

OSX PE

**Well, we got thru Y1K999 unscathed
...and the Millennium hype...**



Wonder what's in store for us this year?

**THIS NEWSLETTER IS PUBLISHED BY THE
PORT ELIZABETH AMATEUR RADIO SOCIETY**

e-mail the Editor: glaaks@iafrica.com

**P.O. BOX 10402
LINTON GRANGE
6015**

January 2000

NOTICE OF MEETING

The first monthly general meeting in the 21st Century of the PORT ELIZABETH AMATEUR RADIO SOCIETY will be held on **Friday, 21 January 2000** commencing at 20:00 (8pm) in the Municipal Disaster Management Centre, Westview Drive, Mill Park, Port Elizabeth (Civil Defence Centre)

Since this is in the middle of the PEARS National VHF/UHF contest, those who want to participate in the contest can get away immediately after business or tea, while the others are free to enjoy an evening chatting about this and/or that, whichever they prefer.

Tea, coffee and munchies will be available for a small consideration

Wrinkly Ravers

The next rave is scheduled for **Thursday, 3 February 2000** at the Zwartkops Yacht Club Clubhouse. Anything from about 12:00 to 12:30 is a good time to get there and enjoy a chat before the kos is ready.

No doubt the January get-together at Bushies in lieu of the usual monthly Rave for January will be reminisced about - and talked about for a long time to come.

VHF/UHF CONTEST 21-23 JANUARY

Cyril ZR2H is trying to arrange a special event station and have PEARS participate in this contest, which runs from 18:00 on the Friday to 18:00 on the Sunday.

He still needs volunteers to operate the station, even if only for a couple of hours at a time. Since the contest is sponsored by PEARS, our participation therein is a must so, **if you can be of assistance for one or more shifts during the period, please get in touch with Cyril as soon as possible.** His telephone number is 360-8482. Being a VHF/UHF event, ZRs as well as ZS licensees may operate the station.

Sporadic-E propagation on 50 and 144 MHz and Tropo on 144 to 1296 MHz are expected to provide long-distance openings during the contest weekend, so there could be some uncommon contacts made.

THIS AND THAT

- The graphics on our cover for last month's QSX didn't print well enough for us to use (see item on page 6). Although the printers offered to redo it if we could give them a printout compatible with their plate maker, time was at a premium and Gary Laaks ZR2ABU arranged to quickly photocopy our original sheet during his lunch hour. Thanks, Gary. (But don't expect any more overprinting with Santas - that was an exercise in frustration due to unforeseen facts of computer printer wilfulness).

- I received my SARL membership card today, which I have to present at HQ when buying books etc. But I figure the cost of petrol will outweigh the discount I get.



A Word

From the Chair



Yes, I am composing this on my home PC – it never died after the date rolled over from 1999 to 2000!!! And the same applied to many items suspected of possible failure over the New Year period. As expected, it turned out to be somewhat of an anticlimax. This could hardly be a surprise, after all the precautions that were taken. It goes to show that being prepared is certainly the way to go.

The whole exercise has certainly highlighted the benefits of having an emergency comms plan, and to this end, negotiations are being held to ensure the long-term viability of the existing extended network. Many thanks go to Jim, ZS2JM who has taken this issue up with the powers that be in East London. And for all the work he and his willing helpers undertook on their end of the link, I also pass on my thanks.

To me, the beginning of a New Year is always an ideal time to clear up all the unfinished bits and pieces, particularly around the workbench and office. My thoughts also turned to the Ham Radio scene, and I decided it is high time I as chairman put my efforts behind supporting the SARL. I know this will raise the hackles of many, but perhaps the way to look at it is not to punish Hans, ZS6ALJ for the deeds of his forefathers. Many hams who had the opportunity of meeting him at the Bathurst bash will remember the good vibes that prevailed.

Let's build on that foundation. Michelle has moved on – let's not judge her replacement before he has had a chance to prove himself. Read the report-back article on the IARU Region One Conference, and you will agree that neither you nor I would be able to represent our hobby as well as was done by these three delegates. I thank them for their dedication to the promotion of our hobby in Southern Africa.

I look forward to major changes and improvements, I know many have reason to complain – my plea is please let bygones be bygones. I would like to offer assistance to any PEARS members who have outstanding issues with the SARL – talk to us as the PEARS Committee and let's see if we cannot get these resolved. And at the same time, the SARL will see that we are interested in helping them get their act together.

It seems strange that I should take this stance, after composing a rather "confrontational" letter to the SARL recently in objection to their organising a major event at the NARC over the same weekend as our PEARS VHF Contest. Fortunately our editor toned it down a bit – thanks Garth. He made me reconsider my attitude. Shouldn't you? **[See page 15 while I polish my halo –Ed.]**

Happy Contesting!

God Bless

73,

Chris ZS2AAW

HAMNET / ECARES NEWS

Iwish everyone a very happy and successful new year. I hope that Hamnet/ECARES, PEARS, SARL and ham radio generally go from strength to strength.

We have seen the new year and century in with few, if any, Y2K related problems. From the evening of 31 December to the morning of 1 January, we experienced a hive of activity on the HF emergency channels and the two metre link system and it is gratifying to see how smoothly and effectively the whole operation functioned.

We also had a disaster management channel activated at the SA Broadcasting Corporation, Radio Algoa, Radio Kingfisher and several hams, namely Ken ZS2OC, Des ZS2ABU, Garth ZS2HB, Stoffel ZS2C, Bryan ZS2BH and myself.

The new year slipped in so quietly, at least with regard to involvement with emergencies for us hams, that we may feel that it was not worth the effort. It did, however, serve as a good emergency exercise and it was most enjoyable to have the opportunity to talk to old friends and meet new ones.

I am sure that it also alerted the

authorities to our capabilities.

I would like to thank all those who contributed towards the success of this operation, especially the hams who also monitored the disaster management channel. A special thanks to Chris ZS2AAW who is mainly responsible for the two metre linked system, and also his helpers

Social

Welcome to André ZR2A, who has joined ECARES and glad to have you with us.

It is good to see that Viv ZS2VM is recovering nicely after his triple by-pass operation.

Six Metre Net

Participants in this net have dwindled and often it is only old faithful, Des ZS2ABU and myself who come on. Please guys, come on, even if it is only to report in and out. The net is conducted every Wednesday evening from 20h00 to 20h30 on 52,950 MHz

73,

Al Akers ZS2U
Provincial Director,
Hamnet East Cape/ECARES



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Operation by Unlicensed Persons

The questions are often asked: "When may a ZR operate on HF?" and "May an unlicensed person speak over an amateur station?" The SARL's President, Hans Potgieter ZS6ALJ, has clarified the situation about people operating a ham station without an appropriate licence – or no licence at all – as follows.


There are certain *very specific occasions* when a person not licensed to operate on HF may speak on, or be relayed onto, HF. This includes novices, ZRs and persons who do not hold any amateur licence, e.g. students, Scouts, Voortrekkers, Lions etc.

We enjoy a dispensation from SATRA that is applicable during *certain special events* such as JOTA, CQ Hou Koers, Hunting Lions, YARIA, local club news bulletins and organised on-the-air activities such as the SARL's Intecnet.

- An amateur station *officially participating* in a special event may permit another person to speak over his station to other stations *participating in the event*. The *appropriately* licensed amateur must be in control of the station at all times and may not permit an unlicensed person or one not licensed for the frequency in use to control the

station.

- An official club station may allow another amateur who is not licensed for the particular frequency in use to be *relayed* over the station for the *purpose of reading the club's bulletin* or to *take part in the club's activities*. The amateur controlling the station must be licensed for the particular frequency and mode used at the time.
- The only other occasion when a non-licensed individual is permitted to speak over an amateur station is in the event of an emergency or disaster, when officials participating in the rescue operation may be relayed.
- ZRs may also operate through satellites in Mode A, which have an uplink on 2 metres and a downlink on 10 metres.


So now you know! 

PEARS NATIONAL VHF/UHF CONTEST DATES

Please note that the 2000 PEARS National VHF/UHF contest is scheduled for the weekend Friday 21 January to Sunday 23 January 2000. For effect, the Radio ZS Editor used the top portion of the certificate issued after last year's contest as a headline for the reminder about this year's contest (RADIO ZS, December 1999, page 9). Unfortunately, last year's date was also reproduced in the header.

The 2000 contest starts at 1800 SAST on the Friday and ends at 1800 on the Sunday. There are five categories: Fixed, Field, Club, QRP and Mobile, which should appeal to most VHF amateurs.

Sporadic-E propagation on 50 and 144 MHz and Tropo on 144 to 1296 MHz are expected to provide long-distance openings during the contest weekend..

See page 9 of the December 1999 issue of Radio ZS for the full rules or download them from the SARL web site: sarl.org.za and, meanwhile, get your VHF/UHF equipment ready to join in the fun. 

BETTER PICTURES IN QSX

The quality of photographs published in QSX has not been great of late. We discussed the problem with the printers and it seems that their paper plate-making machine does not take kindly to solid areas of grey shading that make up the photos that we have been providing.


A recent test, using a different dither style in our printouts, indicates that there should be a vast improvement. With this in mind, and just to make your day/century/-millennium, here is a photo of your



revered Editor circa 1955, when he was young and handsome, operating his first mobile station

The car was a 500cc 4-stroke, 4-cylinder Fiat Cub (probably under 3 metres long) with a rear-mounted, base-loaded whip reaching to nearly 4 metres a.g.l. Some wags referred to the setup as the "antenna with a car attached to the bottom".

The crystal-controlled transceiver, AM only, was built by Jack Drayton ZS2CI of East London. Its input was about 4 Watts and it was powered from a genemotor chewing many amps out of the battery.

The little car, incidentally, took me all over South Africa. When I stopped at a robot in Durban one day a mother answered her young son's curiosity by averring that it was "something to do with Sputnik". The historic satellite had just been launched that week! 


FOR SALE ★ WANTED ★ SWOP

FOR SALE

* TS830S HF transceiver with matching speaker SP230, antenna tuner AT230, station monitor SM220 – R4 000 o.n.o. the lot — André le Roux ZS2AL, tel. 082 951 1164.

* TS130S HF transceiver – R1000; TH3 Junior tribander beam with new trap end caps – R900; Ham IV rotator with control box (new potentiometer fitted during recent refurbishment) – R900; Spare potentiometer (new) for Ham IV rotator – R100 — Beavan Gwilt ZS2RL, tel. 360 6968.

AUTHENTIC NEWSPAPER HEADLINE BLOOPERS—

- Typhoon Rips Through Cemetery; Hundreds Dead (Well...? what do you expect?)
- Drunk Gets Nine Months in Violin Case (That's what you call facing the music!)
- Iraqi Head Seeks Arms (A change from seeking Alms!)
- Is There a Ring of Debris around Uranus? (Why does *that* sound familiar!)
- Miners Refuse to Work after Death (Others I know refuse to work even *before* death!) 

EXCITING VHF EVENTS TO HERALD IN THE NEW MILLENNIUM

BY MIKE BOSCH ZS2FM

- Radio signals on 150 MHz, emanating from commercial stations in Cape Town, have often been picked up on Ascension Island during Tropo openings, a distance of 4500 Km, reports Kosie du Buisson V51E of Namibia. Therefore, two-way contacts on 144 MHz with Reunion Island should be a cinch as it is located less than half that distance from South Africa. Skeds have been arranged with Philip Mondon FR5DN for the month of January 2000.

- The PEARS National VHF/UHF 48 hour contest will take place on 21-23 January 2000. It has been upgraded and now covers the bands from 50 MHz up to 1296 MHz. In addition there will be five categories, namely Fixed, Field, Club, QRP and Mobile, which should cater for all tastes. So now is the time to prepare and polish up your equipment and try it out during the millennium year contest.

- One of the few pioneering challenges that still remain for the radio amateur is

to bridge the Indian Ocean on 144 MHz, a feat which is more difficult than EME. In February 2000 a comprehensive series of Trans-Indian Ocean tests will be conducted between South Africa and Australia. Several Port Elizabeth amateurs will take turns to transmit high power CW signals, in excess of 2000 Watts ERP, on a frequency of 144,250 MHz beamed at Perth, Australia.

The tests are scheduled from sunset Western Australian time to sunset South African time and are to be monitored by serious VK amateurs on the west coast. Bill Hosie VK6ACY will act as liaison between the two countries. Further details will appear in RADIO ZS.

The main objective of these Trans-Indian Ocean tests is to discover the best time, optimum conditions and minimum ERP required to propagate these radio signals across the Indian Ocean and lay the foundation for future two-way tests on 144 MHz.


NEW CLUB FORMED IN SOUTH CAPE

A new amateur radio club has been formed in the Southern Cape. Known as the Suid-Kaap Amateur Radio Klub, it is based in the Stillbaai area and seems to have got started with a surprising number of members for an area that is not normally thought of as densely populated with hams

The Garden Route Radio Club has lost some members to SKARK but we understand it continues to operate and is as active as before.

Ons wens die nuwe klub alle voorspoed toe en hoop om in die nabye toekoms iets van hul lede en aktiwiteite te hoor.

RENEWED YOUR HAM LICENCE YET?

Although ham licences should be renewed before the end of January, nobody seems to have received the usual annual reminder, without which we are unable to coax the Post Office to accept our money. One ham reported that he paid his fee at the local office of SATRA, but another who tried was refused "because we do not take cash here". Presumably a cheque would have been acceptable but they did not suggest this. Anyway, don't worry – SATRA says reminders should be received any day now. 

HINTS FOR THE SHACK

READ AC CURRENT ON YOUR AVO* (VIV MOORE ZS2VM)

Most inexpensive bench test meters have an ac voltage scale but don't have an ac *current* scale. A method to make an approximate measurement of ac current is to insert a one ohm, high wattage (50 watt if you are reading mains current) resistor in series between the supply and the load and measure the ac voltage across the resistor. The scale is then read in amps.

Take care when dealing with mains voltages!

The same system can be used for dc current measurement beyond the range of your test meter. It can be

particularly useful when setting charging currents for Ni cads, where the resistor can be left in permanently.

* On a point of order. We often refer to our test meters as Avo meters. AVO, however, is really the brand name of a particular make of test meters. Most of us use other, probably cheaper, jobs and it is of course incorrect to call them Avos! It is OK to refer to them by spelling out the initials a.v.o., those being the international abbreviations for amps, volts and ohms - whence the brand name originated!-Ed.]

POOL CHEMICALS IN YOUR SHACK (ANDRÉ BOTES ZS2ACP)

When the transceiver of a local ham went on the blink recently it was found to be severely corroded, both inside and out, giving rise to poor earth connections and other problems.

It was ascertained that the owner was in the habit of storing his pool chemicals in the shack. Since these chemicals contain hydrochloric acid, it

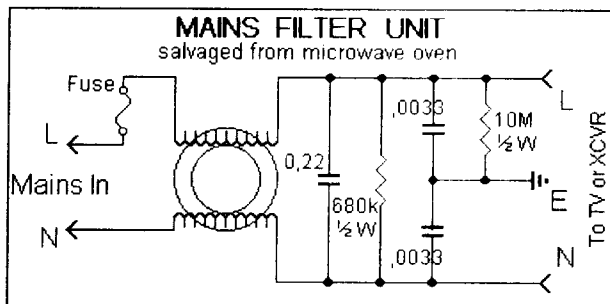
is only a matter of time before the fumes get into the rig and other equipment and they can cause irreparable damage. One can only conjecture about what it does to one's lungs!

The moral of the story, then, is *not* to keep corrosive chemicals anywhere near your expensive goodies.

SCRUNGE A MAINS FILTER (DUDLEY FORSYTH ZS2AW)

In most microwave ovens, PCs, monitor screens etc. there is a modular mains filter (see circuit diagram). This is a throw-away item, so scrounge one from a repair shop.

I have one in the mains near the TV set and one near the HF transceiver. I can now operate SSB on any band with the TV set in the same room. No interference at all. 📡



<p>Shift to the right and subtract</p> <p>Drop the next bit and add divisor because the answer was negative</p> <p>Drop the next bit and add the divisor</p> <p>Drop the next bit and add the divisor.</p> <p>The sign bit is 0 therefore result is positive. Subtr. the divisor or add the two's compl. of the divisor.</p> <p>Result is neg. therefore add divisor.</p> <p>Result is pos. therefore subtract the divisor.</p> <p>The result is pos. therefore subtract the divisor.</p> <p>The result is pos. and there is no bit left to drop down. This is therefore the remainder. If the result was negative, the divisor must be added to it to get the remainder</p>	<p>00010110 00010111</p> <p> - 0000000011101011</p> <p> 1111011111</p> <p> 00001010</p> <p> 111110011</p> <p> 00001010</p> <p> 111111010</p> <p> 00001010</p> <p> 000001001</p> <p> 111111110</p> <p> 00001010</p> <p> 000010001</p> <p> 11110110</p> <p> 000001111</p> <p> 11110110</p> <p> 00000101</p> <p> 11110110</p> <p>The answer is 23.5 (decimal) or 00010111 (23) Quotient 00000101 (5) Remainder</p>	<p>The result is negative as shown by the sign bit therefore quotient is 0</p> <p>The result is negative therefore the quotient is 0</p> <p>The result is negative therefore the quotient is zero.</p> <p>The result is pos. (see sign bit) therefore quotient = 1.</p> <p>The result is neg. therefore the quotient = 0</p> <p>The result is pos. therefore the quotient = 1</p> <p>The result is pos. therefore the quotient = 1</p> <p>The result is pos. therefore the quotient = 1</p> <p>The result is pos. therefore the quotient = 1 and the result is equal to the remainder</p>
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I hope that the above example adequately explains the process of binary division. Practice it with other numbers until you get the hang of it. It

can be a lot of fun. Also do not hesitate to contact me if you require assistance. My e-mail address is:
meltek_n@global.co.za

Next month I will describe the PIC program to achieve the above.

Neil Thomas ZR2NT

Before you start asking what *this* page is all about, please turn over.
(No, No! Stop! Turn the *page* over)

PIC WORK GROUP PROJECT (Part 5) By Neil Thomas ZR2NT

By now you have probably forgotten what was said in the previous articles relating to this topic. For continuity it may be a good idea to go back to the previous articles and brush up on the ins and outs of the PIC's.

The 8 bit number we read in and stored in the variable 'BinaryNo' can have any value from 0 to 255 as 8 bits can represent 256 numbers. (As 0 is also a number, I must mention that year 0 to 1999 is in fact 2000 years and I assume the digital age requires the current millennium celebrations!)

The single number stored in the register called 'BinaryNo' must be displayed on three identical seven segment LED displays. There is no way that you can just take the 8 bit

number and send it to the display and expect the correct number to be displayed. The only way I could think of getting the three digit number to the three 7 seg. displays is to divide the number by ten and send the remainder to the least significant digit, divide quotient by ten and send the remainder to the second least significant digit and again divide the quotient by ten and send the remainder to the most significant digit.

To write a program for the PIC to achieve this, it is

necessary to write a program that can do the binary division as described above.

Part 5 will describe binary division and Part 6 will discuss the assembly routine to do binary division with a PIC. Although we are only interested in a divisor of ten, the processes described below apply to any divisor that can be represented by 8 bits.

Before we plunge into binary division it is necessary to discuss binary addition and subtraction as shown in the following examples:

ADDITION	SUBTRACTION
$0 + 0 = 0$ $1 + 1 = 0$ with a carry bit $1 + 0 = 1$ $1 + 1 + 1 = 0 +$ the carry bit = 1 with a carry e.g. $\begin{array}{r} 00101111 \text{ (decimal 47)} \\ + 00010011 \text{ (decimal 19)} \\ \hline 01000010 \text{ (decimal 66)} \end{array}$	$0 - 0 = 0$ ~ ~ $1 - 0 = 1$ $1 - 1 = 0$ $0 - 1 = 1$ with a borrow 1 e.g. $\begin{array}{r} 00101111 \text{ (decimal 47)} \\ - 00010011 \text{ (decimal 19)} \\ \hline 00011100 \text{ (decimal 28)} \end{array}$

The two's compliment method of subtraction is easier to implement in programming and works as follows:

To obtain the result the two's complement of the subtrahend is added to the minuend. To obtain the two's complement of a binary number, invert all the bits and add a one to the byte. Therefore $47 - 19$ in two's compliment arithmetic:

```

Straight 19: 00010011
Invert bits: 11101100
Add 1:      00000001
            11101101 (The two's compliment of decimal 19)
+00101111 (decimal 47)
            00011100 (decimal 28)
    
```

There are several methods to do binary division. I will describe the shift and subtract method, as that is the method on which I based the PIC routine. This method works by

shifting the divisor one place to the right and subtracting it from the dividend.

If the result of the previous operation is negative, the next operation involves shifting the

divisor to the right and adding it to the previous result.

As an example, divide 235 by 10. In binary form we have:

MINUTES OF THE MONTHLY GENERAL MEETING OF THE PORT ELIZABETH AMATEUR RADIO SOCIETY HELD AT THE MUNICIPAL DISASTER MANAGEMENT CENTRE, MILL PARK, PORT ELIZABETH ON 19 NOVEMBER 1999.

Present & Apologies: As per the register. Additional apologies from Trevor ZS2AE and XYL Julie ZR2EY, Brian ZS2AB and XYL Marge ZS2OB.

Welcome: Chairman Chris ZS2AAW welcomed all present, especially the ladies. He also thanked Cyril ZR2H and XYL Noel, as well as Tony ZR2AI and XYL Maria for organizing the excellent cheese and wine spread to be enjoyed by members at the end of the meeting.

Minutes of the previous meeting: Acceptance proposed by Bill ZS2ABZ and seconded by Viv ZS2VM.

Matters arising: Nil.


Finance & membership: As Treasurer Clive ZS2RT had not yet arrived, Chris reported on his behalf that our finances were still healthy, even though our savings account was somewhat depleted as a result of the payment of rally claims. (Clive ZS2RT arrived shortly after this item, having been delayed by the delivery of the golf shirts).

Correspondence: 1) Various club newsletters.

- 2) Receipt for the registration fee of R150 and a publicity pamphlet, from the organisers of the Sci Fest.
- 3) Letter by Chris ZS2AAW to SATEPSA requesting formal authority for the establishment of the Y2K UHF backbone in conjunction with ESKOM.

General: 1) Neil ZR2NT agreed to take charge of the SciFest Y2K project. A committee will have to be established early in the new year.

- 2) Al reminded members that the CQ CW World Wide Contest would be taking place over the weekend of 27/28 November. He will be operating from his smallholding on Sunday the 28th, assisted by Garth ZS2HB. The general intention was to create an opportunity for newer hams to witness and experience CW operating, and for them to realise that CW could be an enjoyable experience. The braai coals would be ready by 13:00, and Al issued a general invitation to members to attend.
- 3) Chris reminded members of the social on 4 December at the QTH of Roger ZS1J.
- 4) There were a number of scout halls that were no longer in use, and it appeared that we stood a fair chance of obtaining the use of one as a meeting venue. Chris thanked Clive ZS2RT for his research into the matter. Members indicated by a show of hands that a venue in the Western suburbs would be acceptable. Garth ZS2HB would investigate further, and Beavan offered to assist.
- 5) Chris ZS2AAW handed out updated schematic diagrams of the repeater network.
- 6) Clive ZS2RT informed members that he had all the T-shirts that had been ordered, and these could be collected after the meeting. Cost was R40 each.
- 7) Chris ZS2AAW presented André ZS2ACP with the Tinus Lange 7066 Technical Excellence Award for taking a close second place with his CB-to-HF convertor project
- 8) Chris ZS2AAW closed the meeting at 20:20, and wished everybody well for the festive season.

At the conclusion of the meeting all present did justice to the cheese, wine and snacks that were so appetisingly presented. Let it be recorded that the last meeting of PEARS for 1999 ended on a most enjoyable social note. 

WHICH BATTERY TO USE?

BY VIV MOORE ZS2VM

BATTERIES! BATTERIES! BATTERIES! They're everywhere! With several new battery types coming onto the scene in the last 10 years or so, it's hard to keep up with what's available today! And – even more important – how do they differ from one another, and which is best in your application?

The tried and true standby batteries for hand-held transceivers, video cameras and portable computers have been nickel cadmium (NiCd). For less-portable applications, sealed lead acid (SLA or gel) cells are often used. Today we have nickel-metal hydride (NiMH), lithium ion (Li-Ion), lithium polymer (Li-Polymer) and reusable alkaline.

Each of these types has good and bad features, and selecting the battery for your needs can be a real headache unless you understand those features and how they may apply to your needs. Here, I'll try to shed some light on those subjects.

BATTERY TYPES

Nickel Cadmium (NiCd) –

Mature technology, used where long use

life, high discharge rate and reasonable prices are important. Not good where long shelf life is essential.

Nickel-Metal Hydride (NiMH) –

Has been around for about 10 years, offers a somewhat better power density than NiCd, charge/discharge cycles and a lower peak output current (because of higher internal resistance).

Lithium-Ion (Li-Ion) –

A somewhat new technology, really emerging in the last five to seven years, although it has been experimented with for some time. Li-Ion cells provide a much higher power density (power available per unit volume) than NiCd. The downside is that they require very tight control of charge current, charge voltage and discharge to defend against plating metallic lithium inside the battery.

Reusable Alkaline –


Cousin to disposable alkaline cells, reusable alkaline cells are good for low-cost and low-power applications. They're known for having a very low self-discharge rate. 

TABLE 1
Battery Type Comparisons

	NiCd	NiMH	Li-Ion	Reusable Alkaline
Energy density	40–60	60–80	100	80
Cycle life	500–1500	500	500–1000	10
Fast charge time	1 h	2–4 h	3–4h	2–3 h
Overcharge tolerance	Moderate	Low	Very low	Moderate
Self-discharge (per month)	25%	30%	10%	0,3%
Individual cell voltage	1,25 V	1,25V	3,6V	1,5V
Maximum load current #	>2C	0,5–1C	1C	0,2C

Cycle life is when full capacity decreases from 100% to 80%. For reusable alkaline it drops to 65%.

The C specified here refers to the cell Amp-hour capacity.

STOP PRESS

SANTA'S SLEIGH RECOVERED

As you will have noticed from the cover of last month's QSX, Santa Claus had the misfortune of having his sleigh swiped when he parked it on a rooftop in Gauteng during his annual Christmas delivery rounds. He was forced to complete the rest of his route on foot, being virtually dragged along, exhausted, behind his fleet-footed reindeer, who were thankfully not injured in the hijacking.

The good news, we learned from our honorary reporter Ewald Bouwer ZS2EHB of Despatch, is that the sleigh was later recovered virtually intact. By some strange coincidence the hijackers had abandoned it in the bush a hundred metres from the main PE-Uitenhage road.

The Police, Ewald reports, are sure that it was used as the get-away vehicle in an armed robbery at a large shopping mall in the central business district at Coega on Christmas Eve.

We took up the matter with the Chief of the Klippiesdorp Kopshop and he confirmed the discovery. He said he got a tip from a makweta camping in the area who luckily had his cell phone with him. He (the Chief) chewed on it for a while then, deciding it might be genuine, he hacked his way through the colourful plastic bags to the site and found the remains of "a smart-looking donkey cart".

Unfortunately, he said, the wheels of



The donkey cart minus wheels and disselboom.

the cart, including even the axles, as well as the disselboom had been removed. It was clearly the work of foreigners since it was simply left lying flat on its chassis. Local shoppers are decent

and leave vehicles jacked up on rocks.

A theft docket has been opened and the makweta is being questioned. They think he is hiding something.

Among several things the Chief cannot understand is how the donkey cart got to the site. It just could not get there from the main road without leaving tell-tale tracks

through the dense bush. It could only have come by air, but that's ridiculous because we know donkey carts don't fly. Donkeys are just too heavy, the Chief explained.

The makweta, however, insists that it *did* come from the sky. "It nearly hit me!" he said, "I nearly jumped out of my skin from fright!. That's the *second* near miss this week. Look, my face is still white!"

Be that as it may, the Chief also found to his amazement that there were no donkeys at the site, just the biggest goats he had ever seen, with strange horns like TV aerials. One of them must have had a bad cold, because its nose was as red as a post box and it even seemed to glow.

He (the Chief) got the makweta to call the SPCA on his cell phone but they refused to believe the story, saying bluntly that he (the makweta) was 'not all there', and the operator simply cut him off. "That's *also* the second time this week," the makweta sighed.

The Chief found a number of parcels on the cart, still intact in their wrappings. Inspecting the contents, he found no valuables to take for safekeeping. Then, recalling the adverts on TV about speedy mails, he deduced that it must be a newfangled post office cart, so he contacted the nearest postmaster. However, the man had a satisfactory alibi (he was away in Gauteng at the time) so the matter rests, which is just as well, since the docket went astray.

STOP PRESS—Santa Claus learned of the recovery of his sleigh and sent a number of elves, who are usually out of work at this time of year, to fetch it back to the North Pole for a refit. Unfortunately the Klippiesdorp Kops took them all into protective custody and issued a warrant of arrest for Santa Claus. They say it's illegal to force such little people to work. The Chief wants R5000 bail or R200 for two hacksaw blades. ☐

THE SARL MOVES FORWARD

GARTH LAAKS ZS2HB

The SARL has convened a meeting of all club chairmen for Saturday, 22 January to discuss matters of concern regarding ham radio and the League. A little bird tells me that some really serious discussions are expected, which will hopefully redound to the benefit of the League and indeed all hams in South Africa

We wish the Chairmen's Indaba well in the deliberations. May the administrative turnaround that we have seen in the past nine months continue apace, and may membership of the League once again grow to new heights, both in number and in enthusiasm.

In his Christmas message, the SARL President, Hans Potgieter ZS6ALJ said: *"The time has come to put the past behind us and to look forward. The past is history. Let us leave it that way and rather use it to learn from, rather than using it as a rule to live by. Let us not use the past to destroy the future joys of our hobby."* His wise words augur well for the League and we wish him the strength to follow through and guide his Council in that vein.

Hans also observed: *"The council is there to act on the mandates given to them by the members, but members need also to participate in all aspects of the League."* This has been a large problem in the past – Council has not always acted in accordance with the expressed or obvious

wishes of the members. Pseudo professionalism and megalomania alienated the average ham and spiralling costs rendered membership too expensive, especially for those outside Gauteng.

It stands to reason that, for people to *want* to belong to an organisation, the organisation must make itself attractive to them, i.e. it must be run in an open manner and clearly the way *members* dictate, not the way Management or individuals prefer; and the cost must be within members' pockets.

The new President seems to have not only seen the writing on the wall but also identified the author/s. He has acted decisively in his short period at the helm and is making further changes as he goes along. We need to now put the past behind us as he asks, support him and the League, and see what we can achieve with a Council pulling *our* way, together, in harmony.

So join or rejoin the League now and help it grow. You only pay for half a year from now up to the end of June 2000.

Do it!

• The time has
come to put the
past behind us •

DEARStalk

NEW SARL APPOINTMENT

The SARL has a new Administrator. Michelle van der Merwe ZS6TO has left us and has been replaced by Wally Sime ZS6WAL.

The bulletin announcement adds: "Feel free to call Wally for any information at 011 675 2393". I wonder if this was a wise invitation – hams are notorious talkers and I venture to suggest that part of the problem of inattention to correspondence is the fact that the Administrator is kept on the telephone for inordinate lengths of time by members who enjoy a good chat!

QSL BUREAU MOVES

The SARL QSL Bureau moved to the NARC (National Amateur Radio Centre – alias Headquarters office) on 4 January. It seems that Len Silberman ZS6BYE has stepped down as QSL Manager, and we thank him and his right-hand "man", his XYL, for the years of hard work running the Bureau.

SARL BULLETINS UNDER NEW MANAGEMENT

Ever since SARL Headquarters moved to Johannesburg, the 'HQ' bulletins have been written by Hans van de Groenendaal ZS5AKV. In a recent bulletin it was announced that he is standing down as bulletin writer and the task will henceforth be undertaken by a committee under Marten du Preez ZS6ZY of Pretoria.

This should be a good time to brush up the vocal renderings and technical

quality of the relays from Div 6 as well.

70 MHZ BAND NOT AVAILABLE YET

The segment 70 to 70,300 MHz, which was planned for release to the Amateur Service from 1 January, has not been made available due to unforeseen difficulties in moving some commercial users to new frequencies. The band will be released to us as soon as possible and, until that happens, all amateurs are asked to ensure that no signals are transmitted there.

HF & DX NEWS COLUMN

Dennis Green ZS4BS, who is a SARL Councillor with the HF Manager portfolio, says that, commencing this year, he wants to start a HF and DX News column on Amateur Radio Mirror International.

The idea is to have some DX news, contest news and information about one or other facet of HF work – awards, QSL practice, beacons, etc.

However, to do this he needs information to set up the programme. Dennis says: "If you have any information and/or ideas would you please send this to me?" He adds: "There is a VHF slot on ARMI and I think we must now have an HF slot as well."

Dennis can be e-mailed at: zs4bs@netactive.co.za

WOT ?? NO ZS2's??

Keith Laaks ZS6TW e-mailed us thusly: "I saw from W5UN's list of known EME stations that it contained

no ZS2's. Perhaps you need to point this out to the guys in PE and try to muster up some enthusiasm for someone (or the club) to give it a go? Cheers".

The RSA stations from <http://web.wt.net/~w5un/allcalls.dta> are listed as follows:

ZR5ADQ, ZS3AT, ZS4TX, ZS5AV, ZS5JF, ZS5JM, ZS6ALE, ZS6AVL, ZS6AXT, ZS6BMN, ZS6OB, ZS6PJS, ZS6TW and ZS6WB.

Any takers in ZS2? Mike? Jim? André? Ken? Alex?

ANDRÉ GETS SUNSAT CERTIFICATE No 1

André Botes ZS2ACP is the recipient of Certificate No. 1 in the SA AMSAT SUNSAT contest that was initiated a few months ago. Having worked the requisite 25 different stations on different passes, André has been awarded the bronze certificate.

Silver and Gold certificates are available for 50 and 100 contacts respectively, but only one contact per pass may be claimed and a station may only be worked once for the purpose of the award.

SPECIAL EVENT STATION

Adriano, IK2GNW, is leaving for a six week trip in the Pacific. He will start operations on January 20 2000. The first week he will be in French Polynesia signing FOØPRE (still unconfirmed). The second week he will show up from Austral Islands signing FOØPRE (unconfirmed).

He will be in North Cook Islands during the third week and the call sign will be ZK1NW. Adriano will sign A35NW from Tonga Islands during the fourth week. The fifth week he will operate from Wallis & Futuna Islands signing FW/IK2GNW. In the last week he will sign KH6/IK2GNW from Hawaii.

The exact dates will depend on the

local flights. He will be active on all bands CW/SSB/RTTY. QSL via I2YSB (bureau or CBA). The address of I2YSB is Silvano Borsa, viale Capettini 1, 27036 MORTARA(PV), ITALY

More complete details can be found at the Web-Site:

<http://digilander.iol.it/i2ysb>
or e-mail: i2ysb@libero.it


Y2K A DAMP SQUIB – UNFORTUNATELY?

Well, Y2K arrived without any problems that we are aware of, which is both a relief and a pity! *Relief* that we did not lose our electricity or water supplies, bank accounts and other infrastructure, but a *pity* in some way because the public will never know how Ham Radio was poised to help save the day in the event of a major problem.

But we could yet derive some welcome publicity – someone with all the details at his fingertips needs to take a break from repeater development and maintenance and put pen to paper for the local and national media !!

A huge thank-you is due to Chris and his helpers, both ham and saltmine, for the effort that they put into extending and developing our repeater backbone for use by Eskom in the event of a major problem. Publicity aside, we stand to score from the whole exercise by way of some of the repeater extensions alone.

REPEATER DIAGRAM UPDATE

Since publication of the repeater net diagram in the December issue of QSX, another switching point was added between Riversdal and Jonaskop. On the backbone link (the line between these two sites, above the figures 430,500 TX etc.), please insert a cross and the figures 6506. This code facilitates the interconnection and disconnection of the East Cape and West Cape systems. 

Congratulations...

on your birthdays:

January

- 24 Anthony Bruyns ZR2APB
- 28 Rosemary Osborne XYL of ZS1KP

February

- 2 Ginny Pullinger ZS2GIN
- 2 Shirley Winter XYL of ZS2MC
- 7 Joan Bowles ZR2ABA
- 10 Lynne Crothall ZS2MM
- 11 Dirk Ligthelm ZS2D
- 12 Peter Lunow ZR2PEL
- 13 Johanna de Jongh XYL of ZS2NQ
- 14 Arno du Preez ZS2ABT
- 16 Mike Hanslow ZS1RMS
- 18 Peter Flynn ZS2PF
- 19 Gary Laaks ZR2ABU

on your anniversaries:

January

- 23 Natasha ZR2BCS & Anthony Bruyns ZR2APB
- 29 Margaret & Ken Victor ZS2OC

February

- 1 Lizette & Nicolas Oelofse ZS4NIC
- 15 Vanessa ZR2VM & Chris Scarr ZS2AAW

met jou nuwe roepsein Johannes Geldenhuys ZR2JG.

on passing the RAE Johannes Geldenhuys, and Dave and Carl Malcolm (father and son). Johannes het 'n A-gemiddeld behaal – veels geluk, Johannes!

on successful coaching of the three PE candidates by private tuition, Viv Moore ZS2VM. Many thanks, Viv.



Sick List: Ken Tremeer ZS2BWB having structural repairs done and will hopefully soon be able to resume his daily hikes without discomfort.

- Viv Moore ZS2VM still recovering from his triple bypass but suffering from apparently exposed nerve-ends that are painful when touched, even by his shirt. (What a nerve, exposing its end like that!)

Back to Civilization: Ginny & Pat Pullinger ZS2GIN/ZS2PJP more or less permanently now at Port Alfred, but may still skip up to Gauteng once in a while.

- Dick Schönborn ZS2RS 'back home after a month in the UK.

- Greg Maynard ZS2RE home again from Gauteng and ready for another stint at the Technicon.

Greener Pastures: Mike Bentley ZS2IC and XYL have emigrated to the UK. No wonder we haven't heard him for a long while.

Happy

New

Year

Everyone!



Your Society's Committee

Chairman, Repeaters, Packet.....	Chris Scarr ZS2AA	360-1124
Vice Chairman, Secretary.....	Beavan Gwilt ZS2RL	360-6968
Treasurer, Assets Control.....	Clive Fife ZS2RT	32-3203
Awards, Refreshments.....	Bill Hodges ZS2ABZ	581-2580
QSX Editor.....	Garth Laaks ZS2HE	39-1101
e-mail the Editor at..... gilaaks@iafrica.com		
QSX Collation/Distribution, repeaters, packet.....	Trevor Scarr ZS2AE	32-1746
Technical Classes (convening/administration).....	Cyril Hislop ZR2H	360-8482
Technical Classes (lectures).....	Viv Moore ZS2VM	360-4433
Librarian.....	Neil Thomas ZR2NT	487-2403
Special Events, Social.....	Cyril Hislop ZR2H	360-8482

PEARS' VHF/UHF & Other Services

REPEATERS

Town VHF.....	# 145,050/650	Kareedouw.....	† 145,125/725
Town UHF.....	# 431,050/438,650	Knysna.....	* 145,075/675
Cockscomb.....	145,000/600	Lady's Slipper.....	* 145,100/700
Cradock.....	* 145,050/650	Uitenhage.....	# 145,075/675
Grahamstown.....	* 145,150/750	Theescombe.....	† 145,175/775

* These form PE's long-range 2-metre repeater system, to which the East London 145,125/725 MHz repeater and the George repeater on 145,100/700 are also linked. It is DTMF extendable to Cape Town via the CTARC system. # These can also be linked as required. † These are privately owned repeaters and are not included in the PEARS linked repeater system.

OTHER SERVICES

Packet Bulletin Board (ZSØNTP).....	144,625
Packet Rose Switch ZSØGHT-3,046101 (144,675 in/out) or 046102 (UHF out to BBS).....	144,675
2m Beacon (ZS2VHF CW ID) (horizontally polarized, 160W ERP).....	144,410
6m Beacon (ZS2SIX CW ID) (horizontally polarized, 25W ERP).....	50,005
6m Simplex Link with Lady's Slipper 2m Repeater (vertically polarized).....	51,400
Wefax Relay (Meteosat).....	145,350
Web Site.....	pears.8m.com

Sunday Bulletins

PEARS bulletins are transmitted on Sundays immediately after the SARL English transmission, i.e. at about 08:45, on 7098 kHz as well as the 2 metre linked network that provides coverage from East London to George as well as Cradock and environs. PEARS' 7098 or 3640 kHz transceive facilities are also remotely linked as needed. In addition, the SARL's 40m operations on 7082 or 7066 kHz or Hamnet's 7070 kHz can be remotely patched into the 2m network, in receive-only mode or with full transceive capability for interactive events.

Program and Frequency	
16 Jan	ZR2H
23	ZS2AAW
30	ZS2HB
6 Feb	ZS2RT
13	ZS2ABZ
20	ZS2RL
27	ZS2AE

DIARY DATES

JANUARY

21 PEARS monthly meeting
21-23 PEARS VHF/UHF
national contest

FEBRUARY

3 Wrinkly Rave
19/20 ARRL DX CW contest

*** We Like Being Your Society! ***