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The New 40 Metre Band
The Namibian VHF/UHF DXpedition
Design Hints to Prolong Battery Life



Amateur Radio - Communication Technology in Action

Amateur Radio... Professional Technology

[amateur • n. 2.a. one who cultivates anything as a pastime
radio • n. 1. the transmission and reception of
radio-frequency electromagnetic waves]

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SILENT KEYS

STIL SLEUTELS

They shall grow not old as we that are left grow old
Age shall not weary them nor the years condemn
At the going down of the sun and in the morning
We will remember them."

Hulle word nie oud soos ons wat bly vergrys,
Die jare sal hulle nie raak nog die tyd se eis
En, soos die son sak of die more ontvou,
Eer hul herinnering – ons sal onthou."

Eddie Smuts, ZS6BZN

Craig Thom, ZS6UM

Dave Miller, ZS6HO

Gerry Capper, ZS6GMJ

Alfred Staegemann, ZS6ATN

Stan Zway, ZS6SDZ



**South African Radio League National Convention
Cape Town 24-26 April 2009**

Join us at the SARL National convention from 24 to 26 April and enjoy the hospitality of the Western Cape and on Saturday 25 April help shape the future of Amateur Radio at the SARL Annual General Meeting.

Friday 24 April at 19:00, welcoming braai at the Cape Town Amateur Radio Centre. [33.58,467S 18.28,829E]

Saturday 25 April, SARL Annual

General Meeting at the Oakdale Club in Bellville. [33.52,899S 18.38,633E]

08:00 Registration

09:00 AGM

13:00 Lunch

15:30 Champagne cruise on the Tigresse, the largest sailing catamaran in Africa. [33.54,275S 18.25,242E]

19:30 Annual Awards Dinner at the Oakdale Club. Guest speaker: Sias Mostert of SunSpace.

Morning: Ladies programme - shopping spree at the Waterfront.

Sunday 26 April, Breakfast at Poplars Restaurant (D'Aria Estate). [+33.50,429S 18.36,690E]. The rest of the day at leisure, time to taste the wines of the Cape at the many wine farms in the area.

Visit www.sarl.org.za for more details and the registration form.

CQ de ZS1YT



We are approaching the 2nd month of 2009 and, better late than never, I want to use this opportunity to wish all our Radio ZS readers a happy and prosperous new year. Following on this is the fact that the 2009 AGM is literally around the corner. Yes, it is almost a year since we all met in Bloemfontein for the 2008 National convention. This year the convention will be hosted in Cape Town and I am sure that one can look forward to a very exciting programme with activities starting on the Friday evening and culminating Sunday morning. Please diarise the weekend of 24 to 26 April, as it is one of the most important amateur radio activities to attend to during 2009.

During 2009, we will also again see a new series of the ever popular RTA's doing the circuit through the country. It is just great to see so many amateurs attending these interesting lectures and in doing so gaining valuable information about amateur radio related subjects for the next millennium. A great thank you to all the presenters who are always available to make these RTAs such a huge resounding success.

On our menu as well is the presentation of the PIC programming course in all the major centres in South Africa. Feedback from amateurs/members who have already attended such a course, I gather that it is an absolute must to attend these programming courses near you.

Please consult our website for enrolment details.

V o l g e n d e
jaar, 2010, kry Suid Afrika vir die eerste keer in die

geskiedenis die geleentheid om die Wêreldbeker Sokkertoernooi aan te bied. Die SARL en die amateurradio-gemeenskap moet hierdie geleentheid gebruik om ons stokperdjie en Suid-Afrika plaaslik en internasionaal te bemark. Om hierdie rede het die SARL ook vir 2 spesiale roepseine, naamlik ZS10WCS (World Cup Soccer) en ZS10FWC (Fifa World Cup) aansoek gedoen. Hierdie spesiale roepseine kan reeds vanaf 2009 gebruik word sodat ons kan opbou tot die groot geleentheid in 2010.

Aan die einde van Januarie 2009 het Vee Antal na amper 5 jaar in diens van die SARL, ons verlaat. Langs hierdie weg wil ek vir Vee dankie sê vir haar tyd by ons en haar alles van die beste vir die toekoms toewens. Met ingang Februarie het Mariska Faasen die leisels by Vee oorgeneem. Aan Mariska wil ek baie welkom heet by die SARL en vertrou dat sy haar werksaamhede by die SARL gaan geniet.

Groete van hok tot hok.
Rassie Erasmus, ZS1YT
President SARL

The New 40 Metre Band Plan

(Is my 40 metre inverted V still going to work?)

At the World Radio Conference 2003, a decision was taken to change the amateur radio allocation in the 7 MHz band. This followed extensive lobbying and discussions between various parties. It was decided that from 29 March 2009, the segment 7,100 to 7,200 MHz would become a primary allocation for the amateur radio service in IARU Region 1. Countries were also given permission to allow early access to the band on a secondary non-interference basis until 29 March 2009.

At the 20th Tri-annual conference of IARU Region 1 in Davos, 2005, Committee 4 (HF) drew up a new HF band plan, which came into effect on 1 January 2006. In this band plan, provision was made for the expansion to the 7 MHz band. The 7 MHz band plan in use until 23:59:59 on Saturday 28 March 2009 is listed below: CoA = Centre of Activity

Frequency	Band	Mode
7 000 - 7 035	200	CW, QRP
CoA 7 030 kHz		
7 035 - 7 038	500	Narrow band modes - digimodes
7 038 - 7 040	500	Narrow band modes – digimodes, automatically controlled data stations (unattended)
7 040 - 7 043	2700	All modes - digimodes, automatically controlled data stations (unattended), *

7 043 - 7 100	2 700	All modes, Image CoA 7 043 kHz, Region 1 Emergency CoA 7 060 kHz, SSB QRP CoA 7 090 kHz
7 100 - 7 200	2 700	All modes (2009: 200 Hz and 500 Hz segments below 7 100 kHz will be extended)

Amateur radio primary allocation 7,000 – 7,100

* Lowest dial setting for LSB: 7 043 kHz

At the 21st Tri-annual conference of IARU Region 1 in Cavtat 2008, Committee 4 looked at the 7 MHz band plan proposals and after discussions, the following band plan was accepted. This band plan will be effective from 00:00:01 Sunday 29 March 2009.

Frequency	Band	Mode
7 000 - 7 025	200	CW, Contest preferred
7 025 – 7 040	200	CW, QRP
CoA 7 030 kHz		
7 040 - 7 047	500	Narrow band modes - digimodes
7 047 - 7 050	500	Narrow band modes – digimodes, automatically controlled data stations (unattended)
7 050 - 7 053	2 700	All modes - digimodes, automatically controlled data stations (unattended), *
7 053 - 7 060	2 700	All modes - digimodes

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(New 40 Metre band plan from page 7)

7 060 - 7 100 2 700 All
modes, Digital Voice CoA 7 070 kHz,
SSB QRP CoA 7 090 kHz, SSB con-
test preferred
7 100 - 7 130 2 700 All
modes, Region 1 Emergency CoA 7
110 kHz
7 130 - 7 200 2 700 All
modes, SSB contest preferred, Im-
age CoA 7 165 kHz
7 175 - 7 200 2 700 All
modes, priority for intercontinental
operation.

Amateur radio primary allocation

7,000 – 7,200

* Lowest dial setting for LSB: 7 053
kHz

The CW segment has increased
from 35 kHz to 40 kHz and it is di-
vided into a contest-preferred seg-
ment (7,000 to 7,025) and a contest
free segment (7,025 to 7,040).

The narrow band digimodes seg-
ment has doubled 5 kHz to 10 kHz.
Unattended automatically controlled
data stations can operate up to
7,053 with other digimodes active to
7,060.

The phone segment starts at
7,053 and extends to 7,200 MHz.
The lowest dial setting for phone is
7,053 MHz. This segment is divided
into two contest preferred segments
and a contest free segment. The
first contest-preferred segment is
7,053 to 7,100 MHz and the second
segment is 7,130 to 7,200 MHz. The
segment 7,100 to 7,130 will be con-
test free and the IARU R1 Emer-

gency Centre of Activity will be 7,110
MHz.

The Table of Frequency Allocations

Before radio amateurs in South
Africa can get access to the new 40
metre band, the Table of Frequency
Allocations must be updated to show
7,100 to 7,200 MHz is an amateur
radio primary allocation. Hans van
de Groenendaal, ZS6AKV, is in con-
tact with ICASA and keeping the
process on the go. It is hoped that
the whole process will be finalised
long before 29 March 2009.

Now what changes must be made?

Well, the first is probably your 40
metre inverted V – shorten it de-
pending on where in the band you
want to work!! Then check that your
radio can transmit between 7,100
and 7,200 MHz - the FT-817 cannot.

Hamnet members will note the
change from 7,060 MHz to 7,110
MHz as the centre of activity for
Emergency communications in IARU
Region 1.

Clubs will have to look at their
HF bulletin frequencies and if neces-
sary make a change.

The Maritime Net on 7,045 MHz
will have to move, maybe into the
7,100 to 7,130 area.

The 2009 SARL Contest Manual
has been updated to reflect the new
allocations.

The IARU Region 1 HF Bandplan is
available on www.sarl.org.za. It will
be updated on 29 March 2009.

Despite setbacks the Namibian DXpedition a great success

Hans van de Groenendaal ZS6AKV

Heavy winds, lack of mains power and equipment going up in smoke were not enough to dampen the enthusiasm of the January 2009 Namibian VHF and Satellite DXpedition. The DXpedition began with an email from Dan, HB9CRQ, in March 2008 asking about possible locations for a major EME operation somewhere in Southern Africa. Several options were looked at before Namibia was decided on in late April. Detailed planning then began in earnest, starting with a search for a suitable operating site. Diaz Point near Luderitz was chosen because it was the closest major town in Namibia to Pretoria and could be reached by road in two days.

Initial indications were that the team would have ten members with three from Europe including HB9CRQ, the team leader and seven South African operators including Pine, ZS6OB and Hal, ZS6WB. HB9CRQ, ZS6OB and ZS6WB, plus at least two relief operators would be dedicated fulltime to the EME effort while the others would be assigned individual responsibilities to operate the tropo, meteor scatter and satellite stations.

Dave, N7BHC, joined the team with a goal of crossing the Atlantic to Brazil on 144 MHz via tropo ducting using a 2M19XXX 144 MHz 19 element Yagi that is 39 feet in



The antenna farm at Diaz Point, Luderitz

length and would serve as the primary antenna for the tropo effort. That turned out not to be as a cable snap during the erection of the tower saw the antenna tumbling down causing severe damage.

A team of ten did not materialise. By the time the DXpedition left for Namibia, Dan, HB9CRQ, Pine, ZS6OB, Hal, ZS6WB and Dave, N7BHC, were the only operators still on the roster from the original volunteers, but Daniel, ZS6JR, had joined to help with transportation. Daniel was tasked to help Dave, N7BHC, with the tropo project in Luderitz but also assisted in the EME effort on a number of occasions to give the operators a bit of relief when things got very busy.

Antennas for the EME activity included an array of four M-Squared 2M9SSB 9-element Yagis that have

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(Namibian DXpedition from page 9)

already been used in the past on 144 MHz with good success from several locations and a new eight element Yagi 432 MHz array using the 432EME-12 design.

Multisource made an IC-910H available which would have been used on 432 MHz and for satellite SSB operation. This turned out to be a lifesaver as the weary FT-736R scheduled for 144 MHz EME failed at initial power-up and the reliable IC-910H served as the primary 144 MHz EME radio during the entire operation.

For 50 MHz the team planned to use a Yaesu FT-650 driving a modified Heathkit linear amplifier that puts out a comfortable 400 watts into an M-Squared 6M7JHV Yagi. This was intended for use on 50 MHz EME, meteor scatter, tropo and with luck possibly even sporadic -E.

A 1 296 MHz EME station was shipped from Switzerland by Dan, HB9CRQ, in December and included an IC-706 with a 1 296/50 MHz transverter putting out 100 watts into a 59 element Yagi. This package has been used by DL3OCH on more than 20 DXpeditions with great success.

Overall the VHF DXpedition was a success. Expectations were exceeded on the EME side, but some of original goals were not reached for a variety of technical and operational reasons. The EME operation was impressive. On 144 MHz EME 231 different stations were contacted in 47 DXCC entities on all

continents. Of these contacts 230 were made using the WSJT JT65B mode and 1 on CW. On 432 MHz EME 18 different stations in 13 DXCC entities, 16 using JT65B and 5 on CW and on 1 296 MHz EME 18 different stations in 12 DXCC entities, 17 using JT65B and 1 on CW.

No 50 MHz operation was possible due to the serious damage incurred when the antenna was being erected. The tropo effort was severely hampered by damage to the long Yagi scheduled to be used as the primary tropo antenna. Some tropo tests were made with South America using the EME station but these attempts could only be made outside EME windows and were limited by power availability.

Meteor Scatter

No MS operation was possible because of the damage to the 50 and 144 MHz antennas. It was not practical to use the 144 MHz EME array because the location chosen to favour moon visibility and give maximum protection from wind damage effectively blocked the inland path.

Satellite

Satellite operation was one of the casualties of our operator shortage and had to be fitted in when the moon wasn't up and an operator was available. There was early damage to the main satellite equipment limiting us to only AO-51 operation using hand held equipment consisting of a dual band FT-530

(Continued on page 11)

(Namibian DXpedition from page 10)

transceiver and Arrow Yagi antenna. In spite of being limited and operating in gale force winds, the team managed to contact twelve different stations with the best DX being Karl-Heinz, 5R8KH, in Madagascar.

The team is much indebted to Trusty, V51TT, (Secretary of NARL) who facilitated the processing of the Namibian licenses. Thanks to Hal, ZS6WB, who supplied the information for this article and the various donors who provided financial assistance. Visit www.amsatsa.org.za



Dan, HB9CRQ, and Pine, ZS6OB

for Hal's detailed report and a list of donors.

Practical Design Hints to Prolong Battery Life

by Frank van Wensveen, PA3GMP / ZS6TMV.

Previously published in Shack News, the monthly magazine of the Highveld Amateur Radio Club, ZS6HVB

While this article has been written primarily for the amateur radio community, the principles described here also apply to professional electronics design. Battery life, volume and weight are important design factors in commercial applications (especially in portable equipment such as media players, cell phones and hand-held computers) and can make or break an application's commercial success.

Most (perhaps all) radio amateurs building home-brew equipment use batteries: in measuring equipment, in portable receivers (e.g. foxhunt receivers), in microphone pre-amps, and what not. Many of these applications still use no rechargeable batteries, as the use of rechargeable batteries is not always cost-effective. Unfortunately few electronic hobby projects are designed and constructed with effi-

ciency in mind, which means that their batteries could last a lot longer than they often do. A few simple design rules can extend the life span of the batteries used in home-brew equipment significantly, and thereby reduce the cost of battery replacements.

Battery compactness vs. efficiency

As a rule of thumb, the more compact a battery is, the lower is its

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(Battery Life from page 11)

efficiency. The most compact battery models commonly used in hobby projects are 1,5 V AAA "small penlight" and 9 V rectangular "transistor radio" batteries. The AAA type is a single, thin and narrow cell, while the 9 V model consists of a stack of 6 tiny disk shaped cells. This causes the internal resistance in these batteries to be relatively high; even more so for the 9 V type than for the AAA one.

Due to this high internal resistance, the losses that occur in these batteries quickly become excessive. When current is drawn from the battery, power is being dissipated across the battery's internal resistance, which in turn heats up the battery. The battery's clamping voltage drops accordingly, and a significant percentage of the energy stored in the battery is being wasted and can never be recovered again.

A battery with a high internal resistance is fine for applications that only draw a trickle of current (e.g. a clock or smoke alarm) or that briefly draw current at large intervals (e.g. a TV remote control). However, as soon as the battery has to supply more than just a trickle of current, the internal losses in the battery soon become excessive, resulting in a short battery life.

Efficiency and self-discharge rate

As a side note, it should be mentioned that alkaline batteries perform much better than carbon zinc batteries in two ways. Alkaline batteries are famous for their in-

creased power density, which makes them the batteries of choice for applications that draw high currents (such as anything with an electric motor inside). Less well-known, but at least as important, is that alkaline batteries also have a much lower self discharge rate than carbon zinc batteries do. In applications that are used only occasionally and then stored for long periods (such as measuring equipment), the use of cheap carbon zinc batteries can actually be more expensive due to their higher self-discharge rate.

How to avoid using inefficient batteries

The main reason for the use of AAA cells is their small size. The main reason for the use of 9 V batteries is their higher voltage in comparison to single cell (AAA, AA, C or D type) batteries. While using AAA or 9 V batteries is often a quick and easy way to fit a battery power supply at the required voltage, it's by no means the best.

Until recently, we did not have all that much choice when designing and building equipment; one had to accept either a low voltage or a large battery compartment. Fortunately, this is no longer the case. Modern power control and conversion ICs (especially those manufactured by Maxim) can now come to the rescue. For example, the MAX1832 DC-DC booster (a small 6-pin IC typically used with only five or so passive external components) can turn 2 AA cells into a 5 V power

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(Battery Life from page 12)

supply at more than 90% efficiency.

The "traditional" solution to make 5 V (e.g. for TTL ICs) has always been to combine a 9 V battery with a 78(L)05 voltage stabilizer. That works well, but the voltage drop over the stabilizer amounts to 4/9 or 45% due to the stabilizer's dissipation alone! Add other losses (e.g. resulting from circuit resistance, component resistance and internal battery resistance) and power losses easily amount to 50% or more! Compared to this scenario, two AA cells combined with a 90+% efficient DC - DC boost converter to transform 3 V into 5 V is obviously much preferable. Advanced components such as the MAX1832 also compensate for the battery's voltage drop due to discharge, and provide protection against polarity reversal.

Maxim and other manufacturers publish application circuit diagrams for all their major components. These are generally available on the World Wide Web in PDF format. Major component suppliers (such as Mantech www.mantech.co.za) list most of their available component range on their website, which makes it easier to find the right components for the job (in this case DC-DC conversion).

Avoid voltage drops in power supply lines

Speaking of polarity reversal protection, this is another source of power loss. The standard method is to insert an "idiot diode" in series

with the battery, which blocks the reverse current that would occur if the battery should be connected in reverse. However, this creates a 0,6 - 0,7 V voltage drop. How bad is this? Well, for a 3 V battery a voltage drop of 0,65 V amounts to a loss of 22%, for a 6 V battery the loss is 11% and for a 9 V battery, we are still looking at 5.5% loss, which is more than trivial.

For applications where battery discharge current is very low, a fuse with a reverse polarity diode may be considered. Since a fuse has a certain internal resistance and thereby creates additional losses in the power line, this solution is not suitable for high current applications. The diode should be put across the power lines "behind" the fuse and in reverse direction, so that an incorrectly connected battery will blow the fuse via the diode.

Apart from being lossy itself, a fuse also has another lossy drawback: once its blown, the appliance is out of service until the fuse has been replaced. Both these drawbacks can be overcome by using a (power) FET or MOSFET instead of an idiot diode in series with the battery. The voltage drop across FETs in the forward direction is much lower than that across a diode (typically in the range of tens of millivolts) while the FET will still block current in the reverse direction. The maximum voltages and currents that a FET can handle in this application (or should we say mis-application?) are limited, but for

(Continued on page 14)

(Battery Life from page 13)

battery operated equipment this poses no problem.

On a similar note, the use of dissipative voltage stabilizers (such as the well-known 78nn series) should be avoided. Again, this is where modern components come to the rescue: switched low voltage regulators have become the norm. Many hobby electronics still use 78xx stabilizers everywhere without thinking about it. However a modern DC-DC "buck" converter (e.g. to step down a 9 V supply to 5 V TTL levels) can have an efficiency of well over 90% (95% is not unheard of). If properly designed, the amount of QRM and other spurious oscillations generated by these low-power-switching regulators is practically zero.

Avoiding peak currents

As stated above, the internal resistance of small and compact batteries is a major source of battery inefficiency. Since the power dissipation across these internal resistances is a direct factor of the discharge current, it is obvious that the best way to minimize these losses is to keep the discharge current of the battery as low as possible.

For applications that draw a pulsed or irregular current (such as digital appliances or audio amplifiers), the solution is to connect a fair-sized electrolytic capacitor in parallel with the battery. The capacity required depends on the amount of current drawn; for low

currents 470 uF will usually be sufficient; for somewhat higher currents and current peaks 1 000 uF should be considered. The on/off switch for the appliance should be put between the battery terminal(s) and the electrolytic, so that when the power is switched off the leakage current through the electrolytic will not discharge the battery. It is vital that the electrolytic be of good quality and not an old fossil from the bottom of the junk box, as it must have a very low leakage current.

Old electrolytics often have a significant leakage current, which creates an energy loss that is worse than what we were trying to counteract in the first place! It is also important not to use a tantalum capacitor here. Tantalum capacitors cannot handle large inrush currents (the initial charge current when the power is switched on) and should NEVER be put across power supply lines.

Design your circuits for low power consumption

Most hobby projects are fairly straightforward: ICs are TTL ICs from the 74xx range, and pull-up resistors are typically 10 k. AF amplifier stages are conventional class-A (or class A-ish) circuits with a rest current of several milliamps, and LEDs are being driven via a current limiting resistor. While these circuits are simple to design and build, this is not the best way to preserve battery power.

For example:

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(Battery Life from page 14)

- Consider the use of CMOS ICs (e.g. the 4xxx series or 74HC(T)xx series) as an alternative for TTL logic. Not only will these ICs consume far less power, they also do away with the need for low pull-up resistances. A 74HC00, for example, is quite happy with pull-up resistors of 100 k.
- Instead of using transistor stages for AF amplification, consider the use of an AF amplifier IC with a low rest current. This will also simplify the design and construction of your project!
- Instead of driving a LED via a series resistor, consider driving it with a low duty cycle square wave instead. For example, to run a power indicator LED (typically 2,1 V/20 mA) from a 9 V battery, a 330 ohm series resistor could be omitted if the LED were driven by a square wave at a 20% duty cycle.

These are just a few examples.

The possibilities are literally endless.

Use the right battery

In closing, it is important to keep in mind that not all batteries are created equal. Some brands and types are more efficient at higher discharge currents; others last longer in appliances that only draw a trickle. In professional electronics design, this also applies to the increasingly popular Lithium-Ion batteries and polymer based batteries that offer a better power density and a better power- to -weight ratio than NiCd and NiMH batteries.

Your mileage will vary... so do not be afraid to experiment. Unless you design your hobby projects around exotic chips, chances are that the battery will be the most expensive component by far that you will use in your design, and one with a limited lifespan at that. Therefore, a bit of effort to minimize the cost of batteries is generally worth it.

Hamnet Membership

Francois Botha, ZS6BUU



During the past few years, Hamnet membership has increased steadily but we are still short of members in various Provinces. In fact, in one Province, Limpopo, we also require a Provincial Director!

The reason why we need more people to become involved with Hamnet is simply that more and more Disaster Management Organisations around the country have re-

alised that we are still very much around and have again recognised the value we can offer as an alternative means of communication.

The other reason we need more members is that through exercises that were held across the country recently as well as various floods that took place in some Provinces,

(Continued on page 18)



Built to Last

The SG-237 is designed with high density surface mount components on a 4 layer PCB, providing high efficiency, reliability and performance. The PCB is mounted on a sturdy chassis plate which provides an excellent electrical and RF ground system. The unit is fully waterproof (under 2 ft of water for 24 hours). The case is weather resistant, high grade ABS plastic that is sealed at the factory.



Use for base, mobile, portable, marine or aviation.

The SG-237 is our most popular Smarttuner. It's rugged construction and small size allow maximum flexibility. It has a 100W power rating and additional frequency coverage to 60MHz, matching it perfectly with the most popular HF transceivers. It will work with any balanced or unbalanced antenna including whips, backstays, dipoles, loops and longwires, and requires a minimum of only 28 feet of antenna for full coverage operation.

KENWOOD



TM-D710A

Multi Communicator 144/440MHz FM Dual Band

The control head is detached and comes with remote antenna for easy installation. The TM-VD710A is a true dual-band radio so VHF+VHF/VHF+UHF/UHF+UHF operation is available.

- High RF Power Output (50W)
- 1,000 Multifunction Memory Channels
- Dual Receive on Same Band (VxV, UxU)
- EchoLink® MEMORY (Automatic Dialer)
- EchoLink® Sysop Mode For Node Terminal Operation
- Multiple Scan
- Invertible Front Panel
- Choice of 2 Backlight Colors (AMBER/GREEN) For Front Panel
- 104-Code Digital Code Squelch
- "FIVE-IN-ONE" Programmable Memory



We are a Garmin agent, please contact us for automotive, marine, aviation or

ICOM



Icom and the renowned IC-756PRO series continue to make ham radio history:

First 32-bit floating point DSP transceiver

First transceiver with customizable filter shapes. There were no optional filters to buy, for none were needed.

First mid-class HF transceiver with +30dBm-class third-order intercept point*

First amateur HF transceiver with a large TFT color LCD

KENWOOD

Listen to the Future



The all new Kenwood TS-2000 series transceiver offers today's demanding Amateur operator high performance standards without the compromising limitations found in other similar multi-band, multi-mode transceiver. The TS-2000 offers users three distinct operation platforms, the traditional transceiver with full function front panel, or the high-tech looking "silver box" version that allows mobile operation with the new RC-2000 compact control head, or the ARCP-2000 computer control program making the TS-B2000 functional from your personal computer. The new TS-2000 offers 100 watts on HF, 6 meters and 2 meters, 50 watts on 70cm, and when you install the optional UT-20 1.2 GHz module at 10 watts, you will have assembled the most complete dual receiver multi-mode transceiver ever produced. The TS-2000 is transverter frequency display function ready to work with the latest satellite frequencies available.

Radio Accessories & Data Modems

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PO Box 691,

Gallo Manor,

2052

contact us for your
fitness requirement.

(Hamnet from page 15)

Government Departments became more aware of our presence.

In certain Provinces, Hamnet often is the only means of communication during various sporting events. This has also come to the attention of Disaster Management.

Gauteng in particular, the need to establish volunteer groups and get organised for the Confederation and Soccer World Cup's has put pressure on us to not only register but also attend meetings.

It is due to these developments that we wish to make this request for new members. We are looking across the whole country – no mat-

ter where you reside, if you feel you can make yourself available to occasionally offer assistance as an emergency communicator, please consider joining Hamnet.

You will receive a CD that contains everything you need to get yourself organised and prepared for almost any eventuality.

Also consider your unique situation where your station, no matter how small or large, is considered a national resource!

Should you wish to obtain further information, please feel free to contact me at 011 679 5260 or 083 585 3847 or jfbotha@iburst.co.za

Amateur Radio in Space 'Moving Silently Forever Listening' By Eddie Leighton, ZS6BNE



Firstly, I would like to thank Henry, ZS1AAZ, for offering to take over the responsibility of writing Radio ZS articles for the Digital Modes column. Henry I look forward to reading your interesting articles. This is a new column for Radio ZS, starting January 2009. It is my hope that we get the word out to newcomers to the amateur profession and those involved already for many years and to kindle an interest in amateur radio space communications.

Satellite interest group (Gauteng)
A group of satellite operators from Gauteng and nearby surrounding

areas had a meeting at the QTH of Hal, ZS6WB.

Initial discussions included characteristics of the satellites currently active and the recommended operating techniques to be used. Discussions were held on various ways of promoting more local operation to take advantage of the several satellites currently in orbit and available for use by any licensed amateur that is suitably equipped. Eddie, ZS6BNE, was appointed as PR spokesman for the group and given the responsibility of promoting LEO satellite operation and whenever possible letting the

(Continued on page 19)

(Amateur Radio in Space from page 18)

general public know more about this interesting aspect of amateur radio.

SA AMSAT was discussed and all present were in agreement that individual membership is important for the group as the AMSAT organisation is the prime mover for the development and launch arrangements of new amateur satellites. SA AMSAT membership applications were distributed to those who were not already members. The SA AMSAT website can be accessed at <http://www.amsatsa.org.za/>.



Eddie, ZS6BNE, Dino, ZS6DNO, Hal, ZS6WB, Pine, ZS6OB, Pierre, ZS6BQS (now ZS6BB), Sarel, ZS6AC, Rory, ZR6RBJ and Kieth, ZS6TW.

Satellite involvement

Amateur radio has many directions of interest. Satellite communications is just one of those but especially a very exciting one. I like to think of amateur satellites as "Spacecraft," which they are. The

word "Satellite" has become just another term. The detail, lost in the abstractness of the word. There is more to these spacecraft than just the short QSO it offers you. Granted, some QSOs are longer than others and the occasional "ragchew" does occur although most satellite QSOs are limited by traffic and the pass periods involved.

Options for involvement

There is one important factor and that is cost and it need not be high.

I want to invite you to think about making an investment for your h a r d e a r n e d amateur radio licence. To really enjoy a m a t e u r radio to the fullest, invest in a reasonably modern mul-
t i m o d e

transceiver that can handle HF, VHF and UHF. To compare prices, a reasonable rig will cost you the same as a fair sized LCD TV screen or part of an above average Hi-Fi system. The rig you choose will be your companion for your entire amateur radio career. The more you

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enjoy it the longer it will last. Amateur radio spacecraft will keep your interest going for as long as you care to stay involved.

The cheapest option is to concentrate on the "FM Only" spacecraft like AO-51 and SO-50. In my opinion, these are not the easiest to work and will require dedication, perseverance and a good hand held, homebrew yagi antenna. The easiest spacecraft to work is VO-52 but this satellite requires SSB equipment, preferably two rigs (for duplex operation) or at least one receiver and a transceiver or if you are lucky to find one, a duplex satellite radio like the Yaesu FT-847 or similar. Working a complete pass is quite easy with this satellite even with simple antenna systems. The FO-29 and AO-7 spacecraft offer long distance contacts between continents because of their altitude being in excess of 1 200 km. Good directional antenna systems help, especially with these two. They are the preferred satellites amongst serious satellite and DX operators. There has been mention made of using only azimuth (0 to 360 degrees) control, elevation control not necessary, the spacecraft flying at low elevations to the amateur radio station is quite advantageous for DX. Antennas can stay horizontally polarised too.

Each of the abovementioned spacecraft have their own characteristics. The most reliable and versatile being AO-51 (documentation regularly updated and accurate!),

VO-52, always there for you, SO-50 suffers from a power budget, FO-29 always there but signals weak using simple antennas and no in-line pre-amp, same for AO-7. AO-7 is switched between mode A and B every other day and is only operational when sunlit (it's batteries have died). Mode B (V/U) is mostly used among South African satellite operators. For detailed AO-7 information see the Internet website at <http://www.planetemily.com/ao7/main.php>

A spacecraft not to be missed is the ISS, the International Space Station which offers APRS, Packet radio, cross band repeater and communications with the ISS crew members themselves. Note, because of the relatively low altitude, about 350 km, doppler is very noticeable and fast as the station reaches maximum elevation to the amateur radio station. For interesting information, look at <http://pd0rkc.ontwikk.nl/main.html> and <http://iss.ontwikk.nl/issrepeater.html>.

Going for the cheapest option

This will require at least a two metre handheld capable of transmitting FM at 5 Watts (or less) with facilities for sending PL tones (typically 67 and 74,4 Hz for the SO-50 Timer trigger), same as those used for triggering terrestrial repeaters (88,5 Hz) and a sensitive handheld 70 cm FM transceiver. Although there

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are many choices, I have found the Alinco DJ-C7 miniature dualband transceiver to be an excellent 70 cm receiver for the FM LEO (Low Earth Orbit) satellites. Any FM transmitter capable of sending the abovementioned tones will do. I've used a Kenwood TH235 handheld and an Alinco DR135 mobile rig with very good success.

Antennas, as always, are the centre of all successes in ham radio communications. A standard 5/8th 2 metre whip or 2 m J-Pole works very well for an uplink antenna even if you need to raise the power to say 10 watts for high elevation passes (in most cases not necessary). For the downlink antenna, a simple 6 element 70 cm antenna can be made from a length of wood or PVC conduit and brazing rods.

The satellite operator's toolbox

There are certain requirements for the successful operation of amateur radio satellites. Number one on the list is Satellite pass prediction software with a preferable connection to the Internet for regular data updates. Ideal programs are SatPC32 and Ham Radio Deluxe. Both can be used for effective computer control of modern radio equipment as well.

Good coax can assist. LMR400 is good but quite expensive at an odd R25 per metre, but well worth the investment. The purists use only N-Type connectors and shy away from PL 259's! You'll probably get away

with a handheld antenna system using RG58CU and BNC connectors, but that is it - I have.

A little step further, a step to bigger things

VO-52 is the next challenge, an easy one but a necessary step to the "DX Satellites". Here I have used an Icom 706 mk iig and an older Yaesu FT-847 with a lot of success. This will be your first introduction to the SSB satellites.

It is up to the reader to decide whether to go all out for satellite communications or be limited to the FM only birds. Note AO-51 is very configurable, it does SSB too! I trust the points made here will assist with your decision. You will not be disappointed.

Inter club satellite events

In order to introduce satellite communications to radio amateurs, an inter club satellite evening was proposed. Three clubs, to date, have shown their preparedness to take part - Eddie, ZS6BNE - Lichtenburg ARC, Stephan, ZR6MRC - Kempton Park ARTS and Andre, ZS2BK - PEARS.

Future plans for this column

In the next issue of Radio ZS "Amateur Radio in Space" - Preparing to talk to AO-51 and SO-50. Homebrew handheld yagis, suggestions for radio equipment and programming the fixed channels for Doppler.

21st IARU Region 1 Conference in Cavtat, Croatia



Rassie Erasmus, ZS1YT, com-
and Dennis Green, ZS4BS, represented the SARL at the 21st Tri-annual Conference of the International Amateur Radio Union Region 1 held in Cavtat (pronounced Savtat), on the Adriatic Sea, about 10 km south of Dubrovnik, Croatia. The conference was hosted by Hrvatski Radioamaterski Savez, the Croatian Amateur Radio Society, and it started on Sunday 16 November and ended on Thursday 20 November.

What is the International Amateur Radio Union? It is a federation of national associations of licensed radio amateurs representing over 150 countries and separate territories around the world. The IARU is divided into 3 regions broadly mirroring the structure of the International Telecommunications Union. The regions



Hans Welens, ON4WQ, the STARS WG Chairman and Rassie Erasmus, ZS1YT, at the IARU Reception

prise:
IARU R1 – Europe, Africa, Middle East and North Asia
IARU R2 – The Americas
IARU R3 – Asia-Pacific

Among the guests present at the opening ceremony were the Mayor of Dubrovnik County, the Director of Electronic Communications and Postal Directorate and the Deputy Director Croatian Agency for Telecommunications and Post. Over 130 delegates representing 52 member societies as well as IARU Headquarters and the other IARU Regions attended.

The Conference in its four main Committees had to deal with over 150 papers on a wide range of issues that had been submitted to it for consideration. The Conference has 6 committees: C1 is the organising committee, C2 - Finance, C3 – Administration and Regulations, C4 – HF, C5 - VHF, UHF and Microwaves and C6 – Election and Ballot committee. The members of Committee C2 and C6 are elected at the first plenary and South Africa was part of C2. Committee C3, C4 and C5 are permanent committees, Dennis is a member of C4.

Following the first plenary meet-

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(21st IARU R1 Conference from page 22)

ing, the various workgroups held their meetings. These workgroups discussed matters such as Amateur Radio Direction Finding (orienteering using radio), Electro-magnetic Compatibility, IARU Monitoring Service (intruder watch), High Speed Telegraphy and the STARS programme – development of amateur radio.

The days were long with meetings commencing at 08:30 and running on until 18:00, with an hour for lunch and two short tea breaks. Committees C3, C4 and C5 meet

during the day and C2 in the evenings after dinner. On two evenings, there were workshops on ethics and operating procedures and the future direction of amateur radio.



Hans, PB2T,
IARU R1 President

On Wednesday evening, Alexander Gulyaer of the European Radio Communications Office gave an interesting short presentation on CEPT Activities related to Amateur Radio. South Africa is a signatory of the CEPT agreement. Following this presentation, the three countries hoping to host the 22nd Tri-annual conference had a chance to present their bids. Presentations were made by the British, Spanish



There is no truth in the rumour that Rassie and Dennis spent the conference here!!

and South African teams.

On the final day of the Conference, between the ratification of the recommendations from the four main committees, elections were held for the Executive Committee for the next three years. Hans Blondeel Timmerman, PB2T, is the new President of Region 1 and the new Secretary is Dennis Green, ZS4BS. Dennis was proposed by the South African Radio League, the Radio Society of Great Britain nominated and the Radio Amateurs of Lebanon seconded the nomination.

The voting for the hosting of the 22nd Tri-annual conference also took place. South Africa got 22 votes, the Spanish 15 and the British 10 votes. The 22nd Tri-annual Conference of the International Amateur Radio Union Region 1 will take place at Sun City in August 2011.

The conference was closed on Thursday evening 20 November

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with a gala dinner attended by all the delegates and dignitaries from the Croatian Telecommunications Authority and the town council of Dubrovnik. On Friday morning, the delegates were taken by bus on a tour of Southern Croatia, unfortunately, the South African team could not go with, they were on their way back to South Africa.

A special event station with the call sign 9A0IARU was active during conference and a number of South African radio amateurs were able to make contact with the station.

The southern part of Croatia has a Mediterranean climate; the area is very beautiful with mountains and the Adriatic Sea. During the European summer, this is one of the most popular holiday destina-

Nikola Percin, 9A5W, and Dennis, ZS4BS, at the IARU reception

tions. The local red wine is excellent and they enjoy their beer and lagers ice cold. The Croatian language is a Slavic language written in the Latin style, compared to Russian, also a Slavic language but written in Cyrillic style [English is written in the Latin style.] Croatia uses the Kuna as its monetary unit. R1 is equal to 54 lepa, there are 100 lepa in 1 Kuna. Euros are also accepted. During winter, the time in Croatia is 1 hour behind South Africa.



How Radio ZS gets to you

By Henry Chamberlain, ZS1AAZ, and Dennis Green, ZS4BS

Dennis is the editor of Radio ZS and he explains how he goes about putting it together before he mails it to Henry, ZS1AAZ. Henry takes it from there until Radio ZS is mailed.

Radio ZS starts life as a MS Publisher document, set-up using a template created by Fritz Sutherland, ZS6ASF, a previous editor of this journal.

There are 32 pages of which 8 pages contain adverts and other standard information. That leaves me with 24 pages to fill, not only me but SARL members as well. There are regular contributors - Dave Ingram, K4TWJ, Eddie Leighton, ZS6BNE, Henry Chamberlain, ZS1AAZ, Dave Gemmell, ZS6AAW, Hans van de Groenendaal, ZS6AKV, and Rassie Erasmus, ZS1YT. But they do not fill all the pages. This is

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where the SARL members come in with their contributions (or lack of). When all the material has been received, I start fitting the text and graphics into the available space. While doing this, I check the spelling and grammar. I also involve George, ZS6NE, in this process. And then the search for a suitable amateur radio in action photograph for the cover.

I create two pdf files for each issue of Radio ZS. The one file is sent to Henry, ZS1AAZ, for the printers and the other file is sent to Ivan, ZS2ILN, for the SARL web site. The web version is in colour and the page layout is different to the printed version. Hans, ZS6AKV, also gets a copy of Radio ZS to review for SARL News.

Once the pdf file is received from Dennis, I print a copy to proof read. This is probably unnecessary but I do it just to be safe. The pdf file is then e-mailed to the printers in

Stellenbosch. I do not know much about the printing process except that it is apparently done on a real printing press where in the past a Risograph machine may have been used.

It takes about a week for the printers to do their job and then I collect it. Usually about 1 100 copies are printed. In the meantime, I purchase 1 100 B5 postage paid envelopes from the Post Office. Fortunately, it is possible to pay by credit card, which avoids having to walk around with a large amount of cash.

The office administrator at the SARL office obtains a pdf file from Colin, ZS6COL, who extracts the mailing addresses from the SARL database. She prints the labels and mails them to me.

Once everything is at my house, I invite a small team of amateurs to assist in getting Radio ZS into envelopes. They are Karl, ZS1KC, Rene, ZS1VR, Hans, ZS1WZ, and sometimes Rassie, ZS1YT, and myself. They are on the accompanying photo.

We stamp the return address on the envelopes, affix the address labels and insert Radio ZS. The envelopes are closed and packed into boxes for mailing. By lunchtime, the job

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(Radio ZS from page 25)

is done and we have lunch at the restaurant in the retirement centre where I live.

At the Post Office, I borrow a supermarket trolley, load all the boxes into it and push it into the Post Office. They unload the trolley and that is the end of my job. I inform the SARL councillors that Radio ZS has been mailed and Ivan, ZS2ILN, places the web copy on the

Internet. Hans, ZS6AKV, then puts a news item on the SARL bulletin to inform members that they can expect Radio ZS in the mail.

So you see that quite a number of people are involved in the process and this happens six times a year. You can also be a member of this team by writing articles or news items for Radio ZS. Send your material to the e-mail address on page 3.

These Really Were the Good Old Days

by Dennis Wells, ZS1AU

This article commenced in the January/February 2004 issue of Radio ZS, then continued in the April/June 2006, July/August 2008, September/October 2008, November/December 2008 issues and here is the sixth part.

In spite of the trials and tribulations that go with Amateur Radio, life goes on and my XYL Joan has always supported me in my hobby, even when elected to serve on committees and on council of the SARL. I also had the pleasure of serving on committees with Ray Alexander, ZS1IM, and Ted Baker, ZS1RA, when they were chairmen. We also had Derek Siegel, ZS1DP, and Harold Lange, ZS1VW, who was the branch treasurer. I was vice chairman and became Chairman when Ted Baker resigned as Chairman of Cape Town Branch.

It was around 1966 that Ray Alexander was so committed to the formation of a clubhouse at Chess

Road, Rondebosch for the Cape Town Branch, that for 2 weeks he put on the stage show "Yeomen of the Guard." The takings for the first week were for the school feeding scheme and the second for our clubhouse fund. The first week ran well but our week was very poorly supported, so much so that the band and all the actors also made donations to bolster the clubhouse fund. Ray was so moved by this turn of events that he broke down behind the scene. He took the part of Shadbolt, the jail warden, and gave a display of outstanding acting which we will never forget. It was for this display of Ham Spirit that

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(The Good Old Days from page 26)

Ray was awarded the Len Wells Ham Spirit Trophy in 1967, the first recipient. Since that day and each year ever since, the trophy has been awarded to those who have made our hobby so much richer by demonstrating in an unselfish way, something really special for their fellow amateurs. The fact that the trophy has survived, it bears no signs of wear and tear, for 40 years, has given me personally a sense of pride and it goes to prove that we have many people who set a good example and enrich our hobby.

Mobile operation always appealed to me, so I built a small transmitter (6146 running 50 watt AM) in 1956, running off a genemotor giving 500 volt. It was very inefficient because of the heavy current drain, but it worked. I made a centre loaded whip antenna and I had fun working into the USA on the long path on 20 metres. A few years later, a mobile section of the SARL contests was introduced and it was my good fortune to win "The Leeb Du Toit Mobile Trophy." Andre and Maree Leeb Du Toit were keen on mobile operation and they were also my personal friends, so getting this award was very special to me.

In later years, the contest bug bit me and this was one way our operating skills could be put to the test, in preparation for the big world out there in the CQ World Wide contest each year. This is when you can also work your DXCC over a weekend...if you really work at it.

The fascination of speaking to someone in a far distant land in those early days was exciting and rewarding. That is what amateur radio was at the start and now we have so many wonderful advancements to satisfy all facets of our hobby.

The population of radio amateurs in the world today must still be around three to four million and in this age of satellites and space travel, it might surprise you to know that just about every Astronaut today, is a radio amateur. Chuck Brady, (3Y0C and N4BQW) US astronaut and well-known DXer, said that they feel more confident having amateur radio with them in space, especially if they have a problem on board. We are seen as potential emergency stations in many parts of the world and space station (MIR) was a case where amateur radio saved them valuable time in getting an emergency call to the control centre in Russia. Who would have thought that in our lifetime we would be able to speak to a human being travelling around the world in space on amateur radio and more exciting, when one of them, Mark Shuttleworth was from our own hometown, Durbanville, Cape Town, in South Africa.

One of my most enjoyable and fantastic amateur radio experiences was being the main pilot station for Bouvet Island DXpedition, 3Y0C, a one-man operation performed by Dr Chuck Brady, N4BQW, from December 2000 to March 2001. The fact that 3Y was one of the rarest and

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most sought after DXCC countries in the world was exciting, but to have a one man operation for 3 months put a tremendous burden on him because the demand on his operating time was overwhelming. The fact that this radio amateur is a leading NASA astronaut, who has walked in space, is a member of the Blue Angels aerobatic team, a medical doctor, a sportsman and a helicopter pilot amongst many other things, is a brilliant and clever human being with a sharp sense of humour and a memory of 10 elephants and above all is a real gentleman, making him one of the nicest guys you could ever meet. I have covered the operation on Bouvet in my article, "Three Yankee Zero Charlie," which has appeared in various magazines on 4 continents and our own Radio ZS of

May - June 2001.

Some of our amateurs, in other parts of the world as well, say that amateur radio is dying or that computers are doing us a lot of harm. I say bunkum! Yes, we are all dying, BUT there will be enough DX, SSB, CW and other modes, with new DXCC entities appearing, all the time, well into the foreseeable future.

Many of my QSOs are supplemented by the PC, and the advantages are so great that I cannot do without it. It can be in the very near future that you will be having a QSO with a man on MARS!

Our hobby is around 100 years old and it is still going strong! Do your best to support what our pioneers started. The greatest hobby on earth, on the air and in space?

This brings me to the year 2004 and continuing !

The Museum Piece

Dave Gemmell, ZS6AAW, and the Old Timers

New Title!!!!

I decided to use this title, mainly to have a fresh start to the New Year!! Actually, I took from the SAAF Magazine "Ad Astra" as the Column has not been in use for some time and I do have permission from the columnist, Sgt Major Alan Taylor. Alan does have "links" with the SARL, as his Grandfather Gordon Taylor, ZS1JH, (actually Thomas Gordon Taylor) was a member in the 1930s and 1950s. Gordon was also the SARL secretary from 1950 -1953 and helped start Radio ZS. Any in-

formation about Gordon will be greatly appreciated. So far, the only references I have are from a couple of 1975 issues of Radio ZS! 1975 was the 50th anniversary of the SARL! Gordon, ZS1JH became the honorary Secretary when the League HQ moved to Cape Town in 1950 and held the post until 1953.

CW Nets

It is amazing just how many amateurs would like to join a regular CW net! It is a pity we have to find

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(The Museum Piece from page 28)

out, almost as it were by accident. At a get together last Saturday the following chaps mentioned they would like to try to get a CW net on the go - Cliff, ZS6BOX, I,n Johannesburg; Richard, ZS6TF in Benoni; Pine, ZS6GST, in Centurion /Clubview; Dave, ZS6AAW, in Irene and Peter, ZS5PJ, in Howick. There could be others as well.

Now the main task is to find out which day and time would suit every one? The CW Nets I know of are the QRP net at 06:00 to 07:00 Monday to Friday and the ZS0AWA net from 14:00 to 15:00 on Saturdays. The excuses/reasons for not doing so are quite "varied/....." yet valid. Limit the net to 4 or 5 but have other nets to cater for larger numbers.

I was listening to the QRP Bunch on 3,579 MHz (06:30 – 07:00), I want to brush-up my CW before joining in.

QRP

In the Sept/Oct 2008 issue of Radio ZS (Vol 61 No 5) in his article Ham Pride, Dave, K4TWJ, de-

scribes how to use a low power TX as a BFO. Dave had a novel way of reducing the output power of his QRP TX when it was in the "Receive Mode." A 100 k resistor is permanently in circuit between emitter and common thus the base bias less than it should be and the oscillator output is reduced. When the CW key is depressed a 100 ohm resistor is effectively connected in parallel, the base bias goes to what it should be hence greater output!

The reduced output is important when you are in the receive mode. I thought a single transistor oscillator I had would be able to do the job!! It did it too well!!! The set-up I was using is my trusty National Panasonic and the oscillator. A good antenna, preferably an outdoor type gives a better signal (obviously!) This external "BFO" method does not work too well for weak signals!

Beware of Blocking – i.e. the "BFO" being very much stronger than the wanted signal. Makes tuning the portable easy but you cannot hear the wanted signal!



Radio Scouting

Dave Gemmell, ZS6AAW
and the Broomstick Warriors

Special event stations!!

It is a bit late, but not too late!!! If you haven't renewed your special event call sign do so as soon as

possible!!! Remember, neither the SA Scout Association or the SARL are responsible for the payment of

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(Radio Scouting from page 29)

your special call sign even though it is used for JOTA or any other special.

An important note to clubs

Should clubs want to or have already planned an event for the 3rd weekend in October please do not cancel or change your plans for another time. A few more stations on the air to chat and demonstrate different modes to the scouts and guides will be more than welcome. (It is really a bit like my idea about demonstration stations!)

If it is a contest that would be another matter! But at this time in 2009 there's been no word about a contest at that time.

The scouting "gang" has such a problem in Europe where the hams of a certain country have a contest having thousands of contestants refuse to change the date but have agreed stay within certain frequencies. Except on two occasions, the 1st JOTA 10 and 11 May 1958 and the 10th JOTA 05 and 06 August 1967, JOTA has been taking place on the third week-end in October for the past 52 years!!!

Former Scouts

Is there any chance of starting an SA Scout Net or Former Scout/Amateur Net? Actually, a former Scout, as this title implies is some one who has been through the scout ranks but is now no longer actively connected with the Movement. It matters not, whether he/she was a cub, scout and rover scout or was a member only one of the sections.

Evan, ZS6EVD, from Mafikeng was a scout in Zimbabwe when the JOTA bug "struck"! Then there was Norman, ZS6ASL, whom I have not heard since my days of QRP (+/- 1982).

I'm not sure why my Troop, 8th Pretoria St Albans never took part in JOTA when it started about 1958, but the GS Donald MacMillan who had been a signaller during WW2 got me interested in morse at an early age which had the desired results. (Actually, it started with semaphore first!)

Come on, lads! There must be quite a few of you who qualify for this title. Remember, nobody is trying to pass some onerous job on to you! [I am still involved in Scouting, do I qualify? Ed.]

CW Snippet

Gerald, ZS6IG submitted the following snippet, which I thought was quite relevant! "CW students in the ZS6VTB club are cautioned to be very careful how they send the Club call sign, ZS6VTB. Watch your spacing with the 'VTB' part! Mess it up and you'll send S O S." ... Think about it chaps; it is not as funny as it first appears? In addition, watch your language when you send 'CQ' too!

I do have another email, which can be used to send me suitable information for the columns, namely, dave@zs6mus.org.za. All other address information stays the same, namely PO Box 77, Irene, 0062 or davegemmell@bmknet.co.za or tel 012 667 2153

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