AWA Newsletter

#81

October 2012

Affiliated to the SARL

Antique Wireless Association of Southern Africa

Inside this issue:

AWA Committee:

* President—Richard ZS6TF
* Technical Advisor—Rad ZS6RAD
* Secretary/PRO—Andy ZS6ADY
* Western Cape—John ZS1WJ

Reflections:

I cannot believe how fast this year has flown by and one of these days it will be another ring around the bark and one step closer to retirement. Although I don't know if that will ever happen to me, it remains something to be looked forward to.

So many of our "Happy Retirees" tell me they have no time to be retired because they have so much work to do. I think this is just because of bad planning.

One needs to make sure all things are in place before you retire so you can have a lot of time to play radio. Lets face it, we have to get our priorities right here.

If there is no time to play radio, then there is definitely something gone astray in the planning process, because the problem is, once you retire, you are not going to have the money or the inclination to be building antenna towers, arrays, long wire antenna's, shacks etc.

You also need to make sure, all modifications to the home, the kitchen, extensions, the garden, are all completed, otherwise you will never be allowed the time to play radio by management. (This is the retiree's new management who determine new hours for tea time, lunch time, sleep time and bedtime).

The automation of things like sprinkler systems, pool pumps, and a ride on lawnmower (preferably with a fully trained driver) are also essential to ensuring enough free time is allocated to playing radio.

With these things in play, one can be assured of enough time to spend in the shack or workshop, refurbishing your collection of valve radios and having time to test them out and get your DXCC using them.

But then, I suppose we live in a real world where one can surely dream about how wonderful life could be "if only".

I am sure there are some who already have all these dreams come true, but as for the everyday "Joe Soap", the old saying says it all.

"DREAMS ARE GOOD FRIENDS"

Best 73

DE Andy ZS6ADY

AWA AGM

The Annual General Meeting of the Antique Wireless Association of Southern Africa will be held on Saturday 17th November at the West Rand Clubhouse in Kroton Street, Weltevredenpark, Roodepoort.

Flea Market and display of Antique Wireless from 09:00 (Tables will be available. Bring along your disposables and display units)

AGM at approximately 11:00

Braai and Cash Bar will be available.

ALL WELCOME

CW Net:

The CW net continues to plod along and Barrie tells me the QRP net have been having difficulty working on 80m as they always have, due to poor band conditions.

Interestingly there have been a few new call signs to me on the CW net. It was so nice to work Derrick ZS5DM and Mo ZS5BBY on the net, and they call in quite regularly now.

Band conditions are normally good on 40m at 14:00, with the exception now of our Highveld thunderstorms that come along and cause havoc on the bands.

This was the case last weekend with the QRP contest. Rain delayed play for at least an hour, while I waited for the storm to pass. After hearing Barrie's sad story of a lightning surge which caused damage to some of his rigs, never mind the other appliances in the house, I was quite cautious about plugging in the rigs.

When I finally did get going, I managed 4 contacts on a band that was extremely noisy, with constant static crashes, making it almost impossible to hear what was happening.

Although I must say, copying the CW was not as difficult as I thought it would be.

Straight keys vs paddles (Iambic or bugs) I think really depends on ones preference. I do find however that most operators using paddles will tend to go a lot faster than one using a straight key. Most will find it easier to slow down using a straight key and operate at the speed of the contact they have made than those using a paddle connected to an electronic keyer.

If you are using a bug (semi-automatic key

as pictured here) then you can really develop your own style of sending, but I don't think they will operate with the "dits" at less than about 15 wpm.

The choice is yours, whatever it may be. Would love to hear more of you on frequency and especially on the AWA CW net.

SSB activity:

The Saturday morning SSB net still tends to be quite popular for many. Band conditions are still very favourable on 40m, although we still run a relay on 80m. 40m to the Western Cape seems to be a bit tougher at that time of the morning though.

Now might be a good time to bring back the 20m relay to try and encourage more of the W/C guys back to the National net.

The SSB QSO party was quite well attended with 43 stations being recorded on the AWA log sheet. Most of these contacts were done 40m as 80m was just not working.

A fair turnout to say the least, but then we have had no logsheets submitted from the Eastern or Western Cape stations that were there, although it was not easy to hear them. So this number of total stations could increase if we get them.

If you did operate a station on the SSB QSO party, then please send us your log, even if just for check purposes. It does give us a good idea of how many stations were active. Before this weekend activity, we were seriously considering dumping the whole concept as are a few of the clubs with their competitions, due to lack of activity. But if we can get these kind of numbers on the QSO party, then it is well worth keeping it going.

Hearing some of the valve rigs putting out fantastic signals, makes it all worthwhile. Look forward to hearing you on the next one.

Hallicrafters HT37

AM:

The AM net on Saturday mornings is still going along quite fine.

Conditions are normally pretty good and of course one has to be up nice and early to catch the div5 stations before the D layer starts to fade.

Locally, the band improves as time goes on in the morning and usually 5/9 reports are nothing unusual up until around 07:00 when conditions also start to change.

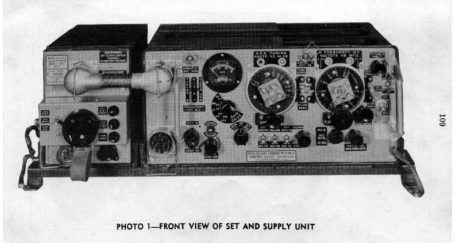
The AM section of the QSO party was also fairly well attended with 22 stations being recorded on the ZS0AWA log sheet. Which, when one considers it, was not bad at all. Of course conditions on the Saturday were not that great and difficult hearing any div1 and 2 stations, so reports from those areas would be appreciated. 80m was a real no go situation as the band was so noisy that not much could be heard.

There have been a few recommendations to drop the AM section of the QSO party, so input would be welcome from other parties as to how you feel about it.

Lets remember, the whole idea of the QSO party is to promote activity on the band using a particular mode. Are we achieving that ? Yes, we reward those stations who submit a log for points with a certificate for having achieved the most contacts and scoring the most points, but is that the real aim of the QSO Party ?

Your comments would be appreciated.

Join us on a Saturday morning for some AM and Musical transmissions from around 05:30 these days. Wednesday evenings are very dependant upon whether or not the summer storms come and intervene, but if clear, you can joins us there too at 19:00.



Wireless Set 19 MkIII

LOYAL ORDER OF BOILED OWLS

When first seeing this I immediately thought it could only be something from the Rainbow Nation.

Perhaps the get together of a group of medicine men who consume magic mushrooms as a starter before .getting down to the main course.

On checking further it was not S African, (oops), turned out to be American.

What on earth is a boiled owl? Well it's certainly not an item you will find on a menu.

Origin:- A night owl is a radio operator who has been operating all night or routinely does so.
Often aged, not always, may be dishevelled, ragged state of mind
"Boiled" ostensibly due to heat and radiation from transmitting high power radio equipment in order to keep in touch with others likewise minded.

Later shortened to "Boiled Owl"
With tongue in cheek might any of above also apply to readers of this newsletter ?

This organisation's Mission Statement is as follows:-

"We are an informal gathering of AM radio operators dedicated to preserving the art of "chewing the rag" using vintage vacuum tubed equipment.
Although antique Amateur and Military transmitters and receivers are order of the day anyone licenced to operate on 3725 kc and who is willing to brave the early morning hours , no matter if their equipment glows in the dark or not is invited to join us"

The top shelf is my primary "AM" station consisting of a: Hallicrafters SX-111 receiver, Hallicrafters HT-37 transmitter, Ameritron AL-80A amplifier (until I've completed restoration of my Hallicrafters HT-41 amplifier), Hallicrafters R-48 speaker, Heil Goldline microphone, W2IHY 8 band EQ, Ameritron ATR 20 tuner and full wave horizontal dipole antenna at 40 feet
The bottom shelf is my 75 meter ssb station consisting of a: Kenwood TS-870, Heil headset with HC5 cartridge, QRO 2500dx amplifier, W2IHY 8 band EQ, W2IHY EQPlus, Ameritron ATR 20 tuner and full wave horizontal dipole antenna at 40 feet.

Big Bertha: Named after the large antenna array manufactured by Telrex Laboratories during the 1950s. She is quite Wagnerian, standing 7 feet tall and weighing in at 400 pounds. The tube lineup is push-pull 100THs modulated by Cass B 805s. Although the transmitter is capable of perhaps 600 watts, I usually hold input power to 400 watts. Bertha was constructed by Casey Kassafang, W4HYG, shortly after WW-II. Like many other scientists and engineers, Casey came to Oak Ridge to work on the Manhattan Project. I purchased Bertha from Casey's widow several years ago. A few modifications have been made but always with the question in mind…Would Casey approve? Audio

gear ahead of Bertha includes: Shure SM-7B mic, Symetrix 528E voice processor, Inovonics 222 amplitude-bandwidth limiter, and an audio driver using 807s in a push-pull cathode follower arrangement. The receive I usually pair with Bertha is the Hammarlund HQ-120. The 120 dates from 1939 and is the first in the long line of HQ models. My National HRO-50 also shows in the photo.

Gates BC-1G: This transmitter was first installed at WMPC in Lapeer, MI (ca. 1966). When WMPY went solid state, it was sold to WWML in Portage, PA I rescued the transmitter in 2005 after it had been taken off the air. I especially like the glow of the four 833s. Like the 304TL, I regard the 833 as an icon for brute RF power. The BC-1 series is easily modified for 160 or 75 meter operation. Audio equipment ahead of the Gates includes: Electro-Voice RE-20 mic, Symetrix 528E voice processor, CRL-SEP-400A spectral energy processor (split band compressor), and Inovonics 222 amplitude-bandwidth limiter

I use a variety of receivers with the Gates including Hallicrafters SX-73, Collins 51J4, Hammarlund Super Pro 600, and Collins R390 (just outside the photo). The photo also shows my Johnson Viking I and Viking II, which are used from time to time.

BC-375: This aircraft transmitter found widespread use in WW-II. It was installed in the B-17, B-24, B-25, and B-26. Tens of thousands were made by GE…and a lot were shot down. The BC-375 uses tubes that were out dated when WW-II began (Type 10 and 211 triodes), but the radio was proven, easy to manufacture, and rugged. This transmitter can be heard on the Old Military Radio Net (Saturday mornings at 0500 Eastern, 3885 kc).

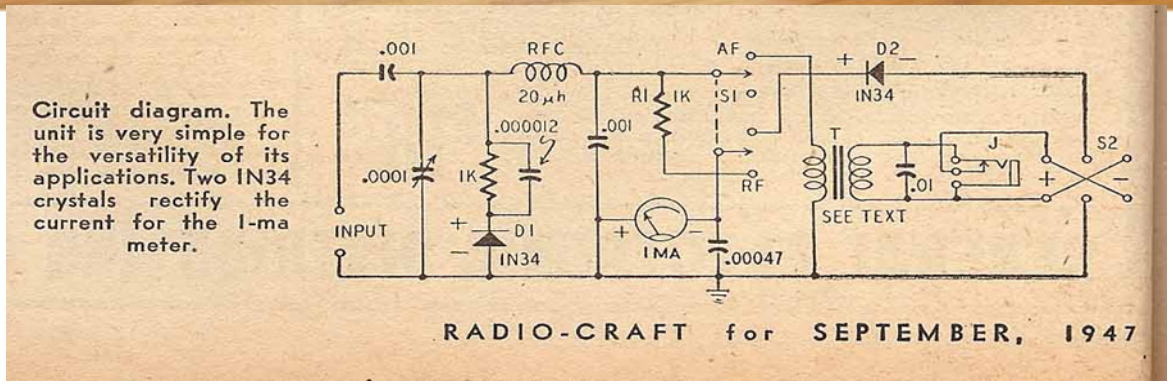
MODULATION INDICATOR

The simple no-power modulation meter is a welcome addition to the auxiliary equipment in amplitude-modulation amateur radiotelephone stations. As described in a recent issue" of Sylvania News, it uses a dc-milli-ammeter and two IN34 crystal diodes- as an RF and AF voltmeter to compare the carrier voltage with its audio component.

The meter is coupled to the final tank of the transmitter through a 1- or 2-turn link and a length of 75-ohm line connected to the input terminals.· A O.OOl-1µf ceramic condenser guards the instrument against possible dc voltages. The 100 µµf variable trimmer tunes the input circuit to the frequency of the transmitter. RF voltages develop across D1 and the l000-ohm resistor. When S1 is in the RF position, the diode is used with the meter as a peak reading–RF voltmeter. Its diode load resistor, RI, is chosen so that a reasonable amount of RF at the input terminals will cause full-scale deflection of the meter for voice modulation and 700/0 of full scale for tone modulation.

The meter reads percentage of modulation directly when S1 is in the AF position. One half the primary of a push-pull interstage transformer, with a 1-to-1 ratio, is the diode load. The AF component is rectified by D2 and indicated on the meter as percentage modulation . S2 is a circuit-reversing switch used to switch between positive and negative AF peaks and to check the symmetry of modulation. To indicate carrier shift, throw S1 to RF and compare the readings with and without modulation. If they differ by more than 2 or 3%. check the transmitter for sources of the trouble.

Plug a pair of high-grade phones' in the jack to check the signal for hum, AF oscillations, and modulation quality.

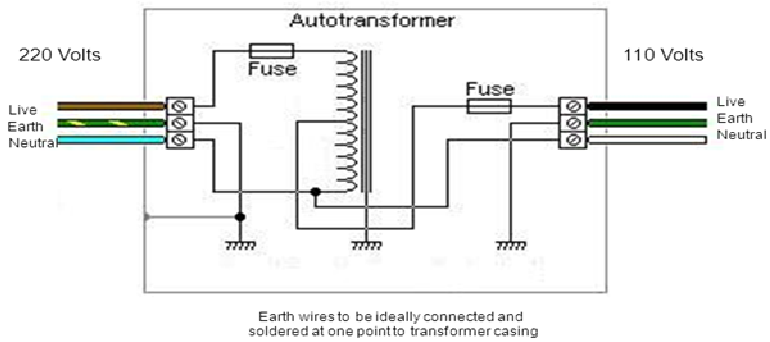


Circuit diagram. The unit is very simple for the versatility of its applications. Two IN34 crystals rectify the current for the 1-ma meter.

President's Corner

9 WAYS TO KILL THE CAT

South Africa is the 4th African country in which I have lived for 32 years out of 45 on this continent. In a way it should have been no surprise in mid September when the municipal supply faulted and applied 400 volts to my 220 volt supply whilst I was overseas. Looking, as always, on the bright side, it could have been far worse had I been at home with a multitude of appliances plugged in so, unlike the other 10 houses connected to the same line, I avoided the electrical carnage. On arriving home I had the security lighting, auto gate, electric fence, alarm system, time switches, irrigation control, and the deep freeze to fix not to mention a hoard of lights, dimmers, and photocells to replace. The deepfreeze is especially precious as it was bought secondhand in 1978 much higher quality than today's rubbish, and being a famous American make, had a 220/110 volt auto transformer mounted underneath. The transformer had behaved like a fuse saving the deepfreeze so a new one was installed. Recently I saw a demonstration by a technically competent person of a restored boat anchor and being American it was plugged into an auto transformer on the table. The problem to me was that the cable to the rig was 2 core without earth and the two pin American plug was reversible by turning it over, and who knows where the 220 input earth was connected if at all. Not only is this irresponsible to demonstrate this to others, it is against the electrical regulations at best and at worst could incur an accidental death penalty. The way I connected the deep freeze is illustrated below.



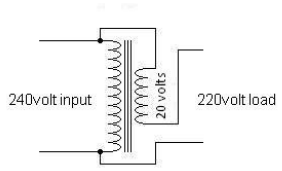
You might think the provision of both primary and secondary fuses a luxury but these things run hot and a primary inter-turn short may not be enough to trip the 20 amp breaker in the board resulting in a fire, and the secondary fuse protects the transformer from overload faults on the appliance. I applied the same philosophy to the 110 volt 500VA supply I installed in the shack for the vintage Collins, but because of plug and play instead of hard wired, I used American 3 pin plugs and sockets on the 110 volt side to avoid mistakes.

Turning to the mains supply to your residence, there are five types of overvoltage events that can invade it destructively.

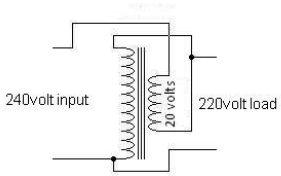
Continuous overvoltage up to 10% due to poor system operation or regulation.
Switching overvoltages, up to 2 times overvoltage lasting milliseconds
Temporary overvoltages up to 40% overvoltage lasting seconds
Continuous over voltage up to 70% due to local system faults
Lightening surges, 5 times or more overvoltage lasting microseconds.

1.Continuous overvoltage up to 10%.

This is my bête noir as my voltage hovers between 238 and 242. The transformers back in the supply chain between the Munic pality and Eskom have taps and adjustment is possible, but the ears are deaf and the recipients of the request think taps to be changed belong to Johannesburg water. I recently dismantled two old homebrew RF amplifiers built in the ghastly galvinised iron sheeting and square nuts era to harvest good vintage components for my AM transmitter. The plate power supplies, in both cases around 3kV, used a bucking transformer to reduce the AC applied to the 866A mercury arc rectifiers. There is no reason why this technique cannot be applied to preserve your most sensitive equipment. Since a long time ago I have used the primary of a 100VA mains transformer as an auto transformer to supply my laptop, wireless modem, LAN router, and printer by putting the mains on the 240 volt tap and the load on the 220 volt tap, the secondary left open circuit. The power handling capability however is seriously limited. Using the bucking method, much higher loads can be run at reduced voltage with cheap and not so heavy iron, taking care to connect the secondary in the correct sense, leaving any others unused .



Bucking transformer



Bucking "auto" transformer

The "Auto" connection is preferred as losses are lower=less heat and the current available is slightly higher. As long as the bucking transformer secondary can handle the load current you have an electrical "lever" at your disposal. Also either way your earth leakage still protects you!

2&3 transient overvoltages.
These events occur regularly during fault clearance and load shedding. Happily, series inductance, parallel capacitance, and thermal inertia come to our rescue and these events usually pass un-noticed except for slow shimmer of the lights at night. However switch mode power supplies, wall warts, and energy saver tubes have none of these attributes and are more liable to die in the home under these conditions.

4.The solid up to 70% overvoltage condition
Originates from loss of the neutral connection on the local distribution transformer. Whether from lack of maintenance or from theft, the end result is un-survivable for virtually all 220 volt connected load seconds after it occurs. This condition rarely occurred in the past due to adequate maintenance and therefore was not catered for in the domestic installation or by protection on the municipal side. Things are different now and good protection is possible by fitting a suitable surge diverter between the MCB on the incoming side and the cable to the house at a cost of about 50% of a wide screen TV. "However there is no one size fits all" and the device must be engineer specified and fitted by a qualified electrician. The surge diverter is a metal oxide non linear resistor rather like an MOV which conducts very little at normal operating voltage but the impedance falls dramatically once the maximum continuous operating voltage is exceeded for example 255 volts. When 400 volts is thrown at it the fast acting surge diverter takes the "nose" off the overvoltage for sufficient time for the high current passed by it to trip the back-up MCB rated typically 50 to 60 amps per phase and minimize the damage although it can die in the attempt.

5.Lightening.
If your name is on the lightning bolt there is nothing you can do bar good earthing and unplug everything at a hint of thunder. Lightening surges coming in through the mains will be greatly attenuated by the surge diverter above, but if the strike is close enough the locally EMP induced voltages in our house wiring, alarm circuits, irrigation controls, electric gates and fences, coaxes and so on may be too much for the electronic kit in the house to bear, connected to the mains or not.

Have a happy day!

Attached are pictures of two RF signal generators that I recently restored to working order. The AVO "Allwave oscillator" is of 1947 vintage as is the Triplett model 2432.By being associated with the AWA and with Richards's help in procuring valves, I was able to get the AVO functioning. The Triplett was given to me in a deplorable state with the case so badly rusted that it required sand-blasting.

In the spirit of ham radio and the AWA
73 James ZS5ABW

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Get your backdated issues at
http://groups.yahoo.com/group/AWA_SA/

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 yesterdays 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.

Notices:

NET TIMES AND FREQUENCIES:
The following are times and frequencies for the AWA nets:

AM Net—Wednesday evenings from around 19:00:
Saturday mornings from around 06:00 or when band conditions allow. Frequency—3615.

SSB Net—Western Cape net Saturday morning from 07:30. Frequency 7070
National net Saturday mornings from 08:30. Frequency —7070 with a relay on 14125

CW Net—Saturday afternoon from 14:00. Frequency—7020.

(Times given are CAT or SAST)