



WATTS

10-2015

Year 85 + 10m

Monthly Newsletter of the Pretoria Amateur Radio Club
Maandelikse Nuusbrieff van die Pretoria Amateur Radio Klub

✉ PARC, PO Box 73696, Lynnwood Ridge 0040, RSA
🌐 <http://www.parc.org.za> @ zs6pta@zs6pta.org.za



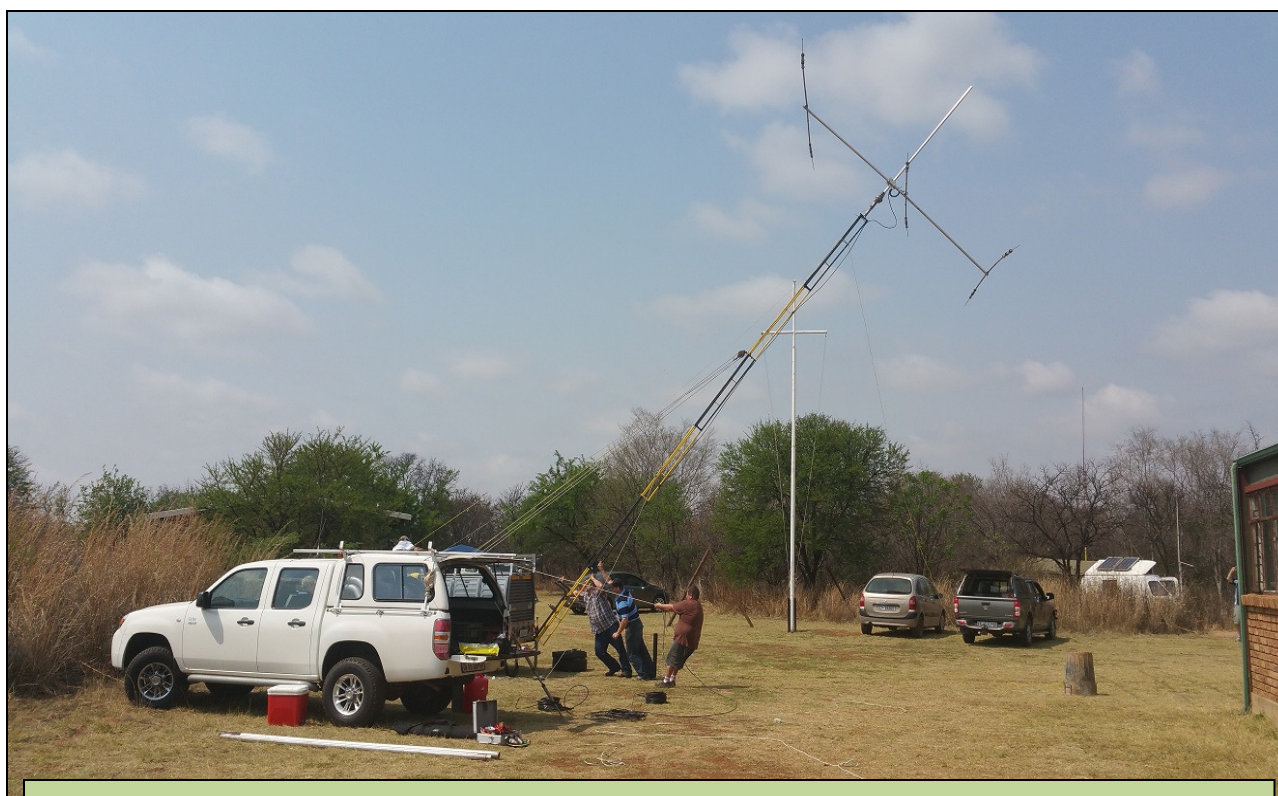
Bulletins : 145.725 MHz on Sundays / Sondag at 08:45

Relays: 1.840, 3.700, 7.066, 10.135, 14.235, 51.400, 438.825, 1297 MHz

Activated frequencies are announced prior to bulletins

Swopshop : 2m and 7.066 MHz live on-air after bulletins

Bulletin repeats on Mondays / herhalings op Maandae : 2m 19:45



PARC Members setting up a radio mast at Gilbanken during the recent SARL HF Field Day

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Next Events

Club Social Meeting :

**Saturday 3rd of October from
11:00AM at the SAM Clubhouse**

Club Committee Meeting :

**Thursday 22nd of October from
19:00 per Skype**

PARC AGM : Saturday 31st of October 2015 (11h00) after the Flea market
Proxy and Nomination forms will be send with Watts and can also be downloaded from the PARC website. Please contact Louis de Wet (ZS6SK) for any enquiries.

PARC Committee Members / Komiteelede : 2014 – 2015

Chairman, Social & Rallies	Johan de Bruyn	ZS6JHB	zs6jhb@gmail.com	012-803-7385	079-333-4107
Vice Chairman	Jan Pienaar	ZS6OB	pienaarja@gmail.com		082-447-7823
SARL liason	Fritz Sutherland	ZS6SF	fritzs@icon.co.za	012-811-3875	083-304-0028
Treasurer	Andre van Tonder	ZS6BRC	andreh.vtonder@absamail.co.za	361-3292	082-467-0287
Web co-ordination	Graham Reid	ZR6GJR	greid@wol.co.za		083-701-0511
Bulletin co-ordinator	Vincent Harrison	ZS6BTY	zs6bty@telkomsa.net	012-998-8165	083-754-0115
Contests	Pierre Holtzhausen	ZS6PJH	zs6pjh@telkomsa.net	012-655-0726	082-575-5799
Repeaters	Craig Symington	ZS6RH	zs6rh@hotmail.co.za		081-334-6817
Fleamarket	Almero Dupisani	ZS6LDP	almero.dupisani@up.ac.za		083-938-8955
Clubhouse	Pieter Fourie	ZS6CN	pieterzs6cn@gmail.com	012-804-7417	083-573-7048
Photographer, Technical	Theo Bresler	ZS6TVB	theo@bresler.co.za		082-698-1742
Auditor	Tony Crowder	ZS6CRO	tcrowder@telkomsa.net	011-672-3311	
Historian, Archives, Awards	Tjerk Lammers	ZS6P	zs6p@iafrica.com	012-809-0006	
Secretary, WATTS newsletter	Louis de Wet	ZS6SK	louis.zs6sk@gmail.com	012-349-1044	072-140-9893
RAE Coordinator	Etienne Naude	ZS6EFN	etienne@afriqrid.com		082-553-0542

Birthdays – October / Verjaarsdae – Oktober

01 Evan Seligmann ZS6ELI
 02 Andre van Tonder ZS6BRC
 02 Hans-Peter Knoepfler ZS6AJS
 09 Edmar Willers ZS6UT
 10 Roy Alexander ZS6MI
 16 Jaco Lubbe ZR6JLL



25 Charles Thompson ZS5CH
 25 Gabriel Marais ZS6GJM
 27 Craig Symington ZS6RH
 30 Andre Coetzee ZS6GCA

Please Note : If your Club fees are not paid up to date, birthday details cannot be displayed in Watts

Spouse's Birthdays – October / Oktober

03 Poppie, spouse of Hansie Meyer ZS6AIK
 12 Juanita, spouse of Ryan Gibson ZS6GGR
 15 Sharon, spouse of Charles Thompson ZS5CH
 21 Louise, spouse of Louis (Almero) Du Pisani ZS6LDP

Anniversaries / Herdenkings – Oktober / October

06 Hansie ZS6AIK en Poppie Meyer
 09 Pieter ZS6CN en Annatjie Fourie

Lief en Leed / Joys and Sorrows

It is with great sadness that we announce the passing of Molly Peer ZR6MOL, who has become Silent Key on the 5th of October 2015, while in hospital with pneumonia. Our sincere condolences with Richard ZS6UK, Edwin and Hillary. Hans ZS6KR Kappetijn's wife, Bertha, has been in hospital for treatment, but has been released.

Contests and Diary of Events – October 2015 / Kompetisies en Dagboek van Gebeure – Oktober 2015 (UTC Times)

02	SARL 80m QSO Party : 17h00 – 20h00
03 - 04	Oceania DX Contest, Phone : 08h00 – 08h00
10 - 11	Oceania DX Contest, CW : 08h00 – 08h00
10 - 11	Scandinavian Activity Contest, SSB : 12h00 – 12h00
10 - 11	Antique Wireless Association AM & SSB Valve QSO Party (see page 3 for more details)
15	Amateur Radio Examination
16 - 18	Jamboree on the Air and Jamboree on the Internet
16 - 18	Annual Amateur Radio Event : Scout, Guide and Voortrekker Movements
17	CQ Hou Koers
17 - 18	10-10 International Fall Contest, CW : 00h01 – 23h59
17 - 18	Worked All Germany Contest : 15h00 – 14h59
24 - 25	CQ Worldwide DX Contest, SSB : 00h00 – 24h00

PARC SUBS / LEDEGELD FROM / VAN 30-06-2014

Bank	First National Bank	Ordinary Members / Gewone Lede : R150 Spouses / Pensioners : R50	Your call sign must appear as statement text!
Branch Code	25 20 45		
Account No	546 000 426 73		
Please remit your subs in time to our Treasurer, or pay per transfer into the PARC account Betaal asb. u ledegelde betyds aan ons Tesourier, of betaal per oorplasing in die PARC rekening			



PARC Annual General Meeting : 31 October 2015



The Annual General Meeting of the Pretoria Amateur Radio Club will take place on the 31st of October 2015, at the Pretoria Motor Club, Keuning Street, Silverton. This Meeting will take place from 11h00 after the flea market which is from 7h00 to 11h00. Proxy and nomination forms can be found in previous issues of Watts. This form is also available in pdf format on the PARC website. **The AGM will be followed by a bring and braai. PARC will supply the fire and salads.** For any queries, please do contact the Secretary, Louis de Wet at 072-140-9893 or louis.zs6sk@gmail.com



PARC Flea Market : 31 October 2015



The Pretoria Amateur Radio Club will hold it's last Flea Market for 2015 from 7h00 on Saturday, the 31st of October. As usual, there will be lots of tables available, so please bring your old equipment and components you wish to sell. If you wish to donate any equipent to PARC to be sold at the Flea Market, or obtain more information on obtaining a table to sell your goods, please do contact Almero Du Pisani ZS6LDP almero.dupisani@up.ac.za or 083-938-8955 for more information. As always, sausage rolls and coffe will be available for sale. The Flea Market will continue till 11h00 after which the PARC AGM will commence.

PARC Flea Market dates for 2016

5th of March ; 28th of May ; 27th of August ; 5th of November
Please contact Almero DuPisani (ZS6LDP) for any enquiries



The AM and SSB Valve QSO Party of the Antique Wireless Association (AWASA) will take place in two sessions on 10 – 11 October. The AM section of this phone contest will take place from 13h00 to 17h00 UTC on Saturday (10/10), and the SSB section on Sunday (11/10) from 13h00 to 17h00 UTC. Activities will be on the 40 and 80 meter bands, using the following segments: 7 063 – 7 100 kHz, and 3 603 – 3 650 kHz. The exchange will consist of your call sign, a RS report, a consecutive serial number starting at 001, and the type of radio used, e.g. HT37 Tx.

Points allocations will be conducted as follows: Using an all valve radio, you score 3 points per contact; using a hybrid - valve and solid-state radio, you score 2 points per contact and using a solid-state radio, you score 1 point per contact. The multiplier, based on your radio is - all valve radio - 3 points per contact, Hybrid - valve and solid state - 2 points per contact and solid-state radio - 1 point per contact. Certificates will be awarded to the first three places in each category : AM and SSB. Logs must be submitted by 31 October to andyzs6ady@vodamail.co.za or by mail to the SA AWA, PO Box 12320, Benoryn, 1504. Please refer to the 2015 SARL Contest Manual for any enquiries.

SARL HF Field Day : PARC at Gilbanken

The SARL HF Field Day was held on Saturday, the 12th of September. As always, PARC members rose to the occasion and made a proper camping and contest event of the Field Day.



Amateur Radio in Action : Innovation Hub Pretoria : 19 September

The recent Amateur Radio in Action (ARiA) Symposium held at the Innovation Hub, Pretoria, proved to be highly informative and successful, with four of the presentations by PARC Members.

The following papers were presented by PARC Members:

Fritz Sutherland ZS6SF : Why IARU is important for Amateur Radio's future

Hans van de Groenendaal ZS6AKV : The Internet of Things (IoT) of Amateur Radio

Vincent Harrison ZS6BTY : Building and Inverted V for Near Vertical Incidence Sky Wave Propagation

Etienne Naude ZS6EFN : Engaging Newly Licenced Radio Amateurs Project

Presentations by PARC members will be published in future issues of Watts.



Louis ZS6SK, Frank ZS6GE, Thobile ZS6TKO, Fritz ZS6SF, Hans ZS6AKV, Etienne ZS6EFN and Johan ZS6JHB



Other presentations included:

Constructing a Frequency Counter – 2015 ARiA project (Kit available) : Frik Wolff ZS6FZ

Amateur Radio is also for the young – my experience at the IARU YOTA 2015 : Koos Fick ZR6KF

Practical mobile radio installation – What to look for and what to do : Riaan Greeff ZS4PR

Kletskous : Why a SA CubeSAT : SA AMSAT Team

Should we still belong to the IARU? : SARL President : Fritz Sutherland ZS6SF

Why should we even ask this question?

Well, at least that is an easy one to answer. Belonging to the IARU costs us money. A part of every member's SARL subscription goes to the IARU. It is only natural to ask firstly what we get for it and then is the something we get for it essential to us and worth the money we pay.

It is council's duty to look after the members' interest and that includes their financial interest. So we do have to ask the question.

The SARL has been a member of the IARU for many years. The reason, in general terms is that we need them to protect our interests, mainly our access to spectrum space. This is a general statement that is easy to make, to justify it we will need to first look at the regulatory structures for spectrum use worldwide, not only for amateur radio, but for radio in general.

Because radio waves do not stop at national borders, some international coordination of spectrum use is essential. There is, therefore, a United Nations agency that deals with information and communication technologies. This is the International Telecommunication Union (ITU). Included within the scope of the ITU work are communication services such as the amateur radio and the amateur-satellite services. The Radio communication Sector of the ITU (ITU-R) manages the international radio-frequency spectrum and satellite orbit resources.

So what does this have to do with the IARU and its value to us? One of the primary activities of the IARU is to work within the ITU structure to preserve and maintain the spectrum allocated to the amateur radio and amateur-satellite services and to promote the usefulness and value of amateur radio. After all, spectrum is the lifeblood of Amateur Radio. To protect it, the IARU attends all ITU-R meetings that may have any impact on amateur radio.

The IARU is a sector member of the ITU's radio communication sector (ITU-R) and also of the ITU development sector (ITU-D) and participates in discussions of those sections. The discussions involve also emergency communications, disaster planning and response. As the IARU administrative council members cannot attend all these meetings, the organization makes use of a number of well qualified individuals called expert consultants, who volunteer their time and effort to attend these meetings and participate in working groups or study groups on behalf of the IARU. One of these is our own Hans van de Groenendaal, ZS6AKV, councilor and former President of the SARL. He is the IARU's satellite coordinator. His function is to coordinate (using expert advisors) all satellite frequencies for satellites using the amateur spectrum. Hans is appointed by the IARU Administrative Council and has been in this position since 1994.

Being involved in the ITU at this level enabled the IARU to achieve the addition of what is now known as the WRC bands; spectrum in the 10, 18 and 24 MHz bands. It also achieved the expansion of the 7 MHz band to 7 200 kHz, the allocation of spectrum in the low and medium wave frequency bands and will, probably, achieve a new allocation in the 5 MHz band in the near future. The IARU also obtained for us changes in the radio regulations to facilitate emergency communications support by radio amateurs and the removal of the mandatory Morse code requirement from licensing conditions. The IARU regularly makes provision for amateurs to use newer or experimental modulation types, especially in the field of digital modulation.

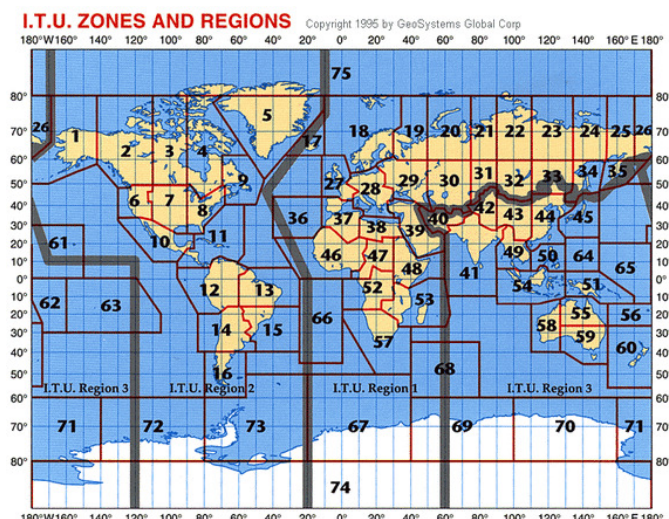
This is all very important and high-level, but how does it link with the practicing radio amateur in South Africa. How does his wishes and needs influence the IARU and how is he represented there. To know this, we have to look at the structure of the IARU.

The IARU consists of a three regions and an HQ with an international secretariat. The IARU International Secretariat (IS) is operated by a member society elected by its fellow member societies and is willing and capable of serving as the International Secretariat. The operating expenses to discharge its responsibilities under the IARU Constitution are borne by the host society with each regional organization contributing a certain amount to IS operations. Currently the IS are located at the American Radio Relay League (ARRL), which has headquarters in Newington in the USA.

The three regions each have a President, secretariat and administrative council. The three IARU Regions are organized to broadly mirror the structure of the ITU and its related regional tele-communications organizations. The map below shows the three regions. We are part of Region 1, which includes Europe, Africa, the Middle East and Northern Asia. Region 1 is mostly the Americas and region three Asia-Pacific.

Our Region 1 is dominated by Europe; rich industrialized countries with large and highly developed amateur populations. South Africa is by far the most active African member of Region 1.

The Executive Committee of Region 1 consists of nine members. The President is Don Beattie, G3BJ. The Vice-president is Faisal Alajmi, 9K2RR and the Secretary is our own member and former President of the SARL. Dennis Green, ZS4BS.



Dennis Green ZS4BS

Region 1 has a plenary meeting (general assembly) every third year. Many member societies send delegates and some of the smaller national societies are represented by proxy. All important matters are discussed and decided on in these sessions. The last of such sessions was in September 2014 in Albena, Bulgaria. The SARL sent three delegates, Geoff Levey ZS6C; Rassie Erasmus, ZS1YT and Riaan Greef, ZS4PR. This is the most important meeting and is where the SARL's voice is heard and also where much important information is exchanged.

The results of discussions, the decisions taken and the information acquired is used by the IARU through the ITU, to protect the interests of amateur radio world-wide, to establish better mutual use of the radio spectrum among radio amateurs throughout the world, to develop Amateur Radio worldwide, and to successfully interact with the agencies responsible for regulating and allocating radio frequencies.

In South Africa the SARL, as the national body representing amateur radio, interacts with ICASA on regulatory matters. ICASA is not unsympathetic to the needs of amateur radio, but regulates the whole of the radio communication community. Spectrum space is a scarce resource, it cannot be expanded and many stakeholders compete for this resource. In negotiations with ICASA, the SARL's standing as a member of the IARU greatly strengthens its position. Like all governmental agencies, ICASA does not wish to be out of line with general world-wide use and the international standing of the IARU and its association with the ITU is very important to us.

In the matter of our neighbors, countries like Namibia. Botswana and others the fact that we are all members of the IARU facilitates cooperation.

The bottom line is that the regulation of the hobby of amateur radio is protected in the international sphere, by the interaction of the IARU with the ITU and that local regulation to a large extent follows the guidelines of international regulation. Should we not be members of the IARU, the fierce competition for resources in the radio communication industry, would soon force the amateurs out. Your radios and other equipment will become interesting conversation pieces, but useless, like cars without roads, boats without water, computers without software or firearms without ammunition.

The IARU also offers other services and enhancements to amateur radio and though they are not the main reason for belonging to the IARU, they are to be taken note of. They are:

The IARU Monitoring System monitors the amateur radio spectrum for intruders or non-amateur radio stations transmitting on the amateur radio frequencies and takes steps to have the signal removed from amateur radio bands.

The IARU Beacon Project maintains a series of radio beacons in various parts of the world so that amateur operators can determine propagation patterns and participate in propagation studies.

The IARU sponsors the yearly IARU HF World Championship contest. IARU member-societies and IARU volunteers are encouraged to join the contest to promote awareness of the IARU.

The Worked All Continents award is the oldest operating award in amateur radio. The basic award is earned by confirming contacts with the six continental areas of the world.

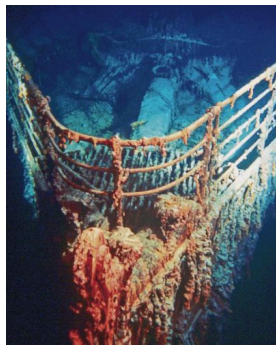
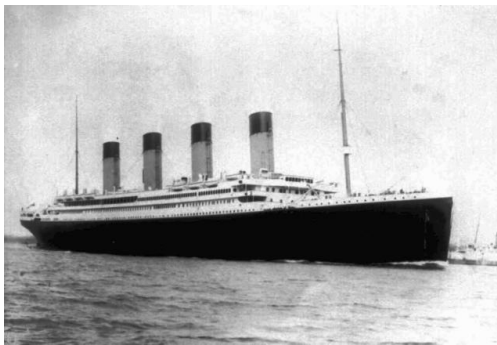
The IARU sponsors World Amateur Radio Day each year in the spring. IARU member-societies are encouraged to take advantage of this special day to promote amateur radio in their country.

The IARU from time to time also becomes involved in other special projects related to amateur radio.

As regulation is done on a world-wide and on a national scale, the advantages achieved by the IARU and the SARL are available to members and non-members alike. ICASA, in the regulations it promulgates, is very reluctant to discriminate between members of the SARL and non-members. So we unfortunately we have a lot of freeloaders, but thank you for your willingness, as an SARL member to bear your part of the burden of protecting our hobby.

Go forth and communicate

How the Titanic Disaster changed maritime laws : by Johan ZS6JHB



When the Titanic sank killing more than 1,500 people in 1912, the impact of the tragedy echoed down the ages.

The discovery of the wreck 30 years ago today only underscored the dramatic changes the sinking of the world's largest ship at the time had on sea travel around the world. Since then, maritime authorities worldwide have implemented a number of changes which would make travelling at sea more safe:

ICE PATROLS

Scout Cruisers from the U.S. Navy and ships from the Revenue Cutter Service (which preceded the Coast Guard) patrolled the seas for two years after the disaster. In 1914, an official International Ice Patrol was formed following a convention months prior known as the International Convention for the Safety of Life at Sea. The Ice Patrol's duty was to monitor iceberg presence and movement at sea. Since 1913, the Ice Patrol is managed as part of the U.S. Coast Guard, according to the U.S. Coast Guard's website.

LIFEBOATS

There were more passengers than the lifeboats could accommodate on the Titanic leaving many of the souls onboard going down with the ship. After the Titanic sank, rules were changed to require every vessel to include enough lifeboat space for every person on board, according to the Merchant Shipping Advisory Committee at the time.

During the sinking of the Titanic, the first lifeboat left without 36 additional people it could have held, but the ship only had enough lifeboats to transport about 50 percent of passengers if completely filled. This requirement was passed, along with others, as part of the International Convention for the Safety of Life at Sea treaty in 1914.

RADIO CONTROL

Due to chaos over the radios during the Titanic's icy demise, the Radio Act of 1912 was passed to regulate the use of certain bandwidths between the U.S. Navy and amateur radio operators. It also required vessels to maintain constant communication with other vessels and radio stations along the coasts.

The act was eventually updated in more than 20 years later as the Radio Act of 1927. The act was passed due to misinformation signaled over the air from unlicensed operators during the time of the accident.

Digital Mobile Radio (DMR) Continued

In the June edition of Watts, an introduction to Digital Mobile Radio (DMR) was presented. In this article, more will be presented on Talk Groups (TG), Zones, Color Codes and DMR Channels. The article: *Introduction to Digital Mobile Radio (DMR)* (John S. Burningham W2XAB. QST Magazine. October 2015 Edition. p. 30 – 35. ARRL.) was consulted for the preparation of this feature.

Talk Groups (TG) allow groups of users to share a time slot without distracting and disrupting other users of the time slot. Only one TG at a time can use a time slot on a repeater. Unless a radio is programmed to listen to a specific TG, that radio will not hear that TG traffic. The DMR-MARC MOTOTRBO network supports a number of Talk Groups as listed below.

Some DMR-MARC MOTOTRBO Network Supported Talk Groups		
Slot	Talk Group	Description
TS1	TG1	World Wide
TS1	TG3	North America
TS1	TG13	World Wide English
TS2	-	Local, State and Regional

Although the DMR standard supports private calls (one-to-one), encryption, and data, private calls are not allowed by most of the amateur networks. Only one TG can be active at a time on a time slot, so many systems will disable other TG's when a local user is active on a TG in the time slot. More information about specific Talk Groups can be found on the DMR-MARC, DMRX, and regional group websites:

DMR Information Sources	
DMR-MARC	www.dmr-marc.net
Digital Communications Interconnect Group (DCI)	www.trbo.org
DMRX	www.dmr.net
Digital Mobile Radio Association	www.dmrassociation.org
Amateur Radio Guide to Digital Mobile Radio	www.k4usd.org/guide.pdf

Digital Mobile Radio supports Zones, which are groupings of individual channels. Some radio models limit the number of channels per Zone and the number of Zones allowed. Zones can be programmed for local channels (DMR or analog), for neighboring provinces or states, or for business or government channels.

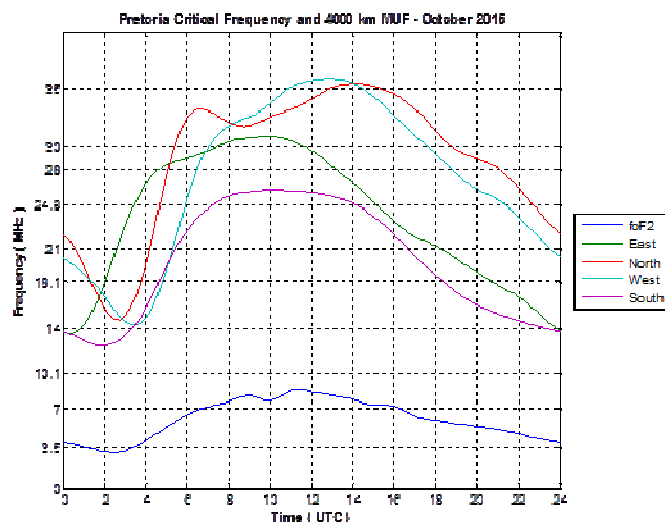
DMR repeaters use Color Codes (CC) similar to the way analog repeaters use CTCSS or DCS. To access a repeater, a radio must be programmed to use a particular repeater's CC. There are 16 different CC's (CC0 – CC15). The use of Color Codes is not optional on DMR systems. If a Color Code is not set correctly, a particular repeater will not be accessed.

A DMR radio channel is a combination of frequency, CC, TS and TG. A single repeater may occupy six or more programmed channels depending on the number of TG's available. A code plug is the radio configuration file. The channels and operating parameters of a radio are configured using the manufacturer's programming software. The file is uploaded to the radio and a copy saved on a PC as backup. A code plug can also be downloaded from a radio to be modified. A code plug can also contain a contact list of Radio ID's, call signs, and names to be displayed.

DMR Talk-Around refers to simplex operations on a repeater output channel. This allows direct communication while still being able to hear the repeater. Amateurs, however, typically use dedicated simplex channels (see below) so as to not interfere with repeaters.

Recommended DMR simplex frequencies and radio settings	
Channel	Frequency (MHz)
VHF1	145.790
VHF2	145.510
UHF1	441.000
UHF2	446.500
UHF3	446.075
UHF4	433.450

In the next Issue of Watts, DMR radios and user bands will be discussed.



Long Term HF Propagation for October 2015

DX Operating

The graph shows the 4000 km maximum useable frequency (MUF) to the East, North, West and South from Pretoria for the first hop using the F2 layer.

Local Operating

The F2 critical frequency (foF2) is the maximum F-layer frequency for short range communications.

See also the Propagation tab at <http://www.parc.org.za/>

Courtesy Vincent ZS6BTY

C/O NELSPOORT & 801 MALMESBURY STR, WINGATE PARK, PRETORIA [S25.49.36 & E28.16.07]

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 - Linear power supply O.V. protection kits
 - 30A DC switching supplies
 - 30A DC Anderson Power Poles
 - Connectors RF and Audio
 - Plug-in triple sequential industrial timers
- Contact Hans at 012-333-2612 or 072-204-3991

My greatest fear is that I'll die and my wife will sell my



radios for what I told her I paid for them.



That's one small step for man, one giant leap for mankind.

Mystery creates wonder and wonder is the basis of man's desire to understand.

Research is creating new knowledge.

In much of society, research means to investigate something you do not know or understand.

I hope you become comfortable with the use of logic without being deceived into concluding that logic will inevitably lead you to the correct conclusion.

Neil Alden Armstrong (1930 – 2012)

You might be a Radio Ham if:

Your wife said: "Let's go see Aunt Anna", and you thought she said, "Let's go see Aunt Anna"
Your wife said: "Is my seam straight?", and you thought she said, "Is my beam straight?"