



# WATTS

**09-2016**  
Year 86 + 9m

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

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<http://www.parc.org.za> @ [zs6pta@zs6pta.org.za](mailto: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 AGM: 27 August 2016 / PARK AJV: 27 Augustus 2016



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### Club Meetings / Klub Vergaderings

#### Club Social Meeting :

No meeting for September.  
October meeting to be announced

#### Committee Meeting :

1<sup>st</sup> meeting of the new Committee was held on the 7<sup>th</sup> of September

## PARC Fleamarket : 5 November 2016 from 10h00

The next Pretoria Amateur Radio Club Fleamarket will take place on the 5<sup>th</sup> of November from 10h00 at the Pretoria Old Motor Club, Keuning Street, Silverton.

Please do contact Almero du Pisani ZS6LDP (083-938-8955) for more information, or to book a table, or if you wish to donate any old equipment to PARC.

## PARC Committee Members / Komiteelede : 2016 - 2017

During the PARC AGM on the 27<sup>th</sup> of August, seven Committee Members (large photos) were elected. The Chairman (Graham Reid ZS6GJR), and Vice Chairman (Johan de Bruyn ZS6JHB) were elected in the first Committee Meeting on the 8<sup>th</sup> of September, and portfolios of both Committee Members and Co-opted Members were allocated. Contact details of all Committee Members are on Page 3.



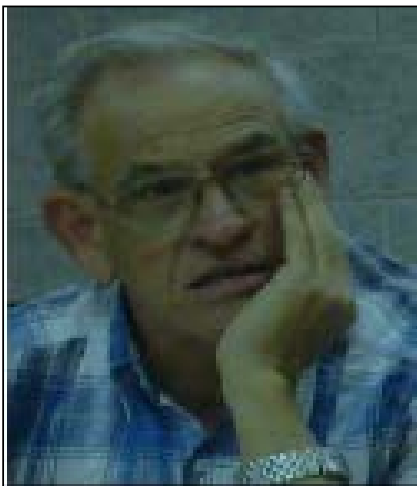
**Graham Reid ZS6GJR**  
Chairman and Web Coordinator



**Johan de Bruyn ZS6JHB**  
Vice Chairman, Rallies & Social



**Etienne Naude ZS6EFN**  
Public Relations, RAE & Bulletin  
Coordinator



**Andre van Tonder ZS6BRC**  
Treasurer



**Whitey Joubert ZS6JJJ**  
Social



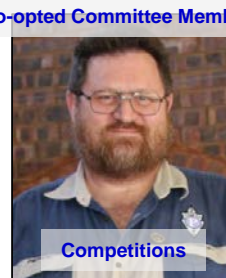
**Pieter Fourie ZS6CN**  
Clubhouse Manager



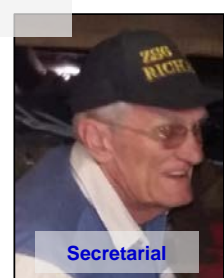
**Louis de Wet ZS6SK**  
Watts Newsletter and RAE



**Jaco Cronje ZR6CMG**



**Pierre Holtzhausen ZS6PJH**



**Richard Peer ZS6UK**



**Almero duPisani ZS6LDP**



**Tjerk Lammers ZS6P**



**Tony Crowder ZS6CRO**

### Co-opted Committee Members

## PARC Committee Members / Komiteelede : 2016 - 2017

<u>Elected Members</u>	<u>Name</u>	<u>Callsign</u>	<u>Email Address</u>	<u>Tel No</u>	<u>Mobile No</u>
<b>Chairman, Web co-ordination</b>	Graham Reid	ZS6GJR	<a href="mailto:greid@wol.co.za">greid@wol.co.za</a>	012-667-2720	083-701-0511
<b>Vice Chairman, Repeater &amp; Rallies</b>	Johan de Bruyn	ZS6JHB	<a href="mailto:zs6jhb@gmail.com">zs6jhb@gmail.com</a>	012-803-9418	079-333-4107
<b>Bulletins, RAE &amp; Liason</b>	Etienne Naude	ZS6EFN	<a href="mailto:etienne@afriqgrid.com">etienne@afriqgrid.com</a>	012-661-6745	082-553-0542
<b>Treasurer</b>	Andre van Tonder	ZS6BRC	<a href="mailto:andreh.vtonder@absamail.co.za">andreh.vtonder@absamail.co.za</a>	012-361-3292	079-869-0753
<b>Clubhouse Manager</b>	Pieter Fourie	ZS6CN	<a href="mailto:pieterzs6cn@gmail.com">pieterzs6cn@gmail.com</a>	012-804-7417	082-573-7048
<b>Social</b>	Whitey Joubert	ZS6JJJ	<a href="mailto:zs6jjj@gmail.com">zs6jjj@gmail.com</a>	012-993-2267	072-120-4516
<b>Watts &amp; RAE</b>	Louis de Wet	ZS6SK	<a href="mailto:louis.zs6sk@gmail.com">louis.zs6sk@gmail.com</a>	012-349-1044	072-140-9893
<u>Co-Opted Members</u>	<u>Name</u>	<u>Callsign</u>	<u>Email Address</u>	<u>Tel No</u>	<u>Mobile No</u>
<b>Fleamarkets</b>	Alméro Dupisani	ZS6LDP	<a href="mailto:almero.dupisani@up.ac.za">almero.dupisani@up.ac.za</a>	012-420-3779	083-938-8955
<b>Secretarial</b>	Richard Peer	ZS6UK	<a href="mailto:zs6uk@peer.co.za">zs6uk@peer.co.za</a>	012-333-0612	082-651-6556
<b>Auditor</b>	Tony Crowder	ZS6CRO	<a href="mailto:tcrowder@telkomsa.net">tcrowder@telkomsa.net</a>	011-672-3311	
<b>Historian, Archives, Awards</b>	Tjerk Lammers	ZS6P	<a href="mailto:zs6p@iafrica.com">zs6p@iafrica.com</a>	012-809-0006	083-976-4387
<b>Contests</b>	Jaco Cronje	ZR6CMG	<a href="mailto:jacocronje@yahoo.com">jacocronje@yahoo.com</a>		081-474-2220
<b>Contests</b>	Pierre Holtzhausen	ZS6PJH	<a href="mailto:zs6pjh@telkomsa.net">zs6pjh@telkomsa.net</a>	012-655-0726	082-575-5799

### Birthdays – September / Verjaarsdae – September

21 Johan de Bruyn ZS6JHB  
26 Graham Reid ZS6GJR

27 Ryan Gibson ZS6GGR  
28 Irene Myburgh ZS6IEA

#### Spouse's Birthdays – September

16 Annelize, sw of de Jager Burger ZS6ZO  
28 Irene ZS6IEA, sw of Pieter Myburgh ZS6PAM

#### Anniversaries / Herdenkings – September

28 Jan en Erika Pienaar ZS6OB

### Lief en Leed / Joys and Sorrows

Ryan Gibson ZS6GGR is recovering from hospital treatment. We wish him a speedy recovery.  
Kenny Martin ZS6KMM is receiving chemotherapy treatment. We wish you all the best with the treatment.

#### September Birthstone: Sapphire

Sapphire is believed to protect the wearer from envy and harm, and attracts blessings from Heaven. It indicates the purity of the soul, and signifies truth, faithfulness and sincerity.



#### Contests and Diary of Events – September 2016 / Kompetisies en Dagboek van Gebeure – September 2016 (UTC Times)

03	Russian RTTY WW Contest : 00h00 – 23h59
03 – 04	All Asian DX Contest, Phone : 00h00 – 24h00
03 – 04	RSGB Field Day : 13h00 – 13h00
03 – 04	IARU Region 1 Field Day, SSB : 13h00 – 12h59
04	DARC 10-Meter Digital Contest : 11h00 – 17h00
10 – 11	WAE DX Contest, SSB : 00h00 – 23h59
<b>10 – 11</b>	<b>SARL Field Day Contest : 10h00 – 10h00</b>
<b>11</b>	<b>SARL Youth Net</b>
<b>15</b>	<b>Closing date for the October RAE Registration</b>
<b>17 – 18</b>	<b>SARL VHF/UHF Contest</b>
17 – 18	Scandinavian Activity Contest, CW : 12h00 – 12h00
17 – 18	All Africa International DX Contest : 12h00 – 12h00
24 - 25	CQ Worldwide DX Contest, RTTY : 00h00 – 24h00

### PARC SUBS / LEDEGELD FROM / VAN 30-06-2016

Bank	First National Bank	Ordinary Members / Gewone Lede : R150 Spouses / Pensioners : R50	<b>Your call sign must appear as statement text!</b>
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**

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

## PARC Annual General Meeting 2016 : PARK Jaarvergadering 2016

The 86<sup>th</sup> Annual General Meeting of the Pretoria Amateur Radio Club was held on Saturday, the 27<sup>th</sup> of August at the Pretoria Motor Club, Silverton. The 2016 Chairman, Johan de Bruyn ZS6JHB, welcomed everyone present, and introduced Fritz Sutherland ZS6SF, past President of SARL, to conduct the opening of the Meeting. Fritz indicated that PARC has gone from strength to strength the past 86 years, and has overcome numerous crises and challenges successfully. Pretoria Amateur Radio Club is an active Club offering a variety of activities and services to Club Members and the non-Amateur community such as Bulletins, Flea-markets, Competitions, Swop Shop, Rallies, Hamnet and much more. Fritz encourages Club Members to actively participate in any one or more of these activities.



Welcome and Opening by Johan de Bruyn ZS6JHB and Fritz Sutherland ZS6SF respectively



The Guest Speaker at the PARC AGM was Hans van de Groenendaal ZS6AKV, who elaborated on radio regulations, as well as the negotiations and Memorandum of Understanding (MOU) being conducted and finalized soon between SARL and ICASA. Thank you very much indeed Hans for this most informative and insightful presentation.

After the minutes of the previous AGM and Statements for the 2015-16 Financial have been discussed and approved by Members of the Meeting, the then current Chairman of PARC, Johan de Bruyn, presented his Annual Report, as presented below.

Baie welkom aan almal hier teenwoordig en dankie dat julle tyd ingeruim het om ons 86<sup>ste</sup> AJV by te woon.

To one and all ,a hearty welcome to this our 86<sup>th</sup> AGM. Thank you for taking time to be here.

A special welcome to our guest speaker for today Hans van den Groenendaal ZS6AKV, and we look forward to your presentation

To my fellow committee members, thank you for your support , guidance ,commitment and dedication the past year.

**Silent keys:** It was with regret that we had to say farewell to Molly Peer ZR6MOL. The sw of Hans Kappetijn ZS6KR, Bertha, passed away after a long sick bed. PARC shared their condolences with both families.

**Club membership:** We currently have 76 paid – up members and 7 honorary members, which bring the total to 83.As you all know we are one of the biggest clubs in the country. To those members who so regularly renew their subscriptions and who is actively participate in club activities like attending the meetings, participation during contests ,rallies, reporting in on weekly bulletins, contributions to Watts, keeping repeaters and Echo link working, and arranging and assisting with flea-markets, thank you for your support.

**Club meetings:** The attendance of monthly meetings is slowly increasing , please let us know what you would like from the monthly meetings.

#### **Club activities:**

**Watts:** To Louis ZS6SK, the Watts editor; Thank you for putting the Watts together every month. You have set yourself a very high standard and to maintain that standard and momentum month after month requires lots of dedication and commitment. Thank you for a job well done and also a big thank you to those members who contributing articles for publishing.

**Repeater:** Thanks to Craig ZS6RH and Andre ZS6CGA who assisted Craig from time to time, for keeping the repeater network operational and they had to deal with a number of issues to keep the repeater going. The antenna got hit by lightning and navigation lights is also causing problems which will be attended to in the coming week. As you all know by now the club purchased a new Kenwood repeater which was recently put into operation but due to the navigation light problem it is not operating as it should. Thank you also to Johan Lehman, ZS6JPL, for keeping our Echo link and IRLP working.

**Rallies:** Providing communications on Motor Rallies is one of the main activities of the club. To all of you who regularly assist me on the Rallies, thank you very much for all the hours that you put into Rallies. I assure you that you guys are doing a great job. Quite recently we were complimented by senior officials of MSA on how well we are performing and if it was at all possible they would like to make use of our services in the Western and Eastern Cape as the operators they use on events there is not doing what they are supposed to do. Well done and thank you once again.

**Treasurer:** Andre, Thank you for all your efforts in keeping our finances in order. We know it is taking up a lot of your time and I assure you it is greatly appreciated.

**Flea-markets:** To Almero ZS6LDP for organizing these events, thank you very much. The Flea-markets are always well attended throughout the year by our regular sellers and bargain hunters and is the perfect venue to have a chat with other hams from other clubs. Thank you to Pieter ZS6CN and his sw Annatjie for assisting with the preparation of the boerewors rolls and coffee; Louis ZS6SK and Pierre ZS6PJH assisting with the braai and of course to all our regular customers who enjoy our boerie rolls and coffee.

**Bulletins:** The SARL and club bulletins on Sundays is listened to from all over the country Thanks to Jean ZS6ARA for broadcasting the SARL bulletin, our team of presenters and regular contributors, and Hans ZS6KR for relaying the bulletins on 40 meters. Thank you all for a job very well done.

**Contests:** Participation in contesting is on an upward trend mainly to the efforts of Jaco ZR6CMG, Pierre ZS6PJH and Theo ZS6TVB.They are well supported by Mark ZS6USA, Pieter ZS6PA and Raymond ZS6ALG. All in all our boys is doing well .To our youngest member Christopher Coetzee ZU6CC; Christopher is very committed to the hobby and enjoy every moment being a Ham especially when participating in contests. Well done Christopher, you are star in the making. Thank you all very much for your contribution during the past year's contests thus far and if you want to join in the fun, get in touch with Jaco or Pierre.

Nadat die formaliteite van die vergadering afgehandel is, was dit tyd om diegene wat hulself onderskei het, te beloon vir hul harde werk en entoesiasme. Die prysuitdeling is behartig deur Graham Reid ZS6GJR en gade Joey en Irene Myburgh. Fotografie van die vergadering en die prysuitdeling is behartig deur Theo Bresler ZS6TVB. Aan u almal, hiermee die hartlike dank vanaf PARK vir jul harde werk en bydraes gedurende hierdie geleentheid. Ons opregte waardering.



Jaco Cronje ontvang die volgende toekennings: Jack Bennet Vyf-meter trofee vir VHF/UHF/6m aktiwiteit; die Eric Brook Memorial Constructors trofee vir HF konstruksie; asook die Roy Alexander VHF konstruksie trofee. Baie geluk aan Jaco vir hierdie besondere prestasies, en veral vir sy entoesiasme waarmee hy die kompetisies en VHF/UHF groep aanpak.



Pierre ZS6PJH en Jaco ZR6CMG ontvang die Hansie Meyer deelname trofee vir kompetisies, terwyl Theo ZS6TVB, Christopher Coetzee ZU6CC en Mark Lukinovich ZS6USA sertifikate vir kompetisie deelname ontvang



Etienne ZS6EFN en Louis ZS6SK vir RAE Klasse en Lexicon woordeboek projek



Fritz ZS6SF, Hans ZS6KR en Johan ZS6JHB vir bydraes tot the Lexicon woordeboek projek



Die jolige tyden ondersteunings groep: Pieter ZS6CN en gade Annatjie, Irene ZS6IEA, Willie ZR6WGR, Johan ZS6JHB en Louis ZS6SK. Graham ZS6GJR ontvang die Roy Alexander trofee vir die beste ondersteuning tydens tydenne



Almero ZS6LDP en Craig ZS6RH ontvang toekennings vir hul harde werk met vlooiemarke en herhalers onderskeidelik



Die dames Annatjie Fourie, Irene Myburgh ZS6IEA en Joey Reid ontvang toekennings vir hul gewaardeerde bydraes by tydenne en voorbereidings vir die Algemene Jaarvergadering



Hans ZS6KR en Louis ZS6SK deel die Piet Roos trofee vir bydrae tot Watts, terwyl Hans ook 'n toekening ontvang vir sy weeklike bydraes tot die uistai en lees van die SARL en PARK Bulletins



Tjerk en Willie bespreek breedvoerig die verskille tussen 'n Cabernet en 'n Merlot



Na die verrigtinge het die gaste gesellig om die vure gekuier en weggeleë aan 'n heerlike ete



Hartlike dank aan almal wat die Pretoria Amateur Radio Klub se 86<sup>ste</sup> Algemene Jaarvergadering bygewoon het. Hier begin dinge einde se kant toe staan en gedagtes aan braaivleis maal in almal se gedagtes rond...



## PARK Vlooiemark : 27 Augustus 2016

Die PARK winter vlooiemark het die Algemene Jaarvergadering voorafgegaan met 'n lekker verskeidenheid HF radios wat op een tafel uitgestal was, asook 'n hele aantal bokse vol verrassings wat almal lekker aan die krap gelaat het, op soek na iets interessants. Soos altyd het die stalletjie van Hans ZS6KR gesorg vir daai komponent wat jy al jare voor soek, terwyl die kos- en koffiespan weereens gesorg het vir heerlike verversings. Besondere dank aan Almero ZS6LDP vir die reelings vir die vlooiemark. Die volgende vlooiemark vind plaas op die 8ste November vanaf 10h00 (sien bladsy 1 vir meer details).



Radios, toerusting en komponente was natuurlik in genoegsame voorraad



Die kosspan het gereed gestaan met verversings: Johan ZS6JHB en Willie ZR6WGR het gesorg dat daar genoeg worsbroodjies beskikbaar is, terwyl Annatjie en Pieter Fourie ZS6CN en Louis ZS6SK gesorg het vir koffie en die regte kleingeld



Hans ZS6KR se stalletjie het altyd groot aftrek vir enigiemand wat komponente benodig, terwyl daar antennes beskikbaar was te kies en te keur

## Ground Loops : Alan, KØBG

*Article submitted by Johan ZS6JHB*

If there were but one bane in amateur radio, it would be the ground loop. Although they may appear in any type of installation, they're more often found in mobile ones. In any case, too many amateurs don't know what a ground loop is, or what causes them to occur. Even rarer, is the ability to recognize that a specific problem is caused by one.

The term Ground Loop in itself isn't very descriptive, but here's a stab at it with credit going to Mr. Webster: An unwanted electric current path in a circuit resulting in stray signals or interference, occurring, e.g., when two earthed points in the same circuit have different potentials. Please pay particular attention the last few words: ...when two earthed points in the same circuit have different potentials. Another way to look at this is, one is a better ground than the other. Or, one has a lower resistance path back to the power source; the battery in this case.

Mobile ground loops are most often seen when the requisite DC wiring is not properly connected. With respect to mobile radio installations, most vehicle manufacturers recommend that both leads (positive and negative) go directly to the battery. In this case, both leads need to be fused. At a minimum, the negative power cable lead should be tied to the same point as the main battery's negative connection to the chassis of the vehicle in question. Here, the negative lead of the power cable doesn't need to be fused.

If instead, you decide to connect the negative lead to the nearest chassis ground point (seat support, trunk brace, etc.), there will be a difference in resistance between any of these points and the battery's chassis ground. A differential of three to five ohms is not uncommon. Whether this causes a ground loop to occur is moot, the resulting voltage drop under load is not.

Digressing for a moment... Vehicle batteries have two standard negative leads. The main one (bigger of the two) goes directly to the starter motor housing, or very near it. The other lead (always smaller) is connected to the chassis of the vehicle. The former is to lessen the losses to the starter motor, the latter to provide a return for the various on-board electrical loads (headlights, accessories, etc.). Manufacturers really don't try to minimize the potential between them; their only concern is powering the various inherent and requisite devices.

Further, I don't want to get caught up in the argument about whether a mobile transceiver's ground lead should or should not be directly connected to the battery terminals, as there are pros and cons to each method. Suffice to say, the negative lead should be collocated close to the battery.

If I had to choose just one example of a ground loop, it would be the presents of alternator whine, especially so when it only occurs, or predominantly occurs, in the transmitted signal. In some cases you can mask the whine by using a brute force filter in the positive lead. Besides the additional  $I^2R$  losses incurred, it's a band-aid rather than a cure. While a bad or leaky diode may cause alternator whine to occur, the truth is, it's a very rare occurrence (nowadays).

In the whine cases I've been involved with, there are usually three common themes, alone or in combination. First: power is taken from the vehicle's wiring rather than directly from the battery. Second: the negative lead was connected to the nearest chassis ground point (seat frame for example) rather than directly to a battery ground, and Third: (and most common), the use of a mag mount antenna.

It should be apparent that direct battery connections should be made, at least the positive connection, as using existing vehicle wiring is fraught with problems. This includes the use of Accessory Power sockets as neither the wire size nor the fusing are adequate for any HF radio. Adding insult, there are devices marketed which supposedly circumvent the inherent problems associated with using them; an incredulous advertising ploy with no merit!

If it makes you warm and fuzzy connecting the negative lead to the battery chassis connection, rather than to the negative battery connector itself, great! But don't use seat rails and other metal body parts unless you want to invite problems.

If you're using a mag mount antenna, and you have whine on your transmitted signal, try this. Replace the antenna with a dummy load. If you can still hear the whine on a near-by receiver, the problem is in the DC wiring, or the alternator (albeit doubtful). If you can no longer hear the whine, then ditch the mag mount and drill the necessary hole.

I have always been in favor of common grounds, and common power supply points. Doing so, lessens the possibilities for ground loops. One way to do this is to use a Rig-Runner or similar common connection device. If you do use one, you won't need the fuses which came preinstalled on your transceiver's power cable. In fact, you're better off shortening the cable (less I<sup>2</sup>R losses) rather than bundling it up with a tyrap. Just remember, the Rig-Runner's power cable needs to be fused very close to the battery connection points.

Some amateurs tend to go crazy installing DC grounds on every single piece of installed gear as if God commanded it so. One common practice is to ground the transceiver's chassis to the nearest hard point. If this cured a problem (ground loop or RFI related), then something else in your installation was amiss, and it's usually a poor coax connection or ground plane issue.

It's assumed that most vehicle manufacturers scatter ground connections hither and yon throughout the vehicle. That is not the case. While there are multiple ground connections made, the same ground points are used for any given sub-assembly. For example, there are no separate grounding points for each headlight. Indeed, they're common. Another way to look at this is, if power for more than one device comes from the same supply point (relay, switch, battery, etc.), then the grounds for those devices should also be common. In case you missed the point, this is to lessen any potential for a ground loop (pun intended).

If you cause a potential to appear between two factory ground points (e.g., ground lead to a seat frame, positive lead to the battery), the resulting ground loop may manifest itself as an RFI problem. This is especially important when high currents are involved (amplifier use for example). Split beads, brute force filters, and ground straps ad nauseam, won't cure the apparent RFI simply because RFI is not the cause!

The most important point that can be made in preventing ground loops is to use correct wiring practices. Not only are direct battery connections necessary, adequate sized conductors and fuses are also required. The truth is, most factory supplied mobile transceiver power cables are barely adequate for the load. Extending them just adds insult to injury, unless you're using a Rig-Runner or other device equipped with over-sized cabling.

It seems, no matter how many times a myth is dispelled, they keep raising their ugly head. One common myth is that power cable fuses protect the radio from damage. They don't. Myth number two is, that a fuse will open instantly as soon as the current exceeds the fuse's rating. They won't. Myth number three is, it's always okay to use fuses designed for 120 volts AC, in a nominal 12 volt DC system. It isn't.

The first truth is, fuses are there to protect the cabling. For example, the Icom IC-7000 has a 5 amp (system) fuse mounted inside the radio, and 30 amp fuses in the cabling (plus and minus). If you short out a supply connection (pin 3 of the tuner port for example), a circuit board trace and/or switching transistor will fail long before the 5 amp fuse opens. The 30 amp fuses will never open in this particular case. It can be argued that the power cable fuses do protect the radio if something fails catastrophically, a final perhaps, but chances are some other component in the circuitry will be damaged beyond repair before the power cable fuse(s) opens.

The second truth is, all fuses exhibit hysteresis. This is the time lag between any given ampere overload and when the fuse opens. For example, a nominal 20 amp fuse will handle a 30 amp load for about 90 seconds. It will hold a 100 amp load for about 1 second. This is one reason slow blow fuses are not recommended for amateur devices.

So, if the radio draws just 20 amps peak, why not use a 20 amp fuse instead? Here's why. Subjecting any given fuse to instantaneous loads close to their current rating will eventually cause them to fail due to element fatigue (sometimes referred to as erosion). Depending on the load characteristics (steady or varying), fuses are sized from 25% to 50% larger than their impressed loads.

Digressing again... In some cases, peak loads will exceed the rating of the fuse, like those encountered when starting an electric motor. Depending on the application, the designer may use a slow-blow fuse with an appropriately longer hysteresis rating. However, in an amateur application, it is only necessary to keep the average current draw below about 60% of the rating for any given fuse to avoid element fatigue.

However, the correct wire size should be based on the peak current, not the average, if you want to keep I<sup>2</sup>R losses low. In any case, should a dead short occur, the wire size needs to be large enough to carry the current imposed by the fuse's hysteresis time delay without exceeding the wire's temperature rating. After all, you don't want to turn the wire itself into a fuse!

As stated, part of the sizing calculation is the temperature rating the protected wire is designed for, as well as its ambient operating conditions. In other words, the fuse must open before the wire reaches its maximum

rating for any given overload. Incidentally, under-hood wiring should have a temperature rating of at least 90°C, and preferably 105°C.

The third truth is, all fuses elements have resistance, and when the current flows through them, they heat up. The elements are designed to melt at a specific temperature thus protecting the wire, and to a lesser the equipment connected to the wire. For any given ampere rating, fuses designed for high voltage (nominal 250 volts maximum) service typically have lower resistance than those designed for low voltage (nominally 32 volts maximum). Thus, their low voltage hysteresis time is elongated, which means they take longer to open under a given overload.

Further, fuses designed for AC service typically have longer arc paths and may be filled with arc suppressing material. While these facts alone don't preclude their use in low voltage applications, here too the hysteresis time delay may be extended. The bottom line is, you should select fuses specifically designed for the voltage range in use.

Whatever you do, don't buy cheap fuses. Both Littelfuse and Bussmann manufacture high-quality fuses with consistent hysteresis ratings. Some off-shore types act more like a shorting bar than a fuse. That is to say, forewarned, is forearmed!

Do mobile radio correctly, and you can have a lot of fun. Do it wrong, and it can become your main bane!

Alan, KØBG  
www.k0bg.com

## Die Heidelberg Tydren : 19-20 Augustus 2016

Die Heidelberg tydren, wat vir die eerste keer in 20 jaar in hierdie pragtige dorp plaasgevind het, het bestaan uit 14 spesiale trajekte wat 'n total van 163 kilometer beslaan het. Aangesien dit 'n nasionale byeenkoms was, het van die groot name in tydren wedrenne soos Giniel de Villiers en Leeroy Poulter weereens deelgeneem. Een van die trajekte is vernoem ter nagedagtenis aan Gugu Zulu wat tragies op berg Kilimanjaro gesterf het.



Aktiwiteite by die Gugu Zulu Ridge 1 en 2 trajekte tydens die middag- en nag trajekte

Weens die relatief kompakte verspreiding van trajekte in- en rondom Heidelberg, was kommunikasie werklik 'n plesier gewees, en is met groot behendigheid behartig deur Johann de Beer ZR6YV. Op die mobiele front is ondersteuning behartig deur Tony Crowder ZS6CRO (Mobile 1), John Ogden ZR6JAO (Mobile 2), Menno Havelaar ZS6AGC (Kar 0), Willem Weideman ZS6JNB (Kar 00) en Chris Barnard ZS6CMB (Marshal 1).

Radio Amateurs van Pretoria Amateur Radio Klub het natuurlik met groot ywer die trajekte beman en het bestaan uit Graham & Joey Reid ZS6GJR (Mineshaft, Spaarwater), Johan & Doreen de Bruyn ZS6JHB (Mineshaft, Spaarwater), Pieter Myburgh ZS6PAM & Annalie (Gugu Zulu Ridge, Mineshaft), Pieter & Annatjie Fourie ZS6CN (Breek die Uys, Die Heidelberg, Rietvallei), Willie Greyling ZR6WGR (Breek die Uys, Die Heidelberg, Rietvallei), Irene Myburgh ZS6IEA & Willie van Niekerk (Breek die Uys) en Louis de Wet ZS6SK bygestaan deur sy skoonpa Cerrie Bezuidenhout (Gugu Zulu Ridge, Melkstal, The Mineshaft).



Nog laataand aktiwiteite by die Gugu Zulu trajek. Louis ZS6SK herlei resultate per radio



Die Melkstal Trajek tydens Saterdag 20 Augustus het gesorg vir baie stof en aksie



By die dienspark tussen trajekte loop aktiwiteite in hoogste rat om motors te herstel

Trajek 14 (Mineshaft 2), die laaste trajek van die tydren, met 'n lengte van sleg 3.15km, het gesorg vir groot opwinding en n vinnigste tyd van 2<sub>min</sub>54.1<sub>sec</sub> deur Leeroy Poulter in Kar No 23. Met die wegspring en eindpunte naby aanmekaar, asook skerp draaie en goeie uitkykpunte, het dit gesorg vir goeie aksieskote soos onder gesien.



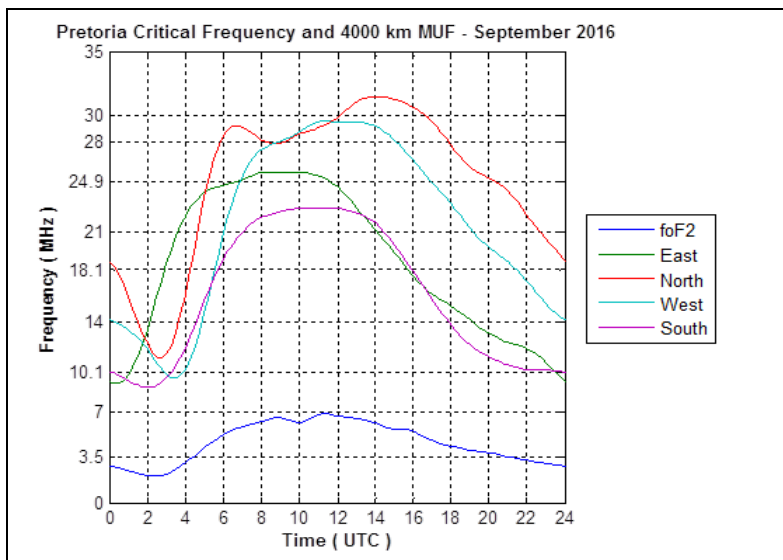
Tydren aksie by die Mineshaft trajek tydens saterdag. Fotos deur Willem en Pamela Sander



Natuurlik na elke tydren is dit tyd om te ontspan, rustig te kuier en nabetraging te hou van die dag se aksie en komiese gebeure wat dalk gebeur het. Annatjie, gade van Pieter Fourie ZS6CN en Annalie van Niekerk besig om die dag se gebeure met Johan en Pieter te bespreek, terwyl in die agtergrond... lyk dit soos 'n "light sabre" uit Star Wars? Met nadere ondersoek blyk dit nie Darth Vader te wees nie, maar Pieter met sy LED "ligstok" besig om te kyk of die vleis al reg is. Irene en Pieter Myburgh in 'n ligte, maar dorstige luim na 'n lang stowwerige dag.



Pieter en Annatjie, Johan, Irene en kleinseun, Annalie en Pieter in rustige luim by hul oornagplek in Heidelberg. Heerlike vleis en braaigeragte staan gereed vir die braaier.



**Long Term HF Propagation for September 2016**

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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