



### Convention lecture summaries and presenter bios

#### Saturday

#### Lecture Room 1 - Breadth of amateur radio

#### Official Opening – John McCullagh MBE, G14BWM, RSGB President

#### Keynote presentation: Life in the RF Spectrum during the last 60 years – is this a life for you? - Colonel John Doody FBCS FCSI CITP ACIIS MIOD

The RF spectrum covers a wide range of everyday capabilities that affect our daily life and it is an exciting environment that includes amateur radio. John will discuss his radio communication experiences across the frequency spectrum from VLF, LF, HF, VHF and SHF to satellite communications from 1965 to today.

The talk will focus on his early days in the Middle East with a Paramilitary Army in 1968; utilising Operational HF communications in a barren desert environment; the use of LUF, OWF and MUF projections; the deployment of a range of Antenna Systems; and then establishing an amateur radio station using Military High-Power HF equipment. The communications theme will be developed from those days to large Military Communication Systems in the mid-80s, cellular radio for commercial and emergency service use in the '90s and Command and Control Systems in the military domain in the 21st Century. He will touch upon the development of cryptographic modules to secure both military and commercial systems.

*Colonel Doody is a retired officer of the UK Royal Corps of Signals, the author of "From Stripes to Stars" and he served at GCHQ and the former Communications-Electronics Security Group for ten years as Head of Information Assurance Customer Services. He has the unique experience of having held appointments in Defence, the Intelligence Services and Industry. John has a wealth of knowledge across the whole spectrum of cyber security, information assurance, cryptography and radio communications.*

*John was awarded the CESG/GCHQ Directors Medal in 2003, elevated to the Infosecurity Europe Hall of Fame in 2012, and nominated "Godfather of Cyber Security 2021" at the Unsung Cyber Heroes Award Ceremony in the city of London in October 2021.*

#### Rockall DXpedition 2023 - Nobby Styles, G0VJG

Nobby Styles, G0VJG describes the challenging and hazardous DXpedition to Europe's rarest IOTA, Rockall Island. One of the most inhospitable islands in the UK, arranging activation of this IOTA came with many unique problems. Nobby discusses how the Rockall Island team planned their DXpedition - their choices of personal survival equipment, location, radios, computer and power source. Given its remote location, this was anything but standard, involving small boats and rescue helicopters. Nobby will share the lessons he and the team came away.



*Nobby, G0VJG has been licensed 34 years and enjoys working and chasing DX. He likes activating IOTA and rare DXCC. Nobby was part of the M2000a team (Millennium station) which was his first experience of working a pile up, which gave him the bug for this style of operating. Nobby also enjoys contesting on his own, as part of the M6T contest station and for his local club M8C Cray Valley Radio Society.*

## **An automated search for radio echoes of long delay – Peter Duffett-Smith, GM3XJE**

There have been sporadic reports since the 1920s of radio echoes received after delays of many seconds (long-delayed echoes, LDEs). Given that it takes just one seventh of a second for a transmission to circle the Earth, and about 2.5s for a Moon bounce, delays of many seconds are difficult to explain, although several explanations have been suggested.

The phenomenon needs to be investigated systematically, with echoes recorded and reported using a common format. The search for echoes needs to cover all the HF frequencies, all propagation conditions, all hours of the day and night, and all phases of the sunspot cycle. Radio amateurs could provide a worldwide network of reporters if they were prepared to use their stations in an automatic LDE sounder mode while not engaged in 'normal' amateur-radio operations.

In this talk, Peter will review the LDE reports and the explanations, present his efforts at constructing an automatic LDE sounder, and report on the results so far. The next stage will be to convert his software into something that can be used by any radio amateur, and to invite people to join a small test panel to try it out using their own stations.

*Peter acquired the very old, large but defunct, family radio when he was eight, and found that he could give himself an electric shock when he disconnected a nine-volt battery from across the mains plug. From then on, he was hooked. His grandfather taught him the basics, and he gained his Class A radio amateur licence, completed a PhD at Cambridge, and joined the Mullard Radio Astronomy Observatory at the Cavendish Laboratory under Nobel prize winners Professors Martin Ryle and Antony Hewish.*

*Peter spent a happy working life investigating the cosmos, tinkering with antennas, and teaching Physics to undergraduates until retirement in 2013. He now lives in Scotland, continuing to tinker with antennas and delving into other interesting radio projects. He is the editor of RadCom Plus, Interim Technical Editor for RadCom and a member of the Propagation Studies Committee and the Technical Forum.*

## **RAYNET in the modern world – Cathy Clark, G1GQJ and Guy Plunkett, M0GUY**

Cathy's part of the talk will look at RAYNET at 70 – from its early beginnings following the 1953 East Coast floods through to the present day. She will cover how RAYNET can offer operational support to User Services and voluntary agencies. She will explore the ways RAYNET has worked with emerging technologies to promote the public face of amateur radio.

*Cathy was first licensed in 1983 but had a been a SWL since a child. As a former primary school teacher (although a 'jack of all trades' in the classroom) her particular interests were in science and technology. She has been a member of RAYNET since 1988, when the local radio club held an inter-club quiz and was persuaded to join the organisation at a local level.*



*This brought her into contact with the statutory User Services and various voluntary agencies and engaged with them in training exercises and local events.*

*Cathy held posts at local, regional and national level within the organisation and became RAYNET's Chairman in 2001. Within the organisation, she was a member of RAYNET's Emergency Planning and Training Teams and was involved in the meetings with the RSGB to amalgamate both organisations.*

Guy's part of talk will cover how RAYNET's DMR server was developed using Docker, Ruby on Rails, React, MySQL and Golang. It will also cover its operation focusing on user registration, Dashboard, Group management, Talkgroups, access control and sending ARPS GPS information into the server. The talk will wrap up discussing the newly implemented Paging system using POGSAC.

*Guy has always been interested in computers and electronics cutting his teeth on BBC micros at primary school. He currently works as a principal training instructor for a cyber security company where he developed and built the training CRM and student lab providing students with dynamic Virtual Machines to practise malware analysis.*

*Guy completed his Foundation licence during lockdown and rapidly worked through Intermediate and Full shortly after. While learning how DMR worked, Guy ended up building a DMR server which RAYNET saw the potential of and encouraged further development. The DMR server has now been in operation for over two years and has over 300 registered accounts.*

## **WRTC 2026 is coming to the UK – Mark Haynes, M0DXR**

The WRTC 2026 presentation will explain what WRTC is about and provide an overview of what the UK's Organising Committee are planning for the 2026 event. Find out how you can be part of this once in a lifetime event - either as a spectator, volunteer, competitor or referee.

*First licensed at the age of 12, Mark is a keen HF and VHF contester. He has operated from around 40 DXCCs in DXpedition and Contest style including D68C (2001), 8Q7ZZ (2002), FT5XO (2005) and TI5W, K3LR & P3F (multiple years). He currently holds many CQWW country records.*

*He founded Contest University UK following the establishment of the USA CTU. He was RSGB Young Amateur of the Year 1999/2000. Mark is a member of many clubs such as FOC and the CQWW Contest Committee. In 2014 he joined G0CKV as a competitor at WRTC Boston. Professionally, Mark works in the ground transportation industry as a Senior Project Manager providing rail signalling solutions on London's urban rail network.*

## **Taking amateur radio into schools – Lyall Smith, GM4XID; Chris Leviston, M0KPW and Simon Harris, G4WQG**

From soldering to coding, from Morse to satellites, and from propagation to electronics, there is so much in amateur radio that links with the school STEM (science, technology, engineering and maths) curriculum. It gives young people skills that could help their future careers and enables them to understand how many things in everyday life actually work.



This presentation shows how three different radio amateurs have inspired school pupils to explore and have fun with amateur radio. Lyall set up an amateur radio club in his school; Chris set up an afterschool club at his daughter's primary school; and Simon, with the help of friends at his amateur radio club, created links with his son's technical college that have snowballed to other schools in the area.

This presentation shows how individual radio amateurs and clubs can make positive and productive links with schools and will give you tips and encouragement for getting involved in schools where you live!

*Lyall was first licensed in 1978 and as GM4XID since the 1980s. His professional business career commenced at Motorola Radio Communications which led into management roles with high growth Telecommunications / Data Communications PLCs i.e. Scottish Power, Scottish Telecom, Racal Telecom and Pipex Internet. Senior Business Development, Business Continuity Planning and Career Development roles followed, prior to early retirement. Through his work in Mallaig High School's Science Department, Lyall identified that most local employment destinations valued the Foundation licence training and Mallaig High School's Amateur Radio Club, GM5MHS, was quickly established.*

*Chris, M0KPW has been licenced since 2010, but has been involved in amateur radio since 1989 after getting interested via his G3 uncle. He spent many years as a SWL and first joined the RSGB in July 1989. Fast-forward many years, and Chris is active on HF and VHF and above. Chris enjoys SOTA, VHF contesting, QO-100 and general HF operating.*

*Chris set up an amateur radio after school club at his daughter's primary school in South Cumbria. Ten children aged between eight and 11 spent five weeks working towards the RSGB Radio Surfer Award.*

*Simon, G4WQG is the RSGB Regional Representative for Wiltshire and part of the Swindon and District Amateur Radio Club team who brought amateur radio to students at Swindon UTC during British Science Week 2023.*

## **VarAC – Mike Richards, G4WNC**

VarAC is a relatively new digital mode that is rapidly gaining in popularity. Designed to provide a keyboard-to-keyboard chat system, VarAC employs the latest communication techniques to create an easy-to-use system. Mike will take you through the installation and use of VarAC and provide useful tips to improve your operating technique.

*Inspired by his father, Mike has been involved in radio and electronics since his childhood days. This led him to a 42-year career with BT where he worked in most engineering departments from outside broadcasts through to installing the digital network that we often take for granted today.*

*First licensed as G8HHA, Mike's interest turned to computing in the early '70s where he experimented with radio data links between his Compukit UK101 and a friend's TRS-80. That spurred him on to get his full licence, G4WNC, where he has maintained an interest in digital modes. Mike's writing career began some 30 years ago when he took over the PW RTTY column from Ron Ham. Since then, Mike been writing reviews and regular columns for many radio magazines including RadCom. His latest endeavour has been NanoVNA Explained for Radio Amateurs, published by the RSGB.*



## Lecture Room 2 – Operating / General

### Portable Contesting - Steve Clements, G1YBB

Steve's talk shares his experience of portable contesting and will explore why you might consider this as an option. He will explore how to go about choosing a site and the equipment you might need from maps to wet weather gear, as well as your portable station kit. His presentation will discuss how to stay safe, and the considerations all portable operators need to consider. Whether it in a tent, on a field day or just out walking, Steve will provide new insight to this fascinating aspect of the hobby.

*Steve got his licence in August 1987 after passing the City & Guilds RAE. His first ever contest was the PW 144MHz QRP contest in 1990, operating from IO82LB. They came 17th from 115 entries, their lowest position in PW. From there they did all the VHF/UHF RSGB contests, PW and WAB 144MHz contests, mostly from IO81KW. Current ops will recognise those locators as the ones he uses today. His first wins were in 1993 winning the PW 144MHz QRP and the WAB 144MHz low power.*

*Steve set out designing and building lightweight but effective equipment to backpack to the summit. He road tested that in a UKAC on a smaller Welsh summit. Coming 3rd with 5W was pleasing for his first time in 20 years and spurred him on to take part in the UKACs as well. Always looking to shave seconds off the setup time and do better in the contests has led to a constant evolvement of his portable setup. Working in 3D mechanical design is a definite advantage and on innumerable nights his sleep is delayed by pondering how he could solve the next problem to make the next improvement.*

### What the RSGB did for me – what the RSGB can do for you - John McCullagh MBE, GI4BWM

John will be speaking about his experience of 50 years of RSGB membership and then talking about the wide range of services that are offered to members.

*John was licensed as GI4BWM in 1973 and became very active on HF, although in recent years his interests have been mainly in the VHF and UHF bands. He became involved with the repeater scene in the late '70s and he has continued that interest over the years. His interests are currently in the digital voice area although he is interested in all aspects of the amateur scene. He is also an active RAYNET member and controller of his local group in NI. John has been a member of the RSGB for 50 years and served at committee chair level for twelve years. In April 2023 he was installed as President of the RSGB.*

### A discussion with the RSGB Board – Hosted by Don Beattie, G3BJ

This year there will be a special session with the RSGB Board where the Directors will present the four strategic priorities that the Society will be focusing on until the 2024 AGM. After that you will have an opportunity to ask questions. This will be a positive and productive opportunity to discuss with the Board how the Society, and its members, can meet the challenges facing amateur radio today.

*Don Beattie, G3BJ, is a past President of RSGB, and for thirteen years held the post of Secretary and then President of the International Amateur Radio Union (Region 1).*



*Don is active on HF and LF bands, both under his own call and his contest call G5W, where he has had considerable success in international contests over the years. Although now retired from IARU, he continues to represent the amateur service in discussions in CEPT, European Commission and ITU on the threat from Wireless Power Transmission.*

### **Which digital radio is right for me? - Tim Kirby, GW4VXE**

This talk will cover the basics of the most common digital voice radio systems; D-STAR, DMR, C4FM as well as a quick look at some of the others; P25, NXDN and M17. It will cover the advantages and disadvantages of the different systems as well as discussing how you might decide which system is best for you.

*Tim Kirby, GW4VXE was first licensed in the early 1980s after being a shortwave listener. Although he has a wide interest in radio, he has always had a particular interest in the VHF/UHF bands. In recent years, Tim has had the chance to combine some of his IT background with radio, to 'dabble' with digital radio and has been lucky enough to review a number of digital radios for the UK amateur radio press. Tim writes for both RadCom and Practical Wireless.*

### **Mining ClubLog for HF propagation studies – Martin Atherton, G3ZAY**

Martin will discuss some of the HF propagation insights available by using the Club Log online query tools to trawl through the immense database of actual QSOs between stations across the globe.

*Martin Atherton, G3ZAY was licensed in 1969 at the age of 16 and has been active, mainly on HF ever since. He studied Natural Sciences and Engineering at Cambridge University and after graduating worked for BT for over 30 years on business development and European telecoms regulation. He even lectured at Kents Hill on the Japanese telecoms business environment. He has worked all the DXCC entities on HF and is near the top of the IOTA Honour Roll having travelled personally to activate many islands that he needed.*

### **CWops - Spreading the Code – Stewart Rolfe, GW0ETF**

This presentation will focus on CWops, its aims of generating interest, enthusiasm and activity in CW and providing a 'go-to club' for anyone wishing to join others in enjoying the mode. Reference will be made to the hugely successful CW Academy which provides outreach to those wishing to learn or further develop their morse skills.

*Stewart lives near Bangor in Northwest Wales (IO73). First licensed in 1986 as GW0ETF. Almost exclusively CW since then with the occasional foray onto SSB and RTTY for a contest. Since 2013 he has had the contest call GW4J. Life member of the Dragon Amateur Radio Club based on Ynys Mon (Isle of Anglesey). Member of the ARRL, RSGB and HF Contest Committee. Member of CWops since 2011 and now serving as its President.*

### **WRTC 2022 from a referee perspective – John Warburton, G4IRN**

WRTC, held every four years, is considered to be the 'Olympic Games' of radio contesting and pitches qualifying teams of two from around the world against each other in a 24-hour

SSB/CW contest. Operating sites are selected, and antennas provided to create a level playing field and each station's identity is hidden behind a random call sign allocated 15 minutes before the contest.

This year's event in Bologna, Italy, was delayed by a year due to the pandemic, then threatened by floods and more lately challenged by world events. It nearly didn't take place, but the Italians pulled it off and hosted 58 teams of two over 58 sites with identical antennas, each with a referee and site manager.

John will describe the event, the role of the referee and share his experience of the week in Italy - how the Italians planned and organised the event; how referees, sites and call signs were allocated to stations and how he worked with his allocated team during the contest.

*John's passion has always been for HF contesting and DXing, especially on CW. Over the years he has completed many DXpeditions, operated from all over the world in the annual CQ Worldwide CW contest and is a previous operator on the RSGB's contest team in the annual IARU HF Championship. Having visited the World Radio Teamsport Championship (WRTC) in Germany five years ago to simply 'live the experience', when the opportunity arose to be a referee at this year's delayed WRTC 2022 event in Italy, John was quick to apply and was delighted to be selected.*

## Lecture Room 3 – Technical / General

### **Why we should do outreach and buildathons – David De La Haye, M0MBD; The Regional Team**

David will give an overview of the opportunities to promote the hobby and ways it can be done with the help of the RSGB, in partnership with clubs and individuals. He will pose the question 'who and why?' and will give delegates the opportunity to feedback their views and suggestions for promoting the hobby.

*David De La Haye, M0MBD has been interested in electronics and radio since 1974 and has worked in audio and computer electronics to component level for many years. David's interest in radio took him from short wave listening to CB and eventually to a full licence in 2003, when he studied for and passed all three exams (in three months) at Loughton & Epping Forest Radio Society (LEFARS). Since then, he has been active as a club committee member and an active member of the RSGB, being a GB2RS newsreader for nine years, a District Representative for Essex and then becoming Regional Representative for Region 12 in 2021. David became the Chair of the Regional Forum in 2022.*

*David is a keen HF and VHF operator using multiple modes and has an interest in construction. As Chair of the Regional Forum David is committed to furthering the ambitions of the RSGB Board, increasing the engagement the Regional Team has with clubs as well as promoting outreach events.*

## **Allstar: 'Working the world on your analogue radio' - Oscar Wood, 2E1HWE**

With digital radio boasting the ability to link amateur radio operators around the globe, Allstar offers an alternative way for low cost worldwide analogue linking. Oscar will share how to utilise your existing VHF and UHF analogue radio to access the Allstar system and communicate with likeminded amateurs in many countries. Find out how to determine the most appropriate Allstar linked repeater near you and how to operate through Allstar repeaters in the USA, New Zealand, Japan and many more countries.

*Oscar Wood, 2E1HWE is a father of three from Southend-on-Sea in Essex. He started his amateur radio hobby in 2000 and has a specialised interest in digital modes on VHF and UHF. Oscar is also the founder and event organiser of the annual 'Gateways on the Air' (GOTA) event. Oscar also holds the NoV for the analogue simplex gateway MB7ISX which covers the Thames Estuary.*

## **NRC DATV system - Justin Cockett, G8YTZ**

The RSGB National Radio Centre's DATV system is an interactive display where members of the public can select amateur television signals from the QO-100 satellite. The TV display normally shows the OSCAR-100 beacon transmission. It scans for amateur transmissions, and the display remains active even when nobody is using it. This presentation will cover: Defining the requirements for a public display; proof of concept demonstration; high-level design; obtaining budget approval; low-level design; implementation stage and the public launch.

*Justin Cockett, G8YTZ passed his RAE in 1980, and in the same year he was successful in joining the BBC as a trainee engineer. During training he gained experience across wide range of transmitting station types and subsequently joined Transmitter Capital Project Department where he specialised in re-engineering several BBC high-power FM stations. In 1993 Justin left the BBC to move to the rapidly expanding Telecommunications and Information Systems industry.*

*Justin is the NOV holder of the GB3JV Amateur Television repeater in Petts Wood, and in 2021 joined the RSGB's National Radio Centre volunteer team where he promoted and succeeded in designing for the new OSCAR-100 Interactive Digital Amateur Television display.*

## **RSGB EMC Committee investigations into sources of RF electrical interference from recent developments in electronic equipment – David Lauder, G0SNO**

David, G0SNO gives a presentation on RSGB EMC Committee investigations into EMC problems and their solutions including electric vehicle charging - wireless and wired; electric bicycles and scooters; 12 volt battery chargers; Solar Photovoltaic systems; Air source heat pumps; LED lighting; Wind turbines; VDSL and g.fast.

*David Lauder first obtained his Class B amateur radio licence about 40 years ago followed by Class A in 1992. He has been a member of RSGB EMC Committee for over 30 years and has written the EMC column in RadCom since October 1996. He is a member of the Investigations Group of the RSGB EMC Committee and he is also Chair of the Noise Measurement Campaign (NMC) Subgroup of the IARU Region 1 EMC Committee.*





## **Design and Production of PCBs for Amateur Radio Projects – John Linford, G3WGV**

The advent of free, high quality printed circuit board design software and low-cost PCB fabrication means that professional quality PCBs are now within the reach of radio amateurs wishing to build their own projects. The evolution of electronics construction techniques is briefly reviewed followed by an introduction to PCB software and modern fabrication methods. A PCB design project from hand-drawn circuit to board production is demonstrated live.

*John was licensed as G3WGV in 1967. He is a keen HF/VHF CW DXer and an inveterate constructor. Starting with homebrewing valve radios in the 1960s, he continues to design and build electronics projects, many of them for his shack. With a longstanding interest in software engineering, John designs numerous PC and single board computer projects for his amateur radio station. Outside amateur radio he enjoys hillwalking in his native Lake District, is a light aircraft pilot and plays the pipe organ, although not particularly well!*

## **The UK Meteor Beacon project – Brian Coleman, G4NNS**

Phase 1 of this project was completed in 2022 when the UK meteor beacon GB3MBA went on the air enabling studies of meteor events over the UK using simple equipment and making possible a range of STEM projects featuring radio and astronomy. Phase 2 of the project, which will be described in the presentation, is to develop a network of receivers streaming their data via a central server for detailed study of individual meteor events. This is a cooperation between the “worlds” of amateur radio and astronomy. In particular this is with members of the Fireball alliance, which in the UK is led from the Natural History Museum, with the aim of studying meteors and when possible recovering meteorites. Both project phases have been supported by the RSGB Legacy Fund and beacon running costs for three years are being met by the British Astronomical Association.

*First licensed as G8AZU in 1967, Brian has always been interested in UHF and microwave activity and construction. He is active on 3.4, 5.7, 10 and 24GHz EME using a 3.7m dish antenna and is interested in radio astronomy. Recently he has developed an interest in making meteor observations using radio and has assembled a team to build the GB3MBA beacon to provide UK coverage and to develop a receiver network for the study of meteor events over the UK.*

## **Unlocking Possibilities: Adventures in Ham Radio's 30THz Band – Remigiusz Lecybyl (Remi), M0LRH**

The relatively uncharted territory of the 30 THz band has recently captured the attention of ham radio enthusiasts, even in the face of formidable technical challenges associated with signal generation and detection.

Drawing parallels to the early stages of shortwave radio a century ago, this presentation embarks on a journey to demystify the 30THz band through practical hands-on experimentation. Delving into the properties of electromagnetic waves, propagation, and material properties within this band, the practical signal generation, transmission, and detection methods are explored. The synchronous phase-sensitive modulation and demodulation technique is explained, allowing for detecting faint signals in noisy surroundings.



A comprehensive survey of published experiments in the 30THz band underscores the current landscape, spotlighting a burgeoning community of pioneers at the forefront of this emerging field. The ongoing effort to enable voice, data, and image transmission using the 30THz band is described. In the face of daunting technical intricacies, the 30THz band emerges as a captivating canvas for amateur exploration. Through empirical evidence bridging theory and practice, this presentation not only demonstrates the viability of ham radio communication across distances exceeding 400 metres but also celebrates the collective effort of a small community to unlock the full spectrum of possibilities within the 30THz spectrum.

*Remigiusz Lecybyl, M0LRH, has been interested in electronics for approximately 40 years and was first licensed as a radio operator in 2020. He is a member of several organizations, including the RSGB, Cray Valley Radio Society, GQRP Club, UK Microwave Group, and FISTS CW Club. His radio interests are focused on frequencies above 100GHz, and he is dedicated to exploring this area of the radio spectrum.*