



September 2024



Andrew ZS2G giving a talk during one of our meetings

This Newsletter is published by the Port Elizabeth Amateur
Radio Society

Editing by Ashley Goosen ZS2AG

Qsx-PE - Newsletter for the discerning

Next PEARS Monthly Meeting will be on Tuesday,
17th September at the Italian Club.

From the Chair



Dear Members,

I am pleased to present the Chairman's Report for the past month. Below is an overview of our recent activities, updates, and upcoming plans.

Our regular club meeting was held on the 20th of August at the Italian Sports Club in Port Elizabeth. Updates were given on the repeater network and some work that lies ahead, at Longmore, Mount Road and then the installation at Kareedouw Berg.

Andrew Gray, ZS2G gave a presentation about PCB construction techniques, and also showed members different soldering techniques using different equipment. I must say, thoroughly enjoyed and learned about the different ways soldering can be done.

From the RAE team, it sounds like the candidates are doing well so far, and new techniques being used for the candidates to become more familiar with HF rigs and using them on the air. A big thank you to the RAE team for offering up your time, money and enthusiasm to get the candidates through the material and of course the exam.

The National Field Day was held on the 7th of September at the Island Nature Reserve. A total of six members participated and had a good time, gaining experience too. Another Field Station will be erected by ZS2G, at the Van Stadens Flower Festival on the 28th of September 2024 to promote Amateur Radio. You are most welcome to join on the day to assist and even operate.

A reminder of the monthly meeting at 19h30 on Tuesday the 17th of Sep-

tember at the Italian Sports Cub. I encourage every member to please attend the monthly meetings. Also, every Monday evening is the Club Bulletin on the Lady Slipper Repeater at 20h00. AR Today is rebroadcasted at 19h00 before the bulletin by Rory, ZS2BL. Come and say Hello!

Just a reminder that the raffle is still running for the Yaesu handheld, at only R50-00 a ticket, simply go to www.zs2pe.co.za and click on the raffle link on the front page. Select the number of tickets you would like to purchase and then make an EFT into the club's bank account with reference "YOUR CALLSIGN" RAFFLE.

And on a final note, congratulations to Mike, ZS2MIC and Dané for the birth of Anja, on the 11th of September. We looked forward to welcoming her one day as a ZU2!

73

Kevern, ZR2BK



Congratulations to Mike ZS2MIC and Dané on the birth of their beautiful daughter Anja. on the 11th September.

FROM THE EDITOR

Here's hoping you enjoy reading this edition of QSX. If you have an article or two that you would like published in future copies of QSX, please let me have your contribution by email to qsx.zs2ag@gmail.com.

Please do not send me QSX material on WhatsApp as I am inundated with WhatsApp messages and I will miss your material.

Thank you for your continued support of QSX and the articles you have submitted for this issue.

73,

Ashley ZS2AG

Minutes of PEARS Monthly Meeting

Held at the Italian Club on the 20th August 2024 at 19h30

Welcome:

Chairman Kevern ZR2BK welcomed all present. Specially Ian Moore ZS2IJ, Patsy ZS2PTY

Attendance:

Approximately 15 attendees. As per Register.

Apologies:

ZS2GKP, ZS2DL, ZS2TAH, ZS2TJ, ZS2DH, ZS2GS.

Acceptance of previous meeting's minutes:

Proposed: ZS2BO

Seconded: ZS2RT

Matters arising:

None

Finances:

Mike has reported that all is in order.

General:

TransBaviaans this past weekend – thanks to all the volunteers that made this happen. Long hours for some checkpoints. Kevern described the comms network set up this year, the changes made etc. The Zandvlakte xband was causing interference, so had to be removed ASAP after CP2 closed.

Repeaters:

Some ducting this afternoon into Longmore from Albertinia area (Div 1).

Kareedouw Mountain - formal sharing agreement is concluded. This has paved the way to do the installation. Antennas will be fairly low down, to save on coax. Carrying to site will be the biggest challenge (steep an drocky)

Longmore - new batteries on their way. Old batteries will move to Slipper. VHF repeater antenna seems to be crackly in windy conditions, and the UHF link RX appears to be faulty.

Mount road VHF receive is very noisy, there is a lot of work to be done at Mount Road too, so will call for a work party. (Check duplexr alignment, install Kenwood repeater, install 2x Wifi link dishes and 2x Cat5 cables, reconfigure wifi access point antennas for Jamtin)
Thanks were expressed to Andrew ZS2G for repairing the Uitenhage repeater feeders that were vandalised.

SARL HF Contest was well supported – many thanks, to those that took part.

ZS2 QSO party results are out.

SARL HF Field day 7-8 September, we will try Groendal camp site. Hot showers, Lapa available, R71 p/p per night, plus conservation fee. Booking will be made. (2 weeks time).

Raffle - reminder to buy your tickets for the year end Raffle of a Handheld radio. Online web form to take part.

RAE – Vaughan gave an update on the classes. Into week 5, flowing nicely. Students are starting to interact nicely. One is from EL, who will travel for the exam. Shaun will have some of them over to get them familiar with radio operation. 7.098kHz from about 10h00. Please answer if you hear a call going out...

SOTA activity weekend 14-15 September, chasers always needed to make the summit activation effort worthwhile. Can log it on so-ta.org.uk as a chaser.

Events – LoFER is in December

ZS2AG

Thanks to all article submitters! ZS2PTY promised an article....

Closure:

Meeting ended at 19h56

Next meeting 17th September 2024

Andrew ZS2G addressed the meeting about project PCB construction techniques and soldering tools for Surface mount and desoldering activities.

CHAIRMAN
KEVERN BURGER (ZR2BK)

SECRETARY
CHRISTOPHER SCARR
(ZS2AAW)

PROPAGATION CHATTER

Introducing the Ionosphere

The ionosphere is a crucial part of the Earth's upper atmosphere and extends from around 50 km to about 600 km above the Earth's surface. It is characterized by a high concentration of ions and free electrons, thanks mostly due to the ionizing effect of solar radiation coming in from the sun.

The ionosphere overlaps with the thermosphere, the mesosphere, and the exosphere. It is divided into several layers, commonly referred to as the D, E, and F layers, each with varying levels of ionization. The F layer is further divided into F1 and F2 during the day.

The F1 Layer

The F1 layer is the lower of the two layers ranging between 150 and 220 Km above the Earth's surface. Because this layer relies on solar radiation to directly ionize atmospheric gases, it is only present during the sunshine hours. At night when the solar radiation is no longer strong enough to maintain the F1 layer it merges into the F2 layer.

The F1 layer, while less critical than the F2 layer, still contributes to daytime radio propagation by reflecting higher frequency signals.

The F2 Layer

The upper part of the F layer is called F2, ranges between 220 and 800Km above the Earth's surface and exists both day and night – although the ionisation levels may vary.

The F2 layer is basically oxygen ions and has the lion's share of free electrons in the ionosphere.

The F2 layer is responsible for reflecting waves back to Earth and without it long distance communications would not be possible.

How does the Ionosphere reflect waves?

When HF radio waves reach the ionosphere, they bump into these ionized layers. Free electrons in these layers cause the waves to bend and eventually bend enough to travel back towards the Earth's surface. This reflection depends on several factors, including the frequency, the level of ionization, solar activity, and the time of the day.

This angle in – angle out produces a distance on the Earth's surface where the signal has "skipped". This is exactly what the skip zone is.

In summary, the ionosphere plays a vital role by enabling long-distance HF propagation. Without it we would still be talking on tins connected with a piece of (very long) string!

Until next time, 73

From ZS2DH

Why a Small Transmitting Loop?

By Vaughan ZS2VR

Portability: One of the advantages of a portable loop antenna is its compact size and weight. It can be easily transported and set up in various locations, making it ideal for those who enjoy portable operations or have limited space for a permanent antenna installation. Often a location (SOTA peak for example) will not have a convenient place to support a mast but there is generally space for a tripod.



Selectivity and Noise Reduction: While not necessarily related to portable operations, magnetic loop antennas excel at reducing unwanted noise and interference. Because they are effectively an LC circuit, they can be tuned to specific frequencies and reject signals outside that range. This selective tuning ability enables operators to isolate desired signals and reject nearby or background noise, allowing for clearer reception and improved signal-to-noise ratio. This has been the saving grace for me at my townhouse QTH and often SOTA peaks have radio masts

Wide Frequency Range: Despite their compact size, magnetic loop antennas can cover a wide frequency range – a typical small STL will cover 40-10m with no need to make physical changes to the antenna (think linked dipole), apart from adjusting the tuning capacitor

Ease of Setup: Setup is relatively straightforward. Most de-

signs feature convenient mechanisms for adjusting the tuning capacitor, allowing operators to quickly fine-tune the antenna to the desired frequency.

Stealth Operation: The small size and low profile of STLs make them suitable for stealth operations. They can be easily concealed or disguised – very useful for operations from a restricted QTH

Disadvantages:

Limited Bandwidth: A properly configured STL will typically have a very narrow bandwidth compared to other types of antennas. This means that if you are constantly QSY'ing you will need to adjust to suit. For SOTA or POTA operations where you are calling on a single frequency this is not a major challenge and changing bands typically takes me about 30 seconds – this is probably faster than a linked dipole.

Tuning and Matching Challenges: Achieving an optimal tune can be a challenge when you are new to mag loops but after some practice it becomes second nature. An unexpected side benefit is that you tune to the current location and conditions for every place you operate from without having to trim antenna lengths or rely on an ATU.

Power Handling: Some small transmitting loops may have limited power handling capabilities. Operators must be mindful of the loop's power limitations and ensure that they operate within the specified power range. My QTH loop will handle full QRO but as it is in my garage roof, I limit myself to 100W. My portable loop will happily deal with the output of my G90 on SSB. For its intended use case, I can cover the entire country on 40m and have worked DX with it on 10m

In conclusion, operating a small transmitting loop in a portable situation offers advantages such as portability, low noise and a small footprint. However, it also comes with disadvantages including narrow bandwidth, tuning challenges, power limitations and potential trade-offs in size versus efficiency. Assessing these factors and understanding the specific requirements of the operating situation can help determine if an STL is the right choice for portable operations for you.

YEAR END RAFFLE

**ENTER TO WIN
A YAESU FT-4X**



87 855 5669 4663

**TICKET AT
R50**



**GO TO WWW.ZS2PE.CO.ZA AND CLICK ON THE LINK
TO BOOK YOUR TICKETS. EFT INTO THE CLUB'S BANK
ACCOUNT AND USE YOUR CALL SIGN
AND RAFFLE AS REFERENCE.**

**THE DRAW IS PLANNED TO TAKE PLACE AT THE
END OF YEAR FUNCTION IN NOVEMBER.**

Birthdays and Anniversaries

Birthdays

September

24 Shaun Baumeister ZS2L
24 Dylan MacDonald ZS2MAC
28 Glen Cummings ZS2GV

October

01 Eric Hosten ZS2ECH
04 Donovan van Loggerenberg ZS2DL
06 Danny Liebenberg ZS2E
09 Tejas Gajjar ZS2TG
12 Trevor Hartwig ZS2TJ
12 Neil Thomas ZR2NT
13 Llise Dodd ZS2LLD

Spouse Birthdays

September

20 Ellie Goosens Rudi ZR2RCG
25 Sarita Brand Albert ZS2BA
26 Caryn Pearson Graham ZS2GKP

Anniversaries

September

23 André Yolande Ollphent André
27 Graham Caryn Pearson ZS2GKP

October

01 Tony Deidre Allen ZR2TX
12 Donovan ZS2DN Rosalie ZS2DN van
Loggerenberg

DISCLAIMER

Please note:

The Editor, nor any PEARS club member shall be held liable for errors and/or omissions in any article and/or drawing contained in this newsletter. Furthermore, any view expressed is not necessarily that of the Editor, any committee member or other members of the Club. The material contained in this newsletter is not meant to defame, purge, humiliate and/or hurt someone's person or feelings.

If copy is unintentionally infringed, we apologise. The newsletter is published as a free service to Amateur Radio Operators and friends.

Sunday SARL and Monday Evening PEARS Bulletins

PEARS provides a local reading of the SARL bulletin every Sunday morning at 8:15 in Afrikaans read by Kevern ZR2BK and at 8:30 in English read by Rory ZS2BL, transmitted through the Lady's Slipper Repeater on 145.700MHz.

PEARS Bulletins are transmitted on Monday evenings at 20H00 through the Lady's Slipper repeater 145.700MHz 88.5Hz Narrow, which is coupled to the Longmore Repeater 145.625 MHz 88.5Hz Narrow.

Bulletin Roster

| | | |
|--------|---------|--------|
| 23-Sep | Vaughan | ZS2VR |
| 30-Sep | Rory | ZS2BL |
| 07-Oct | Kevern | ZR2BK |
| 14-Oct | Dave | ZS2DH |
| 21-Oct | Chris | ZS2AAW |
| 28-Oct | Mike | ZS2MIC |
| 04-Nov | Donovan | ZS2DL |
| 11-Nov | Ashley | ZS2AG |
| 18-Nov | Paul | ZS2PS |

<http://www.zs2pe.co.za/bulletins.html>

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Our 2024/2025 PEARS Committee

These committee members can be reached as a group by sending email to [committee\[at\]peham.co.za](mailto:committee[at]peham.co.za)

| PORTFOLIO | NAME | CALLSIGN | EMAIL | CONTACT No |
|---|--------------------------|----------|--------------------------------|--------------|
| Chairman, Technical support & maintenance | Kevern Burger | ZR2BK | k.burger[at]stfrancislinks.com | 083 401 9587 |
| Vice Chairman, SARL liaison, Hammies, Youth, Contest Scoring | Dave Higgs | ZS2DH | om[at]zs2dh.co.za | 082 387 5657 |
| Treasurer | Michael Steenkamp | ZS2MIC | zs2mic[at]igen.co.za | 082 523 5677 |
| Secretary, Repeaters, QSX emailing, club database | Christopher Scarr | ZS2AAW | christopher[at]peham.co.za | 082 925 6367 |
| RAE Training | Donovan van Loggerenberg | ZS2DL | zs2dl[at]hamradio.co.za | 082 852 4885 |
| Technical/repeaters, Search and Rescue & Emergency comms | Glen Cummings | ZS2GV | glenvanessa[at]gmail.com | 082 411 2743 |
| QSX Editor | Ashley Goosen | ZS2AG | qsx.zs2ag[at]gmail.com | 082 372 6696 |
| Public relations, special events displays, Scouts interface, "Jamtin" | Paul Schoeman | ZS2PS | paul.costcutters[at]gmail.com | 083 582 9660 |
| RAE Training | Vaughan Rizzo | ZS2VR | vaughan[at]netaddress.co.za | 082 882 6555 |

CO-OPTED POSTS

| PORTFOLIO | NAME | CALLSIGN | EMAIL | CONTACT No |
|-----------------------------|-------------------|----------|------------------------------|--------------|
| Contest Liaison Officer | Theunis Potgieter | ZS2EC | zs2ec01[at]gmail.com | 064 901 8079 |
| Events & Rally organising | Tony Allen | ZR2TX | tony.zr2tx[at]gmail.com | 082 956 2920 |
| Website renewal and updates | Graham Pearson | ZS2GKP | gpearson[at]blsmedical.co.za | 082 321 4798 |

(Please note: The "@" sign has been replaced with "[at]" in the above addresses to try to prevent spamming)

PEARS' VHF/UHF, Packet & Other Services

Local Repeaters: These repeaters form a separate sub-net in the PE - Uitenhage - Despatch area.

| Town VHF 145.050/650 88.5Hz, Narrow 12.5k | Longmore 145.025/625 88.5Hz, Narrow 12.5k | Uitenhage 145.075/675 Wide 25k | Town UHF 431.050/438.650 Wide 25k | <---- IRLP available on this subnet |
|--|--|---|---|---|
| Cockscomb 431.000/438,600 Add 88.5Hz for squ tail | Viewlands 431.075/438.675 Add 88.5Hz for squ tail | <---- These form linking hubs for events, hence no tail | DMR 430.675/438.275 QTH: ZS2VA | D-Star 145.175/775 QTH: ZS2N |

Cape Linked System Repeaters:

These form the PEARS long-range 2-metre repeater system, in conjunction with the Border, Southern Cape and WCRWG systems. See www.zs2pe.co.za/Repeaters/repeaters.htm for more details.

| | | | |
|--|--|------------------------------------|---|
| Lady's Slipper 145,100/700 88.5Hz, Narrow 12.5k | Grahamstown 145,150/750 Wide 25k | Cradock 145,050/650 Wide 25k | Noupoort (link only) 438,750 / 438,675 Wide 25k |
| Colesberg 431,075/438,675 Wide 25k | Kareedouw 145,125/725 | Plett 145,175/775 | Brenton 145,075/675 |

APRS/Packet network:

| | | |
|---|---|---|
| ZSONTP Node Lady's Slipper 434,800 1200bd 439.850 9600 bd | ZS0KDK APRS Digi Mount Road 434,800 1200bd | ZS0KDB APRS Digi Longmore 434,800 1200bd |
|---|---|---|

VHF Beacon: 50,007 MHz FSK – ZS2X, 25 Watts into 2 element Yagi beaming north.

Banking details (for subs & donations): NEDBANK SAVINGS ACCOUNT No. 221 252 7594, Bank code 121217, A/C name: Port Elizabeth Amateur Radio Society. **Please use call signs as a reference.**