

*May 2012*



Ironman at Schoenmakerskop 22 April 2012. Photos by Isolda ZS2IW.

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

Editing by Eric ZS2ECH

**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 AGM

**Saturday, 19<sup>th</sup> of May, 2:30 pm**

at the Italian Sporting Club, Charlo, 17 Harold Road.  
Boot sale starts at 2 pm, plus bring & braai afterwards.

## From The Chair:

I cannot believe that the AGM is almost upon us. The past year has really proved an interesting one and certainly opened my eyes to the issues involved in keeping PEARS running.

An item fresh on my mind is the Ironman which took place last Sunday. I am sure many of you monitored the repeaters, keeping in touch with the events as they unfolded. Thanks again to all who assisted and to all the PEARS members for putting up with the 145.700 repeater being out of use for the day.

The supper evening is happening on Friday 4 May, however ticket sales are slow. Please make the effort to attend and ensure the success of this event. An Italian meal (Lasagne) is on the menu and the price is R70 per head. Tickets can be booked with Clive ZS2RT.

As mentioned the AGM is coming up on the 19 May and I urge all members to attend, the venue is the Italian Club at 14h00. The main item on the agenda is the election of a committee for the next 12 months. Please give some thought to this process and canvas members to make themselves available for nomination.

Club subs are now due and remain unchanged from last year at R100. Your spouse and juniors can also be a member for R30 per year.

Thanks for putting up with my ramblings for the past year and I hope to see you all at the AGM.

73 Tony ZR2TX

## WRINKLY RAVERS

The next regular monthly lunchtime meeting of the Wrinklies will take place on Thursday the 3<sup>rd</sup> of May 2012 at the Cattle Baron, Sunridge Park Shopping Centre. You will only be excused if you have a "more" important appointment, or you do not have any wrinkles. Come join the folks for some tremendous company and fun, whether you have wrinkles or not.

**SEE YOU THERE!!!!**

### YOUTH ELECTRONICS

PCB Boards, Tin plated  
Contact: Basie ZR2BA  
Cell: 0828882118  
basiedp@gmail.com

### PEARS CLUB SUBSCRIPTIONS ARE NOW DUE

It is that time of the year again and club subscriptions are now due. R100 per member. Spouses pay R30 and students R30. Wifi fees are R150 per month.

The Club's banking details are:

Nedbank Savings; Account No: 221 252 7594; Branch Code 121217.

**When making a bank deposit please use your call sign as a reference.**

# Port Elizabeth Amateur Radio Society

Minutes of the General Meeting held at the Italian Club,  
Harold Rd, Charlo, at 19:30 on Tuesday 17 April 2012.

Chairman: Tony ZR2TX.

Present and Apologies: as per the register.

1. Welcome: the chairman extended a welcome to all present, especially visitors.
2. Minutes of previous meeting. Not available.
3. Finances: Treasurer ZS2RT reported. The club's repeater licences were due for renewal – members agreed that we should go with ICASA's 5-year option, thereby saving money in the long run.
4. Matters arising.
  - 4.1. Barry ZS2H offered an Icom channelized VHF radio for sale, ex the estate of the late Raphey Schauder.
  - 4.2. Supper evening, planned for the 4th May. Response has been lagging, with only 12 bookings so far. Tony ZR2TX asked members to support the function, and Bill ZS2ABZ to promote it when reading the bulletin on this coming Sunday.
  - 4.3. AGM, 19 May: to be held at the Italian Club, with a braai afterwards. Some committee members have indicated that they will not be available for re-election – members please give some thought as to who they would like to nominate. It would be nice if some new blood joined the committee.
  - 4.4. Garth ZS2HB has indicated that he would no longer be able to print the club's award certificates. Another member needs to take over this job. Tony ZR2TX asked that club trophies be returned to Bill ZS2ABZ a.s.a.p. for cleaning and engraving, ready for the AGM on the 19 May.
5. New business.
  - 5.1. Colin ZR2CRS will be the guest speaker at the June meeting – he will speak on his hike in the Himalayas.
  - 5.2. Tony ZR2TX conducted the briefing for the IronMan event (22 April), and handed out the necessary kit.
6. Guest speaker: Al ZS2U gave a talk on the preservation of marine resources.

## PEARS FUN CONTEST

<b>AIM:</b>	An Event Aimed at Having Fun
<b>DATE:</b>	26th May 2012
<b>TIME:</b>	00:00 to 23:59 CAT
<b>BANDS AND MODES:</b>	All Bands and Modes No repeaters to be used
<b>POWER:</b>	Up to 400W
<b>ANTENNAS:</b>	Any type
<b>EXCHANGE:</b>	Callsign, Report (RST) and Serial Number (Starting at 001)
<b>CATEGORIES:</b>	All Categories
<b>SCORING:</b>	Only 1 QSO per station on each band and mode shall be allowed. South Africa = 5 points, DX = 15 points
<b>LOGS:</b>	Closing date for logs is 3 <sup>rd</sup> June 2012 Logs to be submitted in Excel file, (example log will be available on the PEARS website <a href="http://www.zs2pe.co.za">www.zs2pe.co.za</a> )

Submit logs to [zs2ec\[at\]qsl.net](mailto:zs2ec[at]qsl.net) or [theunis.madeleine.potgieter\[at\]gmail.com](mailto:theunis.madeleine.potgieter[at]gmail.com) (replace [at] with @)

A certificate and fun prize will be awarded to the overall winner.

- Congratulations to **Theunis Potgieter ZS2EC** for receiving the SARL's **Jack Twine Merit Award**. This award is given to amateurs who, in the opinion of their fellow amateurs and the League's Council, exemplify the qualities desirable in a Radio amateur
- Also to **Andre Botes ZS2ACP** for the "**Ray Webber, ZS6RSW**" VHF/UHF Trophy to the amateur/club who achieved the highest score during the annual SARL VHF/UHF Contest.

# THE VHF SPECTRUM AND ABOVE

## THE SQUARE KILOMETRE ARRAY (SKA)

The Square Kilometer Array (SKA) is the world's largest science project that will rival the Large Hadron Collider (LHC) particle accelerator at Cern on the French and Swiss border in Europe. The SKA will be the most powerful radio telescope in the world and 50 -100 times more sensitive. It will peer back in time to the edge of the Universe, explore the origin of the first galaxies, stars, planets and detect any alien life that may exist out there in space. Currently two countries are in the race to host this gigantic project, Australia and South Africa. Who will win?



### TECHICAL DETAILS

The current largest radio telescopes in the world are the 305 metre fixed dish at Aricebo in Puerto Rico, and the Very Large Array at Socorro, New Mexico, USA consisting of 27 dishes of 25 metre diameter each. But these will be eclipsed by the 3000 dish array comprising a square kilometer of surface area that is now being planned by a consortium of 20 countries to start operation in 2020. The central core will feature 1500 dishes and the rest spread out over a 50 000 kilometre area. The SKA will include three separate arrays: SKA – Low Array 70 MHz to 200 MHz, SKA – Mid Array 200 to 500 MHz and SKA - Dish Array 500 MHz to 10 GHz. The latter frequency range could be extended to 30 GHz in a later phase. IBM won the contract to design and construct the largest and fastest “Exascale” computer in the world for the SKA. It will read, store and analyze one Exabyte of raw data per day (1 Exabyte is equal to 1 000 000 000 000 000 000 bytes). This is twice as much data as is produced every day on the World Wide Web.

### THE BIRTH OF THE UNIVERSE

Around the 1930's there were two opposing cosmological theories, the Steady State theory and the Big Bang theory. Supporters of the former claimed that the Universe always expanded at a uniform rate, it was eternal with no beginning or end, while their opponents believed that it had a beginning. According to the Big Bang theory it originated from an extremely hot singularity that became inflated, cooled down, and expanded into the present Universe. The first proof of the Big Bang appeared with the discovery of quasars that existed only at great distances, and finally the smoking gun; the Cosmic Microwave Background or after-glow emitted by the Infra Red radiation from the origin of the Big Bang. Unfortunately the Big Bang theory became a very controversial subject for some religious people. Perhaps they should view it from another angle, if the Deity existed before the Big Bang than He could have created it. After all, science does not offer any hypotheses preceding the Big Bang.

### RESEARCH SCHEDULE

The largest and most powerful radio telescope in the world will explore the past and ultimate fate of the Universe, and peer into the dark ages before the first stars shone. The SKA will reveal how the first galaxies were formed as well as the origins of super massive black holes and their centres. It will survey the sky 10 000 times faster than existing radio telescopes and create a 3-D map of the galaxies in space and cosmic time. This map will help us understand how the galaxies evolved and the accelerating expansion of the Universe is driven by the mysterious dark energy. The SKA will search for gravitational waves by monitoring pulsars, the spinning cores of collapsed stars. Gravitational waves are created when super massive black holes interact. The unique sensitivity of the SKA will enable the study of emissions from the early Universe that have passed through magnetic fields in space. This will help identify cosmic magnetism that is difficult to study at other wavelengths. Through its ability to detect organic molecules and investigate how other planets are formed, it might answer the question are we alone in the Universe?

Regards, Mike ZS2FM

For more info see: <http://www.ska.ac.za/>

**All members that have club trophies – please return them to any committee member ASAP so that we can prepare them for the AGM in May.**



# Variations on an Absorbing Theme

*Found this as a loose page from an old QSX. Don't know who the author was or when it was first published-Ed.*

The principles of the simple diode detector can be used in so many different applications that it just boggles the mind.

## **An AM demodulator**

If one looks at the basic AM demodulator graphically set out in Figure 1 we see a modulated RF signal entering what could be the last IF transformer in an AM receiver. Now, the RF is an AC signal and, in passing through the diode, is rectified and smoothed out by the following capacitor. But the varying amplitude of this smoothed RE results in a varying voltage, which is the audio signal that is later amplified and fed to the speaker.

## **An RF probe**

In Figure 2 we have a probe with two diodes soldered to it, followed by a capacitor for smoothing. I have a screened cable that connects this to my high-impedance avo (test) meter. This is used to probe around RF circuitry and is useful for tuning for maximum output from oscillator chains. I also connect it to my dummy load to tune for maximum "smoke".

## **A field strength meter**

Figure 3 shows a field strength meter which could have plug-in coils for various frequencies. Instead of the meter one could connect your oscilloscope to look at the demodulated signal. Figure 4 is much the same as the unit in Figure 3 except that it is used at VHF and, with a hairpin-shaped inductor 50 mm by 25 mm, would work at 50 MHz to 200 MHz.

## **An absorption meter**

An absorption wave meter, Figure 5, is used to check the approximate frequency of a transmitter and for spurious emissions. You can also look for harmonics with a wave meter and it is possible to gain an indication of their strength. Try sniffing a simple HF transmitter before and after fitting the usual low pass output filter and you can detect the reduction in harmonics.

Here a tapped coil is used for the various frequencies and the diodes are arranged to form a voltage doubler.

T1 toroid type T62-2 (red), 50 turns, tapped at 10, 18, 36 turns

Link 5 turns

## **An 'S' meter**

Most homebrew rigs do not have an 'S' meter and the circuit, Figure 6, will provide a simple method of adding one driven by the audio. OK, it isn't up to the one on your latest multi-thousand rand black box, but it will provide an indication of the received signal strength. Pick up the audio just before the volume control, that is between the detector diode and the volume control. The audio is fed to the unit and then rectified by D1 which, in this case, is a 1N4148. Any similar diode may be used. It is further fed to the base of the transistor, which in this case is the very well known 2N2222, although almost any NPN transistor can be used.

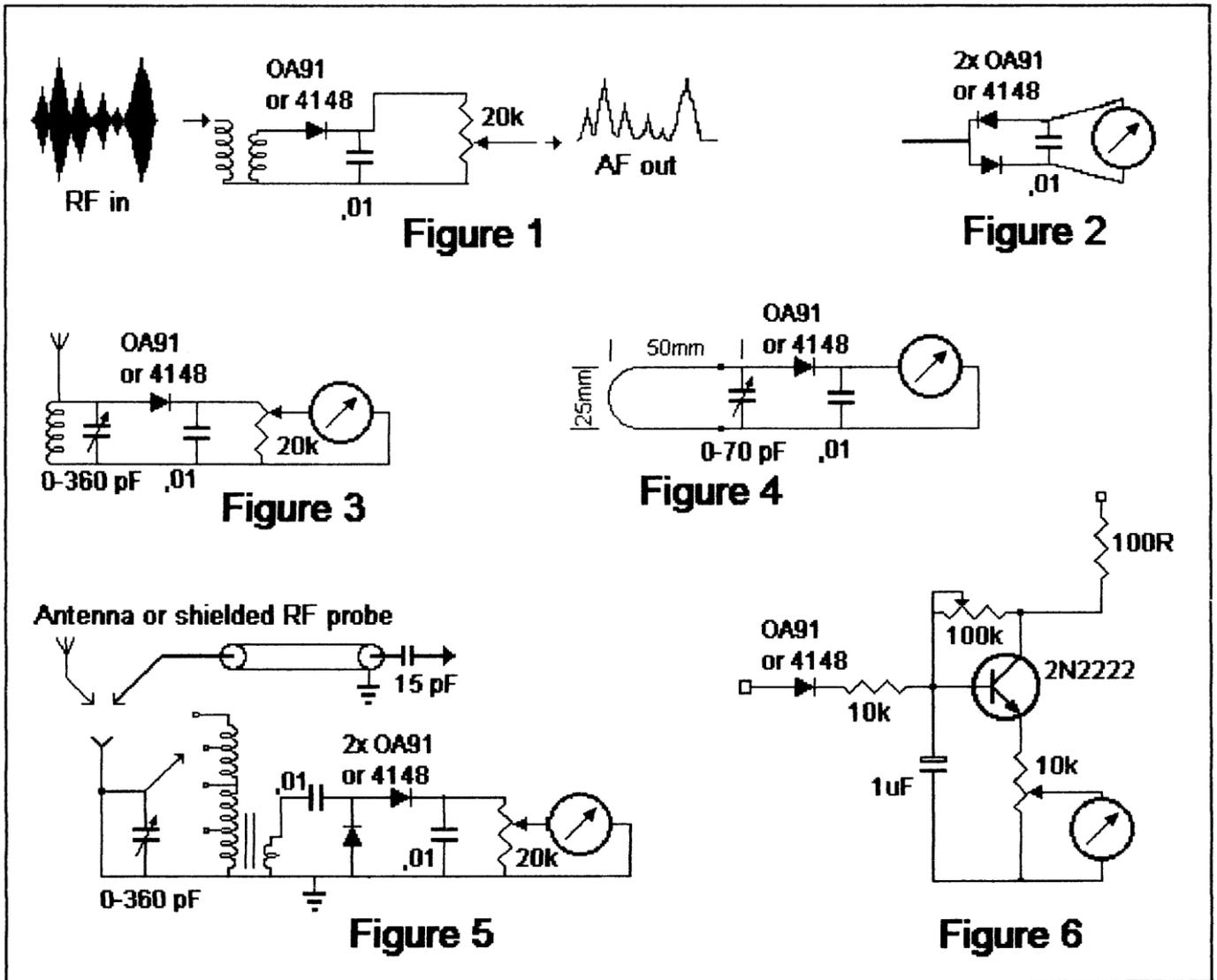
This circuit is a simple DC amplifier, where R2 is used to forward-bias the transistor so that the meter just begins to move (no signal). R4 is adjusted to set full scale deflection. In practice we would find a very strong signal on the band (at least S9+20dB). The smoothing of the meter is carried out by C1 the larger the value the slower and smoother the reading. Almost any value of meter can be used. With the value of C1 as given, a 0-100  $\mu$ A meter will take little effort; a 1 mA meter may take a lot of effort to reach full scale. If, with this value, you can't reach full scale deflection then lower the value of R4. To calibrate this meter, a separate receiver with an 'S' meter may be used.

In all the circuits, the best diode to use would be a fast switching germanium diode, as there is a lower voltage drop across this type. One can pick and mix with all these circuits or come up with some other uses that we would like to hear about.

## **COMPONENTS**

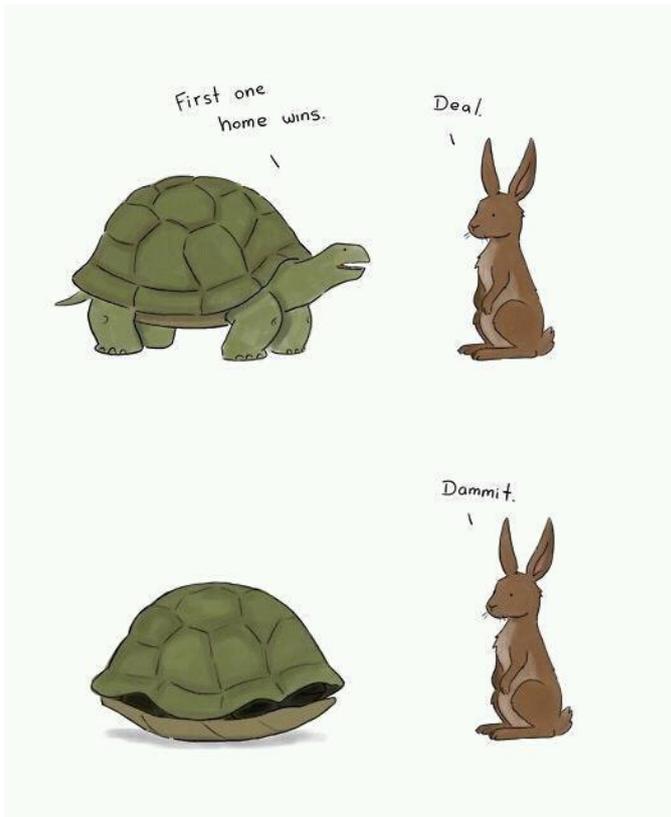
R1	10 K	R4	10 K Preset
R2	1 K Preset	C1	1 $\mu$ F (see text)
R3	100 R (100 $\Omega$ )	D1	1N4148
TR 1	2N2222 (or similar).		

A 100  $\mu$ A meter would be suitable or one could arrange to plug one's normal high-impedance test meter into the unit.



**Everything I need to know about life,  
I learned from Noah's Ark...**

1. Don't miss the boat.
2. Remember that we are all in the same boat.
3. Plan ahead. It wasn't raining when Noah built the Ark.
4. Stay fit. When you're 600 years old, someone may ask you to do something really big.
5. Don't listen to critics; just get on with the job that needs to be done.
6. Build your future on high ground.
7. For safety's sake, travel in pairs.
8. Speed isn't always an advantage. The snails were on board with the cheetahs.
9. When you're stressed, float a while.
10. Remember, the Ark was built by amateurs; the Titanic by professionals.
11. No matter the storm, when you are with God, there's always a rainbow waiting.





Copied from <http://www.funcubedongle.com>

The FUNcube Dongle is the “ground segment”, or a radio receiver designed to allow anyone to try their hand at reception of satellites like FUNcube anywhere on Earth as part of a global educational collaboration project collecting information from space.

Similar to a USB TV Dongle, the FUNcube Dongle simply fits into your computer’s USB port. It’s compatible with many radio reception programs like Rocky, MOKGK, Spectravue and LinRad. The FUNcube Dongle also works with Windows XP, Vista and Windows 7 both x86 and x64. In addition, it is compatible with Linux and MacOS as it uses standard USB drivers already integrated into the operating system.



There are two versions. The entry level FUNcube Dongle gives access to the satellite frequency band that FUNcube and some other satellites use. The Pro version gives unlimited access to the frequency range 64 to 1,700MHz apart from a gap between about 1,100MHz and 1,270MHz.

It’s also all-mode: this means that it’s not just limited to narrow band FM reception. As well as data, the FUNcube Dongle will also receive many other narrow band signals including AM, FM and SSB. It will even receive TV sound channels!

For more info see the web pages at [www.funcubedongle.com](http://www.funcubedongle.com)

A large poster with the text 'THANK YOU TO 1500 VOLUNTEERS AND 50 TEAM LEADERS' in large orange letters. Below this, it says 'for giving up their time to make the Spec-Savers Ironman South Africa 2012 a success and showcase Nelson Mandela Bay to the world.' There are two columns of 'SPECIAL THANKS' and 'WATERING POINTS ALONG THE ROUTE MANNED BY THE FOLLOWING COMPANIES:' with lists of names and logos. At the bottom, there is an image of a triathlete and the Ironman South Africa logo.

### SMS kodes vir seniors:

- BDD - By die Dokter
- BVSB - By Vriend se Begrafnis
- BDR - Bring die Rystoel
- KWS - Kry Weer Sooibrand
- SG - Skryf Groter
- MWG - Maag Werk Goed
- IJGA - Is Jou Gehoortoestel Aangeskakel?
- MGPBL - Moet Gaan, Pasaangeër se Battery Laag
- MGPBW - Moet Gaan Purgasie Begin Werk
- WPEA - Wat Praat Ek Alles?
- WWW? - Waar Was ek nou Weer

## DX CORNER – MAY 2012

Welcome to the first edition of DX Corner, a new feature aimed at providing information and advice for readers interested in working some of that rare DX. This column will focus on activities, operations and contests for the upcoming month.

### PLANNED DXPEDITIONS FOR MAY 2012

Only a few small operations are planned for May. The pick of them are:

Belize (V31) : May 11-31 by V31XB

Seychelles (S79) : May 15-23 by S79RR

Macao (XX9) : May 17-23 by a team of Spanish ops, callsign to be announced.

Somalia : May 25-30 by 6O3A

There are likely to be a number of other interesting DX stations around from the 23<sup>rd</sup> to the 30<sup>th</sup> of May as they prepare for and unwind from the CQ WPX CW contest (26-27 May). Some of the more interesting DX entities that will be active include Micronesia, Norfolk Island, Antigua, Greenland, Sudan and Belize.

### CONTEST ACTIVITY FOR MAY 2012

This month is dominated by the CQ WPX CW Contest, which takes place on the weekend of 26-27 May. This is one of the major events of the year. Exchange is signal report plus consecutive serial number, starting with 001.

Other significant events for the month are the Volta RTTY Contest (May 12 & 13), CQ-M International DX Contest (May 12 & 13), and the SARL Digital Contest (May 27).

### GENERAL DX HINTS AND TIPS

At this stage of the solar cycle, and before we head into the winter “doldrums”, the higher bands continue to offer excellent DX opportunities. 10m has been excellent over the past few months, and 15m has also served up some real treats. 12m and 17m are also great bands for finding those rare stations. Traditionally the CQ WPX CW contest brings the curtain down on the DX season as we move into the quieter winter months, when the lower bands come into their own. May is thus a great time to make the most of the good conditions!

A rare one to look out for: Svein JX9JKA is active from Jan Mayen Island for the next year, ending his stay on this rare entity in May 2013. He has been worked on 20, 17 and 15m SSB, and cluster reports indicate that he has been active on 40m and 10m as well.

That’s all for this month. See you in the pileups!!

73 de Barry ZS2EZ



← is a pic of an ironman competitor who, in Mel's and my opinion, deserves a special award even though he did not finish. He completed the 4,5 km swim, and two laps of the cycle route (2 x 60 km). Note the elaborate gearing set-up.

Beavan ZS2RL  
73.

Ham Radio Outlet-SA cc T/A

## **HRO-SA Communications**

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KEI STREET, SHERWOOD  
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**Tel: 041 3711425 Fax: 041 3605449 Email: [sales@hamradio.co.za](mailto:sales@hamradio.co.za)**

**Donovan (ZS2DL) : 082 852 4885**

**Barry (ZS2EZ) : 071 254 5040**

**VISIT OUR WEBSITE : [www.hamradio.co.za](http://www.hamradio.co.za)**

**OFFICE HOURS 8:00am-4.30pm (4.00pm Fridays)**

## Sunday Bulletins

PEARS bulletins are transmitted on Sundays immediately after the SARL English transmission, i.e. at about 08:30 on 7098 kHz as well as the 2 metre linked network that provides from Butterworth to George and up to the Free State and their environs. PEARs 7098 or 3640 kHz transceiver facilities are also remotely linked as needed. In addition, the SARL's 40 m operations on 7082 or 7066 kHz or Hamnet's 7070 kHz can be remotely patched to the 2 m network in receive only mode or with full transceive capability for interactive events.

A recorded rebroadcast of the bulletin takes place on the Eastern Cape Linked Repeater Network every Monday night at 20h00 courtesy of various volunteers who rotate this duty.

## Bulletin Roster

29 April	Chris	ZS2AAW
6 May	Al	ZS2U
13 May	Theunis	ZS2EC
20 May	Chairman	
27 May	Vice-chairman	
3 June	Secretary	
10 June	Treasurer	

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



## CONGRATULATIONS

### BIRTHDAYS – May

01 Marge Weller ZS2OB  
 04 Heather XYL of James Hoole ZS2ABM  
 05 Anneke XYL of George Whitehead ZS2GO  
 07 Rouhe XYL of Henry Danielson ZS2HD  
 11 Cornelia Kotze  
 11 Deo XYL of Jaco Kotze  
 14 Rory Norton ZS2BL  
 17 Lyn XYL of Les Barker ZS2VA  
 18 Mark OM of Lise Dodd ZS2LLD  
 20 Marjorie XYL of Dudley Forsyth ZS2AW  
 20 Otto Van Rooyen ZS2Q  
 22 Bill Hodges ZS2ABZ  
 22 Erich Rohwer ZS1XZ

22 Saney Martin ZR1S  
 24 Les Barker ZS2VA  
 31 Shirley XYL of Stoffel Carr ZS2C

### ANNIVERSARIES – May

02 Shirley and Gus Winter ZS2MC  
 10 Renee and Guy Middleton ZS2FO  
 12 Susan and Neels du Plessis ZS2ND  
 23 Rouhe and Henry Danielson ZS2HD  
 25 Merle ZR2MP and Neil Thomas ZR2NT  
 28 Chantelle and Richard Ashworth ZS2RA

If you are a member and your birthday or anniversary details are omitted or incorrect, please notify Clive ZS2RT (or any committee member) to update our records.

## DIARY OF EVENTS

4 May	PEARS supper at the Italian Club
6 May	ZS3 Sprint
12 - 13 May	Antique Wireless Association Valve QSO Party
12 - 13 May	Volta RTTY Contest
12 - 13 May	CQ-M International DX Contest
19 May	PEARS AGM
20 May	ZS4 Sprint
26 May	PEARS Fun Contest
26 - 27 May	CQ WPX CW
27 May	SARL Digital Contest
30 May	SARL 80 m Club Championship - Digital

### THE KIND HEARTED SCOTSMAN:

My wife and I walked past a swanky new restaurant last night. "Did you smell that food?" she asked. "Incredible!" Being the nice guy I am, I thought, "What the heck, I'll treat her!" So we walked past it again.

# Your Society's Committee for 2011/2012

<b>Chairman, Events organising</b>	Tony Allen ZR2TX	082 956 2920	tony.zr2tx[at]gmail.com
<b>Vice Chairman, Technical/repeaters</b>	Glen Cummings ZS2GV	082 411 2743	glen[at]peham.co.za
<b>Secretary, Events organising</b>	Beavan Gwilt ZS2RL	041 368 8810	bgwilt[at]iburst.co.za
<b>Treasurer</b>	Clive Fife ZS2RT	041 367 3203	clive[at]peham.co.za
<b>Social, Meetings, Catering</b>	Bill Hodges ZS2ABZ	041 581 2580	zs2abz[at]isat.co.za
<b>Public Relations</b>	Johannes Geldenhuys ZS2JO	082 320 3032	Johannes[at]s4.co.za
<b>Contests, Awards</b>	Al Akers ZS2U	041 360 2983	
<b>QSX Distribution, Contests, Awards</b>	Theunis Potgieter ZS2EC	082 766 8830	zs2ec[at]qsl.net
<b>Technical/repeaters, WiFi, Web</b>	Chris Scarr ZS2AAW	082 925 6367	christopher[at]peham.co.za

## CO-OPTED POSTS

<b>RAE Examination Admin.</b>	Donovan ZS2DL	082 852 4885	zs2dl[at]hamradio.co.za
<b>Assessors</b>	Rory ZS2BL	072 026 8909	rory[at]commco.co.za
	Chris ZS2AAW	082 925 6367	christopher[at]peham.co.za
	Donovan ZS2DL	082 852 4885	zs2dl[at]hamradio.co.za
	Bill ZS2ABZ	041 581 2580	zs2abz[at]isat.co.za
<b>Contest Committee</b>	Al ZS2U	041 360 2983	contest[at]peham.co.za
	Theunis ZS2EC	082 766 8830	
	Mike ZS2FM	084 612 9600	mcbosch[at]webafrica.org.za
<b>QSX Editor</b>	Eric Hosten ZS2ECH	072 8414 693	qsx[at]peham.co.za

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.

Town VHF	Town UHF	Uitenhage	Tygerhoek	Longmore
145,050/650	431,050/438,650	145,075/675	145,000/600	145,025/625

### 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.

Lady's Slipper	Grahamstown	Cradock	Noupoort
145,100/700	145,150/750	145,050/650	438,750 / 438,675
Colesberg	Kareedouw	Plett	Brenton
431,075/438,675	145,127/725	145,175/775	145,075/675

### Packet network:

ZS0NTP-2 Packet Node	ZS0NTP BBS	ZS0GHT-2 Packet Node	ZS0CDK-2 Digi
Lady's Slipper 10,151 LSB 300bd APRS 144,800 1200bd 438,275 1200bd (FWD) 434,875 9600bd	Lady's Slipper On all node frequencies	Grahamstown 144,800 1200bd 434,800 1200bd (FWD) 439,850 9600bd	Cradock 144,800 1200bd
434,800 1200bd APRS Cape Linked System	ZS0KDJ APRS Digi	ZS0KDB APRS Digi	ZS2ABZ-4
	Mount Road 434,800 1200bd	Longmore 434,800 1200bd	WMR918 WX Station 144,625 1200bd

**VHF Beacon:** 50,006 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.**

**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