STARLITE

THE JOURNAL FOR THE STOURBRIDGE AND DISTRICT A.R.S.

G6OI

G6SRS

G4CVK

ISSUE: FEBRUARY 2023

STOURBRIDGE & DISTRICT AMATEUR RADIO SOCIETY

INCORPORATING

OLDSWINFORD HOSPITAL SCHOOL RADIO CLUB

MEETINGS NORMALLY HELD AT

OLDSWINFORD HOSPITAL SCHOOL
HEATH LANE
STOURBRIDGE
[8:00 TO 10:00 PM]

VISITORS ALWAYS WELCOME

DURING COVID, THE SOCIETY HOLDS ITS MEETINGS
EVERY MONDAY AT NORTON SOCIAL CLUB,
OSMASTON ROAD, STOURBRIDGE

RSGB AFFILIATED SOCIETY

The views expressed in STARLITE may not be those of the Committee – Stourbridge and District Amateur Radio Society

STARLITE

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StARS Website URLs:-
www.g6oi.org.uk

StARS Facebook Page:-
https://www.facebook.com/groups/stourbridge.ars/

Forthcoming Meetings

February 6th	Club Meeting at Norton Social Club. 8pm
February 13th	Club Meeting at Norton Social Club. 8pm
February 20th	Club Meeting at Norton Social Club. 8pm
February 27th	Club Meeting at Norton Social Club. 8pm
March 6th	Club Meeting at Norton Social Club. 8pm
March 13th	Club Meeting at Norton Social Club. 8pm
March 20th	**Annual General Meeting 2023**
March 27th	Club Meeting at Norton Social Club. 8pm
April 3rd	Club Meeting at Norton Social Club. 8pm
April 10th	Club Meeting at Norton Social Club. 8pm
April 17th	Club Meeting at Norton Social Club. 8pm
April 24th	Club Meeting at Norton Social Club. 8pm
May 1st	Club Meeting at Norton Social Club. 8pm
May 8th	Club Meeting at Norton Social Club. 8pm

Editor's Comment

[Editor: g4xom@g6oi.org.uk]

Regretfully, I must report that, once again, I have received no reports or comments from the Society or its members. Due to this situation, I am wondering if I should continue producing Starlite, as I am feeling somewhat demoralised at the lack of input for these pages. So, please tell me - do YOU wish me to continue in this role??

In this issue I have included two "Foundations of Amateur Radio" articles, another called "Amateur Radio and the art of getting started", which I hope you find interesting, plus some snippets of current and upcoming DX activity.

This space intentionally reserved for your contribution.

The Editor is waiting patiently for some input and has even resorted to reading sports magazines to fill the time!

Memories, photos, projects, general chit-chat, etc., would all be very welcome.

Send input to: g4xom@g6oi.org.uk

Foundations of Amateur Radio

The Rebirth of Homebrew

On the 12th of December 1961, before I was born, before my parents met, the first amateur radio satellite was launched by Project OSCAR. It was a 10 kilo box, launched as the first private non-government spacecraft. OSCAR 1 was the first piggyback satellite, launched as a secondary payload taking the space of a ballast weight and managed to be heard by over 570 amateurs across 28 countries during the 22 days it was in orbit. It was launched just over four years after Sputnik 1 and was built entirely by amateurs for radio amateurs.

In the sixty years since we've come a long way. Today high school students are building and launching CubeSats and several groups have built satellites for less than a $1,000. OSCAR 76, the so-called "$50SAT" cost $250 in parts. It operated in orbit for 20 months. Fees for launching a 10cm cubed satellite are around $60,000 and reducing by the year.

If that sounds like a lot of money for the amateur community, consider that the budget for operating VK0EK, the DXpedition to Heard Island in 2016 was $550,000. Operation lasted 21 days.

I'm mentioning all this in the context of homebrew. Not the alcoholic version of homebrew, the radio amateur version, where you build stuff for your personal enjoyment and education.

For some amateurs that itch is scratched by designing and building a valve based power amplifier, for others it means building a wooden Morse key. For the members of OSCAR it's satellites. For me the itch has always been software.

Sitting in my bedroom in the early 1980's, eyeballs glued to the black and white TV that was connected to my very own Commodore VIC-20 was how I got properly bitten by that bug, after having been introduced to the Apple II at my high school.

I'm a curios person. Have always been. In my work I generally go after the new and novel and then discover six months down the track that my clients benefit from my weird sideways excursion into something or other.

Right now my latest diversion is the FPGA, a Field Programmable Gate Array. Started watching a new series by Digi-Key about how to use them and the experience is exhilarating.

One way to simply describe an FPGA is to think of it as a way to create a virtual circuit board that can be reprogrammed in the field. You don't have to go out and design a chip for a specific purpose and deal with errors, upgrades and supply chain issues, instead you use a virtual circuit and reprogram as needed. If you're not sure how powerful this is, you can program an FPGA to behave like a Motorola 65C02 microprocessor, or as a RISC CPU, or well over 200 other open source processor designs, including the 64-bit UltraSPARC T1 microprocessor.

I'm mentioning this because while I have a vintage HP606A valve based signal generator that I'm working on restoring to fully working. Homebrew for me involves all that the world has to offer. I don't get excited about solder and my hands and eyes are really not steady enough to manage small circuit designs, but tapping keys on a keyboard, that's something I've been doing for a long time.

Another thing I like about this whole upgraded view of homebrew is that we as radio

amateurs are already familiar with building blocks. We likely don't design a power supply from scratch, or an amplifier, or the VFO circuit. Why improve something that has stood the test of time? In my virtual world, I too can use those building blocks. In FPGA land I can select any number of implementations of a Fourier Transform and test them all to see which one suits my purpose best.

In case you're wondering. My Pluto SDR is looking great as a 2m and 70cm beacon, transmitting on both bands simultaneously. It too has an FPGA on board and I'm not afraid to get my keyboard dirty trying to tease out how to best make use of that.

What homebrew adventures have you been up to?

I'm Onno VK6FLAB

• *This article is the transcript of the weekly 'Foundations of Amateur Radio' podcast, produced by Onno Benschop, VK6FLAB who was licensed as radio amateur in Perth, Western Australia in 2010. For other episodes, visit http://vk6flab.com/. Feel free to get in touch directly via email: cq@vk6flab.com*

• *If you'd like to join a weekly radio net for new and returning amateurs, check out the details at http://ftroop.vk6flab.com/, the net runs every week on Saturday, from 00:00 to 01:00 UTC on Echolink, IRLP, AllStar Link, Brandmeister and 2m FM via various repeaters, all are welcome.*

Amateur Radio and the art of getting started...

By Onno VK6FLAB

One of the regular topics of conversation in amateur radio, especially for those new to the community, is where to start? The sheer volume of available options is often overwhelming. If you've never encountered the complexity associated with this amazing hobby the experience can be disheartening and even demoralising.

In my early years I was results driven. Getting on air, making noise, logging a contact, adding a country, winning a contest, rinse and repeat, get better, do more. There have been numerous occasions when I came home from one of my adventures disappointed, sometimes bitterly so.

That happened for quite some time, until one day I realised that the journey in and of itself is the reward.

That might sound disingenuous, so let me illustrate.

This week I set-up an automatic beacon in my shack that can be heard by stations around the planet, letting me know just how far my signal can travel at any particular moment, using my own station antenna and local propagation. As projects go, it continues to be an adventure.

As you might recall, I like low power operation, truth be told, I love low power. The smaller, the better. Less is more and all that. I recently completed the first leg of a journey to set-up a permanent beacon. For years I'd been dabbling around the edges. On the weekend, whilst I was in my shack, I'd regularly set- up my computer and radio, set it to WSPR beacon and see what stations heard me. I couldn't turn my radio below 5 Watts, so that's what I used. Before you start, yes, I could turn down the volume, but that involves math and I wanted a result, now.

It filled a gap using WSPR, Weak Signal Propagation Reporter, like that. For a while, I improved on things by having a receiver set-up that monitored the bands all day every day and recently I turned it back on, with limited success, more on that shortly.

What I really wanted was to see where my signal was going, not what I could hear. I received a few emails suggesting that a ZachTek WSPR Desktop transmitter, built and sold by Harry, SM7PNV, would be just the ticket. It's a little metal box with USB and SMA connectors. One SMA for the supplied GPS antenna, used for location and time, the other for a transmit antenna. USB provides serial for configuration and power if it's operating in stand-alone mode. Yes, you can operate it without needing a computer and if you want it does band-hopping. After configuring it with things like your callsign and bands, you can plug-in the GPS, your antenna and power it via USB and it will run as an automatic 200 milliwatt WSPR beacon.

That device in turn prompted a journey to discover a more appropriate antenna, since my current station antenna uses an automatic tuner that won't get triggered by this tiny transmitter. That caused an exploration in how and where to mount any new antenna, with a side-trip into finding a specific anti-seize compound locally. To pick the mounting hardware, I had to get into wind loading, how strong my satellite dish mount might be, how to install and tune a multi-band antenna. The list just keeps growing and that voyage continues.

I'm tracking the requirements with a project specific check-list, just to make sure that I

don't miss any steps and have a place to document new discoveries when they invariably hit me in the face. So-far, so-good.

The WSPR monitor receiver is currently connected to a generic telescopic dipole, mounted indoors, which in the past gave me a much better result than my station vertical, so I should be able to keep both running.

Next on the list is to construct a live propagation map for my station, then a way to switch modes on that map, so I can tell if it's worth calling CQ without going blue in the face. I'm also working on a WSPR transmitter for 2m and 70cm, because they are under served in my neck of the woods.

The takeaway from all this is that whilst there are many steps, and truth be told, that list is growing as I learn, each step is tiny and doable. The only thing that separates me from someone who doesn't know where to start, is this.

I started. You can too. Anywhere. Doesn't matter. Pick anything that tickles your fancy. Start digging. It's a hobby, not a profession. What ever floats your boat, what ever makes you excited, what ever you're interested in, pick it and do something, anything.

That's how you get anywhere in Amateur Radio, and Open Source, and life for that matter, just start.

FG/F5HRY Guadeloupe

Herve, F5HRY will be active as FG/F5HRY from Marie Galante Island, Guadeloupe, IOTA NA - 102, 19 January - 2 February 2023.

He will operate on 80 - 10m Bands CW and some SSB.

QSL via home call.

Address for direct QSL: Herve Biraud, 37 Rue Pierre Brossolette, 91600 Savigny Sur Orge, France.

7P8WW Lesotho

Yuris, YL2GM will be active as 7P8WW from Lesotho, 26 January - 4 February 2023. He will operate on 160 - 10m, CW, SSB, Digital Modes.

QSL via YL2GN.

V47JA Saint Kitts Island

W5JON will be active again as V47JA from Saint Kitts Island, IOTA NA-104, 24 January - 8 February 2023.

He will operate on 160 - 6 m (Including 60m), SSB, FT8.

QSL via home call direct, LOTW.

Address for direct QSL: JOHN V ABBRUSCATO, 22199 PINE TREE LN, HOCKLEY, TX 77447, USA.

KP3RE Culebra Island

KP3RE Team will be active from Culebra Island, IOTA NA - 249, Puerto Rico, 17 - 19 February 2023.

Team - Members of the Radio Operadores del Este.

QSL via EA5GL, LOTW, ClubLog OQRS.

Address for direct QSL: PEDRO MIGUEL RONDA MONSELL, MAXIMILIANO THOUS 16-24, E-46009, VALENCIA, Spain.

VP2VWW VP2V/AA7V British Virgin Islands

Steve, AA7V will be active as VP2V/AA7V from British Virgin Islands, IOTA NA - 023, 16 - 20 February 2023.

He will operate on 160 - 10m, CW.

VP5K VP5/K0PC VP5/AC0W Providenciales Island

VP5K Team will be active from Providenciales Island, IOTA NA - 002, in ARRL DX CW Contest, 18 - 19 February 2023.

Team - AC0W, K0PC.

Before and after contest they will operate as VP5/AC0W, VP5/K0PC, 14 - 20 February 2023..

QSL information: VP5/K0PC, VP5K via K0PC, ClubLog OQRS, LOTW.

Address for direct QSL: PATRICK C CAIN, 8608 DRAKE CT, CHANHASSEN, MN 55317, USA.

OX7A OX7AM OX7AKT OX3LG Greenland

Mikkel, OZ7AKT will be active as OX7AKT from Greenland, IOTA NA - 018, 14 - 21 February 2023.

QSL via OZ1ACB.

TO4A FM/VE3DZ Martinique

Yuri, VE3DZ will be active as TO4A and FM/VE3DZ from Martinique Island, IOTA NA - 107, 14 - 21 February 2023.

He will operate on HF Bands, including activity in ARRL DX CW Contest from FM5BH station.

QSL via home call.

J79BH Dominica Island

J79BH Team will be active from Dominica Island, IOTA NA - 101, 20 - 26 February 2023.

Team - VE3DZ, FM5BH.

QSL via FM5BH direct or ClubLog OQRS.

6W7/ON4AVT Warang Senegal

Willy, ON4AVT will be active as 6W7/ON4AVT from Warang, Senegal, 6 February - 31 March 2023.

He will operate on 80 - 10m, SSB, Dgitital modes, and also QO - 100 Satellite.

QSL via home call, ClubLog OQRS.

Address for direct QSL: WILLY VANLERBERGHE, VUURKRUISERSLAAN 92, KORTRIJK, 8500, Belgium.

HR5/F2JD Honduras

Gerard, F2JD will be again active as HR5/F2JD from Honduras, 23 November 2022 - 13 March 2023.

He will operate on HF Bands CW, SSB, Digital modes.

QTH - Copan Ruinas.

QSL via F6AJA.

Address for direct QSL: JEAN MICHEL DUTHILLEUL, 515 RUE DU PETIT HEM, 59870 BOUVIGNIES, France.

VP2MDX Montserrat Island

Tjaore. W2APF will be active as VP2MDX from Montserrat Island, IOTA NA - 103, 3 January - 28 March 2023.

He will operate on 80 - 10m, CW, SSB.

QSL via W2APF, LOTW.

Address for direct QSL: THAIRE BRYANT, 441 Stewart Road, PO BOX 68, EATON CENTER, NH 03832, USA.

Foundations of Amateur Radio

Right now it's 10:45

That piece of information is unhelpful without any context. I could just as easily have told you that it's 2:45 and it would be just as accurate, helpful and meaningless. The point being that without context, you don't know if I'm an insomniac, drinking morning tea, recovering from a late lunch or putting on my PJs.

If I'm talking to people in the same room, supplying the time happens within the context of that room, but if the world is our oyster, our room is a little larger and dawn for one person is dusk for another, at the same time.

Before we could communicate at the speed of light and travel faster than a bullet, time was a relative thing related to the location of the Sun and considered mainly by mariners and astronomers. Even with the advent of increasingly accurate clocks, for most people, noon was when the Sun was at its highest point and the local clock was set to that.

When our world got smaller, because communication and travel got faster, people started noticing that noon in one place wasn't the same as noon in another place. It became a real problem when people travelled hundreds of kilometres by train in a day. Imagine coming up with a train time-table that takes into account each local version of noon.

In an attempt to deal with this, railroad managers in the United States established 100 railroad time zones. This malarkey continued until the 18th of November 1883 when four standard time zones were established for the continental United States.

Of course, being human and all, that was a local solution. Great Britain had already established its own standards for time for England, Scotland and Wales.

In October 1884, the International Meridian Conference, held in Washington DC, adopted a proposal that designated the Prime Meridian for longitude and timekeeping should be the one that passes through the centre of the transit instrument at the Greenwich Observatory in the United Kingdom and established Greenwich Mean Time, or GMT as the world's time standard.

Why Greenwich? At the time the United Kingdom had more ships and shipping using Greenwich as their reference than the rest of the world put together and the observatory at Greenwich had produced the highest quality data for a long time. As an aside, on a French map before 1911, 0 degrees was centred over Paris. There are other wrinkles, like the fact that Earth isn't round and as a result the Greenwich Prime Meridian is not quite in the right spot because measurements didn't take into account local variations in gravity.

In 1972, Coordinated Universal Time, or UTC replaced GMT as the standard for time in the world. It now references the International Reference Meridian, currently about a 102.5m east of the original Prime Meridian passing through Greenwich. It's on the move with reference to land because tectonic plates shift and where it is today is not where it's going to be tomorrow, so don't go looking for a marker to indicate the IRM.

Meanwhile in the rest of the world people needed to come to terms with how to standardise on what to call time zones. The USA establishing four time zones was just for one country. Depending on who's counting, there's over 200 countries and each has its own set of time zones. Which each might include daylight saving, or not. For some, like VK6, daylight saving was voted on several times. Trials were had and time changes during summer were implemented, then reversed, then reversed again, and again, in total, VK6

did this dance six times and we currently don't observe daylight saving, neither does VK4 or VK8.

So, not only does 10:45 require location context, it also requires that you know if there's daylight saving happening at that time in that location, which to add insult to injury, doesn't actually happen on the same date each year. It gets better if you consider time in another location. Do they have daylight saving, is it on at the time, do we have daylight saving at that time, how many hours are we apart, when is this actual event and what if we're coordinating efforts between people in multiple locations? Did I mention that summer in Europe is in July and in Australia it's in January?

In case you're wondering, tracking all this is a massive job currently under the purview of the Internet Assigned Numbers Authority. The person coordinating this, whilst wrangling the politics of naming things, including dealing with warring countries who take umbrage at having their time zone named after "the enemy" is computer scientist Paul Eggert, the project lead of the time zone database.

War aside, time zones are political. For example, Dublin Time was stamped out by the British as punishment for the Easter Rising.

If that wasn't exciting enough, to provide local context, we use abbreviations to indicate which location we're talking about. In VK6 that abbreviation is WST, simple enough, Western Standard Time. What if your abbreviation was CST? Is that Central Standard Time in North America, China Standard Time, Cuba Standard Time, or even Australian Central Standard Time. If your local time zone is IST, you could be referring to Indian Standard Time, Israel Standard time, Irish Standard Time or even Irish Summer Time.

As radio amateurs we hold global contests and we advertise our online club meetings and events. Often, we refer to times and dates that might be understood by an audience of one, but utterly confusing to the rest of the world.

So, what do you do with this?

Simple, use UTC. My timezone, called WST, or AWST, is UTC+8. F-troop, a weekly net for new and returning amateurs runs every Saturday morning at midnight UTC, that's 0:00 UTC. No confusion, no daylight saving, everyone can figure out if it's worth being awake for and I must applaud the amateurs from G-land and PA with their contributions in the very, very early hours of their morning.

So, next time you make some noise about a contest, or any amateur activity that goes beyond the people in your suburb, specify the time in UTC. Who knows, perhaps one day, even the likes of SpaceX, Apple and Google will start using UTC to announce their events ...

As Goldie Hawn put it: "Well, in my time zone that's all the time I have, but maybe in your time zone I haven't finished yet. So stay tuned!"

I'm Onno VK6FLAB

• *This article is the transcript of the weekly 'Foundations of Amateur Radio' podcast, produced by Onno Benschop, VK6FLAB who was licensed as radio amateur in Perth, Western Australia in 2010. For other episodes, visit http://vk6flab.com/. Feel free to get in touch directly via email: cq@vk6flab.com*

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