



Newsletter

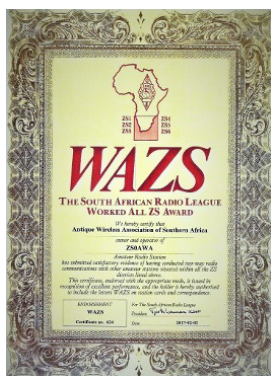
The Antique Wireless Association of Southern Africa



171

October 2020





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AWA Committee:

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Reflections:

I sat the other day trying to think about all the different radios that I have had pass through my hands and came to the conclusion, that I could never remember them all.

There were many that left a lasting impression on my mind either because of their looks, or because of the enjoyment I got out of using them.

I never thought of any of them as being super radios, probably because I never really had a technical grounding about sensitivity or power outputs or any of those things that cause so many people to buy radios. I think for me it was always about the aesthetics.

Of course, I don't think one ever forgets the first radio that crossed your path. After I got my restricted ZR licence, the first thing I could think about was getting a 2 meter rig and how I would talk around the country with it. You see what I mean about that technical grounding?

Anyway, my first radio was a Trio 700G all mode 2 meter rig.

It never had many crystals in it, so it had to be manually tuned each time one changed frequency. It was only after I started to play around with it, that I realised it wasn't going anywhere. So I put together a ZL special 12 element yagi, designed by Frank Judd and then things started to come together a bit. Now I could copy the Kimberley repeater, about 165km away. But with the low power output, I could not trigger it. Somewhere or another, I got hold of a 50w linear, and the world opened up to me. Well that was my thoughts anyway.

At this stage, I still had my CB radio, an SB home base, coupled to an 11m yagi up at about 6m.

Now lets remember, that was during one of the solar peaks where one could work most places around the world on a wet shoestring. Although I felt a bit guilty about

working stations on my CB, it was fun.

After installing the linear on 2m, I could trigger the Bloemfontein repeater, all of 300km away, using my 12 element ZL special. Now that opened up a new world to me.

This was before things like Echolink and internet connections and I became known as the DX station on the Bloem repeater.

Where am I going with this? It became relevant to me at this stage how important a good antenna was. Again there was no technical background to follow this up and my first HF antenna, was as many still do, a G5RV. Again, in the conditions we were in, it performed fantastically.

I had learnt how important resonant antennas were in my Signals days and that was experience, not technical ability.

These days of course, everyone wants to be plug and play, and I wonder if they ever experience the thrill of homebrew.

Best 73

DE Andy ZS6ADY

Wikipedia

Radio Propagation:

Diffraction:

Knife-edge diffraction is the propagation mode where radio waves are bent around sharp edges. For example, this mode is used to send radio signals over a mountain range when a line-of-sight path is not available. However, the angle cannot be too sharp or the signal will not diffract. The diffraction mode requires increased signal strength, so higher power or better antennas will be needed than for an equivalent line-of-sight path.

Diffraction depends on the relationship between the wavelength and the size of the obstacle. In other words, the size of the obstacle in wavelengths. Lower frequencies diffract around large smooth obstacles such as hills more easily. For example, in many cases where VHF (or higher frequency) communication is not possible due to shadowing by a hill, it is still possible to communicate using the upper part of the HF band where the surface wave is of little use.

Diffraction phenomena by small obstacles are also important at high frequencies. Signals for urban cellular telephony tend to be dominated by ground-plane effects as they travel over the rooftops of the urban environment. They then diffract over roof edges into the street, where multipath propagation, absorption and diffraction phenomena dominate.

HF Happenings:

South African Radio League 80 m QSO Party.

The aim of this contests is to create an interest in and activity on the 80 m band. It is a phone only contest running from 17:00 to 20:00 UTC on Thursday 1 October 2020 with activity between 3 603 and 3 650 and 3 700 and 3 800 kHz. The segment 3 651 to 3 699.99 is contest free.

The exchange is a RS report, your call sign and your name. your score 10 points for every contact with a South African station and 15 points for every contact with a station outside South Africa.

Log sheets in MS Excel format ONLY must be submitted by 8 October 2020 to zs5lp@vodamail.co.za

The Antique Wireless Association Valve QSO Party

The aim of the AWA Valve QSO party is to create activity on the 40 and 80 metre bands; and it is a phone only contest using AM and SSB. Preferably, valve radios or radios with valves in them may be used. No linear amplifiers may be used.

The AM QSO Party runs from 13:00 to 17:00 UTC Saturday 3 October 2020 and the SSB QSO Party from 13:00 to 17:00 UTC Sunday 4 October 2020.

Activity on both days takes place between 7 063 to 7 100 kHz and 7 130 to 7 200 kHz as well as 3 603 to 3 650 kHz, with the output power not exceeding 100 w, unless the rig itself has a higher output power.

The exchange is a RS report, your call sign, a consecutive serial numbers starting at 001 and the type of radio used.

All valve radio's score: 3 points per contact; Hybrid radio's score: 2 points per contact and Solid State radio's score: 1 point per contact.

The log sheets must be submitted by Monday 19 October 2020 to andyzs6ady@vodamail.co.za. Certificates will be awarded to the first three places in each category – AM and SSB.

INDEXA Newsletter

The Summer 2020 issue (#130) of the International DX Association's Newsletter is now available for download on the INDEXA website at <https://indexa.org/newsletters.html>. "DX material is very scarce right now", so "this issue is about history" - the beginnings of INDEXA and the first sponsored DXpedition in 1984 to the Kermadecs, plus a spotlight on Yasuo "Zorro" Miyazawa (JH1AJT), the recipient of the 2020 Hamvention Amateur of the Year Award.

The Final Results of the 5th SARL Wednesday 80 m Club Sprint

An enquiry was received about one log – it would seem that the log checker did not check it before submitting it!

1st the West Rand ARC – 918 points (16 logs)

2nd the Boland ARC - 900 points (16 logs)

3rd the Bo-Karoo ARC – 600 points (6 logs)

After the 5th leg

1st the West Rand ARC – 4 471 points

2nd the Boland ARC – 3 892 points

3rd the Bo-Karoo ARC – 1 806 points

And the individual scores

1st Nico, ZS4N and Aldo, ZS4AL – 124 points

African DX

Contacts with stations on the African continent count towards the SARL's All

Africa Award (www.sarl.org.za/public/awards/awards.asp)

Niger, 5U. Adrien, F4IHM, is now active as 5U4IHM from Niamey, Niger and is there on a mission assignment. Activity will be limited on various HF bands (mainly 40/20 m) using CW and FT8, with a FT-817 into a wire antenna. QSL via his home call sign, direct or the REF Bureau.

Calendar:

October

1 – SARL 80 m QSO Party

3 – AWA AM Valve QSO Party

4 – AWA SSB Valve QSO Party; RSGB DX Contest

8 and 9 - Draconids meteor shower

9 – World Post Day

10 – Spring QRP Contest

11 to 16 – IARU Region 1 Virtual General Conference

16 – World Food Day

17 – CQ Hou Koers

17 and 18 – Jamboree on the Air

21 and 22 - Orionids meteor shower

24 – UN Day

24 and 25 – CQ WW DX SSB Contest

25 – PEARS HF Contest

31 – SARL 95 40 m Club Sprint

Antique Wireless Association Valve QSO Party

1. Aim

The aim of the AWA Valve QSO party is to create activity on the 40 and 80 metre bands. It is a phone only contest using AM and SSB. Preferably, valve radios or radios with valves in them may be used. No linear amplifiers may be used.

2. Date and Time

2.1 AM QSO Party

13:00 to 17:00 UTC Saturday 3 October 2020

2.2 SSB QSO Party

13:00 to 17:00 UTC Sunday 4 October 2020

3. Frequencies

3.1 40 metres: 7 063 to 7 100 kHz and 7 130 to 7 200 kHz

3.2 80 metres: 3 603 to 3 650 kHz

4. Power

The output power may not exceed 100 w, unless the rig itself has a higher output power (FTDX400, etc.)

5. Exchange

Call sign, RS report, a consecutive serial numbers starting at 001 and the type of radio used, e.g. HT37 TX.

6. Scoring (Your radio)

All valve radio: 3 points per contact Hybrid radio: 2 points per contact Solid State Radio: 1 point per contact

7. Log Sheets

The log sheets must be submitted by Monday 18 May 2020 and Monday 19 October 2020 to andyzs6ady@vodamail.co.za. Certificates will be awarded to the first three places in each category AM and SSB



All Valve



Hybrid

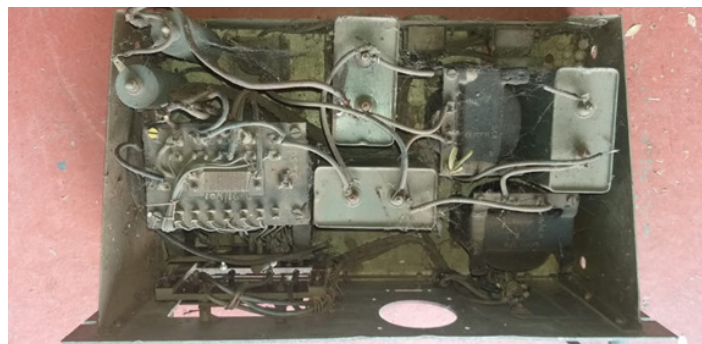


Solid State

Restoring a Power Unit Type R234A, Ref. No. 10D/17395, Ser. No. EKCS 4854 By. Viv Stuart-Williams

The story is quite interesting. I was phoned by a Piet Lombard from Sasolburg. He had an R206 in his garage. He wanted to know whether I was interested. I said yes. He sent some photographs. It was a complete R206, with an Air Ministry Type 234A power supply. Condition of both was moderate. After several months delay, he managed to arrange for it to be delivered to the Cape Town refinery where my son picked it up.

The unit is 19" rack mounting and was produced in the early 1940s by the United Kingdom Air Ministry to power units such as the R1392A (100-150 MHz AM/FM aircraft) and the R1132A (approx. 98-127 MHz). These are both VHF units generally used in control towers. Below is a photograph of the unit I received. These units required an HT+ of about 250 volts and standard heater current of 6.3 volt.



There was no meter (although there was a hole) and no sign of any meter wiring. Some versions of the R234A had no meter and it maybe that at some stage someone had removed the cover plate. Also, the front slide panel (that houses the four fuses) had several broken or bent pins. Inside, behind the front slide in panel was a switch marked R1392A and R1132A that varied the tapping (see circuit diagram below). Also stamped on the internal bakelite panel was R206 in the bottom switch position. On the internet I found an Air Ministry circuit diagram on radiomuseum.co.uk/psu234a.pdf. That schematic is shown below.

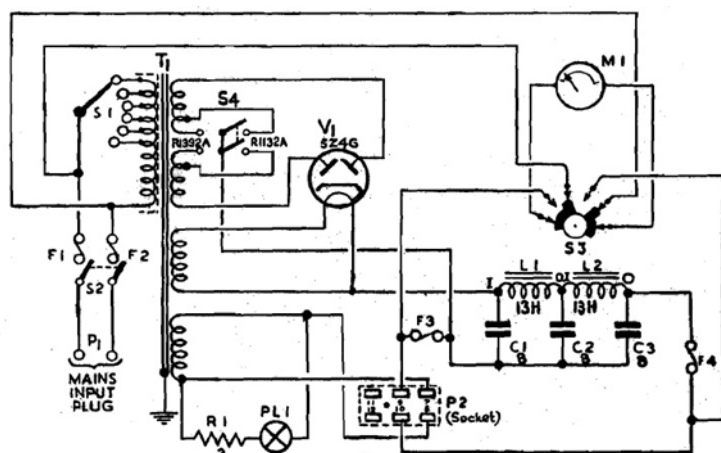


Fig. 2. Power unit Type 234A, circuit

R E S T R I C T E D

octal valve socket for the VR105 and a 5kohm drop down resistor from the 200v supply, they generated the HT2 100v supply. Then by combining in series the 6.3 heater voltage for the previous radios and the 5 volt rectifier heater supply (5Z4G), they approximated a new 12 v heater supply for the R206.

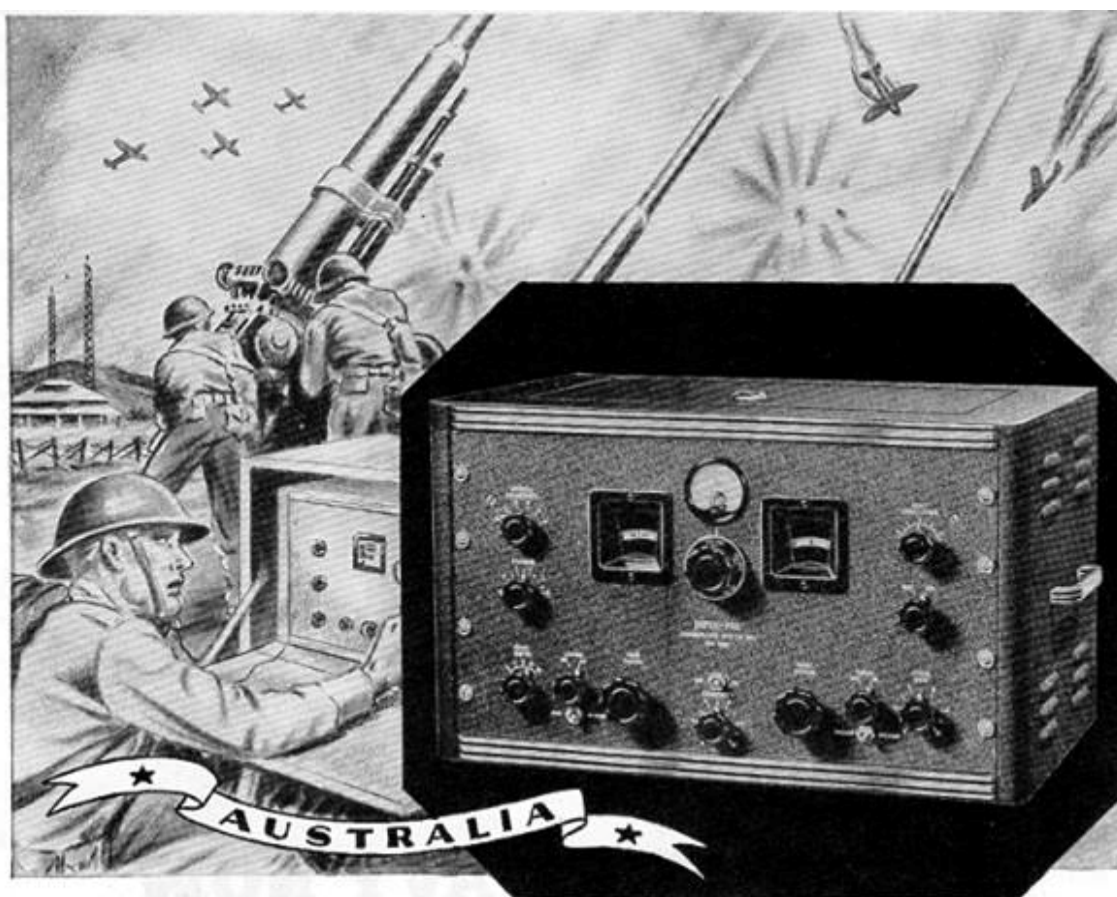
That seemed straight forward. All I had to do was re-install the selenium rectifiers and it should be good. Unfortunately, I couldn't. Firstly, the rectifiers had been painted military gray covering any polarity symbols and testing suggested internal resistances of over 130 k ohms in both directions in both units. Then I tried reforming them but there was no evidence of any improvement. The 50-60 year old selenium rectifiers could not be salvaged.

That meant using a modern diode bridge. But that created another problem because modern diode bridges have something like a 1 volt forward voltage drop versus something like a 40 volt forward voltage drop on the selenium rectifier. Pretty much 2 volts per cell. To resolve this issue I used a 25 watt 1000 ohm wire wound resistor.

The first thing I had noticed examining the unit was the two obvious selenium rectifiers (units with veins at the back left of the unit). These suggested that the 5Z4G valve was no longer required and that there had been a modification. I found an Air Ministry Mod plate on the back that said RMC 2740/1 dated 26-5-53.

However, there was still an octal valve socket in the valve base, containing a VR105 valve base (which is a 100 v voltage regulator).

After considerable thought I realized that the R206 radio (for which the PSU 234A was being modified) uses an HT1 of about 200 volts, an HT2 of about 100 volts and a 12-volt (no longer 6.3V) heater supply. By removing the 5Z4G valve and using two selenium rectifiers the designer created the 200v for HT1; then using the



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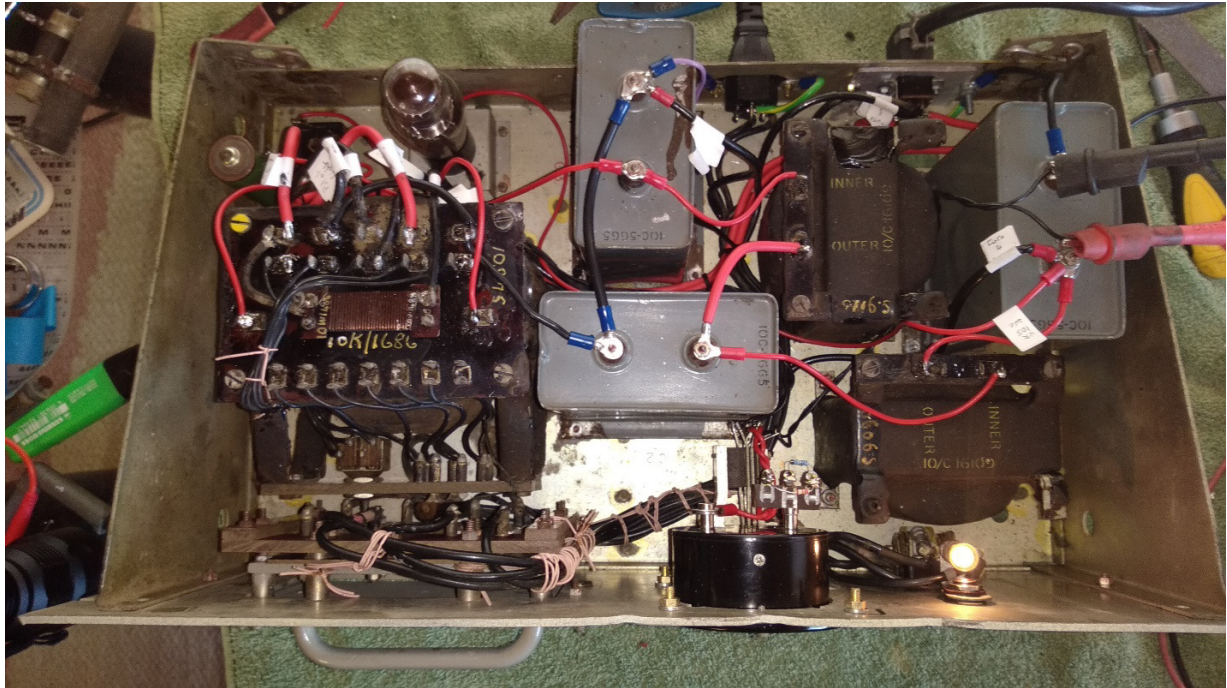
HAMMARLUND

I then found an old Hamrad 1 ma meter which used in series with a 293k ohm resistor gave a full-scale deflection of 300 volt. I produced a 300 volt dial scale for the meter so it now read volts.

Time to turn it on. It seemed to work fine BUT the transformer was getting too warm. I decided that I must have an earth loop so lifted the earth side of the diode bridge only using two of the four diodes. Problem solved – no heating.

The unit powers my original R206 beautifully. See the photos of the restoration and finished PSU below (minus case). The switch now reflects HT1 and HT2 versus the original which showed mains voltage and HT1.

Finally the complete clean and working unit. Note that the little labels were to help me identify the wiring.
VSW 06-11-2019



Restoring an Aeronautical and General Instruments Co Ltd, Reception Set R206 (Mk1), Serial No. 334, ZA14343. By. Viv Stuart-Williams

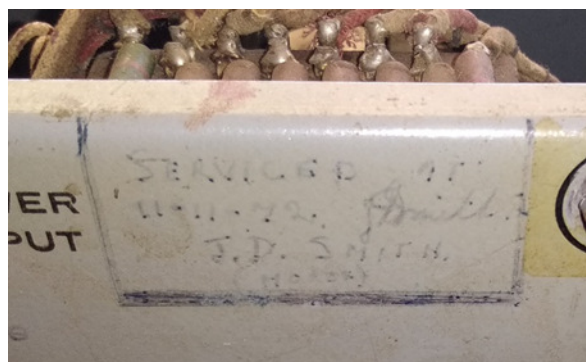
The story is quite interesting. I was phoned by Piet Lombard from Sasolburg on 30 March 2019. He had seen my Antique Wireless Association (AWA) article on my R206 Mk1 (see AWA Magazine #122 April 2016). He told me that he had another R206 Mk1 in his garage. He wanted to know whether I was interested. I said yes. He sent some photographs. It was a complete R206 (unit plus box plus separate front cover), with an Air Ministry Type 234A power supply. Restoration of the Type 234A power unit will be covered in a separate AWA article. The condition of both units was moderate with superficial rust, odd dents, etc. After several months delay, he managed to arrange for it to be delivered to the Cape Town refinery (the unit plus boxes weighs something like 170 lbs/ almost 80 kgs, excluding the power supply) where my son picked it up. The left-hand photo below shows the R206 unit (centre), the lid (left) and the Type 234A power supply (far right with two holes in the front).



Obvious on the front right of the R206 unit when I opened the unit up, was a call sign ZS2PD. Piet tells me that this was a PD

Neveling (1970) from Secunda ARC. I would be interested in additional details.

Also present on the unit was a “serviced by” rubber stamp. Investigation shows this to read “SERVICED AT 11-11-72” And a written name and signature JD Smith followed by an M0??? (letters unreadable). This is a UK callsign.



The possibility that this unit may have come from the UK is further supported by the fact that on all boxes the name Taylor appeared in black felt tip pen. This suggests packing during a move. I would be interested in any information that can be supplied.

As I said the restoration of the power supply unit required considerable love and attention and is dealt with in a separate article for the AWA entitled “**Restoring a Power Unit Type R234A, Ref. No. 10D/17395, Ser. No. EKCS 4854.**”

On opening the R206, there were several issues that required attention before any power could be applied.

A very thorough cleaning;

Although not visible in the photos above there are two large and heavy bandwidth filters (on the r/h photo look below the IF coil packs where the sockets can just be seen), for the 0.7 and 2.5 KHz nominal bandwidth switching. These should be restrained with a large metal bar. This had not been done and both filters had damaged themselves (pins broken and bent) and they had damaged the rear valve (top cap wiring had been broken off). All of this I repaired;

I checked continuity of all 11 valve heaters;

The 1M Ω AF volume control had been damaged. This I remounted and cleaned, straightening the knob;

The 12volt drum light was not working;

The tuning knobs needed resetting (they were jamming);

I checked the power-in socket for continuity and correct resistance. It is a 6 pin socket (Pin 6 is HT2 200 volt, Pin 5 is HT1 100 volt, Pin 4 is the external speaker connection – NC, Pins 2 and 3 are 12volt heaters, and Pin 1 is ground). Pin 6 resistance is a nominal 60 k Ω to ground, while Pin 5 is essentially infinite to ground. Heaters are not grounded being a closed 12volt system; and

I completed a full visual check.

I then connected the Power Unit Type 234 A via the six-wire cable and military plugs I had in my boxes, through a large variac to the mains power and using 20 volts turned it on. No smoke. In 10 volt units I slowly raised the variac to mains 220 volts (done over several hours). Still no smoke. Using Band 6 (MW) I plugged headphones carefully into the 150 Ω front socket. Playing with the volume controls I was rewarded with a gentle hum. Remembering how quiet my previous unit was I carefully connected an aerial (about 4 metres of wire). Tuning to Magic Radio (828 kHz in the Cape) I was rewarded with a beautiful audio, correctly on frequency, with plenty gain. A quick check showed that both 729 and 567 were also present and correct. The power supply and radio are shown below during initial testing. Note that that the drum cover was off on the R206 while I replaced the bulb.



Interestingly the Power Supply Unit 234A required the more work and took a considerable time. Although I have not restored the R206 I probably won't do much with it. What it has is part of its history. I will clean it up carefully and repaint the boxes. I also need to unbend the band change knob which has created the circular mark bottom right on the radio.

Viv Stuart-Williams
73

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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 yesterday's 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.

Notices:**Net Times and Frequencies (SAST):**

Saturday 06:00 (04:00 UTC) —AM Net—3615
Saturday 07:00 (05:00 UTC) —Western Cape SSB Net— 3640
Saturday 08:30 (06:30 UTC)— National SSB Net— 7140; Sandton repeater 145.700
Echolink—ZS0AWA-L; ZS6STN-R
Relay on 3615 for those having difficulty with local skip conditions.
Saturday 14:00 (12:00 UTC)— CW Net—7020; (3550 after 15 min if band conditions not good on 40)
Wednesday 19:00 (17:00 UTC) — AM Net—3615, band conditions permitting.

AWASA WhatsApp group:

Should you want to get on the AWA WA group where a lot of technical discussion takes place, send a message to Andy ZS6ADY asking to be placed on the group. This is a no-Nonsense group, only for AWA business.
+27824484368

For Sale:

Hi guys i have a Eddystone S902 mk2 up for offers. If anyone is interested can contact me on 0825342787 or pietbar-nard76@gmail.com

Thanks Pieter Barnard

Kenwood TS830S Plus:

AT200 Tuner



SP820

SM220
Station Monitor



Heathkit HX20—20m Txvr



HW32 with Leson mic



SB200 SSB Linear Amp



SB101 SSB Transceiver



HB10B SWR Meter and SB600 Speaker

All of the above listed equipment is available from Bryan ZS5WTF, Contact number 0828367419.

Kenwood TS830S plus extra's — R8000

Heathkit equipment plus another SB101—R10,000 onco