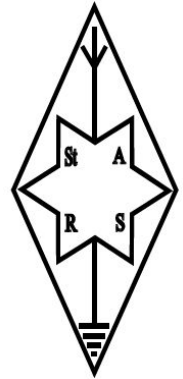


STARLITE

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



G6OI



G6SRS

ISSUE: NOVEMBER 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

Enquiries to:-

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Mark Higgins M7ERH
Tel: 07970 416178

By Email to:-
honsec@g6oi.org.uk
markhiggins6@hotmail.co.uk

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

StARS
c/o 188 The Broadway
Stourbridge
West Midlands
DY8 3HZ

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

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

Forthcoming Meetings

November 4 th	Club Meeting at Norton Social Club. 8pm
November 11 th	Club Meeting at Norton Social Club. 8pm
November 18 th	ANNUAL SURPLUS SALE @ Norton Community Centre. 8pm
November 25 th	Club Meeting at Norton Social Club. 8pm
December 2 nd	Club Meeting at Norton Social Club. 8pm
December 9 th	Club Meeting at Norton Social Club. 8pm
December 16 th	Club Meeting at Norton Community Centre. 8pm
December 23 rd	Club Meeting at Norton Social Club. 8pm
December 30 th	Club Meeting at Norton Social Club. 8pm
January 6 th 2025	Club Meeting at Norton Social Club. 8pm
January 13 th 2025	Club Meeting at Norton Social Club. 8pm
January 20 th 2025	Club Meeting at Norton Community Centre. 8pm
January 27 th 2025	Club Meeting at Norton Social Club. 8pm
February 3 rd 2025	Club Meeting at Norton Social Club. 8pm

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Please remember

"The StARS Club Net"

Thursday evenings @ 8pm

145.325MHz FM ± QRM

Telford Hamfest 2024

By Geoff G0KVK

Once again it was time for the Telford Hamfest and TDARS at the Harper Adams University site. Here they have almost unlimited parking, so Sunday the 1st of September at 9am gathering up all things required, ie RSGB and QRP membership cards and, most importantly, money.

I arrived at about 10:15am and parking was easy due to the help of the marshals. Walking back to the main hall going past the flea markets, noted not so many traders this year due to the thought of rain, although it stayed cloudy but fine. The hamfest has moved into a bigger hall which offers more space for the traders and was closer to the parking.

Just opposite the entrance there was the QRP station set up and operating. Going through the door and paying the £5 entrance fee and collecting the programme, which gave you what times and where the lectures will be and the layout of the stalls.

Going into the hall on the right was the bring and buy stall, which gained a strong interest. Wandering around, there were plenty of stalls, special interest, kit building, Kanga QRP, QRP Labs and stores selling components, so plenty of selection if you are building something. Also, aerials and other bits and pieces. The RSGB was there with a selection of books and you could, also, enrol to be a member if you wished. I spoke to Nick G6DQN on his stall. He said he had been there since six.

I found the QRP stall. I had been looking for a mug last year, but they had sold out. This time they were celebrating their 50th anniversary and they had some mugs for sale, so I handed over £5 for a nice mug. Talking to one of the stall holders, I was asked if I was a member, if so I could sign in with my callsign and membership number and I would get a free lucky bag. This I did and was handed a lucky bag containing a book, a slate mug coaster with the Q R P logo on and also a mug!!!

There was a cafeteria, so plenty of food and drink. Also the toilets were well marked. So after a last walk round I left about 12 o'clock.

BOTA 2024 Activity Report

By Geoff G0KVK

The Royal Observer Corps (ROC) was a civil defence organisation intended for the visual detection, identification tracking and reporting of aircraft over Great Britain. It operated in the United Kingdom between 29 October 1925 and 31 December 1995, when the corps civilian volunteers were stood down, (ROC headquarters staff at RAF Bentley Priory stood down on 31 March 1996). Composed mainly of civilian spare time volunteers, ROC personnel wore a (RAF) style uniform and latterly came under the administrative control of RAF strike command and the operational control of the Home Office. Civilian volunteers were trained and administered by a small cadre of professional full time officers under the command of the commandant Royal Observer Corps, latterly a serving RAF Air Commodore.

Researched by Richard 2E0IJT.

History

The Bunkers on the air(BOTA) program was first established almost 20 years ago, back in 2005. It was the brainchild of Brian G8GMU and his grandson Joshua M3HBM along with the Coventry Amateur Radio Society, with the aim of activating several Royal Observer Corps (ROC) bunkers in there local area.The scheme was later integrated into the castles and stately homes on the air (CASHOTA) Chris Darlington M0DOL in 2010.

In 2023 BOTA was relaunched and rebranded as United Kingdom Bunkers On The Air under the leadership of Bill M0DXT Mark M0IXT Carl M0ICR Phill G7TVB,and Rob M1EGP.This relaunched enhanced the original concept and added a fresh new element to this on the air activity. UKBOTA prides itself on being fully inclusive, providing opportunities both amateur radio operators and shortwave listeners to participate together in this award scheme

The launch in 2023 saw a total of just over 1500bunker locations available to be activated or hunted most of which were ROC bunkers. Ever evolving UKBOTA boasts an impressive 2,259 uk bunkers.

UKBOTA prides itself on not being a contest, awards are given for reaching the required number of QSOs between stations during a activation.Once the bunker is activated the goal is to establish a minimum of 25 QSOs to successfully activate the bunker.

Taken from Practical Wireless

On Saturday 21 September we were at Stanmore Country Park to activate ROC Bunker for UK Bunkers On The Air, arriving at about 10am. The weather did not look too promising, but we carried on and set up the clubs Banntenna aerial feeding the radio, which was sitting on the tailgate of Tony's Tilly. We operated on 20 and 40 meters with Tony's radio and Richard was using QRP. With 9 club members, also Dan who's taking his licence, so there were plenty of operators to use the radios. As we were parked in a car park, there were a few people that parked their cars and came over to see what was going on. Some were interested in Tony's restored Tilly motor. With Drew making hot drinks and Mark on the bacon butties. We made 19 contacts and 2 bunker to bunker contacts. Unfortunately we had to pack up early due to the weather. At about 2.30 the heavens opened and it was a mad rush to get everything packed up and under cover. Apart from that it was a grand day out and it being my first time activating a bunker I really enjoyed the experience.

Thanks to Richard for the historical research. G0KVK

MY ANTENNA FARM

By Tony M6AHW

HERE ARE SOME PHOTOS OF THE HOME BREW STUFF I HAVE BUILT OVER THE LAST FEW YEARS.

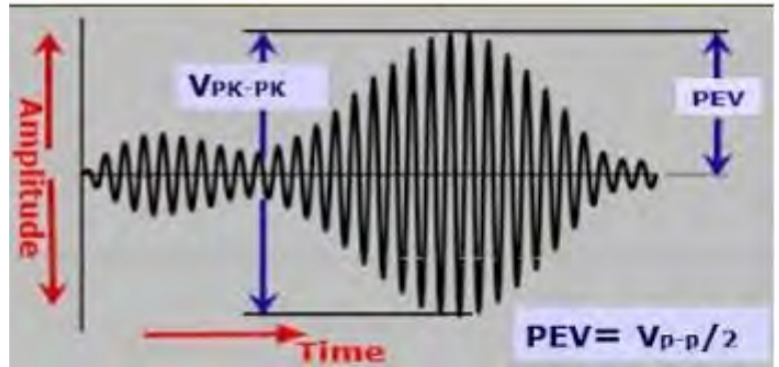
THE HALO IS A 10-20mtr FOLDED WIRE DIPOLE MADE FROM JUNK AND THE PLANS CAME FROM AN OLD PRACTICAL WIRELESS.

ALSO THERE ARE QUARTER WAVE VERTICALS FOR 10-20mtrs PLUS AN 80-40-20-10mtr TRAPPED WIRE DIPOLE AND A 70cms VERTICAL DIPOLE CALLED A LINDENBERG.



Peak Envelope Power (PEP)

Peak envelope power (PEP) is the average power over a single radio frequency cycle at the crest of the modulation. This is a Federal Communications Commission definition. PEP is normally considered the occasional or continuously repeating crest of the modulation envelope under normal operating conditions. The United States FCC uses PEP to set maximum power standards for radio transmitters.[1]



AM PEP

Assuming linear, perfectly symmetrical, 100% modulation of a carrier, PEP output of an AM transmitter is four times its carrier PEP; in other words, a typical modern 100-watt amateur transceiver is usually rated for no more than, and often less than, 25 watts carrier output when operating in AM.[2]

PEP vs. average power

PEP is equal to steady carrier power, or radiotelegraph dot or dash average power, in a properly-formed CW transmission. PEP is also equal to average power in a steady FM, FSK, or RTTY transmission.

Although average power is the same as PEP for complex modulation forms, such as FSK, the peak envelope power bears no particular ratio or mathematical relationship to longer-term average power in distorted envelopes, such as a CW waveform with power overshoot, or with amplitude modulated waveforms, such as SSB or AM voice transmissions. Typical average power of a SSB voice transmission, for example, is 10-20% of PEP. The percentage of longer term average power to PEP increases with processing, and commonly reaches ~50% with extreme speech processing.

PEP level control

Most modern amateur transceivers sample PEP to adjust power, using an ALC (automatic level control) system. Time delay in the ALC system and finite time of RF signals passing through multiple stages, in particular narrow filters, often gives rise to unusual envelope distortion. This distortion commonly appears as envelope power overshoot on leading edges, and sometimes causes negative carrier shift on AM. Some more poorly designed transceivers have a short term envelope power overshoot several times the steady-state PEP setting. This envelope overshoot further complicates definitions of PEP and average power.

PEP was often used in non-broadcast AM applications because it most accurately described the potential of mobile transmitters to interfere with each other. Its use is now somewhat deprecated, with the *average* transmitter power output (or sometimes *average* effective radiated power) now typically being preferred.

References

1. R. Dean Straw, ed. *ARRL Handbook For Radio Amateurs*. Newington, Connecticut: American Radio Relay League, 1999, p. 6.7
2. R. Dean Straw, ed. *ARRL Handbook For Radio Amateurs*. Newington, Connecticut: American Radio Relay League, 1999, p. 15.6

Foundations of Amateur Radio

Smith, the chart to end all charts ...

In the time that I've been a radio amateur not a day has gone by without learning something new. Today was no different and this time learning took me both by surprise and delight. I realise that being delighted by charts, since that's what we're talking about, might not be something that comes naturally, but I can highly recommend that you use this as an opportunity to explore.

So, which specific chart am I referring to?

The venerable Smith Chart, something which I've seen from a distance many times in the past decade, but never actually understood, or to be honest, even looked at with anything more than a glance and a shudder.

My first exploration started with a book published in 1969 by the person who developed the chart, Phillip Hagar Smith, an electronics engineer. The book, over 250 pages, is dense and frankly my reading of the first part of the book did not fill me with delight, but based on what I discovered afterwards, I might revisit it.

The purpose of the Smith chart is to visualise complex mathematical relationships. Instead of filling your worksheet with a litany of calculations, you can draw lines, circles and read the answer straight off the chart.

For example, given the impedance of an antenna system, determining the standing wave ratio becomes a case of putting a dot on a chart, drawing a circle through the dot and reading the VSWR straight off the chart.

It gets better.

If you have a digital Smith chart, like the one shown on a NanoVNA or a RigExpert antenna analyser, you can read the antenna impedance in relation to frequency, use a tuner to change it and see the chart update in real-time in direct response to you changing inductance or capacitance by twiddling the knobs on the tuner.

One of the main things that a Smith chart solves is to visualise a chart with infinity on it, twice. In radio a short-circuit is one extreme and an open-circuit is another. Coming up with a way to show both those conditions on the same chart is a stroke of genius.

The chart has evolved over time, but in essence it's a circle with an amazing set of arcs drawn throughout. The very centre of the chart has the number 1.0 next to it. That's the point at which the VSWR is 1:1, the reactance is zero and it's called the prime centre. A dummy load should show up as a dot in that spot, regardless of frequency.

The Smith chart is normalised. It doesn't matter if you're using a 50 Ohm or a 75 Ohm antenna network system, the middle of the chart is 1.0. Follow the horizontal axis to the right and you'll discover 2.0, that represents twice the resistance. If you're using a 50 Ohm system, 2.0 represents twice that, or 100 Ohm. Go to the left, find 0.5 and that represents half, or 25 Ohm. The far left point on the horizontal axis represents zero Ohm, or a short circuit, the far right represents infinite resistance, or an open circuit.

Positive reactance, or inductance is shown above the horizontal line, negative reactance, or capacitance is shown below the line.

Going back to the middle of the chart, you'll discover a circle. All along that circle the resistance is the same, that is, on a 50 Ohm system, all of that circle represents 50 Ohm.

If you look directly above the prime centre, you'll discover another 1.0 on the edge of the chart. The arc coming from that point represents an inductive reactance of 50 Ohm all along its path. Similarly, at the bottom of the chart you'll see an arc coming from a 1.0, representing the capacitive reactance.

Before you pack it in with all this inductive and capacitive reactance, think of it as another attribute of your 50 Ohm antenna system. You don't need to precisely know how it works in order to use it.

Remember how I mentioned that you could just read off the VSWR from the chart?

Drop a point on the chart, anywhere is fine. You can read off both the resistance and reactance following the two arcs through that point. If you draw a circle through the same point with the centre at the middle of the chart, the VSWR of that system is the number that you can read, where your circle crosses the horizontal axis.

Before I go, there are plenty of YouTube videos on the topic, but there are a few that I'd recommend you explore. Among an amazing array of RF educational videos, Rhode and Schwartz made a ten minute presentation called "Understanding the Smith Chart" which walks you through how to read the chart and you don't need the prerequisites to follow along. In Part two of his "Smith Chart Basics" series, Carl Oliver shows how to look up the VSWR in three easy steps and Alan W2AEW has several videos showing the chart in action with several vector network analysers or VNAs and I'd recommend that you look at videos 264 and 314 to get started, but there's plenty more of his handy work to explore.

If you take away anything from this, it should be that the Smith Chart isn't scary, there's just lots of stuff there, but spend a few minutes looking at it and you'll discover just how useful it can be in your day to day amateur antenna tuning adventures.

I'm Onno VK6FLAB

DXpeditions

JD1BLY Chichi Jima Island, Ogasawara Islands

JI5RPT will be active again as JD1BLY, from [Chichi Jima](#) Island, IOTA AS-031, [Ogasawara](#) Islands, 7 - 10 November 2024.

He will be operate on 40 - 6m, CW, SSB, FT8.

QSL via home call.

Address for direct QSL: MAKOTO KOYANAGI, 37-1 S-507, Negishiasahidai, Naka-ku, Yokohama, Kanagawa, 231-0854, Japan

S9Z Sao Tome

S9Z Team will be active from [Sao Tome](#) Island, IOTA AF - 023, Sao Tome and [Principe](#), 11 - 20 November 2024.

Team - N4XP, 5B4AQN, CT1BOL, CT1EEB, HI8RD, I8NHJ, KH7U, KJ7KOJ, K0IR, K3VN, N2WB, N6MZ, WB4JTT, W7YED.

They will operate on 160 - 6m, CW, SSB, Digital modes and EME on 432 mHz.

C5T C5I Gambia

C5T and C5I Team will be active from Gambia, 25 - 29 November 2024.

Team - EA3NT, EI5GM, EI9FBB, MM0NDX, MM0OKG.

They will operate on HF Bands, including 60 and 6m Bands.

QSL via EA5GL, LOTW.

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

They will use C5T call sign from mainland and C5I from Bijol Islands, IOTA AF - 060.

A35GC Tonga

A35GC Team will be active from Tonga, 25 November - 6 December 2024.

Team - LZ1GC, LZ5QZ.

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

QSL via LZ1GC, LOTW, ClubLog OQRS.

QTH - Nuku'alofa, Tongatapu Islands, IOTA OC-049.

3B9KW 3B9/M0CFW Rodrigues Island

Kazu, M0CFW will be active as 3B9KW from [Rodrigues Island](#), IOTA AF - 017, in CQ WW DX CW Contest, 23 - 24 November 2024.

He will operate in Single Operator Category.

22 - 30 November 2024 he will be active as 3B9/M0CFW.

QSL via LOTW.

DXCC Country - Rodrigues Island, 3B9.

YN2CC Nicaragua

Mike, AJ9C will be active again as YN2CC from Nicaragua, 19 - 28 November 2024.

He will operate on 160 - 6m, CW, SSB, Digital modes including RTTY, including activity in CQ WW DX CW Contest.

In CQ WW DX CW Contest he will be in Single Operator All Band Low Power Category.

QSL via home call direct, LOTW.

Address for direct QSL: MICHAEL A KASRICH, 2340 E. Bocock Rd., Marion, IN, 46952, USA.

HD8CW HC5CW/8 Galapagos Islands

HC5CW and HC2AP will be active as HC5CW/8 and HD8CW from [San Cristobal Island](#), IOTA SA - 004, Galapagos Islands, 19 - 28 November 2024.

They will operate on HF Band, CW, SSB, FT8.

HC5CW/K2IN will be active as HC5CW/8 in CQ WW DX CW Contest, 23 - 24 November 2024.

QSL via M0OXO OQRS.

P44W Aruba

John, W2GD will be active from Santa Cruz, [Aruba](#) Island, IOTA SA -036, in CQ WW DX CW Contest, 23 - 24 November 2024.

He will operate in Single Operator All Band Category.

Before the contest, John will operate some CW on all bands as time permits, with emphasis on the WARC bands.

QSL via LoTW and N2MM.

Address for direct QSL: Carol Richards, 22 MILL RD, SHAMONG, NJ 08088, USA.

V55LA Namibia

V55LA Team will be active from Namibia 30 October - 11 November 2024.

Team - Members of the [Amateur Radio](#) DX Peditions Norway, LA7THA, LB5GI, LB1QI, LA3BO, LB8DC, LA8OM, OE7PGI, LA9KKA, LB1FI.

They will operate on HF Bands.

QSL via M0OXO, OQRS.

VP8G Falkland Islands

Gerben, PG5M will be active as VP8G from Falkland Islands, IOTA SA - 002, 15 - 25 November 2024.

He will operate on 40 - 6m, CW, FT8.

QSL via M0OXO, OQRS.

Planned freqs:

Band	CW	FT8
40	7010	7061
30	10120	10143
20	14010	14085
17	18070	18090
15	21010	21086
12	24910	24916
10	28010	28086
6	50330	

XT2MD Burkina Faso

XT2MD Team will be active from Burkina Faso, 31 October - 11 November 2024.

Team - I8KHC, IZ4UEZ, IZ2GNQ, DL8JJ, OK2WX, HB9TOC, IU3PMA, F6IRA, YO8PS, DJ5IW.

They will operate on HF Bands and EME.

QSL via IK2VUC buro or direct.

3B8M Mauritius

3B8M Team will be active from Mauritius Island, IOTA AF - 049, in CQ WW DX CW Contest, 23 - 24 November 2024.

Team - G0CKV, KX7M, 4O3A, 3B8GL, E70A, SM0CXU, YL3JA, YL2KL, YT1HA, YT7KM, YU6DX, YU9DX.

They will operate in MO Category.

Before and after contest they will operate as 3B8HA, 3B8/KX7M.

QSL for 3B8M and 3B8HA via M0OXO, OQRS.

3B8/KX7M via F5CWU, LOTW.

FW7AA Wallis Island

FW7AA Team will be active from Wallis Island, IOTA OC - 054, Wallis and Futuna, 16 - 29 November 2024.

Team - Bob, W7Yaq and Al, K7AR.

They will operate on HF Bands.

QSL via W7Yaq, LOTW, ClubLog OQRS.

QTH - Vaimalau, Wallis Island.

5X1XA 5X1DF Uganda

G3XAQ and G3XTT will be active as 5X1XA and 5X1DF from Kampala, Uganda, 13 - 27 November 2024.

They will operate on HF Bands, including activity in CQ WW DX CW Contest.

QSL for 5X1XA via G3SWH, OQRS, LOTW.

QSL for 5X1DF via G3XTT.

3D2Y Rotuma Island

3D2Y Team will be active from Rotuma Island, IOTA OC - 060, 15 November - 4 December 2024.

Team - W6IZT, W8HC, K4NHW, KD9LSV, LY7J and others.

They will operate on HF Bands, including activity in CQ WW DX CW Contest, 23 - 24 November 2024.

VK9CV Cocos Keeling Islands

VK9CV will be active from Cocos - Keeling Islands, IOTA OC - 003, 1 - 15 November 2024.

Team - Members of OM7M and CDXP, OM5ZW, OM4AYL, OK6DJ, OK2ZA, OM3PC, OM4MM, OM4MW, VK5GR.

They will operate on 160 - 10m, CW, SSB, FT8, RTTY and QO – 100.

Band plan:

Band	CW	SSB	FT8	FT4	RTTY
160m	1826.5	—	1840	—	—
80m	3525*	3790	3578	?	—
40m	7025	7170	7056	?	—
30m	10105	—	10144	?	10142
20m	14025	14240	14084	?	14084
17m	18070	18150	18096	?	18090
15m	21025	21300	21091	?	21090
12m	24891	24950	24923	?	24923
10m	28005	28470	28091	?	28091

* 3504 for Japan and Asia

60m operation is not allowed in VK at this time.

QSL via OK6DJ, LOTW.

E51SGC Rarotonga

E51SGC will be active from [Rarotonga](#), South Cook Islands, IOTA OC - 013, 6 - 24 November 2024.

Team - LZ1GC, LZ5QZ.

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

QSL via LZ1GC, ClubLog OQRS, LOTW.

DXCC Country - South Cook Islands, E5/S.

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