STARLITE

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

G6OI
G6SRS

G4CVK

ISSUE: APRIL 2021

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 ON 2M FM AND ZOOM VIDEO

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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www.g6oi.org.uk
http://g6oi.ross-lewis.co.uk/

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

Forthcoming Meetings

April 5th	Club Net 145.325MHz FM & Zoom Video. 8pm
April 12th	Club Net 145.325MHz FM & Zoom Video. 8pm
April 19th	**Zoom Talk: Callum M0MCX DX Commander. 8pm**
April 26th	Club Net 145.325MHz FM & Zoom Video. 8pm
May 3rd	Club Net 145.325MHz FM & Zoom Video. 8pm
May 10th	Club Net 145.325MHz FM & Zoom Video. 8pm
May 17th	**Zoom Talk: Measurements by Geoff G0KVK. 8pm**
May 24th	Club Net 145.325MHz FM & Zoom Video. 8pm
May 31st	Club Net 145.325MHz FM & Zoom Video. 8pm
June 7th	Club Net 145.325MHz FM & Zoom Video. 8pm
June 14th	Club Net 145.325MHz FM & Zoom Video. 8pm
June 21st	**Zoom Presentation By A Guest Speaker. 8pm**
June 28th	Club Net 145.325MHz FM & Zoom Video. 8pm
July 5th	Club Net 145.325MHz FM & Zoom Video. 8pm

Notes

The March main meeting was a superb Zoom presentation by Wayne M5LLT on the Bantenna HF Sleeve Antenna. There were 12 people on screen, including David Perry G4YVM, the owner of Bantenna, who gave an overview of the company and its products, together with answering the Q&A session. Those of you who weren't present could view this aerial (and other products) at www.bantenna.co.uk . Of course, I am sure that Wayne would be happy to answer any questions and, should you wish to make a purchase at Bantenna, he could tell you the discount code for StARS members.

Thanks to Wayne for arranging the Zoom presentations. If you have any suggestions for future main meetings, please have a word with Wayne, whom you can find on Monday evenings (2m FM & Zoom), DMR, Facebook and probably other places, too.

Jim G4WAO sent this article in a recent email - **"The Most Interesting QSL Card in the World™" from W8LID**. I hope you find it interesting reading.

Resuming Examinations in Clubs

The RSGB remote invigilation exams have been a great success during the Covid-19 pandemic. Over 3,100 candidates have made the first step into the hobby by obtaining a Foundation pass, nearly 950 have progressed to the Intermediate exam and over 330 to the Full licence.

However, the UK Government's roadmap to exiting the Covid-19 restrictions means we can now plan to resume exams for candidates who prefer to sit them in a club setting with in-person invigilation.

The RSGB will start accepting bookings from club Examination Secretaries from the date when the Government lifts all Covid-19 restrictions in their part of the UK. There will be some changes to make the booking process more streamlined and details will be released in a later communication.

The online remote invigilation exams will continue in parallel as they clearly satisfy a demand from many candidates who do not have easy access to a club setting.

Mandatory practical assessments at Foundation level will remain suspended pending an ESC/ESRG-led review and consultation on their long-term future. The review and consultation will consider whether the mandatory practical assessments should continue and, if so, in what form. The suspension will allow clubs time to get back on their feet after the long closure and will also avoid them having to get practical assessments back up and running only to find there may be changes made to those assessments after only a short time.

Tony Kent, G8PBH

ESC Chair

For Your Diary

ZOOM TALK NIGHT

LIVE GUEST:

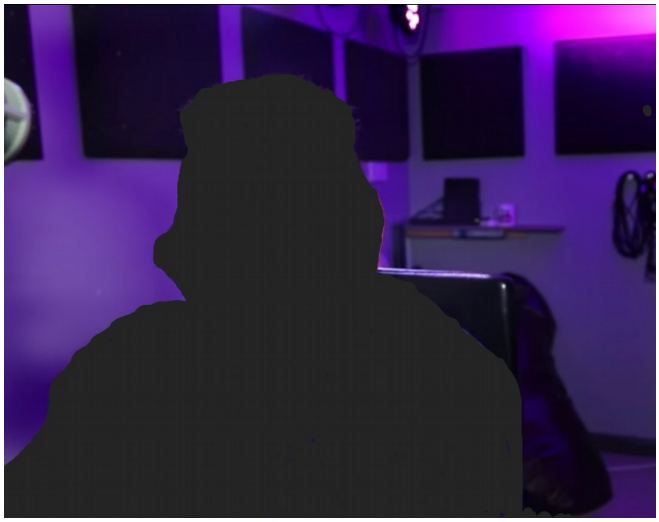
Callum M0MCX DX Commander

Monday 19th April 8 pm

Contact Wayne M5LLT for Zoom details

Free for society members.

£2 voluntary donation to club funds for admission to each Zoom talk/demonstration for non members



EMF Calculator – From The Ofcom Website

To help licensees assess compliance with the EMF licence condition, we have developed a simple EMF calculator.

Licensees can enter basic parameters of their radio system (frequency and transmitter power) into the calculator. Based on this, the calculator will calculate a separation distance that the licensee can maintain between the radio equipment and members of the general public in order to demonstrate compliance. Licensees can print the output of the EMF calculator and keep this with their licence as evidence of compliance.

Download the EMF calculator (XLSX, 56.8 KB)

This calculator is just one method of assessing and demonstrating compliance. More detailed information on acceptable methods for assessing and demonstrating compliance are included in our Guidance on EMF Compliance and Enforcement.

Calculator limitations

This calculator has been designed to allow licensees to simply and easily assess compliance, without the need for technical knowledge. It therefore uses simplified assumptions and will produce conservative results. In some cases, it may significantly overestimate the separation distance that is strictly needed to ensure compliance with the ICNIRP general public limits. Licensees can undertake a more detailed analysis, e.g. by using a more advanced assessment tool or by seeking help from a professional installer, and this would likely result in smaller separation distances.

RSGB's 'Get on the air to care' construction competition winners

The RSGB's Get on the air to care construction competition was for projects made during the Autumn 2020 lockdown, the Christmas and New Year holiday period or the early 2021 lockdown.

The Society was delighted to receive 27 entries from 15 entrants and the standard was very high. To reflect this, the judges awarded four prizes rather than choose one winner as originally planned.

We'd like to thank everyone who entered and we congratulate each of the four winners:

Gordon Lean, G3WJG (1st prize of £125)

Paul Graham, M0PGX (Runner up prize of £75)

Laurence Fletcher, G4SXH (3rd prize of £50)

Robert Lynch, M0NVQ (Highly commended and receives the RSGB Handbook)

You can find out more about their projects in the April RadCom and on the RSGB website: www.rsgb.services/gota2c-construction-competition

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Ofcom released age of radio amateurs data

Following a Freedom of Information request about the age of radio amateurs Ofcom said they do not hold Date-of-Birth information for many radio amateurs but released what information they do have

Ofcom say "We do not hold a full breakdown of the age of issued amateur radio licensees as date of birth is not a mandatory field for licence applications."

In September 2000 the then communications regulator (RA) abolished the ban on people under 14-years-old holding a Full amateur licence, since that time a person's date of birth has served little regulatory purpose.

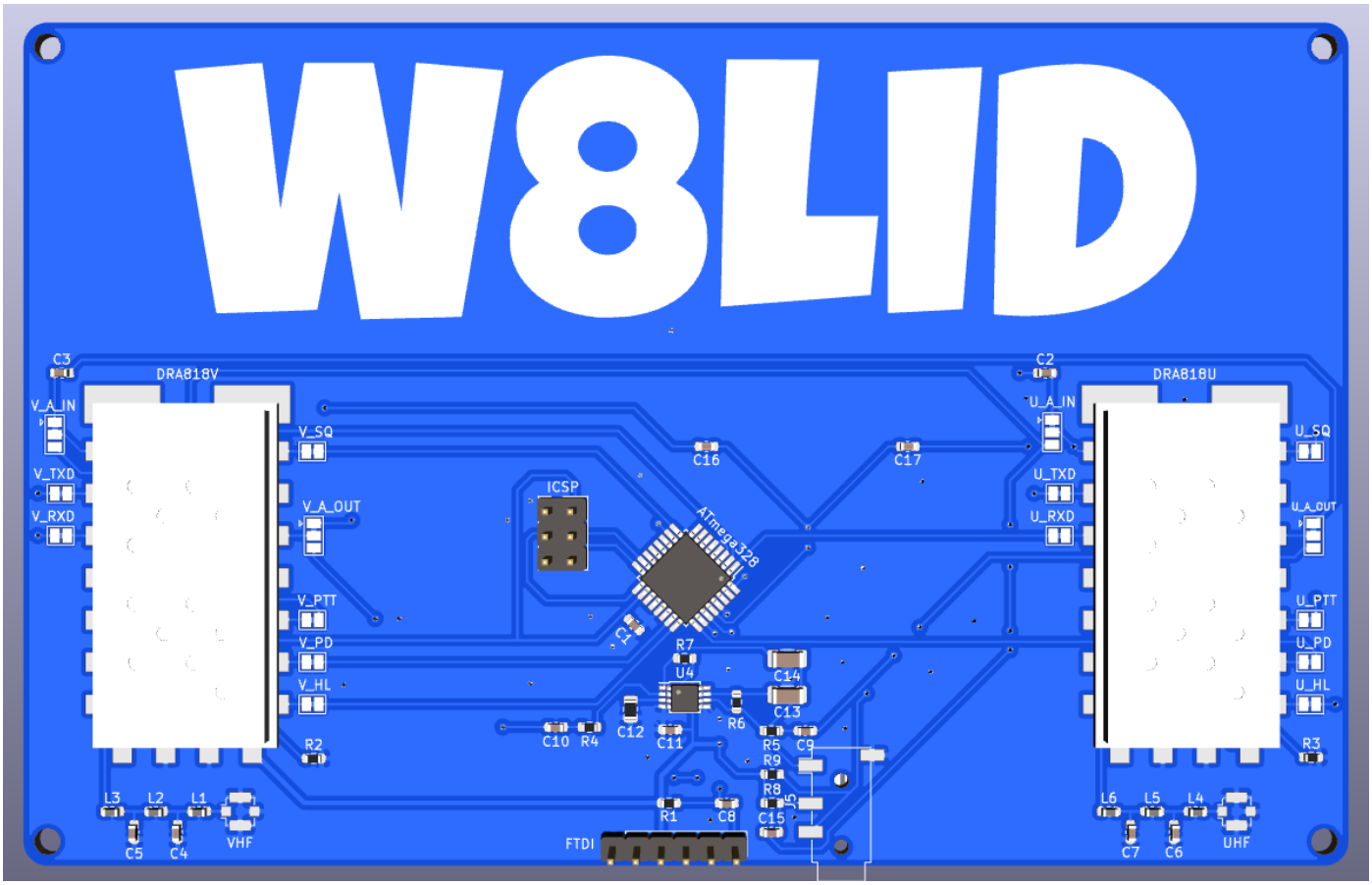
The data Ofcom released showed they only had Date-of-Birth information for:
7,312 out of 28,845 Foundation licences
4,104 out of 12,127 Intermediate licences
44,944 out of 54,072 Full licences

As of March 1, 2021 there was a total of 95,044 valid UK amateur radio licences.

Download the FoI reply and the available age data at
https://ofcom.org.uk/__data/assets/pdf_file/0022/214915/age-of-amateur-radio-licensees.pdf

You can submit a Freedom of Information request to Ofcom online at
https://www.whatdotheyknow.com/new/ofcom

"The Most Interesting QSL Card in the World™" from W8LID



Introduction

The PCB QSL is a spin on the QSL cards that amateur radio operators send to one another to confirm contacts they have made over the air. QSL cards resemble post cards but also have information detailing the contact(s) made between two amateur radio operators. QSL cards are also similar to post cards in that they often have artwork that can represent where or who they came from.

While first trying out KiCad, I came up with the idea that a PCB would make an interesting card that represents my interests in radio, electronics and micro controllers. The PCB QSL has all of the standard features of a paper QSL with silk-screened fields to fill out with contact info. It is also an unpopulated PCB that can be assembled into a working cross-band repeater.

The main components are an Atmel ATMEGA328 and Doji DRA818 VHF and UHF modules. The ATMEGA328 handles the module I/O and serial communications to configure the modules. A small number of passive components are also required to get up and running.

The Circuit

The original version (black solder mask) can only be assembled into a cross-band repeater. Later versions can be used as a repeater, the default configuration, or as a dual band 2m, 70cm FM transceiver. In either configuration the goal was to use the minimum number of components as possible.

In cross-band, the audio out and in from each Dorji module are cross connected. This provides a simple voice repeating functionality.

I/O control for the modules allows for monitoring the squelch status and can key the PTT of an opposing module. The enabling (PD) and the high and low power level of the modules can be handled by the MCU.

While attempting to keep component count to a minimum, it was decided to use the internal oscillator on the ATMEGA328. There are no critical timing needs that require the need for an external oscillator.

Provisions are made for adding headers for ICSP and FTDI programmers to flash a bootloader and program using the Arduino IDE as if it were any other Arduino dev board.

The RF output of the modules are fed to a low pass filter before ending up at u.FL connectors.

The dual band transceiver option is currently considered experimental and should be treated as such, feel free to offer feedback.

Programming

I have started sending out cards that are already populated with the MCU and the minimum passives required to make a cross-band repeater, the only components required are the DRA818 V and U modules. On these the ATmega328 has already had the bootloader flashed to them. They have also had the basic sketch that is in this repo uploaded to them to verify the bootloader works. I have also moved away from the breadboard board configuration and have moved to MiniCore instead. It is a an improved solution. Instructions for installing MiniCore with the Arduino IDE can be found here https://github.com/MCUdude/MiniCore#how-to-install

Once installed just configure for the proper hardware. Select Tools > Board > MiniCore > ATmega328. Then select Tools > Clock > Internal 8MHz.

Some cards are equipped with the ATmega328PB. Select the variant that matches the chip on your QSL with Tools > Variant.

From there you can upload your own sketches from the Arduino IDE using the FTDI header J3.

A very simple cross-band sketch is provided in this repo. It is setup for 145.725MHz input and 434.00MHz output, these are set by the variables named uplink and downlink. Be sure to check your local band plan to ensure you’re operating in the correct portions of the bands. In all cases, please avoid 145.800-146.000MHz and 435.000-438.000MHz as these are internationally recognized satellite bands. DO NOT underestimate the ability of 0.5-1W of power being able to cause interference to satellites. It should also be noted that other weak signal portions of the bands should be avoided.

The provided sketch is very simple and is intended to show how the modules are

configured using AT commands. Pin definitions are there to provide an example of what functions are designed for each GPIO. The main loop is very simple in that it reads the squelch pin status on the input module and keys the output module when a signal is detected.

Programming Issues and Other Considerations

As with other Arduino style boards you will get an error if anything is connected to the hardware UART when attempting to upload a sketch. On the PCB QSL we have the VHF module connected to the hardware UART. There are two options to avoid issues here. You can upload your sketch before soldering your module onto the board. You can also utilize the solderable jumper pads JP5 and JP6. Simply cut the small trace inside the pads to program then use a small bit of solder to reconnect after uploading. There is a possibility this might change on future by using SoftwareSerial for both modules.

The DRA818 data sheet lists the transmit current of the modules is 400mA in low power mode and 700mA in high power. Make sure the power supply you're using is capable of supplying enough current safely. My FTDI programmer works well enough to transmit in low power mode but your mileage may vary.

There are no other known issues at this time.

Ofcom statement on Plan of Work for 2021/22

Ofcom has published its Plan of Work for 2021/22, outlining its priorities for the next financial year.

They aim to continue their work towards switching off 2G and 3G phone services

The document notes:

"2G/3G switch off. We will continue our work exploring the impacts of 2G/3G switch off on all affected parties.

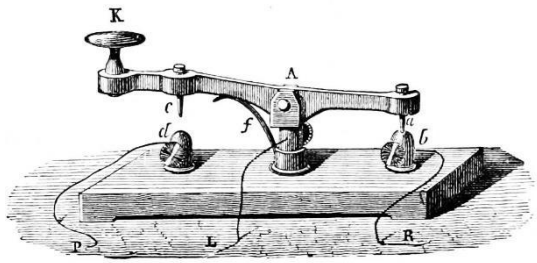
We will work with mobile operators to help make sure issues are identified and addressed with the aim of protecting customers from harm and minimising disruption."

The Ofcom statement and 2021/22 Plan of Work is at:

https://www.ofcom.org.uk/consultations-and-statements/category-2/plan-of-work-2021-22

The Joy of CW – Especially under Lockdown

Patrick Novak – VK2PN



OK, is it a joy or is it a skill you can do and enjoy because you can do it? I have always been jealous of people who are musical. I'm not musical, but my sense of rhythm is OK.

People ask me how long it had taken to learn CW the way I practice it? My answer is about 60 years. I'm just an ordinary Morse code hack positioned somewhere in the middle.

From our club the real aces are Rob VK2MZ, Owen VK2OL who used it professionally, and Russell VK2BYN who learned it because it is a part of amateur radio and he loves it too. Amazing story about Russell, in three months from zero to pass. Simply natural.

I started at about fifteen years of age in a local radio club in the old country. OK2KBR and I think the club is still going. Got a so-called "registered operator" call/number and could operate under supervision (licensed amateur and also a member of the communist party). I was allowed to operate only CW. Later when I was called to the army, the officer there was a ham and picked me and several for the ability to use Morse code. In those old days CW was still the only mode to use. It was a lucky strike then. Instead being dragged through the mud as any conscript would we were in the school rooms playing CW.

After the army I've applied for a callsign and got through examination and because the political situation was not as strict anymore and so I got it (without needing to be a member of the communist party). I was OK2PAL, Class C. That allowed me to work 160 CW only for a year or 300 QSOs whatever comes first. Working the top band EU, Gs, and sometimes the US in the evenings was great fun. I worked the 300 QSOs pretty quickly. In those "good old days" CW was the king of the bands. I don't remember much of SSB being around then and the only other mode was AM.

CW is music it is a skill that gives you a good feeling. Now, I indulge in DX chasing trying to make 300 countries on CW alone. I'm pretty close now.

Contesting is the other passion. I've started mainly CW contests at or around 2003. In my very humble opinion, DXing and contesting are the pinnacle of our hobby. Also, I admit that it is the old way to practise the hobby. Having said that, I don't want to put down the other members who don't chase DX and contests. A lot of you guys are more intelligent than I'm and have superior knowledge of electronics and other parts of our hobby. Your theory abilities are well above my standard.

I still get absolutely chuffed by the fact, that my puny signal reaches to the other side of the globe and there is another amateur who wants to tell you that you reached there and he/she can copy your signal and has the same thrill that his/her signal is in my QTH. Still great fun.

DXing is like fishing. You are never guaranteed the outcome. It is a game of chance. Too many influences affect the outcome. That makes it an extremely attractive game.

Collecting countries is fun. Now there are about 340 countries to be collected. The first 100 is a piece of cake. Easy. One can do that in one 24 or 48 hours worldwide contest. It gets much harder when you get over the 250 mark. Then it gets harder and harder. For the so-called Hall of Fame i.e. the 340 or little less you may spend the whole life to get on that level. Some of us will never get there. However, it is fun to keep trying.

As we know that many of the entities don't have amateur radio population or are so remote that nobody lives there or want to live there. Enter the DX expedition. You go or groups get organized to visit the remote places so that your other amateurs can work that entity and add to their score of countries. Some expeditions visit some places very seldom. One has to wait for decades to be able to work some of the most remote places. For example, P5 - North Korea, will not be available in my lifetime - I don't think so it will. Morse code the humble CW makes it all possible.

Last night I've operated the Harry Angel contest CW section. Harry Angel was the most active amateur over 100 years of age. Harry died at 106 years of age. To his honour there is a test once a year lasting 106 minutes.

Sadly I've worked all the CW stations, available on the band in the first 20 minutes. After that nothing happened. It would be nice if the attendance was greater? Less than two hours of operating and it could have been a very good fun. Quite sad.

Because of the CW's ability to make a QSO in adverse circumstances, CW contests are great fun. In SSB contests you need quite high power and more than an average antenna. CW makes the participants more even. The so called little pistol can equally compete with the big gun fellows. Good advantage that you don't have to battle different hard to understand the accents of the SSB crowd. In CW, most operators use machine Morse - radio or computer-generated CW and that makes is so much easier to copy. CW has no accent or wrong pronunciation. The boys/girls using straight keys don't get that far. Long-life to computers and long life to paddles.

CW contests can be a mixture of excitement and frustrations. Excitement when you develop a good run and the stations are calling you one after the other. Rates well over 100 per hour can be easily done and maintain. And then there is the European Zoo. No courtesy, no discipline. Working a long string of stations from the US and Japan is great. Mind you sometimes they slip too, but nowhere as bad as our EU friends. The G's used to be real gents, but now I'm not so sure!!

Frustration is when you are having a good run and the Russian "bruiser" station whom you worked little while ago decides that "he wants" to have a go at a good run. So, he takes your frequency with his huge signal and does not do well because not too many stations need RU, we here in VK are more valuable as multipliers than the RU station. So, there you have it.

CW is the greatest mode of them all. You can copy CW well into the noise (almost as good as the "b…." FT8 or FT4 (both belong to the dark side). Operating CW requires some effort and with effort you get the satisfaction. Unlike SSB - the simple talk or the other digital modes.

I'd like to make an exception for the RTTY contesting. You have to apply yourself a little bit more than talk SSB.

I'm sure many of you remember lecture/talk by Bernard VK2IA about CW contesting. He proudly showed the participation numbers/graphs for the major world CW contests. The numbers were trending up despite that the propagation conditions were poor. Two great

lessons from that: CW gets through and CW gets through when the conditions are not that good for SSB.

I'd like to encourage our members to return to CW, use it on the bands and as a consequence, you will have more fun doing radio. The sense of achievement making CW QSO is substantial.

CW Forever

By Jim Hatherley WA1TBY

You must have, at times, thought into the past,
Where some things go out, while others still last.
What comes to my mind is the old Morse Code,
That has weathered the storms from many abode.

To talk with one's fingers is surely an art,
Of any info you care to impart.
In most conditions the signals get through,
While the same about phone is simply not true.

Those dits and dahs cut through the trash,
Of nearby noise or lightning's crash,
To sensitive ears of the ham receiver,
Who records this data with ardent fever.

He knows he's doing something quite neat,
In such poor conditions, that's quite a feat!
To receive the message that came off the air,
These brass pounders sure do have that flair.

They say Morse ops are a dying breed,
But don't despair, there's always that need,
When conditions get rough for the new automation,
Be rest assured there'll be need for your station.

CW is dying?, believe it never,
This mode will be 'round forever and ever.
But one thing is sure, what we really need,
Is to relay our knowledge to the younger breed.

To carry the torch, after we've been gone long,
To send Morse Code through the air like a song,
When, at last, Silent Keys slip their final tether,
We can rest in peace, it's CW forever.

Previously published in Starlite, December 1998.

Help for CW Beginners

Newcomers to CW often have difficulty finding stations to work at slow speeds. To address that problem there is a small group of dedicated radio amateurs who regularly help beginners to take that 'Giant Leap' and use CW on air for the first time.

They have a Facebook page ‘SLOW CW UK’ and invite members from all parts of the world to join them.

For those interested in taking their first steps, into what might be referred to as the 'Dark Art' of CW communication, have a listen out around 3.555MHz plus or minus QRM most evenings from around 1930 to 2030z.

The group have specific activity nights on Wednesday and Saturday evenings but one or two of them can be found around those frequencies most evenings often calling "CW SLOW".

These amateurs take some of the fear out of using Morse code on air for the first few times. So, if you feel you can copy CW at around 10 word per minute or more then answer their CQ calls or arrange a sked. Most of them are retired so daytime skeds can be arranged as well as evening ones.

German special callsign

Look for the special callsign DQ11WCA to be active until April 17th, from different WCA (World Castle Award Program) and WWFF (World Wide Flora Fauna) areas.

All QSOs will be confirmed automatically via the Bureau (you don't need to send your own card).

The station also has a special reference number "DOK-WCA11" for the German Amateur Radio Club (DARC) DLD award and of course gives you points for the WCA/COTA award programs.

Logsearch at: https://www.qrz.com/lookup/dq11wca

Last Month's Famous Hams Trivia Quiz - Answers

His callsign was UA1LO. He was the first human to travel in space in 1961.

2. Yuri Gagarin

His callsign was GM3ITN. A Scottish ham who alerted the British that the Falkland Islands had been invaded by Argentina.

4. Les Hamilton

His callsign is K2HEP. He is the former President of PepsiCo and became the CEO of Apple in 1983.

3. John Sculley

His callsign is A41AA. He became the Sultan Of Oman in 1990 and remained in power until his death in 2020.

3. Qaboss bin Said al Said

His callsign is EA0JC. He reigned as King Of Spain from 1975 until his removal in June 2014.

3. Juan Carlos

His callsign was KB2GSD. This American broadcast journalist served as a CBS anchorman for 19 years.

3. Walter Cronkite

His callsign was K7UDA. He was a 5-term Senator from Arizona and the Republican party nominee for President in 1964.

1. Barry Goldwater

His callsign was JY1. He reigned as King Of Jordan until his death in 1999.

3. King Hussein

Listed in the 1990 US Call Book as KC6IWA and N6YOS, she was married to Elvis Presley from 1967 to 1973.

2. Priscilla Presley

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