

Radio ZS

Volume 63 No./Nr 3

May - June 2010

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**ZS6KMD QRP Z-Match
Antenna matcher**

**An unusual voyage into
the world of CW**

How I met София

South African Radio League Suid-Afrikaanse Radioliga

Founded 20 May 1925 / Gestig 20 Mei 1925
The National Body for Amateur Radio In South Africa
Die Nasionale Liggaam vir Amateurradio in Suid-Afrika
Member Society of the International Amateur Radio Union, Region 1
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Sundays / Sondag
08:15 CAT Afrikaans
08:30 CAT English

HF 20 m, 40 m, 80 m HF
VHF 2 m and 70 cm BHF

www.sarl.org.za/newsinbox.asp

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16 and 40 metres AM; 7,082 MHz SSB
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Suid-Afrikaanse Radioliga

Radio ZS

May - June 2010

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Front Cover / Voorblad

Gideon Jannasch and Dale Palmer busy with their HF assessment at a field station setup by the Sasolburg ARC. It took 15 minutes to setup and get on the air. Gideon wrote the RAE on 20 May. The photo was taken by Jaco, ZS6JCO.

Gideon Jannasch en Dale Palmer besig met hulle HF-assessering by 'n veldstasie wat deur die Sasolburg ARK opgerig is. Dit het 15 minute geduur om op te stel en op die lug te kom. Gideon het die RAE op 20 Mei geskryf. Die foto is deur Jaco, ZS6JCO geneem.

Contributions to Radio ZS. Radio ZS is a forum for SARL members to share their amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or e-mail are especially welcome. Material may be submitted in rtf format. Material may be mailed to The Editor, Radio ZS, PO Box 12104, Brandhof, 9324 or by e-mail to radiozs@sarl.org.za. The SARL cannot be responsible for loss or damage to any material.

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Happy 85th Birthday SARL!

On Wednesday 20 May 1925, a group of radio amateurs got together in Cape Town and formed the South African Radio Relay League. It was, I am sure, a momentous occasion for these radio amateurs. I wonder what the challenges were that faced the SARRL in those first years. The organisation grew and later the name was changed to the South African Radio League.

We can think back of many highlights that the SARL has had over the past 85 years, of many radio amateurs who have served the organisation as members with honour and dedication and what has been achieved. We think of the radio amateurs who have served on branch or club committees and on the council of the SARL. I would like to acknowledge every radio amateur that has and is playing a role in promoting amateur radio and the South African Radio League.

As we look to the future, we are faced with some challenges to the organisation and to the hobby. I think the recruitment of members is important, not only the young people, but also those more settled. Are the clubs effective in promoting amateur radio? Do we take amateur radio to the public?

Technologies change very rapidly and we as radio amateurs must stay abreast of development, we must be part of that development, we must take the lead. Our hobby has so many facets, there are some many things

we can get involved in, the sky is the limit.

In our 85th year, I ask you to take up the challenge and let us strengthen the South African Radio League by being radioactive, developing technologies and increasing our membership base. Are you with me?"

As ons na die toekoms kyk, is daar verskeie uitdagings vir die organisasie en die stokperdjie. Ek dink die werwing van lede is belangrik, nie net jongmense nie, maar ook die wat reeds gevestig is. Hoe effektief bevorder die klubs amateurradio? Neem ons amateurradio na die publiek?

Daar is snelle verandering in tegnologie en ons as radioamateurs moet op hoogte bly van die ontwikkeling, ons moet deel van die ontwikkeling wees, ons moet die rigting aandui. Ons stokperdjie het so baie fasette, daar is so baie dinge waarby on betrokke kan raak, daar is geen grense nie.

In ons 85ste jaar vra ek u om die uitdaging te aanvaar en die SARL te versterk deur om meer radioaktief te wees, te help tegnologie ontwikkel en ons lidmaatskapbasis uit te brei. Is u saam met my?

73 & 88
Dennis, ZS4BS



Amateur Radio – the most versatile hobby on earth

Scientific Amateur Radio
By Victor P du Preez, ZS6EA *

“Amateur Radio – the most versatile hobby on earth”, for this statement to be correct this hobby should then have to move on the forefront of scientific technology regarding Communications and the relevant associated sciences, for that is what the hobby is about - Communications. Amateur Radio does indeed embrace all of the available science of the day; building on it by studying, experimentation and refining, and then *“siphoning”* it back to humanity for use.

“Does this really happen?” you ask. I can assure you it does. It has been happening since 1901 when Guglielmo Marconi, the first scientist to experiment with radio (Nobel Prize winner), took his invention and gave it, in some obscure way, to all for use and abuse. That is the reason that we radio amateur’s think of Guglielmo as being the first radio amateur ever, bless him. And thereafter the people exclaimed *“No more Morse code smoke-signals for us, now we use Wireless!”* *“And now, time travel is still some way off, I think, but the radio amateurs are working on it - you just wait and see!”*

Today this is still going on: either the radio amateurs discover something themselves and develop it into something useful, or, they discover that they could make an existing

something work much better, and they do just that. That is what this wonderful hobby is all about - and more, much more. It is an eye-opening experience to see some radio amateurs, for a specific purpose, struggle with electronic equipment and antennas for years, set it up, and do experiment after experiment. Hours and hours of work. The enthusiasm, the innovation, sometimes hardships but never giving up. Lasting friendships formed through essential cooperation and mutual interest, always learning together, and in the end, sharing the science discovered - their hard-won success - with other radio amateurs and the world. Noble, is it not? Do you not think it would be wonderful if more people knew about these playing radio amateurs and could perhaps, somehow, support their quest for knowledge? Who knows what might be possible then?

This technology goes into the world, to be used by others; rather unglamorous but very satisfying to the radio amateurs involved. It would take a book or two to describe the science that happens in the radio amateur shacks all over the world these days, if you tempt me I might just start on that. These guys and girls are amazing, they take a radio signal, bounce it off the Moon, even the planets, and

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(Proudly Amateur Radio from page 5)

another guy or girl on the other side of the world picks it up and does it again in reverse. Sounds simple, but to make this work is rather complicated. Yet still we call ourselves amateurs. Our hero, Mr. Marconi, started out with long wave low frequency radio transmissions and monster spark-gap transmitters, really primitive stuff by today's standards. However, by just having fun (it is a hobby remember!), you will find that radio amateurs over the years have turned this primitive science, step by small step, into the most useful tool imaginable. Surely, we have to let the world know about these inventive people and the way they always seem to be able to move on the cutting-edge of science! Some hundred years later, through experimentation, and a lot of this again mostly done by fellow radio

amateurs, the world is utilizing microwave technology - today's mobile phones used for instant contacts all over the world. And you know what? Very few people indeed realise that ordinary Radio Amateurs have been experimenting in their own backyards, paying for their experiments out of their own pockets, to help bring about this wonder. My fellow radio amateurs, I do not know about you, but I am so proud to be associated with these visionary men and women and the legacy they have left behind for us to play around with. Let us shout to the world! - *"Become a Radio Amateur, you will never regret it – they have a lot of fun playing with science every day"*. #

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The Future of Amateur Radio is with the Youth

The future of amateur radio is with the youth and we need to adapt if we want to attract them. This was the message from IARU Region 1 President, Hans Blondeel Timmerman, PB2T. He delivered the after-dinner address at the SARL Awards Banquet in Port Elizabeth on 24 April 2010.

Hans said that the expectations of the youth were very different from those that moved the current generation to become radio amateurs. What interested us at that time no longer enthralls the youth of today. Hans

continued to say: "My advice is let go on much of what we know and love and let them do what they love. Their focus is more visual. They are keen on new technologies but also want it to happen fast.

"Clubs can do much to promote amateur radio. Start a junior section with a young leader in your club. Fo-

(Continued on page 7)



(Future of Amateur Radio from page 6)
cus on visual, virtual and new technologies.

Promote amateur radio as an art and a science, different from the Internet and cell phones. Senior members should provide the resources and support and let youngsters off the leash. We urgently need a new approach."

Hans commented that on the regulatory front we, as IARU and national societies, must justify our spectrum requirements. "Focus on the

emergency communications support radio amateurs provide. Society needs technically skilled people; we must lead young people in that direction. We must produce papers on our technical work and participate in scientific research."

In summary the youth is our future. Hans stressed that we must be proud of our achievements and that amateur radio is alive - but radio amateurs should not sit and wait. We can do much better!

2009 SARL Awards to our Stars

At the SARL Awards Dinner on Saturday evening 24 April 2010 in Port Elizabeth, the SARL awards were presented for technical achievement, support of amateur radio and achievements in contests.

The SARL's highest award, Honorary Life Membership, was presented to two long-serving members of the Association.

George Honiball, ZS6NE, received the award for his support and dedication to the SARL news service, SARL News, and the promotion of the use of Afrikaans.

Rassie Erasmus, ZS1YT, received the award for his many years of service on Council as councillor, treasurer, Vice-President and President.

The Willy Wilson Gold Badge award was presented to Karl Heinz Canitz, ZS1KC, for his many years of service

to amateur radio, teaching newcomers and bringing them into amateur radio.

A number of Jack Twine Merit Awards were presented to recognise qualities such as unselfishness, clean operating and a genuine interest in amateur radio and its affairs. The awards went to Paul Johnson, ZS1BR, Peter Henochsberg, ZS1PMH, James Timoney, ZS1TK, Martin Schwella, ZS4MS, Chris Gryffenberg, ZS6COG, Johann du Plessis, ZS6PSS, Mark Zank, ZS6YES, Craig Symington, ZS6RH, and Bruce Robinson, ZS1FX.

The Icom Excellence Award was presented to John Willescroft, ZS6EF, for his continued efforts and activities to develop technological expertise in the amateur radio community. He is recognised for his presentations at the Radio Technology in Action symposium, the development and presenta-

(Continued on page 8)

(SARL Awards from page 7)

tion of the PIC and home construction courses and the development of construction kits.

The Arthur Hemsley Two-metre Trophy was awarded to Pine Pienaar, ZS6OB, for his arrangements in the Namibia VHF, EME and satellite DXpedition, In the citation particular mention was made of the construction of the antenna supports and various antenna arrays.

The Joseph White Plaque was awarded to Derek Gravett, ZS5Y, for completing the first ever Réunion to South Africa QSO on 70 cm.

The Buckley Six-metre Trophy was presented to Willem Badenhorst, ZS6WAB, for the first ever 4 m EME contact, which also was a world record.

The Radio ZS Two-metre Floating Trophy for the longest distance on the 2 m amateur band during the year went to Andre Botes, ZS2ACP, for setting a new 2 m Tropo record.

The Radio ZS Shield for the best support of Radio ZS during the year was presented to Frank van Wensveen, ZS6TMV/PA3GMP.

The JJ Pienaar Trophy recognising the best article published in Radio ZS during the past year was awarded to Vincent Harrison, ZS6BTY, for his article "Vertical and Horizontal Antennas: A Performance Comparison".

The Gary Immelman RA Heritage Award Floating Trophy awarded by for the best article of a historic nature of an event that occurred more than five years previously or an interesting personality that has played an important part in the development of Amateur Radio in years gone by was presented to Hans van de Groenendaal, ZS6AKV, for his article "Africa's First EME", recognising the work of the late Peter Carey, ZS6JT.

The Arland Ussher Gold Pen Award which is presented to the student who achieved the highest marks in the RAE went to Louis Mitchell, ZS6LWM.

The Tinus Lange 7066 Technical Excellence Award was presented to Andre Botes, ZS2ACP, for his "The PW MEON 70 MHz Transverter Revisited".

The Hamnet Award was awarded to the Hamnet Western Cape team. Under the leadership of Bruce Robinson, ZS1FX, Hamnet Western Cape has become a very effective and proficient team who have been supportive of many sporting and other events over the years.

Contests Awards

The SARL contest committee has awarded the following trophies and award for excellent performance in contests.

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(SARL Awards from page 8)

The Silent Keys Memorial Trophy SSB recognising the highest score during the annual HF Phone Contest was presented to David Hutchinson, GI4FUM.

The Silent Keys Memorial Trophy CW for the highest score during the annual HF CW Contest was won by the West Rand Amateur Radio Club, ZS6WR.

The Joseph White Trophy for the highest score on any one band, during the annual HF Phone Contest, went to Rosalie van Loggerenberg, ZR2RL (now ZS2DN).

The Fred Mills Trophy for the highest score of a contestant who has never won a SARL contest before went Daniël Mans, ZS3D.

The Anon Trophy for the highest score on any one band during the annual HF CW Contest was won by Vidi la Grange, ZS1EL.

The HOS Trough awarded to the amateur who achieves the highest aggregate score in both annual HF Contests was presented to David Hutchinson, GI4FUM. David was leader of the 3DA0DJ DXpedition.

The Club Participation Award went to the ZS Contest Group.

The Ray Webber ZS6RSW VHF/UHF Trophy was presented to the Magalies Amateurradioklub.

The SARL President's Award was presented to two radio amateurs who excelled in satellite communication in achieving world records working long distance on OSCAR 7. Congratulations to Andre van Deventer, ZS2BK, and Pierre van Deventer, ZS6BB, for setting new distance records via AO-7. The two brothers displayed true amateur radio spirit.

The SARL Congratulates all the award winners.

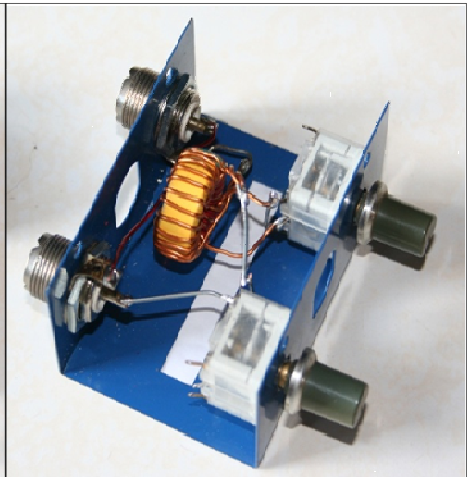
A ZS6KMD QRP Z-Match Antenna Matcher

Based on the design by Phil Salas, AD5X
Kevin McDonald, ZS6KMD *

Like Phil, I have been reading about Z-Match antenna matching for quite awhile now. I wanted to build just such a beast for QRP fieldwork so I did not have to take my home station apart when I went out. Where his design and mine differ is in fact that I

have built it specifically for QRP and have yet to include an SWR circuit in it. I have tested it with a few dipoles and a sloper and it has not failed yet. I have tested it to 10 W with no arcing.

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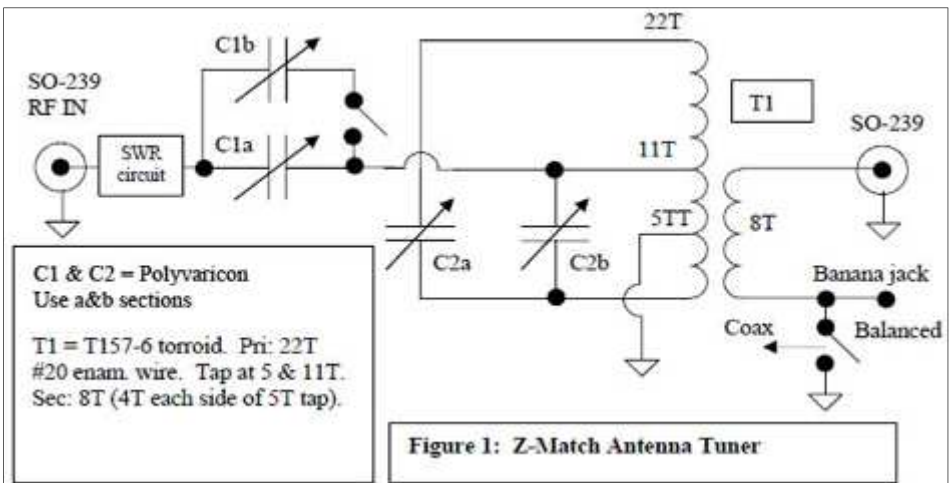


(QRP Z-Match Antenna Matcher from page 9)
Tuner Construction

The final circuit shown in Figure 1 is based on the article by Charles Lofgren, W6JJZ. The only real change made was to go from two switch-selected output links (10-turns and 4-turns) to a single 8-turn output link. The variable capacitors must be insulated from ground. In order to do

this, I mounted both capacitors on a piece of perf-board that was cut to be just wide enough to fit the capacitors. Then this capacitor/perf-board assembly was mounted in the case with Superglue. I made my own capacitor shaft couplings from hard plastic and drilled holes through for long screws to extend the capacitor shaft and allow for control knobs to fit.

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(QRP Z-Match Antenna Matcher from page 10)

Operation

Tuning the Z-Match tuner is very easy. First, adjust C2 for maximum receiver noise. Then apply some RF power and adjust C1 and C2 for minimum SWR. If you need more capacitance for matching, you can switch in an extra section (or two) of C1 if available, or better yet switch in a

fixed mica capacitor across C1. Balanced feed lines terminated in banana plugs can plug right into the SO-239 and adjacent banana jack. For a coax output, an SPST switch grounds one end of the output link as shown in the circuit diagram (Figure 1).

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IdiomPress Rotator Interface – A novice's experience

Marinus Willemstijn, ZS6MAW *

Luckily, Amateur Radio as a hobby has many facets and I have enjoyed many of them. One thing that I really enjoy is station design and automation. This means interfacing to computers, remote control of stations, etc. The part I do not enjoy is home brewing – or let me rather say – have not tried as many times as I should. I love playing with audio circuits but that is it.

Well, in my search of station automation, I found that it would become a very expensive task if I do not start using kits, etc to do the automation. Not that I would call this article writing about building a kit but rather installing a kit.

I required an interface to connect my Yaesu G-1000DXA rotator with my computer and logbook program. This will enable the logbook program to change bearing in the direction of the station I am working or want to work. In addition, it will provide one of

the building blocks to remotely operate my station from my laptop in another room or another city or province via the local network or internet.

My search for the appropriate interface brought me to quite a few options, which seemed to fit my profile of not being a DIY for this sort of thing. The first option was to buy the Yaesu GS-232B at \$600, which in my opinion is a bit excessive! Although there were numerous DIY kits available on the internet, I read about IdiomPress in a QST review of March 2001. Although that specific review was for a Hy-Gain rotator, I was impressed. After researching the interface on the internet, I realized it was well worth the \$149 + shipping for the RotorCard DXA interface – fully wired and tested. The way I like it!

Now is a good time to mention that the interface cards sold by IdiomPress are made very specifically for

(Continued on page 12)



(Rotator Interface from page 11)

specific model rotators! You will see why later on in this article. They make cards for both Yaesu and Hy-Gain rotators.

I placed the order and although it took some time to get the order, I was happy to go and fetch the package when it finally arrived! The PC board and cables were neatly packaged and the whole parcel was well taken care of by the Postal Services!

There was an installation manual included and the pictures show the full contents of the package. I felt comfortable already! Note the cover plate and mounting plates for the PC board INSIDE the rotator!

The PC board have two cables attached to it. The one is the RS232 cable that connects to your computer and the other has a mini-DIN type plug that is a custom fit for the Yaesu

(Continued on page 13)





(Rotator Interface from page 12)

rotator interface receptacle at the back of the rotator. It should now become obvious why these interfaces are custom made for each model rotator. To solder wires into a mini-DIN plug is very challenging – another reason why I prefer buying the assembled unit.

There also is a blue test clip used to provide power to the interface by connecting it to a voltage regulator. The calibration instructions are very clear and I will not go into that detail. It is very easy – even for a novice and they give you the required URL's to download HyperTerminal Emulators, etc.

Other than that, you plug the one cable into the rotator controller; replace the one plate at the back of the

controller with the one that comes with the interface card, which is part of the custom-made mounting plate to mount the PC Board inside the rotator controller. Installation was an absolute breeze – it was as if this was an add-on provided by Yaesu themselves!

The end result of the installation is absolutely amazing and a very neat no solder installation. No changes required to the controller and uninstalling the board will be just as easy – just remember to keep the original small plate that fits on the back of the rotator controller if you are to un-install it at some point in time.

Configuring the interface in Ham Radio Deluxe (HRD) Software I use for logging purposes was even easier than installing the interface! HRD has

(Continued on page 14)



(Rotator Interface from page 13)

a special driver for IdiomPress type interface cards and it worked first time. It took me longer to remove and re-install the rotator control box into my console than it took to do this Installation and I am very impressed. It will also work using the DCU-1 configuration in HRD, but because HRD does not support the A11 command set of DCU-1 at this point in time, this option does not work as well as the IdiomPress configuration.

As far as I am concerned, this is a worthwhile add-on to any station rotator and really worth the investment. Although there are numerous other types of interfaces available, this one adhered to my criteria and one day I will purchase an interface card for my G1000SDX rotator as

well.

Type: Pre-assembled, Single Axis Azimuth (360/450 Degrees).
Interface: RS232c, 4800 bps, 8N1
Protocol supported: DCU-1 and IdiomPress command sets.
Rotor controllers supported: Kenpro/ Yaesu DXA Series rotors only.
Firmware release tested: Release 1.0
Documentation: Construction, Installations and calibration instructions
Software tested: HRD Rotator 2494
Rotors Controllers tested: Yaesu G-1000DXA.
Software supplied with purchase: N/A.
Web Site: www.idiompres.com
Cost: \$159 US

(Continued on page 15)



(Rotator Interface from page 14)

References:

<http://www.idiompress.com>

<http://www.yaesu.com>

<http://www.ham-radio-deluxe.com/>

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Innovation in amateur radio

Hans van de Groenendaal, ZS6AKV

"Innovation in amateur radio" is an 18-month project by the South African Amateur Radio Development Trust (SAARDT) aimed at promoting innovation in amateur radio. "While amateur radio is one of the oldest and still the most rewarding of all the scientific hobbies, there comes a time when one has to look at innovation, new ideas and new technologies to keep the activities relevant and exciting."

This is the view of Hannes Coetzee,

ZS6BZP, a technologist and a member of the Board of Trustees of SAARDT. Coetzee was one of the principal architects of the amateur radio payload on SumbandilaSat, which is attracting wide interest amongst radio amateurs worldwide.

Radio amateurs and technologists are invited to submit projects that will innovate amateur radio whether it is software, amateur radio and the inter-

(Continued on page 16)



Hannes Coetzee, ZS6BZP: "There comes a time when one has to look at innovation."

net, the development of compact HF antennas for flat and complex dwellers or innovation in emergency communications.

Coetzee said that radio amateurs have been at the forefront of providing disaster communication. The recent devastating earthquake in Haiti which claimed over 200 000 lives is a perfect example.

A report from the International Radio Emergency Support Coalition, a world-wide group that combines amateur radio with the internet, reported that its members went into full activation immediately after the earthquake. The Echolink-based conference net sprang to life when David Farquharson, HH2QCS, and Jean-Robert Gaillard, HH2JR, both in Haiti, were able to get into contact with the coalition.

The International Radio Emergency Support Coalition through the Echolink net, an amateur radio VoIP network and the database on its website says that it was able to help with the limited amount of information coming out of the island, along with collecting information on missing people, coordinating of supplies to people on the ground, as well as with

general enquiries. At one point the coalition says that it had over 200 radio amateurs monitoring its net for Haiti operations. It says that this shows the true potential of the use of Echolink along with other amateur radio internet applications for use in emergency communications.

Coetzee said that innovation was needed in the area of disaster communication such as incorporating high-speed images and data transmission utilising amateur radio equipment and frequencies and interfacing all the networks available to amateur radio.

When it comes to satellites, radio amateurs have made a major contribution in the development of low earth orbiting satellites, technologies that have found their way into commercial satellite projects. Coetzee feels that here is another great opportunity for innovation in developing payloads that will make the youth (old and young) want to be part of the scientific and technological communities.

Out-of-the box ideas are required to solve some of the problems and challenges faced by the 21st century radio amateurs. The innovation project is in the form of a competition to stimulate the creative side of radio amateurs to develop those solutions that will make the hobby more enjoyable to amateurs all over the world. Even old ideas improved with modern design techniques and modern components can generate a "wow" factor. Solutions will be judged by

(Continued on page 17)

(*Innovation in Amateur Radio from page 16*) their uniqueness, i.e. not having been previously published.

Papers are invited by 30 September 2010. The designs must be innovative but also practical in their implementation. Three entries will be chosen to go to the final stage of the competition which requires the entrant to develop and build a prototype. The three winners of the first stage will be announced by 11 October 2011.

The innovation competition is supported by Multisource who has made a HF transceiver, an ICOM 7000, available as the main prize for the overall winner. Announcing the sponsorship the CEO of Multisource,



State-of-the-art ICOM 7000 transceiver

Richard Smuts-Steyn, said that innovation in communication technology is an ongoing process. "We believe that the amateur radio innovation project will benefit industry as the enthusiasm of radio amateurs for new technologies will rub off onto others."

More details about the amateur radio innovation project can be found on www.amateurradio.org.za.

Amateur Radio in Space [ARiS]

Eddie Leighton, ZS6BNE *
2010 NSN Radio Amateur of the Year



Browsing the excellent articles in the March - April 2010 issue of Radio ZS made me realize, again, that the future of amateur radio is with our quest to venture further into space. That is still the one thing that fascinates young people. That is where our future lies. What better way of introducing basic electronics to the youth than by getting them to study for the RAE and get a valid certificate for their achievements. Thereafter, after being licensed, get them involved in space activities like satellites.

SumbandilaSat

A question was asked via the SumbandilaSat Google group on what is happening amateur radio wise on SumbandilaSat lately. Jan-Albert, ZR1JAK, replied, "We have indeed had a long "Radio silence." Some good news is that we are reprogramming the command transceiver on the satellite used by the SA-AMSAT payload (CTR-VU2). This will hopefully sidestep the issue we've had with the cut-off at the PTT tail. The idea is to keep the PTT active for the 15-minute duration that the SA-AMSAT payload will be active

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Little Tarheel

6 - 80 Metres

Enjoy local or DX contacts while on the move ...

Fully Automatic Mobile Antenna for mobiling fun, anytime, anywhere

Lowest price HF transceiver with general coverage receiver Alinco DX SR8



Not simply an entry level transceiver but a feature filled rig with detachable front panel, 3 power level settings including super low power setting (0,1 - 2 W) built-in electronic keyer (just add CW key). Extra heavy duty for severe operating conditions

(Amateur Radio in Space from page 17)

at a time, in other words, uncouple the PTT functionality from the rest of the SA-AMSAT payload functions. We will then make sure it works as expected (hopefully by the middle of May 2010) and if all goes well, aim to have the payload fully operational and in service again within a week.”

Hans van de Groenendaal, ZS6AKV, also commented, “SA AMSAT announced that SumbandilaSat will soon be back in the Amateur Radio Mode. The CSIR Satellite Application Centre at Hartebeeshoek will in future carry out programming of the Amateur Radio Payload. SA AMSAT will work with SAC to coordinate operational requests. More details on how to request operation will be announced and published on www.amsatsa.org.za. We will not be using Google groups. The request for areas to be included in the schedule, special events, etc., will have to be sent to saamsat@intekom.co.za by Mondays. SA AMSAT will coordinate with SAC and publish a schedule for the following week during Fridays. SunSpace will continue to provide expert support for the duration of the satellite lifetime.

Satellite communications

They are fast and to the point and sometimes where detailed information is passed, like grid squares, it is difficult to make note of such detail, especially when working portable and in the dark. An ideal unit to use for recording satellite communications is the Philips “Voice tracer”

used for Dictaphone work. This unit has an external socket for use with an external microphone. It also has 1 GB built in memory. There are units with larger memory sizes and fancier software but they are more expensive. The MP3 Audio files can be copied to a PC via a USB Interface (cable supplied). It is possible to connect the headphone output of your transceiver to the input of the recorder, without an interface, with no problems. A headphone can be plugged in, in parallel, via a 3,5 mm double adapter and interconnecting audio cables - all available from your electronic device outlets. Shop around for the best prices before purchasing. The investment will be well worth it.

Satellite alerting system

Sian, ZS3SVD, came up with a brilliant idea. A SMS notification system should be developed to notify operators of important satellite passes and times. This is something we can implement once we find an effective solution. Further feedback will be published later.

Satellites during emergencies

What if HF conditions are so bad that communications are not possible and distances so far that VHF Links are not available. An alternative could be satellite communication. We have a wide range of satellites with different daily pass times. The equipment is easily transported and is not a space constraint. I quote from the

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(Amateur Radio in Space from page 20)

Hamsat (VO-52) AMSAT website, "This satellite will play a valuable role in the national and international scenario by providing a low cost readily accessible and reliable means of communications during emergencies and calamities like floods, earthquakes, etc." For this reason, we should be seeing more satellite activity from South Africa. Sure, many call signs have been heard on the downlinks but in comparison to the vast majority, the percentage of active satellite operators still remains low.

During the recent RaDAR contest,

satellite communications was an alternate communications medium only utilised by a few contesters. Satellites are reasonably reliable and we should practice using them for that day where we will need them most. Only in using the satellites will we realise their strengths and weaknesses, the support items needed (like recordings, see above) and the fast voice procedure used there (on occasions).

CU on the Sats! 73

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An unusual voyage into the world of CW [Part 1]

Vidi La Grange, ZS1EL *

My voyage into the world of amateur radio and especially CW involved many forms of transportation in one way or the other. The first was by bicycle. It all started at the age of 14 in Hillcrest, a suburb of Pretoria where I grew up. My daily bicycle trips to school and back took me past a house not far from us, where I noticed mysterious wires between trees and ladder-like feeders leading into the house.

One day coming home from school, my curiosity got the better of me and I decided to find out what it was all about. I parked my bicycle at the front gate, locked it up with padlock and chain and rang the doorbell. After a while I was greeted by a man in a terrible hurry who, without intro-

ducing himself, or even asking what I wanted, said that he was busy on the radio but that I should come inside. He hurriedly led the way into a room where, on a very tidy desk, there was a row of impressive looking electronic equipment. The letters ZS6AIC was displayed on a wood and brass plaque above the desk.

Crackling noises and beeping sounds filled the room. He went straight for his chair and started writing on a pad of paper with the pencil he was still holding in his hand since he opened the front door. When the beeping sounds stopped, he reached out and moved the lever of a large knife switch fastened to the side of the desk. Silence filled the room for a brief moment and then he started

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The picture was taken in 1960 and shows the Halicrafters SX-43 with to its left a matching speaker. You will see an SARL trophy which I think was for the SARL CW contest in that year, just visible to the left of the loudspeaker. On top of the loudspeaker is a mechanical counter which Mac sent me as one of many small items, to count our skeds. During every QSO with Mac he would say: "remember to push the button." This



would turn the unit's counter wheel up one digit. I still miss him. To the right, on the top level is the Eldico, not even nearly original at that stage. Below it is a Command transmitter used for a VFO, a vacuum tube electronic keyer built according to W5KF and a modulator. The paddle is home brew and made out of parts of open frame relays. The beginnings of the Vidi-paddle?? I wonder ha ha!

(An unusual voyage from page 21)

pounding on a brass instrument, which had a black round wooden knob. A pair of wires was connected between it and the big black box closest to him on the desk. I noticed several meters and dials on its front panel. The meters all came to life and their pointers started dancing around to the rhythm of the pounding. I was baffled and just stood there speechless, trying to absorb the strange things going on around me.

There was no side tone and I could only hear the clicking and clacking of the brass instrument as the man kept on relentlessly pounding it. It dawned on me that I was actually listening to a conversation going on in Morse code! The process carried on, changing from the crackling noises and beeps to the click-

clack of the pounding. After a while, this activity stopped and the man turned to me and introduced himself as Johan van der Linde. Only then, he asked my name and the reason for the visit. He explained that he was a radio amateur and that he just had a conversation with his brother, Dr Emil van der Linde in a town way up in the northern part of the country.

I was given a tour of the station during which Johan pointed out the receiver, transmitter, power supply, Morse key, antenna and feed line. The transmitter had a lid, which he opened to show me the glow of filaments in the several bottle shaped glass tubes. I was so interested in what I saw, that this visit led to many more. Watching and listening to Johan tune the receiver and seeing

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him operate the station while 'talking' to his brother on Morse code was fascinating and all I could think about.

After one of the many visits, he gave me an old Morse key and a piece of notepaper with the alphabet and dots and dashes next to each letter. He suggested that I should start memorizing the code and practice tapping the letters on the Morse key the way he did on the air. I had no audio oscillator and all I could do was to try my best to emulate Johan. This went on for a few months until on a day during one of my after school visits, he showed me how to send the letters CQ followed by DE and his call sign, using his big brass Morse key.

He carefully checked how I did that and fussed about the spacing of letters and letter groups. He had me do that over and over again many times until he was satisfied. Then he moved the lever on the knife switch and said I was on the air! I will never forget the excitement when after several CQs there was a reply from a station in Port Elizabeth! Johan quickly took over, because my knowledge of code did not go much beyond these few letters at that time.

In November 1954 my dad, who was a professor in educational psychology called a family meeting. This was only done when really serious things had to be discussed. Filled with anticipation my mother, sister Jana of 8 and I got together in my dad's study. Then the news broke that he was successful in obtaining a Carnegie Grant, which would take

him to 15 American state universities over a period of 12 months. Of greatest importance was that it would be possible for all of us to go along, provided we were prepared to rough it a bit and live on a very tight budget for 12 months in the USA. After some serious discussions about ramifications like interrupting schooling etc it was decided that we would all go along come what may, even if it meant spending an extra year at school when we return.

Our year of travelling and living out of suitcases began in January 1955. The second form of transport on my way to becoming a code operator started when we left Cape Town on board the Sterling Castle, a mail boat which operated between England and South Africa. After 2 weeks at sea, sailing on fairly calm waters to Southampton, England, we boarded the Queen Mary for a one-week 'hop' to New York. Being mid winter in the northern Atlantic, seas were extremely rough. This was the worst week in my life, ever. My stomach simply could not handle the motion and I was still staggering and suffering from nausea long after we set foot on firm ground in New York.

We moved into a furnished apartment on the 31st floor of Butler Hall near the Columbia University where my dad started a research project, which would take three months to complete. The elevator of Butler Hall was the type which had to be operated by a trained person - - no pushing of numbered buttons. There was a large crank handle, which had to be

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moved manually from one position the opposite, depending on whether you were going up or down. This was the third form of transport, which had a significant impact on me becoming passionate about code.

During the many trips, riding up and down I became friendly with the operator, Bob Bailey and found out that he was a retired telegrapher from Trinidad. He was happy to meet a teenager from South Africa who had an interest in becoming a radio amateur. Bob had an office, no more than a small cubicle on the ground floor where there was a hotplate and kettle, two chairs and a small steel desk.

One day Bob, or Mr. Bailey as I always called him in respect of our big age difference, invited me to his office to show me an audio oscillator, Instructograph and a straight key, which he brought from his home in the Bronx. The Instructograph was an early code-training instrument, which, by running a perforated paper tape at variable speeds past a spring-loaded pair of contacts, keyed the audio oscillator. The following URL has some interesting information about this antique code training equipment: <http://en.wikipedia.org/wiki/Instructograph>.

The straight key was a WW II surplus model J-37 as can be seen at the following URL:

<http://www.morsekey.net/j37.html>

This really started something and before the end of the three months in New York, I had all the letters of the alphabet memorized thanks to the

motivation and regular quizzing by Bob Bailey.

I helped my dad pick a used Plymouth in Hackensack, New Jersey with which we planned to make the long trip by road from one university to the next. This was the fourth form of transport, which had impact on my future ham radio activities. Before we took to the interstate highways, Bob gave me the Instructograph, key and oscillator as gifts so that I could to keep up my code practice 'on the road', so to say.

In the months, which followed, we drove from one university to the next and stayed over in guest houses, which were ubiquitous wherever we went. At the end of the year, we had completed a full anti clockwise circle of the USA and covered about 8 000 miles by road. During all this travelling there were many highlights including visits to National Parks such as Yellowstone, Sequoia, the Petrified Forest, Knots Berry Farm, the Grand Canyon and more. The trip took us via Salt Lake City and we even spent a night in Las Vegas!

My mother and I had the responsibility of navigating and keeping family stomachs filled. Jana was a bit young to take any real responsibility and kept herself busy reading most of the time. Whenever we stopped over, her first priority was to check whether the guest house had TV so that she could watch her favourite show, the Howdy Doody Kids. I also helped out with the driving to give my dad a break from time to time. Despite a

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very full schedule of travel and living out of a suitcase, I managed to make time to keep up with some school work, and also keep up with code practice, using the equipment given to me.

Before sailing back to South Africa at the end of 1955 we made a final stop in New York. Although he was completely non-technical, my dad

was very supportive of the interest I showed in amateur radio. On the last day in New York, the two of us visited Harvey Radio on West 43rd. I was out of my skin when my dad said that he wished to buy me an Eldico, crystal controlled transmitter kit to take home!

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How I met София [Sofia]

Dennis Green, ZS4BS

The annual meeting of the Executive Committee of IARU Region 1 was planned for the weekend of 17 and 18 April 2010 in Sofia, the capital of Bulgaria. Little did we know that Mother Nature had a curved ball waiting for us!

I departed from South Africa on Thursday evening 15 April, flying to Munich and then on to Sofia. I arrived at Sofia airport at midday of Friday, and by now the volcano in Iceland was spewing out ash and causing problems to air traffic. I was met by Panayot, LZ1US, and taken to the Hotel Crystal Palace in the city centre. Reg 1 VP, Tafa, 6W1KI, was already there and we were later joined by Reg 1 treasurer Andy, HB9JOE, his wife Yvonne, HB9ELF, and VHF manager Michael, OE1MCU.

And then the news started coming in of airports closing. Hani, OD5TE, Niksa, 9A5W, and Reg 2



The statue of София / Sofia

president Reinaldo, YV5AMH, were at Budapest airport, but no flights to Sofia. Reg 1 president Hans, PB2T, could not get a flight from the USA, the flights for Colin, G3PSM, and Betty, F6IOC, were cancelled. HF manager Ulrich, DK4VW, had to return home from Frankfurt airport and IARU vice president Olé, LA2RR, was not allowed out of Norway. Hani, OD5TE, got a flight back to Beirut. Niksa, 9A5W, could get an overnight train to Zagreb, but Reinaldo, YV5AMH, was stuck in a hotel in Budapest until he could get a flight to Madrid and then back home.

The decision was taken to continue with the meeting, but only on Sunday 18 April and by making use of a telephone conference bridge.

Those of us in Sofia went sight-seeing on Friday afternoon and were shown the impressive St Alexander

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Nevsky cathedral, the Memorial to the Unknown Soldier, the church of St George the Rotunda (dating from the 4th century AD and still in use) the National Library, the National Theatre, the statue of Sofia and many other sites.

Just before dinner, Demiter, LZ1AF, interviewed Tafa, 6W1KI, Andy, HB9JOE and myself for the DX programme which is broadcast



St Alexander Nevsky Cathedral



The church of St George, the Rotunda



The bridge where the first shot of the April Uprising against the Ottomans was fired.

on Fridays on the English service of Radio Bulgaria.

Saturday morning we boarded the bus and set off for the town of Копривщица or Koprivshtitsa. The town is huddled in the mountain folds 111 km east of Sofia. The town

boasts a large number of architectural monuments from the period, 383 in all, most of which have been restored to their original appearance. It was here that the first shot of the April Uprising against the Ottoman occupation was fired in 1876.

We visited the Oslekov House, the Todor Kableschkov Memorial House, the Dimcho Debelyanov house and the Lyutov House. We enjoyed lunch at one of the restaurants and had Shopska salad and Kavarma, both Bulgarian specialities.

On Sunday morning at 09:00 (08:00 CAT) we started with the Webex conference bridge. The agenda listed 49 papers to deal with. We progressed at a steady pace, taking a break for tea and lunch. By 17:00 we had worked through 45 of the papers and decided the remaining would be dealt with at our next teleconference.

At 18:00, we were joined by members of the Bulgarian Federation of Radio Amateurs (BFRA) for a journey to the town of Berznik, about 50 km from Sofia and the Hotel Bardoto for a World Amateur Radio Day din-

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ner. When Krassy, LZ1ZD, built the Hotel Bardoto in a forest reserve on a 900 m hill near Breznik, he decided that he would allocate the entire ground floor of the hotel to his dream contest station, LZ9W. WOW, what a station, there is a transmitter location for each contest band with everything that opens and closes.

I had an opportunity to operate from the 20 m station as LZ/ZS4BS, and made five contacts, Hani, OD5TE, Ronnie, ZS4RY, Rassie, ZS1YT, Gilbert, ZR1ADI and Leon, ZS6RF. After dinner, I operated from the 40 m station and made 7 QSOs covering Turkey, Poland, Ukraine, Russia and France, before the bus returned to Sofia. 40 metres in Europe is very active at night.

On Monday we travelled to the Monastery of Saint Ivan of Rila, better known as the Rila Monastery (Рилски манастир, Rilski manastir). The monastery, named after the famous Bulgaria saint and hermit Ivan of Rila, is the largest and most famous Eastern Orthodox monastery in Bulgaria. It is situated in the north western Rila Mountains, 117 km south of Sofia in the deep valley of the Rilska River.

The monastery was founded in the 10th century, and is regarded as one of Bulgaria's most important cultural, historical and architectural monuments. The outside wall and ceiling of the church is painted with



Dennis, LZ/ZS4BS, on the air from LZ9W. Seen fltr is Panayot, LZ1US, Michael, OE1MCU, Tafa, 6W1KI, Chavdar, LZ1AQ, and Yordan, LZ1FG.



Standing in front of the church at the Rila Monastery, Dennis, ZS4BS, Yvonne, HB9ELF, Andy, HB9JOE, Ginka, LZ1GIN and Panayot, LZ1US.

numerous murals depicting biblical scenes. The church has five domes, three altars and two side chapels, while one of the most precious items inside is the gold-plated iconostasis, famous for its wood-carving, the creation of which took four handicraftsmen five years to complete.

On Tuesday morning, Dimiter, LZ1AF, collected us at the hotel and took us to the offices of ACOM at

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Blvd Nikola Mushanov 151 in Sofia. ACOM make linear amplifiers, antennas and other hardware for the commercial and amateur radio markets. We were taken on a tour of the whole facility, showing us how the amplifiers are made and tested. Many of the employees are radio amateurs.

Unfortunately, I had a baggage limit and could not bring an ACOM 1011 amplifier with!

I found the Bulgarian people very friendly and I must say the ladies are very pretty. They are very proud of their country and its achievements.

The Icelandic volcano ash caused a problem with my flight back home, instead of Sofia - Munich - Johannes-



At the ACOM head office in Sofia. Dimiter, LZ1AF, Dennis, ZS4BS, and Andy, HB9JOE.

burg, I had to fly Sofia - Zürich - Johannesburg.

If I get the opportunity, I will most definitely visit София - Bulgaria again!

A 1:1 balun for the lower bands

Frank van Wensveen, ZS6TMV / PA3GMP *

When putting up an HF antenna on a tower, it is common practice for many radio amateurs to put 8 or 10 loops in the coaxial cable to form a choke coil, in order to suppress shield currents. While this does reduce shield currents somewhat on the higher frequencies, the very low induction of such a coil is far less effective on the lower bands - even on 15 metres the effect is insufficient to prevent the matcher and/or radio chassis from being "hot" and causing TVI.

An effective choke for the lower bands requires a higher inductance. One way to do this is to wind RG58 coaxial cable onto a ferrite core.



Some radio amateurs frown upon this method because cored baluns are susceptible to saturation, which in turn leads to excessive heat. While this is a serious concern to our brethren overseas who are allowed to use four figure power levels, most of us use only 100 or 200 Watts on HF.

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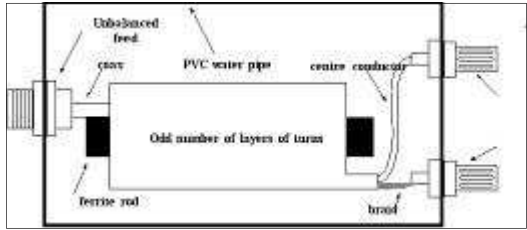
Even at our legal limit of 400 W, core saturation and heating only occurs when the balun encounters a gross mismatch, in which case you have a problem that should be addressed in other ways, rather than just trying to suppress the effects with a choke.

While toroids are generally considered ideal for RF suppression, in fact a ferrite rod will often perform just as well, and is cheaper and easier to use. The balun shown here is wound onto such a rod. Any old ferrite rod salvaged from an AM radio will do, as long as the size is appropriate. The thicker the better, but any size over 10 or 12 mm will do.

A length of 10 cm is generally sufficient, but longer lengths can be used as well. Use a cable tie to affix the coax to one end of the rod. Lay down three layers of 10 windings each; the first one from left to right, the second one from right to left on top of the first layer, and finally the third layer from left to right again. Use another cable tie to keep the coax in place.

Keep in mind that more is not always better! If you have a longer rod and you use three layers of, say, 20 windings each instead of 10, the capacity between the windings starts to play a greater role and the effectiveness of the choke is reduced.

The resulting coil can be housed in a length of PVC water pipe with end caps. I have found this method to be cheap, reliable, convenient and easy to make weatherproof.



For experimentation I use banana plug type stand-offs; for permanent installations, I replace these with bolts or eyebolts. You can also make a version with a coaxial connector on both ends for insertion into any coaxial cable - also known as a "line isolator" and sold commercially under various brand names.

For permanent installation at the feed point of my G5RV, I have used a plastic electric's box from the hardware store, which can be mounted to any wall, pole, tree or other convenient mounting point. Two cable glands on top with bolts running through them provide the balanced mounting points for the G5RV's tuned chicken ladder feed line. The standard hole size in which the cable glands are mounted is exactly right to admit a PL259 connector, so I just put the connector inside the box. Liberal amounts of silicone sealant applied to the cable glands and the lid for the box provide sufficient weatherproofing.

This balun works very well on the lower bands down to 80 metres, and it should on 160, too, although I have not tried that band. For the higher bands (15 - 10) it is of course less ideal, due to the capacity between the windings. For these frequencies, a

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single layer of 10 windings with a little spacing (requiring a slightly longer ferrite rod) would be better.

If you want an "all-bander," consider using two chokes in series; one

optimized for the low bands and one for the high bands.

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Komcar Updated

Al Akers, ZS2U

A series of articles was written about the Komcar (Kombi Carrying Amateur Radio), though some facetious remarks have been passed that it is a mobile tearoom. These articles appeared in the September 1995, October 1995, November/December 1995 and January/February 1996 issues of Radio - ZS.

While the Komcar, like its owner is getting rather long in the tooth, we have not outlived our usefulness quite yet. There have been some changes made to the Komcar since those articles were written. The Kenwood TR 2200 GX 2 metre set (33 years old and still going strong) has been installed in my Ford Escort and replaced with a Ranger 2 metre set. A 4 metre Pygmy radio has been installed. Extension speakers, which were initially installed together above the passenger side windscreen, have been separated to make it easier to tell the bands apart.

I have invested in a nice heavy-duty wheel spanner in case of a puncture and having had the wheel changed previously by one of the relatives of Charles Atlas or Mark Henry.

A solar panel that can charge a battery up to about 650 milliamps has been installed (not much, but

better than nothing). The fluorescent fittings have been retained, but with the advent of high intensity LEDs, some were installed for use when a lower level of light was sufficient, and at a significant saving of battery power. Three were installed in the front of the Komcar, six in the back and three at the very back, the part I refer to as my kitchen. These LEDs have a rather narrow beam of light and while this is not a serious problem for the front and the "kitchen," I was not too happy with the back. Recently my friend George, ZS2E, gave me some LED units I found very interesting. Each unit consists of a circular disc with five LEOS on it and works off 12 volts. These LEDs have a different construction of electrodes that diffuses the light, covering a wider area. I installed two of these in addition to the existing six in the back of the Komcar and now have a more even light distribution. Another rather surprising aspect of these units is the

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low current drawn; only about five milliamps, so the sixteen LEDs combined draw less than 50 milliamps. Six LEDs were installed under the equipment shelf just above the operating table to provide light for nighttime operation.

There have been some significant changes to the antenna systems kept permanently in the Komcar. The 6,7 metre telescopic fibreglass mast is still being used. The top fitting for the mast, which holds it on the side of the vehicle, has been shifted forward to just behind the driver side door. A fitting has also been made at the bottom of the vehicle to hold the mast there, which makes for quicker, easier mast erection wherever the location. Any vertical antenna on the mast now feeds through to the front of the vehicle where a bracket has been made just above the windscreen. A shelf fits onto this bracket to house whatever transmatch is in use. This makes for more convenient adjustments to the transmatch, being closer to the transceiver.

An Indian cane, two metres long, was made to fit into the top of the fibreglass mast. A spirally wound wire runs down the cane to a loading coil at the bottom. From the bottom of the loading coil runs a wire into the front of the vehicle, to the matching unit. This antenna was constructed specifically for 40 metres, requiring no matching unit. The coaxial feed line centre conductor goes directly to the antenna and the screen is connected to the vehicle body, which acts as a ground plane. The SWR varies from

1:1 at 7,000 MHz to 1,4:1 at 7,200 MHz. With matching units, this antenna can also be used on 20, 15 and 10 metres.

A second Indian cane, with bigger loading coil, was made to resonate on 80 metres. The impedance was low so it was necessary to use a matching unit. With the use of matching units, this antenna can also be used on 20, 15 and 10 metres. Also available is a random wire antenna about 20 metres long, which can be fastened to a tree or portable mast and is matched on 80, 40, 20, 15 and 10 metres.

To match these antennas, one could go from the one extreme of using one wide frequency, wide impedance range unit to a dedicated unit for each band (in this case, twelve). I chose a middle course of four units.



Three are parallel tuned circuits covering different frequency ranges. The bottom end of the parallel tuned circuit goes to the vehicle body. The top end or near the top goes to the antenna. The feed line centre conductor is tapped up on the coil at a matching

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point. The fourth unit is a series tuned circuit with some taps on the coil. This unit is used on the 80 metre band to match the second antenna and the random wire antenna. The SWR on these antennas is under 1,5:1 for all bands except the first antenna which is 1,6:1 at the bottom end of 20 metres and the second antenna which is 1,8:1 at the top end of 80 metres.

Recently Bjorn, DK1EAW, presented me with a fibreglass telescopic mast which extends to just under twelve metres and this is also kept in the Komcar. A vertical antenna, a quarter wave long on 40 metres, is used on this mast, which can be held by the same fittings used for the other fibreglass mast. With existing matching units, it functions on 40 and 20 metres. One may well ask how well these antennas work. Though little operating has been done with the

first, second and fourth antennas, results have been quite satisfactory. In the old homeland days, I operated portable from the Ciskei on a number of occasions and worked many DX stations using the random wire antenna. On VHF, I have quarter wave whip antennas for 6, 4 and 2 metres, which plug into holders on the vehicle roof. Also kept in the vehicle is a two-element Quickie beam for 2 metres, as published in the April/June 2007 issue of Radio ZS, when there is a need for something better than a quarter-wave vertical.

I do of course have other portable antennas, which are not normally kept in the Komcar, but used on occasions such as contests.

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The Museum Piece

Dave Gemmell, ZS6AAW,
and the Old Timers

ZS90SAAF at KG44be

Not too much to report regarding the Museum, except that the work on the Wireless Hut, Hangar 3, goes on very slowly, but it continues nevertheless. On Saturday 15 May, Frans van Nieuwkerk painted the outside in grey to match the rest of the hangar.

The Hy-Gain antenna described in the Radio Scouting section has actually been re-conditioned to be installed just outside Hangar 3. I hope



that we will be getting the permission from the Museum Commander to do so. This antenna should do a better job than the existing 80/40/20 trap dipole.

The Power House Museum

During a recent visit to Sydney, Australia, we came across the Power House Museum. At first, it appeared

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(The Museum Piece from page 32)

to be just an exhibit of old electrical components, but as the visit progressed, we discovered a lot more was on view. The choice included two aircraft suspended from the ceiling of one of the halls. One was a Catalina Sea plane! Then there were the old steam engines! Real ones as well as scale models! Both types appeared in good condition, as if they would work if connected to boilers.

Then there was the telegraph exhibit with a live CW demonstration but with a slight difference! The telegraphists, Peter and Alan were Australian Post Office pensioners using sounders and not buzzers. Yes, the click-click type and not the buzz-buzz ones!

For those readers who are not quite certain, when using a buzzer or oscillator, the dot (dit) is a short buzz whilst the dash (or dah) is a longer buzz. However, with the sounder the dots and dashes are distinguished by time lapse between the two clicks made by the sounder armature as it operates and releases. Very much, like listening to a relay operating and releasing.

In the early days, the Australian Post Office used both the International Morse Code as well as the American or Railroad code. Evidently, the country was divided into two parts. The half nearest Africa and Europe used the International version whilst the other closest to the Americas used Railroad Morse. (Look up Railroad Morse on Google and see the difference!

You may be interested to know that certain American railroad enthusiasts take their hobby so seriously that some of them actually learn and use railroad Morse code when operating stations and signal cabins. Remember the old Wild West cowboy stories and movies where the Red Indians referred to the telegraphic system as the "wire-that-talks" or "singing wire." I wonder whether John Wayne ever had to learn Morse and use a Morse key. Hi Hi!

Similarly, certain amateurs have learnt and used American Railroad Morse for certain scenes in their American Civil War re-enactments.

What Do You Do At Club Meetings?

I wonder how many Clubs have their monthly meetings at the local Scout Hall. Have you ever thought of involving the lads and experimenting with wire antennas? Usually there are enough poles and ropes to build a "respectable looking" antenna? Another advantage is that there is enough shape in the grounds to "spread yourselves out a bit." I suggest you stick to wire antennas for the first few projects. Wire can be straightened out after a mishap!

Some items in the Scout Pioneering Book are purely decorative projects such as gateways, arches and notice boards. I mention that a vertical trap antenna with suitable radials can be made to be functional as well as look quite attractive.

Recently I got around to checking the condition of my Hy-Gain 14 AVQ

(Continued on page 34)

(The Museum Piece from page 33)

Vertical Trapped Antenna and making new radials for 40, 20, 15 and 10 m. The “new wire” had been collected in dribs and drabs, over the past few years so I ended up with a different colour for each band!

40 m = Red N – S 2 X 10,06 metres

20 m = Blue NW – SE 2 X 5,03 metres

15 m = Green E – W 2 X 3,45 metres

10 m = Yellow NE – SW 2 X 2,54 metres

The vertical was extended and the radials stretched out in a plane at right angles to the feed point and about one metre above ground level. The resultant was quite attractive! Almost pretty!

If no colour insulated wire is available then bare copper or aluminium wire could be used but then each wire

radial should be supported by ropes tied between the base of the vertical and the stakes. This gives the ground plane more “visibility” than would be obtained if only the wires were in place.

So, analysing this project from an educational point of view, apart from the fun, the girls and boys are using their “creative abilities” in the i) pioneering, ii) electronics/amateur radio and iii) artistic fields.

A word of warning! If you want the structure ready and working for the club meeting or contest in the afternoon, the antenna/mast construction gang should start in the morning. Usually young boys can take a bit more than their fair share of time .

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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.”

**Dave Abraham, ZS5DTA, John Andrew Friend, ZS6FJ,
Joseph Rozploch, ZS2JSR, Norbert Taferner, ZS6ANL,
Anton Matthee, ZS6A, Norman Merrifield, ZS6NKM,
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