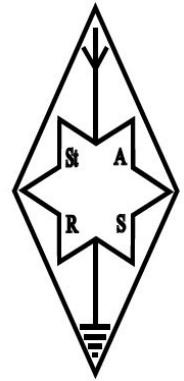


STARLITE

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



G6OI



G6SRS

ISSUE: APRIL 2024

STOURBRIDGE & DISTRICT AMATEUR RADIO SOCIETY

**INFORMAL MEETINGS ARE HELD AT:
NORTON SOCIAL CLUB,
OSMASTON ROAD, STOURBRIDGE, DY8 2AL
[8:00 TO 10:00 PM]**

**MAIN MEETINGS (3RD MONDAYS) ARE HELD AT:
NORTON COMMUNITY CENTRE
HEMPTON WAY, STOURBRIDGE, DY8 3AP
[8:00 TO 10:00 PM]**

VISITORS ALWAYS WELCOME

RSGB AFFILIATED SOCIETY

STARLITE

Telephone Enquiries to:-

Hon. Secretary
John Clarke M1EJG
[01562] 700513

Or by Email to:-

honsec@g6oi.org.uk
johnclarke.m1ejg@btinternet.com

All correspondence/enquiries should
be addressed to the Hon Secretary at:-

StARS
c/o The Mill House
21 Mill Lane
Blakedown
Kidderminster
DY10 3ND

StARS Website URLs:-

www.g6oi.org.uk

StARS Facebook Page:-

<https://www.facebook.com/groups/stourbridge.ars/>

Forthcoming Meetings

April 1 st	Bank Holiday: No Meeting
April 8 th	Club Meeting at Norton Social Club. 8pm
April 15 th	EXTRAORDINARY GENERAL MEETING @ NORTON COMMUNITY CENTRE. 8pm PROMPT START
April 22 nd	Club Meeting at Norton Social Club. 8pm
April 29 th	Club Meeting at Norton Social Club. 8pm
May 6 th	Club Meeting at Norton Social Club. 8pm
May 13 th	Club Meeting at Norton Social Club. 8pm
May 20 th	AERIAL RIGGING WITHOUT A SAFETY NET BY GEOFF G0KVK @ NORTON COMMUNITY CENTRE. 8pm
June 3 rd	Club Meeting at Norton Social Club. 8pm
June 10 th	Club Meeting at Norton Social Club. 8pm
June 17 th	SEVERN AREA RESCUE ASSOCIATION BY ALAN M7ALS @ NORTON COMMUNITY CENTRE. 8pm
June 24 th	Club Meeting at Norton Social Club. 8pm

Unfortunately, the A.G.M. did not take place due to there not being a quorum of at least 12 members present.

An E.G.M. has been arranged for 15th April. Because of this situation, the arranged talks for April and May have been moved to May and June.

In this issue

2E0IJT's Quiz Answers

A Cautionary Tale G7DMO

Dr. Bob Heil K9EID Silent Key

QRPP – Big Results With Little Signals G4UDG

Foundations Of Amateur Radio VK6FLAB

Dxpeditons

2E0IJT's QUIZ ANSWERS

1 - 10W e.i.r.p. is the same radiated power as

- ☒ A. 6.1W e.r.p.
- ☐ B. 6.1W pep
- ☐ C. 10W e.r.p.
- ☐ D. 10W pep

2 - The layers of conductive gases between 70 and 400km in height are known as the

- ☐ A. troposphere
- ☐ B. solarsphere
- ☒ C. ionosphere
- ☐ D. mesosphere.

3 - At an open day hosted by your radio club who is responsible for the safety of those attending?

- ☒ A. Everybody present
- ☐ B. The RSGB
- ☐ C. Ofcom
- ☐ D. The police

4 - In a software defined radio (SDR) receiver the required signal is selected using

- ☐ A. A low pass filter
- ☐ B. An anti-alias filter
- ☒ C. A filter defined in software
- ☐ D. A diode detector

5 - What wavelength corresponds to the 14MHz band?

- ☐ A. 50 metres
- ☒ B. 20 metres
- ☐ C. 0.6 metres
- ☐ D. 40 metres.

6 - In a mains power supply unit the purpose of the reservoir capacitor is to

- ☐ A. reduce the 230V AC to 12V AC
- ☒ B. smooth the DC pulses
- ☐ C. change the AC to pulses of DC
- ☐ D. reduce the mains 230V AC to 12V DC

7 - A dipole antenna is fitted with a total of four traps. It should present a reasonable feed impedance on

- ☒ A. three bands
- ☐ B. five bands
- ☐ C. two bands
- ☐ D. four bands

- 8 - An antenna is stated to have a gain of 9dB. If 10W is fed to the antenna, the effective radiated power will be
- A. 9W
 - B. 19W
 - ☒ C. 80W
 - D. 10W
- 9 - Three resistors are connected in series, $R_1=100\Omega$, $R_2=1.5k\Omega$ $R_3=10k\Omega$. What is the total resistance of the series circuit?
- ☒ A. 11.6k Ω
 - B. 111.5k Ω
 - C. 111.5 Ω
 - D. 10k Ω .
- 10 - What happens to the F1 and F2 layers at night?
- A. They disappear
 - ☒ B. They combine into a single layer
 - C. They move nearer the magnetic poles
 - D. They decrease in height.
- 11 - Which of the following is most likely to cause harmonics?
- A. A tuned half-wave antenna
 - B. Connecting the transmitter to a dummy load
 - ☒ C. An overdriven PA stage
 - D. An unscreened power supply unit.
- 12 - How long is a typical half wave dipole tuned for the centre of the 1.8MHz band?
- A. 52.75m
 - ☒ B. 75.00m
 - C. 157.48m
 - D. 78.74m
- 13 - What standards are home designed and constructed transmitters expected to comply with?
- A. The standards needed to avoid any interference to other radio equipment
 - ☒ B. The standards set out in the amateur licence document
 - C. The standards needed to avoid any interference to other electronic equipment
 - D. The same standards as commercial radio equipment
- 14 - The recommended maximum bandwidth on 473.5kHz is
- A. 500Hz
 - B. 3kHz
 - C. 1.5kHz
 - ☒ D. 200Hz

15 - Which of the following is NOT a type of balun?

- A. Transformer
- B. Sleeve
- C. Differential**
- D. Choke

16 - The organisation Raynet was formed following the great floods on the East Coast of which year?

- A. 1953**
- B. 1957
- C. 1951
- D. 1963

17 - The roots of the Radio Society of Great Britain can be traced back to the formation of which club, inaugurated (in West Hampstead) on 5 July 1913.

- A. Wireless Society of GB
- B. National Wireless Society
- C. National Wireless Organisation
- D. London Wireless Club**

18 - How many Summits On The Air (SOTA) summits are there in England?

- A. 83
- B. 207
- C. 45
- D. 174**

19 - Early on 15 April 1912, over a distance of more than 3,000 miles (4,800 km), Arthur Moore heard distress signals in [Morse Code](#) from the *Titanic*, one of the first uses of "[SOS](#)". He bicycled to the police station in which town, where his report was discounted.

- A. Caernarfon
- B. Cardigan
- C. Carmarthen
- D. Caerphilly**

20 - Decode the following Morse code

S ... **T** _ **A** . _ **R** . _ **S** ...

So, how did you do with this quiz?

A CAUTIONARY TALE BASED ON RECENT EVENTS

By Drew Belcher G7DMO

If I was to ask how prepared you are for an incident involving fire at home, would you be prepared?

Many of us will have a space that has some form of workbench, to do DIY, soldering and other such tasks that need an element of consideration for the risk of what might happen when things don't go to plan. Most of us would likely not even consider what could happen and how to deal with the issues as they arise.

Recently, such a task led me to be working at the bench of my workshop in the garden. Door ajar as normal and the temperature somewhat unseasonal. A cold day to be doing anything and one that needed some warmth to work by. My workshop has a small heater to keep the area free of damp, but without the capacity to keep me warm when working there.

When needed, I use an industrial propane heater, old style refractory radiant panel, robust design with safety cutouts. The propane tank sits outside and is piped in only when needed. However, this old heater has no means to create a spark needed to ignite the pilot flame and the safety thermocouple. What I normally use is a standard plumbers gas torch and standard gas cartridge. I have always kept the torch head and cartridges apart when cold, as thermal expansion plays havoc with the seals and causes leaks.

So imagine the scenario, propane heater all connected and checked for leaks. Plumbers torch screwed on to canister and also checked for leaks. No issues so far. Open propane gas valve, ignite plumbers torch and light the radiant heater. Seconds later a fireball as the gas torch erupts in to a flaming hazard and is promptly thrown outside onto the path.

At this point I reach for my workshop extinguisher and hit the emergency stop on the power to the workshop, bail out the workshop and promptly quell the hazard with the extinguisher. No harm done apart from the mess a 1Kg ABC Powder extinguisher makes and a bit of a bruised ego.

But this got me thinking. My G7 call was issued in 1988, back when BR68 was in force and when most radio shacks had a single point of electrical isolation. Most people would not think of safety in respect to a fire or similar hazard and would likely panic should such an occurrence take place.

Whilst part of my day to day job is safety related, and indeed I hold H&S qualifications and fire marshal training, I wonder who else has done a recent evaluation of the space they use as a bench and considered what might happen if anything like this should befall them. Would you know what to do, how to react and make safe and secure the area as any event unfolds? Most of us are of the generation to have common sense, but would it kick in when faced with fight or flight?

On this basis, I would ask you stop and think for a moment. Do you have a suitable fire extinguisher (in date and charged) that is accessible, a simple means of isolation and an escape route? Does your bench or shack have an array of flammable chemicals, aerosols and other combustible material? Would your radios / test kit / tools / computers survive the mess of an extinguisher being discharged? And most importantly, can you get out quick enough so not to become a casualty?

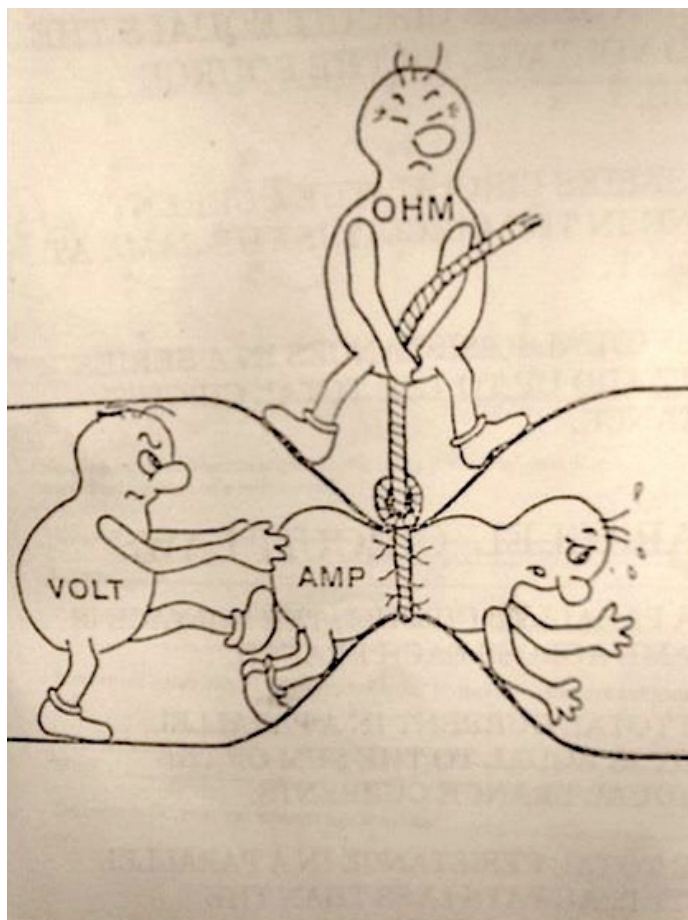
Take the time to do a simple evaluation and avoid what could be an expensive unplanned event. The cost of an extinguisher is minimal, £20 at best for a 1kg single use device. Isolation could be as simple as refresh your knowledge of where the mains electric consumer panel is and the house gas valve.

If you have got this far then spend the next few minutes heeding my advice and make sure you are ready if the need arises.

Drew
G7DMO

OHM'S LAW – VERY FUNNY!

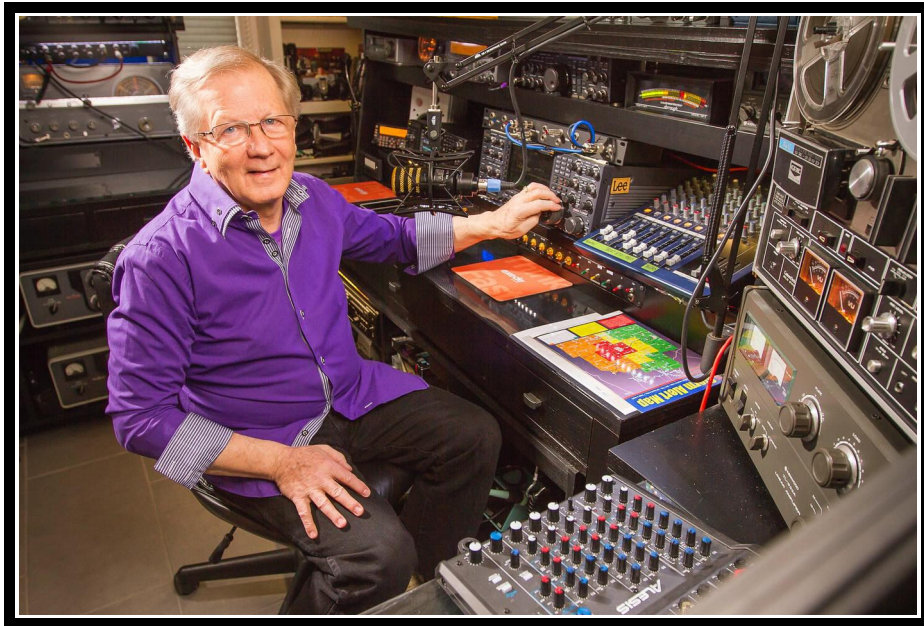
This says it all. Author unknown.



SILENT KEY

Heil Ham Radio Announcement 1 March 2024

Our beloved founder, **Dr. Bob Heil, K9EID**, is now a Silent Key. Bob fought a valiant, year-long battle with cancer, and passed peacefully surrounded by his family. Bob's lifelong passion for amateur radio was clear to everyone involved in the hobby. Everything Bob did for the betterment and growth of amateur radio - from his instructional handbooks and countless presentations to his support of the ARRL and youth programs - was based on the foundation and spirit of service. Bob was an Elmer to all of us. While Bob's presence will dearly be missed, his impact on the hobby and everyone in it will forever be felt. On behalf of Bob to all ham radio operators worldwide, 73.



A Short Biography

Robert G. Heil (October 5, 1940 – February 28, 2024) was an American sound and radio engineer most well known for creating the template for modern rock sound systems. He founded the company Heil Sound in 1966, which went on to create unique touring sound systems for bands such as The Grateful Dead and The Who. He invented the **Heil Talk Box** in 1973, which was frequently used by musicians such as Peter Frampton, Joe Walsh and Richie Sambora, and is still in use today.

Heil was an innovator in the field of amateur radio, manufacturing microphones and satellite dishes for broadcasters and live sound engineers. In the late 1980s Heil Sound became one of the first American companies to create and install home theaters, and Heil has lectured at major electronic conventions and taught classes at various institutions.

Heil won multiple awards and honors, and in 2007 he was invited to exhibit at the Rock and Roll Hall of Fame.

Early life

Bob Heil was born in 1940 in St. Louis. He resided in Marissa, Illinois. He became a proficient theater organ musician at a young age, beginning to perform at various local restaurants at the age of 14. At the age of 15, he became house player for the Wurlitzer theater organ in the Fox Theater in St. Louis. During that time he learned how to tune and voice the thousands of pipes in that great Wurlitzer. It was the platform that taught Heil how to listen - mentally dissect discrete tones which became so important throughout his several careers .

In his teens he also became an avid amateur radio operator, and began designing and building homemade transmitters, amplifiers, and antenna systems. His call sign was K9EID.

Career

In his early twenties Heil began designing and building various theater pipe organ installations in the Holiday Inn North restaurant in St. Louis, playing the instruments six nights a week. After having played the organ for eight years solid, Heil opened a successful professional music shop in the small town of Marissa, Illinois.

In 1966 he founded Heil Sound, experimenting with live sound systems and becoming the technician to several venues around St. Louis, from auditoriums to bowling alleys. Large sound systems at the time were comparatively weak and primitive; in 1965 The Beatles had played New York's Shea Stadium using only a Shure Vocalmaster PA system plugged into the baseball park's announcement system.

Heil Sound

Heil founded Heil Sound which is based in Fairview Heights, Illinois, and manufactures a variety of microphones for professional use as well a variety of gear for Amateur Radio enthusiasts.

Heil Talk Box

Peter Frampton's Heil Talk Box from 1973

The Heil Talk Box was made famous after being used by Joe Walsh, Peter Frampton, and Richie Sambora. It was the first high-powered talk box on the market, which could reliably be used on high-level rock stages. The first Heil Talk Box was built for Joe Walsh's Barnstorm Tour. It was developed in 1973. Heil later sold the rights to Dunlop Manufacturing, Inc. Frampton frequently used a Heil Talk Box after receiving one as a Christmas present from Heil in 1974, and it can be prominently heard on his 1975 album *Frampton*.



Amateur radio

Bob Heil's amateur radio QSL card

In the late 1970s Heil Sound entered the amateur radio market, with Heil ostensibly working to fix his perception of problems in the industry involving poorly transmitted and received audio. He applied science he had learned from Paul Klipsch, Don Leslie, Martin Wick, and the Bell Labs Fletcher–Munson curves. He developed his HC series microphones, intended for amateur radio communication. Heil Sound was also an early installer of large satellite dishes for radio.



Netcast

In May 2011, Heil became the host of a live weekly Ham Radio Netcast "Ham Nation" on Leo Laporte's podcasting network, TWiT.

Personal life

Heil lived with his wife Sarah in Metro-East St. Louis. He has two daughters and one stepson. He continued to play the Wurlitzer Organ at the Fox Theater, and had a classic car collection, chiefly of 50s Thunderbirds.[5] Heil additionally performed his organ music on Lebanon, Tennessee-based international shortwave station WTTW's 100,000 watt 5085 kHz shortwave frequency each Saturday at 8 PM central time (192 kbit/s stereo internet stream also available). Heil's program was discontinued when WTTW's music programming moved to WRMI in 2022.

Heil died from cancer in Belleville, Illinois, on February 28, 2024, at the age of 83.

Awards

From the 1980s, Heil won a number of awards and honors. He was the "International Amateur Radio Operator of the Year" in 1982, an award which had been held by Barry Goldwater the year before. He was later awarded the 1989 "USA Satellite Dealer of the Year" by the Satellite Broadcasting and Communications Association in Las Vegas. In 1995, he received the very first "Live Sound Pioneer Award" at the Audio Engineering Society Convention" in San Francisco.

Heil won the Parnelli Award for Innovator of the Year in 2007. Also in 2007, he was invited into the Rock and Roll Hall of Fame to put up a display of his historically important gear, which included the first modular mixing console (the Mavis), his custom quadraphonic mixer (originally used in the Quadrophenia tour), and the very first Heil Talk Box. He was the very first manufacturer to be invited into the Hall. December 20, 2014 Bob Heil was awarded an Honorary Doctoral Degree in Music and Technology from the University of Missouri.

Information taken from Wikipedia

QRPp – Big results with little signals

By Chris G4UDG

I have been an avid QRP operator (5 Watts CW) for a good few years now. I have operated from various locations in the UK, Greece and Malta with great results and have always been amazed at some of the DX contacts I've made. Over the past 4 months I have reduced the RF power down to 100mW and less. (QRP-X).

I use an Elecraft KX-3 (100mW steps) and my antenna is nothing special. It's a home made Rybakov vertical (7m tall fiberglass flag pole with wire attached, fed with RG58 to a 4:1 UN-UN, with one 10m wire radial bent at 90 degrees to fit into my small garden). I also have a Kenwood TS590SG. Its lowest power is 5 Watts so i have made an RF stepped attenuator for this radio operating from 7MHz and up CW only....

So, how are my QRPp efforts going?

A quick check of my paper logbook tells me I have 148 QS0s with this very low powerin fact, 40 DXCC countries with 100mW or less....to OH8, LZ5, UE2, SX200, KP2, EA6,OY, CT9, US8, YL, W2, HB9 and many others. The best DX so far is FY5KE (French Guiana) at 7,013Km.

I've also worked ESO with just 9mW (0.009W. TS590SG and RF stepped attenuator) at 1,836Km.

QRP-X is not for the faint hearted but with a little patience (and loads of luck) ham radio can still be enjoyed at these very low power levels..... I like a challenge



Foundations of Amateur Radio

How far can you go?

Antennas and propagation are the two single most discussed topics in our hobby, that and how an FT8 contact isn't real. Not a day goes by without some conversation about what antenna is the best one and by how much? In my opinion it's a futile effort made all the worse by so called experts explaining in undeniable gobbledegook, or sometimes even using science, just how any particular antenna is a compromise.

The truth is that most conductive materials radiate to more or lesser degree. Sometimes there is enough of that to make it outside your backyard into the antenna of a fellow hobbyist. To make a point, as is my wont, over the past months I've been conducting an experiment. It's the first in a series all related to antennas and propagation. As has been said, the difference between fiddling and science, is writing it down, so this is me writing it down.

I'm using the tools available to me to explore the various attributes of my station and how it affects what's possible. I will observe that this is within the dynamic nature of the environment, so the solar cycle, solar events, thunderstorms and noise are making an impact. No doubt I'll create a visualisation that links some of those extra variables, but for now I'm just noting that these external events affect what I'm doing.

You might recall that I took delivery of a WSPR beacon a few months ago. If you're unfamiliar, WSPR or Weak Signal Propagation Reporter, is a tool that allows a station to transmit a time synchronised signal on a specific frequency, so other stations can look for, and attempt to decode it. Think of it as a timed Morse code signal and you'll have a pretty close understanding of what it does.

The beacon I purchased was a 200 milliwatt, ZachTek 80To10 desktop transmitter, built by Harry, SM7PNV. It can operate on all the HF bands I'm licensed for and can run all day, every day. It's time-synchronised using a supplied GPS antenna and powered by a Micro USB cable. It's currently connected to my vertical antenna.

That vertical antenna is a homebrew helically wound whip, tuned for the 40m band, clamped to the side of my metal patio roof. It's fed by an SGC-237 antenna coupler which is held by magnets to the roof. A 75 Ohm, RG6 quad shield coax cable, about 20m long, left over from my satellite dish installation days, is connected via several adaptors and coax switches to the beacon.

This is not a fancy set-up by any stretch of the imagination, but it's my station and what I use to get on air to make noise and that's the whole point of this exercise. You might recall that one of the reasons I want to learn Morse is so I can hear an NCDXF beacon and know which one I'm hearing on my own station. In many ways, this is a different way to approach the same problem.

Said plainly, "How do I determine what propagation is like for me, right now, on my own gear?"

There are countless tools available, from the Voice of America VOACAP propagation prediction, through the graphs and charts on clublog.org to the Space Weather Services run by the Bureau of Meteorology in Australia.

All of these tools have one thing in common, they don't use your own gear.

Unsurprisingly, you're likely to wonder what it is that I can achieve with a mere 200

milliwatt transmitter and a vertical. Turns out, quite a lot. As of right now, my WSPR beacon has been heard multiple times over the past three months in the Canary Islands, over 15 thousand kilometres away. The Watts per Kilometre calculation puts that at over 76 thousand kilometres per Watt, not bad for a little amateur station located in the middle of a residential suburb. Did I mention that this was on the 10m band?

I was asked if I would put a pin in my DXCC map, tracking the countries for each of these WSPR reports and my answer to that is "No". This is not a contact, this is a propagation ping. I suppose that I could, if I really wanted to argue the point, which I don't, use a pin if I had a reciprocal report from the other station within a set period of time, but that's not why I'm doing this. The purpose of this exercise is to discover what my station is capable of, what propagation is like, how it changes over time, how uniform my radiation pattern is and how much of the globe can hear my signal.

One observation to make is that much of the West Coast of the United States is a similar distance away from me, but so far there are no reports from that continent. As a quick and dirty test, I'm using my Yaesu radio and 5 Watts for the next day to see if this is an edge case, or if there is something else going on. For example, my house has a peak metal roof, to the West of my antenna. Is it possible that it's affecting the radiation pattern, or is there something else going on, like the neighbour's house that sits to the East?

For all I know the noise floor in the Canary Islands is significantly better than anywhere in the USA, but only time will tell.

I've recently taken delivery of a multi-band vertical antenna which I'm planning to use to replace my current vertical. The main reason being that my antenna coupler cannot tune with 200 milliwatts and to do band-hopping I'd have to re-tune manually each time, not something that is sustainable 24 hours a day.

No doubt that change will bring other discoveries, but then, I'm keeping track.

The intent of all of this is that you can experiment with your own station, test ideas, trial a set-up, keep a log and discover new things that your station presents to you. Amateur Radio is never just about one thing, it's always a dozen different things, all at the same time.

What are you going to discover next?

I'm Onno VK6FLAB

DXPEDITIONS

T88PB Koror Island, Palau

T88PB will be active again from Koror Island, IOTA OC - 009, Palau, 12 - 15 April 2024.

He will operate on HF Bands.

QSL via JA0JHQ direct.

Address for direct QSL: NOBUAKI HOSOKAWA, 1458-25 OKAGAMI ASAO-KU, KAWASAKI, KA, 215-0027, Japan.

JW8EKA Svalbard Island

Kaare, LA8EKA will be active as JW8EKA from Svalbard Island, IOTA EU-026, 18 - 21 April 2024.

He will operate on HF Bands. QSL via home call.

Address for direct QSL: Kaare Roar Hagen, Engelsrud Terrasse 2, N-1385 Asker, Norway.

VP6G Pitcairn Island

Gerben, PG5M will be active as VP6G from Pitcairn Island, IOTA OC - 044, 4 - 14 April 2024.

He will operate on 40 - 10m, CW, FT8 (MSHV).

QSL via M0OXO, OQRS.

A52P A52CI Bhutan

A52P op SP9FIH and A52CI op SP6CIK will be active from Bhutan, 19 April - 4 May 2024.

They will operate on HF Bands.

QSL via ClubLog OQRS, LOTW.

TX7W Raivavae Island, Austral Islands

TX7W Team will be active from Raivavae Island, IOTA OC - 114, Austral Islands, 16 - 30 April 2024.

Team - K5WE, W5CCP.

They will operate on 160 - 6m, CW, FT8, FT4, SSB, RTTY.

Equipment will include 4 Elecraft & Yaesu transceivers with 500 watt amps, two 5 band hexbeams, a Crank-IR vertical, and various other antennas.

QSL via K5WE, ClubLog.

A8OK Liberia

A8OK Team will be active from Liberia, 5 - 19 April 2024.

Team - Petr OK1BOA, Petr OK1FCJ, Palo OK1CRM, Pavel OK1GK , Ruda OK2ZA, Ludek OK2ZC, Karel OK2ZI, David OK6DJ.

They will operate on 160 - 6m, SSB, CW, RTTY, FT8, FT4, PSK and also QO-100, RS44, IO-117.

QSL via OK6DJ, ClubLog OQRS, LOTW.

FR/F5PLC Reunion Island

F5PLC will be active as FR/F5PLC from Reunion Island, IOTA AF - 016, until 30 April 2024.

He will operate on 40 - 10m, CW only.

QSL via home call.

Address for direct QSL: Michel BEAUBOUCHEZ, 27 RUE DE CHALONVILLARS, 90350, EVETTE-SALBERT, France.

H44MS Solomon Islands

Bernhard, DL2GAC will be active as H44MS from Honiara, Guadalcanal Island, IOTA OC - 047, from Middle February - until end of the April 2024.

He will be operate on 80 - 6m SSB.

QSL via home call.

Address for direct QSL: Bernhard M. Stefan, Moeggenweilerstr. 18, 88677 Markdorf, Germany.

YOUR COMMITTEE



PRESIDENT

Alan Stanley

M7ALS

VICE PRESIDENT

Nick Moss

G6DQN

SECRETARY

John Clarke

M1EJG

TREASURER

John Scott

G8UAE

COMMITTEE MEMBERS

Wayne Mocroft

M5LLT

Geoff Cooper

G0KVK

Keith Dixon

M0HPY

Ross Lewis

2E0RLX

Mark Higgins

M7REH

STARLITE EDITOR

[not a Committee post]

Bob Egan

G4XOM

Email:

g4xom@g6oi.org.uk