

***September - October 2019***



Lighthouse Activation by ZS2GS and ZS2U, Donkin Reserve  
17 August, 2019. Photo by ZR2A

This Newsletter is published by the Port Elizabeth Amateur Radio Society  
P.O. Box 10402, LINTON GRANGE, 6015

Editing by Uli ZR2A

**QSX-PE - Newsletter for the discerning Radio Ham**

Download QSX-PE from [www.zs2pe.co.za/Newsletter/Newsletter.htm](http://www.zs2pe.co.za/Newsletter/Newsletter.htm)  
or [www.commco.co.za/pears.htm](http://www.commco.co.za/pears.htm)

# PEARS Monthly Meeting

7:30 pm at the Italian Sporting Club, 17 Harold Road, Charlo.

**Tuesday 17<sup>th</sup> of September 2019**

**Radiotherapy Machines, by Neville ZS2N**

**Tuesday 15<sup>th</sup> of October 2019**

**NSRI Awareness Presentation, by Judy Venter**

**Tuesday 19<sup>th</sup> of November 2019**

**Road Trip into the African Continent, by Eric ZS2ECH**

## DIARY OF EVENTS

14 - 15 September	Worked All Europe DX Contest SSB
14 - 15 September	SARL National Fieldday
<b>17 September</b>	<b>PEARS monthly meeting</b>
21 - 22 September	SARL All Africa DX Contest
21 - 22 September	SARL VHF/UHF Contest
28 - 29 September	CQWW RTTY Contest
3 October	SARL 80m QSO Party
6 October	AWA Valve AM QSO Party
7 October	AWA Valve SSB QSO Party
12 October	SARL Spring QRP Contest
<b>15 October</b>	<b>PEARS monthly meeting</b>
18 - 20 October	Jamboree-on.the.Air
26 - 27 October	CQ Worldwide DX Contest SSB
<b>27 October</b>	<b>The PEARS HF DX Contest</b>
2 November	RaDAR Challenge
9 - 10 November	SARL VHF/UHF Analogue Contest
<b>19 November</b>	<b>PEARS monthly meeting</b>
23 November	SARL Newbie Party
23 - 24 November	CQ Worldwide DX Contest CW
<b>24 November</b>	<b>5150 Triathlon Nelson Mandela Bay</b>

**Tony, ZR2TX is looking for volunteers to help support the event listed above.  
Please contact him at [tony.zr2tx\[at\]gmail.com](mailto:tony.zr2tx[at]gmail.com).**

# The PEARS HF DX Contest

## 1. Aim

The aim of the Pears HF DX Contest is to encourage Southern African radio amateurs to work DX.

## 2. Contest Period Sunday

27 October 2019 starting at 12:00 UTC and ending at 16:00 UTC.

## 3. Modes and Frequencies

SSB, CW and Digital (any digital mode will be acceptable) with activity on 20, 15 and 10 metres

## 4. Entrance Categories

4.1 Single Operator, Base or Field Station

4.2 Multi Operator, Base or Field station

## 5. Station Requirements

Stations may use the maximum power permitted according to the regulations in the country of operation.

## 6. Points

6.1 One point is earned for each QSO. A station may be contacted once on each contest band

6.2 Field stations must multiply their score by two (2) and a further multiplier of two (2) is available if the station uses a non-gain antenna with reference to a dipole. Then the score is multiplied by the number of countries contacted

## 7. Exchange

Call sign and CQ Zone.

Log sheets must be submitted by 18 November 2019 by e-mail to [contest@peham.co.za](mailto:contest@peham.co.za) or to the Port Elizabeth Amateur Radio Society, PO Box 10402, Linton Grange, Port Elizabeth, 6015 or. No late submissions will be considered. Should more than three logs be received per category, a certificate will be awarded to the winner in each category.

## ZS2 Sprint Results (21 July 2019)

1.	ZS2DK	96 points
2.	ZS2MAC	85 points
3.	ZS2NF	55 points
4.	ZS5DCF	52 points
5.	ZS6KR	50 points
6.	ZS4JAN	40 points
	ZS1LL	40 points
7.	ZS3PG	35 points
	ZS6BQS	35 points
	ZS4CGR	35 points

8.	ZS2DH	33 points
9.	ZS3WL	29 points
10.	ZS2AAR	27 points
11	ZS6MMA	20 points
12	ZS4DZ	19 points
13	ZS6PVI	15 points
	ZS6ANT	15 points
14.	ZS6HM	10 points
15.	ZR2A/4	9 points
16.	ZS4MG	7 points

Congratulations to the winners! You will receive certificates via email and thanks to everyone participating

73 de ZS2EC Theunis      Pears Club contest committee member

## Minutes of the July PEARS General Meeting

Held at the Italian Club on the 16th of July 2019 at 19h30

### Welcome

Vice Chairman Tony ZR2TX welcomed everyone present.

**Attendance:** As per attendance register

**Apologies:**      Bernice ZS2BDL  
                          Gert ZS2GS  
                          Les ZS2VA  
                          Barry ZS2H  
                          Colin ZR2CRS

### **Acceptance of minutes of previous meeting:**

Minutes of previous meeting were reviewed and accepted.

### **Matters arising:**

Noted that change to format of news bulletin was well received and would continue, more net controllers were needed.

Tea and coffee box was to be stored at the Italian club and chairman was going to source a kettle.

Plans needed to get tower from Hogsback to Grahamstown.

Italian Club Subs - Chairman had spoken to Nic in this regard but had not yet had feedback.

### **Correspondence:**

None in, none out.

## **Finance:**

No report as treasurer was not present.

## **Events:**

Baywest rally, 15 members were involved. Crossways Trail Run, 5 members spent the day assisting. Trans Baviaans coming up, still need volunteers.

## **General:**

Congratulations to ULI, ZR2A, for a very good QSO publication. As always he is looking for content. Was suggested that we do a regular feature on past and present members.

Noted that Joe was out of hospital and making slow but steady progress. Also that Donovan was recovering after his recent surgery.

Noted that Andrew, ZS2G had received a SOTA chasers award by obtaining 200 points. Dave ZS2DH gave a short explanation.

Paul ZS2PG asked for tips regarding building an X-Band radio. He also suggested having a technical discussion "How To" on using an oscilloscope. Proposed for the September meeting.

Crackle on Slipper repeater was discussed and to be investigated, members to monitor and try find common cause (wind)

Chris ZS2AAW gave feedback on the new features added to the Longmore repeater, mainly regarding remote linking.

Request to all members to please pay their subs if not already done.

Meeting was then followed by a very interesting and interactive talk by John Spies and ex ATC controller.

Meeting closed at around 210h00.

**Next meeting:** 20th August at 19h30

Chairman and Secretary: Tony Allen ZR2TX

# **Minutes of the August PEARS General Meeting**

## **Welcome**

Chairman Gert ZS2GS welcomes everyone present.

**Attendance** As per attendance register

**Apologies** Bernice ZS2BDL

## **Acceptance of previous meeting's minutes**

Minutes of previous meeting were reviewed and accepted.

## **Matters arising**

Date and time to be set by Paul ZS2PG on how to use an Oscilloscope. Paul not present at meeting

Tea and coffee box – Gert ZS2GS states that he has a spare kettle and has made arrangement with Nic (Caterer) to leave box at club. Member wanting tea or coffee can make.

Tower at Hogsback. Gert ZS2GS will arrange with Nic ZS2NT for transporting tower, but concrete base must first be cast at Grahamstown site.

Yearly rental of club facilities at Italian Club. ZS2GS has not yet made contact with the Italian club, will do so soon.

**Correspondence** : Repeater site licenses received from ICASA. Gert ZS2GS will hand over to Chris ZS2AAW for safe keeping

**Finance** Treasure not at meeting. Status was reported

## **General**

SARL HF competition results. 33 individual logs were submitted – PEARS members

Barry ZS2NF #7

Theunis ZS2EC #8

Dylon ZS2MAC #25

8 club logs were submitted

PEARS and Bloemfontein shared the 3<sup>rd</sup> place

Well done to all who took part.

Light house weekend - Gert ZS2GS and Al ZS2U operated a field station at the Donkin light house for a few hours on the Saturday and made 40 contacts.

Tony ZR2TX gave feedback on the latest events the club was involved in. Baviaans went well.

D/Star : Mike ZS2MIC gave brief overview of D/Star in the PE area and have been requested to be the guest speaker at the January meeting on the use of D/Star.

The committee recommended that Uli ZR2A (QSOX editor) publishes a profile of a member, whether it be past or present in each QSOX addition.

Guest speakers : September      Neville on various medical imaging technics  
October                              Judy Venter on the NSRI

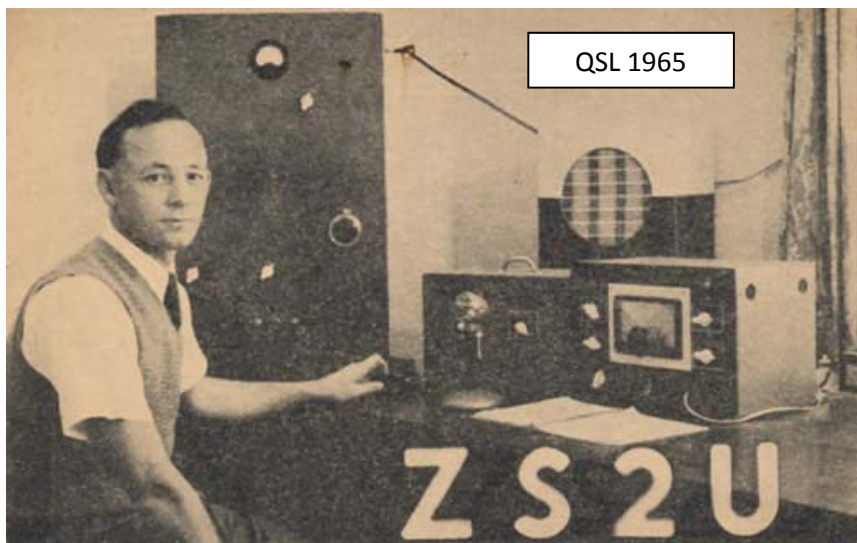
Tonight's guest speaker : Colin ZR2CRS on his trip to China – very interesting especially on how clean it is there...

Next meeting is on the 17<sup>th</sup> of September 2019

CHAIRMAN / SECRETARY  
(GJ SCHOEMAN ZS2GS)

## PEARS Member portrait – AI ZS2U

Having lived for 89 years, I have been fortunate to have led a healthy, active life. Activities include athletics, swimming, yachting, tennis, photography and recording local dance bands.



My main interest though has been amateur radio which I discovered when I was 15. I have been interested in both operating and construction, particularly antennas.

My enthusiasm resulted in me obtaining DX Century Club 305 countries confirmed, CW DXCC 252 countries, Worked All Zones, Worked All States, Worked All

Europe and All Africa Award. I have done a lot of portable operation in contests and putting the former homelands on the map: S42U in Ciskei and S83U in the Transkei.

I have given classes for prospective amateurs on a number of occasions, served on committees of local branches, clubs and as provincial director, Hamnet Eastern Cape. This, with having written 49 articles for Radio-ZS earned me honorary life membership of the S.A. Radio League. Last, but not least, my activities have resulted in me meeting, becoming friends with and having fun with many nice, decent people.

73, AI ZS2U

## A Ham Radio Quiz, by AI ZS2U

1. You are situated on the Donkin Reserve and plan to contact a station on St. Croix Island. In which direction should you point your antenna and how far away is St. Croix Island?
2. You have an antenna fed with a coaxial line that has a loss of 2dB. The SWR measured at the transceiver end is 1,3:1. What is the true SWR on that line?
3. You want to operate on 3,6MHz and you want to use a quarter wavelength wire. However, you only have space for 16 meters of wire. To resonate the wire you plan to put a loading coil 2 meters from the top end. What value inductance would this coil have to be?

4. You have a length of coaxial cable which you want to use at a certain frequency and want to know what its matched loss figure is. You leave the far end open-circuit and measure the SWR at the near end which is 6:1. What is the loss figure?
5. You see a mast on a level field and as a matter of interest, you want to know how high it is. You are at a distance from the mast and from there, the angle from horizontal to the top of the mast is 8,5 degrees. You then go back a further 20 meters and the angle is now 6,83 degrees. How high is the mast?

Answers will be provided in the next edition of the QSX.

## Automated Contacts prohibited for DXCC

The ARRL is prohibiting automated contacts for DXCC as well as for ARRL contests due to the emergence of QSO Robot software for FT8/FT4 that enable completely unattended QSOs in these modes. More details at

<https://rara.org/post/2019/08/21/arrrl-contest-and-dxcc-rules-now-prohibit-fully-automated-contacts/>

## SARL HF Happenings Newsletter

This is probably old news for many of the seasoned PEARS HF operators but in case you did not know this regular SARL newsletter compiled by ZS4BS containing Contest and DX information from Africa, here is the link: [http://www.sarl.org.za/hf\\_happenings.asp](http://www.sarl.org.za/hf_happenings.asp)

## RF Noise can kill Amateur Radio

Interesting article on ever growing RF pollution from cheap electronic products. Measurement methods and a SARL project for automated RF noise measurements using a Raspberry Pi along with a dongle are described in the link below:

<http://www.amateurradio.org.za/RF%20Noise%20can%20kill%20amateur%20radio%20Version%202.pdf>

Tnx to Chris, ZS2AAW

## First Radio License in SA issued 95 years ago

From <https://www.sahistory.org.za/dated-event/first-radio-licence-sa-issued-dr-j-van-reensburg-carnarvon> (first individual broadcast radio listener license)

On 16 August 1924 the first radio license in SA was issued to Dr J. van Rensburg of Carnarvon.



The first station in South Africa was put up by the South African Railways in Johannesburg on December 29, 1923. The Scientific and Technical Club in Johannesburg took over on July 1, 1924. The Cape and Peninsula Broadcasting Association started a similar service in Cape Town, on September 15, 1924. The Durban organization began broadcasting on December 10, 1924. Financial support came from listener's licenses like the first one issued to Dr J. van Rensburg.

Tnx to Gert, ZS2GS

## Spanish Paella Antenna

This OM used a metal Paella dish to make QSOs via the geostationary QO100 satellite <https://twitter.com/EA5DY/status/1164570249347424256/video/1>

Tnx to Dave, ZS2DH

## DStar Repeater Update, by Neville ZS2N

The DStar repeater is back from Icom and the controller has been repaired.

The computer that was with the system has died of old age. Motherboard. power supply as well as the hard drive seems to of given up also. That's the bad news.

The good news: I have bought a new computer as well as the extra Lan port. The Linux software is loaded and we are busy looking to get new software for the controller. This will enable us to set up the various parameters in the controller.

As soon as this is done I will run a few tests and then if we speak nicely to Chris, install the unit on a tower that those with DStar radios can access. VHF. 147.775 dup -600, set to DV mode.

If you have a DV dongle i.e., the Jumbospot you can get on to DStar or DMR or Fusian at your home PC. You will need to register with DStar as well as DMR operators before you will be let loose.

I do not have a date on the DStar but please bear with me. Sooner rather than later.

## Lighthouse Weekend activity from Donkin Reserve, by Uli ZR2A

Gert ZS2GS and Al ZS2U headed out on August 17 to Donkin Reserve for a participation in the Lighthouse weekend. Many lighthouses were activated in South Africa, so there was quite a bit of daytime activity on 40m. It should be noted that it was the day of Al's 89<sup>th</sup>



birthday! Al is still an avid operator which left Gert complaining that despite bringing the bakkie and all the equipment, he got far less airtime than Al.

Operating with an Icom-7100, 100W to a double dipole for 40 and 80, they worked 40 stations in South Africa, Namibia (Walvis Bay) and Swaziland of which 13 were other lighthouse stations. A notable QSO was with ZS9V, the international radio expedition to Robben Island.

The weather was not great and after filling one page in the logbook, the team called it quits and headed home.

## Distribution of operating modes on HF, by Uli ZR2A

Michael, G7VJR runs Clublog, a site where hundreds of logs of DXpeditions are stored along with logs of tens of thousands of normal Clublog users, containing millions of QSOs. This creates a giant database from which Michael has been deriving some interesting statistics on the usage of different operation modes:

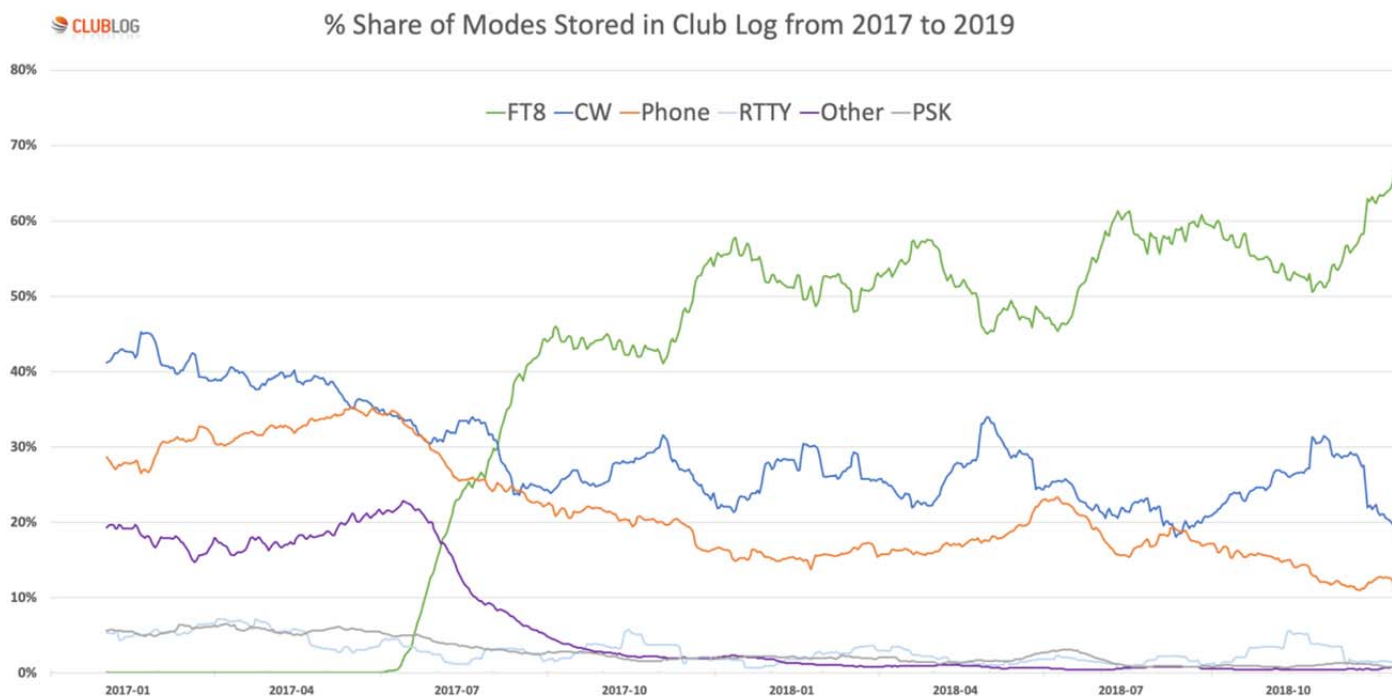
<https://g7vjr.org/2019/03/proportion-of-modes-used-on-the-air-2018-update>

If you are operating on HF and you have been noticing seemingly dead bands that show signs of life only on .074, I recommend reading Michael's detailed analysis of the incredible shift of operating modes from classic modes to FT8 within the last two years.

When you take a look at the graph on Michael's website, you notice the meteoric rise of FT8. Since its introduction two years ago, it has almost completely taken over the other digital modes (RTTY, PSK, JT65, JT9, etc.). FT8 also lead to a significantly reduced portion of CW and SSB in the mix, something that current HF operators will most likely agree on immediately.

Interestingly, while FT8 seemingly came out of nowhere, it predecessors JT65 and JT9 (the main 'Others' modes) had already captured some 20% of all QSOs in mid-2020. With JTx

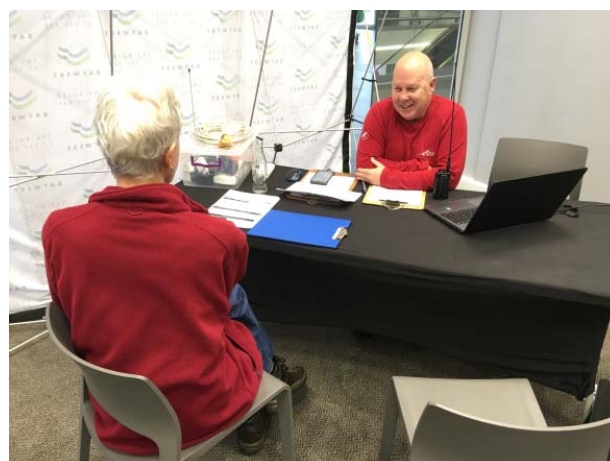
QSO durations being many times longer than FT8, these modes already allowed for contacts with very weak signals. The much shorter duration of a QSO with FT8 prevailed over the Signal-to-Noise advantage of JT65.



The classic modes CW, SSB, RTTY have been losing ground, at least in relative terms, but according to the observation of many, also in absolute numbers.

## Baywest Rally, June 2019, by Beavan ZS2RL

The overnight rain on Friday resulted in the Saturday's stages being cancelled. The routes in the Longmore forest were impassable. However, all the stages on the Friday afternoon were completed despite the rainy conditions.



The one pic shows Tony ZR2TX in Control, speaking to my XYL Mel.

As for the second pic: Mel and I did duty at the end of Stage 3 & 5 (the same position) at Baywest. It was miserable! It was wet, dark, raining, muddy, cold – there were better places to be.



# Trans-Baviaans Impressions, August 2019

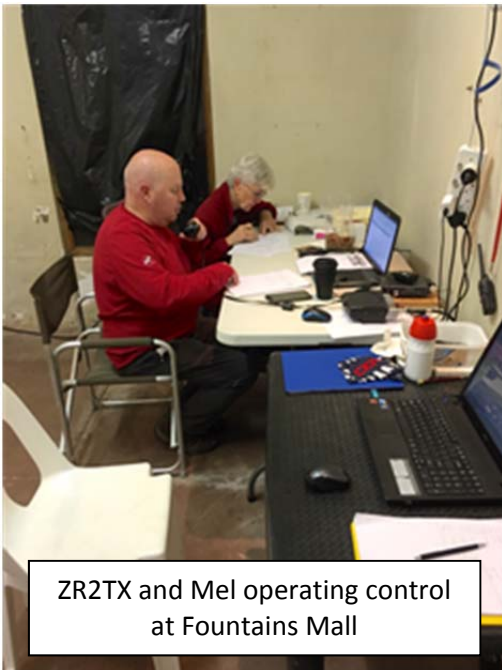
Tnx to Jimmy ZS2JIM, Beavan ZR2RL



View from Grasnek



Repeater on Grasnek Pass



ZR2TX and Mel operating control at Fountains Mall



ZS2JIM providing comms



Trans-Baviaans rider checkpoint



ZS2CRS working on essentials of Maslow's hierarchy of needs

# CONGRATULATIONS

## BIRTHDAYS – September

02 Johannes Geldenhuys ZS2JO  
02 Mel XYL of Beavan ZS2RL Gwilt  
02 Renette XYL of Andre ZS2BK  
van Deventer  
08 Phil Hopper ZS2PP  
09 Andrew Bouwer ZS2AFB  
09 Merle ZR2MP XYL of Neil ZR2NT  
Thomas  
10 Andre van Deventer ZS2BK  
11 Barry Jackson ZS2H  
11 Jane XYL of Clive ZS2RT Fife  
12 Jo ZS2W XYL of Al ZS2U Akers  
12 Pam ZU1PAM XYL of Phil ZS2PP  
Hopper  
20 Ellie XYL of Rudi ZR2RCG Goosens  
24 Dylan MacDonald ZS2MAC  
24 Shaun Baumeister ZS2L  
25 Colleen XYL of Barry ZS2NF Nugent  
26 Caryn XYL of Graham ZR2ABQ  
Pearson  
27 Ewald Bouwer ZS2EHB  
28 Glen Cummings ZS2GV  
28 Willem van Heerden ZS2WP

## ANNIVERSARIES – September

02 Allan ZS2BO and Joan ZR2ABA Bowles  
06 Les ZS2VA and Lyn Barker  
11 Neville ZS2N and Sandra Bowden  
14 Paul ZS2PG and Daphne Galpin  
27 Graham ZR2ABQ and Caryn Pearson  
30 Kevin ZS2KO and Monique  
O'Donoghue

## BIRTHDAYS – October

01 Eric Hosten ZS2ECH  
04 Donovan van Loggerenberg ZS2DL  
05 Roslyn XYL of Andrew ZS2PA Prideaux  
06 Norma XYL of Terry ZS2ABB Flanagan  
08 Peter Ryder ZS2PR  
08 Vanessa ZS2VS of Christopher ZS2AAW  
Scarr  
12 Neil Thomas ZR2NT  
13 Llise Dodd ZS2LLD  
16 Craig Roman ZR2C  
20 Jimmy De Scande ZS2JIM  
24 Cathy XYL of Wolf ZS2WG Gerstle  
26 Patsy Kruger ZS2PTY  
26 Stoffel Carr ZS2C  
27 Ted Smook ZS2TED  
27 Verna XYL of Craig ZR2C Roman  
29 Pat Pullinger ZS2PJP

## ANNIVERSARIES – October

01 Tony ZR2TX and Deidre Allen  
12 Donovan ZS2DL and Rosalee ZS2DN  
van Loggerenberg  
17 Yacov ZS2YCL and Chantal Look  
20 George ZS2GO and Anneke Whitehead  
24 Al ZS2U and Jo ZS2W Akers

**If you are a member and your birthday or anniversary details are omitted or incorrect,  
please notify any committee member to update our records**

## Sunday SARL and Monday Club Bulletins

PEARS provides a local reading of the SARL national bulletins on Sundays in Afrikaans at 08h15 and English at 08h30.

The club bulletins are transmitted on a Monday at 20h00.

All transmissions are on 7098 kHz as well as on the Lady's Slipper's 2m repeater on 145,700 MHz.

Please consult the PEARs webpage for any changes.

## Bulletin Roster

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

2 September	Glen	ZS2GV
9 September	Jimmy	ZS2JIM
16 September	Beavan	ZS2RL
23 September	Gert	ZS2GS
30 September	Tony	ZR2TX
7 October	Chris	ZS2AAW
14 October	Glen	ZS2GV
21 October	Jimmy	ZS2JIM
28 October	Beavan	ZS2RL
4 November	Gert	ZS2GS

The bulletin readers are always looking for something to announce. If you have something to contribute, please forward it to the next reader.



## HAM RADIO OUTLET-SOUTH AFRICA cc

“Where Radio is a Passion”

Port Elizabeth's official distributor of YAESU, Kenwood and ICOM amateur equipment

ICOM KENWOOD



For all your Amateur needs from plugs to coax....  
Give us a call 041 3711425. Speak to Donovan (ZS2DL)

**We Ship Country Wide!**

Visit <http://www.hamradio.co.za>

**For all your ham radio requirements!**



# Your Society's Committee for 2019-2020

<b>Chairman</b>	Gert Schoeman ZS2GS	082 721 4010	gert1schoeman[at]gmail.com
<b>Vice Chairman, Events &amp; Rally organising</b>	Tony Allen ZR2TX	082 956 2920	tony.zr2tx[at]gmail.com
<b>Secretary, Treasurer</b>	Bernice de Lange ZS2BD	082 390 6340	bernicedelange[at]outlook.com
<b>Repeaters, Wifi network</b>	Chris Scarr ZS2AAW	082 925 6367	christopher[at]peham.co.za
<b>Technical/repeaters/SAR comms</b>	Glen Cummings ZS2GV	082 411 2743	glenvanessa[at]gmail.com
<b>Meetings &amp; Refreshments, Socials, Fundraising</b>	Jimmy De Scande ZS2JIM	083 650 9422	Jimmy.descande[at]gmail.com
<b>QSX Editor</b>	Ulrich Ann ZR2A	079 959 1684	dl2hbx[at]gmx.de

## CO-OPTED POSTS

<b>RAE Examination Admin.</b>	Donovan van Loggerenberg ZS2DL	082 852 4885	zs2dl[at]hamradio.co.za
<b>Contest Committee</b>	Theunis Potgieter ZS2EC	064 901 8079	contest[at]peham.co.za
<b>PEARS VHF/UHF Contest</b>	Al Akers ZS2U	041 360 2983	

Replace [at] with @ when you want to send an email (this is done 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.**

<b>Town VHF</b> 145.050/650 88.5Hz, Narrow 12.5k	<b>Longmore</b> 145.025/625 88.5Hz, Narrow 12.5k	<b>Uitenhage</b> 145.075/675 Wide 25k	<b>Town UHF</b> 431.050/438.650 Wide 25k	<----- <b>IRLP available on this subnet</b>
<b>Cockscomb</b> 431.000/438,600 Add 88.5Hz for squ tail	<b>Viewlands</b> 431.075/438.675 Add 88.5Hz for squ tail	<----- <i>These form linking hubs for events, hence no tail</i>	<b>DMR</b> 430.675/438.275 QTH: ZS2VA	<b>D-Star</b> 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](http://www.zs2pe.co.za/Repeaters/repeaters.htm) for more details.

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

### APRS/Packet network:

<b>ZSONTP Node</b> Lady's Slipper 434,800 1200bd 439.850 9600 bd	<b>ZS0KDK APRS Digi</b> Mount Road 434,800 1200bd	<b>ZS0KDB APRS Digi</b> 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.**

### Disclaimer.

Note: The Editor, nor any PEARS club member, shall not 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 copyright is unintentionally infringed, we apologize, this newsletter is published as a free service to Amateur Radio operators and friends and is neither for profit nor gain.

**TO:**

**IF NOT DELIVERED  
RETURN TO**

Port Elizabeth Amateur Radio Society  
PO Box 10402  
LINTON GRANGE  
6015

AMATEUR RADIO is the hobby for RADIO EXPERIMENTERS  
and those who like to fiddle with ELECTRONICS,  
COMMUNICATIONS or COMPUTERS