Radio ZS

Volume 63 No./Nr 1

January - February 2010
Januarie—Februarie 2010

New world records set via AO-7 by Pierre, ZS6BB, and Andre, ZS2BK

Building your own Antenna Analyser
My S-meter, 'n groot leunaar?
International Amateur Radio Union Awards

1925 - 2010 85 Years of Service to Amateur Radio

SARL
ZS6SRL

South African Radio League
Suid-Afrikaanse Radioliga

Founded in 1925 / Gestig in 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
Ledevereniging van die Internasionale Amateur Radio-unie, Streek 1

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Nasionale Amateurradiosentrum
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http://www.sarl.org.za

SARL News Bulletins/ Nuusbulletins
Sundays / Sondae
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

Amateur Radio Mirror International
Sundays 10:00 CAT Sondae
16 and 40 metres AM; 7,082 MHz SSB
2 m and 70 cm FM; Echolink by ZS6FCS
http://www.sarl.org.za, click on ARMI and follow the links

Mondays / Maandae
21:00 CAT - 3,215 MHz

South African Radio League
Suid-Afrikaanse Radioliga

Radio ZS

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Afrikaanse Taalversorging - George Honiball, ZS6NE

In this issue / In hierdie uitgawe

Front Cover / Voorblad

Brothers Pierre, ZS6BB, and Andre, ZS2BK, have been breaking distance records via the AO-7 satellite. Read about in Amateur Radio in Space, page 24.

Broers Pierre, ZS6BB en Andre, ZS2BK, het die afgelope tyd afstandsrekords via die AO-7 satelliet opgestel. Lees "Amateur Radio in Space" op bladsy 24.

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.

CQ de ZS1YT

I would like to start by wishing all our members a prosperous and healthy New Year. May 2010 become an unforgettable amateur radio experience, especially with the exiting upswing of this Solar Cycle.

It seems that the global financial downturn/recession also has had its effect on the SARL. Our budget for the current year was based on a membership number of 1 459. We are currently close to 1 400 members and are SLOWLY getting there, however without the assistance and help from all our members this will be an impossible goal to achieve. Our membership total determines the signal strength of our voice when it comes to dealing with the authorities and other parties alike. You, as a member, should endeavour to convince/convert at least one non-member per annum to join the ranks of the SARL.

In the near future, we are expecting the new draft radio regulations from ICASA. The SARL will again be involved in this process by commenting and supplying input to this important document. It is on these occasions where your membership really counts and it would make a vast difference if we were to speak on behalf of the whole amateur radio community!

Net om die draai is die 2010 SARL-AJV. Hierdie jaar is die Port Elizabeth ARV die gasheer van hierdie spoggeleentheid. Daar is heelwat mosies vir bespreking en vir stemming. Na die amptelike vergadering is daar natuurlik ook nog ‘n aantal interessante werkswinkels gedurende die middagsessie. Hierdie geleentheid is beslis iets wat u nie kan bekostig om mis te loop nie. Tref nou reeds vroegtydig reëlings met u vriende om saam te ry na Port Elizabeth toe vir hierdie geleentheid. Ek sien uit daarna om u by die AJV te ontmoet.

Groete van hok tot hok, Rassie, ZS1YT.

2010 SARL National Convention
hosted by the Port Elizabeth Amateur Radio Society (PEARS)

Join us at the SARL National Convention from 23 to 25 April and enjoy the hospitality of the Eastern Cape and on Saturday 24 April help shape the future of Amateur Radio at the SARL Annual General Meeting.

Friday 23 April 2010
18:30 Welcoming Function at the Italian Social Club, Harold Road, Charlo.

(Continued on page 5)

(2010 SARL Natcon from page 4)

Enjoy a Spit Braai with all the trimmings R80

Saturday 24 April 2010
SARL Annual General meeting
Department of Electrical Engineering, Building 23 M222, Nelson Mandela Metropolitan University
07:30 Registration
09:00 Annual General Meeting
13:00 Lunch: Hamburger and Chips R60 per person

Afternoon Events

13:30 PIC Programming Course presented by John Willescroft, ZS6EF. Cost SARL members R300, Non-members R650. Cost of USB programmer (essential) R250. Limited to 20 persons

14:00 DXing Think Tank with Donovan van Loggerenberg, ZS2DL. No cost but booking required.

14:00 Visit to Seaview Game Park hosted by Glen Cummings, ZS2GV. R50 per person.

14:00 Visit to Hightech Automotive - home of the AC Cobra. Limited to 25 persons. R50 per person

Evening Event
19:00 Annual Awards Banquet
Dress: jacket and tie
Cost: R130 per person. Vegetarian meal available. Cash bar available
Guest speaker: Hans Blondeel Timmerman, PB2T, IARU Region 1 President

Sunday 25 April
08:30 Breakfast at the Bluewaters Café, The Boardwalk, Marine Drive, Summerstrand. Cost R70

Delegates depart or spend the day at leisure in the Friendly City.

Booking for the various events is essential. Booking closes on 12 April 2010. Visit www.sarl.org.za for the booking form.

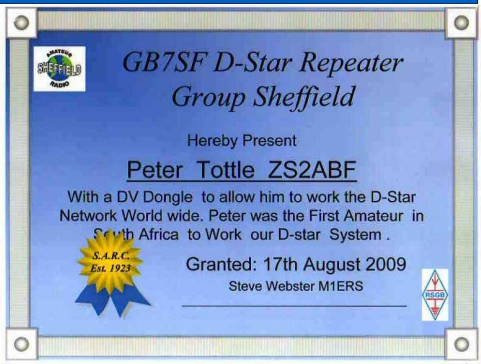
What is D-Star?

Peter Tottle, ZS2ABF *

D-STAR (Digital Smart Technologies for Amateur Radio) is a digital voice and data protocol specification developed as the result of research by the Japan Amateur Radio League to investigate digital technologies for amateur radio. While there are other digital on-air technologies being used by amateurs that have come from other services, D-Star is one of the first on-air standards to be widely deployed and sold by a major radio manufacturer that is designed specifically for amateur service use.

D-Star compatible radios are available on VHF and UHF and microwave amateur radio bands. In addition to the over-the-air protocol, D-Star also provides specifications for network connectivity, enabling D-Star radios to be connected to the Internet or other networks and provisions for routing data streams of voice or packet data via amateur radio call signs.

The first manufacturer to offer D-Star compatible radios is Icom, and no other amateur radio equipment manufacturer has chosen to include D-Star technology in their radios, yet. Kenwood re-brands an Icom radio and distributes it in Japan only.



History

1999 - Funded by the Japanese government and administrated by the JARL, investigation was put into finding a new way of bringing digital technology to amateur radio.

2001 - D-Star is published as the result of the research.

Unknown Date - Icom enters the construction of the new digital technology by offering the hardware necessary to create this technology.

Unknown Date - The conclusion of all this work is the digital technology for amateur radio called D-Star.

1 February 2008: Icom announces the availability of Gateway 2.0 software.

23 April 2008: Icom and US trust server administration announce the shutdown of the Gateway 1.

Technical details

D-Star transfers both voice and data via digital encoding over the 2 m (VHF), 70 cm (UHF), and 23 cm (1,2 GHz) amateur radio bands. There is also an interlinking radio system for creating links between systems in a local area on 10 GHz.

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(D-Star from page 6)

Within the D-Star Digital Voice protocol standards (DV), voice audio is encoded as a 3 600 bit/s data stream using proprietary AMBE encoding, with 1 200 bit/s FEC, leaving 1 200 bit/s for an additional data "path" between radios utilizing DV mode. On air bit rates for DV mode are 4 800 bit/s over the 2 m, 70 cm and 23 cm bands.

In addition to DV mode, a high-speed Digital Data (DD) mode can be sent at 128 kbit/s only on the 23 cm band. A higher-rate proprietary data protocol, currently believed to be much like ATM, is used in the 10 GHz "link" radios for site-to-site links.

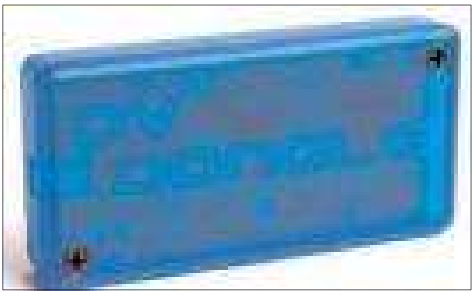
Radios providing DV data service within the low-speed voice protocol variant typically use an RS-232 or USB connection for low speed data (1 200 bit/s), while the Icom ID-1 23 cm band radio offers a standard Ethernet connection for high speed (128 kbit/s) connections, to allow easy interfacing with computer equipment.

Importance of Digital Technology and D-Star

As long as the signal strength is above a minimum threshold, and no multi-path is occurring, the quality of the data received is better than an analogue signal at the same strength.

The system today is capable of linking repeaters together locally and through the Internet utilizing call signs for routing of traffic. Servers are linked via TCP/IP utilizing proprietary "gateway" software, available from Icom. This allows amateur radio operators to talk to any other amateurs participating in a particular gateway "trust" environment. The current master gateway in the United States is operated by the K5TIT group in Texas, who were the first to install a D-Star repeater system in the U.S.

Another important aspect of D-Star technology is its ability to send large quantities of data to emergency responders in the event of a disaster. Served agencies can instantly relate to sending "email" or a "word files" to someone.



DV Dongle - (Get onto D-Star)

I first got onto D-Star with the aid of my friend Steve, M1ERS, who is the keeper of the D-Star repeater, GB7SF, in Sheffield, Yorkshire, England. I was on Echolink and he patched me through to D-Star. What fun I had talking in this new digital mode. I was so thrilled that my overseas friends said, they would all club in and buy a DV Dongle for me so that I could also join the D-Star group of radio amateurs around the world. This sounded great, as here in SA, mother propagation had not visited my neck of the woods very often and I was suffering from loss of HF Rag Chewing.

(Continued on page 8)

(D-Star from page 7)

In August 2009 I went to England to visit my son. Whilst there I visited the Sheffield Amateur Radio club and gave them a Power Point presentation entitled “Ham Radio in South Africa and The Border Radio Club.” I am a member of the Border Radio Club. We had a record attendance and the evening was enjoyed by all (especially the beer and chip butties.)

After the presentation I was presented with a DV Dongle and a certificate making me a Honorary Life member of their club. I could not wait until I got back to East London to install my DV Dongle and get chatting to my friends back at their club, and other radio amateurs around the world.

What is a DV Dongle

A DV Dongle is a small device smaller than a cigarette packet, which is connected to a PC or Mac and used with DVTool software. An amateur radio operator can connect to the international D-Star gateway network and receive/transmit just like a D-Star RF radio user. There is no fee, but users must be licensed and registered in the gateway system.

The DV Dongle uses three chips, oscillator, led’s, and discrete logic to implement its functionality. The chips are the FTDI FT232RL serial to USB converter, the Atmel T91SAM7S256 ARM7 based CPU, and the DVSI AMBE2000 vocoder. Each D-Star radio includes an AMBE2020 voice compression chip provided by Digital Voice Systems, Inc (DVSI). The DV Dongle includes an AMBE chip and logic to connect it to a USB port on a PC or Mac. This allows the computer to “speak” the same voice protocol as D-Star. The DVTool software connects to participating gateways and encodes/decodes the voice using the DV Dongle. The DV Dongle has four LED’s which indicate the current operating status:

• The blue LED shows data is being transmitted from the PC/Mac to the device.

• The yellow LED shows data is being transmitted from the device to the PC/Mac.

• The green LED shows the mode of operation, slow pulsing indicates idle and fast blinking indicates running.

• The red LED shows overruns or under runs between the PC/Mac and the device and should normally be off. Frequent red LED activity indicates your PC/Mac may not be sufficiently fast to operate with the device or you may have other programs running that are taking CPU cycles away from the DVTool application.

DV Dongle System Requirements:

• PC or Mac with 2,0 GHz CPU.

• 512 MB of RAM (or more)

• High Speed Internet connection (DSL, Cable, 3G)

• Microsoft Windows XP/Vista, Mac OS X10.5 (Leopard), or Linux (most distributions)

• PC Microphone and speaker/s

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(D-Star from page 8)
(headset preferred)

The DV Dongle is a high speed, real time device. It communicates with the PC/Mac at 230 Kbps and needs adequate CPU speed and time to operate properly. Many operations on the PC/Mac can interfere with normal operations. These include screen savers, web browsers, instant messengers, etc. For best operation, avoid running them.

I personally have found that a 2,8 CPU or faster and 1 Gig of RAM works just great. I go on to the internet via a USB modem then on to a cell phone tower. This is not always great as the networks become overcrowded and some packet losses are encounted from time to time.

Where are the South African Radio Amateurs?

In my D-Star travels around the world I have been told that my call sign, ZS2ABF, is the only African call seen or heard overseas on the D-Star system. I feel so alone.

My question to you all is, “am I really alone?” as I have also seen no ZS, ZR or ZU call signs registering on the system.

I have been told on the grapevine, that some radio amateurs in Johannesburg/Pretoria have got D-Star radios, but this is not confirmed. If you have got, when are you going to put up a D-Star repeater or when are you going to connect your equipment to the internet? If you wish to copy me on D-Star, I usually hang out on the GB7SF repeater or on Reflector 2 or 3.

Hope to hear you there in the not to distant future.

* Peter Tottle, ZS2ABF, 28 Thornycroft Road, Summerpride, East London, 5200. zs2abf@vodamail.co.za

Building your own Antenna Analyser

John Green, ZS1JHG *

Yes, you can build an Antenna Analyser that will outperform most commercial units.

This project is obtainable from the South Coast Amateur Radio Club in Australia for $AU 150 in kit form or as an alternative, you can order the PCB and Picaxe microchip pre-programmed. Recommended to check if the box size is available locally, if not add the box, about $AU 20 plus postage (Box, PCB and Chip). Also, check if point contact germanium diodes are available

from your local suppliers. All six di-

(Continued on page 10)

(Antenna Analyser from page 9)

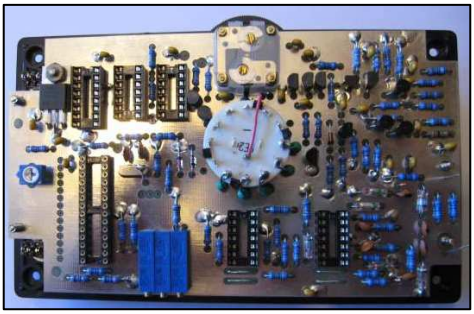
odes must be of the same type i.e. 1n34A. No, Schottky diodes will not work, read your instruction manual.

Warning, this is not a project for first time builders. If you have built a few small PIC based micro kits or similar then you can do it. Recommended, build as I did in parallel with an experienced builder (thanks to Deon, ZS1AFU, for his valued assistance and build input to this project.)

If you got the kit then ALL components must be checked against the parts list. Hint - mark ALL resistors and the inductors with their values. Place parts into a sorter. K value resistors in one section, R value in another section. All caps in one section and transistors/diodes in another. Place the ICs and Picaxe in their own compartment, etc.

Starting the board - read the instructions carefully supplied with the kit or available from the SCARC website. You will need a temperature -controlled iron with a pointed or small bit to make a good soldering job and thin solder (1,25 mm).

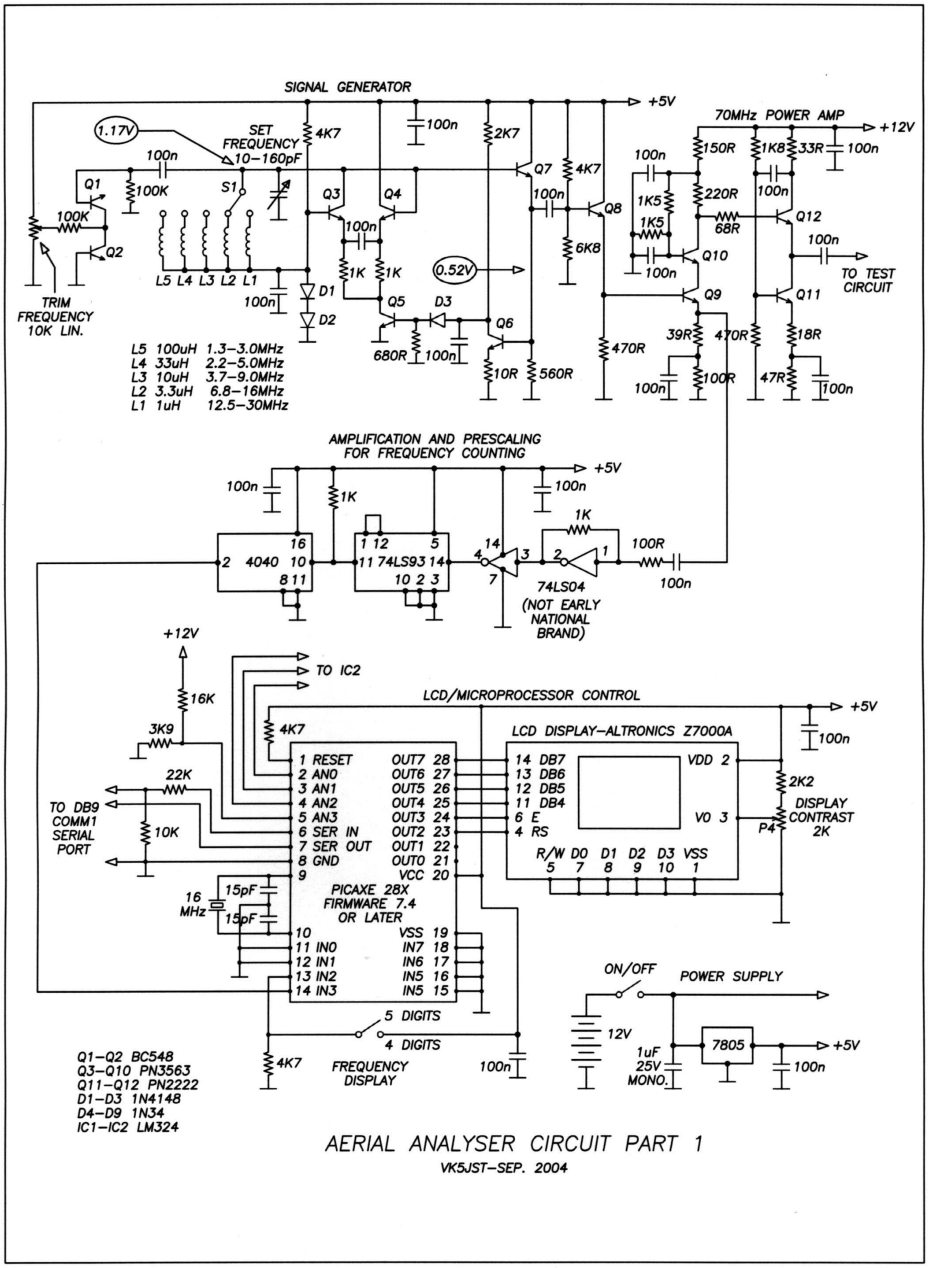
The board is double sided, you are mounting all components on the



ground plane side and their positions are not marked, so study the supplied overlay carefully to ensure you solder your components into the correct holes, not so easy to do for the components that are soldered directly to the ground plane. (Represented as black dots on the overlay, i.e. no holes.)

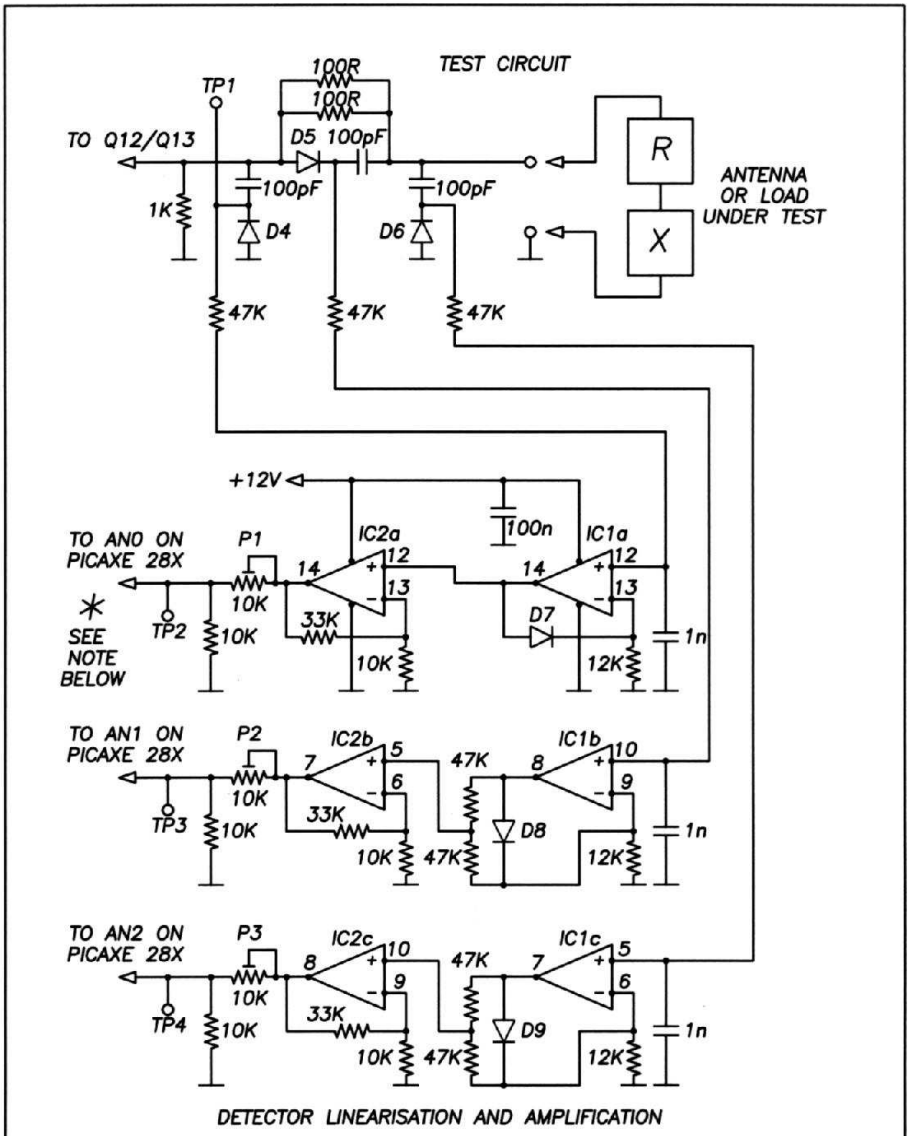
Start with the resistors and mark them off on the overlay as you insert them. Next, solder in the capacitors and then diodes and transistors. On low profile, components like diodes ensure the leads are bent at right angles as the holes in the ground plane have limited insulated clearance and leads at an acute angle could short to the ground plane.

(Continued on page 13)



AERIAL ANALYSER CIRCUIT PART 1

VK5JST–SEP. 2004



DETECTOR LINEARISATION AND AMPLIFICATION

AERIAL ANALYSER CIRCUIT PART 2

* TO AVOID OVER-RANGING PICAXE A/D CONVERTER INPUTS (INACCURATE CALCULATIONS) AND ALSO POSSIBLE A/D INPUT DAMAGE, TP2 MUST NEVER EXCEED 4.7 VOLTS. CHECK AT ALL FREQUENCIES, WITH NO TEST CCT. LOAD.

(Antenna Analyser from page 10)

Then add all the links shown as black dots on the overlay. These are off cuts from your resistor wire joining the two sides of the PCB tracks. Do not forget the two links that attach to the antenna connector posts and add a fibre washer to the red connector as its nut will short onto the ground plane i.e. it needs to be insulated from the ground plane.

Note that the body of the crystal is earthed by a short lead to the ground plane; one touch soldering is needed here so as not to damage the crystal.

I suggest you ask an experienced radio amateur kit builder to solder in the dip sockets for you. Note that the middle top of the PCB dip socket is mounted indent down check before you solder.

The display unit was attached using ribbon cable and the metal tabs bent back carefully to prevent shorts to the PCB tracks as the clearance is minimal. Ensure the tabs are not shorting tracks on the display PCB when bending back. If you are using double-sided tape to secure your display to the PCB then you will not need to do this.

The box showing the battery holders attached with double-sided tape. Note also the cut out for the 160 pF variable capacitor thumb wheel. The mounting of the trimmer pot is somewhere between the battery holders. Check to see you are clear of any of the side ribs before you drill a hole.

If you look carefully at the top left hand side of the box, you will see two white dots on the side ribs of the box. This is to mark the depth to which the board fits in the box. The ribs had to be relieved (cut back) all round the box to this depth.

Deon, ZS1AFU, hard at work making his antenna analyser.

The position of the display cut out was in the kit obtained from the decal overlay. If you are building from scratch, measure your display and mark the position. Drill the corners and cut with a Dremel or jig saw inside your lines and file down to the lines to make a neat job.

Attach the display to the board using ribbon cable and leave enough cable so you can fit the PCB onto the lid standoffs. When separating the ribbon strands make your cuts deep so you leave yourself enough room to solder. When you get to the last few solder connections space gets tight.

The wire connecting all components in the box i.e. fine-tune pot, power connections and your SO-239 socket needs to be long enough so you can open the lid with PCB and hinge over the top of the box or lay

(Continued on page 14)

(Antenna Analyser from page 13)

the lid alongside the box. The connections to the SO-239 socket should be as short as possible and the use of heavy flexible wire is recommended.

If you are using an external power socket (recommended to save your batteries) do not forget to place a diode (1N4004), supplied with the kit, in series with the positive line to protect from accidental reverse power connection.

Follow the procedure for voltage and signal checking per the manual carefully before inserting any IC chips.

The calibration procedure is easy to follow and do if you use a bench variable power supply set to 12,0 V and remember to set the Frequency to 2 MHz. Do not try to calibrate using batteries rather use three diodes in series to drop your fixed voltage power supply to 12 V.

If your analyser does not function correctly, refer to the detailed Diagnostic data on the SCARC website or get a radio amateur who is technically competent to assist you.

This is a super project and a Big vote of thanks to the South Coast Amateur Radio Club project team and the designer Jim Tregellas, VK5JST.

Other points about the VK5JST analyser

- The software is upgradeable and open source.
- You can make repairs to your own analyser.
- You can recalibrate your analyser.
- It is a fun to build project producing a vital piece of test equipment at an affordable price.

* John Green, Box 43769, Fish Hoek, 7974. E-mail: johnhg@telkomsa.net

Amateur Radio in Space

*By Eddie Leighton, ZS6BNE **

So much has happened on the satellite scene recently. After the success of our very own SumbandilaSat (SO-67) launch, the Chinese sent up their new amateur radio satellite, XW-1 also known as Hope-1 or HO-68. This satellite will provide many hours of fun, worldwide. It is presently still under commissioning.

At 21:20 UTC on Thursday 24 December 2009, XW-1 (Hope-1 / HO-68) was worked for the first time by South African radio amateurs.

Eddie ZS6BNE wrote, "I was sitting in the shack, setting up SatPC32 for Hope-1. I had tested the transponders from Acquisition of Signal (AOS), they were quiet. I fortunately had the rig tuned to the FM Transponder when I heard Etienne, ZS6Y, call. I "almost fell off my chair!" I grabbed the microphone and called him. I am not sure if he heard me at first. Andre, ZS2BK, had been listening to the CW beacon where he no-

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(Amateur Radio in Space from page 14)


Pierre, ZS6BB

ticed there must be activity on the satellite and switched over. QSOs took place between Etienne, ZS6Y, Andre, ZS2BK, and Eddie, ZS6BNE. Christmas wishes were shared amongst the satellite operators. Just before Loss of Signal (LOS), packet activity and 7Z1SJ was heard transmitting from Saudi Arabia. That was amazing stuff! The signals on this satellite are excellent."

The following frequencies are used on Hope-1:
Beacon: 435,790 CW
FM Transponder: Down 435,675 FM, Up 145,825 FM
Linear Transponder: Down 435,740 USB, Up 145,950 LSB


Andre, ZS2BK

OSCAR 7 "The veteran satellite" – New world records

After an odd 35 years orbiting the earth, AO-7 is still functioning well and recent world records were made via this satellite. Firstly, Pierre van Deventer, ZS6BB, broke his brother's long standing record with a distance of 7 630 kilometres! Pierre wrote, "On Saturday 2 January 2010, Andre, ZS2BK, alerted me to the fact that we had a mutual window. I ran my own predictions and saw that the pass was as good as it gets. I emailed Luciano, PY5LF, in the hope that he was available for a sked. Unfortunately at AOS I had still not received a reply and assumed that Luciano was not available. I however continued to monitor in the hope of working some other PY station. The next moment, I heard Luciano,

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(Amateur Radio in Space from page 15)
PY5LF's, CW appear out of the mush, I replied with my call and he replied immediately. I could not believe my luck. All too often the QSO ends up in a one-way affair. I have no doubt using CW made this QSO possible, SSB might also be possible but it will need a far more sophisticated setup, antennas and power."

It was not long afterwards when Andre, ZS2BK, reclaimed his long-standing record with a world record distance of 7 694 kilometres! On 8 January 2010 at 19:50 UTC, Andre, ZS2BK, made a historical, record breaking contact with Piraja, PS8RF, via the AO-7 Satellite on Mode B. They made the contact using SSB, which is an exceptional achievement! This record is going to be very hard to beat. Andre wrote, "My Doppler calculation was also gratefully spot on. For example, I calculated that I should call so that my downlink is on 145,944 2 MHz I worked out that our Doppler difference would be 3,8 kHz and amazing that was spot-on. There is really no time to tune!"

The latest up to date South African record distances can be downloaded from http://www.nwinternet.za.org/zs6bne/pdf/AO7SouthAfricanDistanceRecords.pdf A short You Tube video clip made by Piraja for his and Andre's world record QSO can be accessed at http://www.youtube.com/watch?v=zNFmHERisWQ

A new AO-7 World record AGAIN!

Pierre, ZS6BB, did it again, he wrote "On Monday evening 18 January, just prior to the 17:00 UTC AO-7 pass, I used SatPC32 in preview mode, so as to step ahead in time so to visualize the path and footprint of the satellite. I was a little disappointed that the pass did not look very favourable, since the path was too far west and the mutual window would not include the stations on my 'most wanted list' i.e. Middle East, Cyprus, Israel, Greece or Italy, since I know that there are a few active stations in that area. The path did show a very slight chance of working Spain, but from experience that meant nothing since there is no activity from the South East coast of Spain.

During the pass I had a very pleasant rag chew with Eddie, ZS6BNE, Etienne, ZS6Y, Andre, ZS2BK, and Alain, TR8CA. As the satellite approached the horizon we greeted and I scanned the pass band for any new signals. Low and behold, low in the band I heard 'Ola Ola' and I did not recognise the voice. For the uninformed the 'Ola Ola' is not really a good thing, this normally means whoever is doing so, is trying to find his downlink and that he has not found it yet, or worse that he cannot hear himself. I anxiously gave a 'QRZ' and immediately I got a response 'EA…..' I replied with 'Again' he came back with 'EA6…..' one further 'Again' he was in the clear 'EA6SA.' We quickly exchanged calls and signal reports and that was it.

Once the dust had settled, I looked up the details of EA6SA on

(Continued on page 17)

(Amateur Radio in Space from page 16)
QRZ.com. His name is Josep and he is located on the island of Mallorca, according to QRZ.com he is located in JM19ir and according to Tiny Locator that puts him at a distance of 7 788 km. (I have since verified the QSO and locator info by email, Joseps's correct locator is JM19lo giving us 7 766 km.)"

I find it truly amazing that this 36 -year-old satellite that returned from the dead and after being dead for 29 years, is now working so well. Ironically the best distance records have been improved at least 5 or 6 times in the last few months. Not sure why this is, possibly due to a heightened awareness?

There are many factors that played a role in making this contact possible. One must however consider that the total common window (angle of >1 degree) is only 17 seconds long! The most important factor is being able to 'search and pounce.' This is made possible by using the great software of Erich Eichmann, DK1TB, SatPC32. The software takes care of the Doppler correction and enables one to use

(Continued on page 20)

AO7 South African distance records
Two way QSO's

South African station			*DX Station*			*Dist*
ZS6BB	Pierre	KG43eu	EA6SA	Josep	JM19lo	7,766
ZS2BK	Andre	KF26sb	PS8RF	Piraja	GI84ow	7 694
ZS6BB	Pierre	KG43eu	PY5LF	Luciano	GG54jm	7 630
ZS2BK	Andre	KF26sb	LU2DPW	Juan Carlos	GF05gi	7 540
ZS6BNE	Eddie	KG33bu	PY5LF	Luciano	GG54jm	7 417
ZS2BK	Andre	KF26sb	4Z1WS	Shamai	KM71ku	7 367
ZS6BB	Pierre	KG43eu	PY1UNU	Angelo	GG86gx	7 171
ZS6BNE	Eddie	KG33bu	PY4AJ	Fabio	GH70un	7 168
ZS6TW	Keith	KG44bd	PY1UNU	Angelo	GG86gx	7 155
ZS6BB	Pierre	KG43eu	SV1EEK	Evangelos	KM17vx	7 141
ZS6BNE	Eddie	KG33bu	SV1EEK	Evangelos	KM17vx	7 130
ZS6Y	Ettiene	KG33wu	PY1UNU	Angelo	GG86gx	7 123
ZS2BK	Andre	KF26sb	PY5LF	Luciano	GG55jm	7 120
ZS2BK	Andre	KF26sb	CX1TH	Miquel	GF25vi	7 108
ZS6TW	Keith	KG44bd	SV1EEK	Evangelos	KM17vx	7 107
ZS2ACP	Andre	KF26sa	CX1TH	Miguel	GF25vi	7 106

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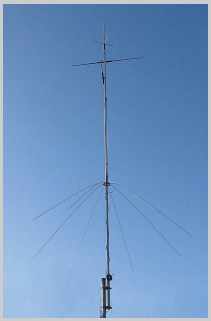

r

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ZS1LS	Allan	JF96fd	PS8RF	Piraja	GI84ow	7 059
ZS2BK	Andre	KF26sb	PY4AJ	Fabio	GH70un	6 990
ZS2BK	Andre	KF26sb	PY4ZBZ	Roland	GH70un	6 990
ZS2ACP	Andre	KF26sa	PY4AJ	Fabio	GH70un	6 989
ZS2ACP	Andre	KF26sa	PY4ZBZ	Roland	GH70un	6 989
ZS2BK	Andre	KF26sb	PY1SAN	Sandro	GG77sm	6 845
ZS2BK	Andre	KF26sb	PY2ACM	Louis	GG76as	6 942
ZS1LS	Allan	JF96fd	CX1TH	Miguel	GF25vi	6 517
ZS6BB	Pierre	KG43eu	4Z1WS	Shamai	KM71ku	6 482
ZS6WB	Hal	KG44ee	4Z1WS	Shamai	KM71ku	6 445
ZS1TX	Chris	JF96hd	PY2CDS	Romanini	GG66qj	6 356
ZS1TX	Chris	JF96hd	PY4ZBZ	Roland	GH70un	6 354
ZS1LS	Allan	JF96fd	PY4ZBZ	Roland	GH70un	6 343
ZS1LS	Allan	JF96fd	PY4AJ	Fabio	GH70un	6 339

One way QSO's

Transmitting station			*Receiving station*			*Distance*
ZS2ACP	Andre	KF26sa	PS8RF	Piraja	GI84ow	7 696

All distances calculated using the "Tiny-Locator" program. The log reflects QSOs in excess of 6 000 km.

(Amateur Radio in Space from page 17)

the VFO in a normal sense; the uplink transmitter automatically gets set to the correct frequency. This feature is not only nice, it is essential.

The theoretical possible maximum distance is 7 906 km. I firmly believe we can push the envelope further. Who is going to be next to do it? Good luck, Pierre ZS6BB.

Congratulations to both Pierre, ZS6BB, and Andre, ZS2BK, on their excellent records!

Working the FM LEO Satellites with a Kenwood TH-D7A

This rig is not only specifically built for APRS and Packet radio; it is a FM LEO Satellite radio too. Press the DUPlex button and the rig goes into full duplex mode. You can then hear yourself on the satellite's downlink while transmitting! Now the secret! The BALance has to be set 100% towards the downlink VFO otherwise you will experience strange, mediocre results. It took me a while to figure that out! Another hint is to ensure both VFOs are open squelch, which is the norm when working the satellites. Head-

(Continued on page 21)

(Amateur Radio in Space from page 20)

phones or an earpiece is necessary for duplex working. The little handheld can be used in conjunction with an Arrow 70 cm / 2 m Yagi with built in diplexer with excellent results. All the FM satellites like AO-51, SO-50, SumbandilaSat (SO-67) and Hope-1 (HO-68) can be easily worked with this configuration.

Allan, ZS1LS's Arrow and tripod

RaDAR (Rapid Deployment Amateur Radio) Portable satellite operations

Allan mentioned in a recent mail to the satellite working group, "There is a frame welded up from 25 mm right angle aluminium to hold the FT-530 and Apple iPhone/iPod. This counterbalances the weight of the Arrow sitting on the tripod. They are held to the bottom of the frame with Velcro. I wired up my aviation headset to the FT-530 and use a separate PTT switch.

The application running on the iPhone is called Satellite Tracker Plus. See http://appshopper.com/utilities/satellite-tracker-plus, I am in contact with the developer in Australia (also a Radio Amateur) and we are trying to put both the Inclination and the Compass (built into the 3GS) up on the Radar Plot. The application also displays the corrected Doppler frequencies during a pass."

Eddie, ZS6BNE's Arrow and tripod

Eddie wrote, "…… The tripod helps in this regard. The antenna is dismantled while mounted on the tripod.

After all the Arrow's elements are removed, the boom (Including di-

(Continued on page 22)

(Amateur Radio in Space from page 21)

plexer) is removed from the 'Tripod adapter' by loosening the hose clamps. The "Tripod adapter" is also the controlling handle."

CU on the Sats!

* Eddie Leighton, ZS6BNE, P.O. Box 410, Lichtenburg, 2740. E-mail facman@nwk.co.za

My S-meter, 'n groot leunaar?

Ean Retief, ZS1PR/HZ

Ean says that his radio's S-meter is a big liar!

Ean looks at the standards set by Region 1 of the IARU at the Brighton (1981) and Torremolinos (1990) conferences and discusses each point.

His conclusion is that you should be aware that the S-meter tells lies!

Baie keer hoor mens op die lug redelike "eienaardige" rapporte en ook kommentaar oor seinsterktes, soos bv: "Jy is 5 en Zero hier, niks op die meter nie maar baie lekker sterk leesbaar". Nou dit rym natuurlik nie. Verder verwys amateurs soms na hulle S-meters as "suinig" of baie "lewendig".

Dit is nie net hier te lande nie, maar 'n wêreldwye verskynsel. Daar was ook etlike standaarde vir S-meters. Die IARU Streek 1 het die saak twee keer onder die loep geneem, die eerste keer in Brighton, Engeland in 1981 en toe weer in Torremolinos, Spanje in 1990.

Uit die twee vergaderings het die volgende "STANDAARDISASIE VAN S-METERLESINGS" voortgevloei:

➢Een S-eenheid sal gelykstaande wees aan 'n verskil in seinsterkte van 6 dB.

➢Op die bande onder 30 MHz sal 'n S-9 aanduiding gelykstaande wees aan 'n kraginset van -73 dBm (-103 dBW) soos gelewer deur 'n gelykgolf seingenerator gekoppel aan die ontvanger se antenne-aansluiter.

➢Op die bande 144 MHz en hoër sal S-9 gelyk wees aan -93 dBm (-123 dBW).

➢Die S-meter kring sal gebaseer wees op 'n kwasipiekdeteksie met 'n aanslagtyd (stygtyd) van 10±2 millisekondes en saktyd konstante van ten minste 500 millisekondes.

(vervolg na bladsy 23)

(S-meter vanaf bladsy 22)

Van Nader Beskou

Kom ons bekyk die kort standaard 'n bietjie van naby, want daar word sommer baie gesê in min woorde.

Punt nommer 1 is eenvoudig, meeste van die standaarde wat gebruik word vir Amateurradio het hierdie verskil van 6 dB (50%) swakker sein as die vorige vlak gebruik. As u dalk 'n marinestel in die hande kry, let daarop dat in baie kommersiële toepassings word 5 dB trappe gebruik wat 56% van die seinvlak van die vorige vlak is. Party Marineradios se senders (bv "Sailor") se kragvlakke skakel in 5 dB vlakke, wat beteken dat elke kragstap so 32% van die vorige stap is. Dus bv. 400 W, 125 W, 40 W, 12,5 W en 4 Watt.

Party HF-voortplantingsvoorspellings vir nie-amateur gebruik is in 5 dB stappe (bv. IONCAP/VOACAP).

Punt nommer 2 definieer die kraginset by die antenneaansluiters van die ontvanger. Op MF/HF is dit dan -73 dB van een milliwatt of -103 dB van een watt. Dit beteken met 'n 50 Ohm antenneimpedansie 'n seinsterkte van 50 mikrovolt. Dus is S9 = 50 mikrovolt, S8 = 25 mikrovolt, ens. Meer hieroor later.

Punt nommer 3 definieer dat op BHF/UHF/Mikrogolf 'n sein 20 dB swakker sal wees vir S9 as op die bande onder 30 MHz. Dus sal S9 = 5 mikrovolt wees, S8 = 2,5 mikrovolt, S7 = 1,25 mikrovolt, ens.

Interessant dat daar geen standaard tussen 30 en 144 MHz gestel word nie.

Punt 4 bepaal basies dat die S-meter vinnig moet "opspring" en ten minste 50 keer stadiger moet sak.

Bespreking

Kom ons kyk 'n bietjie wat die syfers nou beteken. Onder 30 MHz is S9 = 50 mikrovolt; S8 = 25; S7 = 12,6; S6 = 6,3; S5 = 3,2; S4 = 1,6 en S3 = 0,8 mikrovolt. Op hierdie punt is mens gewoonlik onder die geraasvlak op HF. Daarom dat meeste toekennings 'n rapport van ten minste RS33 of RST339 vereis om die betrokke kontak vir 'n toekenning te laat tel.

S2 is dan 0,4; S1 is 0,2 en S0 is 0,1 mikrovolt. Dit is egter deesdae met die nuwe digitale modusse heel moontlik om kontakte onder die HF-geruis te maak, maar 'n "Vyf Zero" rapport op ESB? Ek glo dit nie!

Op 2 meter en boontoe in frekwensie is S9 dan 5 mikrovolt, S5 is 0,3; S3 is 0,8 en S0 is 0,01 mikrovolt. Meeste van die nuwe FM-stelle se sensitiwiteit staan tans rondom 0,2 mikrovolt vir 'n 20 dB sein-tot-geraas verhouding, of te wel net oor die S4, so mens kan met die huidige BHF-standaard op FM nie 'n sein van veel onder S3 gelees kry nie. ESB, GG en die digitale modusse is natuurlik 'n ander saak.

Nou kom die vraag natuurlik, hoe akkuraat is die S-meter van daardie mooi nuwe Japanese stel wat jy so baie van jou swaarverdiende blare voor moes uithaal?

(vervolg na bladsy 24)

(S-meter vanaf bladsy 23)

Die antwoord is dat die meter waarskynlik so ‘n bietjie leuens gaan vertel. Volgens ‘Practical Wireless’ se toetse van nuwe Japanese sender-ontvangers, gee die meeste van hulle al S9 met so 17 na 18 mikrovolt seine (behoort S 7,5 te wees). As die seine sterk is, in die orde van 400 na 500 mikrovolt (dus so 18 na 20 dB oor die S9 dan slaan die meters al S9 + 40 (vertel jou die sein is 5 000 mikrovolt). Soms selfs meer.

So, tensy u toegang het tot ‘n akkurate amplitudeseingenerator en die S-meter noukeurig opgestel het, bejeën daardie S-meter maar met ‘n bietjie agterdog ……..

Amateur Radio – the most versatile hobby on earth

Awesome Amateur Radio

*By Victor P du Preez, ZS6EA **

The statement ***“Amateur Radio – the most versatile hobby on earth”*** suggests something awesome, so it follows that it should be counted among the great hobbies, which people recognise to be truly awesome.

I am a keen aviator, and, as with Amateur Radio, have since childhood had an interest in anything to do with aviation. Most people look at aircraft performing on TV, (or for that matter, at air shows) and immediately say, “My, my, look at that! Awesome, isn't it!” They look at these “Magnificent Men and their Flying Machines” with wonder. The more so if you build your own and have the audacity to fly it yourself. Can we say the same for Amateur Radio? Yes, we can!

Most people know how to use electronic equipment, but they have not the foggiest idea of what makes the goodies tick. Even the “not-so-technically-minded” radio amateur knows the basics of what goes on inside most of the equipment they are using, and even what goes on inside other relevant everyday electronic equipment in use. Now what has that got to do with “Awesomeness”? The point is, people find it awesome when you execute a contact to some other radio amateur, hundreds, even thousands, of kilometres away, and I have experienced this first hand. They find it incredible when they see your store-bought radio, antenna, Morse keyer and paddle - or, for that matter, microphone in operation, the more so when you use equipment home-brewed by yourself. Even your radio amateur friends, be it locally or cross border, will tell you that they envy you when they see you having a contact using your self-built electronic radio amateur equipment.

As for me, (and it must be said: I definitely do not qualify as an expert

(Continued on page 25)

(Awesome Amateur Radio from page 24)
in electronics) I find it the most wonderful experience - yes - awesome! To build and operate my own amateur radio gear, be it built from scratch or in kit format. To make a DX contact to far-away Antarctica, using CW and self-built transceiver and antenna, no matter if it is low power or high, with curious everyday people watching you. It always has the result of; *"Oh my, did you build this yourself?"*, or *"Where did you learn to do this?"; "Can anybody do this? I mean: I Always thought your business is architecture"* or "*How do you become a radio guy like this, is it difficult to build this stuff?",* and on and on the questions go.

I have not done this myself - I have seen it done: contacting a satellite or an astronaut in space. The disbelief on the bystanders' faces: *"Imagine, a normal guy like old Eddie, talking to an astronaut, can you believe it?*" Yes, believe it, it happens every day! Zoom in on this phenomenon and you will find these guys and girls doing it routinely, but they keep quiet about it. They should shout it out: *"Hey you guys out there in the world look at me look at what I am doing! Come over and have a look!"*

There is no question about it. Amateur Radio is awesome, the only problem is that we radio amateurs do not realize this; we do not make an effort to show off, like those flyboys with their hardware. We are in the habit of going at it alone and mostly shying away from having the attention on our hardware and us. In this day and age, and with Amateur Radio having a bit of a struggle to keep abreast, this should not be! We should not be *"loners,"* we should shout out to the world what, how, why, when we are doing it and what doing it is costing us. #

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http://www.amateurradio.co.za/

HF Amplifiers versus Antennas - One Radio Amateur's Opinion [Part 2]

By Kirk A. Kleinschmidt, NT0Z

A Better Way?

To save wear and tear on your neighbours, fellow radio amateurs, your wallet and even your house wiring, consider improving your antenna system before investing in an amplifier. Here are some ideas to get you started

One almost universal way to get out more signal is to get your antenna(s) farther up in the air (your present antenna or a new one). Build a taller mast, find a taller tree or put up a tower.

If that dipole just is not cutting it,

(Continued on page 26)

(Amplifier vs Antenna from page 25)
put up a contest-winning and DX-catching secret weapon a full-wave horizontal loop for 40 or 80 meters (up as high as possible, of course!) Feed it with coax and use an antenna matcher on bands above the fundamental frequency. That's a "cheap 'n' dirty" way to snag an extra 2 to 10 dB, depending on frequency.

Disconnect the feed line from your coax-fed single-band dipole, the one you try to use on several bands, and replace it with 450 Ω ladder line (see Figure 2). With a coax feed, even though your antenna matcher may be presenting a happy impedance to your transmitter, feed line losses due to high SWR may slash your signal by 6, 10 or 25 dB, depending on the band and the size of your dipole! By using 450 Ω open-wire line you will likely reclaim most of that lost power. Now that is a 6 to 20 dB shot in the arm that anyone can afford!

Figure 2 - you can increase the performance of a simple dipole by using low-loss open-wire 450 Ω windowed feed line. This is one of the easiest, inexpensive antennas for the HF beginner. Just string up a dipole made of two equal lengths of copper wire. Do not worry about the overall length; just make it as long as you can. Connect the feed line to the centre insulator and run it back to an antenna matcher with a balanced output. Attach coax between the matcher and the radio and you are in business on several bands!

(Continued on page 27)

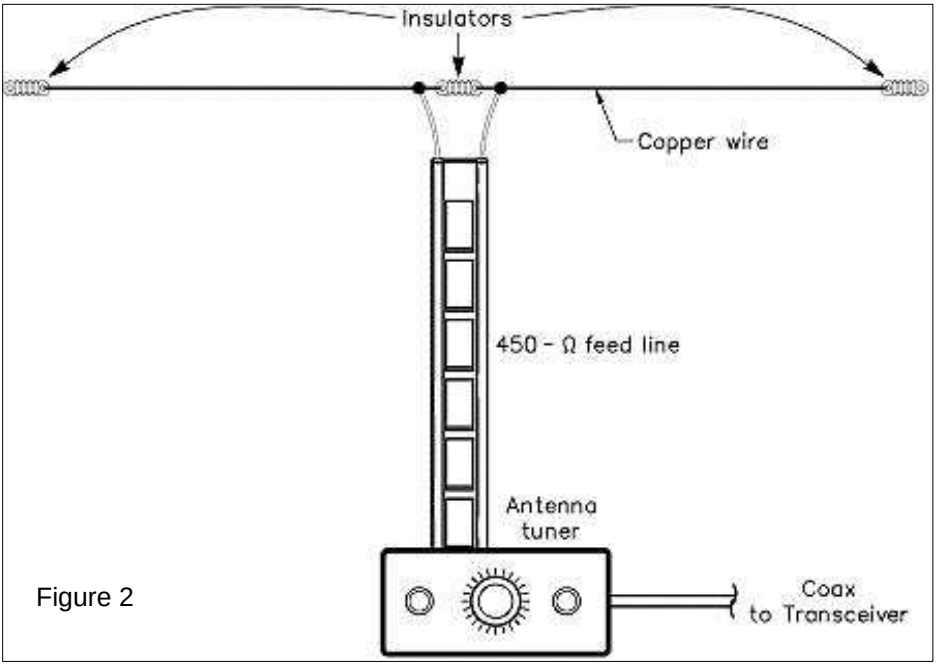

Figure 2

(Amplifier vs Antenna from page 26)

For less than the price of an entry-level amplifier you can buy a multiband beam antenna and a decent rotator. This dynamic duo, mounted reasonably high, will offer a 5 to 7 dB steerable improvement to your signal. Remember amplifiers only boost your transmitted signal and do nothing to improve reception. By rotating a directional antenna you can often achieve a double-whammy - boosting the signal you are trying to receive while attenuating signals that are unwanted. For example, if I am working a European radio amateur from my Minnesota QTH, a potentially interfering signal from an operator in Florida - located in the side null of my directional antenna - may drop 25 dB or more! The difference, more than 30 dB of signal enhancement, could never be achieved by a lone amplifier.

On SSB, learn the correct use of your rig's speech processor. There is another 3 dB (or more) improvement, this time in the modulation department! No purchase necessary!

Aftermath

So, after looking at the cold, hard facts, do antennas win out over amplifiers at your shack? Or will your operating table soon be sporting some heavy iron? As always, the choice is yours.

Amplifiers do have their uses - especially after you have tweaked your antenna farm. Add a 10 dB amplifier to a 7 dB beam antenna and you have got a whopping 17 dB improvement in signal strength! That will put you on the map - especially when the minimum necessary power required to communicate calls for maximum smoke. And when conditions are poor an amplifier may make the difference between being heard and being lost in the noise.

As long as it is confession time, let me come clean.... Most of my operating over the past 23 years has been at QRP or barefoot power levels, but I have used an amplifier every now and then.

The first was one that I built myself from scavenged parts. I was seduced by the possibility of a glowing 4-400A transmitting tube, and I was trying to work DX on 80 metres with a poor antenna.

The amplifier helped me put a few difficult QSOs in the log, but collateral considerations forced me to abandon my glowing metal and glass monstrosity. The 150 pound amplifier was collapsing my operating desk, and its draw from the 120 V mains was overwhelming! I could only use it in the wee hours when everyone else was in bed....

After I put up a decent 80 metre antenna, I never looked back. Given the choice, I will take a "killer" antenna instead of a "rock crusher" any day! How about you?

S Meters and Radio Lore

Something needs to be said about S meters: With a few exceptions, they're inaccurate, nonlinear

(Continued on page 28)

(Amplifier vs Antenna from page 27)
and of dubious calibration!

Each S unit on a typical S meter is supposed to indicate a 6 dB increase in the strength of a received signal. But it probably does not. Or it might - at one frequency on one band (or a few frequencies on a few bands). On other frequencies and modes, however, it might provide readings that are way out in left field.

S meters appeal to our senses and to our need to categorise and stratify things in our environment. They can be useful, but we should not rely on them for precise measurements. That is what your brain is for. Use it and forget the bouncing needle!

When Less is More

Now that you have seen that it takes a whopping amount of extra power to make a noticeable difference in received signal strength, you might be wondering whether the cold equations work in the other direction—and they do!

If you have an okay signal with 100 W, you will likely have a workable signal with 25 W, or even 5 W. That is the Holy Grail of QRP (low power) operation. The power output numbers work, just like before, in reverse.

Let us say that you have a S9 signal with 100 W output. Cutting your power to 50 W provides a 3 dB decrease in strength. Cutting power to 25 W adds another 3 dB reduction. Therefore, going from 100 W output to 25 W output has reduced your received signal strength by 6 dB - only 1 S unit! By drastically cutting your power output, your signal has dropped from S9 to S8! That's not a big deal!

Dropping from 100 W to 10 W is a 10 dB reduction - less than 2 S units. Dropping to 5 W, the commonly accepted threshold for QRP operation, totals 13 dB - just a smidgen more than 2 S units. Your signal will go from S9 to about S7! Again, not a big deal!

Add a decent directional gain antenna to the QRP equation and you are back in the old ballpark - while running a lot less power. That is QRP. And it's a lot of fun.—NT0Z

Used with acknowledgement to QST, November 1998.

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International Amateur Radio Union Awards

Worked All Continents (WAC)

Award Requirements

In recognition of international two-way amateur radio communication, the International Amateur Radio Union (IARU) issues Worked -

(Continued on page 29)

(IARU Awards from page 28)

All-Continents certificates to amateur radio stations of the world.

The International Secretariat or a member society of the IARU bases qualification for the WAC award on an examination of QSL cards that the applicant has received from other amateur stations in each of the six continental areas of the world. All contacts must be made from the same country or separate territory within the same continental area of the world.

All QSL cards, no photocopies, must show the mode and/or band for any endorsement applied for.

Contacts made on 10, 18 and 24 MHz or via satellites are void for the 5-band certificate and 6-band endorsement. All contacts for the QRP endorsement must be made on or after 1 January 1985 while running a maximum power of 5 watts output or 10 watts input.

The following information should be helpful in determining the continental area of a station located adjacent to a continental boundary. North America includes Greenland (OX) and Panama (HP). South America includes Trinidad & Tobago (9Y), Aruba (P4), Curacao & Bonaire (PJ2 - 4) and Easter Island (CE0). Oceania includes Minami Torishima (JD1), Philippines (DU), Eastern Malaysia (9M6 - 8) and Indonesia (YB). Asia includes Ogasawara Islands (JD1), Maldives (8Q), Socotra Island (7O), Abu Ail Island (J2/A), Cyprus (5B, ZC4), Eastern Turkey (TA2 - 9) and Georgia (4L). Europe includes the fourth and sixth call areas of Russia (R1 - 6), Istanbul (TA1), all Italian islands (I) and Azores (CU). Africa includes Ceuta & Melilla (EA9), Madeira (CT3), Gan Island (8Q), French Austral Territory (FT) and Heard Island (VK0).

For amateurs in the United States or countries without IARU representation

WAC application forms are available in MS Word and Adobe PDF format at http://www.iaru.org/wac/wac.doc or http://www.iaru.org/wac/wac.pdf.

Once completed, applications should be directed to the WAC Awards Manager, ARRL, 225 Main Street, Newington, CT USA 06111.

After verification, the cards will be returned and the award sent soon afterward. In addition, approved DXCC card checkers can verify WAC program applications.

The latest list of DXCC card checkers can be found at www.arrl.org/awards/dxcc. There is a $13.00 fee for US applicants. Sufficient return postage, or a self-addressed stamped envelope, is required for the return of QSL cards.

US amateurs must have current ARRL membership. Membership of an IARU member society is required for all applicants.

At the present time, credits in the ARRL Log Book of The World (LoTW) system cannot be claimed for WAC credit. Applicants who have a current DXCC award in the DXCC computer system can apply

(Continued on page 30)

(IARU Awards from page 29)
for WAC by completing the WAC application form and sending it to the address noted above, listing credits to be claimed on the application form. In this case, QSL cards are not required. Send questions to wac@arrl.org.

For other amateurs

Applicants must be members of their national amateur radio societies affiliated with IARU, and apply through the society.

In South Africa, the application form and QSL cards can be sent to the SARL Awards Manager, Tjerk Lammers, ZS6P, with return postage for the QSL cards and application form.

Tjerk is also an approved DXCC card checker.

IARU Region 1 Award

This award, available in three classes, may be claimed by any licensed radio amateur eligible under the General Rules who can produce evidence of having contacted amateur radio stations in the required number of countries whose national societies are members of the Region 1 of the International Amateur Radio Union (IARU).

The three classes are for contacts as follows:

Class 1 All member countries on the current list
Class 2 60 member countries
Class 3 40 member countries

Members of IARU Region 1 are: (Total 94)

Albania, Algeria, Andorra, Armenia, Austria, Bahrain, Belarus, Belgium, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Cameroon, Congo, Cote d'Ivoire, Croatia, Cyprus, Czech Republic, Democratic Republic of Congo, Denmark, Djibouti, Egypt, Emirates, Estonia, Ethiopia, Faeroe Is, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Guinea, Hungary, Iceland, Iraq, Ireland, Israel, Italy, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Mali, Malta, Mauritius, Moldova, Monaco, Mongolia, Morocco, Mozambique, Namibia, Netherlands, Nigeria, Norway, Oman, Poland, Portugal, Qatar, Romania, Russian Federation, San Marino, Senegal, Serbia, Sierra Leone, Slovakia, Slovenia, South Africa, Spain, Swaziland, Sweden, Switzerland, Syria, Tajikistan, Tanzania, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Kingdom, Zambia, Zimbabwe

A special version of this award is available, in the same three classes, for confirmed contacts on the 28 MHz band since 1 July 1983.

Submit a list of countries in alphabetical order with the call sign and date of contact.

An application form is available

(Continued on page 31)

(IARU Awards from page 30)
on request from the HF Manager via hf.awards@rsgb.org.uk or RSGB HF Awards Manager, John Dunnington, G3LZQ, Box-36, Gilberdyke, East Yorkshire, HU15 2WX, England.

http://www.rsgb.org/spectrumforum/hf/hfawards/iarureg1.php

The IARU Region 1 Secretary can also provide copies of the application form, e-mail secretary@iaru-r1.org

IARU Region 2 Award

The International Amateur Radio Union Region 2 (IARU-R2) will grant the IARU-R2 AWARD to radio amateurs and radio listeners (SWL) who certify having contacted 20 countries or entities acknowledged in IARU Region 2, which corresponds to R2 of the International Telecommunications Union (ITU).

Valid contacts must be made starting 16 April 1964, the date at which IARU-R2 was founded.

The application must be made in the form that IARU-R2 provides free of cost.

The application must include the details of the communications that have been established, in alphabetical order according to countries or entities, indicating that the applicant has the QSLs that confirm the contacts.

The application must be sent together with a certification from the IARU Member Society of the corresponding area, stating that the QSLs have been presented to them [*South African applications to SARL Awards Manager*]. If this is not possible, it is mandatory to send a photocopy of the original QSLs (both sides), authenticated by the applicant and an appointee of the Member Society of IARU-R2. If the applicant wishes to do so, he may send the original QSLs. In this case, authentications are not necessary.

IARU-R2, through its Award Manager, may request the presentation of one, several or all the QSLs together with the application.

Electronic QSLs are not valid for this award.

The diploma has a cost of US$10.00 - or 10 IRCs for each mode.

Region 2 countries or entities are: Anguilla, Antigua y Barbuda, Argentina, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Brazil, Canada, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Granada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turk and Caicos Islands, United States, Uruguay and Venezuela.

It is possible to apply for the diploma for contacts made in the following modes: Phone, CW, Digimodes or Satellite.

Bands: Contacts can be made in the following bands: 160, 80, 40, 30,

(Continued on page 32)

(IARU Awards from page 31)
20, 17, 15, 12, 10 and 6 metres individual or multi-band.

All contacts must be made from the same QTH, using any official call letters that belong to the applicant (including special licenses for contests or events) and must be bilateral or two -way (2X). Contacts in crossed modes and/or bands will not be accepted, except for Satellite Mode.

Questions regarding these diplomas may be submitted via e-mail to award-manager@iaru-r2.org

Conventional mail must be sent to Radio Club Venezolano, Award Manager IARU R2, PO 20285 Caracas 1020-A, Venezuela
http://www.iaru-r2.org/wp-content/uploads/r2-award.pdf

IARU Region 3 Operating Award

The award is available to licensed amateurs and SWLs.

Contacts made after 5 April 1982 are eligible.

QSL cards NOT required. Send a certified list of eligible contacts from your Log Book. Include the Country in log.

The cost is NZ $3.00, Overseas US $4.00.

Eligible countries are those in ITU Region 3 whose amateur societies are members of IARU Region 3.

These are: Australia, Bangladesh, Brunei, China (PRC), Chinese Taipei (Taiwan), Fiji, French Polynesia (FO8 only), Hong Kong, India, Indonesia, Japan, Korea, Macau, Malaysia, Myanmar, New Caledonia, New Zealand, Pakistan, Papua New Guinea, Philippines, Pitcairn Islands, Samoa, Singapore, Solomon Islands, Sri Lanka, Thailand, Tonga, Vanuatu, Vietnam.

Plus - ONE Country credit from US Territories in the Pacific from Guam, Northern Marianas, American Samoa, Wake Island, Baker Howland Group, as represented by the ARRL, or ONE Country credit from Chago Archipelago (VQ9), represented by the RSGB.

Current total of available 'countries' is 31.

Requirements for the Award as from 1 January 1986 are Basic, 7 areas; Silver Endorsement, 15 areas; Gold Endorsement, 20 areas.

These will be reviewed as considered necessary by the custodian who would recommend appropriately to the Secretariat.

Awards may be endorsed for any mode or band.

Application to the NZART Awards Manager.

Alan Chapman ZL3GX
NZART Awards Manager
PO Box 1733
Christchurch 8015, New Zealand

nzart.awards.manager@xtra.co.nz
Phone / Fax: +64 (0)3 338 9720

http://www.iaru-r3.org/r3award.htm

The Museum Piece

Dave Gemmell, ZS6AAW, and the Old Timers

Message from the World JOTA Co-ordinator

The WjaC, Richard Middelkoop, PA3BAR, sent the following message from World HQ, "The World JOTA Report of the 52nd JOTA is available on-line for you to download and enjoy. Surf to www.jota.sub.cc and click on the radio-scouting library. Please note that the JOTI part has been delayed unfortunately and is still being processed, so that is not yet there, but will follow shortly. Thank you all for your contributions and your enthusiastic support of the JOTA event."

JOTA Activities

I had great hopes of getting individual youngsters to build and use their own QRP station using Dave Ingram's "One Transistor Marvel" Radio ZS, Sept - Oct 2008. Please note this includes using a domestic portable radio with the transmitter doubling as the BFO. This oscillator can be used in other experiments as a marker oscillator, a test oscillator or a "remote" CW oscillator.

It would be great to have completely "miniature station," single transistor transmitter and receiver as well as a miniature operator! Now that is real QRP!

Have you ever thought of having your home QRP transmitter and a homebrew receiver set up next to your 'official' amateur radio rig? Then, after making contact with another station switching over to the low power home brew rig? This would be quite a revelation to the boys and girls.

Just remember what you do at JOTA can be re-done at a High School Science week or vice versa.

Not Forgetting the Legalities

Remember to renew your special call sign license and to re-register it as an educational station at SARL HQ as well. This applies to your own call sign if you do not have a special one. The registration actually needs to be done in June but you might as well do it now!

A New Look for JOTA in SA

JOTA in South Africa definitely needs a bit of attention!! The number of scout stations taking part has dropped significantly over the past few years. Especially in South Africa! As radio amateurs, it is in our best interests to get as many stations on the air as possible.

(Continued on page 34)

(The Museum Piece from page 33)
The average radio amateur can help immensely and not just supplying the apparatus and operating it, but making suggestions about other activities such as antenna and mast building!!

AM Nets Or Experimental Stations?

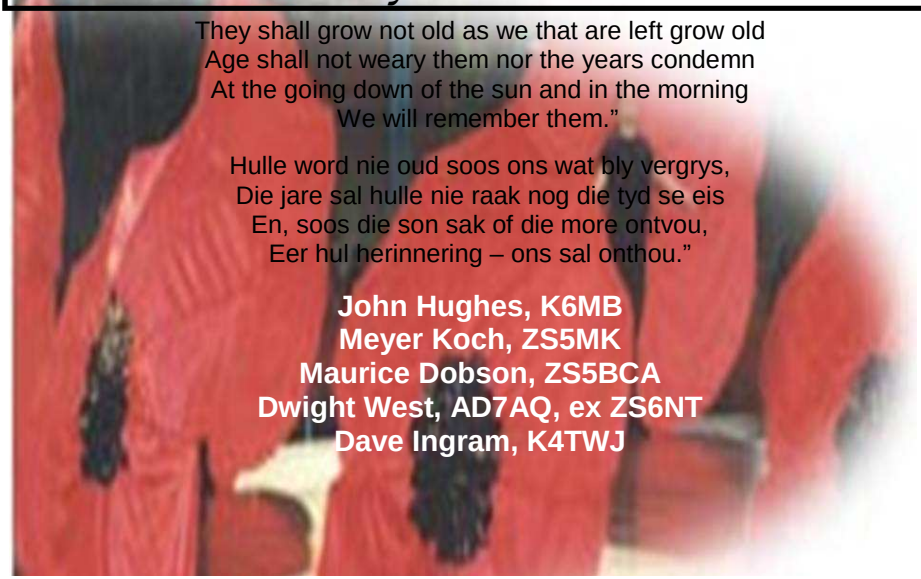
Perhaps we can get all the "museum chaps" in the various cities around the country to form AM Nets and to transmit items of interest especially for special events, that is, CQ Hou Koers, JOTA, and even those high school science fairs. The idea being to show that although certain modes and equipment may be old and little used, it can still be effective!

Be assured that a few extra stations on the air during JOTA will certainly not cause any QRM especially if they can help with CW, SSB or any other mode.

Well fellows, the plinth of the Column again. I make no apologies for repeating myself. Something has to be done, so please try to help on 15, 16 and 17 October and come up for an hour or so to demonstrate your favourite modes. In other words get on the air and do what you like best but do it when you contact the Guides and Scouts. Do not forget the Voortrekkers; CQ Hou Koers takes place on the same weekend.

Dave Gemmell, ZS6AAW, PO Box 77, Irene, 0062. E-mail: dave@zs6mus.org.za or davegemmell@bmknet.co.za

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."

John Hughes, K6MB
Meyer Koch, ZS5MK
Maurice Dobson, ZS5BCA
Dwight West, AD7AQ, ex ZS6NT
Dave Ingram, K4TWJ

AUTHORIZED RADIIO DEALERS:

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Johan ZS6JPL
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Ham Radio Outlet
Donovan ZS2DL
082 852 4885

Kevtronics
Kevin ZS6KEV
012 803 0973

Lets Play Radio
Kobus ZS1K
082 881 1164

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