September 2022

Article on Page 11

This Newsletter is published by the Port Elizabeth Amateur Radio Society

P.O. Box 10402, LINTON GRANGE, 6015

Editing by Ashley Goosen ZS2AG

QSX-PE - Newsletter for the discerning Radio Ham

PEARS Monthly Meeting

19:30h at the Italian Sporting Club, 17 Harold Road, Charlo

The next meeting at the Italian Club will be on the
18th October 2022

Man, Ashley, ZS2AG is a slave driver. Just got a message to say this column is late again and he is in a hurry to get the next QSX out. So here it is. I think firstly his trip seems to be coming to an end rather quickly as he returns to Port Elizabeth on the 17th of October. Looking forward to welcoming you back Ashley. We haven't shared a cold drink in a while.

Well quite a bit continues to happen in the background and all the committee asks to make these efforts worthwhile is that you, the club member get involved with club activities.

I do understand that a new 40/80 trapped dipole was donated to the Jamtin by Shaun ZS2SG for use there and from all accounts it has made a huge difference in the success rate on HF.

My personal thanks to Shaun for this gesture.

Then Kevern let know that everyone should have their new shirts by now and if not they should be at the next club meeting which is scheduled for Tuesday 19 September.

Then please diaries 25 November at 18:00 for our annual PEARS Supper evening at the Italian club.

Please visit www.zs2pe.co.za and book your place online. You have a choice from a menu this time but the old favourite of ice cream and chocolate sauce will still be there sponsored by the club and we will also cover the

cost of the service charge the Italian club now charges.

Then just a word about Monday night Bulletins. It is encouraging to hear those calling in after the bulletin exceeding 10 just about every Monday but we really would like more. It is always important to judge

How many people actually listen? So you do not have to stay and have a conversation but just come up and say thanks for the bulletin your callsign and won't be coming back that is a start to you

talking and staying the following week. Hi

Please come along on the 19th as our guest speaker will be Quintus ZS2KQ who will present to you his Magnetic loop project.

I look forward to seeing all of you there.

Until next time….

PEARS, WE LIKE BEING YOUR CLUB

An awesome achievement guys— Editor

Minutes of PEARS Monthly Meeting

Held at the Italian Club on the 16th August 2022at19h30

Welcome:

Chairman Donovan welcomed all present.

Attendance:

Approximately 15 members.

Apologies:

ZS2AAW, ZS2AG, ZS2JIM, ZS2IW, ZS2GS, ZS2MC

Silent Key:

The club stood in memory of the passing of Stoffel ZS2C.

Acceptance of previous meeting's minutes:

Proposed: ZS2DK

Seconded:ZS2RT

Matters arising:

None

Finances:

All in good standing. Mike ZS2MIC reported the balances to the meeting.

General:

Because of the concern raised during the committee meeting amount the Slipper Electricity account, Kevern ZR2BK will go up to the site take a reading and then forward it to the NMMM via the user interface because we do believe we should have a rather large credit by now. The suspicion is that they simply estimate every month.

Shirts

Latest 23rd arrival promised by the supplier. Once they have arrived Kevern will notify everyone to arrange collection of said shirts.

Silent Key Memorial Board:

Colin ZR2CRS handed over the board to the club, and we thank him again for this most thoughtful gesture.

He will see that it is placed in the Jamtin for now.

Events

TransBaviaans event 20th August. This raised quite a debate. Because on the first leg there was an evacuation required of some more than 100 riders and it was clear for all to see that the amount of communication happening from the organizers that they were grossly shorthanded for the size of the event they are staging. Colin ZR2CRS disagreed with the chair and suggested the chair was being critical of something the chair knows nothing about. The Chairman then suggested if it is something that PEARS wants to be associated with then a better understanding of how emergencies of this nature can be handled more efficiently and more timeously, because it was clearly not the case with this event. The Chairman continued to say that every member of the organization involved in rescue and competitor safety that was in charge of a vehicle should have had a radio operator with them to ensure effective communication.

Colin then suggested that lack of volunteers was a problem which was acknowledged by the meeting but the chairman suggested that he and Colin were preaching to the converted and we needed to get those long dormant members out of retirement and active again.

Further on the topic of events Andrew ZS2G raised 2 events:

Firstly Lighthouse weekend Cape Recife lighthouse has been registered under the call sign ZS2PE however no access has been arranged for the actual lighthouse so the best is to park in the parking lot if you wanted to operate from there. There did not seem to be much enthusiasm for this idea.

Andrew also mentioned the 3 and 4 September is SARL field day. Now this also started a debate. Although it would have been nice to arrange a weekend away for club members where we could put up a field station and have resort type atmosphere, it was however a bit late in the day. Everyone knows that most people are taking financial strain at the moment to the extent that advance planning is required if chalets or campsites need to be booked and paid for. So this is a non-starter for this year. ZS2DH suggested that it would be a non-starter every year because nobody reads his blue book and we always leave things for the last minute.

Be that as it may Andrew suggested we have a get together at the Jamtin and set something up there. ZS2MIC offered again to deaf ears, to make a new 40/80 dipole for the Jamtin but then it came to light that we currently

don't have permission to have as much as a wire antenna up there on a permanent basis. This raised the point of how much we are actually part of that setup, or do we actually need to start looking out for Amateur radio and find our own home-somewhere where we call the shots. Colin ZR2CRS interjected that under the current committee of the scout club, we will always be welcome. The Chairman then suggested that committees change, and as a result we might then need something in writing between the owners of the property and PEARS. Colin indicated that this is possible and the chairman invited him to put something forward in this regard. Enquiries and investigations into our own premises will be on going for now.

QSX

Ashley is in the States and he will still be publishing from stateside. Please give him a helping hand with it by providing articles.

ZS2CJ

Anyone with e-waste, get it to Chad who will convert to cash for the club.

Due to the lengthy discussion on the Events, the decision was taken that the planned entertainment would be postponed to another occasion.

Closure:

Meeting ended at 20h58

Next meeting in 19th September.

ZS2KU Quintus will speak at September meeting about his COVID project – the magnetic loop antenna

CHAIRMAN   SECRETARY

DONOVAN (ZS2DL)   DONOVANVAN (ZS2DL)

FROM THE EDITOR

Hi Everyone, I wish you happy reading this copy of QSX and 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.
Thank you for the articles you have submitted for this issue.
73,

Ashley ZS2AG

THE ZS2EZ-3 DX CLUSTER

Firstly, what is a DX Cluster? Per Wikipedia, "A DX cluster is a network of computers, each running a software package dedicated to gathering, and disseminating, information on amateur radio DX activities. The computers comprising the network are called nodes, the network itself being termed a cluster of nodes."

Why use a DX Cluster? DX Clusters provide realtime information on stations heard around the World, provide valuable information regarding propagation trends and can also be used to establish operating patterns of rare DX stations. The cluster can also provide information regarding where the DX is listening when operating split, as well as when DX stations operate on unusual frequencies.

How is cluster information sourced? Amateurs all over the world post ("spot") to clusters, and this information is circulated very rapidly through the whole cluster network. It is always beneficial for amateurs to post their spots to a cluster in their own country, as this is of most benefit to their fellow amateurs in their region as they will get the benefit of receiving that spot marginally quicker than the rest of the world!

How is Cluster Info Disseminated? There are several methods – via Web interfaces (such as DX Summit), via RF (Packet Nodes) or via Telnet Links (the most common, ZS2EZ-3 is a Telnet Cluster). There are a large number of software packages that make use of Telnet links, and that can be configured to connect to one or more Clusters. For example, SpotCollector (part of AA6YQ's DXLab Suite) can be configured to no less than FOUR Telnet Clusters, as well as PacketCluster, DX Summit (via IRC) and receive local spots directly from WSJT-X. N1MM Logger can also be configured to connect to a Telnet cluster of choice, as can packages such as VE7CC's CC User. There are dozens of other options.... All that is needed is the address of the cluster, and the port on which it is reachable.

Why did the ZS2EZ-3 Cluster come about? After the sad passing of Dick ZS6RO in early 2019, the only active ZS DX Cluster node ceased to exist. Having been a user of this resource for many years, I decided to take up the challenge of providing a new DX Cluster node for the benefit of the ZS DX Community.

How did it all happen? Firstly, I needed a fixed IP address for the cluster. This was done by taking out a subscription with No-IP and registering a self-

hosting domain with them. Armed with a location for my cluster, I then had to identify a suitable Cluster Package. After some investigation I decided to go with Lee VE7CC's CC Cluster software. This is Windows-based software, and was (at least to me) far more intuitive than DX Spider or AR-Cluster. VE7CC also provided excellent email support, helping me enormously to get a working Cluster node, initially with just a feed from his VE7CC-1 cluster. After a few niggly problems (which Lee helped me to overcome) I finally made a public announcement on the SARL Forum, opening the ZS2EZ-3 DX Cluster Node for General Use on 30 October 2019. In addition to the original feed from VE7CC-1, the Cluster now also receives spots from EU (GB7DXS), NA (AE5E), JA (JA2YYF-9) and VK (VK3AMA-2). Whilst all Nodes in the Network are essentially linked together and provide the same information, multiple feeds provide redundancy in the event of node failures. There are also feeds of the RBN Network and the FT8 RBN Network, provided by Lee VE7CC (By default these are inactive - use set/skimmer command to turn on). In time, I plan to add more feeds from other areas of the World. My cluster runs on a dedicated Mini PC on my network, serviced by a 25Mbps Fibre Line. The PC (along with the router, ONT and network switch) is connected to a 24V 1400W inverter, so it keeps running through loadshedding… only downtime is when Openserve experiences an outage (very seldom)… longest downtime here in 5 years of fibre has been half a day!

To connect to my ZS2EZ-3 Cluster, simply point your Telnet Client Software to **cluster.zs2ez.org (Port 7373)**.

Whilst any cluster client can be configured to point to this address, the VE7CC CC User software (found here : http://www.bcdxc.org/ve7cc/default.htm#prog) works particularly well and allows filters to be set up for what your specific interests may be. I would however recommend upgrading the software to ver 3 - see here : http://www.bcdxc.org/ve7cc/Ver3/V3Help.htm

From the CC Cluster User Manual : "The best way to connect to the cluster is with the CC User program. This is a Windows program that uses selection buttons for all the user configuration items. Using this program, it is a simple matter to customise your connection. Even if you are going to use another logging or contest program, it is the easiest way to configure your connection. After you have it configured, you can disconnect and reconnect with your other program. The settings will remain as they were before."

Users of this Cluster are requested to use their <u>VALID CALLSIGNS</u>. Additional SSID suffixes are fine (eg ZS2EZ-2)

Cluster commands are displayed when connecting, but for a summary of all CC Cluster software commands see:
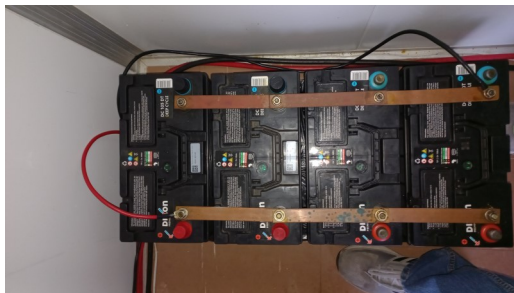http://bcdxc.org/ve7cc/ccc/CCC_Commands.htm

Please try connecting to my cluster! Any feedback is welcome (comments / problems /help needed etc.) - just send an email to shack@zs2ez.co.za

TRANSBAVIAANS 2022 COMMS FAILURE!

Chris, ZS2AAW

PEARS' annual foray into the Baviaanskloof this year was not without glitches. After setting up the GV repeater at Grasnek on the Friday afternoon, Glen ZS2GV and Kevern ZR2BK reported that they could not speak to people in PE, but could hear them clearly.
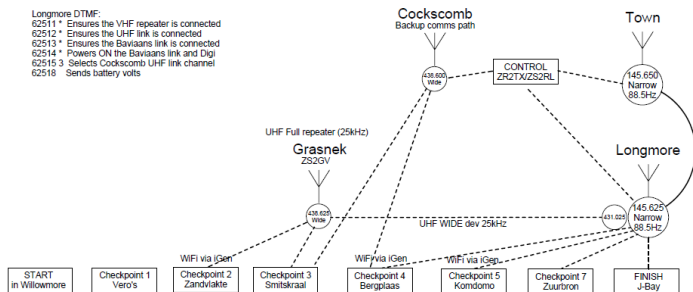
The Grasnek temporary repeater makes use of a permanent UHF

Link connection installed at Longmore repeater pointing Westwards to the kloof, that is normally powered off at the Longmore end to save battery capacity there. Kevern had done the necessary powering on and connections at Long-more via DTMF on their way out on Friday. They con-firmed that local comms

through the GV repeater from Checkpoint 2 at Zandvlakte to Check-point 3 at Smitskraal was good, so that proved the GV repeater was operating well.

Some tests from my Home QTH soon revealed that the Longmore UHF link was indeed transmitting on 431.025MHz towards Grasnek (I can monitor the transmission on the back of the Yagi at Longmore, from PE), but any amount of power in trying to talk BACK to the link was not successful, so the UHF Receive at Longmore had failed. There was no option but to hightail it out to Longmore early Saturday morning to have a look. Unfortunately I had an engagement at 07h30 Saturday, so could only leave after that.

Plan B

In the meantime, Glen and Kevern had asked Kevin ZS2KO to try to set up a cross-band rig near the Grasnek repeater that could connect the Grasnek repeater (438.625) to Longmore VHF (145.625). However, this needed tone for VHF access and not having the user manual meant it was difficult to instruct ZS2KO over the air while transmissions from PE were overriding their conversation – users in PE did not know they were being heard in the kloof, or that the Grasnek repeater was busy.

Longmore DTMF:
62511 * Ensures the VHF repeater is connected
62512 * Ensures the UHF link is connected
62513 * Ensures the Baviaans link is connected
62514 * Powers ON the Baviaans link and Digi
62515 3 Selects Cockscomb UHF link channel
62518 Sends battery volts

Cockscomb
Backup comms path

Town

CONTROL
ZR2TX/ZS2RL

438.600 Wide

145.650 Narrow 88.5Hz

UHF Full repeater (25kHz)
Grasnek
ZS2GV

Longmore

438.625 Wide

145.625 Narrow 88.5Hz

UHF WIDE dev 25kHz

431.025 Narrow

WiFi via iGen

WiFi via iGen

WiFi via iGen

START in Willowmore | Checkpoint 1 Vero's | Checkpoint 2 Zandvlakte | Checkpoint 3 Smitskraal | Checkpoint 4 Bergplaas | Checkpoint 5 Komdomo | Checkpoint 7 Zuurbron | FINISH J-Bay

"Repairs"

One may remember that many months prior to this event, we suffered a lot of damage at Longmore after a lightning strike - the solar regulator failed and seemed to have overcharged the batteries. Repairs had been done, a new solar regulator and surge protection installed and all tested perfectly ON SITE from a handheld at the time.

I made it to the Longmore site soon after 09h00 and found the simple problem – an unconnected RX coax fly lead in the rear of the UHF Link rack, after the many modules had been repaired and slotted into place in May earlier this year, the coax was never connected L. This shows how misleading it is testing transmission and reception ON SITE, as the use of a handheld on site does not need a receive antenna to open the link receiver!   But anything from far away certainly does.

So the link was reinstated easily and all comms flowed both ways henceforth. The event went on without any comms problems. Battery voltages were checked periodically to see the effect the all-night traffic was having on Longmore, given the inclement weather reducing solar charge input, but the batteries (4x 105Ah deep cycle lead acid) lasted well. Volts didn't fall below 12V.

Lady's Slipper Wi-Fi service re-installed

Chris, ZS2AAW

PEARS' Wi-fi, APRS, Remote HF Operation and some other services were damaged in the veld fire that ravaged the site a few years ago. The services were not reinstated due to the new tower that was to be erected on site. Now that the tower is up, the services are gradually being re-instated.

Armed with the necessary equipment on a trip to Longmore recently, and in order to save on travel costs, I decided to try to stop in at Lady's Slipper en route home, albeit the weather was far from ideal. This because the equipment was taking up space in the XYL's lounge, and needed to be taken to site! The equipment was a rebuilt modernized desktop computer, the ex-Governorskop APRS TNC (because the Slipper one had been fire damaged), a 12V UPS, cables and connectors etc.

Because of the tapered tower design, and the need for a cross-polarized Wi-Fi dish to be mounted EXACTLY vertically to benefit the most from the cross-polarization isolation to the far end, a specific mounting pole had to be attached to the tower to create a vertical mounting plane. This was done, and the dish was installed above the climbing ladder cage. A ZS2AAW-designed stabilizing arm was fitted to prevent wind moving the antenna.

Due to the cold and wet conditions, it was not possible to pan the azimuth of the antenna for optimal signal. The outdoor LAN cable was run down the tower and connected to the Power Over Ethernet modified LAN switch inside the cabin. Lo and behold the LAN was up, not perfectly, but at least internet connectivity was intermittently established.

The PC was installed, along with the Packet TNC on shelves in the rack. A UPS was added, with external battery connection that was coupled to the station battery, being 300AH at 12V made up of 2V cells. An LCD monitor was installed on the equipment rack, bolted in place. The PC booted up and using the old AGW and Ui-View packages of the past, the site appeared on APRS. Connecting the Packet TNC to the UHF 9k6 and 1k2 radio equipment waiting on site all these years, brought up all the other digipeaters in the area that had been speaking to

thin air for the last while. Cockscomb ZS0JCQ, Longmore ZS0KDB and Town ZS0KDK all appeared on the map in due time.

Some work is required at the Mount Road end of this link to improve the internet service, using the new matching high powered integrated WiFi link dish that forms a pair with the Slipper end. In the meantime, the old equipment at Mount Road was simply remotely reconfigured to connect to the new link at Slipper. With the new dish fitted at Mount road, all signals will be panned for maximum and a vast improvement in signal quality over the link is expected. Those old dishes have been up at Mount Rd since 2009!

 Some work is required at the Mount Road end of this link to improve the internet service, using the new matching high powered integrated WiFi link dish that forms a pair with the Slipper end. In the meantime, the old equipment at Mount Road was simply remotely reconfigured to connect to the new link at Slipper. With the new dish fitted at Mount road, all signals will be panned for maximum and a vast improvement in signal quality over the link is expected. Those old dishes have been up at Mount Rd since 2009!

Once the WI-FI service is working well, the DMR Repeater will be installed at Lady's Slipper, using the old packet 1k2 frequency of 438.275 with -7.6MHz split – since it is still a "digital" service and falls in the right part of the SARL band plan. This frequency was originally used as a "backbone" packet channel to the late Jim van Loggerenberg ZS2LR in Uitenhage, where all packet forwarding was done between Jim and the BBS on Slipper. The BBS has long since died a natural death, so the frequency has been repurposed. Get your DMR ready on 438 MHz!

The remote-controlled HF station equipment was also refitted at Slipper, but the HF rig not as yet. However, the standardized CIV control means that any compatible radio can be remote controlled, so it may be possible to install an Icom R10 wide coverage receiver to assist with interference tracing etc. This would need some form of discone wideband antenna to be added too. The remote control UHF channel on 438.800MHz (same wide split of 7.6MHz) still exists, and will give you a tail if triggered. With a suitable HF wideband antenna installed on Slipper, and IP cameras etc. to discourage thieves, the HF remote control system could be re-instated in future.

The alarm system installed on site is being expanded to cover miscellaneous items like the Electricity meter box door, the outdoor mains DB cabinet door, outdoor Infrared detectors, and the actual door handle being moved (even when still padlocked), so that early warnings can be received. This alarm communicates via LTE and VHF, with a convenient cell phone app with detail of any mains and security alarms, being sent to a few members.

73 Chris

Birthdays and Anniversaries

Birthdays

September

24-Sep Shaun Baumeister ZS2L
24-Sep Dylan MacDonald ZS2MAC
27-Sep Ewald Bouwer ZS2EHB
28-Sep Glen Cummings ZS2GV

October

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

Spouse Birthdays

September

20-Sep Ellie Goosens Rudi ZR2RCG

25-Sep Sarita Brand Albert ZS2BA
26-Sep Caryn Pearson Graham ZS2GKP

October

02-Oct Elsa Vermeulen Johannes ZS5JPV
03-Oct Kerstin Purdon Neill ZS2NIL
08-Oct Vanessa Scarr ZS2VS Christopher ZS2AAW
24-Oct Cathy Gerstle Wolf ZS2WG

Anniversaries

September

23-Sep André Yolande Ollphent André
27-Sep Graham Caryn Pearson ZS2GKP

October

01-Oct Tony Deidre Allen ZR2TX
12-Oct Donovan ZS2DL Rosalie van Loggerenberg ZS2DN
24-Oct Al ZS2U Jo Akers ZS2W

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 8:30 in English read by Rory ZS2BL, transmitted through the Town 2M Repeater on 145.650 MHz.

PEARS bulletins are transmitted on Monday evenings at 20h00 on the Lady's Slipper repeater, 145.700 MHz, 88.5Hz, Narrow and 438.700 MHz, no CTCSS Wide. (Standby option is 145.650MHz Town repeater 88.5Hz, Narrow)

Bulletin Roster		
19-Sep	Donovan	ZS2DL
26-Sep	Dave	ZS2DH
3-Oct	Chris	ZS2AAW
10-Oct	Mike	ZS2MIC
17-Oct	Kevern	ZR2BK
24-Oct	Glen	ZS2GV
31-Oct	Jimmy	ZS2JIM

Our 2022/2023 PEARS Committee

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

PORTFOLIO	NAME	CALLSIGN	EMAIL	CONTACT No
Chairman, RAE classes, Technical Workshops, HF tests	Donovan van Loggerenberg	ZS2DL	zs2dl[at]hamradio.co.za	082 852 4885
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, WiFi	Christopher Scarr	ZS2AAW	christopher[at]peham.co.za	082 925 6367
Technical Workshops, RAE class assistance, HF tests	Shaun Gilbert	ZS2SG	gaswise3[at]gmail.com	083 672 5241
Technical support & maintenance	Kevern Burger	ZR2BK	k.burger[at]stfrancislinks.com	083 401 9587
Technical/repeaters, Search and Rescue & Emergency comms	Glen Cummings	ZS2GV	glenvanessa[at]gmail.com	082 411 2743
Socials, Scouts interface, "Jamtin" Scouts operating container	Jimmy De Scande	ZS2JIM	jimmy.descande[at]gmail.com	083 650 9422
QSX Editor	Ashley Goosen	ZS2AG	qsx.zs2ag[at]gmail.com	082 372 6696

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

(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	Longmore	Uitenhage	Town UHF	
145.050/650	145.025/625	145.075/675	431.050/438.650	<----- IRLP available
88.5Hz, Narrow 12.5k	88.5Hz, Narrow 12.5k	Wide 25k	Wide 25k	on this subnet
Cockscomb	Viewlands	<----- These form	DMR	D-Star
431.000/438.600	431.075/438.675	linking hubs for	430.675/438.275	145.175/775
Add 88.5Hz for squ tail	Add 88.5Hz for squ tail	events, hence no tail	QTH: ZS2VA	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	Grahamstown	Cradock	Noupoort (link only)
145,100/700	145,150/750	145,050/650	438,750 / 438,675
88.5Hz, Narrow 12.5k	Wide 25k	Wide 25k	Wide 25k
Colesberg	Kareedouw	Plett	Brenton
431,075/438,675	145,125/725	145,175/775	145,075/675
Wide 25k			

APRS/Packet network:

ZS0NTP Node	ZS0KDK APRS Digi	ZS0KDB APRS Digi	
Lady's Slipper	Mount Road	Longmore	
434,800 1200bd	434,800 1200bd	434,800 1200bd	
439.850 9600 bd			

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.