



WATTS

02-2016
Year 86 + 2m

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 participating in the Summer QRP contest from Fort Schanskop: Fanie de Kock ZS6FDK, Gideon van der Merwe ZS6GJV, Jaco Cronje ZR6CMG, Christopher Coetzee ZU6CC, Mark Lukinovich ZS6USA and Pierre Holtzhausen ZS6PJH. Photo by Louis ZS6SK

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Club Meetings / Klub Vergaderings

Club Social Meeting :

**Saturday 6th of February from
14h00 AM at the SAM Clubhouse**

Committee Meeting :

**Thursday 18th of February 2015
per Skype from 19h00**

PARC Committee Members / Komiteelede : 2015 - 2016

Elected Members

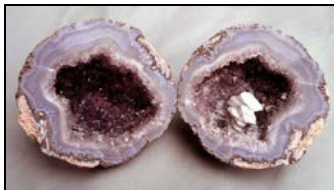
Chairman, Social & Rallies	Johan de Bruyn	ZS6JHB	zs6jhb@gmail.com	012-803-7385	079-333-4107
Vice Chairman, Contests	Pierre Holtzhausen	ZS6PJH	zs6pjh@telkomsa.net	012-655-0726	082-575-5799
Treasurer	Andre van Tonder	ZS6BRC	andre.vtonder@absamail.co.za	012-361-3292	082-467-0287
Secretary, Bulletin Coordinator	Jean de Villiers	ZS6ARA	zs6ara@webmail.co.za		083-627-2506
Public Relations, RAE, Bulletins	Etienne Naude	ZS6EFN	etiennenaude@afriqrid.com		082-553-0542
Web co-ordination	Graham Reid	ZR6GJR	greid@wol.co.za		083-701-0511
Repeaters	Craig Symington	ZS6RH	zs6rh@hotmail.co.za		081-334-6817
Competitions	Jaco Cronje	ZR6CMG	jacocronje@yahoo.com		081-474-2220
Clubhouse & Contests	Whitey Joubert	ZS6JJJ	zs6jjj@gmail.com		072-120-4516
Technical, Web & Repeaters	Gawie Marais	ZS6GJM	zs6gjm@gmail.com		083-663-2222
Repeaters	Andre Coetzee	ZS6GCA	Johncoetzee@absamail.co.za		082-772-5811
WATTS, RAE & Clubhouse	Louis de Wet	ZS6SK	louis.zs6sk@gmail.com	012-349-1044	072-140-9893
Co-Opted Members					
Fleamarket	Alméro Dupisani	ZS6LDP	almero.dupisani@up.ac.za		083-938-8955
Auditor	Tony Crowder	ZS6CRO	tcrowder@telkomsa.net	011-672-3311	
Historian, Archives, Awards	Tjerk Lammers	ZS6P	zs6p@iafrica.com	012-809-0006	083-976-4387

Birthdays – February / Verjaarsdae – Februarie

02 John Minter ZS6LED	07 Stefan Terblanche ZS6VF
02 Stefan, son of Louis ZS6SK	09 Kenny Martin ZS6KMM
03 Willie Greyling ZR6WGR	18 Jaco Cronje ZR6CMG
03 Nico van Tonder (Hon Mem) ZS6AQ	20 Ivo Chladek ZS6AXT
04 Louis de Wet ZS6SK	22 Cristopher, son of Joey and Graham ZS6GJR
07 Andre, son of Andre ZS6GCA	23 Peter Smith ZS6PJ

Spouse's Birthdays – February / Februarie

10 Paddy, spouse of Kenny Martin ZS6KMM
22 Erika, sw of Pine Pienaar ZS6OB



Amethyst:
The birthday
stone for
February

Anniversaries / Herdenkings – February / Februarie

03 Vincent ZS6BTY en Heather Harrison
07 Ryan ZS6GGR en Juanita Gibson
14 Jaco ZR6CMG en Louisa Cronje
16 Pierre ZR6ADZ en Dienkie Britz
18 Willie ZR6WGR en Sarina Greyling
21 Menno ZS6AGC en Sandy
27 Kenny ZS6KMM en Paddy Martin
28 Jurgen ZR6YV en Martie de Beer

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

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

06 - 07	Midwinter 630 Meter Activity Weekend : 00h00 – 23h59 : See ARRL Website
06 - 07	10 - 10 International Winter Contest, SSB : 00h01 – 23h59
06 - 07	Mexico RTTY International Contest : 18h00 – 17h59
13	World Radio Day
13 - 14	CQ WW RTTY WPX Contest : 00h00 – 23h59
13 - 14	SARL Field Day Contest : 10h00 - 10h00
13 - 14	Dutch PACC Contest : 12h00 12h00
15	Closing date for the PEARS VHF/UHF logs
20 - 21	ARRL International DX Contest, CW : 00h00 – 24h00
20	SARL Youth Day Sprint : 08h00 – 10h00
26 - 28	CQ 160 Meter Contest, SSB : 22h00 – 22h00
27 - 28	REF Contest, SSB : 06h00 – 18h00
27 - 28	UBA DX Contest : 13h00 – 13h00
28	SARL Digital Contest : 13h00 – 16h00

PARC SUBS / LEDEGELD FROM / VAN 31-10-2015

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			

The Usual Suspects: Camping Again!



The Gilbanken Christmas/New Year 2016 Light Weight Expedition By Theo Bresler ZS6TVB and Mark Lukinovich ZS6USA

On 16 December 2015, Reconciliation Day, the "Usual Suspects", Pierre (ZS6PJH), Mark (ZS6USA), Theo (ZS6TVB), Avida (ZS6AVB), and Pieter (ZS6PA) were all assembling at their favorite camp site, the Gilbanken Boy Scout Camp, for an 18 day Expedition Simulation. At the beginning of 2015, there was much talk in the Pretoria Amateur Radio Club (PARC) about doing an Expedition to Robben Island. By mid year, many of us realized that one, the logistics of such an Expedition were significant, and two, the Club was somewhat lacking in the up to date experience needed to do an Expedition. Much of the PARC membership is over 50 years old and most of their recent "Expedition" like experience is with rallies where members spend the weekend in a hotel with room service and support the rally during mostly daylight hours. The Usual Suspects decided some Bush Camping Expedition practice was needed. It wasn't long before some of the Usual Suspects found out that 18 days even in "Bush Camping Light Conditions" was a totally different experience from a weekend Field Day in a caravan park; more on that later.

Theo and Mark came to Gilbanken with a plan, though Theo's was much more ambitious. Theo showed up with a brand new JK Navassa-5, an absolutely superb field antenna, with the mission of working all the States of the USA (WAS) from South Africa. Mark's primary focus was on getting FAROS working in the field to monitor the 18 Northern California DX Foundation (NCDXF) Beacons throughout the world and doing some more work with ALE - Automatic Link Establishment.

As soon as the tents were up and the Braai pit was going, Theo started assembling the Navassa-5. First thing he realized was that he needed some "American" tools. Luckily, ZS6USA is an American with a large American tool box.

All hands required!



An Amateur with a plan...

This trip Pierre, Avida and Pieter had plans to actually relax and enjoy Gilbanken. Pierre did do some work on building some ZS6BKW antennas for Field Day. The ZS6BKW antenna is something like an updated G5RV and also uses a run of 450 ohm window line for matching on multiple frequencies. Avida spend a lot of time with the kids and got in a bit of bicycle riding in. Pieter mostly kept Theo and Mark out of trouble; as best he could, but they did have power tools and hammers.

The day after making camp, Mark had his station and his new computer setup; FAROS was up and operating. In order to get FAROS to work properly in the field, you need accurate computer time down to millisecond accuracy. In the field, without Internet Time (NTP), this requires an accurate time source; something a little bit more accurate than a wrist watch. Mark's computer was sync'd to Atom Clock Time by the GPS satellite system and the use of a Pulse per Second (PPS) output Garmin GPS. With the GPS and the use of ToyNTP, it is possible to synchronize a computer's clock to sub 1 millisecond accuracy turning it into a Stratum-1 time source. FAROS Beacons are also synchronized by GPS satellites. By using accurate time, the FAROS software can determine if the beacon signal was heard via short path or long path. With FAROS now operational in the field, Theo had a spotting station to help determine near real-time band openings for his WAS and DXCC quest. Mark turned some of his time to ALE and made some

contacts with ZS1OK during the 18 days in the field via ALE Messaging.

By Sunday morning (20 Dec), Theo had his JK Antenna assembled with help from Pieter and we all pitched in to get it into the air. By Sunday evening, Theo's Super Duper DX Field Station was complete. With the JK Navassa-5 up on a rotating mast mounted on a Pieter's trailer, his ICOM IC-7410 radio, a SG-500 HF Amplifier, and a cooler full of Red Bull, Theo was ready to take on America. Over the next two weeks, Theo would make 1,283 QSOs, contact 47 of the 50 United States, with 43 verified via Log Book of the World (LOTW), and add 32 countries to his DXCC list. And people wonder why Mark calls Theo a QSO machine!

Not to be out done, Mark spent much of his time weaving a German SpyderBeam together. It made its debut on Sunday 27 December and of course he had to compare it to his other antennas with some QSOs to the Foreign Service Net back in the USA. All in all, Mark considered the SpyderBeam to be a good project, but conceded that Theo made a better Field Day and Expedition choice with his JK Navassa-5. One of the things we learned in our Expedition Light camp out was that while the SpyderBeam was more compact for transport, the SpyderBeam was a bit complicated for quick deployment. You really do need a trailer and mast for a good field deployment of a beam antenna and packing the JK antenna on a trailer was very easy and will lend to very quick deployment in the future.

Large battery banks and solar panels seem to be the primary focus of power for field operations in South Africa. The reality is that it takes a lot of batteries and solar panels to power a big station, especially if a linear is part of the picture. One of the things Mark demonstrated during this trip was that it was possible to operate a large high powered radio station on a small generator with good power management. He ran his station continuously for 72 hours on a small 1200 watt generator including powering his 500 watt HF RF Amplifier. Fuel consumption on his 4 stroke 1200 watt generator was better than on his smaller 2 stroke generator. Total fuel consumption for the 72 hour period was only 26.5 liters or about 7 US Gallons. It became obvious early on in this endeavor that the use of a UPS for periods of generator maintenance or refueling was not going to work well, so a small 12vdc battery backup solution was used. Testing indicated that only 20 ah to 30 ah of battery backup will be needed for future operations on generator power. A 20 ah battery pack weighs in at only about 12 pounds (5.5 kg) with the typical 200 ah battery bank used with solar panels weighing in at 10 times as much, plus the bulk and weight of the solar panels. The 1200 watt generator only weighs 23kg (51 lbs) which is less than one 100 ah battery. A 10 liter fuel can of gasoline is only about 8 kg (18 lbs) and can be picked up locally instead of having to be transported all the way to the field day site. When supporting a big station, it looks like the Generator Solution is more compact and lighter than the Battery/Solar Panel Solution, if your station demands exceed 200 watts which is easily done with a digital station. Considering the small number of Field Days in South Africa, it may even be more cost effective, but batteries and solar panels will still have an advantage for small stations.

South African summer weather is at best unpredictable. During our 18 days we had a bit of wind and rain. On Monday, Dec 21st, we had one of those once a year wind events at Gilbanken. After the storm, ZS6USA was left almost homeless in the Bush. His large, light weight 8 man tent had its poles bent into scrap metal by the high winds. But being a typical 4WD Pickup Truck (Bakkie) driving American from the Southern United States, the next day he went out and bought a 3 meter by 3 meter (10ft x 10ft) heavy canvass dome tent that might even survive hurricane force winds. He bought one meter long pegs to make sure it stayed put the next time high winds came to visit. After moving out of his old 8 man tent he found he just didn't have the room he was used to, so he bought a second 3 meter by 3 meter heavy canvass 5 man dome tent. The two dome tents were placed side by side and ZS6USA called his new home - Hootersville! Think UU inverted. (Crazy Americans!)

For field use, we also found that the difference of a beam on 20 meters and the use of a really good wire antenna on 20 meters in the field to be about the same, with the right wire antenna having a slight advantage. This is of significant importance for communications within South Africa where bands above 20 meters are rarely used. Field Deployment of antennas is normally to a maximum height of about 9 or maybe 10 meters. This is too low to develop a low Take Off Angle (TOA) for a beam antenna on 20 meters.



Relaxing.

Shade was not plentiful. Our gazebo under a tree provided the coolest spot. The hammock was comfortable but not the best place to catch a nap, especially not with two guys having a conversation right over you. Local QRM!



Hootersville.

As if the SpyderBeam was not enough between all the antennas and stay wires, inspection around Mark's camping area with the possibility of expanding antennas or erecting even more antennas was always a topic open for discussion.



Building.

Building ZS6BKW antennas under the gazebo using sewerage pipe covers as insulators for the antenna apex.

Theo believed the RF from his Navassa-5 made the clouds burn red-hot!



And so... All the fun comes to an end...

Mark's Carolina Windom-80 (CW80) with its vertical radiating element appeared to produce a lower TOA for DX than the JK or the SpyderBeam on 20 meters. This was most noticeable when operating 20 meters long path to the Western USA in the afternoons. Properly oriented, and placed at the proper height above ground, a simple wire antenna can be a very good antenna, as can a whip with a good ground plane under it. While the beam antennas were fun, simple wire antennas probably should be the focus for field operations in South Africa, especially for events of less than 72 hours unless there are significant bonus points for serious DX.

Basically, what we found out is that you really need a solid tent or a caravan for extended field trips and expeditions into the bush. Light Weight Tents are only for well sheltered camping grounds or day events. Pierre, with his small caravan, survived the wind storm with the least damage. His "Tiny" Caravan is a great idea as it takes the least amount of time to set up and break down. Pierre also spent some time permanently mounting his radio equipment into his Tiny Caravan during our stay at Gilbanken.

During the 18 days we spent a lot of time relaxing. The kids wanted a Christmas tree, so we decorated a small tree in the field with Christmas Lights. We had regular Braais and Anton (ZS6BU) stopped by with his son and they spent the night camping with us. Sam (ZS6JZ) stopped by with some of his family. Pierre's teenagers also spent Christmas with the group. Pieter's Wife, Elize, came by with Pieter's parents. Elize was able to join us all the way up to New Years. There were day visits by Tjerk (ZS6P), Johan (ZS6JHB), Johann (ZS6ETA), Vince (ZS6BTY), Lynette (ZR6LHT), Sam (ZS6JZ) and André (ZS6GCA) during this trip. When we broke camp on Saturday, 2 January 2016, we were all sad to be leaving. Even with the wind and the rain, Gilbanken was, and will be, our favorite campsite. It's secluded and RF quiet, but less than an hour's drive from the city. The view over the fields is fantastic and almost therapeutic. The view of the fields sometimes reminded me of the opening few seconds of the Sound of Music with its large lush fields. Listening to Theo making QSO after QSO was like listening to a sports broadcast in the background with the occasional pickup of a new State being like a goal at a Football (Soccer) match.

Gilbanken is just simply our favorite place to camp and work Amateur Radio.

Story line by: Mark Lukinovich (ZS6USA)

Pictures, graphics and document formatting by: Theo Bresler (ZS6TVB)

Edits and corrections by: Pierre Holtzhausen (ZS6PJH) and Avida Bresler (ZS6AVB)

RAE Classes for May 2016 Examination

The next RAE will take place on Thursday, the 19th of May 2016. Registration for the RAE opened on the 2nd of February 2016. Preparation for the RAE will commence in January at the offices of Waterlab (Pty) Ltd at 23B de Havilland Crescent, Persequor Park, Pretoria. Please contact Louis de Wet ZS6SK (louis.zs6sk@gmail.com) for instructions to the venue.

An introduction to Amateur Radio will be presented on Saturday the 23rd of January (9h00 – 11h00), while **lectures will commence on Saturday the 30th of January (9h00 – 12h00)**. Final information will be posted on soon on the PARC website. Etienne Naude, the coordinator of RAE training can be contacted for more information: etienne@afriqrid.com or 082-553-0542.

Chapter	Description	Date	Tutor
1	Chapter 1 - Introduction to Amateur Radio	30-Jan-16	EN
2	Chapter 2 - Basic Electrical Concepts		EN
3	Chapter 3 - Resistance and Ohm's Law		EN
4	Chapter 4 - The Resistor and Potentiometer	06-Feb-16	EN
5	Chapter 5 - Direct Current Circuits		EN
6	Chapter 6 - Power in D.C. Circuits		EN
7	Chapter 7 - Alternating Current	13-Feb-16	LdW
8	Chapter 8 - Capacitance and the Capacitor		LdW
9	Chapter 9 - Inductance and the Inductor		LdW
10	Chapter 10 - Tuned Circuits	20-Feb-16	PJH
11	Chapter 11 - Decibel Notation		PJH
12	Chapter 12 - Filters		PJH
13	Chapter 13 - The Transformer		PJH
14	Chapter 14 - Semiconductors and the Diode	27-Feb-16	LdW
15	Chapter 15 - The Power Supply		LdW
16	Chapter 16 - The Bipolar Junction Transistor		LdW
17	Chapter 17 - The Transistor Amplifier	05-Mar-16	PJH
18	Chapter 18 - The Oscillator		PJH
19	Chapter 19 - Frequency Translation		PJH
20	Chapter 20 - Modulation Methods		PJH
21	Chapter 21 - The Transmitter	12-Mar-16	LdW
22	Chapter 22 - Receiver Fundamentals		LdW
23	Chapter 23 - The Superheterodyne Receiver		LdW
24	Chapter 24 - Transceivers and Transverters	02-Apr-16	LdW
25	Chapter 25 - Antennas		EN
26	Chapter 26 - Propagation		EN
27	Chapter 27 - Electromagnetic Compatibility	09-Apr-16	EN
28	Chapter 28 - Measurements		EN
29	Chapter 29 - Digital Systems		EN
30	Chapter 30 - Operating Procedures + Regulations	16-Apr-16	EN
	Regulations	23-Apr-16	EN
	Revision	30-Apr-16	EN & LdW
	HF Assessment	07-May-16	PJH
	Revision	14-May-16	EN & LdW
	RAE	19-May-16	John Vorster H/S

EN: Etienne Naude ZS6EFN ; PJH: Pierre Holtzhausen ZS6PJH ; LdW: Louis de Wet ZS6SK

Before registering for the RAE on the SARL website, please consult the RAE registration information sheet. The cost of registration is R475-00 if you are older than 25 years, and R375-00 if you are younger than 25 years. If you have more enquiries, please do email rae@sarl.org.za .

RALLY EVENTS 2016 : PRELIMINARY DATES



For more information please contact Johan de Bruyn ZS6JHB

PARC Shirts, Caps and Hats For Sale

PARC shirts, hats and caps are again available, and can be ordered directly from Joey Reid.

Joey's contact details are as follows for more information on prices: Cell: 083-252-7912 ; Phone: 012-667-2720 ; Email : jreid@wol.co.za

Bank payments can be made to: JD Enterprises ; Capitec Bank ; Acc No : 1273634991 ; Branch No : 470010



PARC Fleamarkets for 2016 are scheduled for the following dates:

5 March ; 28 May ; 27 August ; 5 November

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

Die Somer QRP Kompetisie: PARK lede by Fort Schanskop

“CQ 40m, CQ 40m, Zulu Sierra Ses Papa Tango Alpha roep kompetisie...” As jy al gehengel het, kan jy kompetisie doen. Jy moet die wereld se geduld he as jy daardie stasie ver oor die vlaktes wil werk. En moenie dink jy gaan sommer net so maklik die ander stasie se roepsein kry nie. Weens die swak kondisies moes Pierre en Jaco fyn luister en drie tot selfs vier keer vra om die kontak se roepsein te verifieer. As jy daarvan hou om toerusting wat meer as 30kg weeg, teen 'n steil bult uit te dra, dan is kompetisies vir jou! Dit is nie vir sissies nie manne! Saterdag die 23ste Januarie het 'n paar PARK lede (sien voorblad) Fort Schanskop aangedurf en op 40m en 10m gewerk. Alhoewel die kondisies op 40m baie swak was, was dit nog steeds 'n geleentheid vir nuwe radio amateurs en klubede Fanie de Kock ZS6FDK en Gideon van der Merwe ZS6GJV om in die parkeergrond 'n 40m dipool te bou en te toets met behulp van Fanie se antenna ontleder. Buiten die radiowerk, was die weer genotvol en die uitsig oor Pretoria manjufiek met die stad en Voortrekker Monument in die agtergrond.



CQ Kompetise 40m : Pierre ZS6PJH



CQ Kompetise 10m : Jaco ZR6CMG



Gideon ZS6GJV en Fanie ZS6FDK met hul dipool



Gideon, Mark ZS6USA en Pierre ZS6PJH



Fanie besig om die SWR van sy dipool te meet



Pierre ZS6PJH se 40m dipool

PARC Main Antenna destroyed by first storm of 2016 : By Craig Symington ZS6RH

While we were all very relieved to have the first real rain of the season, the rain in the first weekend of the New Year came in the worst lightning storm of the season.

In previous years the installation, near the top of the Radcliffe tower, was protected by the large aluminum monitoring antenna that adorned the top of the tower for the past two and a half decades.

This installation was removed in winter 2015. After it's removal there was no spike placed on the top of the tower to discharge the static.

PARC has permission to place the spike on to and replace our antenna system. a second antenna, currently a 2-stack with a good 1/2' feedline. The plan is to replace this aged antenna as well so that we can run the digital repeaters that are planned for the near future.

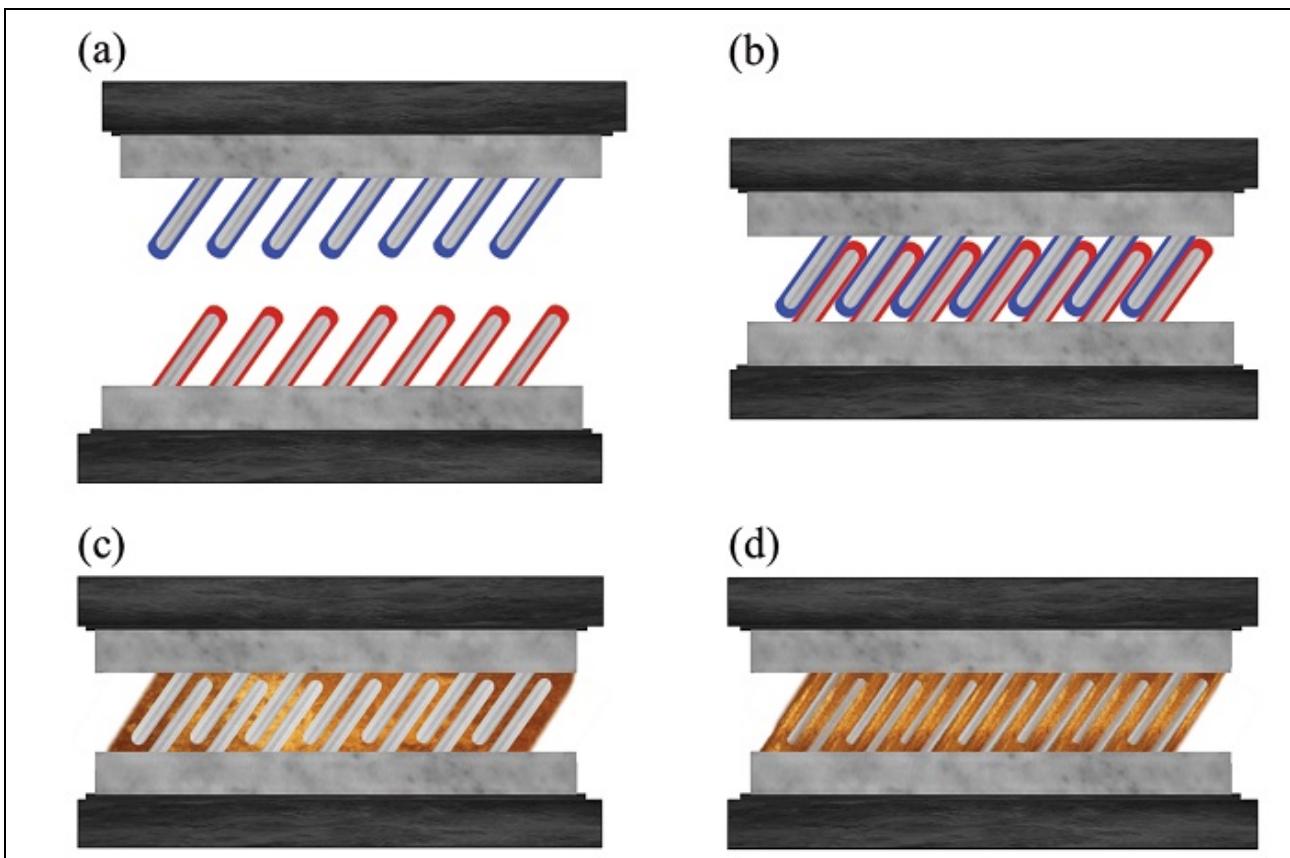
The Repeaters survived, thanks to the superb earthing of the feedline and entry point, with the 145.725 coming alive when switched to the spare 2-stack visible in the pictures below the damaged dual band co-linear. Since the antenna is 2m dipoles only, the UHF is off the air.



Researcher's metallic glue may stick it to soldering and welding

This article, from news@Northeast, submitted by Hans ZS6KR, describes a “MesoGlue” developed by Northeastern’s Dr Hanchen Huang and two of his students, experts in nanotechnology. This glue is claimed to bind metal to metal to glass, sets at room temperature, and requires little pressure to seal.

Both “metal” and “glue” are familiar terms to most people, but their combination is new and made possible by unique properties of metallic nanorods – infinitesimally small rods with metal cores that are coated with the element indium on one side, and Gallium on the other. These coated rods are arranged along a substrate like angled teeth on a comb, consisting of a bottom and a top “comb”. The teeth are interlaced, and when Indium come in contact with Gallium, a liquid is formed. The metal core of the rods then act to turn the liquid into a solid. The resulting glue provides the strength and thermal / electrical conductance of a metal bond.

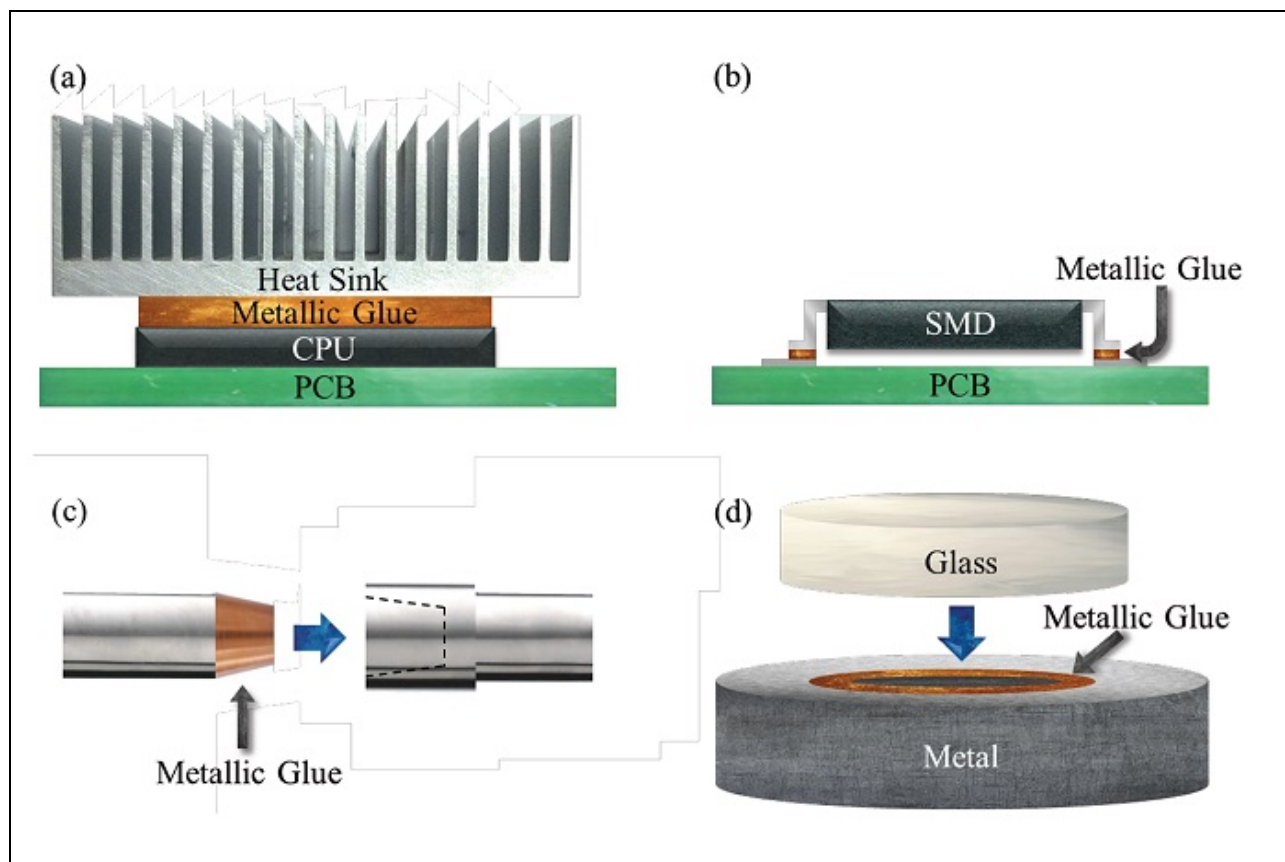


a) Coated rods are arranged along a substrate, like angled teeth on a comb b) The teeth are then interlaced
c) When Indium and Gallium come into contact, a liquid is formed d) The metal core of the rods turns the liquid into a solid

The standard polymer glue does not function at high temperatures or high pressures, but the metallic glue does. The standard glue is not a great conductor of heat and/or electricity, but the metallic glue is. Furthermore, the standard glue is not very resistant to air or gas leaks, in contrast to the metallic glue, which is.

“Hot” processes like soldering and welding can result in metallic connections that are similar to those produced with the metallic glue, but they cost much more. In addition, the high temperature necessary for these processes may have deleterious effects on neighbouring components, such as junctions in semiconductor devices. Such effects can speed up failure and not only increase cost, but also prove dangerous to users.

The metallic glue has multiple applications, many of them in the electronics industry. As a heat conductor, it may replace the thermal grease currently being used, and as an electrical conductor, it may replace today's solders. Particular products include solar cells, pipe fittings, and components for computers and mobile devices.



A schematic illustrating applications of metallic glue: a) A CPU on a printed circuit board connected to a heat sink b) A surface mount device being attached to a printed circuit board. C) A press-fit pipe fitting for environments where welding is dangerous or impossible. D) A glass plate being attached to metal with a different thermal-expansion coefficient to cover a cavity with a hermetic seal. Article and illustrations from "Advanced Materials and Processes", January 2016.

Midwinter 630 Meter activity Weekend set for early February

The ARRL recently published a very interesting article on activities on the 630 Meter band. US and Canadian radio amateurs and experimenters will join forces in February for the first midwinter 630 Meter Activity weekend. The event will get under way on the 6th of February at 00h00 UTC, and run through 23h59 UTC on February 7.

The event is being undertaken because of the new and quickly growing interest in present 630 Meter activities, both in the US and Canada, according to the ARRL 600 Meter Experimental Group (WD2XSH) Experiment Coordinator, Fritz Raab, W1FR. "Much of the interest is in response to the strong likelihood of US amateurs receiving access to the band in the near future, while Canadian hams are eager to learn more about the present level of Amateur Radio activity on their newest ham band".

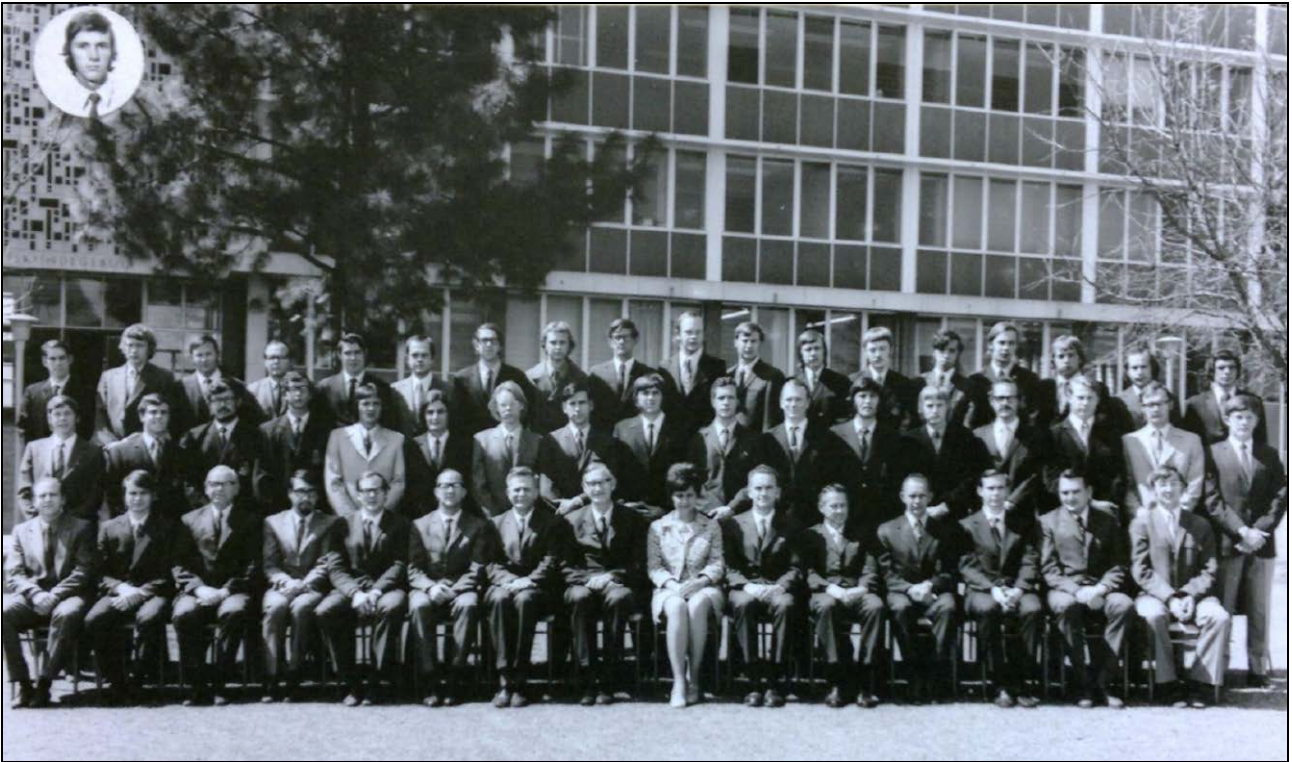
Raab says the two activity nights will offer interested amateurs in both countries an opportunity to experience the 630 Meter band, and, through cross-band activity with Canadian amateurs, to take part in the MF spectrum. "Our hope is to see this activity become an annual operating event, to be held every winter on the 630 Meter band.

Operation will be from 472 kHz to 479 kHz in various modes. The two-way crossband work will be undertaken by several Canadian stations, all on CW. Various operators such as VO1NA (Joe), VE7SL (Steve), VE7BDQ, VA7MM (Mark), VE7CNF (Toby) and VE3OT (Mitch) will be participating. It may be worth while to attempt a listen-in on their activities. Next month Watts will report more on the history of 500 kHz.

Klasse van 1973 en 1974 : UP Dept. Elektriese Ingenieurswese

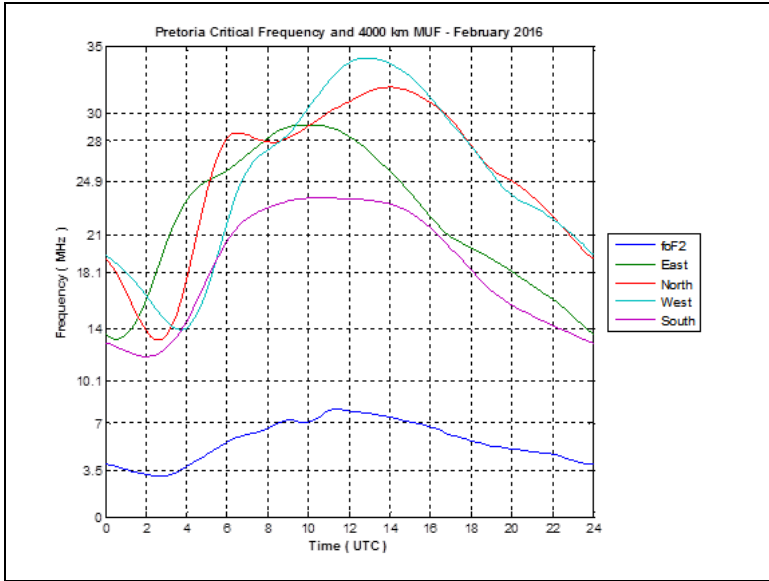
Baie dankie aan Vincent Harrison ZS6BTY wat die twee fotos aan Watts gestuur het.

Die eerste foto is die Vierdejaar Klas van 1973 van die Departement Elektriese Ingenieurswese van die Pretoria Universiteit. In die agterste ry, vierde van links is Fritz Sutherland, ZS6SF, PARK klub lid en SARL President.



Die tweede foto is die 1974 Vierdejaar Elektriese Ingenieurswese groep van die Pretoria Universiteit. In die tweede ry van voor, sesde van regs is Hans Kappetijn ZS6KR, Erelid van PARK, gewese Redakteur van Watts vir meer as 10 jaar, en gewaardeerde Bulletin Leser vir SARL.





Long Term HF Propagation for February 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

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