software cont'd

James M0YOM has been superb at providing the IT support I need here. James gives me the confidence that we have a very reliable and highly professional team looking after the software on the server.

I am pleased to report the QSL requests are coming in well and a huge amount of manual time has been saved to post out the QSL cards. Although we still have some programming work to do, I have a feeling this will be an ongoing project for a long time to come.

Tim M0URX



Morse more popular than ever!

The amateur licence removed the need to be able to send and receive morse at 12wpm if you wanted to operate on the HF bands in 2001. Learning and passing the morse test was a big obstacle for many amateurs and they had to satisfy themselves with operating on VHF or higher bands. As a consequence morse is the amateur radio version of Marmite, love it or hate it.

As part of the Foundation examination we require students to do a number of practical assessments such as operating a radio on VHF and HF, making QSO, connecting up equipment and looking at the relationship between the dimensions of a half wave dipole, frequency and the resulting SWR. We are also required to

witness the candidate sending and receiving morse. As with all practical assessments we make it possible for candidates to do these exercises with scripts, demonstrations, and above all we want to make the whole exercise fun. The morse assessment does not require the candidate to learn morse. For receiving they are required to write down what they hear, dah's and dih's (dashes and dots) and convert them to letters afterwards using a prompt sheet. When it becomes their turn to send a short 20 character message they prepare it first in dih's and dah's using the prompt sheet and send that on the morse key for the assessor to transcribe. No one fails this exercise.

Some amateurs think this exercise is a waste of time and are trying to remove it from the syllabus. Fortunately I think they are in a minority as I believe that this introduction to morse has helped its revival over the past few years. It seems to be the case that since removing it as a requirement to operate on HF, more people are wanting to use it. We have an example in our own club, John M6K0I, is only interested in CW contacts and runs the weekly morse class at Wythall Radio Club. A number of our Foundation / Intermediate and Advanced candidates have been through this class and now regularly use CW when on air.

Chris G0EYO

Trying Meteor Scatter in the Perseids Meteor Shower

Whilst having no all band HF capability at home at the moment, my thoughts turned to whether a very small 144 MHz station could make contacts via Meteor Scatter. I'd started off reading Gavin M1BFX's blog entry here: <http://www.geekshed.co.uk/getting-started-in-meteor-scatter-ms/> which said it could be possible.

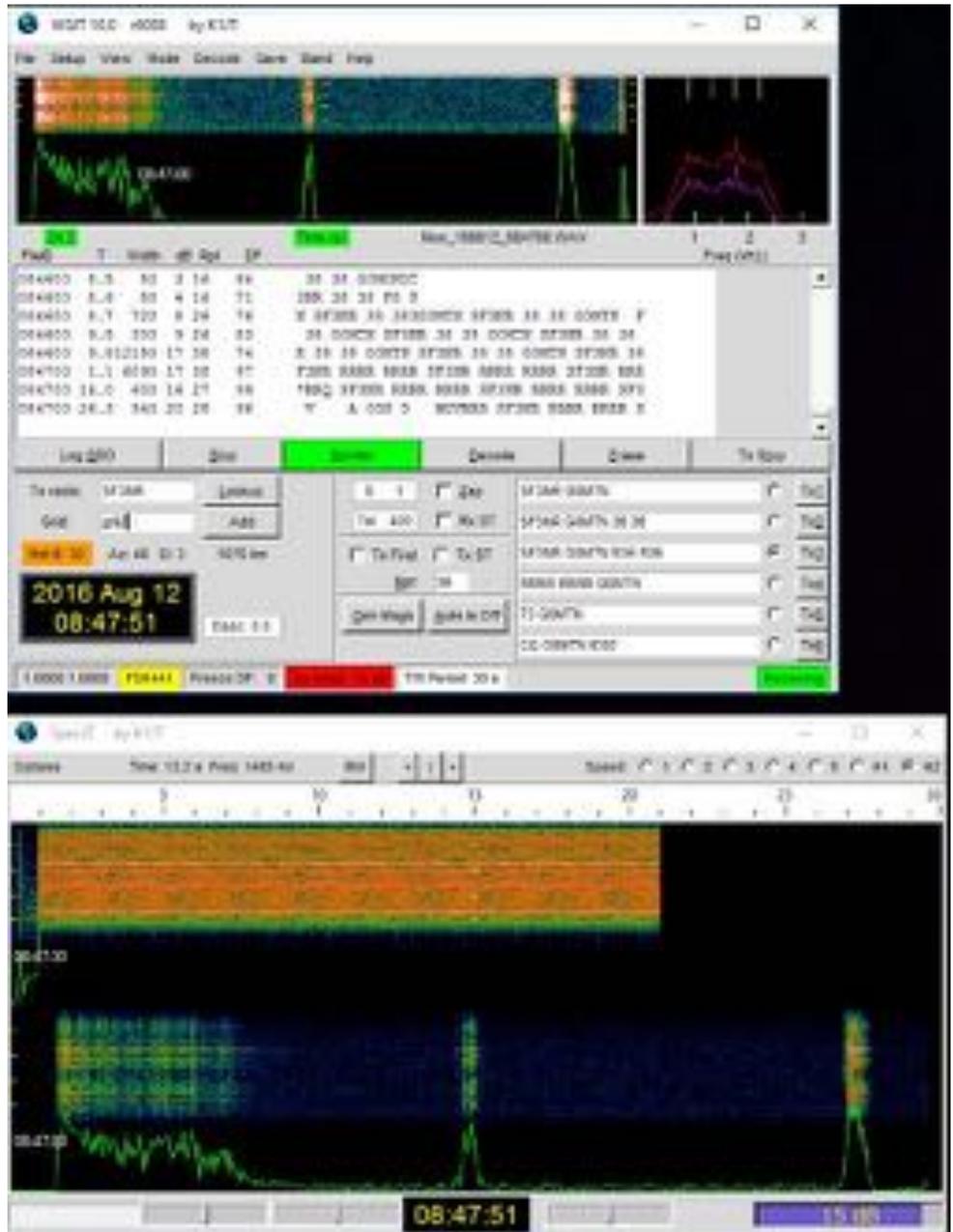
My stealthy setup is a 4 element LFA yagi from Innovantennas, on a push up fibreglass pole. The yagi is very well made, just like the antennas on the club mast. There is a trade-off of strength against reliability and survivability in windy conditions. For my purpose at home, (and perhaps also at the club too) perhaps the antennas are a little heavier than ideal. My thoughts of mounting a 50 MHz antenna too on the same push up mast quickly disappeared...

Meteor Scatter contacts are made by reflecting signals off the ionised trail of a meteor as it burns up when entering the atmosphere. Meteors are constantly hitting the earth, and contacts can be made every day of the year. Most people are familiar with meteor showers which provide not only an impressive visual show, but a much larger volume of meteors on several days each year. More power, more antenna gain, and a receive pre-amplifier will help to make contacts using weaker reflections / smaller meteors.

The ionised trail might only last for a fraction of a second, so the QSO information needs to be sent quickly. Originally this meant using very high speed CW – a tape recorder was commonly used to speed up CW, and then played slowly later so the operator could decode. Similarly speaking repetitively very quickly was the way to make SSB QSOs.

These days, machine generated data modes with transmission and decoding being handled by your PC have taken over. Different data modes are used on the different VHF bands, each optimised for the propagation seen. There are two popular PC applications in use: WSJT and MSHV which will easily be found by Google.

The QSO format is broken up into 30 second transmit / receive chunks between you and your QSO partner. So it's



important to have your PC clock accurate to within a second. The FSK441 mode used on 144 MHz uses multiple tones at a rate of 441 Baud. Essentially the same short message is transmitted over and over, and you cross your fingers at some point during the 30 second transmission a meteor will go by and permit the enhanced propagation. Each contact is essentially an exchange of callsigns, signal reports and confirmations. The next message in the agreed flow is only sent when the previous one is received.

I had a go during the Perseids shower in August for a few hours, also watching the DXCluster and a specific VHF DX chat room to get an idea of where to listen. I

heard stations all over Europe, and eventually was brave enough to try a few contacts and worked Sweden, Croatia and the Czech Republic with my barefoot FT857 (50 watts.)

It was fun to try something new. It's not every day you work 3 new countries on 144 MHz. Next stop, more MS, or perhaps some bigger antennas and let's try for EME...

Photo shows the WSJT software, some of the meteor bursts are visible, and then the decoded QSO information.

Lee G0MTN

Trials and Tribulations of a Small Garden Antenna

Many of us have the problem of installing a useable HF antenna in a small garden. David 2E0AAI certainly did. His modern 3 story town house near Coughton Hacket gave him a garden about the size of a decent deck. David had tried a G5RV along the fence line but that was only good for receiving. He purchased a Moonraker GP2500 7m whip which promised low VSWR across all bands 80m – 10m. On advice from the RAIBC (David is registered blind) he also purchased an Italian MK1 Midi Tuned Loop Antenna. Roger M0GWM and myself had promised to go and survey David's garden and offer our advice as to what he should do with his new purchases.

The GP2500 is basically an end-fed wire connected via an integral UN-UN balun to 50ohm coax with the wire being replaced by an aluminium tubular whip 7.3m long. The problem with long wires fed via an UN-UN is that at quarter-wavelength they present a low impedance (15 ohms plus reactance) and at half wavelengths they present a high impedance (High R plus reactance). This is what 7.3m would look like in wavelength terms for each of the hf amateur bands.

Band	Wave-length λ	VF corrected λ	7.3m whip λ
80m	83m	79m	0.1 λ
40m	42.2m	40m	0.2 λ
30m	29.7m	28,2m	0.25 λ
20m	21.1m	20m	0.37 λ
17m	16.7m	15.8m	0.46 λ
15m	14.2m	13.4m	0.5 λ
12m	12.5m	11.9m	0.6 λ
10m	10.5m	10m	0.7 λ

So the UN-UN balun has to transform a range of impedances from very low to very high to 50 ohms. I don't know how they do it but they state the VSWR across the amateur bands varies from 1.3:1 to 2.0:1. I suspect the balun has some form of resistive load in it which would make it very inefficient. However it did offer a possible solution to getting David on the air and he had it there ready to install.

The MK1 Midi Magnetic Loop is manufactured by Italian company Cirro Mazzoni. Magnetic Loops work on the magnetic field part of the electro-magnetic

wave which is at right angles to the electric field. This is why magnetic loops are mounted vertically to receive horizontally polarised electric fields. The Midi loop works from 3.5MHz to 14.5MHz it is able to be tuned to resonate at a particular frequency in the range. Loops have a very high Q so their bandwidth on any particular frequency is very narrow perhaps only a few kHz so every time you tune your radio the loop also needs to be re-tuned. They proved popular in the 1960's for military and embassy communications where space to erect a big hf antenna might not be possible. These are expensive antennas and the Midi measures about 2.5m in diameter and weighs about 20kg. Made of 3 inch aluminium tube with a large plate capacitor on top it presents quite a significant windload (equivalent to a 5.4ft square plate). In addition to the loop you also need to purchase a tuner/controller and control cable. You would probably also need a suitable rotator as the loop radiation pattern is directional. When tuned it can achieve a typically 1.1:1 across the 3.5-14.5MHz frequency range. (goes out to 1.8:1 at 15MHz), Another factor to be taken into account is that it needs to be mounted no less than 2.5m above ground. This means that the top of the antenna is going to be around 5m and quite visible to David's neighbours, not that he gives a fig of course.

On our first visit, Roger and I discussed with David what was possible to do with the Loop. Such a large load would normally require a significant block of concrete to be put in the ground. (I reckon 60cm x 60cm x 80cm deep). We looked at whether a screw-in pole socket would do it but the overturning moment on the socket would pull out of ground if the loop wasn't guyed and David's garden

would be un-useable if we did that.

The important task was to try and get David on air as quickly as possible so we decided to return at a later date with a ground socket and a small stub pole to mount the GP2500 and connect him up via some coax coming out of his bedroom window. After a couple false starts this is

what we did and the GP2500 presented a VSWR of between 1.5:1 and 2:1 over the 40m -10m bands. David has been left with this to see how he gets on as he also needs to get used to controlling and operating his equipment (to which he has added an IC7300 in addition to his TS590SG. We have advised him to get a separate in line SWR meter as neither Roger or I are convinced that rig SWR indications are good enough. Unfortunately the bands have been poor recently so there is not so much to work (except Italians of course!) on 20m but I am sure David will have worked some stations by the time of our next visit.

David is going to put the loop into store in his garage until some time in the future we can organise a concrete base and permanent installation. He also needs a 2m/70cm whip installing on a pole on his garage wall.

Chris G0EYO



IOTA and club BBQ

Islands on the Air 2016

Aside from rare exceptions caused by very poor weather or the outbreak of Foot and Mouth disease, the club has regularly supported VHF National Field Day in July as a competitive event from Wythall Park, usually combining it with a social and barbecue for friends and family on a Saturday evening.

In recent years the increasing age of the club overall, and perhaps a declining interest in contesting from the current membership has meant that enthusiasm (or free time) for VHF NFD has waned a little. We'd scaled back on the stations we put on air, and in the last years we were down to low power single band activity that attracted literally only a couple of operators. On the flip side, many club members always supported to build and tear down activities, and enjoyed the "weekend in the field", with some staying under canvas, and the social side was seeing record numbers of visitors.

As an experiment, I'd proposed we swap the VHF activity for the popular RSGB Islands on the Air (IOTA) contest at the end of July this year. We'd still get our fill with VHF contacts from the shack during the VHF NFD weekend earlier in the month, and that saw us make contacts from 50 MHz to 1296 MHz using the club array, with more operators taking the mic than we had previously on the field. The IOTA contest is on the 5 classic bands from 10m to 80m, on CW and SSB. Most of the activity was with Europe, so I thought a relatively simple fan dipole at a height of 50 to 70 feet would be good enough without needing to source and erect beam antennas etc.

There's always lots of work behind the scenes to ensure that even a 'simple'

station like this comes together. The main consideration was the club mobile Versa-tower, which is stored offsite in Kings Norton. A work party was needed to check over the tower and make sure tyres and brakes were working, so it was safe to transport to the field. Finding someone to tow the tower itself was another little hurdle to jump. Also aspects like the generator, fuel, lighting, as well as the radio, antenna and IT needed to be checked over. Thanks to everyone that helped pull this together. As usual the club summer barbecue would be run, so working out numbers, buying food and tracking where the barbecue had been stored were other jobs to be done.

Come the weekend itself, the tower arrived on the pre-booked field at Wythall Park without too much difficulty. Some "undesirable types" had been seen in the area, which meant that the gate to the park needed to remain locked at all times to maintain security. The tower and antenna were erected safely, and the two easy ups were built. We had an extra focus on 'health and safety' and the tower zone was roped off as normal, and our workers inside wore hard hats and tabards.

I'd set up the new club laptop to use N1MM+ software, which with the WinKey from the shack and the TS590, we were

able to let the laptop take the strain of sending CW, and also calling CQ on SSB. Never have we been so spoiled! The radio audio was fed to a pair of headsets and an external speaker so casual visitors could listen in. Apart from a higher than expected SWR on 80m SSB, as I'd run out of time to properly tune the wires beforehand, the station overall worked as expected.

New friend of the club and frequent visitor Stan SP3HRN is a keen CW contest-



er, and was looking forward to the event. He did the bulk of the operating actually. IOTA is a contest where strategy is paramount. Do you run (i.e. call CQ and work) mainland stations quickly for mostly 5 points a time, or tune the bands and find new IOTA islands for 15 points, and also increase the multiplier total. In the multi-operator section 2 radios were allowed to do both of those activities at the same time, but for our first outing we only fielded one station. Otherwise we'd need more radios, antennas, computers with networking, perhaps radio filtering too, as well as the operators to fill the chairs. So with our simpler single radio solution Stan called CQ on CW for most of the time, and I and anyone else that wanted filled in with SSB and tuning for those rare islands on both modes. As well as the contest activity, several other verticals and wires sprung up around the site as part of an ad-hoc plug and play activity, testing and trying out new portable antennas and some members showing shiny new radios.

We continued right through the night as there was always someone to work. Stan was only persuaded to appear briefly during the social BBQ activities, once again managed excellently by Mike and Anita. We appear to have had more visitors than we were expecting, and good food, conversation and company in the field was a big draw. As night fell, the smaller contingent of members camping out huddled around the embers for warmth, and drank a beer or two, or maybe three.

Inside the operating tent, despite the bulk of the contest traffic coming from Europe, we did work some North Americans and Japan, as well as club member Jamie who was operating from Orkney borrowing a high powered contest station. After 24 hours our own "100 watt and a wire" station had made 950 contacts as G4WAC/P, which should put us hopefully in a reasonable position when the results are announced.

I think the IOTA contest experiment was a success, although admittedly a dedicated non-contest "plug and play" weekend is more appealing to many members. Let's think about what activities we'd like to try next summer.

Lee G0MTN

The training team have a bit of a summer break with the Intermediate course finishing in July and the Advanced course starting at the beginning of September. We had a very successful Intermediate Course with all students passing, so well done Terry, Michael, David, Rob, and Stuart. I am pleased to report that those guys plus club members Howard 2E0KWH, John, 2E0EGP and Anita 2E0DUO have also signed up for the Advanced Course which runs from now until the exam on the 12th December.

We were able to organise an Intermediate examination for David (was M6KND and now 2E0AAI). What makes this a more noteworthy event is the fact that David is blind. For those of us who are sighted, I don't think we can begin to appreciate the handicap that David has to overcome to sit an examination such as this. Again Anita 2E0DUO took on the role of reader. This is also a difficult and arduous task to undertake. David has to remember the question and the possible answers whereas those of us who are not so handicapped can read and re-read the question and possible answers. I thought David and Anita were both exhausted by the process so we say very well done to both of them and of course to invigilators Ian M0IDR and Roger M0GWM who supervised the examination. I think we at Wythall are setting the standard by which candidates with



disabilities such as David can progress their interest in this hobby and achieve their goals. David has enrolled for the Advanced class and we know this is going to challenge both candidate, tutors and reader even more than it has up to now. We are discussing with RSGB exam team how we can make this a more level playing field so that we can satisfy the RSGB's declaration that disability should not be a bar to achieving a full licence.

We did try to run an on-line foundation course over the summer months but although we had some 12 people show an interest previously only one responded to our invitation so we cancelled that. Probably just as well as I had enough stress in my life with a house move and a gammy

leg!. We plan to run a class room foundation course after the Advanced course starting in January so if you know of anyone who might like to do this please get in touch as numbers we can accommodate are limited.

The RSGB is undertaking a review of the syllabus for all three levels of the exams. This is being done by the RSGB Examinations Group and the Syllabus Review Working Group. The intention is to better align the Advanced with HAREC and to smooth out the steps more evenly between the different levels of exam. (it has been felt for some-time that the gap between Intermediate and Advanced is too big). Also, the syllabus will be refreshed to include more recent technologies and practices currently in use. Later this year an advanced draft of the new syllabus is expected to be available, and there will be consultation with the training community. No changes will be implemented before January 2018 and at least 12 months' notice will be given between the formal release of the new syllabus and the start of the corresponding updated exams.

There have been problems with the new Ofcom licensing system. Licensees have had to re-register to access the new system to check, re-validate or claim their new licence, and sometimes new licence holders have been issued with call signs that appear in call sign lists such as QRZ.com. Ofcom have reaffirmed that none of the call signs issued by the new system is a duplicate. Although some of these call signs have been used in the past (which is why they could be found on QRZ.com or Hamcall.net), none has been authorised under a valid licence for at least two years. In fact, Ofcom intended to ensure that call signs which were last used more than two years ago were also not recycled. The RSGB challenged Ofcom on this, as they were receiving reports that some applicants were still getting recycled call signs, Ofcom says that it has now loaded the past ten years'-worth of licensing records into its new licensing system. That means that if a call sign was last used more than ten years ago, the system may recycle it but that call signs used in the last ten years should not be recycled. Watch this space.

Chris G0EYO

Jamie's IOTA expedition to the Orkney's

So on Friday 29th July I embarked on my first DXpedition sort activation to Orkney Islands. This came under the IOTA group EU009 as I was staying and operating on Orkney Mainland. I travelled from Birmingham Airport to Kirkwall via Aberdeen. Flybe offered a great service and I'm pleased to say a comfortable start to my trip.

When I landed in Orkney I was greeted by my host Dave MM0EAX. He took me back to his place and showed me where I would be sleeping. But more importantly he showed me where the shack was. He got me up and running within an hour or so of my arrival. Making 250 QSO's in that evening. I then went to see another Radio amateur on Orkney to then go and make another 250 QSO's in the evening on 40m with a 4 square. That's already 500 in the log.

With a little bit more pile up experience it was almost time for the IOTA contest. I switched from 2M0SDV to the call sign MS0YHC for the contest and switched the amplifier on. It took a few minutes to get the first call but after that I was away. The calls came thick and fast. The first 100 QSO's came within an hour. My experience was very good. I was kept fed and watered all through the contest. By the time 1000 QSO's came it was 00:15z and I was very tired. But I continued through it. But unfortunately for me QSO numbers dropped for a few hours. I was called out of the shack to observe so very faint Aurora behind the clouds. If it had been a clear night I may have had to chance to see my first ever auroral activity. But I was not that lucky so back to the contest. I was operating for the full 24 hours without much of a break. That got me a nice score. 1723 QSO's and 2 419 690 point's before checking.

After the contest I went off to bed for a few hours before getting up again for more food and back down to the shack,

where I tried to focus on chasing some DX for 2M0SDV.

But the bands were flat after the contest (No surprise there)

On the Monday I worked just over 500 QSO's again which took my total number of QSO's as 2M0SDV to over 1000. Then I went QRT. Or at least that's what I thought. I was woken up at 08:00 on Tuesday ready for my flight. But instead Dave had told me that Pacific and West coast USA was coming in loud over the pole. So I went into the shack and had a few more calls. With some success to my surprise. I managed Oregon, California and Alaska, A few Japanese stations long path. But to my surprise I was called by a gentleman In Hawaii. So after I'd worked them all I had no further call's so I continued to pack.



Everything went smoothly from Kirkwall airport back through Aberdeen. A two and a half hour wait in Aberdeen before arriving home in Birmingham airport. It's a shame my bags didn't arrive. They showed up at my door 24 hours later. But oh well. I had a great trip and a brand new experience. I'd like to thank the club members who worked me whilst I was up there. And I'd also like to congratulate the team who were operating G4WAC/P in the contest.

2M0SDV from EU009



The next issue of the Wythall Radio Club Newsletter will be published at the beginning of Nov 2016