



RSGB 2019 Convention lecture details

HF Stream

Dave Sumner K1ZZ – Keynote lecture – ‘Our Global Amateur Radio Community’ For its entire history amateur radio has transcended the-barriers and boundaries of geography, nationality, culture, and class. Keynote speaker David Sumner, K1ZZ, has been involved with the International Amateur Radio Union (IARU) for half of its 94-year history, first as a member of the ARRL professional staff and currently as its volunteer Secretary. Along the way Dave has worked with hundreds of radio amateurs in dozens of countries to protect, promote, and advance the unique access to the radio spectrum that we all enjoy. He will share why he believes a bright future awaits generations of radio amateurs to come.

Prof Chris Scott – ‘The ionospheric response to intense bombing during WWII’

Chris Duckling, G3SVL - ‘Lessons from the 6Gs VK9XG DXpedition: logistics, 160m & FT8 Fox and Hounds mode’. Chris will take a retrospective view on mounting this DXpedition, the challenges of getting sufficient kit there, enjoying 160m rates of five per hour (!) and maximising the rate as the Fox in FT8 DXpedition mode.

Gwyn Williams G4FKH – HF Propagation

Jim Loughlin, G4DKQ – ‘A Brief History of Baldock Monitoring Radio Station’. From its opening in 1929 as a receiving station for the Imperial Wireless Chain, Baldock Monitoring Radio Station has seen many changes throughout the ninety years of operation. Under GPO control it expanded to include a Frequency Control Station while extending the radio telegraphy and telephony services to include circuits to all the major continents of the world before WWII. The station also provided a maritime wireless receiving service for ships at sea. Following a number of changes in operations under the GPO, MPT and as an executive agency of the DTI the station became part of Ofcom in 2002. The talk will cover the milestones in its history up to the present very different operational capabilities of the station.

Don Field, G3XTT – ‘Guest Operating’. Being part of a multi-operator contest or DXpedition effort can be fun, it's a great learning experience as to how others operate and how they configure their stations, and can expose you to different propagation (and, indeed, different cultures when operating from overseas). Don has been involved in many such operations from more than 50 DXCC entities and talks about how to get yourself invited and how to make the most of such opportunities.

Roger Balister, G3KMA and Igor Znamenskiy UA9KDF – **The “Arctic Legends” expedition by RI0B to the Russian Polar Arctic**. After introducing our distinguished visitors from the Russian Robinson Club we will see a film (in English) of the RI0B operations from a number of rarely visited IOTA groups in the Kara Sea in late 2018. This was one of many challenging operations carried out by the Russian Robinsons in the last 25 years.

Roger Balister, G3KMA and Andrey Korobeynikov UA9LDD – **IOTA, No Ifs, No Buts**. Roger will give some personal thoughts on the place of IOTA in today's amateur radio scene and point out the value of greater participation in the programme by British amateurs and the



ease with which this can be achieved at very little cost. This will be followed by a return to the Russian Robinsons' contribution to IOTA and a short video-clip with English subtext of the RI1F operation from Viktoriya Island in the Franz Josef Land Archipelago in late 2017.

David Deane, EI9FBB - DXpeditioning - 5V7EI and lessons learned from previous activity

Tony Canning, G2NF – Urban QRM; What can I do?

Nobby Styles, G0VJG – DXpedition to Wallis Island

Prof. Michael Warrington, G4EMW – HF Radio within the Polar Regions and the Problem of Maintaining Communications with Civil Aircraft

VHF Stream

Marcus Walden, G0IJZ – 'Tropo Ducts: A Strategy for Records?' Marcus will talk about propagation via elevated tropospheric ducts. He will present analysis of radiosonde data and show propagation predictions that explain some of the long-distance amateur links made through ducting. The talk will cover VHF through to mm-wave bands.

Alwyn Seeds, G8DOH – 'Coax and connectors, the forgotten ingredient of high-performance VHF/UHF stations. Alwyn will draw on his long professional and amateur experience to explain many of the pitfalls and mistakes made when selecting feedlines and coaxial connectors. Although focused on VHF/UHF issue this talk should be of interest to all radio amateurs.

Chris Deacon, G4IFX – 'More on the polarisation of 50 MHz signals via sporadic-E'. At VHF we tend to assume that our signals arrive at the other end with more or less the same polarisation as they left with, whereas at HF it's commonly believed that polarisation is effectively 'scrambled' as the signal goes through the ionosphere. But how many of us know what's really happening, particularly via sporadic-E which suffers from such dramatic fading? In this session Chris Deacon, G4IFX will initially reprise some of the results from his 2016 and 2017 Convention presentations, which showed that the effective polarisation of sporadic-E signals is constantly changing over timescales of seconds to minutes. He will then go on to describe the results of his more recent experiments using new more comprehensive measurement techniques, which are beginning to help us answer key questions about the true nature of Es propagation.

Jenny Bailey, G0VQH – 'Building your own antenna test range' I would love to check the performance of some home-made antennas and a few purchased antennas, for example the 6/2/70 white stick omni from various manufacturers. A professional antenna test range is beyond the budget of most radio amateurs, so how well would a compromised range built in a back garden work? This talk will explore our adventures in antenna testing.

Neil Smith, G4DBN - **I can HEAR it, why won't it decode?** How do you choose the best digital mode for tropospheric DX at VHF and above? Why do distant stations on VHF/UHF/SHF digimodes often decode better than those at 300-500km? Neil will investigate the effects of multipath, scintillation, scatter modes and radio characteristics on signal coherence and decodability. He will discuss the shortcomings for terrestrial DXing of using



modes and technologies designed for HF and EME. Could alternative modulation schemes work better for terrestrial DX? Does the future lie in real-time path sounding and agile adaptive techniques?

Chris Whitmarsh, G0FDZ - 122 GHz and up. Chris is a very well-known and respected microwaver who is constantly 'pushing the frontiers' in the higher microwave bands. His talk will cover the 122, 134 and 241 GHz bands and beyond and the equipment that is typically used. He will also cover the operating challenges to enable the record breaking contacts to be made.

Richard Banester, G4CDN 2m Ionosscatter - using digital modes to open up paths that are usually unworkable. The push for everyday 1500km.

Noel Matthews, G8GTZ EME Adventures using the 32m dish at Goonhilly. Noel's presentation will cover the recent history of the iconic Goonhilly site in Cornwall and the current amateur radio activities on the site. In particular, he will talk about the opportunity and challenges of using the 32 metre GHY6 dish for EME communications.

Sam Jewell, G4DDK – Icom IC9700: How does it measure up as a VHF DX transceiver - It has been several years since any of the big amateur radio manufacturers have released a VHF and UHF only transceiver. Icom's announcement that the new IC9700 would not only cover 144 and 432MHz but would include 1296MHz as standard set a high level of expectation. Not only would this be a new transceiver but it would use software defined radio (SDR) architecture instead of the usual superhet technology in order to improve performance. Hopes have been very high that this new transceiver would be the perfect radio for dx'ing, satellite and as a general base station for other modes of operation. Have the expectations been realised? G4DDK will present his finding about the radio including a number of key performance measurements. These measurements have been made by a number of well-known amateurs and verified by Sam's own measurement Is the IC9700 the radio we have all been waiting for or should we wait for the next generation?

Simon Watts, G3XXH - Airborne Maritime Reconnaissance Radars for the RAF, 1946 – 2010. At the end of WWII microwave airborne maritime reconnaissance radar (known as ASV) was widely in service with RAF Coastal Command. New systems were subsequently developed, but based closely on their wartime heritage. During the 1970s there was a major change in technology and design, resulting in the Searchwater radar, incorporating advanced signal processing, computer control and sophisticated wide bandwidth waveforms. This talk will describe the evolution of ASV radars from the end of WWII up to Searchwater in the Nimrod MR2.

Mike Richards, G4WNC – Amateur Radio and the Raspberry Pi

Contest University (Saturday)

Steve Nichols, G0KYA - Propagation and Contesting - Steve will discuss how propagation plays an important role in contesting and present the tools available today for helping to predict for the big weekend itself. The session will show how time of day defines the productivity of the HF frequency bands available.



Dave Lawley, G4BUO – The M6T Multi-Multi Station. Dave will present on the world famous M6T contest station. This Multi-Multi (multi operator, multi transmitter) UK station holds a strong competitive edge both on a continental and global scale. Dave will run through the team and an insight to how they achieve such impressive results as well as a history of the Suffolk station.

Jonathan Mitchener, G0DVJ – ‘SkookumLogger - Contesting with macOS’ Jonathan will cover how this feature-rich logger supports contest operators using the Mac, and will incorporate actual demonstrations. This software by K1GQ, supports a large number of contests, including most RSGB HF & VHF events. SkookumLogger was used by entrants in WRTC18 and also has an integrated CW contest simulator. It can be configured simply for beginners but also in 2BSIQ mode for the most advanced contester. It has developed significantly, and the number of Mac users has increased markedly, since the previous talk Jonathan did on this at the 2011 convention.

Dominic Smith, M0BLF – Winning the RSGB AFS Superleague - Dom will share how operators of the Camb Hams achieved the winning club in the RSGBs AFS Superleague. Undoubtedly, this award comes with some good operating, decent station engineering and some other secrets which promises to be interesting to hear about.

Dave Sumner, K1ZZ – WRTC (World Radiosport Team Championship) - Dave is a very well-known DXer and contester from the USA. We have a unique opportunity for Dave to present this year. Dave will present what the WRTC (World Radiosport Team Championship) is all about, how it has evolved since the first event in 1990 and how to be a part of the next one in 2022. WRTC is the Olympics of Amateur Radio – a truly exciting and demanding programme, which is growing in popularity every time it is held.

Chris Tran, GM3WOJ – The GR2HQ activation in the IARU Contest – Chris will also focus on the IARU contests. Every year, IARU member nation activates HQ stations as part of the multiplier scheme within this contest. Organising participating HQ stations for the UK is a challenging job and Chris is at the heart for the GR2HQ UK stations. Chris will show how this activation is executed and how GR2HQ compares to other very competitive activations from around the world.

Andy Cook, G4PIQ - SO2R without Breaking the Bank

AMSAT

Achim Vollhardt, DH2VA, AMSAT-DL - Report on the Es'hail-2 / QO-100 activities of AMSAT-DL

Achim Vollhardt, DH2VA, AMSAT-DL - Narrow band operation for QO-100

Iain Young, G7III - Ranging using the QO-100 Satellite

Prof Julia Hunter-Anderson, Warwick University - WUSAT-3 – a novel wildlife tracking satellite



Pat Norris, Former Apollo Engineer - Apollo 50 and return to the Moon. Pat Norris FRAeS, FRIN, AIAA, CITP is a retired space and IT engineer. Pat spent 50 years working on space projects including the Apollo Moon landings as a NASA contractor and the Hubble Space Telescope as a European Space Agency program manager. From 1980 until 2018 he worked for software multinational CGI. He is the author of two books on space surveillance as well as many articles, book chapters and conference presentations on all aspects of space. He was awarded the Apollo Individual Achievement Award in 1969 and the Sir Arthur Clarke Lifetime Achievement Award in 2016. His latest book *Returning People to the Moon After Apollo: Will It Be Another Fifty Years?* was published in June. His talk will be entitled 'Returning to the Moon 50 Years after Apollo 11'. The question of why we haven't sent humans to the Moon since 1972 is explored by identifying the success factors of Apollo and the failure factors of the contemporary Soviet programme. This provides a basis for assessing today's programs and plans for sending humans to the Moon, including those of NASA, the two American billionaires Elon Musk and Jeff Bezos, China and Russia.

Dr Barnaby Osborne European Space Agency, M6KGO - Challenges for the Small Communication Satellite Industry. Small Satellites are at the forefront of innovation in the space industry leading developments in miniaturisation, use of commercial off-the-shelf components in space and the implementation of mega-constellations. Previously small satellites were predominately used for academic/research missions; however, we are now seeing a significant interest in using them for commercial missions, with commercial communications missions predicted to be the most numerous. This presentation will give an overview of the current small communications satellite sector, discuss some of the future challenges that face the industry and provide an overview of some of the upcoming technology solutions that will be needed.

Jim Heck, G3WGM, Hon. Sec. AMSAT-UK - Welcome and AMSAT-NA Presentation. This year is the 50th Anniversary of AMSAT-NA and they are celebrating over the weekend of 18th-20th October. In light of this, they have given the AMSAT-UK committee permission to present on their behalf. The presentation will cover existing projects and the new GOLF-TEE project, which is under development.

Dave Crump, G8GKQ - Use of the QO-100 Wideband Transponder for DATV

Dave Johnson, G4DPZ - Report of the Current FUNcube fleet of satellites and FUNcube Next

Dr Chris Bridges, Surrey Space Centre - Student satellite hardware developments at SSC

Dr John Paffett, CEO KISPE Space - Open Source Satellite Strategy

General interest

Dean Pesnell - Project Scientist at the Solar Dynamics Observatory. "Solar Dynamics Observatory, SDO, the Sun and the Ionosphere" (via Skype) DX'ing is more fun when the Sun has sunspots. So amateur radio operators closely monitor what the Sun is doing. Dean uses



the Solar Dynamics Observatory (SDO) to study the Sun. He will describe two areas where SDO science is directly related to radio communications. 1) SDO measurements of the light that creates the ionosphere. 2) How the sunspot number will change over the next 5-10 years. Come and see how studying the Sun helps us understand the Earth and amateur radio.

Elaine Richards, G4LFM – ‘Writing for all variants of RadCom’. Could you be an author for one of the RSGB’s magazines or e-magazines? It’s not as difficult as you think. Whether it’s something simply explained for RadCom Basics, something much more complex for RadCom Plus or an idea or project that you think other Members will want to read in RadCom, we are interested in your ideas. The editorial team and the Technical Panel are there to help bring your ideas to completion. Elaine will give some easy-to-remember pointers to help you on your way to becoming a RadCom author.

Steve White, G3ZVW - The BBC’s South Atlantic Relay Station on Ascension Island. Steve will give a presentation on the BBC’s South Atlantic Relay Station on Ascension Island. The presentation will cover the facility’s broadcast transmitters both old and new, the antennas and especially how the antennas can be electrically steered to beam signals accurately to any part of Africa or South America. All-in-all it gives a fascinating insight into a high-power broadcasting facility on this remote island in the middle of the South Atlantic.

Meet the Board – a chance to discuss current issues and strategy with the members of the RSGB Board of Directors.

Kamal Singh, M0IOV – ‘The future and growth of Amateur Radio’. There was a time when amateur radio was at the leading edge of technological innovation and pioneered important telecommunications breakthroughs. Year by year, our importance, strength and contributions started to decline. Our appeal began to deteriorate as the digital world overtook us and we struggled to remain relevant. We thought digital might be the distant future, but it was actually the present. The more the world progressed with mainstream technologies, the deeper we withdrew into our secluded niche, often citing the mantra “that isn’t radio”. The world over, amateur radio is facing the challenge of attracting new blood into its community. Can we reverse this tide, or will we be relegated to the annals of obsolescence? This session explores an alternative history and suggests some controversial ways to move forward.

John Rogers, M0JAV and David Lauder, G0SNO – RFI Clinic. Interested in finding out the characteristics of some common causes of RFI? This session will consist of a short presentation on the tools and techniques used to locate and identify RFI sources. Then a number of test setups will be available using radios, SDR’s and spectrum analysers to let you see and hear some of these common RFI sources. If you have an unusual source then bring it along for us to investigate.

ICQPodcast Session - Grow, Merge or Disband your Club - Is your club relevant in today’s society? Now that we are well and truly in the 21st century are radio clubs as relevant as they were 60 years ago? Many clubs are suffering from declining membership numbers, others are close to closing. Successful clubs seem to have that winning formula. In modern times groups of like-minded amateurs have bonded together to enjoy our hobby successfully without the club infrastructure. Is it time to rewrite the rule book? We invite the audience to interact with the panel to discuss this problem. Discussion and debate to understand our options in a new era to keep our hobby alive.



Ian White, GM3SEK, returns to update his 2015 Convention talk about reducing RF noise levels and the risk of causing interference. The original talk called 'Clean Up Your Shack' has had over 7000 views on YouTube and many amateurs have successfully followed its recommendations. This year's talk, 'Clean Up Your Shack - Revisited' reviews the practical user experience and updates the recommended RF chokes and filters. (It will help to have viewed the 2015 talk at <http://tinyurl.com/y2auze96>)

Nick Totterdell, G4FAL - RSGB Cricket World Cup Radio Marathon - The journey from inception to completion. The story of the operating team who made the largest number of QSOs of any RSGB event to date

Derek Koziel, MW0LNA - Digital Homebrewing and the Schematics of SDR. There's a joy to understanding how the radios we use work and being able to build some parts at home, as a key piece of a station or as an experiment. Electronics kits are wonderful, but what about "kits" for software? We'll take a tour of some software projects and tools with a particular emphasis on Digital Signal Processing. As DSP becomes a key component of most new radios it is the perfect new component to learn a bit about. Guaranteed that you'll leave with a place to start.

Tony Kent, G8PBH – Exam update

Alan Messenger, G0TLK - Amateur radio photography - hints and tips. A simple introduction to try and help you get better images of your amateur radio activities, known to be a less than easy subject to photograph! For those who maybe unfamiliar with basic photographic techniques there will be some guidance on taking better pictures generally. You will probably have to indulge in a bit of image processing so the talk will cover use of the Windows 10 built in app for doing that. You will also be able to use the hints and tips provided in your other photography! Alan is a Licentiate of the Royal Photographic Society.