Volume 79, Issue 4 - April 2026

RadioZS

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Radio ZS

The Journal of the South African Radio League
Die Tydskrif van die Suid-Afrikaanse Radioliga
"Advancing the Spirit of Amateur Radio Through Innovation"

YOU are the SARL!

Volume 79, Issue 4 - April 2026
Editor: Dennis Green, ZS4BS radiozs@sarl.org.za

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On the Cover. Eight of the 3Y0K team with Paul, ZS1S at Cape Agulhas

Op die Voorblad. Agt van die 3Y0K-span saam met Paul, ZS1S by Kaap Agulhas

South African Radio League
Suid-Afrikaanse Radioliga
Founded 20 May 1925 / Gestig 20 Mei 1925
The National Body for Amateur Radio in South Africa and Member Society of IARU Region 1
Die Nasionale Liggaam vir Amateur Radio in Suid-Afrika en Lidvereniging van IARU Streek 1
https://mysarl.org.za/

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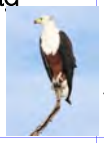
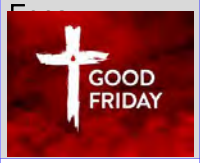
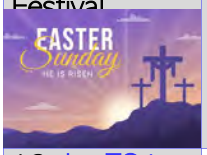
April 2026

Sunday	Maandag	Tuesday	Woensdag	Thursday	Vrydag	Saturday
29 CQ WW WPX SSB contest 	30 Wêreld Bipolêre Dag	31	1 Pasga, April-gek Dag en Internasionale Voël Dag 	2 Pesach, World Autism Day, the SARL 80 m QSO Party and Cosmos Festival	3 Goeie Vrydag, Pasga en Kosmos 	4 Pesach, the Pretoria ARC Boot Sale, the SARL QRP Contest and Cosmos Festival 
5 Easter Sunday, Passover and Cosmos Festival 	6 Pasga en Familiedag	7 Pesach (Passover) and World Health Day	8 Pasga en Provinsiale Skole open 	9 Pesach (Passover)	10	11 SARL Technical Symposium and the Africa FT4 DX Contest
12 the ZS4 QSO party 	13	14	15	16	17 die registrasie vir die Mei RAE sluit 	18 World Amateur Radio Day and World Heritage Day 
19	20	21 National Tea Day 	22 Lyrids Meteoorreën en Sandton Kraguur Tegnologie praatjie	23 Lyrids Meteor Shower and English Language Day	24	25 Marconi Day and the SARL Saturday 40 m Club Contest 
26	27 Vryheidsdag en Morsedag 	28 Buy your spouse a radio Day	29 Internasionale Gidshonddag 	30 the end of the ISS Contact Session	1 die SARL Nasionale Konvensie, Sauvignon Blanc Dag en Werkersdag	2 the SARL National Convention and World Naked Gardening Day 

They shall grow not old, as we that are left grow old:
Age shall not weary them, nor the years condemn.
At the going down of the sun and in the morning
We will remember them.

Hulle word nie oud soos ons wat bly vergrys,
Die jare sal hulle nie raak nog die tyd se eis.
En, soos die son sak of die more ontvou,
Eer hul herinering - Ons sal onthou.

Alwyn Petrus Burger, ZS6BTH
Hal Lund, ZS6WB
Koos de Kock, ZS5KDK
Mario Vosloo, ZS1MV

Amateur Radio News

HF Noise Level

The CSIR Technical Committee on EMC, TC73, met on Thursday and again discussed the increase in the noise level on HF as an emerging concern. The SARL made a presentation on the increasing problem at the April 2025 meeting of the committee. It was then agreed to publish the SARL presentation on the CSIR TC 73 portal for comment and input. It was agreed to request the ICASA Technical Department to report on the extent how they are able to monitor the situation. Through some administrative confusion the presentation was not placed on the portal. The SARL was requested to resubmit the presentation to the CSIR Secretarial Support Group to ensure the presentation was place in the portal for TC73 committee members to be able to comment. A decision would then be taken at the November 2026 meeting on how to proceed.

The SARL Technical Symposium

Save the date of 11 April for the SARL Technical Symposium which will be presented virtually on the AMSAT SA video conference platform and simulcast on OSCAR 100. The symposium will run from 10:00 to 16:00 CAT. Free registration is now open to obtain the link to join the symposium. The full programme and the registration link are published on page 12 as well as at www.amsatsa.org.za and www.mysarl.org.za.

The 2026 SARL National Convention

Registration for the 2026 SARL National Convention has been open for quite some time. Have you registered? Registration is required for attending the event in person or for attending the AGM on the virtual platform. Visit the SARL website and click on AGM to get the registration form. The 2026 SARL National Convention Booklet and the electronic proxy form will be made available on Thursday 2 April 2026.

The SARL Secretary received eight nominations to serve on Council, there are five vacancies. In terms of Rule 16.6, members of Council shall be elected by the ordinary members of the League entitled to vote. Such election shall be conducted before the AGM by electronic means. The online voting platform will open on Thursday 2 April and closed at midnight on Friday 24 April 2026. More information will be given next Sunday.

The Port Elizabeth Amateur Radio Society has arranged the weekend at the Willows Resort and Conference Centre. There will be a welcoming function on Friday evening; the AGM and a partner's programme to SANCCOB, followed by the Awards Dinner on Saturday. Meridian Wine Merchants and Fitch & Leedes will be sponsoring the wine and gin & tonic. Also arrange your accommodation in Port Elizabeth for the weekend of 1 to 3 May. See you in the Friendly City for the National Convention.

Working Groups and Coordinators

Amateur Radio Today: Hans van de Groenendaal, ZS6AKV artoday@sarl.org.za.

ART Relays: Louis Veldkamp, ZR4DJL and Andy Cairns, ZS6ADY

Awards: Tjerk Lammers, ZS1J

Contest WG: Johan Bezuidenhout, ZS6JBZ; Gerhard Coetzee; ZS3TG; Phillip van Tonder, ZS6PVT; Karel Bezuidenhout, ZR6K, Karel Bezuidenhout, ZS6WN; Phillip Fischer, ZS6FY; Danie Schnetler, ZS6DPS

Database: Colin de Villiers, ZS6COL

Forum: Bradley Phillips, ZS5Z; Roger Conroy, ZR3RC and Andy Cairns, ZS6A

IARUMS: Jim Archibald, ZS6NS

QSL Manager: Gert du Plessis, ZR6GRT

RAE and Training: Donovan van Loggerenberg, ZS2DL rae@sarl.org.za

Regulatory WG: Hans van de Groenendaal, ZS6AKV; Leon Lessing, ZS6LMG; James Archibald, ZS6NS and Peter Leonard, ZS5PL

Reno Faber Station: Alistair Skudder, ZS6S

Repeater Co-ordination: Philip van Tonder, ZS6PVT

SARL Beacon Project Manager: Brian Jacobs, ZS6YZ

SARL Hamnet: Brian Jacobs, ZS6YZ; Michael Taylor, ZS1MJT; Andrew Gray, ZS2G; Roy Walsh, ZS3RW; Rickus de Lange, ZS4A; Keith Lowes, ZS5WFD; Gert Botha, ZS6GC and Leon Lessing, ZS6LMG

SARL/ICASA Liaison: Hans van de Groenendaal, ZS6AKV; Nico van Rensburg, ZS6QL and Colin de Villiers, ZS6COL

SARL News/SARL Nuus: Dennis Green, ZS4BS; Dave Reece, ZS1DFR; Rory Norton, ZS2BL; Andy Cairns, ZS6ADY; Vivian Dold, ZS6VD; Herman Erasmus, ZS6CTA; Paul Johnson, ZS1S; Irene Myburg, ZS6IEA; Deon Erwin, ZS1ZL; Christo de Witt, ZS3CDW, Hannes Enslin, ZS6JDE and Kevern Burger, ZR2BK

SARL VHF and Above Records: Paul Smit, ZS6NK

Swap Shop: Rassie Erasmus, ZS1YT

Youth/Jeug: Koos Fick, ZR6KF

Radio ZS Awards

The Gary Immelman RA Heritage Award Floating Trophy awarded by the SARL Council for the best article of a historic nature describing an event that occurred more than five years previously or an interesting personality that has played an important part in the development of Amateur Radio in years gone by. Donated by Gary 1993.

The JJ Pienaar Trophy awarded by the Editor for the best article published in Radio ZS during the past year.

The Radio ZS Shield awarded by the Editor to a South African Radio League affiliated Club or member who best supported Radio ZS during the year. Donated by the Port Elizabeth Branch in 1966.

Radio ZS

Radio ZS is a forum for South African Radio League members to share their amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on e-mail are especially welcome. Material may be submitted in MS Word, Open Office or rtf format, using Calibri 12 pt and English (South Africa). Material may be e-mailed to radiozs@sarl.org.za. The League cannot be responsible for loss or damage to any material. www.sarl.org.za/public/RadioZS.asp.

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Silent Key: Harold R. Lund, ZS6WB

Chris R. Burger ZS6EZ

Hal Lund ZS6WB was born in 1935 and licensed as W8LIM in 1952. He obtained the callsign ZS6WB in 1975. He died in Pretoria on 28 February, aged 90.

Hal supported early NASA space missions from radar tracking stations in the Caribbean, Ascension, South Africa and Madagascar. He settled in South Africa in 1975.

Hal was an early pioneer in VHF operations, especially on the 50 MHz band. While based in the Bahamas as VP7CX, he ran a series of VHF DXpeditions to Caribbean islands, including the Dominican Republic, St Kitts, Puerto Rico, Montserrat and Turks and Caicos.

Starting in the early Eighties, Hal became very active on 50 MHz and other VHF bands in South Africa. He became the first African to achieve DXCC on this band in 1998. Only two other South Africans have been able to follow his example in each of the three decades since then.

What made Hal's activity unusual is that he did not only pursue his own achievements. For more than a decade, Hal published a VHF/UHF newsletter which he widely circulated in southern Africa at his own cost. He developed voice protocols for meteor scatter, resulting in numerous contacts that would not have happened otherwise. He also provided mentorship to a number of aspiring VHFers and contesters that have subsequently continued to great things. He actively promoted VHF contesting in southern Africa, by proposing a square-based rule system in the Eighties and donating numerous trophies and certificates. He also provided log checking services and supported numerous contest expeditions to activate more grid squares.

Hal also provided equipment and other logistical support to a large number of DXpeditions and resident operators in neighbouring countries. Examples include residents such as 3DA0CA, A22KZ and ZS3AT, as well as DXpeditions by ZS4TX (7P), ZS6EZ (3DA, 7P, A2, V5, ZS9, ZS0), ZS6JDE (9J, 7Q) and others.

Hal's example and motivation have led to a quantum leap in achievements on VHF in South Africa.

Hal was the first South African to achieve VUCC

(Continued on page 8)

(Hal Lund, ZS6WB from page 7)

in 1999. As of 2026, he is still the second-highest station on 50 MHz. He was also the first winner of All Africa Award and Worked All ZS on 50 MHz.

Hal is on the DXCC Honour Roll, both on Mixed Modes and Phone. He still has the fifth-highest DXCC Challenge score in southern Africa. He was the second South African to achieve 9BDXCC in 2012.

Professionally, he started a series of successful businesses. At one point, his business was the largest Hewlett-Packard distributor in the southern hemisphere. He was an ardent pilot, both on aeroplanes and gliders.

He was a member of the SARL Amateur Radio Hall of Fame and the SARDT's Radio Amateur of the Year in 2011. He won several other SARL trophies too.

He set foot in over 40 countries and operated from at least 10 of them.

Emergency Power Generation Systems Using Starchy Tuber Arrays

Professor Emil Heisseluft* Lauton Institute, Grossmaul An Der Donau, Austria

Photo A. The Lauton Institute's Genetic Engineering and Research Centre outside Grossmaul an der Donau, Austria.[4]

Professor Emil Heisseluft investigates how potatoes have the potential to solve the world's energy problems.

The availability of emergency power-generation systems is becoming an ever-increasing challenge, especially given the impact of climate change and with it, the number of natural disasters occurring worldwide. Amateur operators are among those most affected, for who among us at one time or another has not been inconvenienced, at best, by not having access to the airwaves because our primary power source was unavailable? Gasoline- and propane-powered electrical generators, of course, have always been used in such situations, though noise (both of the audible and electrical varieties) impose limitations (the former, especially, limiting their use in urban areas). Now, solar systems are increasingly being employed, though their costs still can be prohibitive in some applications. Below, the good professor introduces us to still another option: the use of starchy tuber arrays that portend the generation of electrical power at a uniquely low cost, giving us the promise of efficient emergency power generators, even for use in the Third World. W2VU, CQ Magazine, April 2019

Introduction and Background

The Lauton Institute has a long and distinguished history of participating in the exploration of bleeding-edge science, including molecular biology and genetic engineering. For example, the first paper published in the popular literature by the Lauton Institute on molecular engineering was an article that appeared in the April 1982, issue of CQ on the threat to molecular electronics from microbes produced by genetic engineering.[1] The seminal research on this topic

(Continued on page 9)

(Emergency Power from page 8)

was performed by the Institute's prestigious Genetic Engineering and Research Centre (GERC; see *Figure 1)*, which was formed in 1971 and which, by the early 1980s, was recognized as a world leader in the development of new microbes using genesplicing techniques.[2] In the years that followed, GERC discovered revolutionary new ways to slow the aging process.[3] The research was paid for by three well-known, high-scoring DXers who had approached me in Dayton in the early 1990s. They offered to fund a research programme that would lead to the development of drugs that extended their lives to the point where they could ascend to and remain at the top of the ARRL DXCC Honour Roll for decades while their competitors died off. So, you see, my dear readers, the Lauton Institute has been at the forefront of molecular biology and genetic engineering since the early 1970s. This legacy bodes well for the success of our most recent work in the field of emergency power generation systems using tuber arrays.

The Lauton Institute's Genetic Engineering and Research Centre [which also houses the Centre for Research of Abnormal Personalities (CRAP)], seen in *Photo A,* is located in a forested setting just outside Grossmaul an der Donau, Austria.[4] The facility currently is treating five Radio Amateurs who recently formed a DX contesting club. The members anticipate erecting a rotating tower with Yagis for 160 through 6 metres at the peak of the mountain. Doctors and nurses are in attendance during all contests. The club will be using an all-tuber array of power supplies during the next DX contest to text its capability to function under emergency conditions.

Some Background on Starchy Tuber Electrical Generation Arrays

The first mention of the use of potato batteries in the scientific literature highlights the work of Golberg, Rabinowitch and Rubinsky at the Hebrew University and the University of California at Berkeley. According to these researchers, "we show that boiled or irreversible electroporated potato tissues with disrupted cell membranes generate electric power up to tenfold higher than equal galvanic cell made of untreated potato. The study brought about basic engineering data that make possible a systematic design of a Zn/Cu-potato electrolytic battery. The ability to produce and utilize low power electricity was demonstrated by the construction of a light-emitting diode-based system powered by potato cells. Primary cost analyses showed that treated Zn/Cu-potato battery generates portable energy at 9 USD/kWh, which is 50-fold cheaper than the currently available 1,5 V AA alkaline cell (retail) or D cells (49 – 84 USD/kWh)."[5]

First Application to Amateur Radio

Dear readers, you are most fortunate that, with CQ at the forefront of developments in amateur radio, the first amateur-related application of potatoes to power generation has already been described in the pages of this august magazine. Specifically, Hiroki Kato, AH6CY, in the July 2022, issue, published a seminal article titled "'Green' Power for QRPp."[6]

Here, he described how it was possible to obtain between 0,5 and 0,9 volts from a single potato regardless of the size of the potato or the distance between the two electrodes used. He also noted that by increasing the size of the electrodes, he could increase the current output without changing the voltage and that it was possible for a potato to produce output for as long as a month even after it became mouldy or rotten.

Beginning with several experiments employing a variety of copper and zinc-plated electrodes, one of Kato's more successful batteries, shown in *Photo B,* comprised a bank of eight cooked potatoes tightly wrapped in plastic tape. The two electrodes (again, copper and zinc) were bent into a "U" shape to increase the contact surfaces. Further experimentation by Kato yielded a 6-cell mashed-potato array in a 6-section plastic case that generated about 5 volts and a current greater than 30 mA.

High-Power Systems

While little known outside of the academic community, The Lauton Institute's Genetic Engineering and Research Centre (GERC) has for the last several years worked with the Hebrew University and the University of California at Berkeley to develop high-power, tuber-based power systems for the emergency response community (including the Amateur and Amateur-Satellite Services). Our first goal is the limited

(Continued on page 10)

Photo B. This eight-bank tuber array produced 1 mW of power with a current drain of 7,729 mA. (AH6CY photo)
Photo C. Shady Brook Farm in Yardley, Pennsylvania, yields from 25 000 to 35 ,000 pounds of potatoes per acre, more than enough for the Lauton Institute's experiments.[7]

(Emergency Power from page 9)

production of a unit capable of producing 5 A at 12 VDC for at least 30 minutes from activation. Initial estimates suggest at least 1000 tubers will be required to achieve our design goals, but battery longevity has been a problem and we are "burning" through potatoes faster than resupply is possible. To this end, the Institute has entered into a multi-year agreement with Shady Brook Farm *(Photo C)* for the delivery of its annual potato crop through the year 2033, to ensure an adequate supply of tubers for experimentation and product development.

Summary

Power generation systems using starchy tuber arrays have the potential to provide low-cost emergency power worldwide. Such systems have already been demonstrated in amateur radio applications and are under further development by the Lauton Institute. The intent is to fabricate units capable of producing 5 A at 12 VDC for at least 30 minutes from activation. To further such development activities, the Institute has contracted with Shady Brook Farms, whose acreage can yield up to 25 000 to 35 000 pounds of potatoes per acre, to supply it with potatoes through 2032. In addition to providing a cheap form of energy, this power source (except for the electrodes) is biodegradable.

Notes

[1] Heisseluft, E., "The Threat To Molecular Electronics From Microbes Produced By Genetic Engineering," CQ, April 1982, p.13

[2] Heisseluft, E. and J. Ostermond-Tor, "Fundamental Principles Behind the Use of Genetic Engineering to Create New Life Forms," Lauton Institute Report LI-1-71, 1971.

[3] Heisseluft, E., "How To Stay at The Top of The DXCC Honour Roll Until You Reach At Least Age 100," CQ, April 1996, p. 11

[4] Castle Hochosterwitz, this file is licensed under the Creative Commons Attribution-Share Alike 3.0 Austria license. Photo by Johann Jaritz

[5] Golberg, A., H. D. Rabinowitch and B. Rubinsky, Biochem. ZN/Cu-vegetative batteries, bioelectrical characterizations and primary cost analyses, Biophys. Res. Commun. 389, 2009, p. 168; https://tinyurl.com/2czj22j2; Abstract: https://tinyurl.com/3ezau73r

[6] Kato, H., "'Green' Power for QRPp," CQ, July 2022, p. 32

[7] Potato harvest; this file is licensed under the Creative Commons Attribution-Share Alike 2.0 Generic license. Photo by Richard Croft.

*Professor Heisseluft has returned to the Lauton Institute, Grossmaul an der Donau, Austria, where he is assisting his government in developing a new strain of potato that will yield a superior electrical potential when employed in a tuber array. E-mail: heisseluft.emil@mashuga.orf.ar

The 2026 SARL National Convention - The Willows, Port Elizabeth

At 18:30 on Friday 1 May, PEARS will welcome you to the 2026 National Convention at the Boma at the Willows Resort in Port Elizabeth. There will be gin and tonic and wine sponsored by Meridian Wine Merchants and Fitch and Leedes. You are also welcome to bring your own drinks.

AGM registration will start at 08:00 on Saturday 2 May in the foyer of the Conference Centre with tea and coffee to start your day. The AGM will start at 09:00. The Partners programme will also start at 09:00 and is a visit to The Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) with a chance to feed the Penguins.

PEARS will provide a boerie roll for lunch and at 14:00 there will be a talk and demonstration of Meshcore at the Boma.

The Awards Dinner will be held in the Conference Centre from 18:30 onwards. There will be a cash bar and sponsored wines.

The registration form for the National Convention is available at https://mysarl.org.za/sarl-agm-2026/, click on the link and fill in your details. Friday evening is R150 per person and Saturday evening is R250 per person, pay the amount into the SARL bank account and upload a copy of the PoP on the registration form.

The 2026 SARL National Convention Booklet and the electronic proxy form will be made available on Thursday 2 April 2026.

The National Convention takes place over a long weekend, so book early. There are various accommodation options to choose from chalets, cottages; rondavels; bungalows and caravans and camping, Visit the website at https://thewillowspe.co.za/ for all the information. You can also book at Pine Lodge https://pinelodge.co.za/ about 9 km from The Willows. Or make use of one of the many accommodation webpages.

Come on, do the right thing - see you in the Friendly City in May 2026!

Presented on the AMSAT SA WEBEX video platform. Click here for free registration

10:00 Welcoming address by SARL President Nico van Rensburg ZS6QL

10:30 Keynote address - Why science in Amateur Radio is important to drive the future

Speaker: Dr Nathaniel Frissell, W2NAF. Dr Nathaniel Frissell, Ph.D., is an Associate Professor of Physics and Engineering at The University of Scranton. Dr Frissell's research interests include space weather and radio science, with a focus on traveling ionospheric disturbances and High Frequency (HF) radio propagation.

11:00 EME on 23 cm with a solar cooker

Speaker: Derek Gravett ZS5Y. EME, call it EARTH Moon-Earth or moon bounce communication, it has a long history in Amateur Radio but for many decades required large expensive antenna arrays. In this presentation, Derek introduces a simple easy way using a modified solar cooker as the antenna.

11:45 Telemetry via Repurposed WSPR for Amateur Radio Pico balloons as they travel around the World

Speaker: Stewart Clark, ZS1WT. Stewart is a retired software engineer whose interest in electronics and radio began at around the age of ten. He entered university intending to pursue physics and

(Continued on page 13)

(Technical Symposium from page 12)

mathematics, but was ultimately drawn into computer science, where he developed a deep and enduring fascination with logic and low-level hardware programming.

His paper describes why WSPR, developed by Joe Taylor, is used as a telemetry system for amateur radio Pico balloons carried globally by jet streams. Typical Pico balloon payload hard-ware is described along with the most common telemetry data and how it is encoded into valid WSPR packets. In conclusion, the science that can be extracted from this telemetry that is transmitted every 10 minutes.

12:30 Make Meteor Scatter Communication your next Amateur Radio Project

Speaker: Derek Gravett, ZS5Y. Derek will be introducing you to MSK144, one of the most effective digital modes designed specifically for this purpose. MSK144 is part of the WSJT -X suite developed by Nobel laureate Joe Taylor, K1JT. It uses fast, efficient minimum-shift keying to capture those fleeting bursts of reflected signals from meteor trails—bursts that may last only fractions of a second! With this mode, VHF and UHF operators can achieve contacts of 500 to 2 000 kilometres or more, even when the bands seem completely dead.

13:15 Refreshment Break

13:45 Development of a contesting and DXing dashboard for the HamSCI personal space weather station.

Speaker: Owen J. Ruzanski, KD3ALD, Computer Engineering Student, The University of Scranton, USA. Aspiring Network Engineer / RF Engineer with hands-on experience in IT administration, networking and RF experimen-tation. Passionate about embedded systems, computer engineering and applied problem-solving.

The HamSCI Personal Space Weather Station is a multi-instrument system designed to measure space weather for both scientific research and amateur radio operations. The core of the PSWS is the RX-888/ KA9Q-radio WSPR Daemon-Grape HF SDR. While most PSWS development efforts thus far have focused on strictly scientific objectives, this project aims to make the data available and useful in real time for radio amateurs. The dashboard has a goal of enhancing real-time HF propagation assessments for Radio Amateurs.

14:45 Technology in providing effective SARL HAMNET emergency communication

Speaker: Brian Jacobs, ZS6YZ, SARL Hamnet National Director. It is all about using the best technology available and having a plan B for when technology fails. As "Communication Specialists" we provide what works best and have a whole bag of tricks that we can fall back on when needed. Gone are the days of the Bakkie and Baofeng brigade.

15:15 The SARL Noise monitoring Project

Speaker: Anton Janovsky, ZR6AIC. The SARL HF noise monitoring system takes a 12 x 1MHz bandwidth sample every 2 minutes using the RTL power utility and saves the measurements in a CVS file. The 2-minute scheduling is done with a Crontab calling a script in the HF-noise directory. The RF samples are taken at a 1MHz bandwidth from 1MHz to 30MHz, therefore 29 of CVS files are created and get appended as the measurements are made.

15:45 The final word

Chris's Musings

Chris Turner, ZS6GM

I was reading about Artemis II, Nasa's new moon rocket and comparing the technology with that of Apollo. As many of us enter our autumn years, we have seen a lot of life. We have seen great technological growth and things are very different to our care free youth.

Moore's Law an observation and projection made by Intel co-founder Gordon Moore in 1965, stated that the number of transistors on a microchip doubles roughly every two years, while the cost of computers is halved. This exponential growth in transistor density has driven the rapid advancement of computing power, efficiency and miniaturisation for over 50 years.

When I started out in electronics, semi-conductors were in their infancy and computers filled a whole room. There is more computing power in modern mobile phone than in the entire Apollo space capsule. While computing has become ever more powerful and technology has advanced, the basic laws of radio communication, propagation and antennas have not. Radio broadcasting has remained relatively unchanged for over a hundred years. SSB, though 70 years or more old, is still the dominant voice communication mode on the HF bands.

So where am I going with this? Even though many of us are well into retirement age, we are fortunate to have amateur radio as a hobby. We can still dig out those old radios, blow the dust off, throw a wire in the sky and talk to people all over the world. When all else fails, short wave radio, CW and SSB will probably still be around. Amateur radio remains a rewarding hobby and provides mental stimulation and enjoyment in a way that many other hobbies or activities don't. So, do not dispose of those old radios just yet. Like the older generation they still have value and lots of life in them yet.

Apollo and Artemis are the twin Olympian deities in Greek mythology. Ed.

Who is Sarel?

Dennis Green, ZS4BS SARL Secretary

I often hear South African amateurs speaking about Sarel. I am not sure who he is. I know of the South African Radio Relay League (SARRL) and then after WW2, the South African Radio League (SARL), but Sarel I do not know!

The SARL or League is a voluntary association, a juristic person, with perpetual succession, having all the powers in law of a juristic person, together with such powers as may be specifically conferred on it by this Constitution, including the right to acquire property in its own name, both moveable and immoveable. This tells me that the SARL is made up of radio amateurs who pay an annual membership.

Rule 3 of the Constitution states that the sole or principal object of the League is to promote social and recreational amenities or facilities for the members in a non-profit manner. This will include:

3.1 To encourage, develop and promote all activities, matters and studies connected with amateur radio, television, computer technology and radio science throughout Southern Africa.

3.2 To provide the members of the League a recognised channel for negotiation with the government, in particular ICASA and any other authorities.

3.3 To give the members of the League the advantage of collective representation and control in all matters affecting amateur radio.

3.4 To promote international goodwill and understanding between South Africa and other countries by means of international amateur radio communication.

3.5 To promote and obtain recognition for amateur radio in all spheres of South African society.

3.6 To provide emergency communications facilities, through its members by means of amateur radio, to the government and people of the country in times of disaster or emergency.

3.7 To provide radio communications in support of community activities.

3.8 To undertake any other matters that may arise and concern the interests of the League, its members or amateur radio.

3.9 To invest and apply any monies not immediately required for the purposes of the League in such manner as the League may from time to time think fit

3.10 To purchase, take on lease or exchange, hire or otherwise acquire any real or personal property, moveable or immovable, or interest therein or any other rights and privileges which the League may think necessary or convenient for its purposes.

3.11 To raise, receive, control and administer funds by levy of subscriptions from its members and by contributions, gifts and bequests by its members and others; with the power to borrow, or provide, or secure payment of, monies in such manner as may be thought fit and mortgage or charge on all or any part of the property of the League (both present and future) and to repay and redeem such loan, mortgage or charge.

3.12 To associate, affiliate, or amalgamate with, or incorporate, such similar bodies as the League may from time to time consider advisable.

3.13 The League is established for the mutual benefit of the members who contribute to share the cost of providing a collective benefit. The common objective therefore excludes the personal financial gain of the individual members and trading for a profit.

The Government of the League

Rule 5 of the Constitution tells us that:

5.1 The government of the League shall be in accordance with its constitution and rules, which shall be binding upon all members of the League.

5.2 The affairs of the League shall be administered, controlled and conducted by a body which shall be known as “Council.” Council may, subject to any conditions or limitations imposed by the rules, delegate any of its powers or functions to anybody or committee constituted in terms of the rules.

5.3 Council shall consist of 10 (ten) members referred to as “the full number of Council.”

5.4 The members of Council will accept a fiduciary responsibility for the association and will not be connected persons in relation to each other and no single person, directly or indirectly, controls the decision-making powers relating to the League.

(Continued on page 16)

(Who is Sarel from page 15)

Rule 16 of the Rules of the SARL tell us more about the Council. Rule 16.1 Candidates for membership of Council shall only be nominated by affiliated clubs or by members of the League who are entitled to vote. Rule 16.6 Members of Council shall be elected by the ordinary members of the League entitled to vote. Such election shall be conducted before the AGM by electronic means…

Rule 16.7 In the event of the nominees for election not being greater than the number of members to be elected, such nominees and retiring members shall be declared by the chairman of the relevant AGM to be duly elected. Rule 16.11 Councillors elected at an AGM shall hold office for a period of no longer than two years but will be eligible for re-election after that period. At the end of every year of office subsequent to this amendment, 50% of the elected councillors shall stand down alternating, but may stand for re-election. A retiring member may offer himself for re-election only if he is proposed and seconded as provided for in these rules.

Election of the Council

Therefore, at the 2026 Annual General Meeting in Port Elizabeth on 2 May, five Councillors will stand down. On 31 January 2026, the SARL Secretary received eight nominations for the five vacancies and Rule 16.6 comes into play. All the SARL Members who are eligible to vote, must vote for five of the eight candidates from Thursday 2 April to Friday 24 April 2026.

The link to the Council election page can be found on the AGM page on the mysarl webpage. Fill in your call sign and your email address and click on 'Send OTP.' The system will send you a one-time password (OTP) which you enter on the page; you will then be taken to the election page. Select a maximum of five (5) of the names you would like to serve on Council and submit your vote.

What does the Council do?

The first meeting of the Council takes place after the AGM, when the outgoing Secretary chairs the meeting (Rule 16.15). At this meeting, the election of the President, Vice-President, Treasurer and Secretary takes place. That is all. During the second meeting, the various portfolios are allocated to Councillors and the Working Groups

and Coordinators are confirmed.

The Council is collectively responsible for the long-term success and strategic direction of the League. Its core functions include Strategy, Fiduciary Duty, Risk Management, Performance and Compliance.

As the SARL Secretary, I look after the SARL News portfolio - there is a team that deals with weekly bulletins and AR Today. I have the IARU Liaison portfolio, it includes STARS and the HF Beacon Coordinator and I have the publications portfolio. So each Councillor has a number of portfolios.

The Working Groups and Coordinators are responsible for the day-to-day execution of the Council's strategy. Their authority includes execution - implementing approved programmes, services and projects; reporting - providing the Council with timely, accurate data and progress reports to inform strategic decisions (reporting to a specific Councillor) and operational policy - developing internal procedures that align with Council-level policies.

The Council meets each month using the Zoom platform and there are three in person meeting. The first is just after the AGM and then two Strat meetings, usually in February and November at the National Amateur Radio Centre.

Conclusion

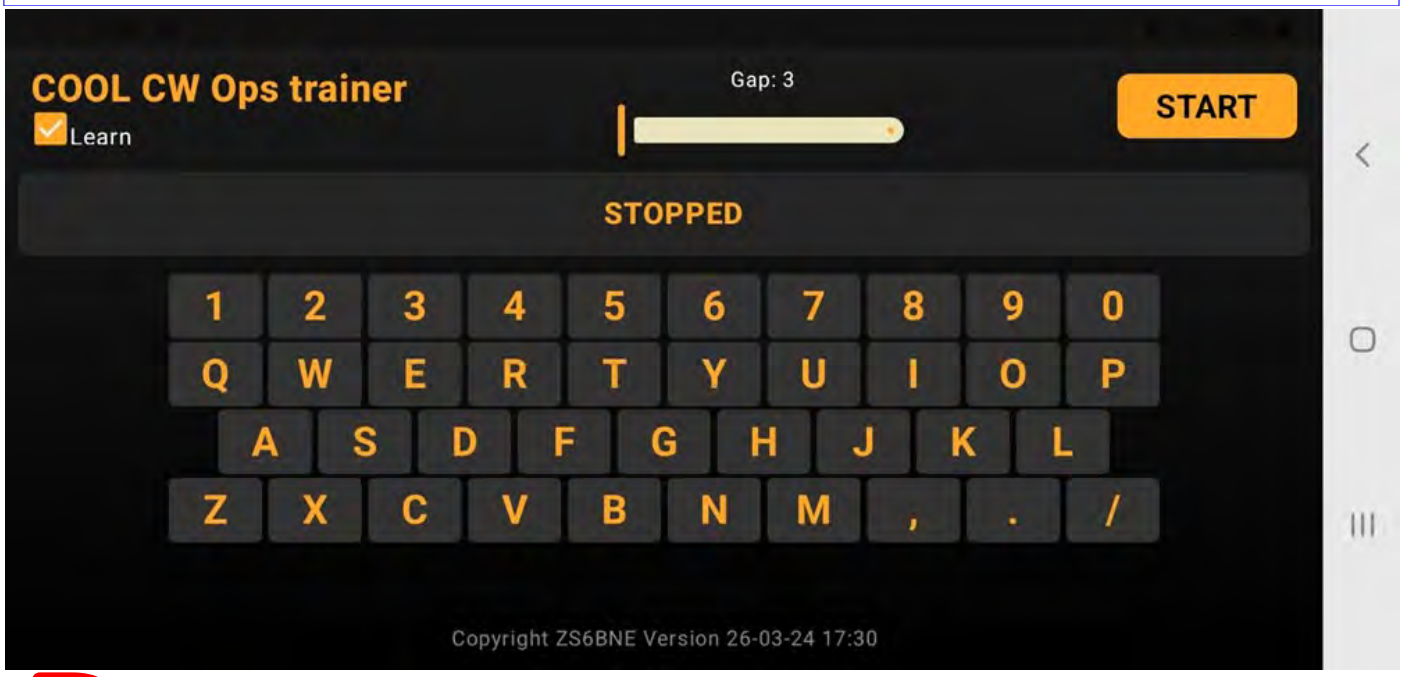
So the SARL is made up of all the radio amateurs who pay the annual membership fee, the SARL is not the Council.

The members of the SARL have the duty to elect five members to serve on Council each year - Rule 16 of the Rules.

The ten members of Council are collectively responsible for the long-term success and strategic direction of the League. And to help them, there are working groups and coordinators as well as affiliated Clubs and members.

The COOL CW Ops Trainer

Eddie ZS6BNE



Play with this Android app until the slider is positioned to the left and "Learn" mode is unchecked then you will be ready. It will take time but have a LOT of fun on the journey. Just one day, you will be retrieving the sounds from your short-term memory and then you are also ready for head copy.

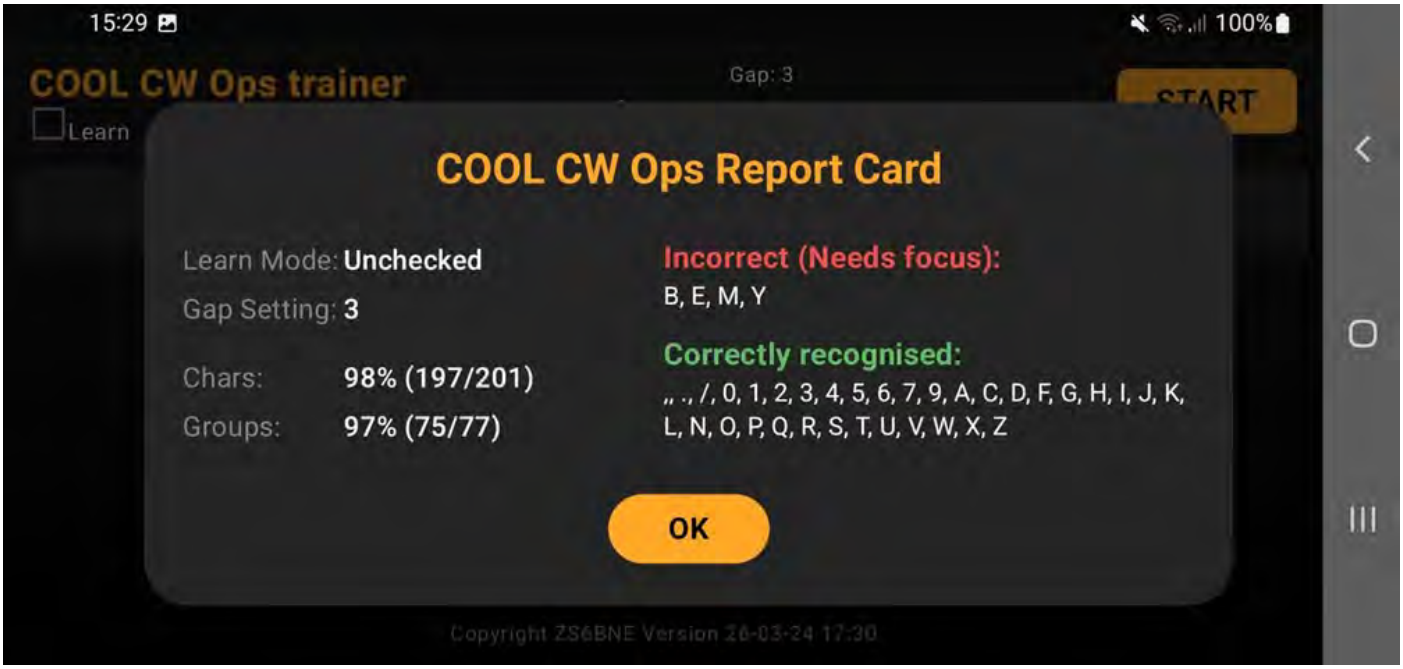
Hang in there, it is worth it!

The keyboard “Hint” flash will flash AFTER the audio has been sent. The flashes will only occur from single letters up to a group of three. If the word is longer than three characters no flashing occurs. This is to move you away from such assistance that you rely on recognising the sounds of the characters.

The report will show what you know and what still needs to be mastered. Pat yourself on the back whenever you easily recognise a character even if it comes along many times! If you hear ZS in the beginning expect a COOL dude’s call sign! You will not get assistance with a call sign; it is longer than three characters.

Once you master the single characters, two- and three-character groups, the rest is EASY!!! The

(Continued on page 18)



(The COOL CW Ops Trainer from page 17)

character groups are standard CW shortcuts and Q Codes. They should become second nature.

Play many times a day. No limit, any duration, whatever feels comfortable.

The app (APK Download) is available from www.radarops.co.za. Click on the Admin button to access the download links.

The whole point is to train short term memory. At 20 wpm the audio will come at you faster than you can type but that audio will echo in your mind and you will type the correct characters.

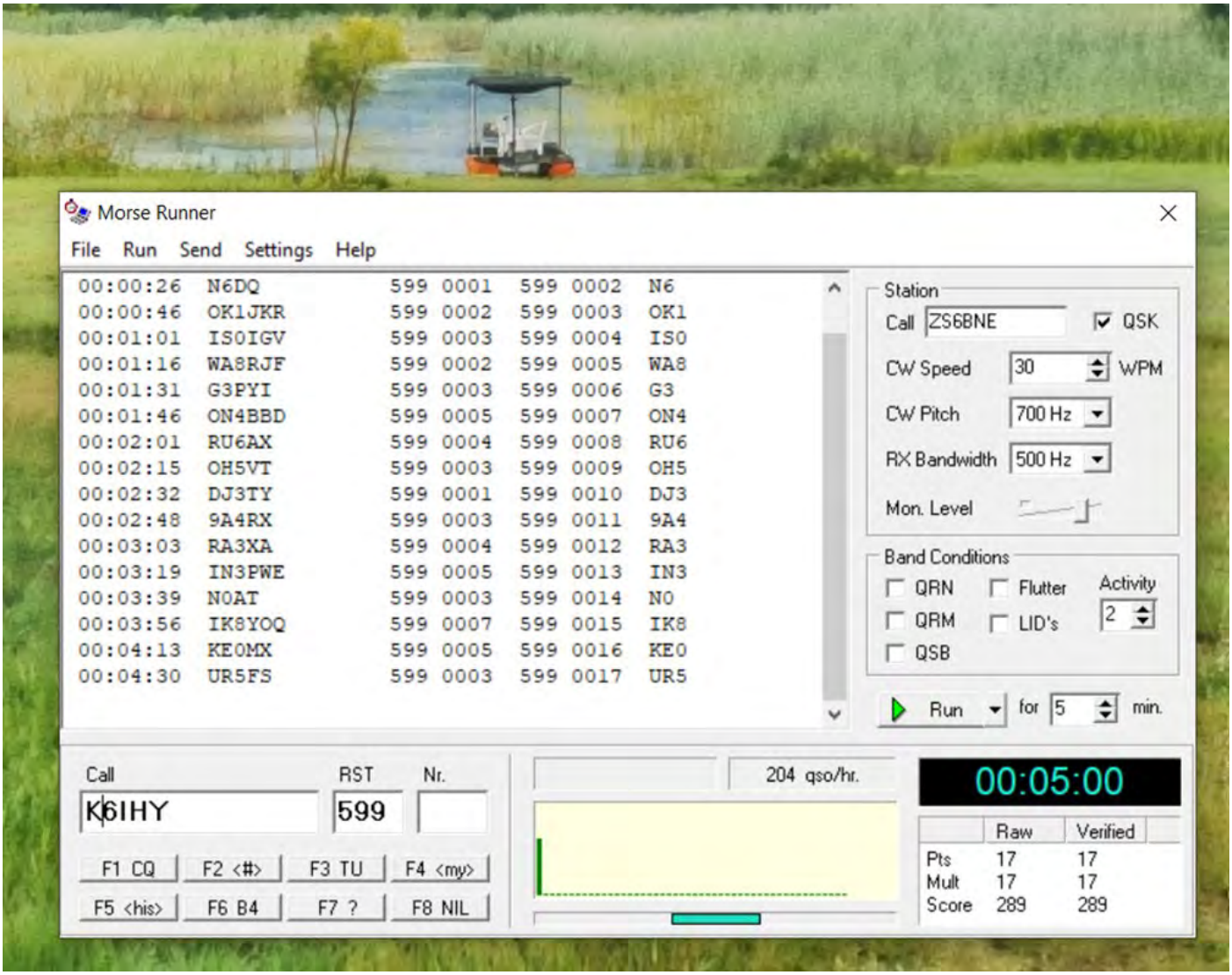
There are many two character or three-character groups that will be easier. Eventually Learn mode must be switched off that you do not get a hint of the character. Rely on your short-term memory and learn to trust it.

Using Morse runner, the ultimate goal

You will hear these call signs being sent to you, no repeats and it requires a quick response on the keyboard before sending the call sign all over again like an irritated rare station chaser. The point is, practice, practice, practice till things become second nature.

Note, this is my viewpoint, it is uniquely, the BNE training method. in teaching the Morse code. Any other method got me stuck and bored. Continuous repeats on the same characters in my opinion do not prepare you for the real world.

Let me put it this way, without getting 100 % for an exercise of reasonable duration, there is no way you will achieve the next level and that is Morse Runner at 20 to 30 wpm. This is your entry to comfortable Morse code QSOs and head copy.



Operating ZS6STN for Field Day

Guy Eales, ZS6GUY

Earlier this year, I was invited to join the Sandton Amateur Radio Club for the SARL Field Day contest held over the weekend of 14 and 15 March 2026. Having long admired the scale and organization of such operations, this opportunity was both exciting and instructive. Granted the Sleepy River caravan park in Magaliesberg is not a DX expedition destination, but it was close enough.

The experience highlighted the significant difference between casual portable operation and the setup of a high-performance contest station. Antenna installation began on Friday morning, following a detailed layout plan. The configuration included a 10 m Yagi on a Clark hydraulic mast, multiple dipoles for 40, 20, 80 and 160 m, a home-built hex beam for 15 and 20 m and supporting masts and infrastructure. The logistical effort involved, cabling, connectors, filtering, power distribution, solar panels and guying was substantial. In parallel, an IT network was established, linking five radios to laptops running N1MM Logger for real-time, networked logging.

Friday evening was dedicated to testing and validation. Radios, logging systems and voice recording for QSO verification were thoroughly checked. During this period, I had the opportunity to operate an FT□710 with a 500 W amplifier and completed 52 DX contacts across the USA and Europe in approximately ninety minutes.

On Saturday morning, external power sources were disconnected, amplifiers removed and all stations reduced to 50 W in preparation for the contest to start at 10:00 local time. The competition ran to 12:00 local time on Sunday, with results reflecting the effectiveness of the preparation.

What stood out most was the level of planning, engineering and teamwork. From antenna spacing and feedline management to the successful performance of a home-built hex beam, the operation was clearly the result of careful design and commitment. The team arrived well prepared, organised and focused and it was a privilege to observe, learn and participate in such a professional field operation.

Using WSPR to Predict Relative Antenna Gain of Directional Antennas

Dale Ostergaard, N3HXZ

QEX, March/April 2026

This article uses time-averaged WSPR spot SNR values, collected by alternating a single transmitter between two antennas, to estimate the relative gain of a test antenna to a reference antenna. After calibrating the methodology, it maps relative gain of an inverted L sloper antenna against a vertical antenna on 40 and 20 metres. A CW experiment validates the peak relative gain on 20 metres. Statistics are used to create confidence intervals on the relative gain. The method largely reproduces expected antenna pattern lobes while showing how local obstructions can skew results.

The Weak Signal Propagation Reporter (WSPR) is a powerful tool for collecting signal-to-noise (SNR) values at a receiver antenna from a transmitting antenna. Utilizing a transceiver configured for data mode operation and two antennas, it is possible to predict the relative gain of one antenna (test antenna) with respect to the other antenna (reference antenna) using SNR data collected from receiver stations. With the vast net-work of WSPR receiver stations, it is possible to map out the relative gain pattern to understand the performance of the test antenna. This article will test a WSPR approach to predict the relative gain of an inverted L antenna compared to a vertical antenna.

WSPR Overview

WSPR is popular in the amateur radio community for checking propagation conditions and testing antennas. The ARRL publication Get on the Air with HF Digital[1] provides an excellent overview of WSPR. For antenna testing, the amateur radio operator configures an HF transceiver (or dedicated WSPR transmitter) to work in WSPR mode. Software packages like WSJT-X can be configured to work directly with the transceiver to transmit a message and decode a signal report. A transmitted message includes the call sign, geographical location and power level. The transmitted message is picked up by a world-wide network of WSPR receivers. The receiver reports information from the transmission back to a central WSPR database. The report includes the receiver station call sign, a timestamp and SNR reading, among other data.

WSPR transmissions occur at 2-minute intervals. The tail end of the transmission is used to decode the receiver reports and upload them to the WSPR database. The operator can run successive 2-minute transmissions for as long as desired. The received information stored in the database can be downloaded in Excel format to a computer and processed to extract desired information.

SNR data gathered from receiver stations can be highly variable as stations use different antenna systems and WSPR-configured receivers. Additionally, local noise levels and propagation variation over time can be highly variable. As an example, Figure 1 represents the SNR data collected from a single receiver station over time from a transmitter operating with a portable 5,18 m vertical antenna on 20 metres. The reported values from the receiver station varied from 0 dB to -19 dB. Overtime, however, the average SNR was -6.7 dB. The average SNR value over time will be key in the subsequent test method to arrive at relative antenna gain.

Previous Work

There have been several studies[3,4,5] investigating the use of WSPR to compute antenna performance. Since WSPR reports SNR at receiver stations from a transmitter station, the studies have looked at using this data to predict the relative gain between two antennas. Consider a transmitting station and a single receiver station. We begin with the received signal power, P_r expressed as:

$$P_r \quad \frac{P_t \times (G_r \times G_t)}{L_p}$$

where P_t is the transmitted signal power, G_t is the transmitter antenna gain, G_r is the receiver antenna gain and L_p is the path loss. SNR at the receiver can be expressed as:

$$\mathrm{SNR} = \frac{P_t \times (G_r \times G_t)}{(L_p \times P_n)}$$

where P_n is the noise power at the receiver station.

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(WSPR from page 20)

Let us consider a configuration with a single transmitter connected to two transmit antennas (via a switch) and a single receiver station and receiver antenna. Two setups differ only by which transmit antenna (test or reference) is active. We can conclude that P_t is the same for both setups since the same transmitter is used, the noise power P_n between setups is the same as there is a single receiver and the receiver antenna gain G_r is the same between setups as there is a single receiver antenna. If we assume that the time-varying path loss between the transmitting station and the receiver station is the same, then we can express the SNR for each antenna setup as follows:

$$\frac{\mathrm{SNR(test)}}{\mathrm{SNR(ref)}} = \frac{G_t(\mathrm{test})}{G_t(\mathrm{ref})}$$

where SNR(test) is the SNR reported at the receiver station from the test antenna and G (test) is the test antenna gain. For the reference antenna:

$$\mathrm{SNR(test)} = \frac{P_t \times (G_r \times G_t(\mathrm{test}))}{(L_p \times P_n)}$$

where SNR(ref) is the SNR reported at the receiver station from the reference antenna and G_t (ref) is the reference antenna gain.

If we look at the ratio of the SNR terms, like terms cancel out and we are left with:

$$\mathrm{SNR(ref)} \qquad \frac{P_t \times (G_r \times G_t(\mathrm{ref}))}{(L_p \times P_n)}$$

Expressed in decibel terms, the relative gain is thus: Relative Gain dB = SNR(test)dB - SNR(ref) = G_1 (test)dB - G_1(ref)dB.

Thus, SNR data alone can be used to calculate the relative gain of a test antenna to a reference antenna provided the system setup and assumptions are as described above. The assumption that the path loss difference between the test and reference antennas will be revisited later when we compare relative gain obtained from WSPR results with that obtained from a CW test.

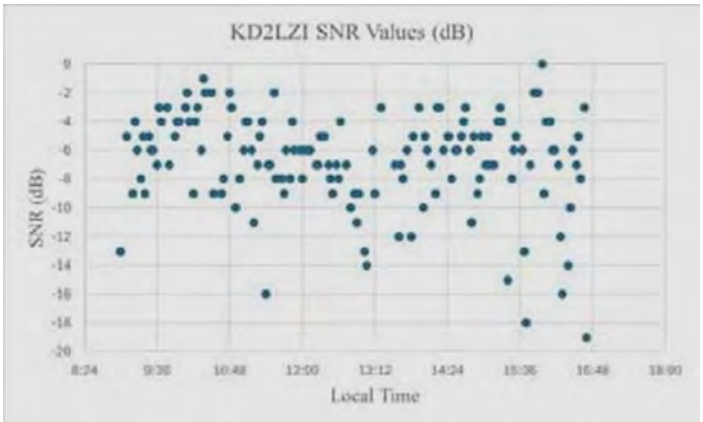


Figure 1. SNR values reported over time from station KD2LZI.

In J. Zender's "Simple HF antenna efficiency comparisons using the WSPR system," rather than a single transmitter, two identical WSPR transmitters are connected to two different antennas and run simultaneously. The author gathers SNR data for both the test and reference antenna within each 2-minute WSPR transmission window and assumes the path loss between antenna systems in the 2-minute transmission window is the same. Relative gain is computed for each 2-minute window available and then averaged over the test period to arrive at an overall average antenna relative gain at a receiver station. In D. Ostergaard's "Using the WSPR system to estimate the performance of telescoping whip antennas," the author took a slightly different approach than outlined by Zender and introduced the concept of time-averaged SNR values to compute relative antenna gain. Instead of calculating relative gain at individual 2-minute WSPR transmission intervals where data for both antennas exist, a single relative gain calculation is made using time-averaged SNR values of the test and reference antenna collected over the duration of the test. As path loss effects vary spatially and in time, it is observed that at a single receiver station, the spatial location of the receiver is the same for the antenna transmissions while path loss effects are assumed to vary identically and simultaneously in time across antenna systems. Ideally, a set-up with two transmitters feeding two antennas would give SNR data at the same time intervals over the long time period, i.e., a set-up similar to Zender for collecting SNR data and computing time-averaged values. An alternative approach is to use a single HF transceiver operating in WSPR mode and alternating antennas through an antenna switch during the test to collect SNR data at prescribed intervals over a long period. This method is a compromise in that continuous data is not collected over time for each antenna, but rather it is collected at specified time intervals.

As an example, two different antennas, a vertical and an inverted L antenna are connected via an antenna switch to a transceiver running in WSPR mode. The antennas are switched back and

(Continued on page 22)

(WSPR from page 21)

forth at 30-minute intervals (sample rate) while trans-mitting WSPR messages. After a 9-hour test run, the WSPR data collected at receiver stations is downloaded from the www.WSPRnet.org database and analysed in Excel. Figure 2 illustrates the SNR data collected over time at a single receiver station WA2TP on 40 metres. Note the 30-minute interval between data collection for each antenna. The time-average SNR values for each antenna are indicated with solid lines. The difference between the time-averaged values represents a relative antenna gain of 8,7 dB at the receiver station.

Calibrating the Test Methodology

The fundamental question to ask is how accurate is this methodology in predicting relative antenna gain? What is the influence of sample rate and sample size (spots per antenna) on the accuracy of the time-average SNR at each receiver station? These questions can be answered in part by a simple test as illustrated in Figure 3.

A single 5,18 m vertical antenna is used to transmit a WSPR beacon on 20 metres and collect data from receiver stations over an 8-hour period. The SNR data collected from this test is then used to create two "virtual antennas" each containing a subset of the SNR data collected from the test. "Virtual" testing can be performed by allocating the test data to the virtual antennas at various sample rates and calculating the average SNR value of each virtual antenna. Since the data came from a single antenna, the relative gain between the two virtual antennas must be zero. As the test run is over 7 hours, a check can also be made on the sample size needed to get an accurate average SNR value.

Figure 4 is a map of the receiver stations from the vertical antenna test. A total of 45 stations reported data over the 8-hour test period. A total of 1 824 spots were recorded. The data in Figure 1 represents one of the 45 receiver stations reporting spots. Three virtual tests were run with sample rates of 10 minutes, 30 minutes and 1 hour. For each virtual run, time-average SNR values were calculated for each virtual antenna and the relative gain was calculated. Figure 5 shows the results for all three virtual runs.

All three sampling rates showed significant errors when the sample size per antenna was small. Above 45 spots per antenna the 10-minute and 30-minute sampling rates showed accuracy within ± 1,3 dB. The 30-minute sampling rate appears to show the best results above 45 spots per antenna.

Application: Inverted "L" Antenna

As an avid activator in Summits on the Air (SOTA), I often use a portable vertical antenna as it is omni-directional and can be deployed in less than 5 minutes. My antenna of choice is the Chameleon Modular Portable Antenna System (MPAS) SS17, which offers a 5,18 m vertical radiator atop a matching unit and ground spike. Chameleon recently released the CHA LZ Sloper wire, which is an 18,288 m wire that attaches to the top of the 5,18 m radiator and slopes down to ground where it can be attached to a tree or pole. According to Chameleon[6], this inverted L configuration enables near vertical incidence skywave (NVIS) propagation below 10 MHz. Above 10 MHz the configuration offers a low take-off angle with some directional properties suitable for DX communication. Chameleon publishes the antenna patterns for 40 metres and 20 metres in their User Guide as shown in Figures 6 and 7. (The sloper wire follows the +X Axis.) The 40-metre antenna pattern clearly shows broadside directional gain for NVIS, while the 20-metre antenna pattern shows directional lobes with the highest gain expected off the direction of the sloper wire. These two distinctly different direction gains provide a perfect test for the WSPR prediction of relative gain.

With regards to a reference antenna, a good choice is a vertical antenna as it exhibits an omni-directional antenna pattern. Hence the relative gain pattern of a directional test antenna compared to the omni-directional vertical antenna should retain directional characteristics of the test antenna pattern.

Two identical Chameleon MPAS Lite antenna systems in a vertical configuration were deployed. The test antenna is outfitted with the Chameleon CHA LZ Sloper wire attached to a 5,18 m whip. The reference antenna uses an identical 5,18 m whip. Both antennas had identical coax feed lines with RF chokes. A single 7,62 m ground mounted counter-poise was deployed for each antenna set-up, both aligned in the same direction.

(Continued on page 23)

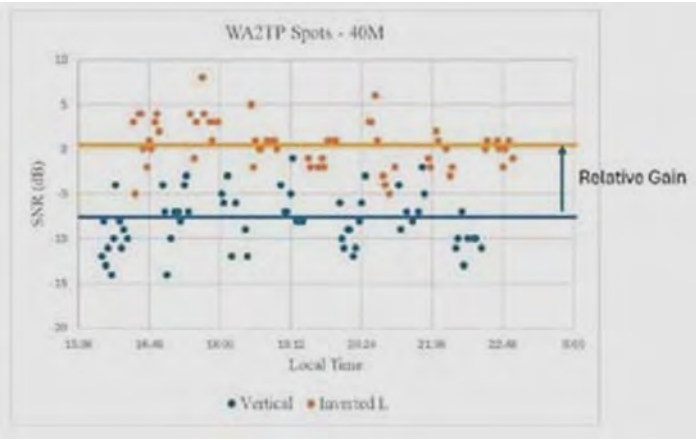


Figure 2. SNR values over time for two antennas at station WA2TP.

Figure 4. Map of WSPR spots for the vertical antenna test

(WSPR from page 22)

An Elecraft KX2 HF transceiver was connected to a SignaLink USB sound card. The KX2 was run in Data A mode and driven by the WJST-X software. The rig transmitted at 1 W with a 70% duty cycle (to minimize heating of the transceiver). The antenna sample rate used in the 40-metre and 20-metre study was 30 minutes.

In the 40-metre study, 4 957 spots were received across 134 receiver stations over 7 hours. Hence there were fourteen 30-minute transmission sessions, seven for each antenna. Of those stations, 22 reported greater than 45 spots per antenna over the duration of the test. Figure 8 shows the calculated relative gain of the inverted L antenna to the vertical antenna as a function of the angle AZ (positive counterclockwise from the X-axis). As an example, the results from station WA2TP from Figure 2 are represented in Figure 8 (8,7 dB relative gain at AZ = 98°). The results show alignment with the published antenna pattern location with maximum relative gain broadside to the inverted L sloper wire at ± 90°, reaching 6 – 11 dB. Twenty of the 22 receiver stations were found within 170 – 340 miles of the transmitting station. In all but one case, the relative gain of the inverted **L** was greater than 0, showing superior performance at all angles to the vertical antenna for NVIS operation.

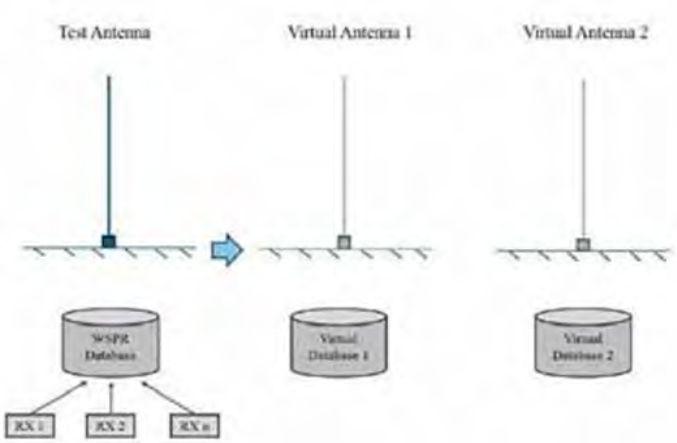


Figure 3. Test setup for method validation.

In the 20-metre study, 4 162 spots were received across 184 receiver stations over 5.5 hours. Of those stations, 11 reported greater than 45 spots per antenna over the duration of the test. Figure 9 shows the calculated relative gain of the inverted L antenna to the vertical antenna as a function of the angle AZ. In Figure 7, the antenna plot shows directional lobes at ± 50° and ± 130°. Traversing from the x-axis (0°) counterclockwise, the results in Figure 9 show a spike in the relative gain at 48° of 9 dB consistent with the front lobe location in the published antenna pattern. Positive relative gain is shown at 100° and 150° off the back side lobe but at lower levels than the front lobe. In the vicinity of –50°, it was expected to see a similar gain of 9 dB but instead the results show negative relative gain. The terrain and surrounding powerlines, trees and housing in the sub-urban test site may have played a role in distorting the results from 180 – 360° for low take-off angles. However, the unobstructed direction of 0 – 180° showed promising correlation with the published antenna pattern.

A CW test was run on 20 metres to validate the peak relative gain at 50°. The test was run from a hill close to my QTH n Pittsburgh to Jim, KJ3D, after a SOTA activation at W7A/ AW-001 (Mount Lemmon) outside Tucson, Arizona. The sloper wire was aligned such that the 50° lobe was pointed toward Tucson. Two transmissions were run. The first transmission used the test antenna configuration with the sloper wire. Over a 1-minute

(Continued on page 24)

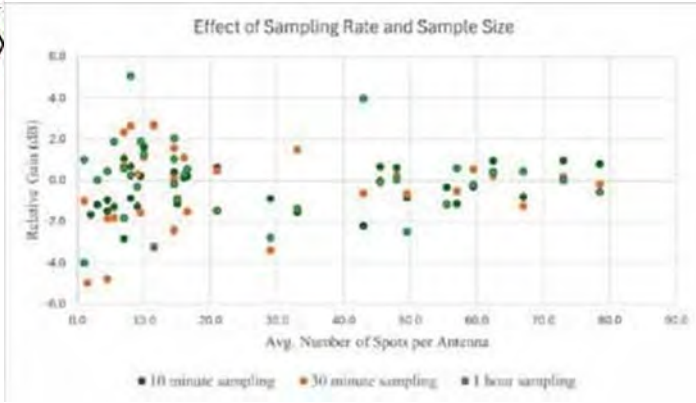
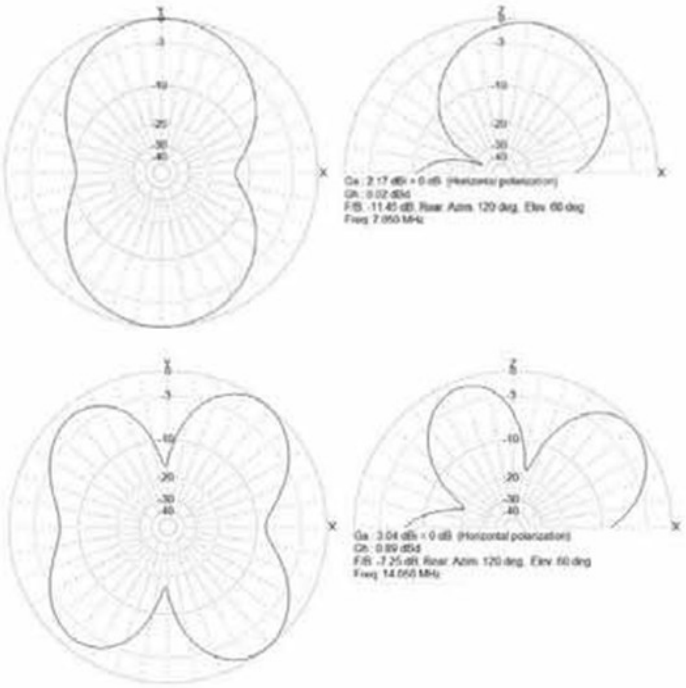


Figure 5. Virtual antenna test results

transmission the SNR at the receiver station varied between 2 – 4 S-units. The sloper wire was removed for a second transmission to reflect the reference antenna. A 1-minute transmission was performed with the SNR at the receiver station varying between 1 – 2 S-units. Taking the difference of the average reading for each transmission gives a relative gain of 1.5 S-units or 9 dB. Given that an S-unit represents a 6 dB interval, the range of the result could fall ± 3 dB. The CW result is reflected in Figure 9. The average value compares very well with the WSPR results. The accurate result supports the assumption that path loss differences between the test and reference antenna in this study are negligible.



Top. Figure 6. The Chameleon CHA LZ Sloper antenna pattern for 40 metres.
Bottom. Figure 7. The Chameleon CHA LZ Sloper antenna pattern for 20 metres.

Confidence Interval for the Relative Gain

At a given receiver station, the relative gain is calculated as the difference in the mean value of two sets of SNR data. Statistics can be used to analyse these SNR data sets to determine the confidence interval for the difference between the two data set mean values (i.e., the relative gain) at a given confidence level, typically 95%. The confidence interval test assumes the SNR data sets are normally distributed. Online statistics calculators such as Statistics Kingdom7 can be used to analyse the data sets.

Utilizing the SNR data sets represented by the receiver station WA2TP in Figure 2 as an example, the data set mean and standard deviation results are shown in Table 1. It is observed that the standard deviation (and hence variance) of the sets is different. A Shapiro-Wilk test can be used to determine if a data set has a normal distribution. Taking the SNR data sets and running the calculation at a 0,05 significance level shows that both the vertical antenna and inverted L antenna SNR data sets are normally distributed. In short, the p-values of 0,23 and 0,37 are greater than 0,05, indicating that we cannot reject the null hypothesis that the data sets are normally distributed. The test statistic W is within the 95% region of acceptance. Lastly, using a means-difference confidence interval calculator, we can compute the confidence interval for the difference between the two data set means (i.e., the relative gain). Using a 95% confidence interval and assuming unequal variance between data sets, we find that the confidence interval of the relative mean lies between 7,7 dB and 9,7 dB. In other words, we have 95% confidence that the relative gain is 8,7 dB ± 1 dB.

(Continued on page 25)

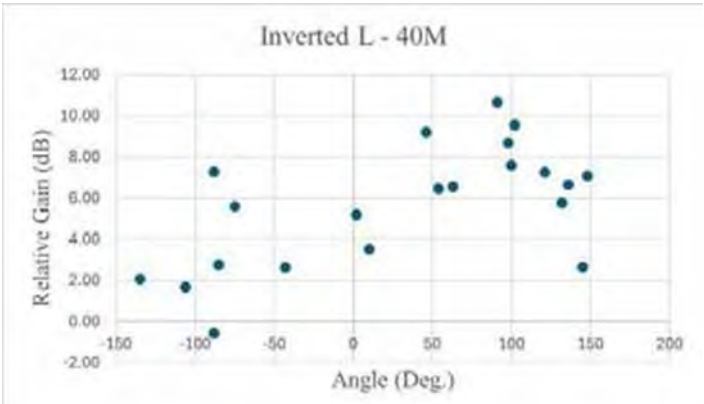


Figure 8. Relative gain of the inverted L antenna at 40 metres

(WSPR from page 24)

Conclusions

WSPR is a powerful tool for investigating propagation and antenna performance. Due to spatial and time-varying propagations patterns, received SNR data from WSPR receiver stations can demonstrate significant variability. Between stations, SNR data can also vary due to local noise, path loss, different receiver antennas, etc. All these factors make it tough to determine quantitative performance characteristics of antennas from WSPR SNR data.

Recent studies suggest that calculating the relative gain at a given receiver station between a test antenna and a reference antenna is possible using SNR data from both antennas systems, assuming that the test systems are constructed to minimize any set-up differences. This study furthers the work on using time-averaged SNR data to compute relative gain by examining the factors influencing the accuracy of calculating time-averaged SNR values, quantifying the accuracy and then demonstrating the utility of the approach in predicting the antenna gain of an inverted L directional antenna on 40 metres and 20 metres.

Using a single transceiver and alternating transmissions between antennas over the duration of the test, it was found that a sample rate of 30 minutes provided the best results for sample sizes of over 45 spots per antenna. In this configuration, accuracy was within ± 1,3 dB.

An inverted L antenna provides an excellent choice for evaluating antenna relative gain performance. At 40 metres, where NVIS dominates, the predicted relative antenna gain tracked the reference antenna pattern quite well, showing a relative gain approaching 6 – 11 dB broadside to the sloper wire. On 20 metres the antenna shows DX capability with a low take-off angle showing multiple lobes. The predicted relative gain accurately located one of the front lobes demonstrating a relative gain of 9 dB. Relative gain on a back side lobe showed gain smaller than the front lobe, approaching 2 – 6 dB. Predicted relative gain to the west (180 – 360°) did not correlate as well, possibly due to environmental factors. A CW test confirmed the relative gain computed from WSPR results at the front lobe location.

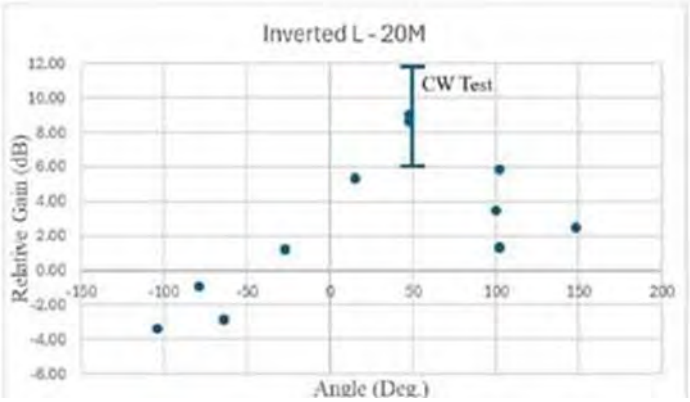


Figure 9. Relative gain of the inverted L antenna at 20 metres.

Statistical analysis on the data sets at each receiver station yields important information about the distribution of the SNR data and can ultimately be used to assess a confidence interval for the relative gain. Overall, WSPR test methodologies using time-averaged SNR data from receiver stations to calculate relative gain between antennas show promising results. Further work is needed in a more ideal test location away from environmental factors to further validate the process.

In addition, research is needed to further test when it is appropriate to assume that path loss differences between a test and reference antenna can be assumed to be negligible. For the portable operator looking to enhance NVIS and DX of a vertical antenna, a sloper wire attached to the tip of the vertical antenna provides a lightweight and effective option.

Dale Ostergaard obtained his General-class amateur radio license in 1990 and is currently active in portable operation through Summits on the Air (SOTA) and Parks on the Air (POTA). Dale received his BS and MS degrees in Mechanical Engineering from Purdue University and spent most of his career in software engineering. Now retired, he is actively researching numerical methods and techniques to analyse WSPR transmission data for use in predicting portable antenna performance.

References

[1] S. Ford, Get on the Air with HF Digital. Newington, CT, USA: American Radio Relay League, 2011, p. 7-3.

[2] "WSJT-X," https://wsjt.sourceforge.io/wsjtx.html.

[3] J. Vanhamel, W. Machiels and H. Lamy, "Using the

(Continued on page 26)

Table 1. WA2TP Data Analysis		
	Inverted L	Vertical
Sample Size	60	61
Mean (dB)	0,63	-8
Std. Dev.	2,6	3,1
Mean Diff. (dB)	8,7	
Shapiro-Wilk Test		
W	0,97	0,98
p	0,23	0,37
Confidence Interval on Relative Gain (Mean Diff.)		
Low Value	7,7 dB	
High Value	9,7 dB	

(WSPR from page 25)

WSPR mode for antenna performance evaluation and propagation assessment on the 160-m band," Int. J. Antennas Propag., vol. 2022, Art. no. 4809313, 2022.

[4] J. Zender, "Simple HF antenna efficiency comparisons using the WSPR system," arXiv:2209.08989, 2022, https://arxiv.org/abs/2209.08989.

[5] D. Ostergaard, "Using the WSPR system to estimate the performance of telescoping whip antennas," The Spectrum Monitor, Sep. 2024.

[6] Chameleon Antenna, "CHA LZ Sloper Wire 60," https://chameleonantenna.com/products/cha-lz-sloper-wire-60.

[7] "Statistics Kingdom," Statistics Kingdom, https://statskingdom.com/index.html

The South African Radio League broadcasts a news bulletin each Sunday in Afrikaans and English at 08:15 and 08:30 Central African Time respectively, on HF and various VHF and UHF repeaters around the country. The bulletin is relayed on EchoLink and AllStar Node 53511 by Johan, ZS6JPL. The audio bulletins can be downloaded from https://sarlnews.podbean.com/ while the text bulletin is available at https://mysarl.org.za/sarl-news/.

You are welcome to join us every Sunday morning for the weekly radio programme Amateur Radio Today at 10:00 CAT. The programme can be heard on VHF and UHF repeaters countrywide and is relayed on 7 115 kHz lower sideband by Louie, ZR4DJL. In Bloemfontein, you can listen on the 145,7625 MHz repeater at 08:15 and at 10:00 CAT. In Cape Town, you can listen at 10:30 CAT on the 145,700 MHz repeater, with EchoLink to ZS1DCC-R by Dave, ZS1DFR. A rebroadcast by Andy, ZS6ADY, can be heard on Monday evenings at 19:30 CAT on 3 620 kHz.

Die Suid-Afrikaanse Radioliga saai elke Sondag nuus bulletins uit in Afrikaans sowel as Engels om 08:15 en 08:30 Sentraal Afrika Tyd onderskeidelik op HF sowel as op verskeie BHF- en UHF-herhalers. Hierdie uitsendings word ook via Echolink en Allstar Node 53511 herlei deur Johan, ZS6JPL. Die oudio bulletins kan afgelaai word vanaf https://sarlnews.podbean.com/, terwyl die teks bulletins by https://mysarl.org.za/sarl-news/ afgelaai kan word.

Luister elke Sondag oggend om 10:00 Sentraal Afrika Tyd na "Amateur Radio Today." Daar is 'n herleiding op 7 115 kHz laer syband deur Louie, ZR4DJL, en verskeie herleidings op BHF en UHF frekwensies regoor Suid Afrika. In Bloemfontein kan jy om 08:15 en om 10:00 SAT op die 145,7625 MHz-herhaler luister. In Kaapstad kan jy om 10:30 SAT luister op die 145,700 MHz-herhaler met Echolink na ZS1DCC-R, danksy Dave, ZS1DFR. 'n Heruitsending aangebied deur Andy, ZS6ADY vind op Maandae aande om 19:30 Sentraal Afrika Tyd op 3 620 kHz plaas.

3Y0K – Part One - The beginning

Paul Johnson, ZS1S

Just on a year ago I became involved with the logistics and planning for the 2026 Bouvet Island expedition.

The 3Y0J expedition in 2023 and the 3Y0Z expedition in 2018 team members had passed through Cape Town on their way home and many of us had the privilege of meeting and greeting them.

Way back in 2001, we had the great pleasure to meet Dr Chuck Brady, N4BQW (SK) who spent a lengthy time on Bouvet and operated as 3Y0C.

Planning an expedition is highly involved and a logistical nightmare in many respects.

I was only too happy to assist here in Cape Town having the local knowledge and the necessary contacts just the same as I had assisted with the VK0EK expedition to Heard Island in 2016.

The 3Y0K 2026 expedition requirements were much more complex. A large vessel was involved which entailed the appointment of a local shipping agent who could handle the complex paperwork. A helicopter company had to be contracted to provide the aerial support. Supplies of petrol, paraffin and Jet A1 fuel in large quantities had to be secured and supplied with test results, there was no margin of error to deal with contaminated fuel.

And so it went on, even down to the procurement of suitable portable toilets with weather protection.

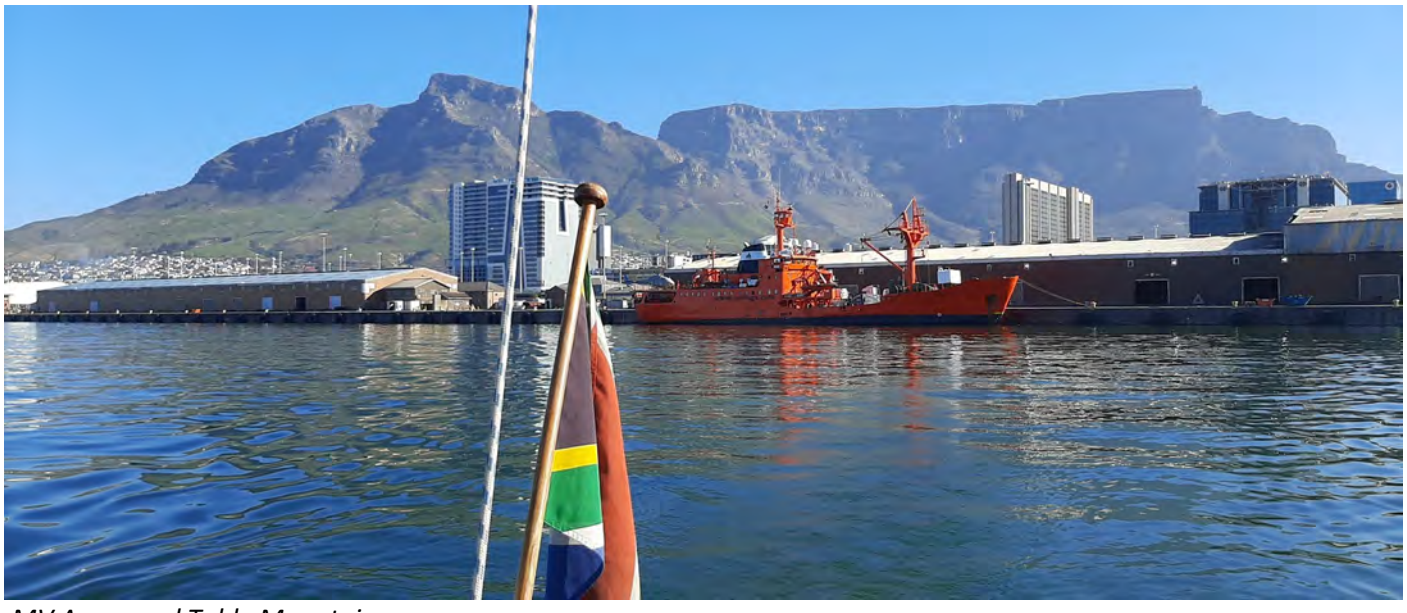
Dennis, ZS1AU and Chuck Brady, N4BQW / 3Y0C in 2001. Both are silent keys.

A container had been packed and sealed in Norway and shipped in bond to Cape Town for onward transit to the island. This type of arrangement theoretically means that it would merely pass through without trouble or delay. An enormous amount of time and effort was required to get the container cleared and on to the ship, as I mentioned earlier, a logistical nightmare!

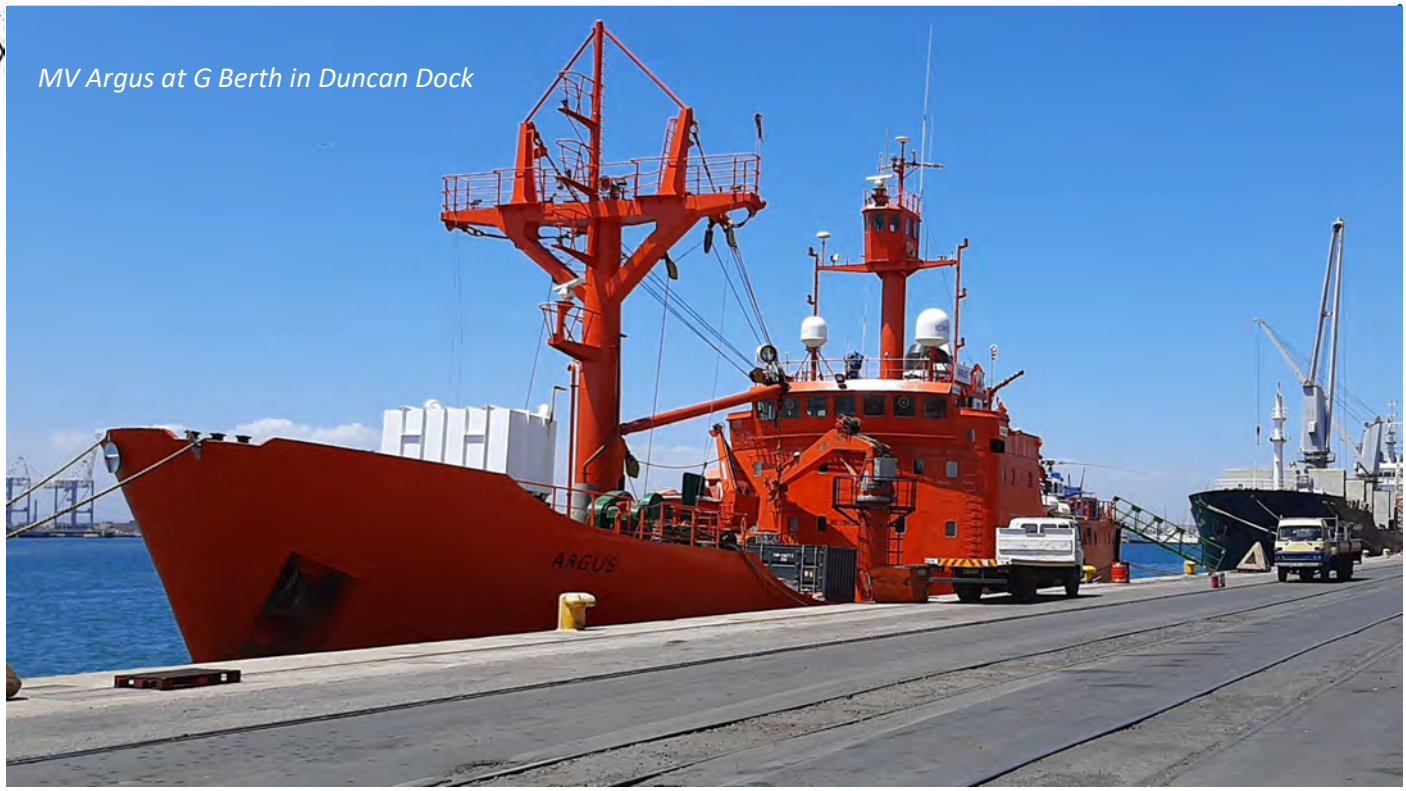
Beware of what items on a manifest may or may not be construed as dangerous and/or hazardous goods!

The departure date was planned months in advance to be the first of February. This did not happen as probably everyone knows by now. Repairs and maintenance to the ship had to be

(Continued on page 28)



MV Argus and Table Mountain



MV Argus at G Berth in Duncan Dock

(3Y0K – Part One - The beginning from page 27)

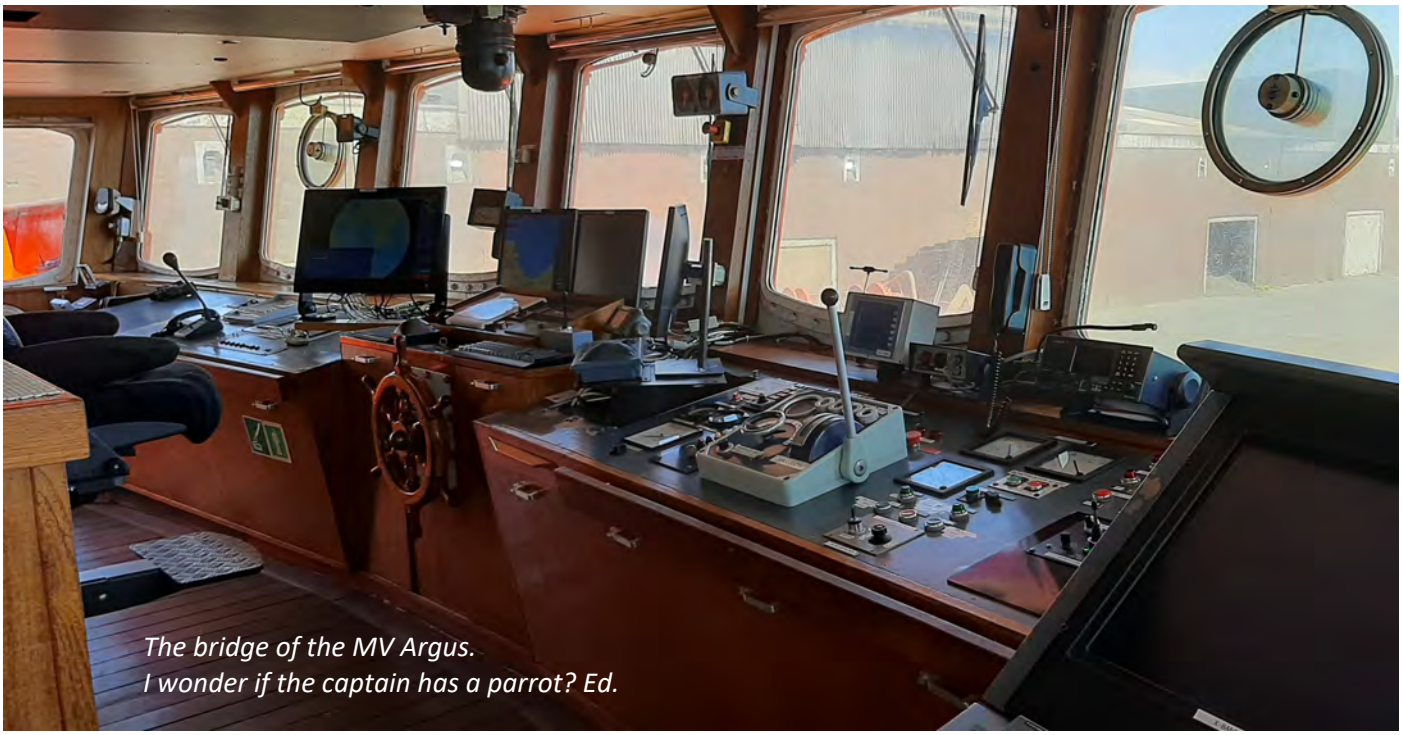
carried out in Las Palmas and the work signed off by suitably qualified people before the ship could leave, not an easy thing to achieve in EA8.

Team members had made their travel arrangements to arrive in Cape Town according to the original date. Some arrived and some cancelled and rebooked, some flights were cancelled because of a huge storm passing over the eastern USA, some had to withdraw from the expedition for personal reasons, at least two team members spent close to a month in Cape Town really getting to know the place.

The pre-departure activities were both serious work and pleasure, sight seeing and experiencing their first visit to South Africa, their first visit to Africa and even their first trip to the southern hemisphere.

I was able to take eight of the team to Cape Agulhas, the southern most tip of Africa, possibly a once in a lifetime experience for some.

(Continued on page 29)



The bridge of the MV Argus.
I wonder if the captain has a parrot? Ed.

Welcome to some of the team arriving at CPT International Airport. Helicopter on the aft deck of the MV Argus

(3Y0K – Part One - The beginning from page 28)

Multiple trips to Signal Hill gave the visitors a good introduction to the geography of Cape Town. Visits to Cape Point, up Table Mountain on the cableway, a climb up Lion's Head and trips to wine farms were also done individually.

Departure day approached, the helicopter was authorised to land on the ship, the bunkers were pumped into the ship, the fuel and stores and provisions were loaded and the team went through Home Affairs to emigrate officially.

The MV Argus left port in the early hours of Saturday 21 March.

Part Two will follow the expedition and the return of the team to Cape Town.

Right. Dennis, KT8X outside my house, street number 73, with the DENNIS sign I inherited from Dennis, ZS1AU. The DENNIS brand of fire engine fame.

Mills On The Air 2026

Celebrating 30 Years

Saturday 9th to Sunday 10th May

CALLING ALL RADIO AMATEURS!!

The 30th anniversary of Mills on the Air in conjunction with National Mills Weekend (run by S.P.A.B.)

This year we are inviting Mills and Radio Amateurs from around the World to take part in this unique event. Bringing Amateur Radio to locations that are typically seen only by Mill enthusiasts and Walkers!

Mills on the Air began back in 1996, when our founder happened to spot a call out on the RSGB Newsfeed for a few Amateurs to set up at a select few Mills around the country to operate on the National Mills Day.

This turned into a decades long event that now had more than 300 operators and clubs taking part from the UK, The Netherlands, Finland, Australia, South Africa and many more locations!

It is free to take part, but we do encourage you to give a donation to your local Mill to help them with their fundraising efforts. Many are run by volunteers and every penny helps!

We are open to all Amateur Radio Bands and Modes and this year, there are DMR groups set up specifically for us!
(more details can be found on our facebook page)

If you would like to take part, please visit our website to sign up!

www.nharg.org.uk/mota

We have regular updates on our Facebook page, including interesting histories of the Mills taking part!

www.facebook.com/MillsontheAir

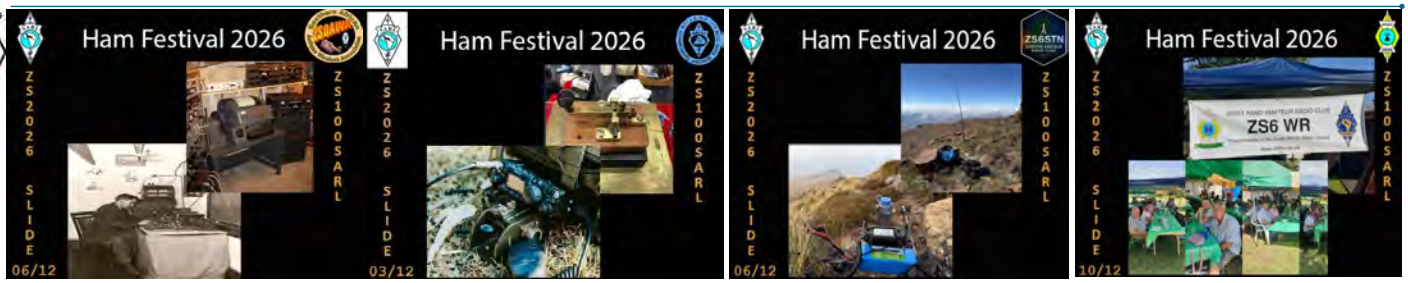
Photograph by Jack Dwarswaard - Kinderdijk Polder Mill

Our first ever Ham Festival took place over the weekend of 27 February 2026 (my birthday - ZS6SKY) and Sunday 1 March, with most of the activities happening on Saturday 28 February. Wayne is our “Visionary” and the Club’s “Planner.” Wayne having been very busy lately, wanting to upgrade our Flea Market to a Ham Festival. The Ham Festival idea was that we would have our Flea Market in the morning, followed by various demonstrations on various modes of operation, my input was “Hey - Anything goes!” If you want to bring your Flea Market to the East Rand, you are welcome, bring a

(Continued on page 32)

Ons eerste Hamfees ooit het plaasgevind oor die naweek van 27 Februarie 2026 (my verjaarsdag - ZS6SKY) en Sondag 1 Maart, met die meeste van die aktiwiteite wat op Saterdag 28 Februarie plaasgevind het. Wayne is ons "Visionêr" en die Klub se "beplanner.” Wayne was die afgelope tyd baie besig en wou ons Snuffelmark opgradeer na 'n Hamfees. Die Hamfees se idee was dat ons ons Snuffelmark in die oggend sou hê, gevolg deur verskeie demonstrasies op verskillende maniere van werking. My inset was, “Haai - Enigiets is welkom.” As jy jou Snuffelmark na die Oos-Rand wil bring, is jy

(Vervolg op bladsy 32)



(The East Rand Hamfest from page 31)

demo with, come and enjoy the weekend with us, we have a fantastic and safe venue. Wayne was hard at work the week before the event, gathering pictures from the Gauteng based clubs, resizing and encoding these into SSTV format, this was for our transmission on 2 metres. I, on the other end, was busy changing the format of some samples into BMP format for transmission on 40 metres.

Myles, ZS6MYL arrived on Friday afternoon, camping over till Saturday, Myles setup his Yaesu FT -710 with his Buddy pole and we were on the air with his field station into the evening.

Saturday saw an attendance of around 60 + amateurs, CBers and some other curious folk, descending on Arrowe Park, this included two couples from Pietermaritzburg, Stephen and his wife Marie, arriving on Friday evening and Stan,

(Continued on page 33)

(Die Oos-Rand Hamfees van bladsy 31)

welkom, bring 'n demonstrasie saam, kom geniet die naweek saam met ons, ons het 'n fantastiese en veilige lokaal. Wayne was hard aan die werk die week voor die geleentheid, het hy fotos van die Gauteng-gebaseerde Klubs versamel, dit verwerk en in SATV-formaat gekodeer. Dit was vir ons uitsending op 2 meter. Ek, aan die ander kant, was besig om die formaat van sommige voorbeelde na BMP-formaat te verander vir uitsending op 40 meter.

Myles, ZS6MYL het Vrydagmiddag aangekom en tot Saterdag gekamp. Myles het sy Yaesu FT-710 met sy Buddy-paal opgestel en ons was tot die aand op die lug met sy veldstasie. Saterdag het 'n bywoning van ongeveer 60+ radio amateurs, Burger -banders en 'n paar ander nuuskieriges gesien, wat op Arrowe Park toegesak het. Dit het twee paartjies

(Vervolg op bladsy 33)

(The East Rand Hamfest from page 32)

ZR5SEM and his wife Rachel arriving on Saturday, Mark, ZS4OIL arriving from Sasolburg and amateurs from Pretoria doing the trip to Arrowe Park. Local amateur participation was also good, with most people there to buy or sell.

Ronald, ZS6RVC set up his “Sat Rover” and 60 cm dish connected to his Icom 706 MKII radio. Various amateurs enjoyed making contact on QO-100 in the afternoon. Once things had quietened down, SSTV did not seem to be as much of a hit, with only a few opportunities to show and tell. Wayne demonstrating another digital mode, using SDR Angel software.

Boerie Rolls and Gourmet Chicken Burgers with chips were on sale, plus lots of cold drinks to cool everyone off.

Due to various reasons, including not enough man power from our Club’s side, not all the demo’s could run, we ended up not being able to transmit

(Continued on page 35)

(Die Oos-Rand Hamfees van bladsy 32)

van Pietermaritzburg ingesluit, Stephen en sy vrou Marie, wat Vrydagaand aangekom het, en Stan, ZR5SEM en sy vrou Rachel wat Saterdag aangekom het, Mark, ZS4OIL wat van Sasolburg af aangekom het en radio amateurs van Pretoria wat die reis na Arrowe Park onderneem het. Plaaslike radio amateur deelname was ook goed, met die meeste mense daar om te koop of te verkoop.

Ronald het sy "Sat Rover" en 60 cm-skottel opgestel wat aan sy Icom 706 MKII-radio gekoppel is. Verskeie radio amateurs het dit geniet om in die middag op QO-100 kontak te maak. Nadat dinge bedaar het, het SATV nie so 'n sukses gelyk nie, met slegs 'n paar geleenthede om te wys en te vertel. Wayne het 'n ander digitale modus gedemonstreer met behulp van SDR Angel-sagteware.

Boerie Rolle en Gourmet hoender burgers met skyfies was te koop, plus baie koue drankies om almal af te koel.

(Vervolg op bladsy 35)

The South African Maritime Mobile Weather Net

The Maritime Net is on the air daily at 06:35 UTC [08:35 CAT] and 11:35 UTC [13:35 CAT] on 7,120 MHZ LSB and 14,316 MHZ USB.

The 06:35 UTC and 11:30 UTC transmissions are for High Seas METAREA 7 which covers from Ascension Island down to Madagascar East and Marion Forties on 14,316 USB.

The coastal weather and general sails are on 7,120 MHz LSB after the main weather broadcast.

The team is Peter, ZS1CH; Marjoke, ZS5V; Woody, ZS3WL and Johan, ZS6WZ.

The IARU Intruder Watch Service (formerly the IARU Monitoring System or IARUMS) is a worldwide service authorised by the IARU Administrative Council. It is served by dedicated volunteers.

A monthly IWS Newsletter is published and can be downloaded from https://www.iaru-r1.org/spectrum/monitoring-system/iarums-r1-newsletters/

(The East Rand Hamfest from page 33)

our SSTV on HF, but many hours were transmitted on 144,500 MHz and a few participants managed to decode the signals, we also gave a few calls on the "Queens of the Mountains" contest later in the day. We are hoping for a bigger turn out next time, a big thank you to Wayne, ZS6ORB for organizing the event and to everyone that attended, your being there made this event Special…

(Die Oos-Rand Hamfees van bladsy 33)

As gevolg van verskeie redes, insluitend nie genoeg mannekrag van ons Klub se kant nie, nie al die demonstrasies kon loop nie, ons kon uiteindelik nie ons SATV op HF uitsaai nie, maar baie ure is op 144,500 MHz uitgesaai, en 'n paar deelnemers het daarin geslaag om die seine te dekodeer. Ons het ook later die dag 'n paar oproepe op die "Queens of the Mountains"-kompetisie gemaak. Ons hoop vir 'n groter opkoms volgende keer, 'n groot dankie aan Wayne, ZS6ORB vir die organisering van die geleentheid, en aan almal wat dit bygewoon het, julle teenwoordigheid het hierdie geleentheid spesiaal gemaak…

The YL.Beam

Heather Holland, ZS5YH

World Wide YL Award registrations online now

I am happy to announce that the website for the World-Wide YL Award is now online at https://hamaward.cloud/wwayl. The event took place from 9 to 16 March 2026 and you could have taken part as "activator" or as "hunter." Best regards, 73 and 33 Veronika Wigand, DL4VER Sunday 8 February 2026

Let our voices be heard

To celebrate International Women's Day ALARA (Australian Ladies Amateur Radio) issued special certificates to YLs who make at least 5 contacts with other radio operators on Sunday 8 March 2026. OMs needed to contact 5 YLs. Any Amateur Radio mode can be used. For more details contact publicity@alara.org.au.

Third annual International Women's Day YL POTA Party 2026

The third annual International Women's Day YL POTA Party was held on Sunday 8 March 2026 with the aim of activating a park during the 24-hour event window. Radio activity on any amateur radio frequency within your license class. You could be an activator or a chaser.

Listen 32 mins in to Shannon, 2E0OHT/KC1OHT and Marion, W1GRL discussing this event, on The European Ham Radio Show #136 https://www.youtube.com/live/avcWT14_V04

VKFF YL Awards for 2026

During 2026, the Australian chapter of the World-Wide Flora Fauna (WWFF) programme (VKFF) will be offering this special award. There are two certificates to gain. One for the ladies who activate a park and another for those who contact these ladies. Six levels of awards will be available for multiple of 5 contacts up to 30 VKFF references. The award will run for all of 2026 and can be applied for via e-mail to National Co-Ordinator, Paul, VK5PAS. See the VKFF website for more details https://www.wwffaustralia.com/2026-vkff-ladies-award.html

First YL POTA Activator in Bosnia and Herzegovina

My name is Lamija Kapic, call sign E77LZ from Bosnia and Herzegovina. I got my licence in 2015 as a support to my husband E77PY. Back in 2013 he decided to renew the Radio Club that existed (1970 - 1992) before war in Bosnia. We had no older amateurs, no existing amateurs so we started from

(Continued on page 36)

scratch… We had a deal with teachers in the local elementary and middle school to introduce technical education and knowledge in alternative communication. And before we knew it, we must care for about 50 kids! It was overwhelming! To help my husband I must study first, HI. I got my licence together with my 14 years old son Hamza, E78KH in first class that we organized. Since then, I was a mother to all these kids, secretary, vice-president and president in the club when my hubby got back to US for work. Every year we have 7 ARDF (amateur radio direction finding) competitions across the country. That is a lot of work and lots of travel!

I am the first YL POTA Activator in E7. I am a member of the E7POTA Team, still a member of radio club E74AAX and member of Association of Radio Amateur in Bosnia and Herzegovina. My other hobby is knitting, mainly socks. I can do some FT8 contacts and knit simultaneously, two birds with one stone, HI. Hope to catch you on the air, 73!

The American Lighthouse Weekend, 20 to 22 February 2026

Four YLs are part of N4T DXpedition to Dry Tortugas and the Florida Keys – Molly, W3NY; Angela, N3ARB; Elaine, K3MET and Elisabeth, N7MEB. Molly and friends sailed to the park in a

fishing boat to be active on the third DXpedition to Dry Tortugas. The Garden Key Lighthouse, USA-316 activated from Garden Key, located near downtown Dry Tortugas.

Dry Tortuga National Park, located about 112 kilometres west of Key West, Florida, is a remote destination of breathtaking beauty that offers a unique opportunity for amateur radio operators to participate in a Parks On The Air (POTA) and lighthouse activation. With its pristine beaches, crystal-clear waters and historical significance, this park is not only a haven for nature lovers but also an exciting destination for those seeking to establish connections and log contacts.

The Dry Tortugas are a small group of reefs, islands and sandbars 112 km from Key West. They are the final connecting point of the Florida Keys. Access to the park is limited. The only way to reach Dry Tortugas National Park is by ferry, boat or seaplane. This makes the park a highly sought after contact in the amateur radio community around the world!

Ham Nation episode 596 for 9 April 2025. POTA Molly and Friends (start 16 mins >47 mins) https://www.youtube.com/watch?v=bX15zk3qD8E

The Cabo Vírgenes Lighthouse is in the province of Santa Cruz, Argentina, at the entrance to the Strait of Magellan overlooking the South Atlantic Ocean. It is 133 km from provincial capital Río Gallegos. The Cabo Vírgenes penguin colony is located a short distance from the Lighthouse. Five YLs and five OMs operated from the Lighthouse with the call sign AY1X. The YLs were Bianca, LU9YBM; Liliana, LU3YL; Leticia, LU5ILA; Veronica, LU9IVN and Marina, LU1VYL. https://www.facebook.com/djlunanqn/videos/1479082603774378.

(Continued on page 37)

(The YL.Beam from page 36)

From Chile, Maritza Fredes Naveas, CE1RFI and the Atacama Desert Radio Club, CE1DDA activated the Puerto Viejo Beacon (lighthouse NAC-102). Puerto Viejo is a small fishing cove. It is a long journey by land, about 16 hours from Santiago, Chile

Out-and-About

The Ganga Sagar Mela, the week-long Hindu pilgrimage that takes place each January (where the Bay of Bengal meets the Ganges River), is a sacred time for millions throughout India. The crowd size makes it a perilous time, so members of the West Bengal Radio Club (WBRC), who have been a presence at the Mela for many years, are deployed with their radios into the crowd, connecting with a central hub. Saborni Nag Biswas, VU2JFC was active again this year.

Saborni, VU2JFC at Ganga Sagar 2026

Italian astronaut Samantha Cristoforetti, IZ0UDF headlined the Milano Cortina 2026 Winter Olympics Opening Ceremony on 6 February 2026, at San Siro Stadium, guiding a young girl through a live, artistic interpretation of the galaxy. This performance celebrated science and humanity, featuring dancers representing a moving galaxy, inspired by the Voyager probes' Golden Record.

Esther JM Harper, GI0AZA from Northern Ireland

Today I had the honour of being present for Esther's (GI0AZA) Mountain Goat Award Earning Activation on her local summit, Benbradagh, Ireland. The journey to this moment has been almost 10 years in the making for Esther and for anyone in the know, it is no small feat.

Congratulations to Esther and of course to Ian

Esther with Dave, EI5IMB, taken just after she made 'Goat'

by proxy (already a qualified Goat himself). An inspiration… Take a bow..
De Dave, EI5IMB. Irish Ham Radio 26 Jan 2026

Silent Key

Sharon Taratula (18 March 1962 – 4 February 2026) died at the age of 63. She was from New Britain, CT. The ARRL is saddened to share the news that Sharon Taratula, who served the League with dedication and distinction for 32 years, passed away on 4 February 2026.

Sharon joined ARRL on 31 January 1994, as DXCC Awards Technician. She later served as Administrative Assistant (1996), MVP Administrative Manager (2011) and from 2016 until her passing, as Award Manager. Over more than three decades, she became a cornerstone of support for some of the most recognized programmes in amateur radio.

The 14th Youth of the Air Summer Camp

IARU Region 1 Youth Working Group

Dear Member Societies,

The IARU Region 1 Youth Committee, together with the Österreichische Versuchssenderverband (ÖVSV), are pleased to announce the 14th annual Youngsters On The Air (YOTA) Summer Camp, this time in Austria. As announced during the closing ceremony of the 13th YOTA Summer Camp in Jambville, France, the event will take place in Wagrain, Austria, from 25 July to 1 August 2026.

Once again, we look forward to welcoming motivated youngsters from across IARU Region 1, together with guest teams from Regions 2 and 3, for a week of international friendship, learning and amateur radio activities.

If your Member Society is considering sending a national youth team to this event, please complete the preliminary application form. Each team may consist of one team leader (aged 18 - 30) and up to four team members (aged 15 - 25). The last two team members will be considered substitutes in case any of the primary participants from another Member Society are unable to attend.

We kindly ask you to select participants who are highly motivated, eager to learn more about amateur radio and enthusiastic about taking part in the full programme. With many countries represented, the camp is a unique opportunity to discover other cultures, build international friendships and become part of the wider community of young radio amateurs. At the same time, participants will gain valuable experience and skills that will help them involve more youngsters in the hobby back home.

A participation fee will apply and will be confirmed at a later stage. At present, it is expected not to exceed 50€ per participant.

The deadline for submitting the preliminary application is at 00:00 UTC on Friday 1 May 2026. The deadline for the nomination of participants is at 00:00 UTC Sunday 24 May 2026,

Are you between 15 and 25? Would you like to represent South Africa at the 14th Youth of the Air Summer Camp in Austria. Contact Guy Eales, ZS6GUY at guyeales.ge@gmail.com so that the process can be started.

International Amateur Radio Union, Region 1

27th General Conference - Vienna, Austria, 19 to 23 September 2026

The 27th IARU Region 1 General Conference, to be held at the Austria Trend Parkhotel Schönbrunn (https://www.austria-trend.at/en/hotels/parkhotel-schoenbrunn).

The opening Plenary will take place on Saturday 19 September 2026 and the Final Plenary on Wednesday 22 September 2026. The 100th anniversary celebration of the OV with a festive theatrical performance will take place at 19:00 on 21 September 2026.

The business of the Conference will be conducted in English.

The Conference will be an 'in-person' meeting with online streaming of the C3 and Plenary meetings. Remote participants will not be able to take the floor during the discussions and will have to ask their in-person proxies for questions or votes. Day by day detailed information will be made available through a dedicated website. No remote voting procedure will be used.

The Working Group and Committee chairmen may organize preparatory online discussions as soon as the final list of contributions is available.

Conference Papers

All Member Societies are invited to submit papers for consideration by the Conference. Papers must be submitted by Monday 15 June 2026 by e-mail to the Conference Secretary.

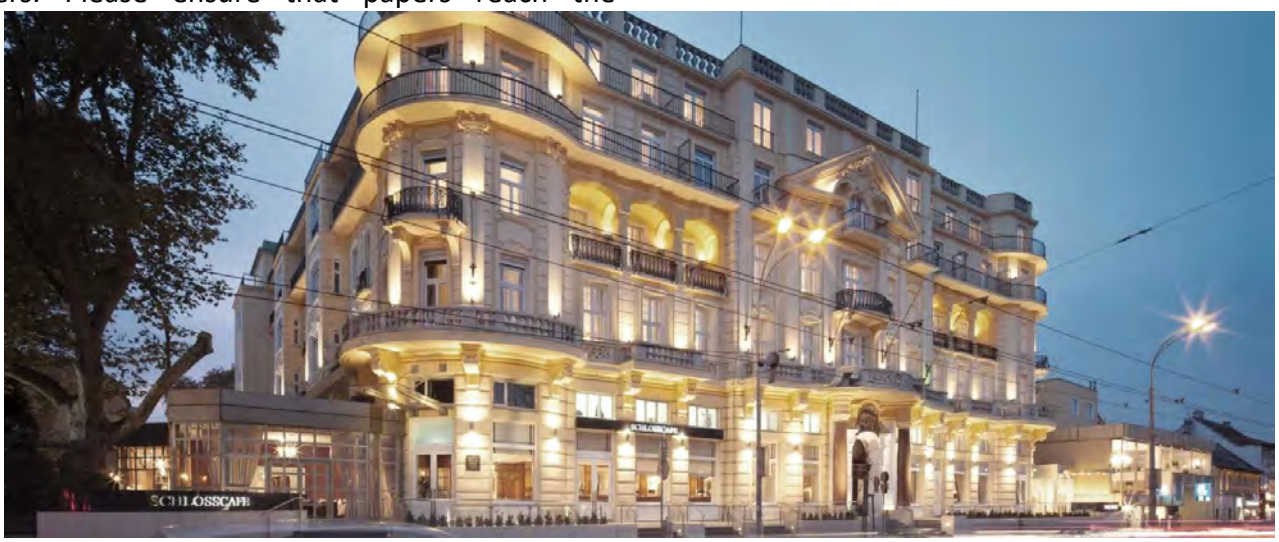
Member Societies, the Executive Committee, the IARU Region 1 Specialised Bodies, the Administrative Council, the International Secretariat and other IARU Regions may submit papers. Please ensure that papers reach the Secretary before the deadline, late papers may not be accepted.

The full set of papers will be available for download from the IARU Region 1 Conference Web from Monday 6 July 2026. Member Societies are responsible for distributing papers to their delegates.

Following the Opening Plenary, the meetings of the various Working Groups takes place - Amateur Radio Direction Finding (ARDF), Amateur Radio Space Experiment (ARSPEX), High-Speed Telegraphy (HST), Emergency Communications, the Political Relations Committee (PRC), the Spectrum and Regulatory Liaison Committee (SRLC), Support to the Amateur Service (STARS) and the Programme for Disabled Radio Amateurs (PDRA).

Committee 2 (C2) deals with the finances of Region 1. The Committee is elected during the Opening Plenary. Committee 3 (C3) looks after the General Administration and Organisation matters, while Committee 4 (C4) deals with HF matters. Committee 5 (C5) deals with VHF/UHF and Microwave matters, Committee 7 (C7) deals with EMC matters and Committee 8 (C8) is the Youth Working Group. Committee 6 (C6) is the Election and Ballots committee and is elected during the Opening Plenary.

Member Societies can summit papers for C2 Finances, C3 Administration, C4 HF, C5 VHF/UHF and Microwaves, C7 EMC, C8 Youth and the Workgroups The template for the papers are available from the SARL Secretary at secretary@sarl.org.za.



The 2026 Africa Scout Day

Stephen ZS6SKY

The 2026 Africa Scout Day was celebrated at Arrowe Park Scout Centre, in Benoni from 13 to 15 March. With the main celebrations taking place on Saturday 14 March. The East Rand Radio Club ran a Radio Base for the Scouts. Wayne, ZS6ORB set up various demonstrations including our HF station, Automatic Dependent Surveillance–Broadcast (ADS -B) flight tracking, satellite and SSTV.

A word of thanks and shout out to Ronald, ZS6RVC and Sheldon, ZS6KID who came out from the Johannesburg ARC to assist us. Ronald assisted in setting up the Sat Pack and tuning up the Club's Icom-910 radio, while Sheldon assisted us with setting up the other displays. Sheldon also braaied for us.

Two hundred and forty Scouts, being approximately 24 Scout patrols were in camp, the opening ceremony was at 09:00 Saturday morning, thereafter the Scouts could venture out to various bases, including air rifle shooting, traditional dancing, canoeing and building of wooden structures. I met up with a Scout patrol from

Horizon on the West Rand, Madagascar and Scouts from Durban.

Nigel, ZS6RN set up the Battleship game and a new "escape room" type of game, using electronics and LED lights, both games proved to be a great success again. The weather played along too, ensuring a great autumn day was had by all.

The East Rand Club did not take part in the SARL Field Day this weekend, but we did get a chance to put a few Scouts on the air, thanks to the Sandton Amateur Radio Club, for answering their call, we also made contact with the West Rand Club, on 40 metres, using Wayne's Icom-7300. The SDR and LCD display, as well as SDR Console software, made a great display of radio technology

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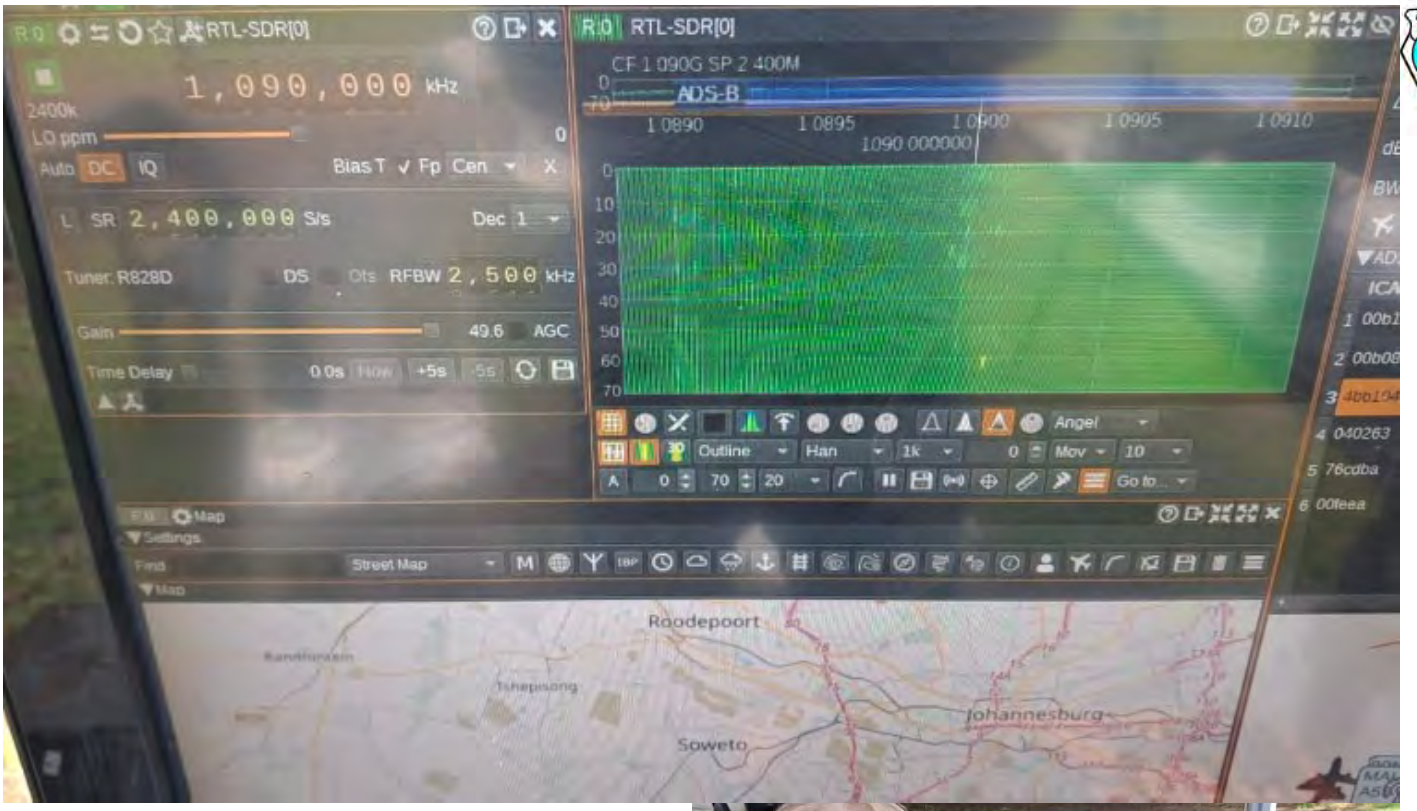

(The Africa Scout Day from page 40)

in action.

Wayne shows the Scouts ADS-B, some of the young Scouts found this display very interesting. He was running the SDR Angel software, a version 4 SDR dongle receiver, a saw amplifier and a dedicated ADS-B antenna, working together, to produce some nice decodes and interesting information

Johannesburg Amateur Radio Club

Amateur Radio, a popular hobby and service that brings communications, electronics and people together. The hobby integrates the latest technologies with traditional two way radio. People use amateur radio to talk across town, around the world, or even into space, all without the Internet or cell phones. Join a fun, social, educational, and family friendly hobby, which offers something for everyone.
Contact the Johannesburg Amateur Radio Club Today!!!

- Radio amateur courses
- Technical projects
- Large club house facilities
- Radio room with antennas

A side view of the Cape Town Amateur Radio Centre

The Moxy Antenna

Dave Ahlgren, K1BUK

QST, May 2019

In 2015, after a 40-year hiatus from Amateur Radio, I discovered the excitement of working sporadic-E (E_s) openings on 6 metres, allowing me to contact stations halfway across the nation on frequencies once used by local TV stations. I got started with a small antenna, the Par Electronics SM-50 6-metre Stressed Moxon, which I now use on a painter's pole when operating portable from grid square FN53. I quickly gained respect for the Stressed Moxon. It is compact, weighs just 3 pounds and provides good gain and an excellent match to 50 Ω coax.

This piqued my curiosity in trying to design a double Moxon antenna that preserved the excellent match while increasing gain. Such an antenna would consist of a basic Moxon and a second Moxon whose elements would serve as directors. My Numerical Electromagnetics Code (NEC) simulations of this double Moxon were promising, but I did not succeed in simultaneously predicting high gain, good match and acceptable front-to-back (F/B) ratio.

I got better performance by combining the basic Moxon with two Yagi-style directors and thus the Moxon-Yagi hybrid — or "Moxy" — was born.

I studied the Moxy using the optimization features of the freeware NEC programme 4nec2 (www.qsl.net/4nec2/) equipped with the NEC 4.2 engine (https://ipo.llnl.gov/technologies/nec). The optimization goals were to maxi-mize gain and F/B ratio while minimizing SWR at the 50,2 MHz design frequency.

Two designs emerged from my studies. The first used a fixed boom length of 8 feet, a convenient standard length. The second allowed the boom length to be optimized by 4nec2. Both designs used a 3,81 cm diameter insulated boom and tapered elements with 1,27 cm aluminium middle sections and 0,95 cm tips. Table 1, Table 2 and Figure 1 show the optimized antenna dimensions, while Table 3 and Figure 2 present the simulated

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Table 1. Dimensions for Design #1, optimized for 50,2 MHz, dimensions in centimetres

Element	A	B	C	S
Reflector (R)	182,8	18,4	38,9	13
Driven Element (DE)	184,1*	17,7	32,4	
Director 1 (D1)	182,8	47,7		
Director 2 (D2)	182,8	45,4		

*includes 1,27 cm gap at centre.
d23 = 59,7 cm; d34 = 96,9 cm; boom = 243,8 cm.
1,27 cm element mounting space at each end of the boom.

Table 2. Dimensions for Design #2, optimized for 50,2 MHz, dimensions in centimetres

Element	A	B	C	S
Reflector (R)	182,8	17,7	41,5	13,3
Driven Element (DE)	184,1*	17,1	32,8	
Director 1 (D1)	182,8	38,5		
Director 2 (D2)	182,8	37,3		

*includes 1,27 cm gap at centre.
d23 = 76,2 cm; d34 = 111,4 cm; boom = 255,1 cm.
2,54 cm element mounting space at each end of the boom.

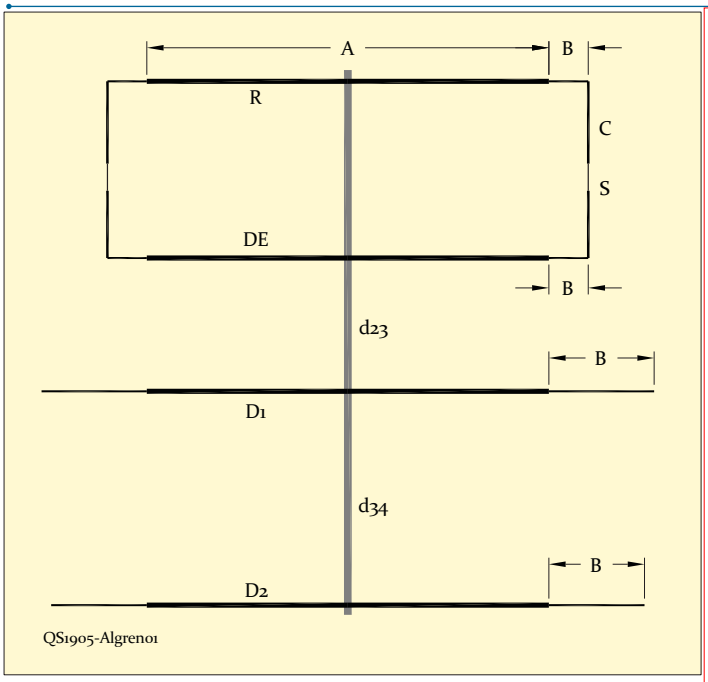

Figure 1. Moxy antenna reflector (R), driven element (DE), first director (D1) and second director (D2).

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performance of the two designs.

Building the Moxy Step by Step

1. Prepare the boom and mark the positions of the element centres according to Table 4. Apply two coats of marine spar varnish to stabilize the fibreglass.
2. Use a hacksaw to carefully cut four slits, 90° apart and 2,54 cm deep, in both ends of the three 182,88 cm, 12,7 mm central tubes. Slit one end of each 12,7 mm, 91,44 cm tube. Remove burrs with a small round file or deburring tool.

Parts list

243,84 cm fibreglass boom 3,81 cm OD, round tube, Max-Gain Systems Stock # RT-112-8 (https://mgs4u.com/product/1-12-od-round-tube/)

8 — Aluminium tubing 6063-T832, 91,44 cm, 9,525 mm OD, 1,4732 mm wall, no slit, DX Engineering P/N DXE-AT1240

1 — Aluminium tubing, 6063-T832, 91,44 cm, 12,7 mm OD, 1,4732 mm wall, no slit, DX Engineering P/N DXE-AT1494

1 — Aluminium tubing, 6063-T832, 182,88 cm, 12,7 mm OD, 1,4732 mm wall, no slit, DX Engineering P/N DXE-AT1480

8 — 12,7 mm stainless-steel pipe clamps DX Engineering P/N DXE-ECL-0500-10P

1 — Aluminium tubing, 6063-T832, 91,44 cm, 15,875 mm OD, 1,4732 mm wall, no slit, DX Engineering P/N DXE-AT1495

4 — 3,81 cm Maco Element Mounting Set (includes element bracket, saddle, U-Bolt, nuts; www.antennapartsoutlet.com/Pages/Products/MacoParts.html

1 — Insulating element base, DX Engineering DXE-BEB-3 Building Plate, boom-to-element, 9,8425 cm width, 7,30 cm length, 6,35 mm thickness

1 — Boom clamp plate with U-bolts to it mast and boom

1 — 6,35 mm fibreglass rod 121,9 cm-long Max-Gain Systems Stock #RSR-14-4

1 — 9,525 mm fibreglass rod 60,96 cm-long Max-Gain Systems Stock #RSR-38-2

High-strength epoxy adhesive

Palomar Engineers ferrite choke balun model BA-58

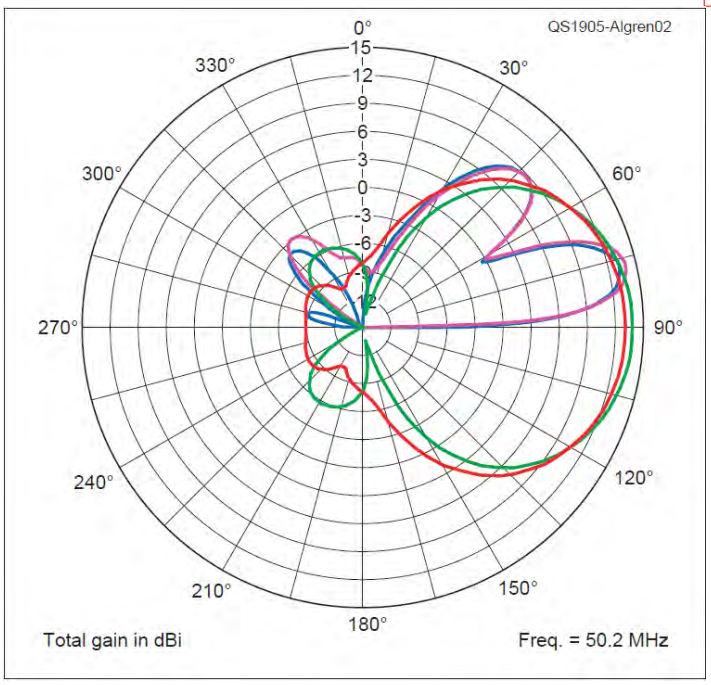

Figure 2. Radiation patterns were simulated 6 m above medium ground for Design #1: horizontal (green) and vertical (magenta); for Design #2: horizontal (red) and vertical (blue).

3. Prepare element mounts for R, D1 and D2. The Maco Element Mounting Set includes an element bracket that accepts 15,87 mm tubing. A shim is needed to accommodate the 12,7 mm tubes. For each element, cut an 20,32 cm shim of 15,87 mm tubing and centre the shim in the bracket. Insert the 12,7 mm diameter middle tube (labelled A in Figure 1) and centre. Drill and tap a hole through the bracket, shim and middle tube to accept a 12,7 mm stainless-steel 6-32 screw. Insert and tighten the screw to secure the middle tube (see Figure 3).
4. Each end structure consists of bent 9,525 mm

(Continued on page 46)

Top. Figure 3. Element-to-boom mounting.
Right. Figure 4. Driven element showing element clamps, feed-line connection and one end of the choke balun.

(The Moxy Antenna from page 45)

diameter tubes represented by segments B and C n Figure 1. To make the 90° bends, use a basic tube bender. Cut the B segments 15,24 cm longer than specified in Table 1 or Table 2. Cut the C segments to the lengths specified in Table 1 or Table 2 as measured from the centre of segment B. Make the S connectors 15,24 cm longer than the S dimension. Glue the B – C section of the reflector to the B – C section of the driven element via the S section. Use a permanent marker to mark the B section at the points where the Moxon ends enter the 12,7 mm middle tubes.

5. The middle section of the driven element (DE) is made from two 91,44 cm tubes, 12,7 mm in diameter. These tubes are separated by 12,7 mm and joined by a 9,575 mm fiberglass rod, 30,48 cm long, that is centred and glued. The DE is mounted on a DX Engineering BEB-3 insulated plate. Each side of the DE is attached to the plate by a 2,54 cm clamp cut from one of the Maco element clamps. A short 17,14 mm diameter shim is needed on both sides. One side is tapped for a 12,7 mm-long 6-32 screw. Feed-line connections are formed by tapping each half of the DE 6,35 mm from the inner ends of the elements. The latter taps go through aluminium and fiberglass to make secure connections (see Figure 4).

6. Measure and mark the 9,575 mm diameter end pieces of D1 and D2 (B segments). Cut these 15,24 cm longer than the B measurements. Assemble all elements using stainless-steel clamps and mount the elements on the boom.

7. Assemble the choke balun on a 38,1 cm length of 50 Ω coax (LMR-240 or RG8/X). Connect to the DE using spade terminals and stainless-steel screws (see Figure 4). Make provisions for connecting your 50 n coax feed line to your transceiver.

8. Add boom-to-mast mounting plate and mount the mast.

Results

See the www.arrl.org/QST-in-Depth web page for the 4nec2 code for the two designs. I chose to build Design #1 because of its convenient boom length. I note that the 4nec2 simulations predict somewhat cleaner reverse performance for Design #2. I mounted my antenna on a 426,72 cm painter's pole for initial testing (see the lead photo). I performed a swept SWR measurement with a RigExpert AA-54 antenna analyser and found a nearly perfect match at 50,5 MHz, 300 kHz high. I lengthened each "trombone" end of the Moxon by about 19,05 mm and obtained the SWR curve shown in Figure 5. The minimum SWR was 1,06,

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Table 3. Predicted performance of Moxy Designs at 50.2 MHz

	NEC model segments	Gain, dBi	SWR	Radiation Efficiency %	F/B, dB	F/R, dB
Design #1	772	13,8	1,05	71,4	29,4	16,8
Design #2	752	13,3	1,01	71,5	22,4	17,4

Table 4. Positions of element centres on the boom, dimensions in cm, measured from reflector end of boom

	Total boom length	Reflector	Driven element	Director 1	Director 2
Design #1	243,84	1,27	85,725	145,573	242,57
Design #2	255,1	2,54	90,249	166,528	277,971

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rising to 1,2 at the edges of a 500 kHz bandwidth.

From the end of June to mid-August 2018, I have logged 168 contacts, including 34 states, of which 14 are new ones for me and I contacted 96 Maidenhead grid squares, including stations in VA6, EA8, F8, FG8, KV4, CT1, XE1 and EI3. Clearly, the Moxy is a good performer, even on a 426,72 cm painter's pole.

Photos by the author.

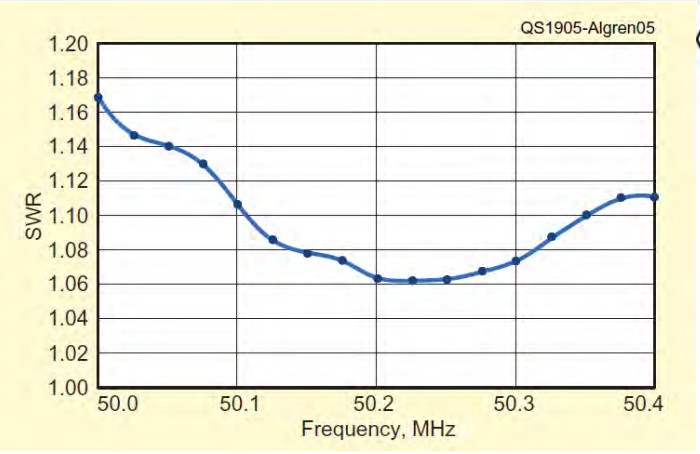

Figure 5. Measured SWR of Design #1

ARRL member and Amateur Extra-class licensee Dave Ahlgren, K1BUK, got his Novice call sign, KN1BUK, in 1957 and operated as K1BUK from 1958 to 1967. He held the call sign W8IXX while pur -suing a PhD in electrical engineering at the University of Michigan. Dave was a professor at Trinity College in Hartford for 41 years and retired in 2014. In 2015, he came back to ham radio, first holding the Amateur Extra-class call sign AB1XY and then K1BUK. Dave enjoys designing and optimizing antennas using 4nec2, especially for the 160-metre and 6-metre bands. Since returning to ham radio, he has earned the WAS and DXCC awards. You can reach Dave at djahlgren@cox.net.

A working Shack raid at the home of ZS5APT and ZS5AYC. Coax cables made up for the club and lots of topics covered.

Radio operators celebrate 101 years as they prepare to ham it up

Amateur radio in South Africa turns 101 this year and, as part of this, the local club is getting together for its South African Radio League (SARL) National Field Day this weekend.

This is an annual, two-day amateur radio contest and emergency preparedness exercise. The event challenges operators to set up stations in remote areas to make contact with others - in order to win the contest.

The local club is called the Hibiscus Coast Amateur Radio Club (ZS5HAC).

Members meet bi-monthly and are always available for enquiries through their email zs5hac@gmail.com or Facebook page.

Louise Larsen (ZS5BSR), who joined the club in 2022, said that ham radio had broadened her outlook on the world.

"Conquering the challenge of a competition and being able to make contact with other operators around the world is exciting," she said.

She said that being a member of the club, along with her husband Tim, had seen her make new friendships and had added social aspects to her life.

"We climb mountains to set up and then hope a radio station out there is going to be listening out for our call of CQ and that they will respond to it," she explained.

Ham radio is a colloquial term for amateur radio that originated in the early 20th century, likely stemming from a derogatory 19th-century telegrapher term for unskilled, 'ham-fisted' operators.

Amateur radio enthusiasts later embraced the term, turning it into a badge of pride for their radio hobby.

It is recognised by the International Telecommunications Union as a service and is an inclusive hobby, with more than three million members of different ages and backgrounds around the world.

Radio amateurs utilise radio transmission and two-way communication between

Setting up a station are (back, from left) Adele Morton, Mariele Venter, Jurie Venter, Martin Blomeyer, Tim Larsen and Owen Larsen, with Louise Larsen in front.

radio ham operators through voice, digital techniques, video and Morse code.

Amateur radio typically does not rely on the internet or cellular networks, making it especially helpful during emergencies or disasters when those systems become unreliable.

Operators must be qualified and have a ham radio licence.

Friendly competitions are often held throughout the year, including Summits On The Air (SOTA) and Parks On The Air (POTA).

Best regards (73) to ham radio operators.

Be gone pesky radials!

John, VA3KOT Ham Radio Outside the Box

"I would rather have questions that can't be answered than answers that can't be questioned." — Richard Feynman

One of the biggest bugbears of portable operations in a public space when using a vertical antenna is having to lay out radials – either on the ground or raised. I have told the story of the dancing lady before on this blog; she performed a little jig when advised being careful of the wires on the ground. Some of the parks I frequent are quite small and busy in the summer months, so I always must be cautious about creating a potential hazard for other park users.

Even if I find a nice quiet area along a trail, there is often limited space in which to spread my wires. Alternatively, I may be on a mission to operate with multiple rapid deployments – drop my pack, super-fast setup, operate, move on. A small vertical antenna is a very convenient way of getting on the air with minimum fuss – except for the radials.

What is the function of radials?

It does not matter whether the radials are on the ground or raised, they form a counterpoise – "the other half" of an antenna. The current flowing through the radial system controls the current flowing into the radiating element. An efficient set of radials allows maximum current to flow through the whole antenna system. The current flowing in the radiating element is equal to the current flowing into the radials. More current equals more signal being radiated.

We can throw a single wire on the ground and call it a counterpoise – there seems to be a magic length of 17 feet/5,18 m, at least that is what we may be led to believe from reading many online accounts. Seventeen feet may be approximately a quarter wave on 20 m, but it is detuned by proximity to the ground. Is it efficient? Well, it is better than nothing. Without that wire the operator may become the counterpoise – RF gotta go somewhere.

Transceivers can't count radials

Let us pretend that transceivers have eyes for a minute. When the transceiver looks at a counterpoise – whether it is made of wire radials or has a call sign – all it really "sees" is a combination of Resistance, Inductance and Capacitance (RLC). Transceivers cannot count radials – you read it here first! Resistance, Inductance and Capacitance are seen as impedance. An efficient set of radials has a low impedance to RF which allows maximum current to flow. So, is not the current flowing into the counterpoise system really the most important factor in determining its efficiency?

Amateurs endlessly debate about how many radials make an efficient counterpoise. Is it 4, is it 16 or maybe 128? The debate is pointless unless other factors are also considered. The correct number is just ONE – if your antenna is erected in seawater. I want to propose another number – ZERO and, in the true spirit of scientific endeavour, I have empirical evidence to support my assertion. If an assertion cannot be verified by experiment it just is not so.

Here is the experiment

The experiment was conducted in the Ham Radio Outside the Box outdoor laboratory (my driveway). A welcome rise in temperature had melted the ice from my concrete driveway and, for once, the Sun was shining. I wanted to test a "de minimis" rapid deployment antenna that would also serve to verify my assertion about counterpoise efficiency.

The initial test was conducted with my 20 m emergency wire antenna (a coil-loaded 13 ft/3,96 m wire). Instead of radial wires I used my GTU (Ground Tuning Unit).

A GTU is a series connected L-C device. There is a sensor circuit connected to a small analogue meter for observing the current passing through the device. The GTU case is a Hammond aluminium box which is electrically connected to the ground side of the GTU. The input to the GTU is a short wire connected to the shield of the coax at the antenna end.

To monitor the current in the radiating element an RF current meter was inserted into the radiator

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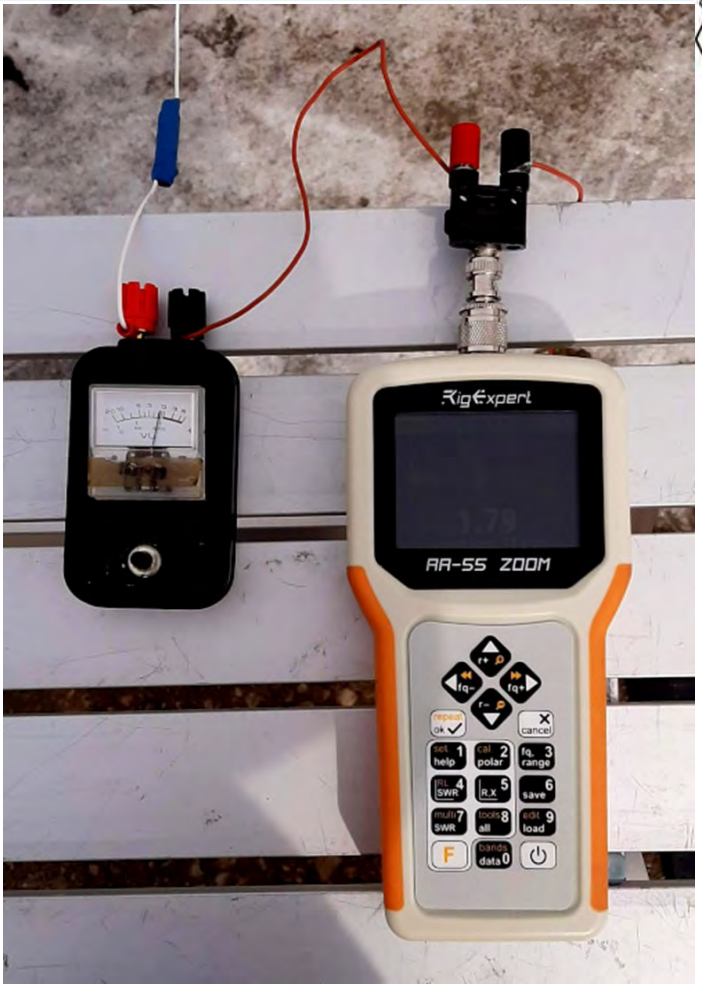
The SWR is hard to read due to the bright sunlight – it is 13. The GTU had not yet been adjusted for maximum counterpoise current. Observe the small deflection on the RF current meter.



The SWR is difficult to read due to the bright sunlight; it reads 1.79. The strange blue thing in the antenna wire is a small loading coil. Observe the higher deflection on the RF current meter after the GTU had been adjusted for maximum current in the counterpoise.

(Be gone pesky radials from page 48)

wire. The current meter is basically a GTU without the tuned circuit.

The GTU was placed directly on the concrete driveway; its aluminium box forming a capacitive connection to ground. It would have been more effective to perform the experiment on grass, but my lawn is still buried under a miniature glacier formed by another dreadful winter that is not over yet.

The 20 m emergency antenna is nominally resonant when a counterpoise is attached so no further tuning was required. The absence of radials required the GTU to do the job of maximizing the current flow on the ground side of the antenna.

At the start of the experiment there was a small current flowing to ground. A similarly small current was observed flowing into the radiator wire (see images). The antenna analyser recorded an SWR of 13:1.

As the GTU was tuned the ground current increased. It was observed that the current in the radiator also increased. Neither meter could measure the value of current, so the readings simply represented the relative flow of currents in the counterpoise and radiator. As the ground current peaked the antenna analyser showed a much improved 1.79:1 SWR.

Quod Erat Demonstrandum?

So, did that little semi-scientific experiment prove the point? Well kinda sorta. It established a correlation between ground side current and radiator current. But would it QSO? No, definitely not; it is just a dumb collection of wire and electronic components – I make the QSOs, eh?

Next step – hook up a radio

This is the bit where I boldly went on to risk a

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radio in pursuance of scientific inquiry. First, the antenna was replaced with my "tactical" 9,5 ft/2,98 m whip wearing its finest top hat. The whip was mounted on a small tripod out on the driveway. Even with a googol (10e100) of radials this antenna would not be resonant on the 20 m band. That called for deployment of my QROp L-match tuner.

The radio called into service for the experiment was my old Yaesu FT-897 set for a blistering 20 watts. Since the antenna is a compromised short vertical, my QRP radios were granted liberty for the day. A little muscle was called for to ensure a decent signal could be launched up to the edge of space to pound the ionosphere.

The L-match was adjusted for resonance (X = 0 @ 14,113 MHz), a low SWR reading on the radio, then the GTU was adjusted to max out the ground current, which lowered the SWR reading on the radio even further. Everything was ready for launch, but countdown was paused for one further refinement.

A large plate for pizza?

A GTU is usually used in combination with a capacitance plate laying on the ground. The GTU body is itself a very small capacitance plate, but maybe a larger plate would enhance the ground side current flow. A quick hunt around the Ham Radio Outside the Box HQ turned up several options. One of the options was an old pizza pan. It worked – i.e. it raised the ground current a little, but I really could not see carrying a disgusting retired old pizza pan around as part of my portable ops kit. A little further searching resulted in a small piece of what looked like chicken wire. It looked much nicer and it worked even better than the pizza pan.

The final setup – will it QSO?

Do I have to say it again? I make the QSOs not the dumb bits of wire. Well, could I make some contacts with this ZERO radial short vertical antenna system? Here is a picture of the setup.

Once again, a concrete driveway is not the best test of a GTU-based zero radial counterpoise system. The glacial layer of frozen, compressed snow on my lawn may not melt for another few weeks so one has to just make do with whatever nature allows.

I scanned the bands seeking somebody calling CQ and found a station in Connecticut doing a POTA activation. Grabbing my CWMorse paddle

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GTU atop its chicken wire capacitance plate. The large toggle switch bottom right is a bypass switch. The knob under the meter selects one of three inductors. The knob at top right adjusts the deflection of the meter needle. The large knob is for the tuning capacitor.

(Be gone pesky radials from page 50)

key I threw out my call sign and waited to hear if he heard me. Connecticut might be a little close to my QTH in southern Ontario for a vertical antenna with low angle radiation. Anyway, he heard me and sent me a 539 report. I responded with a 579. Contact was made.

A popular mantra among amateurs is “one is none and two is one” so I figured another contact would hammer a nail in it and seal the proof.

A little more search and pounce revealed another POTA activator in Virginia. Still quite close but my contact there earned my modest setup a 579 report.

Both those contacts were on 20 m and I wondered whether another band would also work. I tuned up on 15 m but the band was frantically busy with high-speed CW traffic and I did not want to slow anybody down with my low power into an experimental antenna, so I pulled the plug.

So, there we have it. A very simple, rapid deployment field portable vertical antenna with zero radials. Now how am I going to make the ladies dance?

Final setup. This picture was taken before the chicken wire capacitance plate was in place. The antenna was fed by a 10 ft/3 m RG-8 coax through a Common Mode Current choke (on a FT240-31 toroid).

The Many Consequences of QRP

Cory GB Sickles, WA3UVV

QRPGuys "unique amateur radio kits for the budget minded." Kits range from CW code trainers to a transceiver for 40, 30 and 20-metres. (Courtesy: QRPGuys https://qrpguys.com)

It is difficult for me to believe, but half a century ago, I became an amateur. At that time, CB radio was something of a "gateway drug" into amateur radio. It gave many a taste of what personal two-way radio communications could be like. For those who did move up to amateur radio, it was also our first taste of QRP – as CB was limited to no more than five watts of power.

The term comes from the standard amateur radio Q-Codes where QRP means "I am lowering my power" and QRP? "means "Shall I lower my power?" Its polar-opposite is QRO, meaning "I am increasing my power" and QRO? means "Shall I increase my power?" In common use, QRO refers to power levels higher than the standard 100-watt out-put of most modern HF transceivers. Although QRP at one time referred to power levels under 100 watts, it has equated to a power level of 5-watts or less, for all the time I have been a amateur.

My entry into amateur radio was through the Novice Class license. The privileges of this license at that time limited you to CW only operation on small sub-bands of the 80, 40, 15 and 10-metre HF bands. Your transmitting frequency had to be crystal-controlled and your transmitter input power had to be no more than 75 watts. This typically equated to about 38 watts output, given the vacuum tube technology of the day.

Like many new amateurs, I was building my own transmitter, which was supposed to reward me with 60 watts in or 30 watts out. Major components (transformers, chokes, rectifier and output tubes, passives, etc.) for this project were harvested from a pair of television chassis from a nearby repair shop owned by a amateur.

As I was picking up some additional components for this project from one of the electronic parts stores in town, I was discussing my objective with a counter man working there, who was also a amateur. While mentioning my desire for more power once I eventually upgraded to a General Class license, he offered that I did not actually need as much power as I was planning on

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(The Many Consequences of QRP from page 52)

and could make plenty of contacts with a single tube transmitter and less than 10 watts. He also mentioned that it would be a faster path to getting on the air, with less of a cash outlay.

Those two benefits were of particular interest, as I was impatient and was already stretching my allowance and ability to earn money with odd jobs, while still in high school. Still, I was incredibly sceptical and convinced that any time and money expended toward this pursuit would be a total waste. On a sheet of paper, he sketched out a schematic from memory. The tube he selected was a 6V6, a "little brother" in the popular 6L6 series.

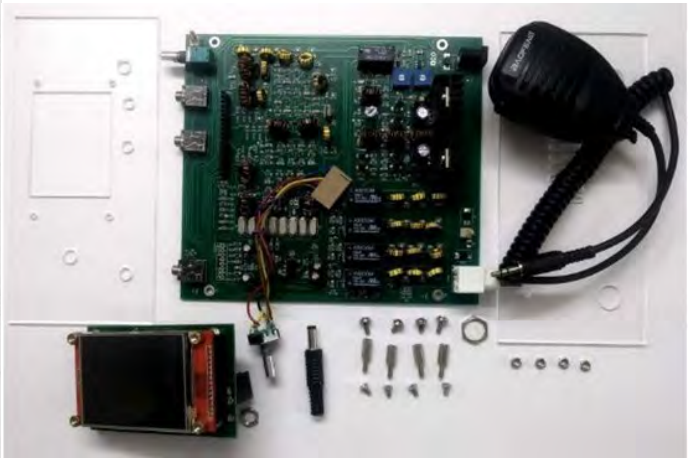
The parts list that resulted was a bit more than the extra cash I had on me. After some more discussion, a slightly different design, using a 117N7 tube was arrived at. This tube was used in many portable record players and offered a mere three watts, but did not need a power transformer, as it had a filament designed for the North American power grid. In addition, most of the passive components needed were already in my expanding junk box. Instead of a nice cabinenough conviction to plug it in. No smoke, voltages good, time to try it out. I put in a 40-metre crystal and called CQ. Three long minutes of this went by as I became increasingly convinced that I should have been working on my 60-watt rig, I switched back to receive and heard a amateur returning my call.
et, it would be assembled on a scrap piece of wood, with nails as connection points and a coil wound on a leftover plastic pill bottle.

As it was transformer-less it connected directly into the mains. As the wiring was all exposed, it was incredibly dangerous and I do not suggest that anyone today builds such a thing, especially without an isolation transformer in use. It is all too easy to plug something like this into an outlet backwards and end up with a "hot ground."

I finally did go ahead and buy what I needed, perhaps compelled by a strong desire to be able to say, "I told you it would not work." After dinner that evening, I invested the time to collect the needed parts, hammered in nails according to the layout, soldered in the components and mustered up enough conviction to plug it in. No smoke, voltages good, time to try it out. I put in a 40-metre crystal and called CQ. Three long minutes of this went by as I became increasingly convinced that I should have been working on my 60-watt rig, I switched back to receive and heard an amateur

(Continued on page 54)

In the 1970s, Ten-Tec offered a series of solid-state QRP transceivers branded as "Power Mites." They output only a few watts, so I had little interest in them, owning to my level of ignorance and stubbornness. Years later, I would purchase one of these and enjoy it tremendously. (Courtesy: 73 Magazine Archive)



One of the least expensive ways to get a multi-band, multi-mode HF rig on the air is HF Signals' uBITX. Starting at $160, it is simply a matter of connecting controls. All the hard work has already been done. Cases are available, or you can just place it on a clipboard, for open air use. (Courtesy: HF Signals)

With an AlexLoop and a bit of shade in my backyard, I can make a surprising number of contacts with my 4SQRP Cricket and less than a watt. It required less than an hour to build, then immediately go on the air. The 9-volt battery can keep you going for quite a while. (Courtesy: 4SQRP.com)

returning my call.

It was soon revealed that my signal, my measly less than two watts to the antenna signal could be heard in Oregon! After an enjoyable and surprising QSO, I had a handful of other contacts, then called it a night. I was forever hooked on QRP.

In sharp contrast to the popular HF rigs of 1973, any solid-state HF transceiver currently manufactured can have its output power dialled down to five watts or less. With a 100-watt rig you can experiment with lower powers and see if the thrill of getting the most out of a watt is something that brings you joy.

Lower power transmitters are generally simpler in nature. Enjoying the use of something you have built fits well into come of the themes of amateur radio, encouraging made-from-scratch, kit building or general homebrewing activities. This is usually one of the first consequences from the joy of QRP.

Many of us bemoan the corporate death of the Heath Company and two-tone green radios, but there are many contemporary producers of good

QRPGuys kits range from CW code trainers to a transceiver for 40, 30 and 20-metres. (Courtesy: QRPGuys https://qrpguys.com)

quality kits offered at very reasonable prices. One of the first that comes to mind is HF Signals and their uBITX multimode HF "un-kit" concept. Purchase one of these and you get rewarded with a set of populated PC boards, as the radio and display/control panel. The package includes all the controls you will need to assemble a 10 (or 20 watts output) very nicely featured HF rig that supports voice, data and CW. Various cases and options are also available, yet the costs of the basic platform can be well under $200.

Maybe you would just like to build something simple, perhaps in the way of a single band CW transmitter. The Four State QRP Club offers a variety of kits. Possibly the best known is the "None Simpler" NS-40, which has about 30 through-hole components and a postcard size PC board with the needed coils bound into a copper layer. No coils to wind and as we live in modern times, the one tube of my open board transmitter in the past, gives way to a single transistor running in Class E operation. With 13.8 volts supplied to the board, you should experience an output of eight watts. At a lower voltage, you can be well into official QRP territory. The first iteration of this board was designed for use on the 40-metre band. A subsequent model is tuned for the 80-metre band. I am patiently waiting for 20-metre and 30-metre Flavours, as well. Hopefully, they will become a reality soon.

In the meantime, there is the 4SQRP Cricket series transceiver. These have been designed for our 7 MHz, 10 MHz and 14 MHz bands, offering about three-quarters watts out, with a better than you would expect receiver, powered from a single 9-volt battery. The kit even has a PC Board-based straight key that you can use. Either of these kits is

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(The Many Consequences of QRP from page 54)

about $40 each and requires a mere hour of your time to build. Much like my 117N7-based transmitter but eminently less dangerous, you can build it in an hour and then immediately get on the air.

With less than a watt (known as QRPp power levels) I have used my Crickets to work several states at notable distances. Other kits can be found from QRP Kits, QRP Guys, QRP ME and more. I believe you will be surprised at the quality and final product, plus you will have the satisfaction of being on the air with something you built.

Yes, knowledge of CW is a requirement with such radios, but CW is easy to learn and a skill that is rewarding on its own. When I learned CW, I learned it using a more difficult method than necessary. First, I learned it at five words per minute (WPM). Later, I had to learn the sound of the characters again, at 13 WPM. At each tier, I was essentially hearing the characters with a different sound each time.

Today, the best method has you learning the sound of each character at your desired target speed – perhaps 25 WPM, 40 WPM or 50+ WPM. The effective rate at which you learn is determined by the interstitial pause between each character. Stretched out, this can result in an effective speed of 5 WPM, then 10 WPM, then 15 WPM and so on. All that changes is the time in between the same sounding characters, but not the sound of the characters. As it gets shorter, you soon arrive at your target speed.

Then, you can start to read CW in the same way as you are reading this article. You read the pattern for "the" all together. Not so much the letters "t, h, e" but the complete word. Commonly used words such as the, this, is, are, my, QTH, rig, name and many others can be learned and memorized. Once done, you can stop writing down each letter or word during a conversation. Specifics like callsign, individual's name, location, radio being used, RST and so on are really all you need to jot down. That takes a lot of stress out of CW and transforms the whole QSO into a much more pleasurable experience. Groups like CW Ops can help you get there, with the on-line classes and on-air practice sessions.

Once you have learned CW, two more QRP consequences come into view, DX chasing and contests. In many countries, you will find more amateurs using CW, than voice. If you want to work them and get them in the log, then CW may well be the best way to go. For lower power or even high power with poor band conditions, CW has a nice "punch factor" that gets signals through.

In multimode contests, CW contacts typically have a higher point value. A good operator – just like the one you can become – can tap out CW contacts in the same time as most voice contacts require. Even with a mere 2:1 points ratio, the differences add up fast. If you enjoy competition, there are also enough CW-only contests to keep you busy throughout the year.

From my experience, CW DX and contest pileups seem to be handled in a more – dare I say "polite" – approach than with the voice equivalents. Also, if you like to be on the air when people in your home are sleeping and you have a voice that carries, CW has another advantage with headphones in place. There will be no audible sound for others to hear.

Low power into a highly efficient antenna system can outperform high power into a poorly functioning antenna system. This brings us to another consequence of low power appreciation: antennas, tuners and feedlines – the compo-nents of an antenna system.

Over the years, I have seen stations with amplifiers in use, along with some of the worst quality coaxial cables. Good cable with low loss and 100 percent shielding does cost more than some RG-58 that you got a great deal on at a hamfest, but you are not doing yourself, your transceiver, or your amplifier any Favors. I have seen bargain cable that only provides 70 percent shielding. As ridiculous as that may sound, such cable (RG-8, too) does exist and is in use more than you might suspect.

Good low-loss cable will reward you every day with more signal to your antenna for more to hear you. It will also allow more signal to reach your receiver's front end, so that you can hear others that much better. For most "barefoot" stations (not just QRP) good quality RG-8X, such as Times Microwaves's LMR-240, is all you need for HF operation, unless you are pushing the limits of the QRO envelope.

An antenna is going to be resonant at a given

(Continued on page 56)

While I have fashioned hand-held mounts for my MFJ-9200 and FT-818, the just-announced Elecraft KH1 was designed as a hand-held transceiver. This five-band (40M / 30M / 20M / 17M/15M) model is already generating a noticeable "buzz" in the QRP, POTA, HFPACK and other special interest groups. Even with a shortened whip antenna, early feedback indicates good performance. It can produce up to 5 watts using CW or SSB. (Courtesy: Elecraft)

If your HF rig does not include an internal automatic antenna tuner, then an external tuner is a generally good idea. If you need an SWR meter, the MFJ-971 is a good choice in manual tuners. If you have the meter, then the MFJ-902B might be more attractive. (Courtesy: MFJ Enterprises)

frequency and usable over a limited range above and below that frequency. To compensate for such impedance and VSWR (Voltage Standing Wave Ratio) differences, we have match-ing devices known as antenna tuners. A low insertion loss tuner – automatic or manual – is invaluable for compensating for the mismatches and related losses. As coaxial cable becomes more and more lossy the further away from the desired impedance the antenna system may become, it is best to place the matching network at the feed point of the antenna, rather than the back of the transceiver. This is important at any power level, but more significant when dealing with single-digit watts. (If you are using balanced feedline, then the considerations are a bit different.)

For such reasons, a remote tuner is better. I like the convenience and speed of an automatic tuner, but I also know that I can fine tune a manual tuner for an even better match, that what the typical algorithms of an automatic tuner's microcontroller is set to meet a "best match" set of parameters. Yes, you will spend a bit more time tuning up, but sometimes the improved match is worth it.

In some cases, the cost difference between an automatic tuner and a manual tuner is significant. For example, the Icom AH-705 automatic tuner, which is a companion accessory to their IC-705 portable QRP transceiver has a street price of $360. Since the IC-705 has internal VSWR display circuitry, a manual tuner does not need such metering. Fitting in with this is the MFJ-901B, with a street price of $140. If you are happy with a manual tuner, the saving can be directed toward better quality feedline or the antenna itself.

As to antennas, there are centre-fed dipoles, off-centre-fed dipoles, end-fed half-wave, inverted-V, delta loop, magnetic loop, vertical and a plethora of others. That only lightly touches the subject of wire antennas. Directional antennas such as hex-beams, Yagi-Udas, quads and more are available if you wish to incorporate steerable gain antennas to your station.

What fits into the available space in your yard will be the primary factor in your selection of antennas. Many of the same considerations are the same with QRO or QRP, but for the latter, the pattern and possible gain are worth extra study. The whole subject of antennas is a worthwhile pursuit. That is the kind of experimentation that QRP enthusiasts find encouraging and worthwhile.

Keep in mind through all this that while your goals are important, so is the journey and the additional knowledge that you will gain. You may also wish to pursue having separate antennas for receive and transmit, especially if you have the

(Continued on page 57)

QMX: a feature-packed, high performance, 5-band 5-watt, CW and digimodes transceiver kit, including embedded SDR, 24-bit 48 ksps USB sound card, CAT control, synthesized VFO with TCXO reference ($95) at QRP Labs https://qrp-labs.com/qmx. html. (Courtesy: QRP Labs)

QCX-mini ($55): a feature-packed, high performance, single-band 5-watt CW transceiver kit, with WSPR beacon and built-in alignment/test equipment. Available for 160, 80, 60, 40, 30, 20 or 17 m bands. It has rotary encoder synthesized tuning, VFO A/B/Split, Iambic keyer, CW decoder and more from QRP Labs. (Courtesy: QRP Labs)

(The Many Consequences of QRP from page 56)

room for a low-noise receive antenna system.

As I segued earlier from kits to CW, I left out another important consequence relating to QRP – one of advancing your knowledge of electronics and test equipment. Building your own gear leads to a better understanding of soldering and de-soldering techniques. It leads to a collection of test equipment that you can rely on for accuracy. You may quickly find yourself owning a test bench complimented by a good waveform/signal generator, signal tracer and oscilloscope.

The latter is invaluable when evaluating circuits and repairing equipment that is not working or not working as well as it could.

The investment in such things and the investment of your time can save you money in the future as you acquire non-working radios and manage to restore them for little cash outlay. I can cite several examples of times I have purchased a radio with a problem for $100 or less, only to discover that my experience and a few minutes of probing around finds an anomaly that is easy and inexpensive to resolve. Is the thought of getting a $900 HF rig for a little more that $100 and an hour of two of time attractive to you?

All of what I have mentioned above might well await you, if you are willing to drop your 100 watts to 50, then 25, then 10 and finally 5 watts (or even less). The QRP lifestyle is a set of challenges, that

The "QCX+" (QRP Labs Xcvr +) $57.79: a feature-packed, high performance, single band 5-watt CW transceiver kit with WSPR beacon and built-in alignment and test equipment. Available for 160, 80, 60, 40, 30, 20 or 17-metre bands. Experimental use on 15, 12, 10 or 6-metres (lower power output and reduced sensitivity). (Courtesy: QRP Labs)

encourage you to learn more about amateur radio and find different ways to get that much more enjoyment out of it. The real investment is in yourself.

The West Coast Marathon

Roy Walsh, ZS1YR

The West Coast Amateur Radio Club provided communication at the West Coast Marathon that was held on the Saturday 14 March 2026. The marathon was 42km long which started in the Park at Tzaarbank, on the Atlantic coast, with the route around the Langebaan Lagoon and ending at the Country Estate in Langebaan. There was also a 21 km half marathon and 10 and 5 km runs.

There were seven club members placed at different water points. Roy, ZS1YR went to the start of the race at Tzaarbank and then became the sweeper vehicle and comms along the route.

Marais, ZS1NOS was at the second point, Costa, ZS1CV at the third, Deon Cross at the fourth, Charles, ZS1CF at the fifth and relay to Control, Jacques ZS1TOI at sixth point and Louise, ZS1HF and Esmé, ZS1YE at the Control station.

Map 2


LANGEBAAN COUNTRY ESTATE
WESKUS MARATHON
ROUTE MAP
Map 1
DRIVEN BY:
smile 90.4
from ear to ear
21.1km START
REGISTRATION
42.2km BUS DEPARTURE
FINISH
42.2km START
Tzaarbank
Mamba
Langebaan Country Estate
Club Mykonos
R27
ENGEN
#RUN clean
Atlantic Ocean
Churchhaven
Geelbek
Abrahamskraal
West Coast National Park Gate
Closed until 13H00
Legend
Marathon 42.2km
Half Marathon 21.1km
10km
Fun Run 5km
Roads
Medic Facility
Toilet Facilities
Water Point Coke
Water Points
#1 Club Mykonos
#2 Life West Coast Private Hospital
#3 Hytec Saldanha
#4 CrossFit Langebaan
#5 BVSA Rekenmeesters
#6 Curro Langebaan Private School
#7 Harcourts West Coast
#8 Remax Langebaan
#9 Freek Properties
#10 Seeff Langebaan
#11 Oxigym Langebaan
#12 Langebaan Country Estate - 1
#13 Electrical & Lighthouse
#14 Home & Hectare Real Estate
#15 Rawson Properties Langebaan
#16 Langebaan Country Estate - 2
#17 Mica Langebaan


Coca-Cola
Coca-Cola
Coca-Cola
Coca-Cola


32km
THIS SEEMED LIKE
A GOOD IDEA
THREE MONTHS AGO!
LANGEBAAN
COUNTRY ESTATE
WESKUS MARATHON


BLOOD, SWEAT
& TEARS FOR
A SMALL MEDAL
LANGEBAAN
COUNTRY ESTATE
WESKUS MARATHON


22km
JV HARDLOOP
VINNIGER AS WAT
ESKOM WERK !
LANGEBAAN
COUNTRY ESTATE
WESKUS MARATHON

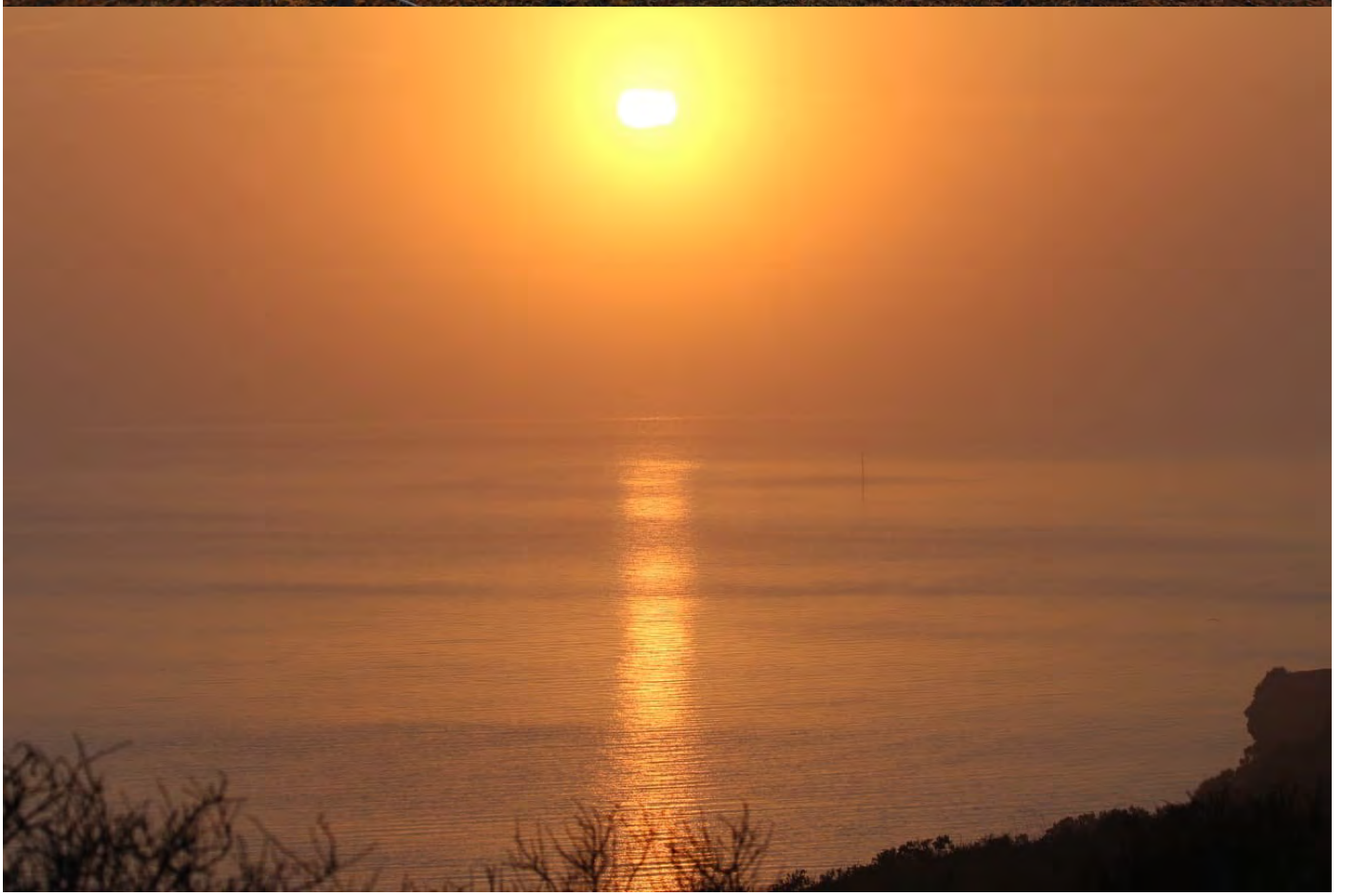

WEST COAST AMATEUR RADIO CLUB
ZS1WK


SORRY
NO
CR 15911


PINELANDS
2706


AMBULANCE
A08
JV 59 GP
+27 10 224 0777
076 100 4339
DIAL-A-MEDIC


MELKBOS AC
CapeMultisportClub
CR 19810



Die ZS3NC Veldstasie Naweek Maart 2026 – ‘n Geleentheid om te onthou!

Esmarie Lotriet, ZS3EL

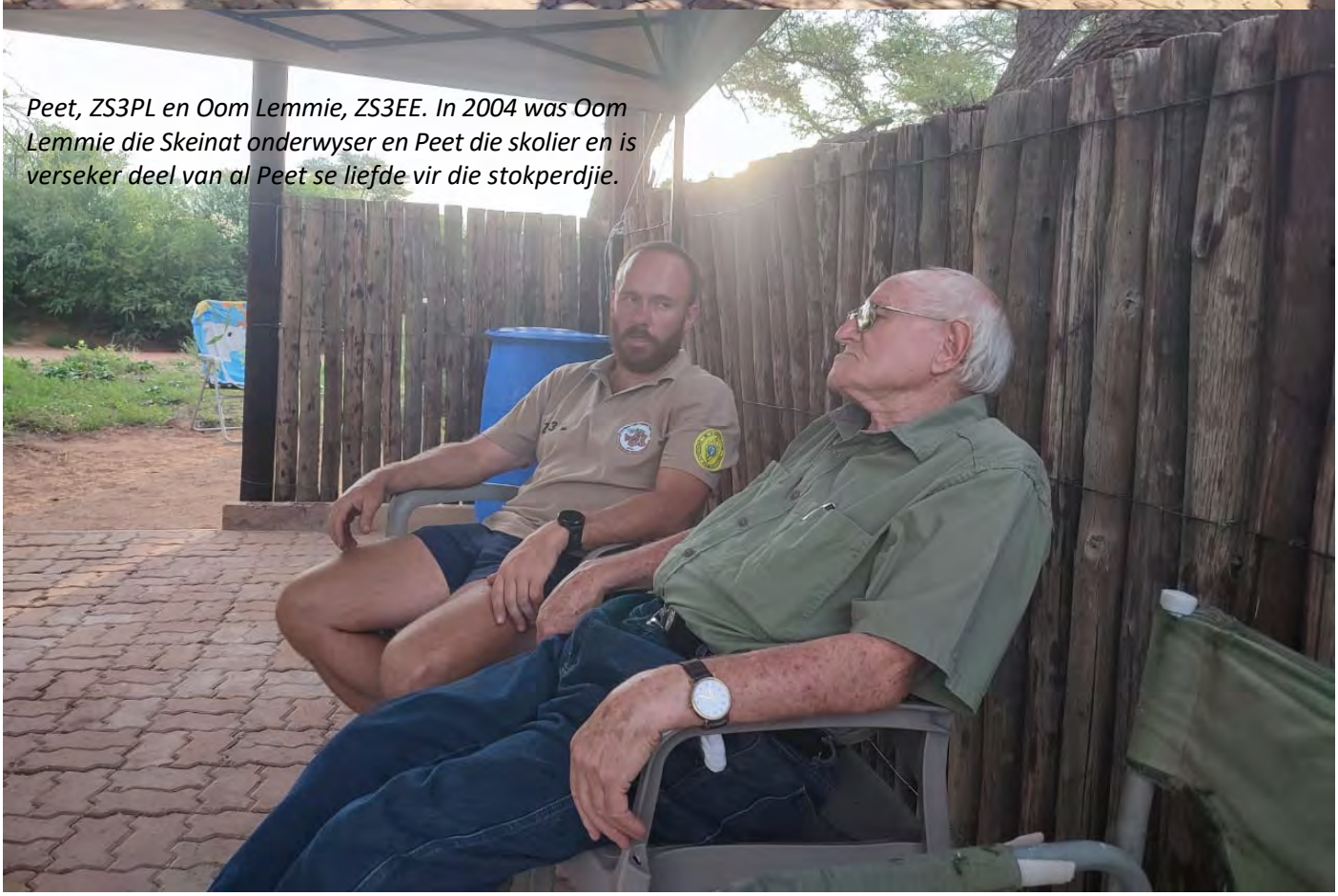
Vroegoggend koffie en beskuit. (Ek verstaan, van ‘n betroubare bron, dat die hond ook koffie en beskuit gekry het! Red.)

Die onlangse SARL Velddag Naweek was vir die Noord-Kaap Amateurradioklub soveel meer as net ’n radio-geleentheid. Dit was ’n naweek vol samesyn, lag, gedeelde passie en die tipe herinneringe wat ’n mens weer laat besef hoekom ons deel is van hierdie besondere gemeenskap.

Ons veldstasie is opgerig in KG01, tussen Upington en Louisvale — ’n gepaste sentrale punt vir ’n Klub waarvan die lede oor ’n groot gebied versprei is, van Alexanderbaai tot by Vryburg en Luckhoff. Met sulke afstande tussen ons, is geleenthede om almal bymekaar te kry skaars en werklik spesiaal. Jaco Moorcroft, ZS3JAC; Drikus Rossouw, ZS3MHR en Cobus Hough, ZR3JGH het baie moeite gedoen om die kampterrein vir ons gereed te kry. Daar is skoongemaak, water aangery en ja, ‘n heerlike Kalahari kamp atmosfeer is geskep!

(Vervolg op bladsy 68)

Gelukkig is Grootdrink en Raaswater ver van mekaar af!



Peet, ZS3PL en Oom Lemmie, ZS3EE. In 2004 was Oom Lemmie die Skeinat onderwyser en Peet die skolier en is verseker deel van al Peet se liefde vir die stokperdjie.

(ZS3NC Velddag van bladsy 66)

Die naweek het Vrydagmiddag afgeskop toe lede begin arriveer en kamp opslaan het. Gou het die rustige omgewing verander in ’n lewendige amateur radio kamp, met antennas wat die lug in strek en radios wat oral besig is. Karavane, tente en selfs ’n paar dapper lede wat sommer langs die vuur geslaap het, het gesorg vir ’n egte Kalahari-kamp ervaring.

Soos dit hoort, begin geen lekker naweek sonder koffie en beskuit nie — en hierdie een was geen uitsondering nie. Vure is aangesteek, daar is gebraai en soos die son sak, het die kampvuur die hart van die kuier geword. Stories is gedeel, vriendskappe is versterk en nuwe bande is gesmee. Wat begin het as ’n bymekaarkom van klublede, het gou gevoel soos ’n groep ou vriende wat weer herenig is.

Saterdag het die volle gees van amateur radio na vore gekom. Gesprekke oor toerusting, opstelling en toekomstige planne het die lug gevul, saam met die konstante geruis van radios in werking. Een van die hoogtepunte was toe Alec Johnson, ZS3AJ met trots sy nuut-aangeleerde GG vaardighede gewys het — iets wat hy eers ’n paar maande gelede begin leer het. Sy entoesiasme was aansteeklik, veral onder die jonger amateurs. Petrus Lotriet, ZU3PL en Herman Jacobs, ZS3HJ het groot belangstelling getoon om self morsekode te leer, en in ware amateur radio gees is daar sommer geïmproviseer — ’n selfgemaakte GG sleutel is vir ZU3PL gebou met ’n stuk hout, ’n paar skroewe en selfs ’n ruitveërlem!

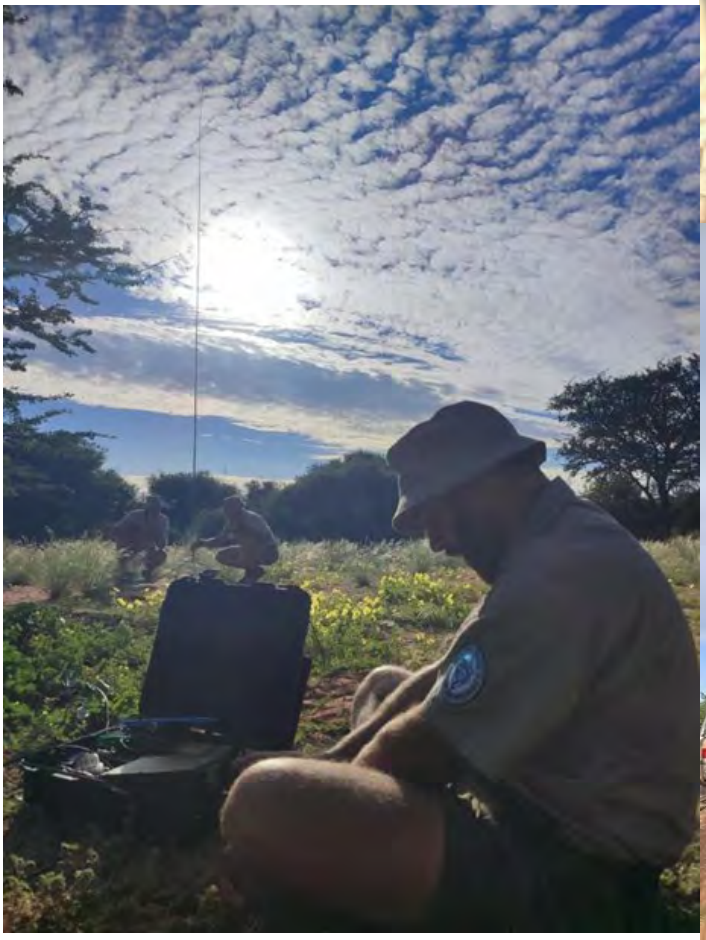
Die leer en deel het nie daar gestop nie.

(Vervolg op bladsy 69)

Die mooiste kameeldoring boom waar ons kamp opgeslaan het

Herman, ZS3HJ; Alec, ZS3AJ en Petrus, ZU3PL om die radio

Bo. Petrus, ZU3PL met sy stomp sleutel - hierdie stomp gaan nog jare gebere word!
Regs. Herman, ZS3HJ agter die sleutel. Hier word geoefen Onder. Peet, ZS3PL toets 'n vertikale antenna. Agter is Herman, ZS3HJ en Johan, ZR3JB



Herman, ZS3HJ en Petrus, ZU3PL

(ZS3NC Velddag van bladsy 68)

Herman, ZS3HJ en Peet Lotriet, Z3PL het ook hul vaardighede in messlyp gewys, wat vinnig ontaard het in ’n praktiese demonstrasie. Micho Opperman ZS2MD en Johan Britz JR3JB was meer as gewillig om die resultate te toets. Dit was nog ’n bewys dat kennis, vaardighede en ’n goeie sin vir humor altyd

(Vervolg op bladsy 70)

"Swem Jannie, swem!"

(ZS3NC Velddag van bladsy 69)

vrylik gedeel word binne die klub.

Soos die hitte Saterdagmiddag toegeneem het (soos net Upington kan!), was dit duidelik dat almal bietjie moes afkoel. Gelukkig was daar 'n plaasdam naby die kamp. Wat gevolg het, was een van die naweek se hoogtepunte — 'n verfrissende swem vol lag, grappies en sommer net lekker kuier. Dit het die ware gees van die naweek vasgevang: eenvoudige, egte pret saam met goeie mense.

Sondagoggend se oppak was allesbehalwe stil en haastig. Tussen die laai en afbreek deur het die stories en grappies net aangehou vloei. Die Land Rover van Nelius Boshoff, ZS3CM se enjinkap is oopgemaak en die 'Chev straight 6' enjin ombouing is met groot belangstelling bekyk en bespreek. Selfs die groet was uitgerek — elke "tot siens" het net weer plek gemaak vir nóg 'n storie en 'n laaste geselsie, asof niemand regtig haastig was om die naweek agter te laat nie.

'n Spesiale vermelding moet gemaak word van die twee dames in die kamp — die enigste JDs tussen al die manne. Esmarie Lotriet, ZS3EL () het haar plek volgestaan en was deel van al die aktiwiteite, terwyl ons voornemende JD, Alec se vrou Christine, kom saam kyk het wat alles aangaan. Haar belangstelling en nuuskierigheid het beslis bygedra tot die gees van die naweek, en ons hoop om haar binnekort ook op die lug te hoor.

Die naweek is ook besonders gemaak deur die teenwoordigheid van beide die oudste en jongste

(Vervolg op bladsy 71)

Bo. Peet, ZS3PL agter die mikrofoon en Johan, ZR3JB agter die mes

Regs. Wat is 'n Velddag soner 'n braai?

Agter: Drikus Rossouw, ZS3MHR; Christine (ZS3AJ se vrou); Alec Johnson, ZS3AJ; Johan Britz, ZR3JB; Herman Jacobs, ZS3HJ en Peet Lotriet, ZS3PL.
Voor: Frikkie die Hond, Esmarie Lotriet, ZS3EL; Micho Opperman, ZS2MD; Jaco Moorcroft, ZS3JAC; Nelius Boshoff, ZS3CM en Petrus Lotriet, ZU3PL.

(ZS3NC Velddag van bladsy 70)

lede van die klub. Oom Lemmie van der Linde, ZS3EE, het kom inloer om te groet — ’n herinnering aan die ryk geskiedenis en ervaring in ons geledere. Hy het reeds in 1968 sy amateur lisensie gekry en is hierdie jaar 84 jaar oud. Terselfdertyd het ons jongste lid, Petrus, ZU3PL voluit deelgeneem en die toekoms van amateur radio mooi verteenwoordig. Petrus is nou 10 jaar oud en het in 2024 sy lisensie gekry.

Van Vrydag tot Sondagoggend was die kamp vol energie, kameraadskap en ’n gedeelde liefde vir radio. Maar belangriker nog — dit was ’n herinnering dat ons klub nie net oor seine en kontakte gaan nie, maar oor mense.

Ten spyte van die afstande wat ons skei, bring sulke naweke ons bymekaar op ’n manier wat geen radio alleen kan doen nie. Dit verander stemme op die lug in ware vriendskappe en oomblikke in kosbare herinneringe.

Ons sien uit na nog sulke naweke — waar die radios besig is, die vure warm brand en die vriendskappe net sterker word.

Groete van die Noord-Kaap Amateur Radioklub, ZS3NC

Hamstick?

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The P Antenna

Get on 160 metres with this antenna named for its shape and tailored for limited-space installations.

José Carlos León Ortega, CP6CL QST, May 2019

The SARL Top Band QSO Party is on the air from 4 to 7 June 2026. Here is an idea to try out for the contest.

There are well-known difficulties associated with operating on 160 metres, with the size of the antenna being the primary problem. Many articles have been written on this subject, with solutions that compromise the efficiency, bandwidth and radiation patterns of the antennas. Small-space antennas for this band feature various solutions such as loading coils, along with different orientations like vertical, horizontal, inverted L and vertical helical.

One example is John Miller, K6MM's article, "The No Excuses 160 Metre Vertical," in the June 2009 issue of QST, in which he used a helical antenna. Another antenna often used in this band is the famous ⅜ λ, much to the detriment of its radiation pattern with its very steep vertical radiation angle, making it of little use for DX. The problem with all these solutions is that they require considerable height and wire of more than 40 metres long, as in the case of the inverted L antenna.

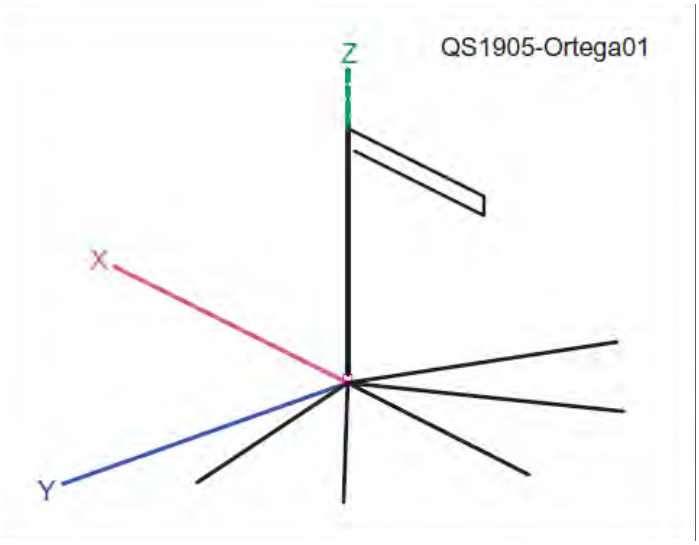
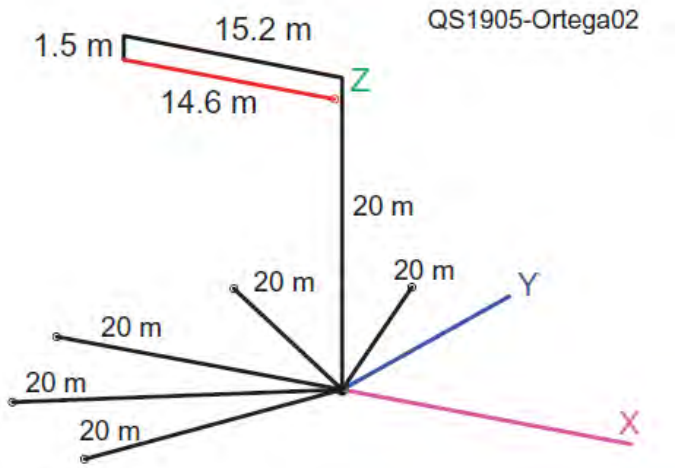


Figure 1. General plan of the antenna

Figure 2. Dimensions of the P antenna, specifically designed for 160-metre DX operation from small lots.



The P Antenna

Given my station's space limitations, I set out to design an antenna for the 160-metre band that had the following characteristics:

- Low-space requirements without using loading coils.
- A suitable height for average towers.
- An impedance at the feed point that was not too low.
- A bandwidth of at least 20 kHz with an SWR less than 1,5: 1.
- A radiation diagram that guarantees an angle advantageous to DX of less than 30°.
- A gain that at least surpasses a simple dipole.

The idea came from combining the benefits of the dual-band wire Morgain-brand antennas and verti-cals.[1,2] From these two sources came the P antenna. It is an inverted L antenna of approximately ¼ λ with the horizontal part folded on itself, as shown Figure 1.

This antenna optimizes the space in the horizontal part, occupying only about 15 metres, which is feasible for typical city lots. The variant that I installed has a height of 20 metres, although you could try lower heights without affecting its properties too seriously.

Five 20-metre-long radii were added under the horizontal bent arm. Others could be added, but the improvement will not be very significant. Because the length of the horizontal arm is only 15 metres, it will always be above the ground plane, as shown in Figure 2, which shows the dimensions

(Continued on page 75)

(The P Antenna from page 74)

of the antenna. The 14,6-metre arm allows adjustment by lengthening or trimming.

Antenna Simulation

I used *Mmana-GAL Pro* software to simulate the antenna. The numerical results of this simulation are shown in Figure 3. Note that many of the initial design goals are satisfied. The reactive component is negligible and the impedance at the feed point is 21 W. It was configured as 20 W in the calculation of SWR, because with the incorporation of a balun between 2:1 and 4:1, you can achieve appropriate matches. Also note the gain of 1,42 and a vertical radiation angle of almost 25°. It presents a vertical polarization due to the preponderant influence of the vertical section of the antenna.

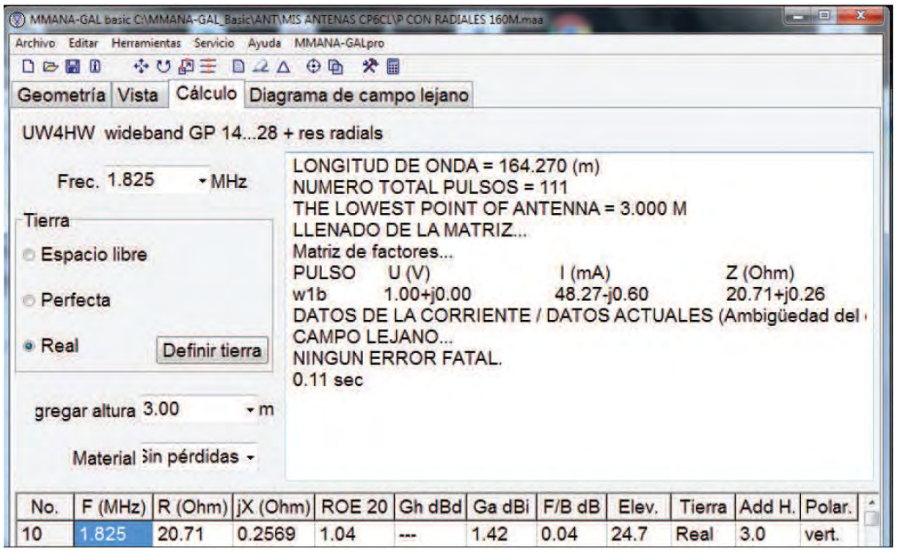
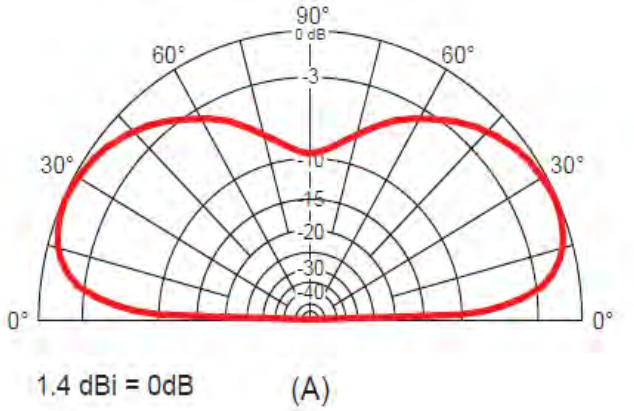
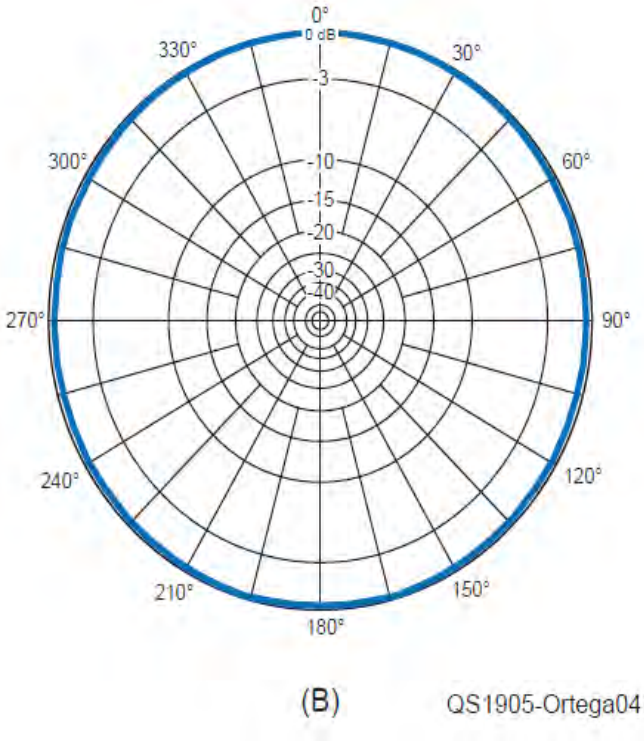


Figure 3. Antenna simulation data using Mmana-GAL Pro software

In Figure 4A, the vertical radiation diagram shows a flattening of the upper part of the lobe, which results in a reduction of the radiation angle. This lobe is perfectly symmetrical on the x-axis and isotropic with respect to the horizontal plane (see Figure 4B) because this is not a directional antenna. SWR is less than 1.5 in the 20 kHz band segment from 1,815 MHz – 1,835 MHz (see Figure 5). The antenna can work without an antenna tuner, unless you intend to work in other bands where the SWR remains low for many of them.

Figure 4. P antenna vertical (A) and horizonal (B) radiation patterns.





Results

My preferred Amateur Radio mode is digital FT8 on the 160-metre band, so I did not evaluate the antenna under other conditions. I only use it at 1,838 MHz, with 50 W maximum. I had my most significant results and best signal reports during

Table 1. P Antenna Evaluation

Country	FT8 Signal Report
Argentina	–3
Brazil	–1
Peru	–5
Paraguay	–3
Colombia	–5
Eastern US	–7
South Africa	–5
Spain	–10
European Russia	–12
Australia	–15

(The P Antenna from page 75)

autumn in the Southern Hemisphere. These are shown in Table 1.

The compact design of the P antenna meets the requirements of having a low radiation angle, easy installation on small lots and workable feed-point impedance. It enables me to enjoy working the 160 -metre band with little difficulty.

Notes

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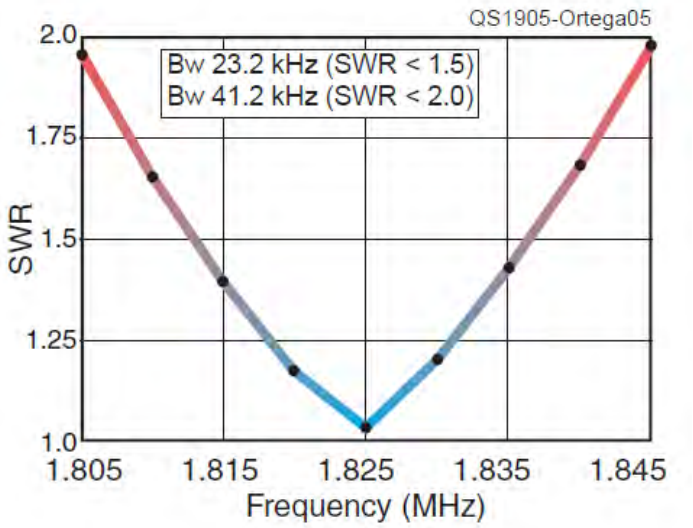
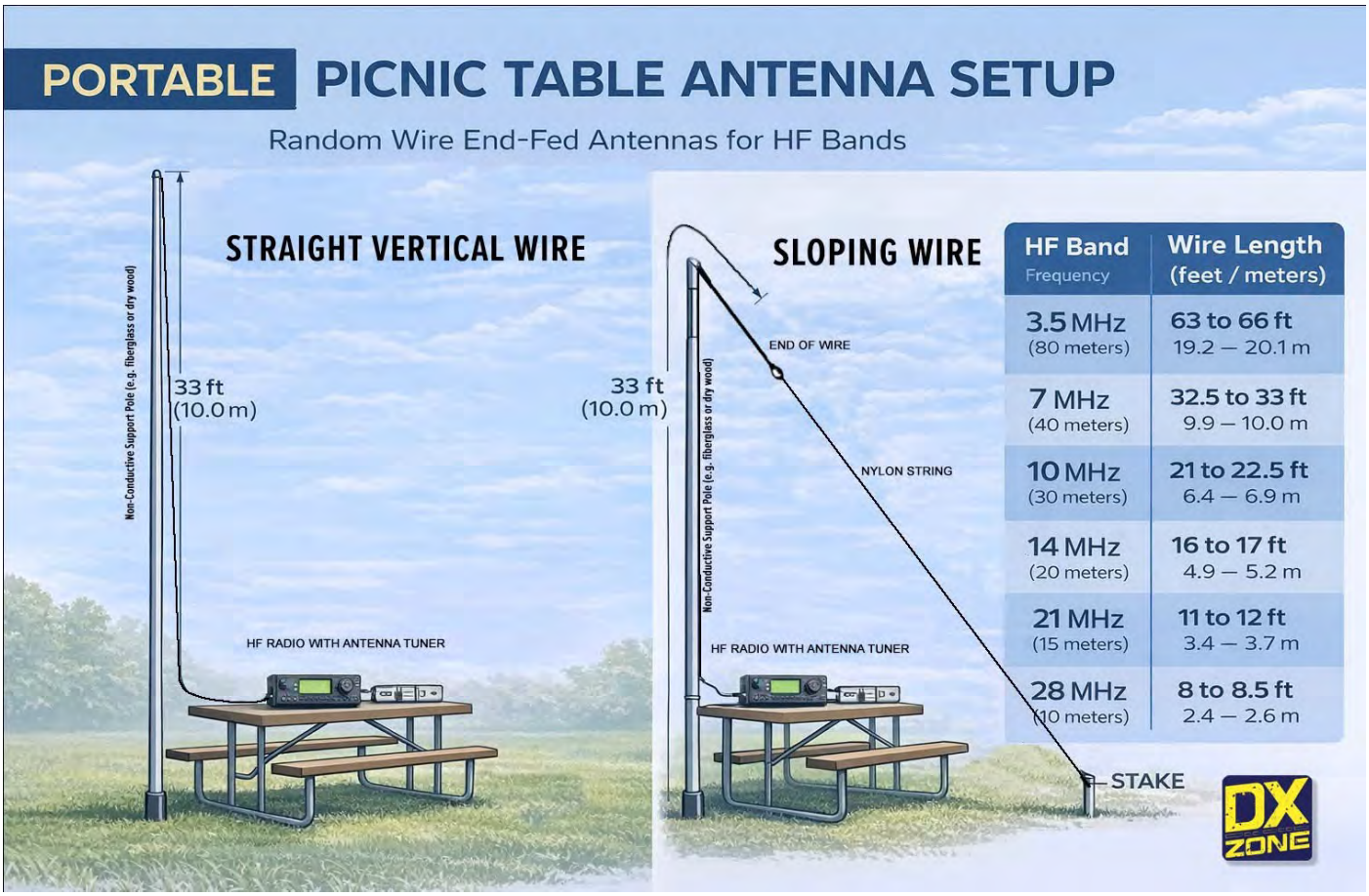


Figure 5. P antenna SWR from 1,805 MHz to 1,845 MHz.

José Carlos León Ortega, CP6CL, first received his Amateur Radio license in 2015 with the call sign CO3CL. He has a PhD in physics and graduated from Havana University in 1981. José has taught at Havana University and has 20 years of experience working in scientific research centres in Cuba. He has lived in Bolivia since 2000 and is currently Head of the Engineering Department at UDI University in Santa Cruz, Bolivia. You can contact Jose at josecarlosleon48@yahoo.com.



Please provide your own picnic table!

Karl Ferdinand Braun

From Wikipedia, the free encyclopaedia

Karl Ferdinand Braun (6 June 1850 – 20 April 1918) was a German applied physicist who shared the 1909 Nobel Prize in Physics with Guglielmo Marconi for their contributions to the development of radio.[2] With his two circuit system, long range radio transmissions and modern telecommunications were made possible.[3] His invention of the phased array antenna in 1905 led to the development of radar, smart antennas and MIMO.[4,5] He built the first cathode-ray tube in 1897, which led to the devel opment of television and the first semiconductor diode in 1874, which co-started the development of electronics and electronic engineering.[6]

Braun was a co-founder of Telefunken, one of the pioneering communications and television companies.[7] He has been called the "father of television" (shared with inventors like Paul Nipkow), the "great-grandfather of every semiconductor ever manufactured,"[8] and a co-father of radiotelegraphy, together with Marconi,[9,10,11,12] laying the foundation for all modern wireless systems.[13]

Biography

Education and career

Karl Ferdinand Braun was born on 6 June 1850 in Fulda, Hesse-Kassel. In 1868, Braun started studying physics, chemistry and mathematics at the University of Marburg. In 1869, he transferred to the University of Berlin and became an assistant to Heinrich Magnus, who died the following year; he continued his training with Georg Quincke. In 1872, he received his Ph.D. with a thesis on vibrating strings and subsequently followed Quincke to the University of Würzburg as an assistant.[14]

Geburtshaus (house of birth) of Ferdinand Braun in Fulda

In 1874, Braun accepted a teaching appointment at the Thomasschule in Leipzig. In 1876, he returned to the University of Marburg as Extraordinary Professor of Theoretical Physics and in 1880 was invited to fill a similar post at the University of Strassburg. He was made Professor of Physics at the Karlsruhe Institute of Technology in 1883 and was invited by the University of Tübingen in 1885. In 1895, he returned to Strassburg as Principal of the Physics Institute.[15]

Radio work

In 1897, Braun joined the line of wireless

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(The Museum Column from page 77)

pioneers.[16,17] His major contributions to the development of radio were the introduction of a closed tuned circuit in the generating part of the transmitter, its separation from the radiating part (the antenna) by means of inductive coupling and later on the usage of crystals for receiving purposes. Around 1898, he invented a crystal detector. Wireless telegraphy claimed his full attention in 1898 and for many years after that he applied himself almost exclusively to the task of solving its problems. He had written extensively on wireless subjects and was well known through his many contributions to *The Electrician* and other scientific journals.[18] In 1899, he applied for the patent *Wireless electro transmission of signals over surfaces*.[19] Also in 1899, he is said to have applied for a patent on *Electro telegraphy by means of condensers and induction coils*.

Pioneers working on wireless devices eventually came to a limit of distance they could cover; connecting the antenna directly to the spark gap produced only a heavily damped pulse train. There were only a few cycles before oscillations ceased. Braun's circuit afforded a much longer sustained oscillation because the energy encountered less losses swinging between coil and Leyden jars. And by means of inductive antenna coupling the radiator was better matched to the generator. The resultant stronger and less bandwidth consuming signals bridged a much longer distance.

In 1905, Braun invented the phased array antenna; he described in his Nobel Prize lecture how he carefully arranged three antennas to transmit a directional signal.[20] This invention led to the development of radar, smart antennas and MIMO (Multiple-input and multiple-output.)

Braun's British patent on tuning was used by Guglielmo Marconi in many of his tuning patents. Marconi used Braun's patents (among others). Marconi would later admit to Braun himself that he had “borrowed” portions of Braun's work. In 1909, Braun and Marconi were jointly awarded the Nobel Prize in Physics “in recognition of their contributions to the development of wireless telegraphy;” the prize awarded to Braun depicts this design. He experimented initially at the University of Strassburg, not long before he bridged 42 km to Mutzig. In spring 1899, Braun, accompanied by his colleagues Cantor and Zenneck, went to Cuxhaven to continue their experiments at the North Sea. On 24 September 1900, radio telegraphy signals were exchanged regularly with the island of Heligoland over 62 km. Light vessels in the river Elbe and a coast station at Cuxhaven commenced a regular radio telegraph service.

Later life and death

In 1914, Braun went to New York in the United States to be a witness for the defense in a lawsuit regarding a patent claim by the Marconi Company against Telefunken's wireless station in Sayville. He was a Lutheran.[21,22]

After the US entered World War I in 1917, Braun was detained, but could move freely within Brooklyn, where he died the following year on 20 April at the age of 67.[23,24]

Inventions and discoveries

Semiconductor

In 1874, Braun discovered the asymmetric conduction properties of certain materials, which became the foundation for the point-contact rectifier. This discovery showed that certain metal-semiconductor junctions could conduct electricity more easily in one direction than the other, a crucial property for diodes.[25]

Braun's work with semiconductors led to the development of the first point-contact diode, often credited as a basic semiconductor device that allowed the rectification of alternating current into direct current. This is important because it was one of the first real-world applications of semiconducting materials, paving the way for future semiconductor devices that would later evolve into modern diodes, transistors and other semiconductor technology.

Braun's discoveries were instrumental in the early development of electronics and helped lay the groundwork for the semiconductor industry we know today.

Cathode-ray tube

Braun's enduring fame is largely due to his invention of the cathode-ray tube (CRT), which is still commonly referred to as the “Braun tube”; today, the term typically refers to a high-vacuum

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tube, in which an electron beam can be deflected in both horizontal and vertical directions. The first version, developed in Strassburg in 1897,[26] was far from perfect; it featured a cold cathode and a moderate vacuum, which required a 100 000 V acceleration voltage to produce a visible trace of the magnetically deflected beam. Furthermore, magnetic deflection affected only one direction, while the other was controlled by a rotating mirror placed in front of the phosphorescent screen.

Braun's original cold-cathode CRT, the Braun tube, 1897

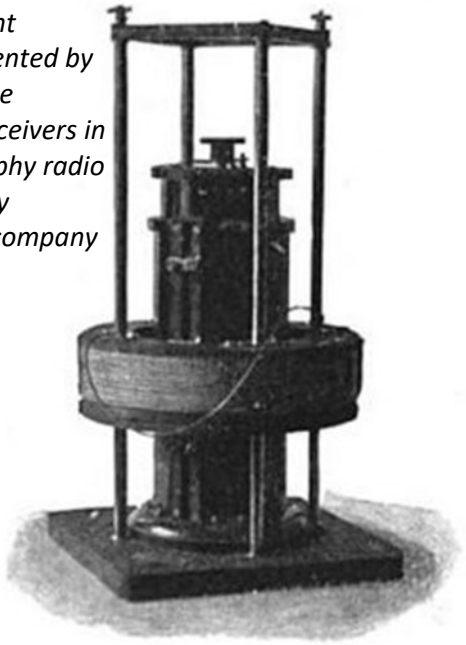
However, industry immediately recognized the potential of the invention, leading to its further development. By 1899, his assistant, Jonathan Zenneck, introduced oscillations to magnetically control the Y deflection and later improvements included the addition of a heated cathode, a Wehnelt cylinder and high-vacuum technology. This tube was not only used for oscilloscopes, but also for fully electronic television transmission as a picture tube for television sets, although Braun had considered it unsuitable for television.

The CRT became the cornerstone in developing fully electronic television, being a part of every TV, computer and any other screen setup till the introduction of the LCD screen at the end of the 20th century.[27]

Radio receiver

Following the invention of his tube, Braun began researching in the field of wireless telegraphy. A key issue in early radio technology was the development of a reliable receiver. Braun, as a physicist, was accustomed to working under reproducible experimental conditions, which the commonly used coherer receivers at the time failed to meet. He replaced the coherer with a crystal detector,[28,29] which greatly improved the sensitivity of the receiver, although the crystal detector required frequent re-adjustment. It was only later that the electron tube replaced the crystal detector, although devices like Germanium diodes continued to be used in simpler receivers for some time. The first FM radar systems still employed a crystal detector.[30]

An early resonant transformer invented by Braun used in the coherer radio receivers in wireless telegraphy radio systems made by the Telefunken company in 1903.



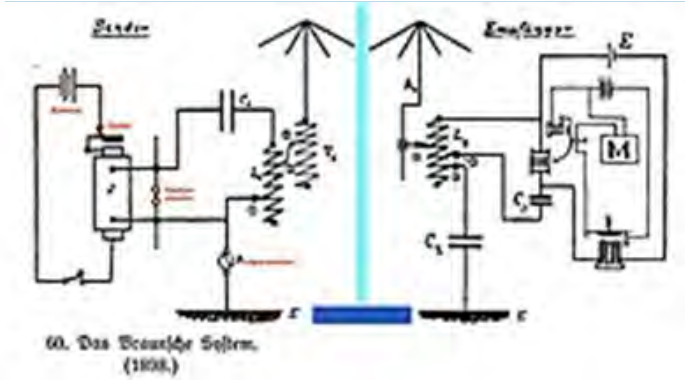
In late 1898, technology was commercialized when the chocolate manufacturer from Cologne, Ludwig Stollwerck, founded a consortium to exploit Braun's patents, contributing 560,000 marks in capital. After the successful transmission of signals over longer distances, the consortium was transformed into “Professor Braun’s Telegraphy Company," which eventually became Telefunken AG. They set up the first world-wide network of communications,[31] and was the first in the world to sell electronic televisions with cathode-ray tubes in Germany in 1934.[3233] In 1900, Stollwerck facilitated contact with Professor August Raps, head of the Siemens and Halske Telegraph Construction Company, which later took over the development of the apparatus.

Read more at https://en.wikipedia.org/wiki/Crystal_detector

Radio transmitter

Braun also made significant contributions to radio transmission technology. While Guglielmo Marconi had developed his transmitter primarily through empirical methods, Braun was able to improve it by focusing on the underlying physics. Originally, the resonant and antenna circuits were combined, but he separated them into two parts: a primary circuit consisting of a capacitor and spark gap and an antenna circuit inductively coupled to it.[34] This innovation allowed for greater energy transmission in the system.

(Continued on page 80)



Braun's two circuits to send and receive

By 1898, the resulting powerful systems made the term "long-distance telegraphy" more appropriate, as the maximum range, previously limited to 20 km, steadily increased. On 24 September 1900, a radio link was successfully established between Cuxhaven and Helgoland over 62 km.[35] On 12 December 1901, Marconi received radio signals at his station in Poldhu, Cornwall, at Signal Hill in St Johns, Newfoundland, using a transmitter designed in Braun's circuit. Whether this reception actually occurred remains debated in the literature.

Meanwhile, Braun attempted to replace the spark-gap transmitter, which produced damped oscillations, with AC generators that generated undamped oscillations, though he was unable to implement a feedback loop using electron tubes at the time.

Together with Georg Graf von Arco and Adolf Slaby, Braun was part of the team that developed the concept for "mobile stations for wireless telegraphy for military purposes," which in 1903 led to a practical implementation by AEG and Siemens and Halske. The system consisted of two horse-drawn wagons: one with all the transmitting and receiving equipment, including a battery and the other with auxiliary and reserve supplies. This allowed the wagons to be separated in difficult terrain, as the station could still operate with just the front wagon.[36]

PROFESSOR BRAUN IN HIS LABORATORY.

24 September 1900: Bargman, Braun and telegraphist at wireless station in Heligoland

Read more at https://en.wikipedia.org/wiki/Wireless_telegraphy

A Braun mobile station (1903)

Antennas

Braun also focused on early problems in directional radio, the alignment of transmitting and receiving antennas. He was among the first to achieve directed radiation and optimized antenna performance through calculations.[37,38]

Electroscope

Braun is also credited with the invention of the pointer electroscope, which was named after him.[39]

The SID Karl Ferdinand Braun Prize

In 1987, the Society for Information Display created the Karl Ferdinand Braun Prize, awarded for an outstanding technical achievement in display technology.[40]

Patents

U.S. Patent 0,750,429, Wireless Electric Transmission of Signals Over Surfaces

U.S. Patent 0,763,345, Means for Tuning and Adjusting Electric Circuits

Alma mater

University of Marburg

University of Berlin (Dr. phil.)

Awards

Nobel Prize in Physics (1909)

(Continued on page 81)

(The Museum Column from page 80)

Scientific career

Fields

Radio-frequency engineering

Institutions

University of Würzburg
St. Thomas School, Leipzig
University of Marburg
University of Strassburg
Karlsruhe Institute of Technology
University of Tübingen

Thesis

Über den Einfluß von Steifigkeit, Befestigung und Amplitude auf die Schwingungen von Saiten (1872)

Doctoral advisor

Georg Quincke

Doctoral students

Richard Gans (1901)[1]
Leonid Mandelstam (1901)[1]
Nikolai Papaleksi (1904)[1]
Godfrey Thomson (1906)[1]

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(Continued on page 82)

(The Museum Column from page 81)

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General

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The Cape Radio Group heads for the hills

Lem Melidonis, ZS1LEM

On Friday 12A March 2026, four members of the Cape Radio Group, ZS1CRG headed for the hills. Their destination was the Telkom Microwave Tower on top of Piketberg mountain. The four members present were Derrick, ZS1DUP; Matian, ZS1O; Celso, ZS1MYG and Lem, ZS1LEM.

The weather on Friday was really hot, I measured the temperature in Moorreesburg at 40 degrees C. The road up to the site was blocked by a large fallen pine tree, no problem, the tree was sawn in half and dragged to the side of the road, another fallen tree was also moved out of the way to gain access to the site.

(Continued on page 84)

The fallen pine tree after it was sawn in half

Above. The fallen pine tree after it was pushed to the side
Left. The 20m vertical antenna
Left. Celso, ZS1MYG and Derrick, ZS1DUP man the radios
Below. Dieter, ZS1DWH and Derrick, ZS1DUP man the radios

(CRG take to the hills from page 82)

The antennas were raised, a 40 and 80 m dipole on a 7 metre fibreglass pole and a vertical antenna for 20 m. The day ended with a delicious braai.

We started Saturday morning with an early breakfast then started calling CQ at 10:00 CAT. The 2 X 100 ah batteries were charged with solar panels and the radios were operated at 50 watts. We used an Icom-7200 for 40 and 80 m and an Icom-7300 for 20 m. We were joined by Dieter, ZS1DWH on Saturday morning.

40 metres was quite busy until 17:00 CAT and contacts were also made on 20 metres during the day. Seven contacts were made on 80 m between 17:.30 and 18:30. The day ended with another wonderful braai.

Sunday morning was relatively quiet and only three contacts were made on 40 m, the other contestants were either sleeping late or listening to Club Bulletins.

The total points scored for the Field Day was 58 320 points. The antennas were lowered and all of the equipment was packed away. The CRG then headed back to Cape Town.

Three members of the team man the radios, the 40/80 m dipole in the background

SARL Velddag / Klub-kompetisie verslag – ZS6MRK

Pierre Smit, ZS6PS

Die ZS6MRK Velddag klub kompetisie is onder uitdagende weersomstandig-hede by Kleinfontein gehou, met aanhoudende reën wat buitelug-bedrywighede beïnvloed het. Die aanvanklike opstelling is afgebreek voordat die kompetisie begin het, met Hannes, ZS6JDE en Leon, ZS6AYS wat die eerste pogings aangewend het.

Charlie, ZS6CRR; Gert, ZS6ATZ en Pierre, ZS6PS, het besluit om met twee stasies te werk. Antennes is opgestel gedurende 'n venster waar die reën dit toegelaat het. Gevolglik is die bedryf posisie na die kombuis-area verskuif om voortgesette deelname aan die kompetisie moontlik te maak.

Figuur 1. Die antenna van Hannes ZS6JDE

Die stasie het op die 20- en 40m-bande gewerk en 'n totaal van 14 QSOs behaal, bestaande uit 10 QSOs op 20 m en 4 QSOs op 40 m. Bedrywighede is vroeër as beplan afgeskaf weens beperkte beskikbare batterykrag. Beide stasies is teen 50 W en laer bedryf om batterykapasiteit te bespaar.

Die antenna konfigurasie het bestaan uit 'n omgekeerde V-dipool en 'n Eindgevoerde dipool. Die senders wat in gebruik was, was 'n Icom IC-706 en 'n Icom IC-7300. Krag is voorsien deur 'n groot batterystelsel, wat kortliks aangevul is deur 'n

(Vervolg op bladsy 85)

Figuur 2. Hannes, ZS6JDE se stasie

Figuur 3. Leon, ZS6AYS se stasie

(ZS6MRK Velddag van bladsy 84)

sonpaneel; die son bydrae was egter minimaal weens beperkte sonlig.

Stasies in bedryf was ZS6PS, ZS6CRR en ZS6ATZ. Logistieke en operasionele ondersteuning is verskaf deur Corlie, ZS6CHS en Alice.

Toe die reën toegelaat het dat 'n vuur aangesteek word, is dringend aandag aan die braai gegee en die sonpaneel is opgesit, maar verskoning, geen foto van die paneel nie, behalwe die lyn na die battery en die C-Tek-laai-eenheid op die battery.

Figuur 4. Pierre, ZS6PS se stasie en omgekeerde V

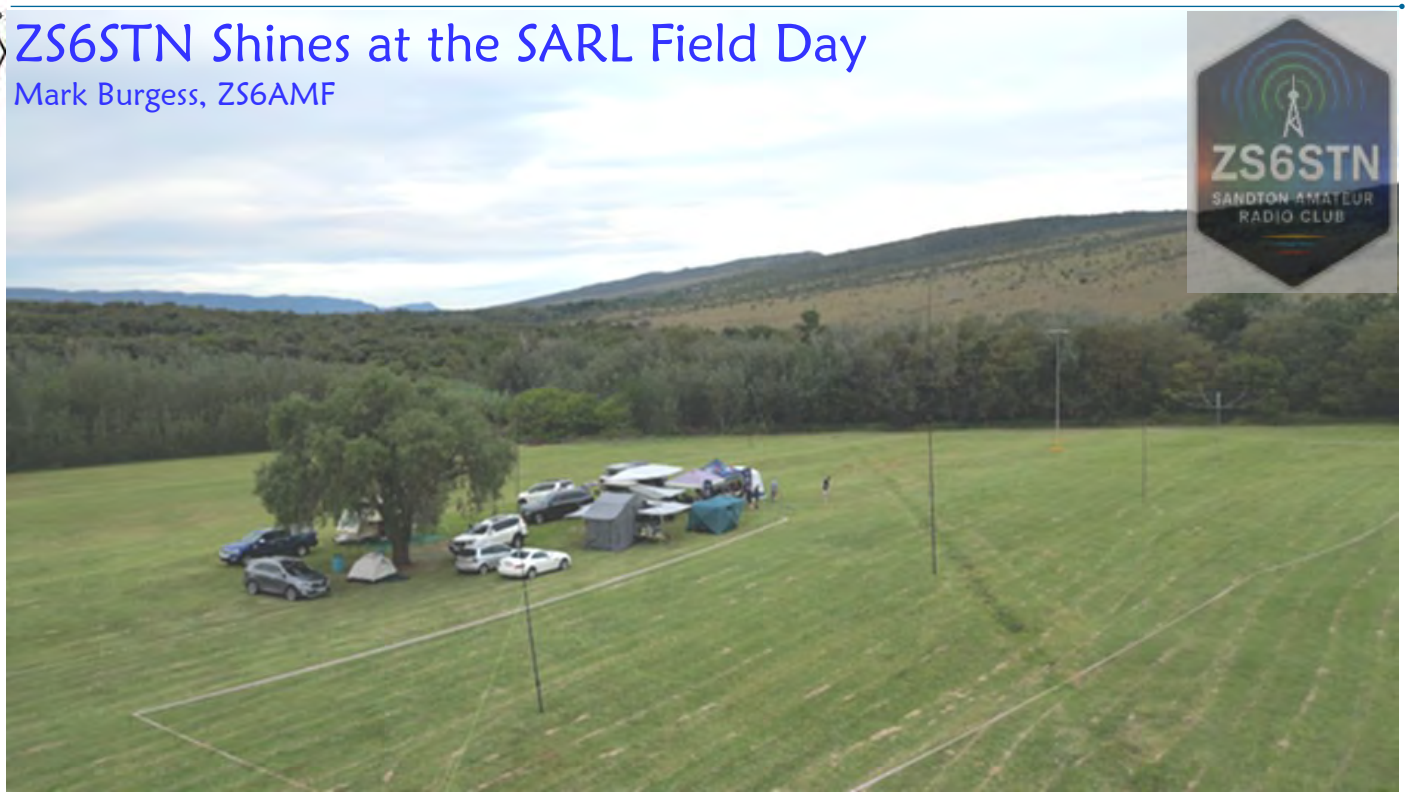
Figuur 5. Die ondersteuningspan wat aan strategie werk

Figuur 6. Nabyheid van twee antennas (links Eindgevoerde halfgolf en regs 'n omgekeerde V)

Figuur 7. Wat is 'n Velddag sonder 'n braai?

ZS6STN Shines at the SARL Field Day

Mark Burgess, ZS6AMF



Seven Antennas, One Team and the Rise of Project Honeycomb

With the results now released, we were pleased to learn that we achieved first place in the Autumn leg of the SARL National Field Day. The competition was fierce and the pace of evolution among the top teams has been astounding, driving exactly the kind of innovation that contests like this are designed to stimulate.

As a contest team and on behalf of the Club, we would like to thank all the other contestants, as well as the many general stations that supported this event. It has become a highlight of the SARL events calendar.

When the SARL Field Day rolled around this year, the ZS6STN team set out to do more than simply participate, they set out to showcase what teamwork, ingenuity and a passion for amateur radio can achieve.

There was a time when Field Day meant clipboards, paper logs and the steady rhythm of pen on paper. Operators juggled handwritten call signs, often under fading light or in the middle of the night, while trying to keep pace with fast-moving contacts. Errors were inevitable, fatigue was real and after the antennas came down, the real work often began, hours spent capturing logs into a computer, verifying contacts and resolving discrepancies. In many ways, it was as much a test of endurance as it was of operating skill.

Today, that same spirit of Field Day remains, rooted in the legacy of the club's pioneers, but the way it is executed has evolved dramatically.

What emerged at the operating site on this occasion was impressive: a highly functional multi-antenna field station featuring seven antennas, five operating positions and the debut of a unique antenna experiment known as Project Honeycomb.

From the earliest planning stages, the team set out to build a station capable of reliable multi-band performance while showcasing the practical engineering spirit that defines amateur radio. By the time the setup was complete, the ZS6STN site had transformed into a DXpedition-worthy antenna farm, carefully arranged to maximise performance while ensuring smooth operation throughout the event.

A Field Day Station Built for Performance

Field Day deployments often require operators to balance portability, reliability and performance. The ZS6STN team approached this challenge with careful planning and coordination. This included a detailed antenna layout plan, feedline routing and station layout to minimise interference and maximise efficiency.

With seven operators working in rotation, the stations could maintain activity across the bands throughout the event.

(Continued on page 87)

From foreground to background: Justin, ZS6JGP; Brett, ZS6MIV; Keith, ZS6HI; Matthew, ZS6MDV; Guy, ZS6GUY and Brandon, ZS6LZ (behind Guy). Photograph by Mark, ZS6AMF

(ZS6STN Shines at the SARL Field Day from page 86)

The setup demonstrated that with the right combination of strategic thinking, planning, teamwork and technical knowledge, a temporary field station can rival the capability of many permanent installations, even while operating at 50 watts.

Teamwork in Action

Field Day is about far more than signal reports and logged contacts. It is a celebration of cooperation, technical experimentation and shared enthusiasm for radio communication.

The ZS6STN members worked together to:

- Erect multiple antenna systems in various configurations
- Configure radios and logging stations
- Optimise antenna orientation and feedlines as conditions change
- Maintain station power and operating efficiency through both battery and solar power

Throughout the event, operators rotated through shifts, ensuring the station remained continuously active while still allowing everyone to enjoy the experience. In addition to the antenna systems, computer-based tools played a key role in maintaining efficiency and coordination. All operating positions were interconnected via Wi-Fi and LTE, enabling seamless data sharing across the station. Software such as N1MM Logger and QSO recording tools streamlined logging, reduced duplication and enhanced overall operational performance. A custom-built interactive QSO location map further improved real-time situational awareness. Communication beyond the contest environment was maintained through the ZA-Net Repeater Network, accessed via an AllStar link node, ensuring reliable connectivity both on-site and beyond.

The atmosphere around the stations reflected the very best of amateur radio - collaboration, learning and camaraderie.

Project Honeycomb—The Hex Beam Advantage

One of the standout features of the ZS6STN Field Day deployment was the introduction of Project Honeycomb, a hex-beam antenna developed by Matthew, ZS6MDV and Brandon,

(Continued on page 88)

(ZS6STN Shines at the SARL Field Day from page 87)

ZS6LZ and assembled on-site by the team.

The hex beam is a directional antenna design that delivers many of the benefits of a traditional Yagi while remaining significantly lighter and more compact. Rather than using rigid elements on a long boom, it employs wire elements suspended between six spreaders, forming a hexagonal structure. This approach reduces both weight and wind loading while maintaining effective directional performance.

Optimised for portable operations, the hex beam offers several key advantages: a compact footprint, forward gain typically in the region of 4–6 dB, reduced rearward noise and multi-band capability within a single antenna system. In the ZS6STN configuration, the antenna was optimised for operation on 15 m and 20 m, providing efficient coverage across these key contest bands. The antenna also provided a useful front-to-back ratio, improving signal clarity by reducing rearward interference.

In practice, Project Honeycomb delivered excellent results. Once erected and properly aligned, the antenna enabled operators to reliably capture weaker signals and maintain consistent contacts across the bands. Its performance, combined with ease of deployment and portability, made it particularly effective for the Field Day environment.

Beyond its operational success, the project served as a strong example of the innovation and practical engineering that continue to drive amateur radio forward.

Project Honeycomb - From Concept to Contest Reality

Over the past decade as part of the ZS6STN Field Day contesting team, our antenna strategy could best be described as practical and adaptable. Team members would arrive with a variety of antennas and while we always ensured that most, if not all the bands were covered, the overall approach remained relatively informal.

In recent years, however, that began to change. We moved toward a more deliberate and structured operating model, starting with our antenna strategy. Multi-band antennas were gradually replaced with resonant single-band dipoles. This shift delivered clear performance benefits, but it came at a cost: each additional band required its own mast, increasing both setup time and overall complexity.

During this evolution, Brandon, ZS6LZ had experimented with a lightweight wire-based 10 m Yagi supported by multiple masts. The results were impressive. By the following Field Day, he arrived with a purpose-built Yagi mounted on a robust

(Continued on page 90)

(ZS6STN Shines at the SARL Field Day from page 88)

telescopic mast, an upgrade that delivered exceptional performance. From that point on, it was clear that our Field Day approach had fundamentally shifted.

Despite these improvements, one band remained a consistent weak point: 15 metres. While 20 metres was serviceable, there was clear room for improvement. This led to discussions around how we could introduce a directional, higher-performance antenna that remained practical for field deployment.

After considerable debate and research, we settled on the hex beam concept. The appeal was clear: a compact, lightweight, multi-band directional antenna capable of delivering meaningful gain without the logistical burden of a traditional Yagi. The initial plan was to focus on 20 m and 15 m, with the possibility of expanding to additional bands over time.

For me, Matthew, ZS6MDV, the idea of building a hex beam had been lingering for over two years. Despite never having owned or operated one, the consistent positive feedback from those who had made it an obvious next step. With that, the decision was made we would design and build our own field-portable hex beam.

Research began with existing designs, including examples already in use by club members. From there, we moved into the design phase. The first priority was the mechanical structure. Foldable tent poles were selected as the spreader arms, offering a balance between strength, weight and portability. Once these arrived, we began prototyping the frame - measuring, assembling and refining - until we achieved a structure that was both stable and quick to deploy.

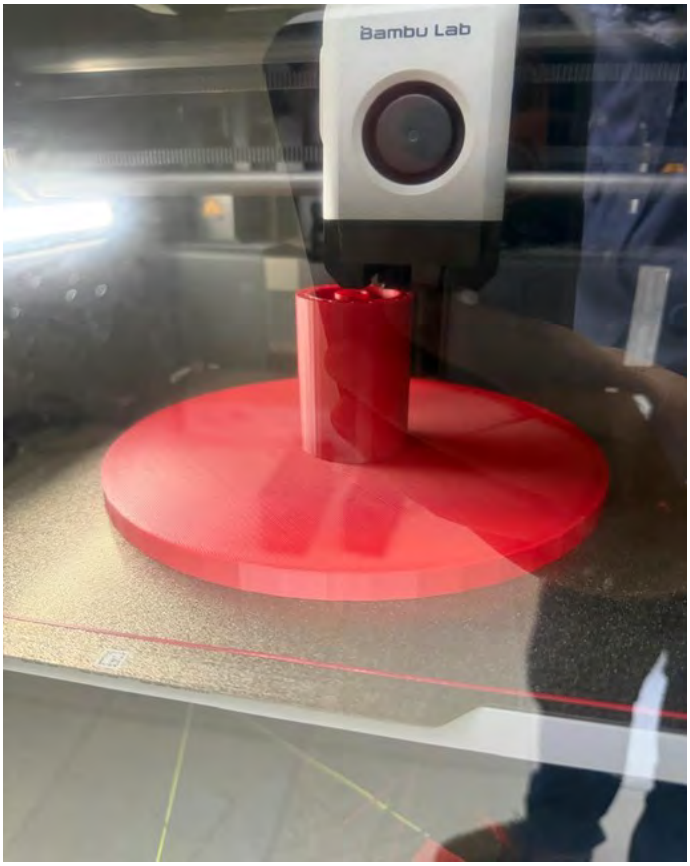
With the mechanical design validated, attention turned to the electrical elements. Wire lengths were calculated, cut and installed and the antenna was assembled for initial testing. Using an antenna analyser, we confirmed that while some tuning was required, the design showed strong potential from the outset.

Field Day became the true proving ground.

On-site, the antenna was initially erected a few metres above ground level to allow for trimming and fine-tuning. As expected, final adjustments were needed, but the process was straightforward and confirmed that the design was fundamentally sound.

Raising the antenna to full height, however, proved more challenging. Despite its relatively lightweight design, the hex beam is still a substantial structure to manage in a field environment. During erection, the mast was inadvertently damaged. Fortunately, with some quick thinking, basic tools and a bit of determination, the team was able to make on-site

(Continued on page 91)



(ZS6STN Shines at the SARL Field Day from page 90)

repairs and proceed, albeit at a slightly reduced height compared to the original plan.

A key feature of the design was the use of 3D-printed components. A custom hub allowed the antenna to mount securely onto the mast while still rotating freely. This enabled a simple but highly effective manual rotation system: ropes attached to the spreaders allowed operators to reposition the antenna by walking it around the mast.

Once operational, the antenna delivered exactly what we had hoped for. Performance on both 20 m and 15 m was strong, with reliable contacts and improved signal clarity. It quickly became clear that Project Honeycomb was not just a successful experiment, but a meaningful step forward in our Field Day capability.

That said, like any first iteration, it was not without its lessons. Several areas for improvement were identified, both mechanically and electrically and these have already been documented.

Project Honeycomb MK I represents the beginning of an ongoing development process. With the experience gained from this deployment, work is already underway on a refined MK II version.

More than just an antenna, Project Honeycomb reflects the team's continued commitment to innovation, practical engineering and the pursuit of performance in the field. It is a clear example of how ideas, when backed by action and collaboration, can evolve into something that materially enhances both capability and experience.

ZS6STN's Evolution of Techniques and Tactics

While this year's Field Day highlighted what the team can achieve today, the journey to this level of performance has been shaped by several years of continuous refinement.

Our Field Day strategy has evolved around a simple but often overlooked principle: start with the *why* before the *what* and *how*. Rather than defaulting to gear, bands, or tactics, we align first on a shared objective and then operate as a single, coordinated unit rather than a collection of individuals. This clarity shapes everything that follows - how we allocate stations, who takes responsibility and how we balance contacts and multipliers. A strong baseload of QSOs remains non-negotiable, but equally important is understanding that competitive advantage lies at the margin - in the contacts others do not make, rather than those everyone does. This is especially important for

(ZS6STN Shines at the SARL Field Day from page 91)

multipliers.

Execution then becomes a matter of deliberate choices, situational awareness and marginal gains. Knowing what is happening beyond your own contest matters, which international events are active, on which bands and what exchanges are required. In this case, the South American 10 m contest ran concurrently, presenting a clear opportunity. Configuring antenna orientation and heights for the right take-off angles in the right direction and targeting those stations at the optimal time of day maximises your odds of making key contacts.

We continue to manipulate terrain to our advantage to shape our signals, especially for DX. None of these factors is decisive in isolation, but together they compound into a meaningful edge. Field Day is rarely won through a single breakthrough, it is won through many small decisions, consistently applied and integrated into a coherent strategy.

Earlier setups were more distributed in nature, with multiple campsites and operators spread across the field. While the antennas performed well, many were optimised for lightweight, multi-band portable field use and not for outright single-band performance. As a result, unavoidable cross-band harmonics between stations were part of the operating experience.

Logging used to be primarily paper-based, requiring significant post-event effort from dedicated members to capture and digitise contacts, often long after the contest had ended. Today, the station reflects a far more refined and deliberate approach.

Operators are now centralised within a coordinated operating area, allowing for improved communication and real-time collaboration. A separate station is purpose-built for each band, with a dedicated transceiver, band pass filter and one or more carefully matched antennas that are tuned, tested and positioned for optimal performance.

Rather than moving radios or reconfiguring setups, operators simply rotate between stations when working different bands. This structured approach keeps things simple and ensures each band is worked as efficiently as possible.

The evolution extends beyond technical improvements. Enhanced branding and presentation have elevated the professionalism of the ZS6STN team, clearly reflecting the level of preparation, coordination and pride behind the operation, both to visitors on-site and to those engaging with the team on-air and online.

Several key factors contributed to the success of this modern approach:

- Keeping operators in close proximity improved camaraderie, coordination and overall team awareness
- Rotational operating ensured continuous activity, keeping stations active while allowing operators to rest when needed
- A technology-driven environment enabled real-time visibility of station activity, including frequency usage and logged contacts
- Integrated logging systems helped identify and prevent duplicate QSOs
- Live dashboards provided insight into performance and progress throughout the contest
- Internet connectivity supported callsign lookups (e.g., QRZ) and integration with networks such as ZA-Net
- Audio recording capabilities allowed for post-event verification and improved log accuracy
- Logs were available almost immediately after the contest, significantly reducing post-processing time

This progression highlights how continuous learning, experimentation and teamwork have shaped ZS6STN's Field Day strategy into a highly effective and professional contesting operation.

Amateur Radio at Its Best

The ZS6STN Field Day station stood as a powerful reminder of what makes amateur radio so rewarding.

Events like Field Day allow operators to combine:

- Technical experimentation
- Practical engineering
- Team collaboration
- Real-world communication skills

With seven antennas on the air and the success of Project Honeycomb, the ZS6STN team demonstrated that innovation and enthusiasm

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(ZS6STN Shines at the SARL Field Day from page 92)

remain at the heart of amateur radio in South Africa.

For the operators involved, the real success was not just the field station they built, but the shared experience of working together to overcome challenges and push the boundaries of what the ZS6STN team can achieve together.

For a closer look at the ZS6STN Field Day setup and operation, watch the video below: https://www.youtube.com/watch?v=EuBGR2-6VMA

I had the pleasure to meet three other members of the First Class Operators' Club (FOC) part of the 3Y0K team in Cape Town, upon their return from Bouvet Island. Left to right - Adrian, KO8SCA Team leader; Ken, L7GIA; Raoul, ZS1C and Cezar, VE3LYC. (Thanks Raoul.)

The Bird Island Lighthouse

This month we visit the Islands on the Air group AF-079 made up of Bird, Brenton, Jahleel and St Croix islands situated in Algoa Bay in the Eastern Cape. We are concentrating on Bird Island, which is home to the Bird Island Lighthouse.

Bird Island, latitude 33° 59" 29' South and longitude 26° 17" 13' East (Loc KF36DD) is 730 metres by 370 metres in size. The highest point on the island is 9 metres above sea level. (*Just misses out on being a SOTA summit!. Ed.*) There are two small islands nearby, namely Seal Island and Stag Island and also a number of rocks. Between the island and the shore just under 9 kilometres away is a treacherous stretch of sea to navigate. Bird island is 61 kilometres from Port Elizabeth harbour.

The island has literary thousands of birds on it, mostly gannets. The birds include Cape Gannet (*Morus capensis*), Australasian Gannet (*Morus serrator*), African or Jackass Penguin (*Spheniscus demersus*), Cape Cormorant (*Phalacrocorax capensis*), White Breasted Cormorant (*Phalacrocorax lucidus*), Kelp Gull (*Larus dominicanus*), Roseate Tern (*Sterna dougallii*), Swift Tern (*Sterna bergii*) and Black Oyster Catcher (*Haematopus moquini*). The guano smell downwind is quite overpowering. The island is devoid of vegetation except for a succulent type of plant which grows close to the ground in some places.

In the February 2022 issue of Radio ZS, you can read about the ZS26BI DXpedition, which took place from Monday 9 March to Friday 13 March 1998. Operators were Bud Voortman, ZS1B; Barry Fletcher, ZS1FJ; Hans Potgieter, ZS6ALJ (now ZS1ALJ); Lambert Ledoux, ZS2LL and Al Akkers, ZS2U.

From an article by G. Godwin in 1873, "New Lighthouse, Bird Island, Cape Town." *The Builder*, Vol. 31. London: Publishing Office No. 1. (p 702)

The Bird Islands are a group of small islets situated in Algoa Bay, about 53 kilometres ESE of Port Elizabeth. Besides the three largest, which are called the Bird, Seal and Stag Islands, there are

(Continued on page 95)

(Lighthouses from page 94)

several half-sunken rocks around these larger islands, extending about two miles in different directions. The group are about 11 km from the main land, the nearest point of which is Woody Cape. The farthest rock to seaward is the Dorington Rock, where the ill-fated *East Indiaman* was wrecked rather more than a century ago; the anchor and gun of which vessel is still to be seen lying between the rocks on Bird Island at low water. I have seen them many times. They must have been carried by the current from the spot where she struck to the place where they now lie: the distance is about 1,6 km.

Bird Island is still the resort of thousands of sea-birds, principally penguins and what they call here the malgas, but which is very much like the gannet, or sea-goose. These birds make their nests in the guano and sit together in one large flock, covering the greater part of the island. Any one attempting to go among them stands a chance of having his legs torn and scratched, for while the female bird is sitting on her one egg, she is very vicious; she sits all the time, which is about five weeks and her food is brought her by the male bird. When the young ones are old enough to fly, they are taken away by the old ones in large droves and it is supposed that they go to sea, for they do not return to the island for about three months. The penguins are a curiosity to look at, with their little flappers, with which they are very active in the water. It is astonishing how fast they run. When they are pursued, they always make for the water; when once they are there, they are safe. One would think at night that there were thousands of donkeys let loose upon the island, for the noise which these birds make is very much like the braying of that animal. The eggs of both these birds are eaten by the light keepers and those who visit the island; they are very wholesome and not unpalatable.

There is a vegetable grown in the guano and which covers a part of the island. It is very much like spinach and it is eaten by those on the island. There is a large quantity of guano, which in some parts is as deep as 4,3 m. There is an abundance of shells, but not a particle of sand or earth of any kind. There are many seals, on one of the rocks, called the Black Rock: they are seldom disturbed, excepting by parties who go there sometimes for guano.

In 1851 the Cape Governor erected a wooden lighthouse upon Bird Island, for the benefit of vessels going in and out of Algoa Bay. It was a rather curious-shaped-looking building as seen from the sea. There were exhibited from the tower, in different positions, two fixed white lights. The tower was a pyramidal-shaped building, with a

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Aerial view of Bird Island. Photographer: Jackie and John Standish-White - 2024

(Lighthouses from page 95)

projecting landing or platform, upon which each of the lanterns was fixed. It had been noticed for some years past that this building was fast going to decay. It was built of wood, the framing part of which was connected with iron bolts; the iron seemed to be very much affected by the action of two salts, one arising from the water and the other from the ammonia.

This building has been taken down and close to where it stood a new and more substantial building has been erected. In 1871 the Colonial Government granted the money for this work. Drawings were at once prepared for the same and the contract was signed in November of the same year, but the works upon the island did not actually commence until March 1872; and the whole of the work would have been completed by the end of last year had it not been for the delay which took place in getting the lighting apparatus and other ironwork done in England. But it was so far finished by the 1st of May last, that the new light was exhibited for the first time on that day. It is a fixed red light, of the Third Dioptric order, the height of which is about 24,3 m above the level of the sea, seen about 19 km off. The buildings are now entirely finished and the workmen have all left the island.

Bird Island lighthouse and crew's quarters in the 1890's

The whole of the work has been carried out according to the drawings. The tower is 18,2 m high from the level of the rock to the focal plane, or centre of light. It is a square building, quite perpendicular, showing on its north and south sides four circular apertures, which are connected with each other by a recess formed in the work and a large moulding forming the whole into a cross, which is intended as a day mark; on the east and west side there is only one aperture.

The parapet is finished in the form of battlements, with small, coved recesses under the cornices. The outside of the tower is coloured grey or light stone colour. The inside of the watch-room and cleaning-room is fitted with cupboards and other fittings to hold the different articles required for the establishment. The whole of the inside fittings is of teak and mahogany and varnished.

All the lighting apparatus, as also the iron watch room, lanterns, iron floors, girders and stairs, were supplied by Messrs. Chance Bros., of Birmingham. Besides the tower, there are two cottages (which are connected on each side with the lighthouse) for the use of the light-keeper and his assistant.

The greater part of the buildings has been constructed with the stone found upon the island and pointed outside and plastered inside. The arches are of brick and cement, which had to be taken to the island.

The roofs of the cottages are covered with slate and provision has been made for preserving the water, which is a very scarce commodity at times. To each keeper's quarters an under-ground tank, holding about 9 092 litres, has been constructed and a 2 268-litre iron tank has also been supplied to each house.

In connection with the establishment, a flag staff and signal-house have been erected, so that the light-keeper can communicate with vessels passing.

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(Lighthouses from page 96)

The works have been carried out under the superintendence of Mr Joseph Flack, of the Colonial Engineer Department.

The cost of the work is understood to be about £7 000. Mr B. Godfrey, of Cape Town, was the contractor for the whole of the work, excepting the part supplied by Messrs. Chance Bros.

References

Hoberman, Gerald. 2011. Lighthouses of South Africa : pocket edition. Cape Town - London - New York: The Gerald & Marc Hoberman Collection. Page 89 - 91

Williams, Harold. 1993. Southern Lights : Lighthouses of Southern Africa. Cape Town: William Waterman Publications. Page 25 - 31

The Bird Island Lighthouse is stunning … at least from a distance. Historically, a wooden lighthouse was erected in 1852. It was a pretty remote area with little means of communication. After 1906, this improved a bit when carrier pigeons took messages from the Port Elizabeth Lighthouse to the Bird Island Light. Work on a stone lighthouse began in 1872. The lighthouse has now been fully automated. The last permanent lightkeeper left Bird Island in 1968. Maintenance is now performed periodically by a technical staff which arrives by helicopter.

The Technical Stuff

Lighthouse Construction: 1852 – the wooden lighthouse and 1872/73 – the stone lighthouse
Commissioning Body: the Cape Colonial Government
Lens Order: First order
Lens Type: Fixed
A first-order Chance Brothers lens with a Trinity House Douglass burner producing 47 000 candlepower were installed in the lighthouse in 1873. In 1967 the lens and pedestal were replaced with an AGA 250 mm catadioptric four-panel lens and pedestal producing 1 465 000 candlepower.
Lighthouse Markings: Masonry tower painted red and white horizontal stripes
Management Body: Transnet Port Authority
Open Status (Site and Tower) Closed
Coordinates: -33,84172 26,28669
Grid block: KF36DD
IOTA Number: AF-079
ARLHS Number: SAF-002
Admiralty Number: D6412
ILLW Number: Not issued yet. *I wonder if a chat with the maintenance team or researchers will not help getting on to the island for an activation? Ed.*

Credits

https://artefacts.co.za/main/Buildings/bldgframes_mob.php?bldgid=10100
https://chanceht.org/lighthouse/bird-island-lighthouse/

The lighthouse in July 1981. South African Railways Publicity and Travel Department (photographer - Jan Hoek).

HF Update

Dennis Green, ZS4BS

For your All Africa Award

Central African Republic, TL. Joao, CR7BNW is operating as TL8BNW until June. Activity on 40, 20, 15 and 10 metres using SSB and digital with a dipole.

Lesotho, 7P. Paolo IZ0EVI, Diego IZ0EWJ and Luca IZ6DSQ will be active as 7P8WR from Lesotho from 23 April to 1 May. They will operate SSB and digital on 40 to 10 metres. QSL via Club Log's OQRS, LoTW, or via IZ0EWJ.

The Gambia, C5. Arnaud, F4AGG and Kuc, F5RAV will be active as C5B, C5C and C5D between 25 April and 8 May. C5B from Bijolo (AF-06) with satellite activity, C5C using CW and SSB and C5D from the mainland using RTTY, PSK and other digital. QSL via F5RAV direct, LoTW.

Tanzania, 5H. Kasimir, DL2SBY will again be operating as 5H1KB between 3 and 12 June with a focus on 6 metres during his trip. QSL via home call and LoTW.

Republic of Congo, TN8GD. Father Darek (TJ1GD, TL8GD and TT1GD) has been granted the permanent call sign TN8GD for activity from the Republic of Congo. Operations are expected to begin shortly. TN8GD will initially be active during Darek's pastoral and humanitarian visits to Brazzaville, with plans to enable remote operations as soon as the local infrastructure supports it. Derek will operate CW, SSB and FT modes on the HF bands and 6 metres. QSL via Club Log's OQRS, or direct to SP3EOL.

DR of Congo, 9Q. The Mediterranean DX Club will be active as 9T0MD between 30 September and 11 October. The 9T prefix has never been used before. Operation from 160 to 6 metres using CW, SSB and digital. Also, on QO-100 and EME. More to follow.

Mozambique, C8. The Czech DX Team will be active as C8K during September/October 2026. Operation from 160 to 6 metres and QO-100, RS -44, IO-117 using CW, SSB and digital. Club Log live stream if possible. QSL via OK6DJ OQRS, LoTW.

African Islands

Cape Verde, D4. Frank, DL1IL will be active 'holiday-style' from the end of March until mid-April as D41IL. Operation using CW with 10 W. QSL via home call bureau.

Rodrigues Island, 3B9. Suvarna, VU3OPT will be operating as 3B9N after the 3B8 activation between 3 April and 20 May. https://www.9n7ga.com

Sao Tome, S9. Francisco, CT7AKS will be active as S9R between 17 and 31 October. More to follow.

Other DX

Solomon Islands, H4. Bernard, DL2GAC is once again active as H44MS from Manakwai village until 10 April with operations from 80 to 6 metres using SSB and digital. QSL via home call, direct or bureau.

Minami Torishima, JD1. Take, JG8NQJ is once again active as JG8NQJ/JD1 until mid-May during his spare time. Mostly using CW and digital. QSL via JA8CJY, LoTW.

Japan, JA. Take, JI3DST is active again as JS6RRR from Miyako Island (AS-079) until 17 April. Operation from 40 to 6 metres using CW, SSB and digital. Take is also using JI3DST/6, JJ5RBH/6, JI3DST/P and JJ5RBH/P. QSOs are uploaded to Club Log and LoTW.

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Niue, E6. Gavin, ZL3GAV will be active as E6SP during July. Operation on HF using CW, SSB, SSTV, digital and satellite. More to follow.

Cook Islands, E5. Steve, ZL2KE and Steve, ZL4CZ will once again be active as E51CZZ and E51KEE between 22 July and 14 August for E51KEE (CW, SSB) and between 26 July and 6 August for E51CZZ (SSB).

Marquesas Islands, FO. A team of 6 operators (K5WE, W5CCP, N5TEA, K4VBM, WD5COV and F6BCW) will be active as TX9W from 19 to 30 April. Activity with 6 stations from 160 to 6 metres using CW, SSB and digital. Depending upon a reliable internet connection, logs will be uploaded to Club Log daily and Club Log Livestream will be active. Logs will be uploaded to LoTW shortly after returning home. https://k5we.com/tx9w/

Palau, T8. A team with Masu, JA3AVO; Mune, JI3DNN; Kuni, JA1CJA; Jusei, JA3IVU and Shozo, JA3HJI plan (tentatively) activity from the VIP Guest Hotel, Koror, Palau between 21 and 29 October. They will be active on various bands and modes as T88MB (JA3AVO), T88CZ (JI3DNN), T88DK (JA1CJA), T88ED (JA3IVU) and T88DN (JA3HJI).

Palau, T8. Yas, JA6UBY will be operating as T88RR from 10 to 18 June 1. Activity from 160 to 6 metres using SSB, digital. QSL via LoTW or home call.

Palau, T8. Nobu, JA0JHQ will once again be active as T88PB between 19 and 22 June. An entry in the All-Asian DX CW contest is included. QSL via home call, LoTW.

Franz Josef Land, R1/F. After two years of planning the RUDXT are proud to announce a DXpedition to the northern-most DXCC in the world – Franz Josef Land. Team of 6 operators will be active from Heiss Island (FJL) during 15 days in late August-early September 2026. https://www.rudxt.org/ri1fjl.

Mongolia, JT. Vladimir, R9LR and Denis, R8LCM will be active as JT0LR from rare grid squares in Mongolia (NN49, NN48, NN58 and possibly NN59) indicatively between 25 and 30 April. They will operate SSB, CW and digital modes on multiple bands and via satellite, QO-100 included. QSL via R9LR. They will be travelling by car and during the round trip - roughly between 22 April and 10 May - they will be active as RT9L/m from several Russian districts. See https://tnxqso.com/rt9l#/info for updates.

Russia, UA. Commemorating the 65th anniversary of Yuri Gagarin's historic 108-minute first flight into outer space (12 April 1961), members of the Miller DX Club will use several special call signs between 10 and 26 April: R065A, R065C, R065L, R065N, R065O, R065S, R065X, R065Z, R065YG, R108YG, R1961YG, UE7YG, UE65YG and UE65YAG. QSL for all call signs via RQ7L; see https://hamlog.online/club/mdxc/1800/ for the certificates.

Italy, I. For the third year in a row, members of ARI Sondrio (IQ2UL) will operate the special event station II2AUT from 28 March to 12 April for the World Autism Awareness Day. A certificate will be available on https://hamaward.cloud/awards.

Germany, DL. Special call signs DA200GVN and DM50GFS will be active on various bands and modes from 1 April to 31 July. The former celebrates the 200th anniversary of the birth of Georg Balthasar Ritter von Neumayer (1826 - 1909), German geophysicist, polar researcher and namesake of the Neumayer Antarctic research station (DP0GVN). The latter commemorates the Georg Forster Station (Y88POL and DP0GF), the

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first German Antarctic research base, inaugurated on 21 April 1976 by the German Democratic Republic and decommissioned in 1993. QSLs via DK5ON, LoTW and DCL (DARC Community Logbook).

Belgium, ON. Celebrating the 100th anniversary of the Belgian National Railway Company (NMBS/SNCB), special station OT26B is active until 31 December. QSL via OR4K. The line between Brussels and Mechelen, opened on 5 May 1835, was the first steam-powered public railway in continental Europe.

The Netherlands, PA. PI26WT and other special call signs (PA01WT, PA02WT, PD01WT, PD02WT, PD03WT, PD04WT, PD05WT, PD07WT, PD09WT) will be active between 7 and 21 April for the Dutch Radio Group's Water Tower Event. Several certificates will be available, see https://dutchradiogroup.com/ for detailed information.

USA, W. W2A will be active between 1 and 7 April for the fourth World Autism Awareness Week Special Event. QSL via Club Log's OQRS, LoTW and QRZ. See qrz.com for more information.

Bahamas, C6. Paul, WA4PAW is active from Treasure Cay as C6APS until 12 April. Activity from 20 to 10 metres using CW, SSB and digital. QSL via OQRS. www.qrz.com/db/C6APS

Bahamas, C6. Eric, K9GY will be operating as C6AYM between 5 and 10 August. Operation from 80 to 6 meters using CW. An entry in the WAE CW contest is included. QSL via LoTW.

St Kitts, V4. Janusz, SP9FIH will be active as V4/SP9FIH between 23 March and 18 April. Operation from 30 to 6 metres using SSB and digital. An entry in contests is included as V47K. QSL via OQRS, LoTW.

St Kitts, V4. Roger, EI8KN will be operating as V49B from Basseterre between 13 and 21 May. Active 'holiday-style' on HF. QSL via LoTW, OQRS or direct via home call.

St Kitts, V4. Markus, WW6W will be back as V4/WW6W between 24 May and 1 June. An entry in the CQ WW WPX CW contest is included. QSL via home call, LoTW.

Easter Island, CE0Y. Markus, DJ4EL will be active from Easter Island (SA-001) from 28 March to 11 April. "Please excuse the confusion regarding our call sign", he posted to QRZ on 25 March. "Although we were assigned the call 3G0YE, we will not be using it for various reasons. Instead, I will be conducting a solo DXpedition (holiday style) with the call sign CE0Y/DJ4EL". QSL via Club Log's OQRS and LoTW.

Robinson Crusoe Island, CE0Z. Felipe, XQ7IR, will be active as 3G0Z from Robinson Crusoe Island (SA-005), Juan Fernandez for "approximately three weeks" in May. He will operate digital, SSB and CW on 160 to 6 metres, with a focus on the low bands. See www.robinsoncrusoe2026.net for more information. QSL via M0URX's OQRS.

Bonaire, PJ4. Chris, WA7RAR will be active as PJ4CB during his spare time between 27 May and 8 June. Look for Chris from 20 to 10 metre using SSB and CW. Perhaps 10 metre FM simplex depending on conditions. QSL via home call direct only.

Turks And Caicos, VP5. Nobby, G0JVG will be operating as VP5G between 17 and 30 June. Operation on HF and 6 metres using CW, SSB and digital. An entry in the IOTA contest is included. QSL via M0OXO.

Martinique, FM. Darrell, AB2E will be operating as TO3E between 26 May and 2 June. An entry in the CQ WPX CW contest is included. Before and after the contest he will focus on WARC and low

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bands using mostly CW with some digital and RTTY. QSL via LoTW or direct via home call.

St Pierre And Miquelon, FP. Eric, KV1J will once again be active as FP/KV1J, this for the 18th time. Activity between 27 June and 13 July with an entry in the IARU HF Contest. FP/KV1J July 2026

Curacao, PJ2. Frank, PH2M will again be active as PJ2/PH2M between 12 and 29 June. He will be active holiday-style on 60 to 6 m, mainly digital, some SSB. QSL via bureau, direct, LoTW.

Colombia, HK3. Renato, PY8WW will be operating as HK4/PY8WW from Tutumate Island (SA-093) between 9 and 15 on May. "CW and SSB remain my main focus," he says, with digital as "just a tool for those difficult moments when propagation doesn't cooperate." More information is expected in due course. This IOTA group was activated only once, by HK3JJH/4 back in 2002.

Special Call Signs

Croatia, 9A. 9A10SOTA is the special call sign celebrating ten years of SOTA Croatia. Look for activity until 30 September 2026. See https://9aff.wordpress.com/ for information. QSL via LoTW.

Croatia, 9A. To celebrate their 15th anniversary, members of the Croatian Flora Fauna ARC (9A1WFF) are active as 9A44FF and 9A44FF/p until the end of 2026. See www.qrz.com/db/9A44FF for information about the Anniversary Award.

Portugal, CT. The Rede dos Emissores Portugueses (REP) has announced an activity open to its members across Portugal during 2026. Using the special call sign CT100REP (including /p or /m), this year-long collective activity celebrates the 100th anniversary of the founding of the REP, Portugal's IARU society. Operation is planned across various HF, VHF and UHF bands using multiple modes (SSB, CW, Digital) and satellites.

Germany, DL. DA26WARD is the special call sign for the DARC Team SES to promote World Amateur Radio Day between 1 March and 30 April. QSL via LoTW, DK5ON and DCL (DARC Community Logbook). WARD is celebrated annually on 18 April, the day when the IARU was formed in 1925. The theme for this year's WARD is "Advancing the Spirit of Amateur Radio Through Innovation.

Germany, DL. Celebrating a half-century of German research in Antarctica, special call signs DA0ANT, DM50ANT and DP50ANT will be active from 15 February to 30 April. In addition, active between 1 and 30 April will also be DM50GFS (for the 50th anniversary of the Georg Forster Station, established by the GDR in 1976 and decommissioned in 1993), as well as DP200GVN (for the bicentenary of the birth of Georg von Neumayer, after whom three German Antarctic research stations have been named). See

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https://50ant.hamaward.de/en/german-antarctic-research/ for complete information on the "50 Years of German Antarctic Research" award.

Germany, DL. During 2026, the following special event stations celebrate 100 years of the German aviation company Lufthansa: DA100LH, DL100LH and DK100LH (special DOK 100DLH). QSL via DK5ON, direct or via the bureau.

Germany, DL. The special event stations DA100TV and DL100TV (special DOK 100TV) celebrate 10 years of television in Germany during 2026. QSL via DK5ON direct or via the bureau.

Germany, DL. The special call sign DB100FT will be active throughout 2026 to celebrate the centenary of the Berlin Radio Tower (Funkturm), one of the city's most iconic landmarks. The 150-metre-high steel lattice tower occupies a prominent place in the history of radio broadcasting in Germany, as it was used to broadcast transmissions starting in 1926. QSL via the bureau, or direct to DO2PZ.

Germany, DL. DARC Team SES will be active as DL25WIKI throughout 2026. The special call sign celebrates the 25th anniversary of Wikipedia, The Free Encyclopedia, founded in January 2001: "the station reflects the spirit of free knowledge and international collaboration within the amateur radio community. Wikipedia and amateur radio share common values: openness, education, technical enthusiasm and world-wide networking". QSL cards will be sent automatically via the bureau; QSOs will also be uploaded to LoTW and the DCL (DARC Community Logbook)

Germany, DL. DQ30GDXF is the special call sign celebrating the 30th anniversary of the German DX Foundation (https://www.gdxf.de/) during 2026. QSL via Club Log's OQRS and LoTW.

England, G. GB50PUNK is a special call sign for David, G3SKA "and team" to use at various times during 2026 to celebrate 50 years of punk rock music. QSOs will be uploaded to Club Log and eQSL; QSL via the bureau or direct. Updates will be posted to www.facebook.com/61585208894891.

Italy, I. Throughout 2026, ARI Fidenza (IQ4FE), with the patronage and historical supervision of the Guglielmo Marconi Foundation, will use a series of special call signs, each representing one of the "key figures who played a fundamental role in Marconi's personal and emotional, educational and cultural, academic, scientific and, finally, entrepreneurial development": II4AMRC (March), II4JDVS (April), II4ROSA (May), II4PRCE (June), II4JAFL (July), II4KEMP (August), II4PAGE (September), II4NTTI (October), II4GCLB (November), II4SLRI (December). QSL via LoTW, or direct only to IQ4FE. Complete information about the Marconi Supporters award: www.arifidenza.it/

Bulgaria, LZ. Radio Club Blagovestnik (LZ1KCP) will use six special call signs during 2026 to honour as many different Orthodox saints: LZ488AM (March and April), LZ370TL (May and June), LZ67PP (July and August), LZ936BA (September and October), LZ911TD (November and December). QSL via the bureau or direct to PO Box 36, 4300 Karlovo, Bulgaria. Details on the All Saints 2026 Award can be found at www.lz1kcp.com/

Bulgaria, LZ. LZ75HSC is the special call sign for Bulgarian HSC members to celebrate the 75th anniversary of the Radio Telegraphy Highspeed Club (HSC) until the end of the year. QSL via LZ2JE. The club was founded in 1951 as a community within the Deutscher Amateur Radio Club (DARC). To date, membership has grown to include over 1 400 operators spanning every continent: http://www.highspeedclub.org.

Poland, SP. The Dobrzycki Amateur Radio Club (SP3PDO) will use twelve special call signs during 2026 to honour as many different Polish saints: SP1040SSZ (March), SP1865JML (April), SP1920KW (May), SP1373JA (June), SP1183JO (July), SP1905MFK (August), SP1373AB (September), SP1550SK (October), SP1234KK (November) and SP1835JK (December). QSLs via SP3PDO. See https://radioawards.club/ses/155 for the certificates.

Southern African Antique Wireless Association

ZSOAWA

MISSION STATEMENT

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yesterdays radio's and associated equipment.

To encourage all like minded amateurs to do the same thus ensuring the maintenance and preservation of our amateur heritage.

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NET TIMES & FREQUENCIES (SAST):

Saturday 06:00 (04:00 UTC) -
AM Net - 3615

Saturday 07:00 (05:00 UTC) -
Western Cape SSB Net - 3630

Saturday 08:30 (06:30 UTC) -
National SSB Net - 7140;
Sandton Repeater 145.700
Echolink - ZS6STN-R; ZS0A W A-L
Relay on 3615 for those having difficulty with local skip conditions.

Saturday 14:00 (12:00 UTC) -
CW Net - 7020; (3550 after 15min if band conditions not good on 40)

Wednesday 19:00 (17:00) -
AM Net - 3615, band conditions permitting

IARU Region 1 President's Report Period 2025

President's Introduction

When I look back at nearly nine years on the Executive Committee — the last five as President, alongside Vice-President Hani, OD5TE and Secretary Mats, SM6EAN — I find myself in a genuinely reflective mood.

This is my third and final term, the maximum permitted under our constitution and this report is therefore not just an annual account of activities: it is the last chapter of a journey that has been, for me personally, one of the most meaningful experiences of my amateur radio life.

I joined the Executive Committee in 2017 because I have always been deeply impressed by what IARU Region 1 represents. An organisation a hundred years old, still functioning, still relevant, bringing together people from across the world — from Europe to Africa, from the Middle East to Northern Asia — who give their free time, with no reward other than the satisfaction of serving a hobby they love.

That spirit of respect, friendship and shared purpose across borders and cultures is something I never take for granted. It is why I stood for President in 2021 and it is what has kept me motivated through the challenges of this term.

Those challenges have been real and I believe this report would not serve its purpose if it glossed over them. The momentum we built during the pandemic years — when the world moved online and suddenly a hundred people from fifty Member Societies could gather in a virtual workshop and dream together — proved very difficult to sustain once the world reopened and competition for people's time intensified.

Volunteer engagement has become genuinely hard. We have seen it in the Shaping the Future projects, in content creation, in committee feedback. I am sad that we were not able to convert that early enthusiasm into lasting, operational momentum. It is the honest regret of this term and I think the incoming team deserves to hear it said clearly.

But I do not leave discouraged — far from it. Two things give me real confidence in the future of this organisation: First, we have seen members of the Youth Committee taking more and more responsibilities in the organisation. The next generation is not just participating — they are ready to lead. That is exactly what we hoped for when we invested in youth activities and it is the most encouraging signal I could imagine. Second, the openings we have made toward new communities — open-source developers, technology makers, content creators — show that amateur radio can still attract new energy and new talent from beyond its traditional boundaries. The Innovation Zone, the connections made at FOSDEM and Friedrichshafen: these are seeds and I believe they will grow.

There is one moment of this term that I will carry with me long after the last report is filed: In April 2025, IARU Region 1 held its Interim Meeting in Paris — one hundred years, almost to the month, after the International Amateur Radio Union was founded at La Sorbonne in 1925.

As President and as the only member of the organisation living in France, I took on the full weight of organising this event, with the indispensable support of Mats, SM6EAN and Oliver, Z32TO.

Bringing a major international meeting to my own country, in the city where it all began, was a responsibility I felt deeply. But what I will remember most is not the logistics or the sessions. It is the evening cruise on the Seine, dinner on the water with colleagues from across the region, the Eiffel Tower lit up above us — and the faces of those who were seeing Paris for the very first time. Seeing this organisation, one hundred years old, still bringing people together with that kind of joy: that, for me, is what amateur radio is about.

Before anything else, a word that belongs here and nowhere else: to my wife Hélène and my son Maxime — thank you. Maxime was born just as I joined the Executive Committee in 2017 and he has grown up never knowing a weekend without a Zoom meeting somewhere in the house. He is eight years old now and he has already given more to this organisation than he will ever know. Hélène, thank you for your patience, your support and for never once asking me to stop. You gave me the space to do this and that is not a small thing.

To Hani and Mats: thank you.

To every committee chair, working group

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member, EC member and volunteer who gave their time during this term: thank you.

And to the incoming team: you inherit an organisation that is older than most of us, more resilient than it sometimes appears and full of people who genuinely care. Trust them. Listen to them. And design your ambitions around what they can truly sustain — that, more than anything, is the lesson we are passing on.

73, Sylvain, F4GKR.

EC President, Vice President, Secretary and Treasurer - Summary of Main Activities of the Executive Committee

President, Vice-President, Secretary

The past year has been one of the most significant in the history of IARU Region 1 — marked by a major international celebration, important strategic decisions and sustained work across all areas of amateur radio. This section provides a high-level overview of the key topics that have shaped our work. Each topic is covered in greater detail in the dedicated committee and working group reports that follow.

IARU Centennial and the Paris Interim Meeting

April 2025 brought together two milestones in one exceptional event: the IARU Region 1 Interim Meeting held in Paris and the global celebration of the 100th anniversary of the International Amateur Radio Union.

The Interim Meeting served as a productive working conference, with committee sessions covering the full range of Region 1 activities. The Centennial celebrations provided a unique opportunity to reflect on a century of amateur radio, reconnect with Member Societies and project our vision for the future. *For further details, see the reports from the relevant committees and the IARU IWS section.*

IARU Restructuring

The ongoing IARU restructuring process has been a major topic of attention throughout the year. Region 1 has actively engaged in the consultation process, with a very important engagement from all the region societies and a joint response submitted by the Political Relations Committee (PRC) and the Spectrum and Regulatory Liaison Committee (SRLC).

The Executive Committee has followed these developments closely, ensuring that the interests and operational continuity of Region 1 — including its committees and working groups — are properly represented and safeguarded in any future organisational structure. *For further details, see the PRC and SRLC reports.*

Youth Activities

Ensuring the continuity and vitality of our youth programme has been a priority. Following a period during which EC members Lisa, PA2LS and Alex, IV3KKW served as interim points of contact for the Youth Committee, we are pleased that Mario Lerma Martínez, EA1JAY has taken on the role of Youth Committee Chair.

He has brought fresh energy to the programme, developing and reshaping activities such as Train the Trainer/Mentor (TTT), Discover Your Morse (DYM) and the Youngsters On The Air (YOTA) events.

The YOTA Summer Camp continued to provide an outstanding experience for young radio amateurs from across the region. *For further details, see the Youth Committee report.*

General Conference 2026 — Vienna

The 2026 General Conference, to be held in Vienna in September, represents a critical milestone, not only as the principal governing event of Region 1, but also as the conference at which the current team will hand over responsibility to the incoming Executive Committee.

Preparations are well advanced. The conference agenda will address strategic direction, ratification of newly established structures and elections for the next term.

We encourage all Member Societies to engage fully in the preparatory process and to come to Vienna ready to shape the future of Region 1.

HAM Radio Friedrichshafen 2025

HAM Radio in Friedrichshafen continued to be an important point of contact between the Executive Committee, Member Societies and the broader amateur radio community.

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The IARU presence, including the IARU, YOTA and Innovation Zone booths, was carefully prepared and staffed by EC members and volunteers.

Numerous bilateral meetings took place during the fair, making it a productive opportunity for direct engagement. The Emergency Communications committee also held its annual in-person meeting there, for the first time in a hybrid format combining on-site and online participants.

Spectrum Defence and Regulatory Affairs

Protecting the spectrum available to amateur radio remains one of our most demanding and consequential responsibilities. The Spectrum and Regulatory Liaison Committee (SRLC) has been active on multiple fronts throughout the year. Preparations for WRC-27 are in full swing, with six agenda items of direct relevance to the amateur community.

A particularly significant achievement was the finalisation of the CEPT regulatory decision protecting the 23 cm band in the context of the Galileo satellite navigation system, a result that reflects the agreed outcome of ITU-R discussions.

Work on Wireless Power Transfer (WPT), including electric vehicle charging (WPT-EV), continues to present challenges due to the potential for interference in the LF and HF bands.

IARU Region 1 also participated in ATU task group work aimed at strengthening amateur radio's position across the African continent. *For full details, see the SRLC report.*

Political and Regulatory Engagement

The Political Relations Committee (PRC) has expanded its engagement with European institutions.

Beyond its established presence in the EMC Working Party and the Expert Group on Radio Equipment, the PRC successfully applied to join the new Expert Group on Cybersecurity of Products with Digital Elements (CRA-EG). Practical guidance documents were published to help Member Societies and individual amateurs understand the implications of the EU Cyber Resilience Act, the EU Artificial Intelligence Act and upcoming changes to EU import duties. These publications reflect IARU Region 1's commitment to keeping the amateur radio community informed about legislative developments that affect our activities. *For full details, see the PRC report.*

Technology, Innovation and Open Source

The Technology Working Group (TWG), formally established by the Executive Committee in early 2024, has been developing its activities and awaits ratification at the 2026 General Conference. Its mandate, to address technical topics relevant to amateur radio and to collaborate with external organisations where interests align, fills an important gap.

Complementing this, Marc, HB9SSB was appointed in January 2025 as the first Open-Source Projects Coordinator, strengthening our relationships with communities developing key technologies such as GnuRadio and M17.

These initiatives reflect Region 1's commitment to remaining relevant in a rapidly evolving technical landscape.

Sadly, no TWG report was provided. We may want to reconsider our approach to these topics at our next General Conference. *For full details, see the Open-Source Coordinator report.*

Emergency Communications

Amateur radio's value in emergency situations was demonstrated once again during 2025, with activations in response to major power outages in Spain and Portugal and Hurricane Gabriele in the Azores. The EMCOMM community continued to develop its coordination mechanisms and contributed to the Ethics and Operating Procedures manual. The annual meeting in Friedrichshafen introduced a hybrid format for the first time, broadening participation beyond those physically present. *For full details, see the EMCOMM report.*

Space and Satellites

Amateur radio's presence in space remains active and expanding. QO-100 (EsHail-2) continues to provide geostationary transponder access for operators across the region.

The IARU Frequency Coordination Panel has processed close to 1 100 coordination requests, underlining the growing demand for amateur satellite spectrum.

Several ESA astronauts with amateur radio licences are scheduled for ISS missions, maintaining

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the visibility of amateur radio in the context of human spaceflight. *For full details, see the ARSPEX and Satellite Coordinator reports.*

Competitive Activities — ARDF and HST

The competitive side of amateur radio had an active year.

The 22nd IARU World ARDF Championship, held in Birštonas, Lithuania, attracted 310 participants from 25 countries. The 7th World Youth ARDF Championship took place in Mariánské Lázně, Czech Republic.

The 21st IARU World HST Championship was held in Igalo, Montenegro. These events demonstrate the continued vitality of amateur radio sport and the dedication of the national societies that organise them. *For full details, see the ARDF and HST reports.*

Shaping the Future

The "Shaping the Future" (StF) initiative, launched in 2021 with the ambition of transforming and modernising IARU Region 1, has now reached a point of maturity where an honest stocktaking is appropriate — and necessary before handing over to the incoming team.

The initiative produced some concrete results. ARMA, the Amateur Relationship Management Application, is nearing full deployment and will provide all Member Societies with a single, authoritative directory of contacts across Region 1. The Innovation Zone at HAM Radio Friedrichshafen proved to be a genuine success, bringing amateur radio into contact with open-source developers, content creators and technology communities well beyond the traditional amateur radio world. The appointment of an Open-Source Coordinator and the integration of the ENAMS noise monitoring project into the StF framework are also steps in the right direction.

However, the overall picture is one of unfulfilled ambition. The HamChallenge innovation competition, which ran from 2022 to 2024, was discontinued in early 2025 after participation declined to a single submission. The hamradio.org website, despite a completed technical design, has failed to generate the content needed for a meaningful launch, with its active volunteer team shrinking from over 60 initial expressions of interest to barely five. ENAMS struggles to reach the minimum 50 pre-orders required to trigger series production. And the Technical Working Group, formally approved, funded and given a clear mandate, held only one single meeting over three years and provided no activity report. It exists on paper; it has not yet existed in practice.

These outcomes are not a failure of vision. The strategic direction identified in 2021 remains sound and relevant.

They are, however, an unambiguous signal about the structural challenge that must now be addressed head-on: the persistent and widening gap between what we plan and what our volunteer base can realistically deliver over time.

The detailed Shaping the Future report, including project-by-project status, is provided in a dedicated section of this document.

Volunteer Engagement: A Structural Challenge We Must Name

The TWG story is, unfortunately, not an isolated case. Across almost every domain of Region 1's activity — from Shaping the Future projects to committee work, from content creation to technical coordination — the same pattern has repeated itself: strong enthusiasm at the planning stage, followed by a steady erosion of active participation once the hard, un-glamorous work of delivery begins.

This is not a criticism of the individuals who give their time to amateur radio. Their dedication is what keeps this organisation alive and it deserves genuine respect. But an honest report — and especially a final one from a departing team — must acknowledge what the evidence consistently shows: **volunteer capacity is a finite and fragile resource** and Region 1 has too often designed its ambitions without that reality as the central constraint.

The 2021 Shaping the Future workshop attracted over 100 participants from more than 50 Member Societies — an impressive mobilisation. By the implementation phase, that energy had evaporated for most projects. The TWG was established, resourced and tasked — and met once. The HF Manager network, covering a domain critical to spectrum coordination, generates almost no feedback from Member Societies despite a

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functioning mailing list. The hamradio.org content team went from 60 volunteers to five.

These are not coincidences; they are symptoms of a systemic issue.

Several lessons have emerged from this term. Time-bounded, event-driven commitments, the Innovation Zone, the YOTA Summer Camp, contest organisation sustain engagement reliably. Open-ended, ongoing responsibilities, content creation, technical coordination, governance roles, do not, unless they are actively managed, formally recognised and realistically scoped.

Where professional services were brought in alongside volunteers, deliverables appeared. Where the work depended entirely on volunteer availability with no structure or accountability, it stalled.

The incoming Executive Committee and the 2026 General Conference will need to confront this directly. The question is not whether our volunteers are willing — many are. The question is how Region 1 designs its initiatives: smaller scope, clearer accountability, time-limited commitments, formal recognition of contributions and a willingness to invest in professional support where volunteer effort alone has proven insufficient.

Designing around demonstrated capacity, rather than aspirational goals, is the most important structural shift the organisation can make.

We raise this not to end on a discouraging note, but because honest diagnosis is the prerequisite for effective treatment. The incoming team inherits real assets, tools, structures, relationships and hard-won lessons. Using them well starts with a clear-eyed understanding of what has and has not worked.

Member Society Engagement

Throughout the year, the Executive Committee maintained an active dialogue with Member Societies through regular online meetings, bilateral discussions and in-person contacts at Friedrichshafen and Paris. Particular efforts were made to strengthen relations with Arab Member Societies. While engagement is generally positive, we note that volunteer capacity and responsiveness within some technical communities, such as the HF Manager network, remains a challenge that warrants attention from Member Societies.

The Executive Committee thanks all committee chairs, working group members, EC members and volunteers who have contributed to these activities. Their dedication is what makes Region 1 function. Full reports from each chair and coordinator follow in the subsequent sections of this document.

EC member Joerg, DJ3HW

Support the IARU at HamRadio Messe 2025

I took part in the organization of the IARU appearance at the fair.

During the fair, I took part in several IARU meetings, presentations and staffing of the booth

Interim-Meeting 2025 and Celebrations in Paris

I took part in the 2025 in person IARU Region 1 Interim-Meeting in Paris linked with the Centennial Celebration events for IARU.

EC-Meetings 2025

I joined several virtual Meetings and discussions

ENAMS 2.0 activities

I was involved in the activities around the ENAMS 2.0 project, supporting C7 chair and ENAMS 2.0 team setting up a second batch of ENAMS Receivers production by joining (virtual) meetings and discussions.

EC member Alex, IV3KKW

As an EC member I focused on the following topics:

Development of an amateur radio focus on young people.

As EC's Point of Contact with, Lisa PA2LS, I provided the Youth Committee with assistance on different topics related to youth activities (YOTA Camps, DYM, TTT, etc.).

Shaping the Future

I am a member of Shaping the Future Secretariat, but during the 2025 year has not been any significant development in this project.

PR Strategy

I am of the PR team with Lisa, PA2LS managing the social media platforms for IARU Region 1.

HAM Radio Friedrichshafen

I have been involved in preparations for the

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2025 edition with Lisa, PA2LS; Ahmad, 9K2DB and Mats, SM6EAN; I produced some material for the booth (banners, posters, gadgets); further, I helped manning the booth during the fair.

C5 Contest Working Group

I am the C5CWG chairman since 2019 and the point of contact with the Contest Robot developer, I prepared all the prizes for all the VHF+ 2024 contests and organized the prizing ceremony in Friedrichshafen (June).

At the present time all the 2025 VHF+ IARU R1 Contests and Trophy are evaluated and classifications are published; all the prizes will be produced on due time.

EC member Ahmad, 9K2DB

Global Coordination on Ethics and Operating Standards:

Led a collaborative initiative with volunteer teams across IARU regions to update the Ethics and Operating Procedures for the Radio Amateur document. This effort was critical in upholding the highest professional standards, reinforcing ethical practices and ensuring the amateur radio community continues to lead in technological advancement.

IARU 100th Anniversary Planning:

Actively contributed to the EC team responsible for planning and organizing the IARU's 100th-anniversary celebrations.

Strengthening Arab Member Society Relations:

Designated as the EC Member point of contact for Arab Member Societies, facilitating communication and strengthening relationships to enhance regional engagement.

Ham Radio Friedrichshafen 2025 Representation:

Represented the IARU at Ham Radio Friedrichshafen 2025, leading the preparation of the IARU, YOTA and Innovation Zone booths and actively engaging visitors to foster strong community interaction.

Promotion of Global Amateur Radio Activities:

Actively encouraged Arab IARU member societies to participate in global amateur radio initiatives and integrate into the broader international community.

Educational Outreach in Kuwait:

Delivered lectures and presentations to newcomers, schools, universities, private and government associations and other organizations to promote amateur radio and expand its awareness in Kuwait.

EC member Oliver, Z32TO

Following my responsibilities, here are the main activities in 2025:

7th IARU World Youth ARDF championship, organized by CRC from 1 to 5 July 2025 in Marianske Lazne, Czechia. Well organized, reasonable participation.

22nd IARU World ARDF championship organized by LRMD from 16 to 22 August in Birstonas, Lithuania. Well organized, good participation.

21st IARU World HST championship, organized by MARP from 15 to 19 October 2025 in Igalo, Montenegro. Well organized, good participation.

Activities for 2026:

8th IARU World Youth ARDF championship, Veszprem, Hungary from 1 to 5 July 2026

25th IARU R1 ARDF championship, Trgovishte, Romania from 16 to 22 August

22nd IARU HST World Championship, TBD

EC member Lisa, PA2LS

Ad-interim Chair of the Youth Committee until the new Chair, Mario Lerma Martínez EA1JAY, was selected by the YC. Acted as a linking pin between the EC and the Youth Committee together with Alex IV3KKW. During the period without a Chair, we stepped in as representatives, providing leadership and support to ensure continuity of the Youngsters On The Air programme and to facilitate the search for a new Chair. After Mario took office, he quickly picked up the work and began further developing the existing youth programme, reshaping several elements such as Train the Trainer/Mentor and to make them more attractive and effective for the intended goals.

IARU booth at HAM Radio 2025: involved in preparations, booth set-up and representing IARU. Met with several Member Societies and IARU Region 1 volunteers during the fair to discuss ongoing matters and align on key topics.

(Online) meetings with Member Societies addressing a range of topics.

Participation in EC meetings, both online and in -person, including the EC meeting in Barcelona, Spain and meetings with the EC in Friedrichshafen,

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Germany.

Attended the Interim Conference in Paris, France, with a focus on Youth and their developments.

Recently joined Hani Raad, OD5TE, together with Wolfgang Mahr, OE1MHZ, to con-tribute to the IARU centennial booklet.

ARDF - Amateur Radio Direction Finding - Dušan, YU1EA

IARU ARDF events in 2025

7th IARU World Youth ARDF Championship (CRC, Czech Republic). Date: 2 to 6 July 2025. Venue: Marianske Lazne, Czech Republic. Total participance was 85 competitors from 11 countries (China, Croatia, Czech Republic, Germany, Hungary, Moldova, Poland, Romania, Slovakia, Slovenia, Ukraine). The IARU Region 1 Child Protection Principles were followed throughout the whole event.

22nd IARU World ARDF Championship (LRMD, Lithuania). Date: 16 to 22 August 2025, Venue: Birštonas, Lithuania. The championship involved 310 participants from 25 countries. During the entire event, the rules of the IARU R1 for child protection policies were strictly observed.

47th IARU ARDF WG Plenary meeting was held with the attendance of 17 members out of 27.

Forthcoming IARU ARDF Championships scheduled for next year:

Request have been sent to the organizers of the forthcoming ARDF events 2027,2028,2029 to submit the report regarding the preparation of the events. Reports to be discussed in Targoviste, Romania at the WG Meeting.

2026: 8th IARU World Youth ARDF Championship (MRASZ, Hungary). Date, venue: 1 to 5 July 2026, Veszprém, Hungary. The organizer sent the Bulletin No.1 to all ARDF WG members with all details regarding the event.

2026: 28th IARU R1 ARDF Championship (Targoviste, Romania). Date, venue: 16 to 22 August 2026, Targoviste.

2027: 23rd IARU World ARDF Championship (KARL, Korea) Date: to be announced (September 2027). Proposed Venue Location: Central region of the Republic of Korea, within 1 – 2 hours travel from Incheon International Airport. The details will be discussed at the ARDF WG meeting in Targoviste, Romania.

ARSPEX - Amateur Radio Space Exploration - Stefan, ON6TI

ESA Astronaut corps

25 January 2025 ESA has selected several astronauts for the next ISS missions: Sophie Adenot (France) is scheduled to fly on Crew 12 on February 15th. She has passed her amateur radio license. Raphael Liégois (Belgium) has been announced to fly not before 2027.

Further candidates are Pablo Álvarez Fernández (Spain) and Marco Sieber (Switzerland). In the astronaut reserves are Larkus Wandt (Sweden, has already flown with Axion and has performed ARISS contacts), John McFall (UK, 1st disabled astronaut candidate, has committed to do amateur radio contacts) and 10 further candidates.

FRAM-2

Fram-2 was a private initiative to fly 4 astronauts on a polar orbit for 3 days. Fram2, in honour of the Norwegian ship that made pioneering voyages to the Arctic and Antarctic between 1893 and 1912, was performed with a Dragon capsule (Space-X).

On board were 4 astronauts: Chun Wang (Malta), Jannicke Mikkelsen (Norway), Eric Philips (Australia) and Rabea Rogge (Germany, LB9NJ). Rabea contacted me and asked, “What can I do as Amateur experiment on board using COTS equipment?” After several discussions, we prepared 2 experiments that she conducted from space during her mission:

a voice contact with the TU Berlin: students asked her questions and she answered.

a SSTV competition targeted to schools: the aim was to receive 12 SSTV images, to reassemble them as a puzzle and guess the location where they were taken. All pictures were related to the exploration of the poles.

This competition was a huge success with over 1 500 images submitted during the 3-day mission, creating international teams of students.

ARISS

ARISS is still very popular throughout the world. Many schools request a contact, but only a limited number do get a slot assigned. 2025 has seen 77

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contacts from which 43 contacts have been done with Region 1.

Tibor Kapu HA5TRO and Sławosz Uznański-Wiśniewski SQ7A were members of the AXIOM 4 mission and performed each 2 contacts with 7 schools in their native language.

Highlights of 2025: there were 3 YOTA contacts, including YOTA region 1 summer camp in Jambeville.

Another remarkable contact was done with the Pan African Science Lab uniting 16 Region 1 nations in a single contact.

The ISS used OR4ISS for 36 contacts, while 21 contacts were done with RS0ISS.

2026 sees many contacts in Europe, also with Sophie Adenot. One remarkable contact is with Luxembourg: 30 students and 3 teachers decided to pass their license; this boosts the LX community by 5%!

HAM TV

2025 has also seen the reactivation of the HAM TV station and several ARISS contacts have already been augmented by live images.

The equipment has been improved, including fixing the software bug that prevented commercial set top boxes to decode the signals.

A HDMI converter will soon be commissioned, allowing images from one of the AstroPi's to be transmitted (the camera can often not be turned on because of privacy). This will increase the number of TV experiments from the ISS.

ARTEMIS and the moon

NASA has partnered with the amateur community to perform Doppler-measurements during the Artemis-2 flight. This not only proves that amateurs can perform a challenging technical experiment but also that we get recognised for that by official administrations.

The next step will be to design "experiments" and "telecommunication equipment" for the Lunar Gateway.

Education

Currently "space" is a very good driver for science and technology in schools, but also one of the weak links as the current curriculum of schools lack this area.

ESA sponsors the "CanSat" project, where students build a satellite in form of a soda can; the selected teams are given a launch opportunity on rockets reaching 1,2 km altitude. Telemetry is sent during the flight and many teams ask amateurs for help to build antennas.

The national CanSat competition team regularly contact the radio amateur community for help with the telecommunication aspects of the project.

I am in contact with both the Belgian and the Luxembourgish competition and work in from of the project with an on-line "radio workshop".

Euro Space Centre in Belgium is continuing to propose the "SatCamp", where kids build a "CubeSat" that is lifted up to 100 m. This generates every year some new amateur operators aged <18!

2026 and beyond

ARISS team will meet probably in the UK. ARISS will have a stand at the HAM RADIO and host a lecture by Rabea Rogge, LB9NJ about the FRAM2HAM experiment.

EMCC – EMC committee - Wolf, OE1MHZ

The main tasks of the EMC committee can be summarized as follows:

Periodic meetings of the EMC committee including the NMC subgroup

Active work in several standards bodies on International and European level

EMC (C7) committee

Regular meetings were held on a bi-monthly basis, highlighting upcoming issues with numerous interference sources and discussion as well as preparation of standardisation issues.

The ENAMS2 (enams.de) receivers finally will go into production, with a batch of 50 units to be produced by a specialised company. After a lot of promotion work, 20 units were finally reserved by future-oriented member societies, another batch of 20 units[1] will be deployed in Germany by DARC. IARU Region 1 will acquire 10 units for deployment at the discretion of the Executive Council.

[1] In the meantime, additional reservations have been registered.

Standardisation work

As seen from IARU Region 1, standardisation

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work is based on participating in global activities, in IEC and ISO technical committees and European activities, focusing on CENELEC and ETSI work.

The main activities concerning IEC are supported by the IARU representative in CISPR, which is the IEC technical committee focusing on EMC (Electromagnetic Compatibility).

The year 2025 saw an increase in standards development work in ETSI (European Telecommunications Standardisation Institute). We as IARU Region 1 have been tasked to oversee the revision of the ETSI standard EN 301 489-15 V2.2.1 (2019-04), covering the EMC requirements for amateur radio equipment), A lot of work lies ahead of us.

EMCOMM – Emergency Communications - Greg, G0DUB

Introduction

Across IARU Region 1, our local Governments have different expectations of Amateur Radio in emergency and disaster response. As public communications systems evolve, there is a continuous pressure for us to do the same balanced with the need to use systems which are proven to be reliable and affordable to Radio Amateurs. These requirements are difficult to balance between the perception that we must be 'modern' to be relevant against the current worst-case scenarios in many countries being a failure of power and internet systems. Through 2025 the large-scale power outages Spain and Portugal in April and Hurricane Gabriele in the Azores allowed emergency communications groups in those countries to use the full range of facilities from HF to VHF to be ready to assist.

Services provided by National Societies

The list of recognised points of contact in each country is continuously updated at https://www.iaru-r1.org/about-us/committees-and-working-groups/em-comm/national-co-ordinators/ and continues to reflect a mix of groups well integrated with their National Societies and those who are independent. 2025 had the continuing frustration of finding out about changes via Social Media rather than being reported by either the outgoing coordinator or the national society.

Can I remind everyone again that updates should be passed to me at g0dub@iaru-r1.org so I can make the appropriate contacts and updates to the records I keep.

As stated above, the different requirements placed by national governments on their voluntary responders does make comparison between groups difficult, but the differences also allow us to potentially suggest new things to our members and users based on what we have seen work in other countries.

Meetings and Communication

The Friedrichshafen emergency communications meeting required to be held by the Varna Conference of 2014 continues to take place. In 2025 the venue changed to the Admin building which provided a good balance between room size and proximity to the main event. The change also allowed a first attempt at a hybrid meeting with about a 50:50 split between online and physical attendees. A lot was learned from trying to do this single-handedly and improvements will be made for the 2026 meeting.

Alongside the physical meeting there was one Virtual meeting held for Coordinates to discuss emerging issues and training requirements. The two styles of meeting draw different audiences and it is hoped moving to a more hybrid for-mat for the Friedrichshafen meeting will improve information sharing between countries.

Liaison with other committees

Support to other committees such as the EC and STARS continued in 2025 and the group finalised its contribution to the 'Ethics and Operating Procedures' manual on Emergency Communications. Another focus through the year was representing the concerns of the Emergency Communications community to the IARU restructuring proposals. The community has its own Nextcloud file store which is becoming restricted for space but moving our file store onto the IARU - R1 NextCloud system risks bringing more capacity issues onto that system, more work needs to be done on making this migration happen in 2026.

HF – HF committee - Jacques, F6BEE

Introduction:

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This is the report from the IARU-Region 1 HF Manager / HF Committee chair, covering the period between General Conference Zlatibor 2023 and Interim Meeting Paris 2025.

Background:

The HF Committee addresses topics on frequencies below 30 MHz.

Key actions:

Chaired the C4 session at IARU-R1 Paris Interim Meeting in April 2025.

For several years, the World-Wide Radio Amateur Foundation (WWROF) has been managing the tasks of log checking, results editing and publication for the IARU HF Championship (contest), on behalf of the ARRL. Following the agreements between WWROF and IARU-R1, the R1 HF Chair reviewed in 2023, 2024 and 2025 the contest scores and logs for the IARU MS Headquarters category where a majority of Multi Operator / Multi Transmitter / Multi mode / Multi location stations from Europe are competing.

With the limited available material and short available time allocated by WWROF, the scores have been endorsed before official results publication late December 2025 for the July 2025 edition of this IARU contest.

Paper PA25_C4_06 proposing more involvement of the Region 1 in the IARU-HF contest management and adjudication has been presented to C4 and C5 at the Paris 2025 Interim Meeting but has been rejected by the delegates.

In agreement with Recommendation ZL23_C4_04, the Region 1 HF Committee Chair liaised with NCDXF to understand the proposals and progress for their DQRM tracking solutions. As of February 2024, the NCDXF was still looking for a project manager though they got at least one serious company offer and it seems the project is on hold.

With the expert assistance from Tom Kamp DF5JL, the former HF Manager/C4 Chair, questions from individual amateurs from Region 1 about the opportunity to set into operation digital bots or HF to internet gateways were addressed. The main issues are the authorization from local spectrum management agencies and frequency occupancy, in addition to the interest of such.

Gather information about IARU-R3 Band Plan revision project. A paper from the WIA presented to IARU-R3 2024 General Conference was reviewed with great help from the RSGB band plan specialist. This project will be closely followed as the HF band plans are still to be harmonized between all 3 Regions.

The overview of the 160 m allocations within IARU Region 1 was updated and published.

Since the beginning of 2025, year of the 100th anniversary of IARU, we tried to collect data on IARU centennial special operating events organized by Region 1 Member Societies. Unfortunately, the responses from HF Managers subscribed to the HF-Manager mail reflector was very low to nothing.

A general remark: there is unfortunately very low motivation, contribution and feedback from most MS HF Managers of Region 1. Does that mean that everything is working perfectly?

The HF-Manager reflector is correctly working according to checks on 25 January 2026…

HF beacon Region 1 - Dennis, ZS4BS

Introduction:

The report of the Region 1 HF Beacon Coordinator for 2023 to 2025.

Activities:

My main work is updating information of the various beacons as received from beacon co-ordinators or from radio amateurs who listen for the beacons. It has mainly been changes to frequencies and sometimes a location change.

Raoul Coetzee, ZS1C is busy developing and testing a CW beacon on 473 kHz, he is situ-ated on the West Coast of South Africa, grid JF96.

The HF Beacon list is available at https://iaruhfbeacons.wordpress.com/

HST, High Speed Telegraphy - Oliver, Z32TO

Main event in 2025 was the 21st IARU HST World Championship that took place from 15 – 19 October in Igalo, Montenegro. Well organized and well attended.

As usual, an in-person HSTWG meeting took place during the championship. Topics concerning rules updates as well as organization of future HST championship were main topics of the meeting. Members were satisfied with how the group works and the process in general.

IARU Intruder Warch Service (IARU IWS, ex.

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IARUMS) - Gaspar, EA6AMM

Restructuring of the IARU Monitoring System (IARUMS): transition to the global IARU Intruder Watch Service (IARU IWS).

In April 2025, during the *IARU Region 1 Interim Meeting* held in Paris, the transition from the *IARU Monitoring System* to the current *IARU Intruder Watch Service (IWS)* was officially communicated to all member societies of Region 1. The reasons for this transition, the related changes and the new *Terms of Reference (ToR)* of the Working Group were explained through the release of a consultative document and a face-to-face session (also streamed online) attended by several member societies representatives.

Prior to this event, online meetings were held with the active members of the IARUMS in Re-gion 1 to inform them of the changes. The main modifications include:

The renaming of the Working Group.

A shift from a regional to a global structure.

An expanded scope of monitoring, now covering not only amateur HF bands but also amateur satellite frequencies.

Regarding this last specific matter, several online meetings were held with the IARU Satellite Advisor, Hans Blondeel, PB2T, to organize the monitoring of these frequencies and to establish reporting procedures for intrusions. We hope to receive a final protocol soon.

As of the date of this report, regular monthly reports (for publication in the *IARU IWS Newsletter*) are being received from the following R1 Member Societies: DARC (Germany); IRTS (Ireland); PZK (Poland); REP (Portugal; since March 2025); SRAL (Finland); URE (Spain); VERON (Netherlands).

Most of the monitoring work of our amateur radio bands continues to be carried out by the volunteers of the IARU Region 1 member societies. Although communication campaigns have led to the involvement of several Region 1 mem-ber societies (currently, 29 have appointed a national coordinator), the number of volunteers who actively and regularly monitor the spectrum or submit reports has increased by only one (REP, Portugal).

Intruder Activity

Currently, most transmissions received in amateur HF bands originate from radars (most of them *Over The Horizon*, of military origin), military stations using military digital modes, or from jammers linked to *Electronic Warfare* activities.

Unfortunately, despite the daily reception of a large volume of such transmissions, typically long-lasting, high-power and wideband and therefore significantly impairing the spectrum allocated to amateur radio, the IARU IWS currently can do no more than record them, maintain a historical archive in its database and publish them monthly in the Newsletter.

It is considered that submitting concrete information to the international regulatory body regarding the large number of such transmissions could perhaps help raise awareness of the serious impact these types of transmissions pose for radio amateurs and potentially influence future regulations.

IARU IWS Webpage

An update of the IARU IWS official website is planned to reflect the new name of the Working Group and its ToR, as well as to update the IARU Intruder Watch Wiki.

IARU IWS Database

During the Paris Interim Meeting (April 2025), a new functionality of the online IARU IWS Database application was presented: IARU IWS Analytics.

This feature makes it possible, based on the data contained in each report, to profile the activity of specific non-amateur transmissions or individual transmitters, as well as to generate a wide range of statistics on the non-amateur signals reported by the Working Group. Access to this functionality requires registration.

Below are just a few examples of the capabilities of this tool (using data from July 2025, the full month preceding the drafting of this report).

Image 1: All the non-amateur transmissions received during July 2025 distributed by transmission modes.

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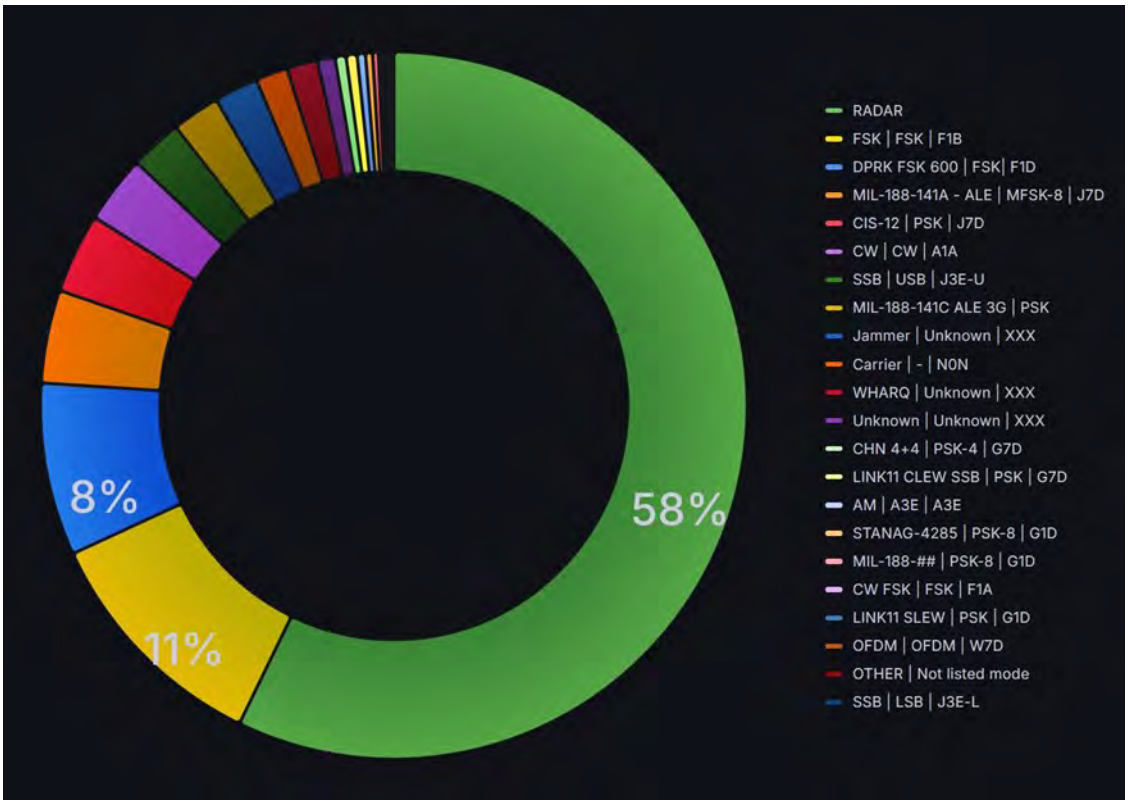
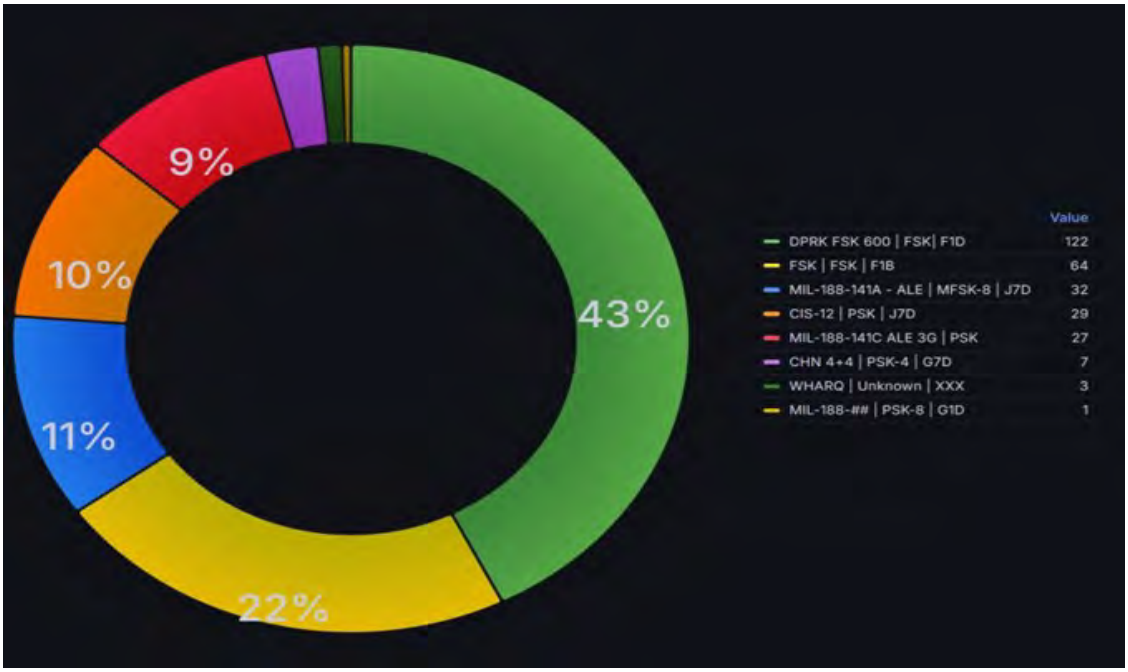


Image 1:
All the non-amateur trans-missions received during July 2025 distributed by trans-mission modes.

Images 2 and 3: non-amateur transmissions sent in MIL and DIPLO modes on 20 m during July 2025



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Images 4 and 5: transmissions sent by the RUS OTH Radar Contayner (BW = 12 kHz, 40 pps) on 20 m; reports selected: user EA6AMM only. July 2025. Images 6, 7 and 8: Transmission sent by the North Korean Embassies using the proprietary mode DPRK 600 (FSK. Shift = 600 Hz. 600 bd? all bands, July 2025.

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Open-Source coordinator - Marc, HB9SSB

Preamble: What the Open-Source Projects Coordinator (OSPC) does in general

Promote the concept of open source in the radio industry

Explain open source to the amateur radio societies, the license forms, the ad-vantages of open source.

Document radio related open-source projects

Help the industry move to open source

Fund open-source projects in any reasonable way

Organize or help to organize tradeshow, hamfest presentations (Innovation Zone, FOSDEM Devrom and Infobooth etc.)

OSPC Activities in 2025

In February, I organized a one-day openRTX hackathon in the Brussels Hackerspace on Friday before FOSDEM. The openRTX projects creates a free and opensource firmware for radios, employing the M17 protocol and the free and open source Codec2 vocoder. During the hackathon the future direction of openRTX development was discussed and defined. This hackathon was a great success.

Just after this hackathon, FOSDEM'25 took place in brussels, the world's largest open-source developers conference. At FOSDEM'25 I co-organized a Radio Devroom (together with Bastian Cabay and Sylvain Azarian), this devroom has a HUGE success, the room was full at any time to the extent that we could not accommodate everyone for security reasons. We got excellent feedback from both speakers as well as attendees.

In April, I attended the IARU-R1 interim meeting and IARU 100-year celebration in Paris, a welcome opportunity for me to get to know our member societies and working group chairs an deepen contacts. Notably I discussed with Nestor Jacovides 5BAHZ the impact certain EU regulations (RED/CRA etc.) have on open-source development in general and its use in amateur radio in special. Nestor invited me to join the PRC as a member which I, of course, accepted.

in June, during the HAMRADIO fair in Friedrichshafen, I was again involved in making the IARU R1 Innovation zone a success. I invited promising radio related open-source projects to present their project at the innovation zone. openRTX and mmdvm were present as well as the ZigRadio project which was presented to the public for the very first time. The highlight of the innovation zone, however, was that I invited content creators (youtubers and podcasters) to the innovation zone to give them a stage and meet their audiences. During the content creators meeting, the In-novation Zone was the most crowded place at the whole fair.

After the HAMRADIO fair, I started planning the FOSDEM'26 already. It is in early 2026 but needs careful planning as I want to take this opportunity to get in contact with as many radio related projects as possible and try to find out in which open-source communities are licensed amateur radio operators active.

In October, I took the opportunity of a private travel to Cyprus to again meet with Nestor Jacovides 5BAHZ to further discuss the impact of EU regulations on the development, use and integration of free and open-source software into devices used by radio amateurs.

PDRA, Information Programme for Disabled Radio Amateurs - Riri, OD5RI

Introduction

This report outlines the activities and status of the Programme for Disabled Radio Amateurs (PDRA) over the past three years. During this period, the coordinator continued to hold the position and maintain oversight of the programme, despite limited operational activities.

Programme Overview

The Programme for Disabled Radio Amateurs (PDRA) aims to promote inclusion, accessibility and participation of persons with disabilities in amateur radio activities. The programme aligns with international efforts to support equal opportunities and social participation for persons with disabilities.

Activities During the Reporting Period

During the three-year reporting period, the PDRA did not conduct regular technical, training, or outreach activities due to limited resources and operational constraints.

However, the programme consistently participated in the annual celebration of the International Day of Persons with Disabilities (3

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December) each year. These observances focused on:

Acknowledging the importance of inclusion and accessibility in amateur radio

Raising awareness about the role of radio communication in empowering persons with disabilities

Reaffirming commitment to the values and objectives of the PDRA

Coordinator's Role

Throughout the reporting period, the coordinator:

Maintained the PDRA's status and continuity

Represented the programme during International Day of Persons with Disabilities celebrations

Preserved programme records and readiness for future reactivation

Conclusion

Although no major activities were conducted during the past three years, the PDRA remained formally active through its annual recognition of the International Day of Persons with Disabilities. The programme remains positioned for future development should resources and participation improve.

PRC, Political Relations Committee - Nestor, 5B4AHZ

Introduction:

The mandate of the Political Relations Committee (PRC) is to represent IARU Region 1 in political bodies on matters relevant to the amateur service. The PRC pages on the IARU R1 website are at https://www.iaru-r1.org/about-us/committees-and-working-groups/prc/. This paper gives an overview of the activities of and challenges facing the PRC since its re-port to GC 2023.

Membership of the PRC:

At the GC 2023 in Zlatibor it was announced that the Chair of the PR Committee, Séamus EI8BP would be standing down. No replacement was found during the GC2023 proceedings. A few weeks after the GC 2023, communication was received from Nestor 5B4AHZ, who expressed an interest to take over the role of PRC Chair. The handing over process be-gun and transfer of the PRC was completed by June 2024.

Over the period that followed, June 2024 until June 2025, most EU meetings were co-at-tended by Seamus EI8BP and Nestor 5B4AHZ. They also co-attended the IARU Noise Measuring Campaign meetings, the EMC Committee meetings and SRLC meetings, providing their support for matters in the political field.

Current membership of the PRC is listed on the IARU R1 website. New members who wish to contribute to the work of PRC are always very welcome.

PRC Activity:

PRC is actively involved in the European Commission meetings of the Electromagnetic Compatibility Working Party (EMC WP) and Expert Group on Radio Equipment (EGRE) and attends the Radio Spectrum Policy Group (RSPG) public stakeholder meetings.

Please refer to **Appendix A** for a comprehensive summary of key meeting discussions pertinent to the amateur radio service.

Following the European Commission's decision to transition the management of reconfigurable radio system rules from the Expert Group on Radio Equipment to the Expert Group on the Cybersecurity of Products with Digital Elements (CRA-EG), an application for membership was submitted to the CRA-EG in January 2026.

Moreover, the PRC Chair also attends the IARU R1 Noise Measuring Campaign meetings, the IARU R1 EMC Committee meetings and IARU R1 SRLC meetings

PRC Actions:

In December 2024 a paper was submitted to the European Commission EMC WP titled "Concerns Regarding Wireless Power Transfer for Electric Vehicles (WPT-EV) and its Impact on Radio Communications Services". During the relevant meeting the PRC had the opportunity to present the IARU R1 position on the matter.

A Joint PRC and SRLC response to the IARU restructuring consultation was prepared in June 2026.

In November 2025 a comprehensive guidance document was published to help the amateur radio community understand the key aspects of the European Union Cyber Resilience Act (CRA) (Regulation (EU) 2024/2847).

In December 2025 the PRC circulated guidance to the IARU R1 MS, regarding the new EU import

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duties applicable to products purchased from non-EU countries that will be set in force during the summer of 2026.

During Q1 of 2026 a comprehensive guidance document was published to help the amateur radio community understand the European Union's new Artificial Intelligence Act (AI Act). (Regulation (EU) 2024/1689).

Additionally, the PRC continues to make IARU R1 visible by responding to consultations on various topics of interest of concern to amateur radio. The PRC responded to the European Commission public consultations titled:

Review of the Digital Decade policy programme

EU Arctic policy.

See Appendix B for more details.

Recommendations and Way Forward:

It is extremely important that IARU R1 continues to have a voice in various appropriate and relevant government agencies. There is a huge overlap between spectrum protection, interference and political issues. The two-pronged approach of SRLC and PRC should continue to ensure that our voice is heard.

R1 Satellite coordinator - Graham, G3VZV

Operational satellites

At the time of writing, there are thirteen OSCAR satellites carrying amateur radio voice transponders, all of them, except QO-100, are in low earth orbit.

There are also many satellites with digital and APRS capability including the ARISS Digipeater and SSTV payloads on the ISS.

These activities can change from day to day so to identify currently available Oscar satellites visit https://www.amsat.org/status/

Other active satellites

As reported previously, there continue to be satellite launches which include downlink systems operation in our 435 – 438 MHz amateur satellite spectrum which have not requested IARU frequency coordination.

QO100 - EsHail-2

This Geostationary Spacecraft located at 25,8 degrees east carries two amateur transponder and uses 2,4 GHz for uplink and 10 GHz for downlinks. It was launched in November 2018 and became operational in February 2019. Activities on both the wideband and narrowband transponders continue satisfactorily.

As previously reported, there continue to be several active investigations underway to uncover other possible routes to GEO or HEO/GTO orbits so that amateurs in other areas can experience similar opportunities in the future

Frequency Coordination

The IARU Frequency Coordination Panel has continued to be very active, it meets online on a two-to-three-week cycle and has now dealt with almost 1 100 requests. It works to ensure that all satellite projects, which are intending to use frequencies in the amateur satellite ser-vice, are compliant with the requirements for such use.

Some requests are declined when they do not demonstrate that they meet the requirements in Art 25 section II of the Radio Regulations.

Full details of all satellite projects about which the Coordination Panel is aware can be found at http://www.amsat.org.uk/iaru/ and information about the Coordination process itself is available at https://www.iaru.org/on-the-air/satellites/

Education Outreach

Education Outreach forms an important part of many amateur radio space missions. This includes the small Cubesats, microsatellites and the ARISS payloads on the International Space Station.

SRLC, Spectrum and Regulatory Liaison Committee - Barry, G4SJH

Overview

Spectrum defence is the core topic driving the SRLC agenda and work plan. Throughout the year, SRLC volunteers have been active in several Region 1 regulatory groups dealing with matters outstanding from WRC-23, preparatory activities for WRC-27, regional regulatory developments and technical studies. These activities have taken place in Europe (CEPT), Russian Federation (RCC) and the African Telecommunication Union (ATU).

CEPT Activity Summary – WG-SE, WG-FM and associated Project Teams CEPT WG-SE

In the CEPT Spectrum Engineering working group the key topics continue to be Wireless Power Transfer (WPT) which has a potential impact in the LF and HF bands and UWB technologies in the GHz bands. Project Team SE24 is a key group carrying

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out spectrum compatibility studies on a variety of topics. These include unwanted emissions from WPT (including WPT-EV -Electric Vehicle charging) which have the potential for cause interference in our LF and lower HF bands. Technology proposals using UWB techniques include micro-wave security scanners (MWSSc) in the 3,6 - 10,6 GHz range, outdoor security scanners in the 76,5 − 80,5 GHz band, UWB band extension from 8,5 GHz to 10,6 GHz.

The work items on WPT have proven to be particularly challenging. The results of the stud-ies are used to develop regulatory recommendations and decisions regarding in-band and out of band emissions that can have an impact on interference in our LF and HF bands.

The proposals for UWB technologies usually cover a wide range of frequencies ranging from the lower GHz bands up to the higher mm-wave bands. Often the studies show there is a small possibility for interference into amateur services, but the probability is low and requires very specific operating conditions which are unlikely. SRLC ensures the amateur service voice is heard in these discussions.

SRLC volunteers participated in three WG-SE plenary meetings and several project team and correspondence group meetings on the detailed studies during the year.

CEPT WG-FM

In the CEPT Frequency Management working group, the major topic the SRLC engaged in was the development and approval of the European regulatory decision concerning the protection of the European Galileo satellite navigation system in the 23 cm band. The decision covers only the part of the band relevant to the Galileo system and the impact on the amateur services reflects exactly the outcome of the agreed discussions in the ITU-R.

CEPT WG-FM approved for publication a new Recommendation on emission limit requirements for Wireless Power Transmission (WPT). The SRLC contributed to this work which has been challenging when considering the unwanted emission levels satisfactory to fully protect amateur radio services.

Additionally, the IARU chairs the Radio Amateur Forum Group in WG-FM supporting the European Communication Office (ECO) and maintenance of the CEPT amateur service deliverables on HAREC and the CEPT licence.

SRLC volunteers participated in three WG-FM plenary meetings and directly contributed on the Galileo decision including the public consultation.

CEPT WRC-27 Preparations

The SRLC participated in the CEPT Conference Preparatory Group (CPG) plenary and project teams during 2025. There are six WRC-27 agenda items that are of interest to the amateur community. The SRLC has contributed to the discussions with the IARU Global International Team to develop and agree IARU positions on these agenda items. These positions have been presented in the CPG and will be reflected in the respective CEPT Briefs on the relevant WRC agenda items.

RCC Activity Summary

SRLC volunteers participated in two RCC WRC-27 preparatory meetings during 2025. The agreed IARU positions form the basis for participation in these meetings and a watching brief is maintained on these agenda items.

ATU Activity Summary

SRLC volunteers participated in the 7th ATU Task Group on Spectrum Recommendations which is developing a recommendation entitled “Strengthening the role of Amateur Radio in Africa”. The recommendation covers a wide field of amateur radio topics especially relating to regulatory reform to encourage wider take up of amateur radio across the continent.

Miscellaneous

The SRLC strives to circulate information on all the activities by sharing reports from these groups as developments occur or meetings take place. During the year 9 external meeting reports have been shared with the SRLC mailing list (and other groups if deemed appropriate).

Acknowledgements

As always, the SRLC depends on the willingness of the volunteers to support the work plan agreed with the Executive Committee. The chair extends his thanks to all these volunteers and looks forward to another year of pro-active engagement in 2026.

STARS, Support to The Amateur Radio Service – Remy, PA0AGF

In 2025 four issues of the three-monthly

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newsletter have been distributed to the members of the STARS working group.

The mailing list also included several amateurs active in their country not being a member society. The decision for including them has to do with the philosophy that it is good to keep them updated on what is going on the in IARU and in case of questions to help them out. It may happen that finally they want to represent their country via am IARU membership.

General subjects:

News from IARU-R1

Call for candidates for the EC election in 2026

Correcting society information on IARU-WW website

Input from societies and countries on local activities

Over time various projects in the societies have been described such as:

Finishing a project in Mali which was sponsored by the IARU.

Discussions about a project in Tanzania which was sponsored by the IARU

Finding a way to get licenses in Uganda. Unfortunately, this appears to be a long run as there is no support from the Government

An addition to the newsletter:

As of the third issue, the content is also available in Arabic. Before that, all articles were in English and French. Thanks to Mr Oumiloud Mimoum, 7X5MO, who takes care of the translation and adds some nice pictures to the bulletin.

Experience:

Some member societies have reacted on subjects discussed in the newsletters

Request for feedback is hardly given

Motivation:

Very much willing to support the societies

Learn what is going on in the societies in conjunction of finding out how to support them

TWG, Technology Working Group – Mike, OE3MZC

No report has been provided.

VHF+, VHF/UHF/SHF committee (C5) – Rasto, OM3BH

Band planning:

In recent years, the issue of the 23 cm band has been a hot topic. There has been much discussion in the microwave and EME community about the 23 cm band. The reason for this is GNSS Galileo, which operates in the 23 cm band. In some European countries, restrictions on amateur services have already been imposed by national authorities. At the interim meeting of IARU R1 in Paris in April 2025, most of the discussion points concerned the future of 23 cm.

As the results of the CEPT ECC meeting were not known at that time, it was agreed that after the CEPT meeting, when the decision would be known, a working group led by

Barry, G4SJH would be set up to develop a new band plan for 23 cm that would take into ac-count the requirements of both CEPT ECC decision and the amateur service. In the fall of 2025, the working group was formed and prepared a draft of a new band plan for the 23 cm band, which will be submitted for approval at the IARU R1 conference in Vienna in 2026.

Coordination of beacons:

Since 2024, the position of beacon coordinator had been vacant and IARU R1 does not have a beacon database. SQ6EMM and PH0UNX have been appointed to the position of coordinators and are currently working on coordinating beacons and beacon database is in progress.

Contesting:

No problems have been reported in this area. The evaluation robot seems to be debugged, IARU-organized contests are evaluated regularly and prizes are awarded at HAM RADIO.

Subregional contests are also evaluated on the server.

VHF+ beacons – Dawid, SQ6EMM

I created a github account for IARU R1 C5 so we can store in a public place with version control all IT related data (I consider beacons IT data) https://github.com/IARU-R1-C5. Inside I created 4 repositories, the most important are: https://github.com/IARU-R1-C5/beacons - where you can find all information about COOR-DINATED beacons + old database. https://github.com/IARU-R1-C5/bandplan - where you can find a band plan from VHF Man-agers handbook in format consumable by application developers (we really need this). (there are yet two other not public that contain code of pskreporter and

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dxcluster data grab-bers/parsers). Here you can find all track of all coordinated beacons - and as you can see 8 beacons have been updated/ coordinated. https://github.com/IARU-R1-C5/beacons/issues?q=is%3Aissue

In the meantime, I was in communication with the owners of beaconspot.uk webpage to enable their cooperation with IARU (in scope of the beacon database) but it seems they have lost an interest in it... I cry but...

I was also working in the background on software (that is now ready but not yet formally run) that will gather data from pskreporter and dx clusters about all beacons and save them in our (IARU) database so we can at least see what beacons are out there.

Youth – Mario, EA1JAY YOTA Summer Camp 2025

The 13th YOTA Summer Camp took place from August 18–25, 2025, at the Château de Jambville, near Paris, France. The event was organized by the Radioclub de Provins (F6KOP) in close cooperation with the IARU Region 1 Youth Committee. For the first time, the entire camp was organized *by young radio amateurs for young radio amateurs*, with all main organizers under the age of 30.

The camp brought together 76 young radio amateurs aged 15 – 25 from 28 countries, representing IARU Regions 1, 2 and 3. Several countries participated for the first time or after a long absence, further strengthening the global and inclusive nature of the YOTA programme.

The YOTA Summer Camp continues to be a flagship activity for youth engagement in amateur radio. Beyond the technical training and skills development, the camp promotes international friendship, teamwork, leadership and intercultural exchange, creating a unique learning environment both on and off the air.

Programme Overview

The 2025 programme combined traditional YOTA activities with several new and innovative elements. Key highlights included:

ARISS Contact: A major milestone of the camp was a successful live contact with astronaut Michael Fincke KE5AIT aboard the International Space Station. Twenty participants from different countries asked pre-approved questions during this once-in-a-lifetime experience, using the special event call sign FX5YOTA.

Workshops: Daily hands-on workshops formed the backbone of the programme. Participants built CW paddles, assembled and programmed a K3NG CW keyer and took part in additional practical sessions such as high-altitude ballooning, ARDF, Microbit programming, rocket building and satellite operation.

Ham Shack Operations: The HF, satellite and repeater stations were set up and operated collaboratively by participants and staff. Operating under the call signs TM25YOTA (HF) and FX25YOTA (SAT/EME), more than 3 500 QSOs were completed throughout the week.

FCC Exam Sessions: Three FCC exam sessions were organized on-site, allowing participants to obtain or upgrade US amateur radio licenses. Nearly 100 candidates took part across the sessions, with a high overall success rate.

Presentations & Training: Participants and staff delivered short technical and inspirational

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presentations covering topics such as DXpeditions, contesting, mobile operation, digital modes, CW, ARDF and the work of the IARU.

Intercultural Evening: A traditional and highly anticipated part of the camp, where each national team presented food and drinks from their home country, fostering cultural exchange and informal interaction.

Paris Excursion: A full-day visit to Paris included a boat tour, free time near the Eiffel Tower, a visit to the Cité des Sciences and a unique EME operation from a radio telescope.

Communication, Media & Youth Engagement

Communication throughout the camp was managed via a dedicated Discord server, used both before and during the event for coordination, schedules and real-time updates. Participants were divided into small international groups, each supported by staff and Youth Committee members.

Media coverage was handled by a dedicated PR team from the Youth Committee, with daily updates on social media, professional photography and video production. This significantly increased the visibility of the event and highlighted the energy and professionalism of the YOTA programme.

Support and Acknowledgment

The YOTA Summer Camp 2025 was made possible through the generous support of numerous sponsors, including IARU Region 1, WWROF, YASME Foundation, REF, OM Power and several individual contributors and organizations. Thanks to this support, participation fees were kept low, ensuring accessibility for young radio amateurs from a wide range of countries.

Conclusion

The YOTA Summer Camp 2025 in Jambville was a major success. Despite logistical challenges and the complexity of organizing a large international event, the camp delivered a rich technical and skill development programme, meaningful cultural exchange and unforgettable experiences such as the ARISS contact. The event strengthened international cooperation among young radio amateurs and further reinforced YOTA as a cornerstone of youth development within amateur radio.

HAM Radio Friedrichshafen

The IARU Region 1 Youth Committee (YC) had a strong and visible presence at HAM RA-DIO Friedrichshafen, with activities focused on the youth booth, main stage appearances and the annual Youth Meeting.

Booth Setup and Engagement. The YC booth was located within the IARU zone, close to the main IARU booth and the in-novation area. As in previous years, the booth was designed to be open and welcoming, encouraging visitors to stop by, interact and engage with youth-related activities.

The booth featured a range of PR materials, including flyers, stickers, posters and visual decorations, as well as interactive elements aimed at attracting young visitors. The Morse key “Battleship” game was once again available, allowing participants to try Morse code in a fun and approachable way. The booth was also part of the official HAM Rallye, a paper-chase style activity for young visitors across the fairgrounds.

In addition, the YC organized a live, on-site edition of the well-known “Offline Contest”, traditionally played during YOTA camps. Participants took part in communication and coordination challenges away from the radio, focusing on teamwork, listening skills and rule-following.

Thanks to the support of AATiS e.V., the winners of the Offline Contest received radio-related kits as prizes. The Youth Committee would like to sincerely thank AATiS e.V. for their initiative and generous contribution in supporting youth activities at the event.

Throughout the fair, the booth served as an important meeting point for young radio amateurs to connect, exchange experiences and learn more about YOTA and YC activities. Many visitors, including experienced OMs and YLs involved in youth work, expressed strong appreciation for the visible youth presence at the event.

Main Stage Activities. The December YOTA Month (DYM) and YOTA Contest Prize Ceremony took place on the main stage, following the same successful format as in previous years. Winners were recognized with plaques and prizes, highlighting outstanding youth participation and achievements within the YOTA community.

During the Flag Ceremony, also held on the main stage, the YC presented a retrospective of the YOTA Summer Camp 2024 in Czechia and

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Summary of 2025:				
Round	DXCC entities	Stations	Total score	Avg score / station
1st	57	597	29 766 818	49 861
2nd	59	652	28 952 035	44 405
3rd	50	555	30 636 717	55 201

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introduced the upcoming YOTA Summer Camp 2025 in Jambville, France, providing the wider HAM RADIO audience with insights into recent and future YOTA flagship events.

Annual Youth Meeting. The Annual Youth Meeting was held in a dedicated room at the fairground. The session included a presentation of the Youth Committee's work, outlining ongoing and upcoming projects and opportunities for youth involvement within IARU Region 1.

In addition, participants shared experiences from the DL YOTA Subregional Camp, the Youth Contesting Programme (YCP) at ED8Y and an initial proposal and discussion on reviving the World-Wide Young Contesters (WWYC) initiative.

The meeting provided a valuable platform for exchange, discussion and networking among young radio amateurs, reinforcing the role of the Youth Committee as a central hub for youth activities within the region.

YOTA Contest

Written by Tamás Varró HA8RT - YOTA Contest Organiser.

Ham radio is changing activity on the bands is often sparse, so many operators need an extra push to get on the air. That push can come from DXpeditions, themed events, or contests. Therefore, the YOTA Contest was created to:

Increase on-air activity and give everyone a reason to operate.

Bring generations together through a shared event and awards, reducing the "youth vs. elderly" gap.

Promote contesting (Radiosport) because it builds core skills: technical and propagation knowledge, accurate logging, operating discipline and teamwork.

We noticed many young operators were comfortable in small local youth contests but felt lost in large international contests. To fill that gap, MRASZ partnered with IARU Youth WG and launched the YOTA Contest in 2021, supported by our own log-checking and evaluation software.

Scheduling the YOTA Contest is tricky because it must fit around school holidays so young operators can take part. That is why the Spring (1st) round dates often change from year to year, while the Winter (3rd) round is usually held on a weekday near the end of the year, when many people are off from both work and school.

Rules and results: https://yotacontest.mrasz.org/ and https://contest.ham-yota.com/

YOTA Contest participation is now mostly European, with limited interest from other regions. Country-by-country activity, especially the number and visibility of YOTA stations, often reflects how strongly national societies support youth programmes.

The YOTA Contest is also more than Radiosport: it is a celebration of amateur radio. The award ceremony takes place during the DARC "HAM RADIO" convention, offering a chance for contestants to meet in person. Even if many of the oldest participants can't attend, we emphasize their presence because the contest has connected operators from about age 3 to 91 over the air.

73, Tomi HA8RT

DYM

Throughout the entire month of December, youth teams around the world become active using callsigns featuring the "YOTA" suffix. The primary objective of this initiative is to introduce young people to amateur radio and to encourage their active participation on the amateur radio bands. Over the years, these special event callsigns have proven to be highly popular among operators of all ages, with the associated award scheme providing additional motivation to search the bands and DX clusters for YOTA stations.

In 2025, a total of 59 special event stations took part in December YOTA Month, generating 95,084 QSOs worldwide. Since its launch in 2013, DYM has consistently demonstrated the strong and growing interest of young operators in amateur radio, firmly establishing itself as one of the flagship youth activities within IARU Region 1 and beyond.

In addition to the general participation awards available via the event website, the highest-scoring

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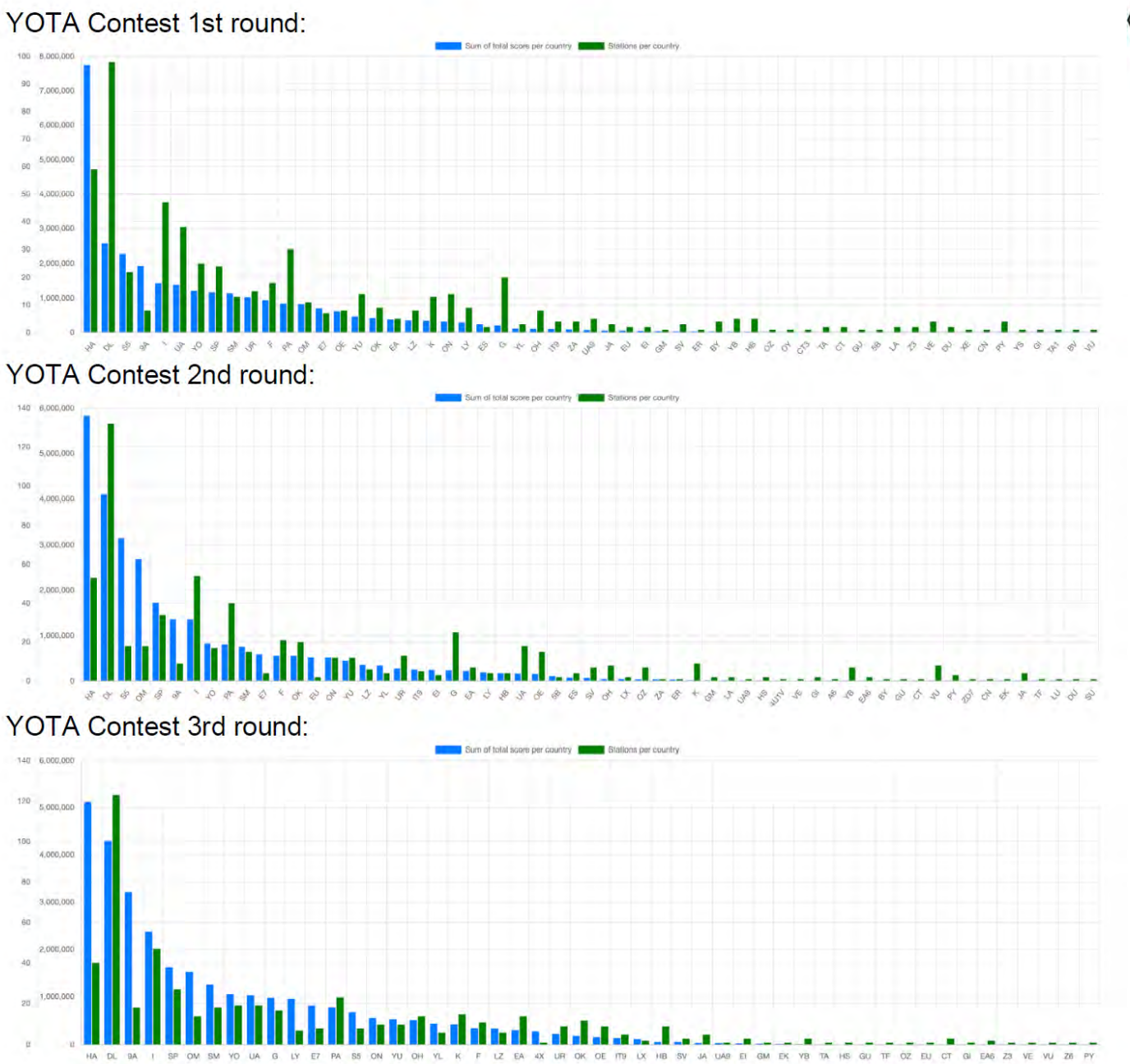

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operators were once again recognized with special wooden plaques, awarded in multiple categories by the DYM team. The Youth Committee would like to sincerely thank all organizers, volunteers and participating stations whose continued dedication and enthusiasm make December YOTA Month a success year after year.

PR

The Public Relations (PR) team continued to play a key role in supporting and promoting YOTA activities throughout the year, with a strong focus on event coverage, documentation and community engagement.

During HAM RADIO Friedrichshafen, the PR team provided on-site coverage of the various YC and YOTA-related activities taking place throughout the fair. This included document-ing booth activities, main stage ceremonies and youth-focused events, ensuring consistent visibility of youth initiatives within the wider amateur radio community.

The YOTA Dinner was once again organized alongside the Friedrichshafen event and was met with very positive feedback. With more than 60 participants, the dinner offered a relaxed and informal setting for newcomers and long-time YOTA members to meet, exchange experiences and strengthen personal connections within the YOTA network.

During the YOTA Summer Camp, the PR team

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was responsible for the complete media production workflow, including photography, video recording, editing and publication. Throughout the week, the team worked continuously to deliver daily updates across YOTA's social media platforms, supported by high-quality photos and videos that documented both the technical programme and the social life of the camp. This sustained effort played a major role in increasing the visibility and overall impact of the event.

In addition to media production, PR team members were fully embedded in the camp's activities, allowing them to document the event from within and share an authentic and engaging perspective with the online audience.

The Youth Committee would like to express its special thanks to Leon DL3ON, Martina OK2YLQ, Amelia IU5LVM, Markus DL8GM and Pieter ON1GPS for their outstanding dedication and continuous effort throughout the entire week of the YOTA Summer Camp, which made the extensive PR and media coverage of the event possible.

Youth Contest Programme YCP

The Youth Contesting Programme (YCP) is designed to introduce and support young radio amateurs in the field of radio contesting, providing hands-on experience in a team-based, international environment under real contest conditions, while also fostering mentoring, knowledge sharing and intercultural exchange.

Building on the success of last year's TM4Y YCP at the F6KOP radio club in Provins, France, the programme continued in 2025 with a new activity hosted by URE Las Palmas. A YCP was organized during the CQ WPX SSB Contest on 29 – 30 March, bringing together 24 young operators from 11 different DXCC entities.

Operating from the Canary Islands under the call sign ED8Y, the team achieved over 12,5 million points and nearly 3 500 QSOs, ranking first in the Canary Islands and second in Africa. Beyond the contesting results, the weekend also offered a rich cultural and social experience. Participants enjoyed a truly international atmosphere, discovering local cuisine, sharing barbecues, spending time at the beach and exploring the island together, further strengthening the bonds within the YOTA community.

Shaping the Future of Amateur Radio

What is "Shaping the Future"?

"Shaping the Future" is an initiative to find improvement areas to keep amateur radio up-to-date, launched by IARU Region 1 to modernise amateur radio organisations and ensure the hobby remains vibrant and relevant for future generations.

The initiative recognises that while amateur radio has withstood the test of time, the world around us has changed dramatically. New technologies emerge and evolve at unprecedented speed and

amateur radio must adapt to remain attractive to new generations while preserving its core values of experimentation, communication and public service.

How Did It All Begin?

The initiative was born from a virtual workshop held in October 2021. Approximately 100 radio amateurs from over 50 member societies participated in this week-long event, facilitated by a professional consultancy (Envoy Portfolio). Together, a shared vision for amateur radio's future was developed.

The workshop produced eight Strategic Objectives, which were then developed by seven volunteer workgroups throughout 2022. By November 2022, these were consolidated into six priority Scope Areas:

- Build a public relations programme to promote amateur radio
- Be recognised as useful to society
- Establish and maintain connections with other communities
- Training and self-development for radio amateurs
- Broaden the technical focus of amateur radio: 21st century technologies
- Include amateur radio in public education

A dedicated budget of 200 000 CHF was allocated to support the programme.

Timeline and some milestones

October 2020: Genesis and Formal Acceptance

Key Decision: During the 2020 Virtual General Conference, the Executive Committee (EC) proposed a new strategic approach to address

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"survival issues" and ensure amateur radio did not "go the same way as the dinosaurs". Member Societies readily accepted the proposal to move away from administrative agendas toward transformational change.

Coordination: Don Beattie, G3BJ, as President of IARU Region 1, led the initial push for this strategic pivot.

October 2021: The Virtual Workshop (Defining the Vision)

Key Decision: A major virtual workshop was held to build a collaborative picture of the future. Delegates adopted **Core Values**, a **Core Purpose** and an **Overarching Goal**: "Amateur Radio is booming across Region 1... one of the leading communities of expertise for science and technology enthusiasts". They identified **8 Strategic Objectives (SOs)** to reach this goal.

Coordination: The workshop was led by Don Beattie, G3BJ with significant support from Chris Deacon, a consultant with expertise in strategic transformation.

Late 2021 – 2022: Structural Foundation and Programme Board Creation

Key Decision: The initiative established a three-phase implementation process: Start-up (Phase 1), Initial Teams (Phase 2) and Per-Project Resourcing (Phase 3).

Governance Decision: The creation of the Programme Board (Steering Committee) to manage the programme, approve project scopes and coordinate funding.

Financial Decision: The 2021 General Conference allocated CHF 100 000 per year for 2022 and 2023 from reserves to fund these projects.

Coordination: Following the October 2021 elections, Sylvain Azarian, F4GKR (President) and Mats Espling, SM6EAN (Secretary) took over primary coordination.

2022 – 2023: Consolidation and Prioritization

Key Decision: To manage limited resources, the 8 SOs were consolidated into 6 primary Scope Areas.

Priority Decision: The Programme Board identified hamradio.org as the top-priority "horizontal" project to provide a digital foundation for all other areas.

Coordination: Sylvain Azarian, F4GKR and Mats Espling, SM6EAN directly coordinated the development of hamradio.org. Erwin, PE3ES was appointed as Project Manager for the ARMA (Amateur Relationship Management Application) project.

November 2023: Zlatibor General Conference (Revitalization)

Key Decision: To address a lack of volunteer momentum, the Programme Board was reoriented to actively select and prioritize projects rather than waiting for funding requests.

Technical Decision: Formal inclusion of ENAMS Noise Monitoring into the StF programme.

Financial Decision: Allocation of an additional CHF 50 000 specifically to support innovations.

Coordination: Mike, OE3MZC was officially appointed as the "Shaping the Future" Coordinator to help structure projects and identify contact points within Member Societies (ZL23_C3_Rec_23).

2024 – 2025: Focused Execution

Key Decision: Ongoing efforts focused on the deployment of ARMA (scheduled for September 2024) and finalized the structure of hamradio.org.

Strategic Decision: Grouping the 2025 Interim Meeting in Paris with the IARU 100-year celebration.

Current status

Significant challenges persist: HamChallenge was discontinued in 2025 due to declining participation, the hamradio.org website struggles with content creation despite completed technical design and ENAMS faces production threshold issues due to insufficient pre-orders. The transition from strategic planning to operational execution has revealed structural gaps in volunteer capacity and project management.

Several initiatives require immediate attention and decision-making. ENAMS needs resolution of its production viability crisis and dedicated project management for data consolidation. The hamradio.org platform requires a sustainable content creation strategy to fulfil its potential.

Future considerations include developing more

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realistic volunteer engagement models, establishing hybrid professional-volunteer project structures where possible and economically viable and creating adaptive management approaches that can respond to participation fluctuations. The organization is also exploring deeper integration with open-source communities and broader radio technology ecosystems.

A critical pattern has emerged across projects: high initial enthusiasm during planning phases consistently gives way to declining participation during implementation. This gap between strategic vision and operational execution has become the defining challenge of the initiative. Projects succeed when they feature structured teams with clear leadership, time-limited engagements and integration of professional services with volunteer efforts. The organization has learned that volunteer capacity must be the primary design constraint rather than an aspirational goal and that formal recognition through coordinator positions helps sustain engagement.

Key Projects and Their Status

ARMA (Amateur Relationship Management Application)

Status: almost completed, to be deployed.

ARMA is a custom-built online database that replaced scattered Excel spreadsheets and e-mail lists with a single, authoritative source for contact information across IARU Region 1. The application allows member societies and IARU officials to find and contact the right people for any topic, from EMC matters to youth activities. Erwin, PE3ES serves as Project Manager. The system was developed by an external IT company, tested by volunteers and will be available to all member societies after a planned functional update.

HamChallenge

Status: Discontinued in 2025

HamChallenge was an innovation competition designed to encourage creative ideas from the amateur radio community and beyond, with a particular focus on reaching schools and young people. Launched in 2022, it ran annually through 2024. However, participation declined steadily, with only one proposal received for the 2025 edition. The Executive Committee decided not to continue the competition, recognising that competition-based engagement models may face diminishing returns over time.

ENAMS (Electrical Noise Area Measurement System)

Status: Ongoing – seeking to reach production threshold

ENAMS is a specialised receiver designed by DARC (Germany) to measure and document the increasing levels of man-made electrical noise that threaten radio communications. The ENAMS 2.0 version offers improved capabilities including autonomous operation without Internet connectivity and higher measurement resolution.

The project requires a minimum of 50 pre-orders to begin series production (at approximately €2 000 per unit). As of late 2025, pre-orders had reached 42 units but had not yet met the threshold. The project also faces the broader challenge of establishing how collected data will be aggregated and presented in formats acceptable to regulatory bodies such as CISPR and ITU.

The Innovation Zone

Status: Active and successful

The Innovation Zone is an exhibition space established at the annual HAM RADIO fair in Friedrichshafen, Germany. Following a recommendation from the 2023 General Conference in Zlatibor, IARU Region 1 created this area to showcase radio-related projects from both amateur radio and broader technology communities.

First implemented at HAM RADIO 2024, it received highly positive feedback and has been continued in 2025. The zone features presentations, demonstrations and opportunities for visitors to meet project developers. It represents a successful way to promote innovation and build bridges to communities outside traditional amateur radio circles.

The hamradio.org Website

Status: Technical design complete; content creation remains challenging

The hamradio.org project aims to create a comprehensive web platform for promoting amateur radio to the general public, providing

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educational resources and serving as a hub for the amateur radio community worldwide. IARU owns the domain and the technical design was completed by Lichtsignale, the same consultancy that developed the IARU websites.

While the platform structure is ready, the persistent challenge has been generating sufficient content. Despite various strategies and outreach to member societies, finding volunteers willing to create or search for suitable articles has proven difficult. The design group continues to explore sustainable content creation approaches.

The Technical Working Group (TWG)

Status: Established in 2024; awaiting General Conference ratification

The idea of a Technical Working Group had been discussed for years within IARU Region 1. Following the 2023 General Conference recommendation, Mike, OE3MZC was appointed to develop Terms of Reference for the group at the Zlatibor conference.

In March 2024, the Executive Committee formally approved the establishment of the TWG after agreed Terms of Reference. A key feature of the group is its ambition to collaborate with organisations outside IARU where there are common interests, including arrangements for external experts to participate in discussions and projects (though voting remains restricted to member society representatives). The TWG's establishment requires ratification at the 2026 General Conference.

Open-Source Communities Relationships

Status: Coordinator appointed in January 2025

Recognising the growing importance of open-source software and hardware communities to amateur radio's future, the Executive Committee decided to formalise liaison activities. Following positive experiences at FOSDEM (a major European open-source developer conference) and the Spectrum conference, Marc HB9SSB was appointed as the first Open-Source Projects Coordinator in January 2025.

This role operates in close coordination with the Technical Working Group and aims to strengthen relationships with communities developing technologies such as GnuRadio, M17 and other open-source radio projects.

PR Initiative

Status: In development; exploring professional support options

Building a public relations programme to promote amateur radio has been a priority from the start.

IARU Region 1 engaged with a UK-based PR company to explore possibilities but found that traditional PR campaign approaches would be prohibitively expensive given the diverse audiences and geographic spread of the region.

The Executive Committee allocated up to 25,000 CHF to develop a focused PR plan. The current approach involves searching for a part-time PR expert (either internal or external) who could help drive the initiative forward, complementing rather than replacing the PR efforts that some larger member societies already conduct.

Key Lessons Learned

The Shaping the Future initiative has revealed important insights about volunteer-driven transformation programmes:

The challenge of sustained engagement: High enthusiasm during planning phases (over 100 participants in the 2021 workshop) gave way to far fewer volunteers during implementation. By 2024, only a handful of people remained consistently engaged in active projects.

Matching ambition to resources: Projects succeed when they have clear leadership, defined teams and realistic scope. The programme learned to focus on selected priority areas rather than attempting to advance all six Scope Areas simultaneously.

The value of professional support: Where professional services were engaged (ARMA development, hamradio.org design, the original workshop facilitation), concrete deliverables emerged. Purely volunteer-based content creation has proven more difficult.

Competition versus collaboration: While HamChallenge struggled with declining participation, the Innovation Zone succeeded by offering a collaborative, showcase-oriented format rather than a competitive one.

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Looking Ahead

As IARU Region 1 approaches its 2026 General Conference, the Shaping the Future initiative continues to evolve. Some projects have reached completion (ARMA), some have been discontinued (HamChallenge) and others face ongoing challenges (ENAMS, hamradio.org content). New structures like the Technical Working Group and the Open-Source Coordinator position represent the organisation's commitment to building bridges with the broader technology community.

The initiative remains a work in progress, adapting its approach based on experience. Its ultimate success will depend on the continued engagement of volunteers across member societies who share the vision of ensuring amateur radio thrives for generations to come.

ARMA – Amateur Relationship Management Application

Goal

The ARMA project was initiated to create a centralised online database for managing contacts and relationships within IARU Region 1. The application serves as a single source of information for all volunteers working for IARU R1 and its associated organisations, including Member Societies and Working Committees.

The core objectives of ARMA are to replace the fragmented system of Excel spreadsheets, web pages and other disparate lists previously used to track contacts and roles; to consolidate reliable and up-to-date data about IARU R1 activities and key personnel; to enable Member Societies (MS) to maintain and update their contact information directly; and to facilitate easier communication between IARU R1 officials, Member Societies and volunteers across the Region. For example, a member of the EMC Committee seeking expertise on a specific topic from countries without permanent committee representation can quickly search ARMA to locate relevant local coordinators or specialists.

Alignment with "Shaping the Future"

ARMA directly supports Strategic Objective #8 of the "Shaping the Future" programme, which states that "IARU has an active programme and supporting tools to strengthen member societies, their mutual cooperation and their development and growth." The project addresses the identified need for improved internal communication within IARU R1. By providing a reliable, accessible tool for maintaining contacts and roles, ARMA contributes to making IARU R1 more efficient, transparent and better connected across its Member Societies.

Major Milestones

In January 2023, the Executive Committee approved the ARMA project and established a project team tasked to identify possible solutions, with recommendations regarding the choice related to developing a custom application or using an off-the-shelf application. Following a review of available tools on the market, it was decided to develop a fully custom application, as existing commercial solutions exceeded IARU's requirements.

The design and development phase was completed in 2023 through a contracted IT company. The application was then presented at the 2023 General Conference in Zlatibor, where a group of beta testers from a group of Member Societies was formed. This test phase allowed societies to evaluate the system and report bugs and feature requests.

In 2024, Erwin PE3ES accepted the role of ARMA Project Manager. The application was briefly updated at the International Meeting at HAM RADIO in June 2024. Bug fixing proceeded throughout the year following the initial testing by selected Member Societies, with the target of having a release candidate ready by September 2024. Hosting on a dedicated server was scheduled for the same period.

Status: Outcomes and Issues

Outcomes: A first version of ARMA has been released and tested by a group of Member Societies.

The beta testing phase successfully collected feedback and the list of enhancements was reported to the development company for consideration. The application provides fundamental functionality for searching and managing contact information across the Region.

Issues: Following the first roll-out and validation, several matters require attention before

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a broader deployment to all Member Societies. The development company has recommended moving to an upgraded platform for security and development reasons. Access rights need to be updated to ensure proper day-to-day handling of the application. A list of missing features and proposed enhancements has been compiled and is under review. In October 2025, the Executive Committee decided that a prioritised list of feature upgrades with estimated costs shall be presented for decision before any further development is ordered.

The project continues to progress, with additional features under development based on the feedback received from the testing societies. Full roll-out to all Member Societies is planned soon once the platform upgrade and access rights adjustments are completed.

HamChallenge

Goal

The HamChallenge was an innovation competition launched under the "Shaping the Future" initiative to stimulate creativity and innovation within the amateur radio community. The competition invited participants to submit game-changing ideas that would increase awareness of amateur radio and present it from new perspectives. It featured two distinct challenge categories: Challenge #1 targeted young persons and non-licensed participants, focusing on creative content to explain and promote amateur radio through social media-friendly formats. Challenge #2 was oriented toward licensed amateur radio operators, asking them to envision the future of amateur radio through technology projects, experimentation, or digital development initiatives.

Alignment with "Shaping the Future" Goals

The HamChallenge demonstrated strong compliance with several "Shaping the Future" strategic objectives, particularly aligning with objectives #2 (Inclusive Global Community), #4 (Innovation and Technology) and #5 (Learning and Education). The competition fostered innovation and creativity around leading-edge technology while promoting interest in science and technology subjects across society. By specifically targeting both licensed operators and non-licensed individuals, including youth groups and families, the initiative embodied the inclusive community building aspect central to the "Shaping the Future" vision.

Major Decisions

The Executive Committee made several key decisions regarding HamChallenge throughout its lifecycle.

In November 2022, the EC agreed to continue the competition and add it to the Region 1 website main menu, with PA2LS designated as coordinator supported by IV3KKW and 9K2DB.

The EC approved running HamChallenge editions in 2022, 2023 and 2024, with monetary prizes ranging from €50 to €300 per category.

A special prize of €100 was introduced in 2024 for participants under 18 years old.

Most significantly, in January 2025, the EC decided to discontinue the HamChallenge competition due to declining participation.

Status: Major Outcomes and Issues

The HamChallenge ran for three consecutive years (2022 - 2024), with the inaugural edition in 2022 generating notable enthusiasm and multiple submissions evaluated during HAM RADIO Friedrichshafen.

Winners were selected through a judging committee process involving EC members. However, the initiative faced significant challenges with volunteer engagement and declining participation over time. By 2024, only one proposal was received despite promotional efforts through social media and the IARU-R1 website.

The competition struggled to reach its intended audiences, particularly non-radio amateurs, which was identified as a concern by the organizing team.

Planned Next Steps

Following the EC's decision in January 2025, no future editions of the HamChallenge are planned. The competition has been discontinued as of 2025 due to insufficient participation.

The final winner announcement from the 2024 edition was scheduled for late February 2025. While the competition itself has ended, the initiative's goals of fostering innovation and youth engagement continue through other "Shaping the

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Future" projects, including the Innovation Zone at HAM RADIO events and the newly established Technical Working Group activities.

Lessons Learned

Competition-based engagement models face diminishing returns without sustained external visibility. The challenge of reaching non-amateur audiences proved insurmountable without dedicated public relations support and established channels into educational institutions.

ENAMS

Outline

The ENAMS project aims to deploy a network of high-resolution noise floor monitoring receivers across IARU Region 1 to systematically measure and document electromagnetic noise levels in HF bands. The system enables member societies to collect standardized data on background noise trends and interferers over time and across geographic areas, providing independent evidence for spectrum defence discussions with regulatory bodies such as CISPR and ITU.

Alignment with "Shaping the Future" Goals

The ENAMS project directly supports the "Shaping the Future" initiative's objectives of spectrum defence and technical modernization. It provides concrete tools for member societies to:

Document and address the increasing electromagnetic interference threatening amateur radio operations

Generate qualified data acceptable to international regulatory organizations

Support evidence-based advocacy with national regulators

Enable potential STEM educational activities through data analysis opportunities

The project was formally integrated into the "Shaping the Future" programme following recommendations at the Zlatibor General Conference 2023.

Major Milestones

2017: Initial Noise Measuring Campaign launched (LA17_C7_Rec_02) with appointment of Brendan Minish, EI6IZ, as chairman

2020 - 2022: First generation ENAMS systems was developed (DARC, Germany) and deployed with operational data collection.

2023: ENAMS V2 development started within DARC, seeking for significantly improved capabilities including autonomous operation, 12 measurements per hour and enhanced resolution

2024: Second production batch proposed following ZL23_C7_Rec_01 and ZL23_C7_Rec_02 recommendations

2025: Production specifications finalized, order for a production batch of 52 units at €2,000 per unit was placed

2026: Production has started, delivery is expected to start around May

Status: Major Outcomes and Issues

Outcomes:

Successful data collection by first generation ENAMS receivers.

Successfully developed ENAMS V2 with enhanced technical specifications

DARC established as lead for receiver design, production coordination and data qualification

Initial systems operational with data accessible via enams.de platform

Interest expressed by national regulators in utilizing ENAMS data for interference management

Major Issues:

Critical production threshold challenge: Difficulties to reach the minimum requirement of 50 units for viable production

Data consolidation gap: While individual receivers can collect local data, system for aggregating multiple receivers' data for trend analysis and regulatory-acceptable reports remains undeveloped and beyond current team scope

Systematic Evaluation: There is still no concept for a systematic evaluation of the data and how to make use of them.

The Executive Committee concluded in September 2025 that without establishing dedicated project teams for both receiver production/distribution and data management/ reporting, "the whole initiative may fail." As of today, the production is on track, hence, the data management strategy is still not in place. A separation of the ENAMS activities from the C7 Committee shall be considered and moved to an independent “Noise Measuring” Working Group

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focussing on the ENAMS data and their usage for IARU.

The Innovation Zone

Outline

The Innovation Zone represents a strategic exhibition platform established at HAM RADIO events to showcase and promote radio-related projects within and beyond traditional amateur radio boundaries. First successfully implemented at HAM RADIO 2024 and continuing into 2025, the Innovation Zone aims to extend IARU Region 1's network by creating a dedicated space where innovative radio technology projects, demonstrations and presentations can engage with a broader audience of technology enthusiasts, makers and radio amateurs.

The concept focuses on creating an interactive environment where presenters can demonstrate cutting-edge radio technologies, conduct interviews and facilitate knowledge exchange between project developers and exhibition visitors. The zone serves as a bridge between amateur radio traditions and emerging radio communication technologies, welcoming projects that may not exclusively focus on amateur radio but contribute to the broader radio technology ecosystem.

Alignment with "Shaping the Future" Strategic Goals

The Innovation Zone directly supports Strategic Objective #4 of the "Shaping the Future" initiative: "To achieve recognition that Amateur Radio is, among all the non-commercial technology communities, the leading one for radiocommunications".

The platform positions amateur radio as a technology leader rather than follower, demonstrating expertise and innovation capacity to wider technology communities. By showcasing projects that bring amateur radio into the current technology century and beyond, the Innovation Zone creates a favourable environment to attract more people into the amateur service while building on traditional amateur radio foundations.

Through its inclusive approach to "radio-related" rather than strictly "amateur radio" projects, the zone demonstrates the community's ability to innovate new technology while maintaining awareness of fast-moving technological developments.

Open-Source Related Actions and Outreach

The Innovation Zone has established itself as a key platform for open-source community engagement within the amateur radio ecosystem. The zone actively promotes collaboration with major open-source initiatives.

The outreach strategy encompasses hackathons and competitions on amateur radio topics, support for open source and open hardware project developers through potential IARU R1 patronage programmes and creation of catalogues featuring DIY projects and amateur radio activities suitable for fablabs, makerspaces and hackerspaces. These activities position the Innovation Zone as a convergence point between traditional amateur radio expertise and contemporary open-source development methodologies.

hamradio.org Website Project

Goal

The hamradio.org website was conceived as a central digital platform to establish a unified online presence for amateur radio information targeting a broad audience, particularly individuals not yet licensed. The primary objective was to create a comprehensive resource hub that would serve as the preferred source of information about amateur radio, presenting content through accessible, non-technical language while maintaining the depth needed for existing radio amateurs. The website aimed to consolidate various amateur radio activities, resources and educational materials into a single, professionally designed platform available in multiple languages.

Alignment with "Shaping the Future" Goals

The hamradio.org project directly supported the broader "Shaping the Future" initiative's strategic objectives by addressing the need for modernization and improved community outreach.

The platform was designed to serve as a consolidation point for multiple scope areas identified during the strategic planning phase, including knowledge sharing through online forums, hosting research projects like the Noise Monitoring initiative, providing a learning

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management system (MOOC Platform) and facilitating content creation through incentive programmes. The website aligned with the initiative's vision of transforming amateur radio organizations by creating a modern, accessible gateway for newcomers while serving as a resource repository for existing members.

Major Milestones

The project achieved several significant milestones during its development phase. Initial strategic planning identified the website as a critical horizontal project supporting multiple scope areas. The team successfully completed the website structure design and information architecture, organizing content into dynamic topics and static informational sections.

A comprehensive mock-up was developed and tested on the WordPress platform, with agreement reached on using professional developers for implementation.

The Executive Committee allocated budget for professional website development services and a consultant company was selected for the WordPress development.

The technical design phase was completed, establishing specifications for content management, multi-language support and user interface optimization independent of existing IARU design guide-lines.

Current Status: Outcomes and Issues

While the technical framework and design of hamradio.org were successfully completed, the project faces critical challenges in content creation and ongoing management. The website structure is ready for deployment, but lacks the essential content needed for launch.

The basic idea is that there is already enough of relevant and suitable content published. Instead of creating the actual content, the focus should be on finding, qualifying and re-publishing content.

An attempt to leverage existing articles from member societies proved successful as a principle, demonstrating that already published content could be reused on the website. However, the editorial team created to manage content production have not yet been able to establish this process, resulting in stalled content development.

Another discussed alternative is to search for suitable articles and contact the authors for re-publishing on the website. This approach requires more resourcing than working with several contributing member societies.

The upside for member societies with the website is that the articles also may serve as a collection of articles that could be of interest to re-publish by another member society.

Despite presentations at international IARU-R1 meetings aimed at garnering support from member societies, the project has been unable to secure sustained volunteer engagement for content creation. This reflects the broader challenge identified across "Shaping the Future" initiatives: the persistent gap between initial enthusiasm during planning phases and sustained participation during implementation. The project currently remains in a state of technical readiness but operational stagnation, with only a small group of five volunteers maintaining minimal activity compared to the initial 60+ volunteers who expressed interest during the workshop phase.

The hamradio.org project exemplifies both the potential and challenges of the "Shaping the Future" initiative, achieving successful technical planning and infrastructure development while struggling with the volunteer capacity needed for sustainable content creation and long-term operation.

Technical Working Group (TWG)

Goal

The Technical Working Group was established to provide technical expertise and support across IARU Region 1's technical initiatives. The TWG's primary objective is to actively seek collaborations with other organizations where common interests exist, fostering innovation and technical advancement within the amateur radio community. The group aims to address technical challenges, support technical projects and enhance the organization's technical capabilities through structured collaboration with both member societies and external partners.

Alignment with "Shaping the Future" Goals

The TWG directly supports the "Shaping the Future" initiative's core objectives of

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modernization and innovation. By establishing formal collaboration mechanisms with external organizations, the TWG embodies the initiative's vision of expanding beyond traditional amateur radio boundaries. The inclusion of "observers," "contributors," and "non-voting members" from partner organizations demonstrates alignment with the initiative's goals of building broader technical communities and fostering cross-organizational cooperation. This approach supports the transformation programme's emphasis on technical advancement and community building.

Major Milestones

Initial Concept and Restart (2021 - 2022):

March 2021: Initial TWG discussions identified concerns about potential conflicts with existing working groups

June 2022: EC decision to restart the TWG with HB9AMC volunteering as chairman. Action assigned to draft Terms of Reference for the TWG

Formal Establishment (2023-2024):

December 2023: Following GC2023, Mike, OE3MZC accepted nomination as TWG coordinator

March 14, 2024: The EC approves the Terms of Reference (ToR) and formally establishing the Technical Working Group

The EC explicitly approved provisions for external organization participation, with clarification that voting rights remain exclusively with member society representatives

Decision requires ratification at the following General Conference

Implementation Phase (2024-2025):

The TWG held its first and only meeting at the Paris Interim Meeting (24 - 27April 2025)

Current Status

Despite the strategic importance of technical coordination within the amateur radio community, the TWG has faced significant implementation challenges. Following its formal establishment in March 2024, the group has conducted only one meeting at the Paris Interim Meeting. The lack of sustained volunteer engagement has prevented the TWG from achieving its expected objectives. This pattern unfortunately reflects broader challenges within the "Shaping the Future" initiative, where initial enthusiasm during planning phases has not translated into sustained operational activity. The limited progress highlights the ongoing challenge of maintaining volunteer commitment for technical initiative requiring sustained effort and expertise.

Open-Source Communities Initiative

What is Open-Source and its Relation to Amateur Radio

Open source represents a collaborative approach to software and hardware development where de-signs, source code and documentation are made freely available for anyone to use, modify and re-distribute. This philosophy aligns naturally with amateur radio's long-standing tradition of experimentation, knowledge sharing and technical innovation.

In the amateur radio context, open source enables:

Software Development: Digital mode applications, logging programmes and signal processing tools that operators can customize for their specific needs

Hardware Projects: Transceiver designs, antenna analysers and measurement systems that can be built and improved by the community

Collaborative Innovation: Shared development of protocols, standards and technical solutions that advance the entire amateur radio ecosystem

Educational Opportunities: Transparent systems that allow newcomers to learn by examining and modifying existing designs

The intersection of open source and amateur radio creates a powerful synergy, fostering innovation while maintaining the hobby's educational and experimental roots.

The Structural Challenge

IARU Region 1 operates through formal committees, working groups with defined Terms of Reference, Executive Committee oversight and triennial General Conference ratification processes. This governance model ensures accountability, continuity and democratic legitimacy across a geographically and culturally diverse membership.

Open-source communities, by contrast, typically operate through informal, project-based engagement. Contributors participate based on immediate interest, commit for short durations and move between projects fluidly. Leadership emerges

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from demonstrated capability rather than formal appointment and decision-making tends toward rough consensus rather than structured voting.

These models appear fundamentally incompatible, yet the Shaping the Future experience suggests they can be complementary when appropriately structured.

Process Leading to the Open-Source Projects Coordinator Nomination

The appointment of an Open-Source Projects Coordinator emerged from a convergence of strategic initiatives and practical engagements:

Initial Framework (2021 - 2022): During the original "Shaping the Future" workshop, participants identified engagement with makers, hackerspaces and open-source communities as Strategic Objective #3 - ensuring amateur radio remains relevant to science and technology groups. Specific proposals included support for projects like M17, creation of amateur radio DIY catalogues and establishing an IARU patronage programme for selected open-source initiative.

Technical Working Group Formation (2024): In March 2024, the Executive Committee established the Technical Working Group (TWG) under Mike OE3MZC's leadership, with explicit ambitions to actively seek collaborations with external organizations sharing common interests. This structural foundation was considering formal engagement with open-source com-munities.

Practical Engagement and Recognition (2024 - 2025): Following successful activities at FOSDEM (the premier European open-source conference) and the organization of a Spectrum conference in France, F4GKR reported substantive discussions with communities including GnuRadio. These engagements, combined with positive feedback from the HAM RA-DIO 2024 Innovation Zone, demonstrated the value of structured coordination.

Formal Appointment (January 2025): The Executive Committee agreed to strengthen and organize relationships with open-source software and hardware communities. Marc HB9SSB was nominated as the first Open-Source Coordinator, following discussions between F4GKR, OE3MZC and HB9SSB regarding liaison requirements.

Alignment with "Shaping the Future" Goals

The Open-Source Communities initiative directly supports the programme's strategic objectives:

Innovation and Modernization: Bridges traditional amateur radio with contemporary development methodologies

Community Building: Expands the amateur radio ecosystem to include software developers, makers and hardware hackers

Technical Advancement: Facilitates cross-pollination of ideas between amateur radio and broader technology communities

Youth Engagement: Connects with younger demographics familiar with open-source collaboration models

Major Milestones

October 2021: "Shaping the Future" workshop identifies open-source engagement as strategic priority

March 2024: Technical Working Group established with collaboration mandate

June 2024: Successful HAM RADIO 2024 Innovation Zone demonstrates community interest

2024: Active participation at FOSDEM and organization of Spectrum conference in France

January 2025: Marc HB9SSB appointed as Open -Source Coordinator

2025: Integration of open-source coordination with Technical Working Group activities

Current Status

Achievements

Formal Recognition: Establishment of dedicated coordinator position legitimizes open source as organizational priority

Community Engagement: Successful connections with GnuRadio and other technical com-munities

Event Integration: Innovation Zone at HAM RADIO provides platform for open-source project showcase

Ongoing Challenges

Resource Allocation: Like other "Shaping the Future" initiatives, volunteer capacity remains the primary constraint

Scope Definition: Determining optimal balance between supporting existing projects and initiating new ones

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Integration Complexity: Coordinating between traditional amateur radio structures and more fluid open-source communities

Sustainability: Ensuring long-term engagement beyond initial enthusiasm

Future Considerations

The appointment of an Open-Source Coordinator represents a significant step toward modernizing amateur radio's engagement with contemporary technology communities. Success will depend on maintaining momentum through concrete projects, clear communication channels and sustained volunteer engagement. The close relationship with the Technical Working Group provides the structural support necessary for this initiative to evolve from strategic vision to operational reality.

Future success will likely depend on hybrid approaches: formal IARU structures providing legitimacy, continuity and resources; open-source engagement methods providing flexibility, innovation and access to broader technical communities. Neither model alone addresses the volunteer capacity challenge, but together they may create sustainable pathways for the initiative's objectives.

The integration of open-source community engagement methods within IARU's formal structures offers one promising direction. By creating permeable boundaries, recognising diverse contribution patterns and investing strategically in professional support where continuity is essential, the organisation can extend its reach and capability without abandoning the governance structures that ensure accountability to Member Societies.

PR Initiative

Goal

The Public Relations Initiative was established to organise and structure a coordinated PR programme and strategy to promote amateur radio to audiences beyond the existing community. The initiative aims to generate content that can be customised, localised and reused by different Member Societies (considering language and cultural differences), while also supporting participation in events and helping to recruit volunteers for work within IARU and Member Societies.

The programme was designed around several key elements: defining target audiences (including regulators and authorities), crafting tailored messages for different stakeholder groups, clarifying the division of responsibilities between IARU and Member Societies, preparing and training local representatives and establishing methods to monitor the effectiveness of PR actions.

Alignment with Shaping the Future Goals

The PR Initiative directly supports Scope Area 1 of the Shaping the Future programme: *"Build a public relations programme to promote Amateur Radio."* It also connects to multiple Strategic Objectives identified during the October 2021 workshop:

Strategic Objective 3 called for establishing a professional PR team at the IARU Region 1 level to support all member countries in promoting amateur radio through mainstream media, making the social, economic and other benefits of amateur radio visible to the public.

Strategic Objective 7 focused on building PR target lists, generating PR content and measuring the presence of amateur radio on social media through key performance indicators.

Strategic Objective 8 emphasised developing a promotional toolkit (electronic media, leaflets, videos, FAQ lists, pre-recorded seminars), improving communication and transparency among Member Societies and creating customisable promotion materials.

The initiative recognised that "covering everything and everywhere is not an option" and that a focused approach, guided by professional PR expertise, would be necessary to make effective use of limited resources.

Major Milestones

October 2021: The Shaping the Future workshop identified public relations as a high priority goal. Strategic Objectives 3, 7 and 8 specifically addressed the need for professional PR support and promotional tools.

April 2023: Following the difficulties to identify skilled volunteers from the Member Societies, the Executive Committee formally approved the

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initiative to contact an external PR company, acknowledging that PR activities are central to the Shaping the Future programme.

May 2023: A few Member Societies were consulted regarding their experiences with PR companies. Two companies with amateur radio experience were contacted for initial discussions. The EC acknowledged that "PR for amateur radio" has very broad scope given the diversity across Region 1.

June 2024: Following discussions with a UK-based PR company, the Executive Committee received a proposal. However, the standard PR campaign approach proved too costly for IARU Region 1's resources. The EC decided not to proceed with the proposal as presented and instead allocated a maximum budget of 25 000 CHF from the Shaping the Future reserve to develop a more targeted scope and PR plan.

October 2025: The search continued for a part-time resource with PR experience. A job description was prepared and initial enquiries circulated, but no responses had been received. Coordination was undertaken with Member Societies possessing PR experience (notably RSGB) to explore options.

Status: Outcomes and Issues

Outcomes: The exploratory work with the UK PR company produced valuable insights into what a professional PR initiative might involve and at what cost. This pre-study work has helped frame the organisation's understanding of the scope, complexity and resource requirements of effective PR campaigns.

Issues: The initiative faces a fundamental challenge: no one within the Executive Committee team possesses the skills required to define and propose a PR strategy**.** PR has been explicitly identified as "a domain where there is a lack of internal IARU experience." This skills gap means that any meaningful progress depends upon securing external expertise.

The proposal received from the external PR company demonstrated that a conventional PR campaign approach would exceed available budget constraints. The widespread nature of the amateur radio stakeholder community, spanning different countries, languages and regulatory environments across Region 1, makes a comprehensive campaign particularly challenging to design and implement cost-effectively.

Efforts to recruit a part-time PR expert, whether internal or external, have so far yielded no candidates. The limited posting of the job description has not generated interest, leaving the initiative without the professional leadership it requires.

Despite the approved budget allocation of up to 25 000 CHF, progress remains constrained by the absence of a qualified individual to drive the work forward. Until such expertise can be secured, the PR Initiative remains in a preparatory phase, with strategic direction yet to be defined.

Volunteer Engagement Analysis: Issues and Lessons Learned

Critical Issues Encountered

The Planning-to-Implementation Gap

The most significant challenge emerged in the transition from conceptual planning to practical execution. The October 2021 workshop generated eight strategic objectives with strong volunteer support, yet by February 2022, the consolidation phase already showed signs of resource strain. The R1 EC explicitly identified resources as the "key issue moving forward," acknowledging that while intentions were clear, forming dedicated teams proved challenging.

Specific manifestations:

Initial workshop: 100 participants engaged in strategic planning

Consolidation phase: Difficulty forming teams with "critical mass size"

Implementation phase: Multiple projects stalled due to insufficient volunteers

Programme Board declared "non-functional," requiring direct EC intervention

Critical Mass Failure

The initiative recognized early that "a critical mass size is necessary for each project team," yet consistently failed to achieve this threshold across multiple projects. The planning documents suggested 5 - 10 persons for initial teams and 5 persons per scope area, but actual recruitment fell short of these targets.

Examples of impact on projects:

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HamChallenge: Declined from multiple submissions in 2022 to one submission in 2024, discontinued in 2025

hamradio.org: Platform completed but "severely hampered due to lack of volunteers for getting content"

Governance Structure Breakdown

The Programme Board, intended to provide strategic oversight, became non-functional. This governance failure forced the Executive Committee to assume direct management responsibilities, adding to their existing workload and creating inefficiencies in decision-making. Contributing factors:

Lack of clear decision-making processes,

Insufficient volunteer commitment to governance roles,

Traditional committee structures proved inadequate for dynamic project management.

The Zlatibor Conference agreed to close the Programme Board and nominated a “Shaping The Future” Project coordinator. This move did not provide additional momentum and the initiative continued to be driven in practice by the R1 Executive Committee.

The "Best Effort" Paradox

While acknowledging that "volunteers participate on a best effort basis," the initiative's ambitious scope required more consistent commitment than "best effort" typically provides. This fundamental mismatch between expectations and reality undermined project continuity. Consequences:

Unpredictable project timelines

Difficulty in maintaining quality standards

Inability to meet external commitments (e.g., production deadlines)

Communication and Coordination Challenges

Despite establishing support infrastructure (mailing lists, file sharing platforms, collaboration tools), coordination across multiple time zones, languages and cultural backgrounds proved more complex than anticipated. The virtual nature of the workshop, while necessary due to COVID-19, eliminated informal networking opportunities that facilitate volunteer bonding. Specific challenges identified:

"Different languages, different cultures, different backgrounds"

"No coffee breaks, no social events to let people talk and think together"

Limited experience in organizing large-scale virtual events

Objective Lessons Learned

Lesson 1: Virtual Engagement Has Limitations

The shift from planned in-person to virtual workshop format, while necessary, fundamentally altered engagement dynamics. The organization "lacks relevant skills and experience in transferring planned sequences of workshop events to the virtual world." Investment in professional facilitation (Envoy Portfolio, $20 000) proved valuable but couldn't fully replicate in-person collaboration benefits.

Lesson 2: Scope Must Match Capacity

The initiative's eight strategic objectives, while comprehensive, exceeded available volunteer capacity. The recognition that "societies and IARU capacity already limited" came too late to prevent over-extension. Future initiatives require realistic capacity assessment before scope definition.

Lesson 3: Time-Limited Commitments Work Better

Event-based initiatives maintained higher engagement than ongoing commitments:

Innovation Zone: Annual time-bound event received "quite positive feedback"

Content creation: Open-ended commitment for hamradio.org failed to attract volunteers

Lesson 4: Professional Support Is Essential but Not Sufficient

The initiative correctly identified that "we may engage external resources/consultants where needed," but underestimated the extent of professional support required:

Workshop facilitation: $20 000 investment improved quality but didn't solve volunteer shortage

Website development: Professional design completed, but content creation still required volunteers

PR initiative: Professional consultation revealed standard approaches were cost-prohibitive

Lesson 5: Volunteer Recruitment Requires Active Management

(Continued on page 142)

(IARU Region 1 Report from page 141)

The passive approach of spreading "information about the programme to find people" proved insufficient. Successful projects actively recruited through:

Formal coordinator appointments (Open-Source coordinator)

Cross-organizational partnerships (FOSDEM, Spectrum conference)

Direct engagement with external communities

Lesson 6: Incentive Structures Matter

The initiative recognized need to "define incentives for volunteers" but failed to implement compre-hensive recognition systems. Projects lacking clear volunteer benefits experienced higher attrition rates.

Lesson 7: Failure Recognition Is Crucial

The decision to discontinue HamChallenge after declining participation demonstrates organizational maturity. Recognizing that "projects without a sustainable resource situation and a critical mass, cannot start" prevents resource waste on non-viable initiatives.

Lesson 8: Documentation Enables Improvement

Comprehensive documentation through EC minutes, project reports and status updates created institutional memory enabling this analysis. Organizations must maintain detailed records even during challenging periods.

Lesson 9: Adaptation Requires Courage

The shift from ambitious PR campaigns to scaled approaches (25 000 CHF budget) and creation of new roles (Open-Source coordinator) demonstrate adaptive capacity. Organizations must be willing to acknowledge limitations and adjust accordingly.

Critical Success Factors Identified

Based on the five-year experience, the following factors emerged as critical for volunteer-driven project success:

Pre-Implementation Requirements

Realistic Scope Definition: Match ambitions to demonstrated (not hoped-for) capacity

Critical Mass Verification: Confirm minimum team size before project launch

Formal Structure Creation: Establish terms of reference, clear roles and reporting lines

Professional Support Integration: Budget for professional services from inception

Implementation Enablers

Time-Bounded Phases: Break long-term goals into discrete, achievable milestones

Active Volunteer Management: Dedicated recruitment, onboarding, retention efforts and support the exchange of resources over time.

Cross-Organizational Engagement: Leverage external communities and partnerships

Regular Progress Assessment: Monthly reviews with willingness to pivot or terminate

Sustainability Mechanisms

Recognition Systems: Formal positions, public acknowledgment, tangible benefits

Knowledge Transfer Protocols: Documentation standards and succession planning

Hybrid Resourcing Models: Combine volunteer effort with professional services

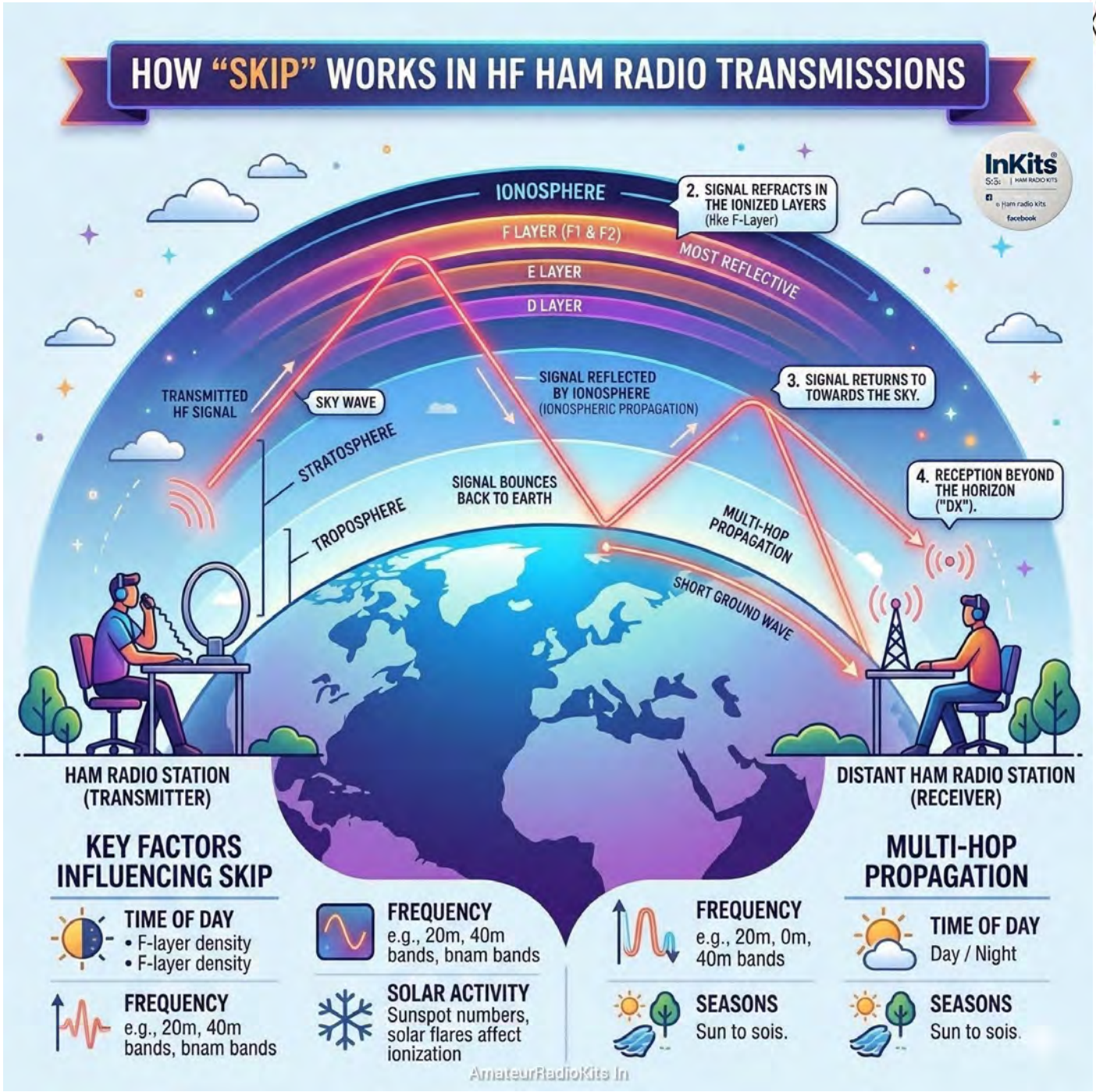
Failure Acceptance Culture: Normalize project termination when viability thresholds aren't met

Conclusion

The fundamental lesson is clear: strategic vision without operational capacity leads to implementation failure. The amateur radio community's volunteer tradition remains strong, but traditional approaches require modernization to address contemporary challenges. Success requires accepting that volunteer capacity is a finite resource requiring active management, not an unlimited asset that can be assumed.

The initiative's mixed outcomes provide a realistic framework for future planning. Organizations must design initiatives around demonstrated volunteer capacity rather than aspirational goals, implement formal structures that support rather than burden volunteers and maintain the courage to adapt or terminate initiatives when evidence indicates non-viability.

The key is not to avoid ambitious goals, but to ensure that ambition is matched with realistic assessment of available resources and active management of volunteer engagement throughout the project lifecycle.


HOW "SKIP" WORKS IN HF HAM RADIO TRANSMISSIONS
InKits
IONOSPHERE
F LAYER (F1 & F2)
E LAYER
D LAYER
2. SIGNAL REFRACTS IN THE IONIZED LAYERS (Hke F-Layer)
MOST REFLECTIVE
TRANSMITTED HF SIGNAL
SKY WAVE
STRATOSPHERE
TROPOSPHERE
SIGNAL REFLECTED BY IONOSPHERE (IONOSPHERIC PROPAGATION)
3. SIGNAL RETURNS TO TOWARDS THE SKY.
SIGNAL BOUNCES BACK TO EARTH
4. RECEPTION BEYOND THE HORIZON ("DX").
MULTI-HOP PROPAGATION
SHORT GROUND WAVE
HAM RADIO STATION (TRANSMITTER)
DISTANT HAM RADIO STATION (RECEIVER)
KEY FACTORS INFLUENCING SKIP
TIME OF DAY
• F-layer density
• F-layer density
FREQUENCY
e.g., 20m, 40m bands, bnam bands
FREQUENCY
e.g., 20m, 40m bands, bnam bands
SOLAR ACTIVITY
Sunspot numbers, solar flares affect ionization
MULTI-HOP PROPAGATION
FREQUENCY
e.g., 20m, 0m, 40m bands
TIME OF DAY
Day / Night
SEASONS
Sun to sois.
SEASONS
Sun to sois.
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