



A Member of the SARL



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AWA Committee:

- * President—Jacques ZS6JPS
- * Vice President and Western Cape—John ZS1WJ
- * Technical Advisor—Rad ZS6RAD
- * Secretary/PRO—Andy ZS6ADY
- * KZN—Don ZS5DR
- * Historian—Richard ZS6TF
- * Member—Ted ZS6TED

Newsletter

10th Anniversary

124

Sept 2016

Reflections:

I am sure you have all heard the old saying “its not over till the fat lady sings”.

Well it would seem that I was a bit hasty and I will still be around in sunny Gauteng for a while to come. (Says he with a very red face)

All too often I have talked about how great it would be to be able to retire and get done with all the projects that had been saved up in my workshop. Well for 3 months I had a taste of that and was so busy I did not know which way to turn, so I decided it would be better to go back to full time employment. Its not so busy in the business world.

I joined up with a few nets every morning, had a CW QSO every afternoon and in between was kept busy with all sorts of things. Eventually, it just all became too

much to handle.

Of course, all this is said very tongue in cheek and I certainly enjoyed the time I had at home.

I think that most people given the opportunity to stay at home and be retired, would jump at the opportunity, as did I . But then an opportunity to extend the period before that final retirement is as alluring as being retired.

Anything to get a few more pennies in the piggy bank sounds pretty good to me.

The problem of course is that I was just starting to enjoy all the opportunities to chat on the radio and of course my CW was getting betterer as the days went by. Band conditions were not always great, but they were good enough to make regular contacts across the

country.

This all brought back such fond memories of my early CW days when I could really pound the brass on a straight key. Today of course I am much more gentle on an Iambic paddle where there is no more pounding, but the gentle back and forth motion of a spring loaded keyer.

Unfortunately these days I make more mistakes than I did with the straight key, but then I suppose age has something to do with that and a slight deterioration of brain cell activity.

Looking forward to getting a new antenna up and getting back on the bands as soon as possible.

Best 73

DE Andy ZS6ADY

WIKIPEDIA

Electrical Telegraph

In 1825 William Sturgeon invented the electromagnet, with a single winding of uninsulated wire on a piece of varnished iron, which increased the magnetic force produced by electric current. Joseph Henry improved it in 1828 by placing several windings of insulated wire around the bar, creating a much more powerful electromagnet which could operate a telegraph through the high resistance of long telegraph wires.

During his tenure at The Albany Academy from 1826 to 1832, Henry first demonstrated the theory of the 'magnetic telegraph' by ringing a bell through a mile of wire strung around the room.

In 1835 Joseph Henry and Edward Davy invented the critical electrical relay. Davy's relay used a magnetic needle which dipped into a mercury contact when an electric current passed through the surrounding coil. This allowed a weak current to switch a larger current to operate a powerful local electromagnet over very long distances.

First working systems

The first working telegraph was built by the English inventor Francis Ronalds in 1816 and used static electricity. At the family home on Hammersmith Mall, he set up a complete subterranean system in a 175 yard long trench as well as an eight mile long overhead telegraph. The lines were connected at both ends to clocks marked with the letters of the alphabet and electrical impulses sent along the wire were used to transmit messages. Offering his invention to the Admiralty in July 1816, it was rejected as “wholly unnecessary”.

^[9] His account of the scheme and the possibilities of rapid global communication in *Descriptions of an Electrical Telegraph and of some other Electrical Apparatus* was the first published work on electric telegraphy and even described the risk of signal retardation due to induction. Elements of Ronalds' design were utilised in the subsequent commercialisation of the telegraph over 20 years later.

HF Happenings:

Belarus gets 60 m band :

Amateurs in Belarus now have access to the new WRC15 60 m allocation. Their band is from 5 351,5 to 5 366,5 kHz, restricted to Class A (top level) licensees. CW, SSB or digital modes are permitted with maximum power of 50 watts.

ringing or buzzing in the ears:

You have to be able to hear them to work them and tinnitus can interfere with that and life in general. New research points to some ways to treat the symptoms of this chronic condition affecting 50 million people in the US alone <http://nautil.us/blog/50-million-tinnitus-sufferers-just-got-some-bad-news-and-some-good-news>.

Transistor density:

According to the recently released Semiconductor Industry Association's International Technology Roadmap report, future innovation in transistor density will not be made by shrinking the size of transistors, but rather through changes in topology or geometry www.semiconductors.org/news/2016/07/08/press_releases_2015/international_technology_roadmap_for_semiconductors_examines_next_15_years_of_chip_innovation/. The de-emphasis on size may occur as soon as 5 years from now. Ars Technica has placed the ITRS report in the context of other trends and industry history <http://arstechnica.com/gadgets/2016/07/itrs-roadmap-2021-moores-law/>.

Word to the Wise:

Diplexer - A device that is used to combine different frequencies or bands to a single output, or which can separate a common input into different bands or frequencies. They are common in UHF/VHF mobile applications where 2 metre and 440 MHz radios share a single coax cable to feed an antenna. In recent WRTC contests, triplexers have been used to allow two radios on two different bands to simultaneously use a tribander antenna.

Soldering:

Many of the steps like soldering, cutting, or painting, which might be necessary in home brewing a project for your station yield gases, smells or particulates. Here is an instructable showing a simple way to build a fume extractor and fume box for small projects www.instructables.com/id/Easy-Cheap-Portable-VENTED-Fume-Extractor-and-Opti/.

Faraday Cages:

Faraday Cages work...how, exactly? One person's journey to understand them on a physics level yielded a number of surprises and questions the accuracy of conventional explanations. <https://sinews.siam.org/DetailsPage/TabId/900/ArtMID/2243/ArticleID/757/Surprises-of-the-Faraday-Cage.aspx>.

RF design:

As RF design goes nearly all digital, this EDN article provides a look at what it's like to design radios

using digital building blocks www.edn.com/design/analog/4442464/RF-design-in-the-21st-century. One of the biggest changes is that the design environment may provide a working prototype without the necessity of building any hardware.

JOTA

As you may be aware, the Jamboree on the Air weekend is fast approaching and being held over the weekend of 15 to 17 October 2016. This is a great event and with it being in its 59th year, has become an integral event for Radio Amateurs and Scouts to get together and make those contacts with other scout from around the World. The Jamboree event is the largest Scouting event in the World, with approximately 1,5 Million Cubs, Scouts and Guides taking part from every continent on earth.

What can Amateur Radio Clubs do for this great event? How about setting up a small station, or invit-ing a Group to your station for either the day or the weekend. Show the youth what Amateur Radio is all about and get them making contacts.

If you are able to assist or would like more information regarding this fantastic event, please contact me and I will put you in direct contact with the District Commissioner and the Scouter in charge of the nearest Scouting group to you.

The youth are the future of our fantastic hobby, and with Scouting, they work so well together.

Richard Hooper, ZS6RKE
National JOTA JOTI Coordinator
SCOUTS South Africa

Higher Bands will pick up this autumn (northern Hemisphere); Data suggest smaller Solar Cycles lie ahead

Propagation guru Carl Luetzelschwab, K9LA, says that, while conditions on 12 and 10 metres will pick up as they always do in the fall, F₂ propagation on those bands will decline thereafter, with only sporadic E during the summer months as a possible saving grace. On the other hand, the lower bands - 160, 80, and 40 meters - should be good going forward, and 20 and 17 metres will be the main-stays of daylight HF propagation. Luetzelschwab offered these observations during a 23 August World Wide Radio Operators Foundation (WWROF)-sponsored webinar "Solar Topics - Where We're Headed." <http://wwrof.org/webinar-archive/solar-topics-where-were-headed/>. He said data suggest that Solar Cycle 24, the current solar cycle, will bottom out in 2020 and he advised that radio amateurs may need to lower their expectations on the higher bands (and 6 me-tre) looking beyond that.

"I think the only conclusion we can make with some confidence is that we are headed for some small cycles," he told his audience. He cited various evidence related to the Sun's polar fields - which appear to be de-creasing in strength, A index trends, and cosmic ray data to support his assertion. Luetzelschwab cautioned, how-ever, that past performance does not necessarily predict future performance.

"There seems to be a good correlation between how long a solar minimum is and the next solar cycle," said Luetzelschwab. "The longer you spend at solar mini-mum, the smaller the next cycle."

He observed that hams active since the 1950s and 1960s have experienced short inter-cycle solar minimums of approximately 2 years, until the one between Solar Cycle 23 and Solar Cycle 24, which lasted about 4 years. He also allowed that the science is not fully understood, and that some things appearing to be patterns may just be coincidences.

On the other hand, he said, it looks like the downward trend of disappearing sunspots has levelled off, suggesting that Solar Cycle 25 may see a lower smoothed sunspot number as opposed to zero or near-zero sunspots.

Counting those sunspots can be a subjective business. "That's a tough job," he said of the task, noting that it appears observer bias also has been a factor over the years, affecting historical sunspot data. "We now have new corrected data that are believed to be more accurate."

Luetzelschwab's article "The New Sunspot Numbers," appearing in the October issue of QST, discusses the new sunspot numbers.

Luetzelschwab cited historical sunspot cycle data going back centuries - including the "Maunder Minimum" of zero and near-zero sunspots between the years 1645 and 1715 and a later, less-drastic "Dalton Minimum." He pointed out that over the last 11 000 years, 19 notable grand maximums including Solar Cycle 19 and the cycles around it - and 27 notable grand minimums were recorded. "We're likely to have more of both grand maximums and grand minimums in the future," he predicted. The current system of numbering sunspot cycles begins with Solar Cycle 1 in the mid-18th century.

"We don't fully understand the process inside the Sun that makes solar cycles," Luetzelschwab said. "Thus, you should exercise caution with statements seen in the news."

African DX

Uganda, 5X. Andy, DL3YM, will be on a work assignment in Uganda between 20 September and 1 October. During his spare time, he plans to get on the air from the campus of the Nkumba University in Entebbe. He will be active as 5X8B on CW, SSB occasionally for demonstration purposes. QSL via DL3YM, LoTW; expect cards via the bureau automatically.

Kenya, 5Z. Tom, DJ6TF, and Reiner, DL7KL, plan to visit Diani Beach from 15 November to 1 December and be active as 5Z4/home calls on 80 to 10 m using CW and SSB. QSL via h/c direct or via the bureau.

African Islands

IOTA frequencies

CW: 28 040 24 920 21 040 18 098 14 040 10 114 7 030 3 530 kHz

SSB: 28 560 28 460 24 950 21 260 18 128 14 260 7 055 3 760 kHz

Canary Islands, EA8. Kari, OH2BP, Väinö, OH9GIT, Ewe, SM7BHM, and Yuris, YL7A, will be active as EA8DED from Tenerife Island (AF-004) during the CQ WW DX RTTY Contest (24 and 25 September)

as a Multi-Single entry. QSL via OH2BP only direct. After the contest look for them on the WARC bands using CW, SSB and PSK31.

Canary Islands, EA8. Frank, PH2M, will be active as EA8/home call from Lazarote Island (AF-004) between 25 September and 6 October. Activity will be holiday style on 40 to 10 metres using SSB only. QSL via his home call sign by the Bureau.

Reunion Island, FR. Jean, F6BVV, is now active as FR/home call from Reunion (AF-016) until 23 September. Activity will be limited to his spare time because of his work, but look for him on 14 045 and 21 045 kHz. Listen for QSL info.

Pantelleria Island. Raffaele, IH9YMC, will be active from Pantelleria Island (AF-018, WW Loc. JM56xt), African Italy, during the CQ WW DX SSB Contest (29 and 30 October) as a Single-Op entry. QSL via eQSL. Cape Verde, D4. Ralf, DK8FA spends a holiday on Boavista (AF-086) between 15 and 28 September. He plans to operate with the call D44TUJ with 100 W and a vertical antenna, mainly on 20 and 17 m (digital modes). QSL via DK8FA, direct or the bureau. Comoros, D6. David, OK6DJ, Pavel, OK1FPS, Pavel, OK1GK, Ruda, OK2ZA, and Petr, OK1BOA, are going to activate AF-007 from 18 to 30 September as D66D. They will be active on 160 to 10 m using CW, SSB and RTTY. QSL via OK6DJ, LoTW, eQSL. www.cdpx.cz/?page_id=569

Diary

22 - Spring Equinox

22 to 25 - Hermanus Flower Festival; National Sheepdog Trails, Dullstroom

23 to 25 - Gauteng Getaway Show

24 - National Braai Day and Heritage Day

24 and 25 - CQ WW RTTY Contest; Franschoek Uncorked Festival

24 Sept to 2 Oct - Magoebaskloof and Haenertsburg Spring Festival

26 - Closing date for October Radio ZS

27 - World Tourism Day

29 Sept to 3 Oct - White Mountain Music Festival, Estcourt, Natal

29 Sept to 2 Oct - Madeliefie Makietie, Vredendal

30 - All schools close

30 Sept to 2 Oct - Hermanus Whale Festival

October

1 - Spring QRP Contest

4 - World habitat Day

6 - SARL 80 m QSO Party

8 and 9 - AWA Valve QSO Party

9 - SARL Youth Net

6 to 9 - Superblast Rocking the Daisies Music and Lifestyle Festival, Darling

10 - All schools open

12 - Yom Kippur

20 - Radio Amateur Examination; National Marine Day

21 to 23 - Jamboree on the Air

22 - CQ Hou Koers

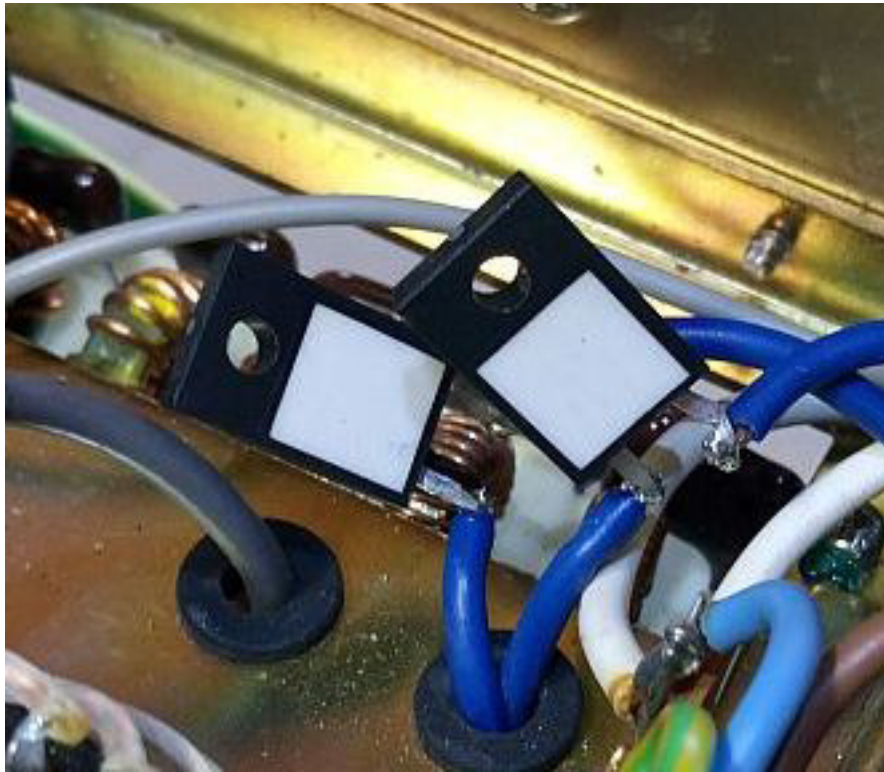
29 and 30 - CQ WW DX SSB Contest

Is your tube heater voltage correct?

Introduction by Rad ZS6RAD

The following from AE1S 's blog at <http://blog.kotarak.net/2009/05/sb-200-filament-voltage.html> is very applicable to us here in SA since ESKOM seems to have stabilised our voltage at 235 to 240 volts AC. In a recent refurbishment of my Yaesu 2100z (new tubes, soft start and replacement of the old fans with 12v computer fans) I checked the heater voltage and found it to be 6.7 v. My recent reading around the subject especially from W8JI, http://www.w8ji.com/filament_voltage_life.htm suggested that failure to check the filament voltage could lead to reduced life/early failure of an expensive tube; be it 572B, 3-500z etc. AE1S mentions the use of milliohm resistors but opts to go the Nichrome wire route as he describes below. I did a search of the Radio Spares website <http://za.rs-online.com/web/> and found milliohm ceramic resistors in a TO-220 package with a 30w rating (RS code 8220110). The heater supply for the 2100z is a 6.3 v (nominally) center tapped winding. Since 50 milliohms was the required resistance I placed a 20 milliohm resistor (because I had them) in each leg and hoped the resistance of the wire from the transformer to the valve socket would do the rest. I was not disappointed as the voltage dropped from 6.7 to 6.28 volts. Happiness!

In the picture below of the underside of my 2100z, the ceramic resistors are seen in the center before I clamped them either side of a piece of paxolin. They do not need to be heatsinked.



SB-200 - correcting the filament voltage

Andrey E Stoev AE1S

Most of the SB-200 amplifiers (including mine) suffer from "high filament voltage". One theory I've heard is that when the amplifier was designed in the 60s, the power transformer was calculated for AC mains of 110V/220V and today we are using 120V/240V AC. While a bit higher plate voltage is welcomed, higher filament voltage is a bad thing! According to an EIMAC study: "A 3% increase in filament voltage above the maximum rating will result in a 50% decrease in tube life".

The factory specification for 572B heater voltage is 6.3V +/- 0.3V @ 4A. My calibrated (NIST traceable) DVM measured 6.65V AC (True RMS) for the filament voltage @ 240V AC mains. This reading is beyond the maximum allowed and it should be corrected!

I decided to bring the voltage down, just slightly less than the recommended 6.3V.

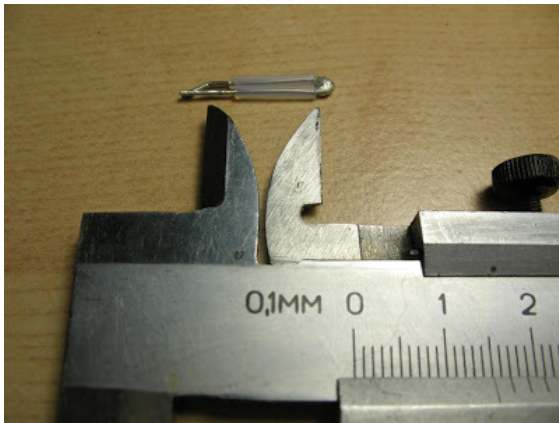
The increase in the filament voltage is of no benefit to the output of the valve. 572B is performing at full output with even less than 6.0V filament voltage! My target voltage was 6.25V - about 0.4V down. A thing to note is that the voltage of my 240V AC line does not fluctuate a lot over time - just a couple of volts. Using resistors to correct the filament voltage is the obvious solution except sometimes it is hard to find the right ones for the job! Each amplifier will require custom values for the resistors (determined by the individual transformer and maximum AC line voltage).

To drop the voltage across a resistor by 0.4V (in my case) while drawing 8A of current (2 x 4A for each valve) results in calculated total resistance of 0.05 Ohms. To complicate the matter further, this resistor should be capable of dissipating at least 4W. To preserve the circuit symmetry (the filament secondary is center tapped) I decided to use 2x 0.025 Ohms /2 W resistors - one for each side of the secondary.

Precision current-sensing power resistors could be one possibility. Another solution would be to use a coil of small gauge Teflon insulated wire - AWG #22 for instance. The small gauge will cause the wire to heat up increasing the resistance and corresponding voltage drop. (Even better - coiled on a ferrite rod, thus creating a second filament choke - more inductance equals better choking in this case). I might actually try this someday but there is not much space in the tube's socket compartment and I want this to look neat.

Instead, I made DIY resistors out of Nichrome-60 AWG #22 wire (0.65 mm), left over from my Low-Q VHF suppressor's kit. This wire has very high electrical and thermal resistance. To reduce the heating and thermal stress on the short piece of wire required for each 0.025 Ohm resistor (I am using two of them in series for 0.05 ohm total resistance), I actually made each resistor out of two paralleled 0.05 Ohm "resistors".

Recap - i need a 0.05 ohm resistor but for circuit symmetry, I'll use 2 x 0.025 ohm in series (one on each end of the filament winding, just before the filament choke). To increase the power rating of each 0.025 ohm resistor on the other hand, I'll be using 2 x 0.05 resistors in parallel to form the actual resistor.



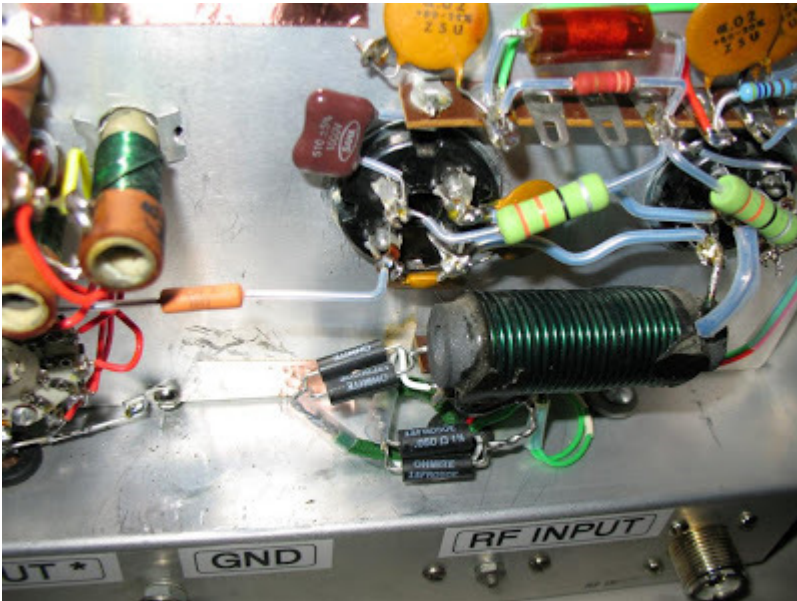
I used a little over 3cm length of Nichrome wire, bent into a "U" shape. Both ends of the wire are soldered together, creating small elongated loop. The solder points for the resistor are at each side of the elongated loop. This way, each 1.5 cm length of the wire would have to dissipate about 1W for a combined power rating of 2W per resistor.



I inserted each leg of the U-shape wire into Teflon tubing before soldering them together, forming the "resistor". This will prevent an "internal short" in the "resistor". My LCR meter shows exactly 0.025 Ohm.



Each 0.025 Ohm/2W resistor was placed in-line with the filament secondary, just before the filament choke. For soldering the Nichrome wire I used the instructions, flux (corrosive!!!) and silver solder supplied with the suppressor kit. The solder is a tin-silver alloy with high melting point and it should be used also for soldering the "DIY resistors" to the filament choke terminal strip and to the transformer leads. The heat produced by the resistors is substantial - I can barely keep my finger on the resistor (right after I shut the amplifier off (!)), so high temperature solder is needed in order to prevent the joints from failing over time. The result is as expected - filament voltage now measures exactly 6.25V @ 240V AC Mains!



I was ordering parts from Mouser for another project so I ordered a few high-power current sense resistors. Here is a more "commercial" modification for those who don't feel like making their own resistors. The end result is the same as it is with the DIY resistors. I have the feeling that the commercial resistors heat up a bit less (obviously, larger surface area - better cooling) than the nichrome wire but it is hard to tell just by touching them with my finger.



Ramblings of remembrances of Radio Part 2 – by ZL2AIM (continued from last month)

At the age of 19 I decided to emigrate to hotter climes. I travelled on the Pendennis Castle to South Africa. Stopping at Las Palmas on the way, I bought a radio for next to nothing. The reason that it was sold for next to nothing was that inside it – it had next to nothing.... Long wave was not in use in South Africa and that is what it was – a Long wave receiver. That put me off radios for a while. In 1967 I did acquire a 6 transistor radio that had medium and short waves on it. The South African Broadcasting Service didn't play music to my taste, but there was another station based in Mocambique called LM Radio. (LM was Lourenço Marques, now known as Maputo). They played the pop music that I liked and I was able to listen to the radio whilst studying.

One car that I bought in the early 70's had a radio in it that had short wave. During the day it was dead, but at night time it came to life with lots of interesting stations that brought back memories of sitting in my bedroom in Dublin listening to the same stations. BBC was received as a very strong signal. Well then along came TV some years later and the radio died a natural death – well for the time being anyway.



During that time I bought a Sony SW30 world receiver. (My grandson now has it in his bedroom.) My appetite was tempted by this receiver. During this time the news broadcasts in South Africa were very slanted and it was great to hear the same news but given a completely different slant to it.

One Sunday morning a friend phoned me and gave me a phone number of a person selling a "FRG7". I bought it and listened to the BBC and

other stations for some months, before purchasing a Icom R75.

I then joined the Short-wave Listening Group in Durban. One day Steve ZS5HP came around to my house and asked what ham stations I had listened to. "Ham stations?" I replied – "I don't listen to ham stations – I listen to broadcast stations". He thought I was mad and showed me how to tune in to the amateur bands. I was hooked! Within 5 months I had written my RAE and was a regular person on the 2m repeaters. It was not long after that that I fell in love with CW. Well maybe I should call it a love hate relationship. After failing the CW exam twice (nerves!) I got down to some serious study of CW with Mel ZS5MF (sk) and Roger ZS5FX (sk). Roger was a real brick and gave up at least one hour of each evening on a simplex channel on 2 meters to teach both myself and Colin ZS5CF the intricacies of the Morse Code.



An old friend of mine who had been a "Ham" for many years and lived in UK, Raymond G4NJW had been in touch with me via email and encouraged – nay shoved – me into passing the CW exam. To this end he came out here and gave me a present of a TenTec 1340 which I will always treasure. This is a QRP rig for 40 meters and when I use it (which is a lot), I remember Raymond and I in the quiet of the bush in Botswana and me listening for 2 hours a day to my MFJ Morse Tutor. I am sure there were times that he would gladly have thrown it into the fast moving waters of the Okavango River just for a bit of peace and quiet.

On passing the 12 wpm CW exam, I decided not to let go of CW. Through Tubby ZS5TUB, and like stalwarts I was coaxed into getting on the air on a regular basis. Mossie ZS4XJ was a great Elmer and always listened out for me when I was in Botswana or Swaziland or even just Johannesburg or Cape Town. That was the beginning of my love for QRP as a small transceiver was just the job for use whilst travelling around. Transmitting from hotels in Southern Africa needed some serious thinking when it came to antennas. I have found that two "slinky" springs pulled apart, supported in the middle and fed with some 75 Ohm cable takes a lot of beating when it comes to portable indoor antennas. Of course an antenna tuner helps a lot and that is when I got into building kits.

I could write a lot more on QRP and QRPP as well as building kits, but I will leave that for another time. For now, I have at least fulfilled my part of the deal by telling you how I got into Amateur Radio.

So now I would love to hear from other members how they journeyed into the world of amateur radio and the Morse code. Over to YOU!

Antique Wireless Association AM/SSB Valve QSO Party:

This is a phone contest held over 2 sessions on Saturday 08 and Sunday 09 October 2016.

On Saturday afternoon 08 October, 15:00 to 19:00 SAST the AM section will be held with Contacts on both the 40m and 80m bands for points.

On Sunday 09 October from 15:00 to 19:00 SAST the SSB section will be held with contacts on both the 40m and 80m bands for points.

Frequencies - 40 metres: 7,053 to 7,100 MHz and 80 metres: 3,603 to 3650 MHz

Exchange - Call sign, RS and consecutive serial numbers starting at 001, plus type of radio used, eg HT37 Tx.

Points scoring:

All valve radio - 3 points per contact;
 Hybrid (valve & solid state) - 2 points per contact;
 Solid State Radio - 1 point per contact.
 Multiplier - All valve radio - 3 points per contact;
 Hybrid (valve & solid state) - 2 points per contact;
 Solid State Radio - 1 point per contact.

Certificates will be awarded to the first three places in each category.(AM/SSB)

All logs to be submitted to :
 Southern African Antique Wireless Association,
 PO Box 12320, Benoryn,1504.
 E-mail: andy6ady@vodamail.co.za.
 Closing date for log submissions: 31 October 2016.
 Please refer to the SARL Contest Manual for any queries.



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**Get your backdated issues
at
<http://www.awasa.org.za>**

**Antique Wireless Association
of Southern Africa**

Mission Statement

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yester-days radio's and associated equipment. To encourage all like minded amateurs to do the same thus ensuring the maintenance and preservation of our amateur heritage.

Membership of this group is free and by association. Join by logging in to our website: www.awasa.org.za

Notices:**Net Times and Frequencies:**

Saturday 06:00—AM Net—3615
Saturday 07:00—Western Cape SSB Net— 7140 (Alternate 3630)
Saturday 07:30—KZN SSB Net—3615
Saturday 08:30— National SSB Net— 7140;
Saturday 14:00— CW Net—7020
Wednesday 19:00— AM Net—3615, band conditions permitting.

AWA Valve QSO Party

Saturday 08 October 2016—15:00 to 18:00; AM Session
Sunday 09 October 2016—15:00 to 18:00; SSB Session

AWA Open day and Flea Market

Saturday 15th October from 10am.
Home of William ZS4L—Harrismith.
Bring your excess goodies to sell off, give away or just brag with.
Bring and Braai.
Overnight camping facilities available.
Dress warm and bring warm clothing, remember the last time ?
Directions: from N3 Durban/Johannesbug take R722 to Verkykerskop. Approximately 2 km on your left is the farm. Look for the AWA notices. From Johannesburg it is before Harrismith, from Durban after Harrismith.

Anyone wishing to share costs and travel with me is welcome to do so. I can take 3 people.
I will be going down the morning and coming back on Saturday evening.
Contact Andy ZS6ADY 0824484368