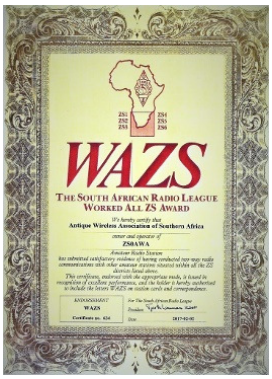
Antique Wireless Association of
Southern Africa
Newsletter

195 October 2022



Inside this issue:

AWA Committee:

* President—Renato ZS6REN
* Vice President—Jacques ZS6JPS
* Technical Advisor—Rad ZS6RAD
* Secretary/PRO—Andy ZS6ADY
* KZN—Don ZS5DR
* WC—John ZS1WJ
* Historian—Oliver ZS6OG

Visit our website:

www.awasa.org.za

Reflections:

Another winter has passed and it would seem we have all come through without losing too much weight from hibernation, or have increased in weight from all the hot chocolate consumed. Whichever it may be, I am sure it will not affect the ether too badly and we will still be able to get involved in as many transmissions as we can.

The second part of the Valve QSO party is coming up this weekend, 1st and 2nd October, (see page 7 for details) and it would be really good to hear some of the AWA members taking part. In fact it would be even better to have an AWA member taking the highest points positions.

I don't see why this is not possible, as we are mostly, the ones who still operate hybrid and all valve radio's, that get you the highest scores.

Take some time out of your busy schedule and if you have never operated AM, then here's the ideal opportunity to try it out. Be careful and watch your ALC when doing this, otherwise you will be overmodulating and upsetting the other ops, or you may destroy your finals.

There is also a notification for the AGM coming up on the 12th November. (Page 9). Once again it is a great opportunity to get out there and meet up with the old faces, burn some meat over the coals and see what is available in terms of jewels at the fleamarket. Then of course there is the official side of it which we will try to make as short as possible.

For those who can't make it, we will try and have the internet up and running with a connection. This is only for people further than 200km away. If you are closer than that, you won't be able to log in. Of course that is pure nonsense, but at least we tried.

You can't use covid as an excuse any more so just put some petrol in your car, see how many guys you can bring along with you and share the costs. We look forward to meeting up with you all again.

I hope there are some who still enjoy doing crossword puzzles. This month is the third one of a series, and it would be interesting to know if any of you are doing them.

I had a phone call from Kevin Turner ZS6KAT who is now in Oslo, asking about some of the answers and had to supply him with the cheat sheet. He tells me he is a great fan of doing crosswords.

I was wondering if there are any others ?

We are flying towards the end of the year and I hope you have all decided on what you are going to surprise yourselves with for Christmas or Hannukah or just present time. For me it's just another time to relax and put on some more weight so that I can go on diet in January and lose it all again.

Best 73

DE Andy ZS6ADY

Wikipedia

Solar Flares:

Post-eruption loops and arcades

After the eruption of a solar flare, **post-eruption loops** made up of hot plasma begin to form across the neutral line separating regions of opposite magnetic polarity near the flare's source. These loops extend from the photosphere up into the corona and form along the neutral line at increasingly greater distances from the source as time progresses.[13] The existence of these hot loops is thought to be continued by prolonged heating present after the eruption and during the flare's decay stage. In sufficiently powerful flares, typically of C-class or higher, the loops may combine to form an elongated arch-like structure known as a **post-eruption arcade**. These structures may last anywhere from multiple hours to multiple days after the initial flare. In some cases, dark sunward-traveling plasma voids known as supra-arcade downflows may form above these arcades.

Cause

Flares occur when accelerated charged particles, mainly electrons, interact with the plasma medium. Evidence suggests that the phenomenon of magnetic reconnection leads to this extreme acceleration of charged particles. On the Sun, magnetic reconnection may happen on solar arcades – a series of closely occurring loops following magnetic lines of force. These lines of force quickly reconnect into a lower arcade of loops leaving a helix of magnetic field unconnected to the rest of the arcade. The sudden release of energy in this reconnection is the origin of the particle acceleration. The unconnected magnetic helical field and the material that it contains may violently expand outwards forming a coronal mass ejection. This also explains why solar flares typically erupt from active regions on the Sun where magnetic fields are much stronger.

Although there is a general agreement on the source of a flare's energy, the mechanisms involved are still not well understood. It's not clear how the magnetic energy is transformed into the kinetic energy of the particles, nor is it known how some particles can be accelerated to the GeV range (10^9 electron volt) and beyond. There are also some inconsistencies regarding the total number of accelerated particles, which sometimes seems to be greater than the total number in the coronal loop. Scientists are unable to forecast flares.

The Wonderful World of Lids

December 1964 Popular Electronics

By Carroll Moon

What was Pheobus Sharney's strange preoccupation? Here, it stands revealed for every YL to read.

I shall not reveal how I met Pheobus Sharney, nor why I have chosen to distinguish him from the many others of his ilk by writing about him. Suffice it to say that I am acquainted with a gentleman who is, believe it or not, a typical radio nut.

During the day he is employed in a computer foundry. There has always been some question as to whether he simply tolerates the incessant pound, pound, pound of square waves on the shore, or just considers it something that any red-blooded American ham should do. For his spare time is spent in a like manner-sweating over a hot cathode, oblivious to anything but ham radio.

Recently, I spent a soul-wrenching Sunday morning with him before the cyclotron he sardonically calls his "linear amateur radio rig." "Let's try fifteen first," he said competently, although why he picked that particular number I will never know. He twisted the dials, read the cyclotron's meters, and then a speaker began to emit weird chirps and snorts. Finally, I began to distinguish voices speaking some odd language that seemed to make sense to Pheobus.

"There's a contest on," he explained, "a big phone contest."

I've heard of endurance contests where people line up outside a phone booth to wait for some teen-ager with a pocket full of nickels to get off the phone, but this phone contest was a horse of a different color. Some loudmouth was shouting something that sounded like "Seek you the axe, seek you the axe!", but this seemingly strange advice was actually given in a Brooklyn accent that came out "Seek you de axe!" I waited patiently for an explanation.

"You see," Pheobus began, "every so often an organization called the American Radiator Delay League notifies all the gang that a phone contest will be held on a certain date between such and such hours. There's one this weekend, and hams all over the world are trying to contact other hams. The one who makes the most and best contacts gets top honors. Some contacts count more than others, especially de axe. Sometimes a real operator wins, but there are a lot of accomplished fakirs in the ham world."

"What do they talk about?" I asked innocently. "They sound like they're fresh out of the funny factory."

"Just lissen," Pheobus commanded. "I'll explain as we go along."

He twisted something called a "gain control" and another knob that was supposed to multiply the Q, and a voice with a Spanish accent began shouting through the speaker.

"My number two you oh man is five zero, my report is are nine plus. Do you copy? Do you copy? See oh eight are hell with kay eight bloozy, doozy, choosy . . . Come in oh man!"

Pheobus turned off his standby in order to comment. "That's a Cuban ham talking with a ham in our eighth district. He gave a contest number and signal report. Notice how fast he's working. Wants to make as many contacts as possible before the show is over."

He turned on the kilocycle control, only to find the Cuban still spouting. "O.K. oh man. Thank you werry much. So long and best of lock in de contast. See oh eight are hell is cue are zed on de band looking for any possibles. Kay somebody please."

Pheobus broke in over the noise. "He's telling any possible listeners who might want to contact him that he's now ready to talk with them. That's what cue are zed stands for. Now let's get up on the American part of the band and listen to the lids up there ..."

"Scratch, squawk, zzzz . . . fine business zed ess two able baker. I'm running 50 watts on homebrew with a zepp outside the shack. How do you copy? Double you four umptsy bumptsy whiskey over two zed ess two able baker victor."

Pheobus turned down the kilocycle control again and shook his head in disgust. "That joker is running with damn near a full keg. He always pulls that crud on some poor, unsuspecting foreigner. Last week he was bragging about his full keg and tribander on an eighty-foot mast."

All I could envision was some guy living in a shack and drinking homebrew - a whole keg of it-but what was a zeppelin doing parked at the eighty-foot mast outside?

"... I'm writing out your cue ess hell card right now old man, be sure to send yours. Pea a zero alpha better papa. Your number is seventy-nine and your sigz are nine plus. Do you copy? Kay a seven papa please America two pea a zero alpha better papa. Come in oh m."

"That louse," Pheobus muttered, "hasn't got any cue as hell cards. Never had any, but tries to collect all the foreign cards he can get. I heard him explain it on the air last week. Thinks it's funny but it gives the rest of us American hams a bad name."

The stand-near switch was thrown again, and Pheobus fiddled with the dials. Suddenly a voice, speaking in an obscure Choctaw dialect grated through the speaker. "Single Sideband," Pheobus observed.

I nodded in wonderment and awe, for how could he tell just by listening whether Mr. Sideband was married or single? The voice became intelligible, interrupting my thoughts.

"Seek you, seek you. This is whiskey baker two yellow banana peel. Kay somebody plz."

"I'll just give him a shout to see if the rig is working," Pheobus said hurriedly as he twisted dials, threw meters, and stepped on the accelerator.

"Whiskey baker two yellow banana peel, this is kay two brown spotted zebra. What say old man?"

"How do you know he's an old man?" I asked. "And is brown spotted banana peel a code name?" Pheobus just grimaced and looked pained as he listened to his microphone, waiting for a reply.

"Sorry brown spotted zebra," the voice came back. "I can barely read you-you're way down in the mud ..."

Before I could ask him what this "mud" business was about, Pheobus went into action. "Cue are X there, I'm running in my bare feet. I'm switching over to the linear."

Pheobus' feet were not bare, but I thought it would be better not to remind him, for he was in a frenzy. Lights came on, dials began to spin, and the air smelled like ozone.

"How do you read me now, old man?" Pheobus asked the cyclotron.

"Sorry brown spotted zebra," said the voice. "Your sigz are three by four. Sorry I can't stick around as I have a sked coming up with Yankee victor three papa whiskey, and he'll be looking for me. Seventy-three. Kay two brown spotted zebra, whiskey baker two yellow banana peel is cue are zed."

"Three by four!" Pheobus raged. "He must be using a crystal set. Why that lid ... I ought to ..."

When I left, Pheobus Sharney was seated morosely before his monster, staring out into space and occasionally mumbling something that sounded like "lid." I have pondered this term and the many others used during this strange, revealing session. Dictionaries do not seem to carry them.

I can only conclude that radio hams live in a world of their own, and have invented a special language to baffle casual intruders. To use their strange word of approval. I call it "The Wonderful World of Lids."

Digital Filtering - Switched Capacitor Filters
December 1974 Popular Electronics

New technique operates from a digital oscillator and uses no critical elements

When this Digital Filtering article appeared in a 1974 issue of *Popular Electronics* magazine, the concept of switched capacitor filters (SCFs) was just entering the realm of digital circuitry. One author, Carmen Parisi, credits none other than James Clerk Maxwell for initially contriving the idea. Today, variations of the switched capacitor filter are ubiquitously incorporated into integrated circuits of all sorts, but at the time of this piece they were assembled from discrete components including banks of capacitors, digital switches (counters), and transistors. Figure 2 shows an experimental circuit that uses six capacitor values for use at audio frequencies. The earliest IC switched capacitor filters worked in the hundreds of Hertz realm, and gradually increased in frequency until today they reach to around 100 kHz (see Digi-Key SCF offerings).

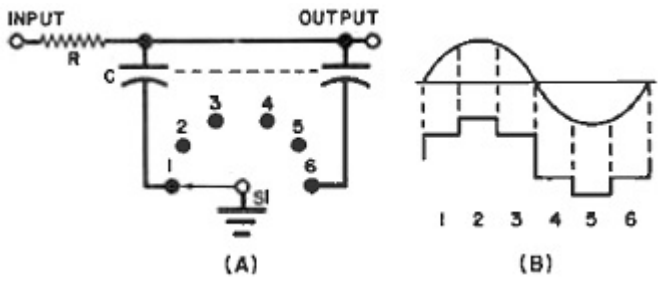


Fig. 1 - At (A) is a simple switch circuit which generates the stepped waveform shown at (B) from a sine wave.

By Leslie Solomon, Technical Editor

Single frequency filters are important in a number of areas - RTTY, SSTV, radio control, etc. There are two approaches that are usually used to accomplish such filtering: either multi-element passive systems (which use precision components and are somewhat bulky physically) or active filters (which use a few passive components and an op amp). Even with the active filter, to obtain careful control of the selected frequency, it is necessary to select precision passive elements.

Though either of the two approaches works well, there is a new filtering method that is unique and should be of interest to the serious electronics experimenter. Called digital filtering, the new method uses no critical elements and is "tuned" with a digital oscillator. High-Q filters (even at low audio frequencies) can be realized and the circuit is very stable since no regeneration is used. These filters use low-cost TTL logic and some conventional switching transistors.

In the simple circuit shown in Fig. 1A, with the six-position switch in position 1, and with an audio sine wave applied to the input, the first capacitor will start to. charge up toward the signal's peak voltage. If S1 is switched to the next capacitor when the voltage across the first capacitor has reached the average value for that portion of the sine wave, the switch makes another step.

Therefore, as S1 rotates around the six capacitors, each capacitor receives a charge whose value depends on the average value of the sine wave at its portion of the waveform. The charges on the capacitors can be represented by the step curve in Fig. 1B. Of course, the switch must be synchronized with the input sine wave. If the input and switching frequencies are not synchronized, the average voltages stored in each capacitor will differ and will drop very rapidly on each side of the switching frequency. This is the basis of digital filtering; and because of the synchronization system, tuning the filter to any desired frequency is primarily a matter of "tuning" the switching oscillator. Component values for the resistance and capacitance are not very critical.

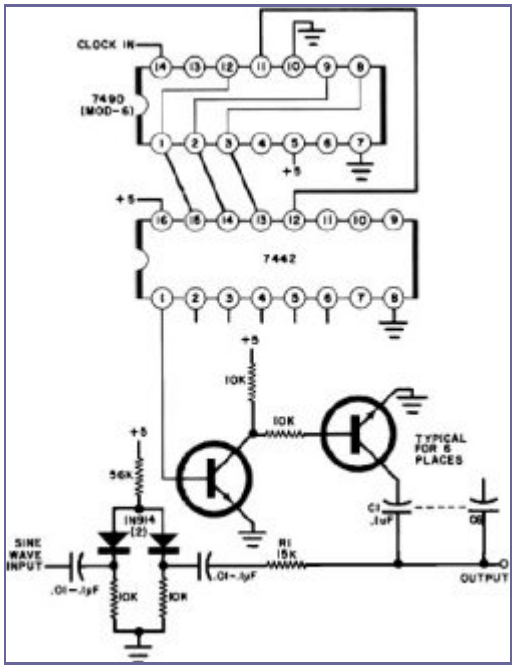


Fig. 2 - Circuit of an experimental digital filter for the audio range.

The circuit of an experimental digital filter for the audio range is shown. in Fig. 2. This circuit consists of a conventional mod-6 counter (7490) driving a BCD-to-decimal counter (7442). The audio input to be filtered is passed through a simple clipper and then coupled to the digital filter consisting of R1 and the six transistor-switched capacitors (C1 through C6). The digital logic and transistors form the switch in Fig. 1A. The digital clock that actually tunes the filter can be any variable-frequency triggering source at six times the required filter frequency.

To tune the filter, connect the audio input to the clipper and a scope to the output. For a dual-channel scope, use the second channel to observe the sinewave input. Care must be taken in tuning the variable clock since the Q of the circuit is high and the filtering action might be missed. As the input is tuned up further in frequency, a peaking in the digitized waveform will be reached at the harmonics of the original setup, with the steps getting coarser each time. This will happen until the harmonic number corresponding to the number of switching positions is reached (six, in this case). There will then be no output, but there will be at the next harmonic. As each harmonic is viewed, it will be lower in amplitude and coarser.

The filtered output signal is a distorted version of the original input so the output can not be used as a sine wave. However, it is useful for triggering other circuits. The bandwidth of the filter remains substantially the same even when the filter frequency is changed. Once built, to change the filter's center frequency, it is only necessary to change the clock frequency to the TTL counter (7490), with the frequency six times the input. The number of switched capacitors is not limited to six but can be any number from a minimum of three to as many as required. The larger the number of capacitors, the smoother the displayed waveform.

The number of capacitors also determines the clock frequency. With six capacitors, the clock must be six times higher in frequency than the input. With five switched capacitors, the clock must be five times higher than the input signal, etc.

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 (15:00 to 19:00 CAT) Saturday 1 October 2022
2.2 SSB QSO Party
13:00 to 17:00 UTC (15:00 to 19:00 CAT) Sunday 2 October 2022

3. Frequencies
3.1 40 metres: 7 063 to 7 100 kHz and 7 130 to 7 200 kHz; 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
5.1 Call sign, RS report, a consecutive serial numbers starting at 001 and the type of radio used, e.g., HT37 TX.
5.2 Each QSO claimed for competition credit must include contemporaneous direct initiation by the operator on both sides of the contact. Initiation of a contact may be locally or by remote. Contemporaneous = existing at or occurring in the same period of time and the operator must be in control of all the processes. In plain English – a live, air breathing radio amateur must be at both ends of the QSO.

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
7.1 The log sheets must be submitted by Friday 7 October 2021 to andyzs6ady@vodamail.co.za.
7.2 Log sheets should be in Excel Format as far as possible.
7.2 Certificates will be awarded to the first three places in each category – AM and SSB

All Valve

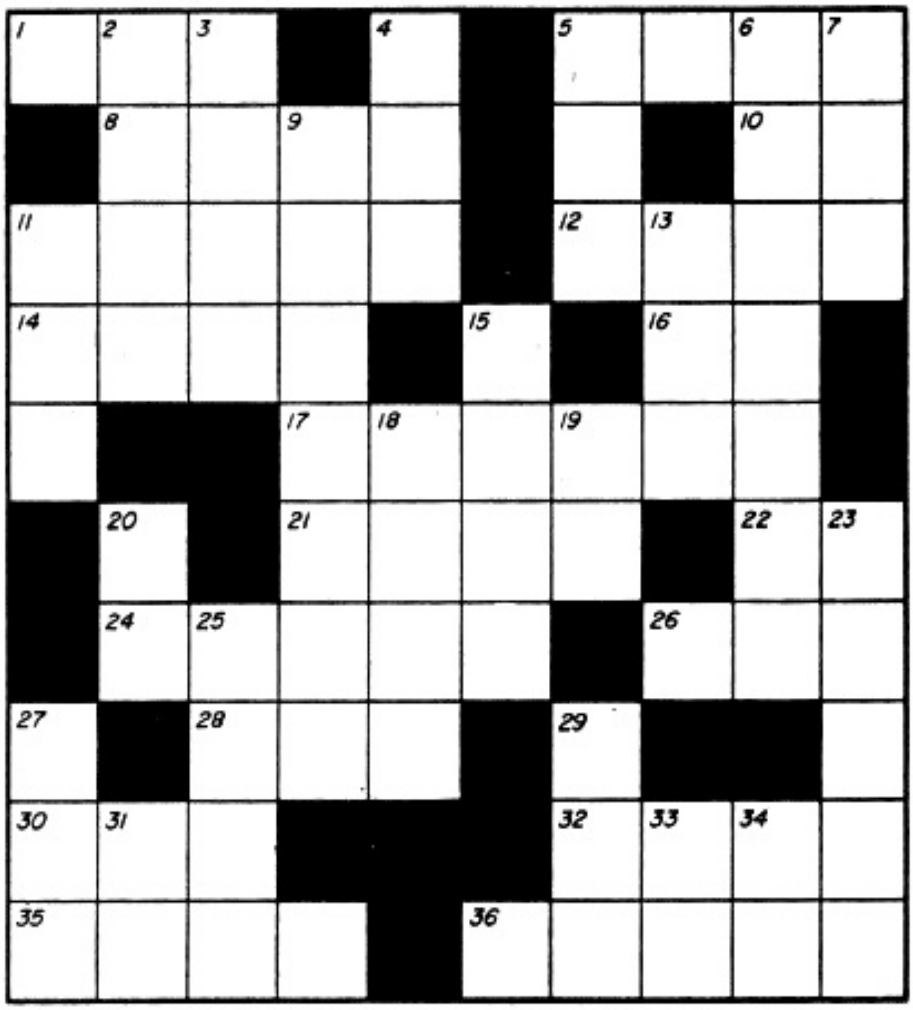
Hybrid

Solid State

Electronics Crossword

CROSSWORD PUZZLE

By Arthur L. Branch



ACROSS

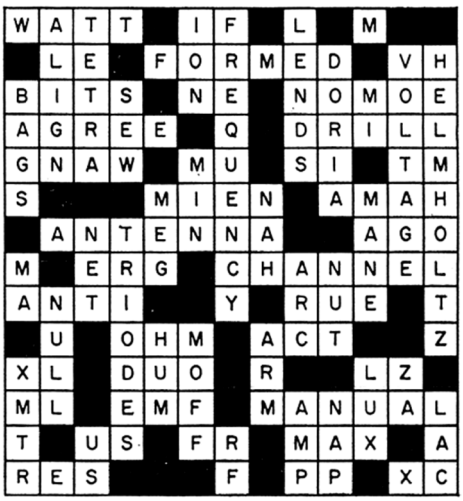
1 Automatic gain control: Abbr.
5 Plug-in type terminal.
8 Speed contest.
10 Hawaiian Islands: Abbr.
11 Type of switch.
12 Thin strip.
14 Legal trial or hearing.
16 Exists.
17 Positive electrodes.
21 Dielectric material.
22 Pronoun.
24 Electronic equipment not properly operating is said to be "on the ——."
26 Result of rapid combustion.
28 Playing card.
30 Type of tree.
32 Aid.
35 Parts of electronic tube envelopes.
36 Greek letter used as symbol for ohms.

DOWN

2 Color representing eight in color code.
3 Restaurant.
4 Prefix meaning over the whole extent.
5 James: Abbr.
6 Mounting part of electronic devices.
7 An asset to a "do-it-yourself" follower.
9 Type of capacitor.
11 Tape distortion.
13 Untruth.
15 To fasten.
18 Number represented by white in color code.
19 District attorney: Abbr.
20 Unit of relative power: Abbr.
23 Greek letter used as symbol for phase angle.
25 Device that changes electricity into heat and the heat into light.
27 Transformer winding: Abbr.
29 Male sheep.
31 Southern state: Abbr.
33 Exist.
34 Grid voltage: Abbr.

(See page 142 for solution)

Sept puzzle answers:



Notice of the Antique Wireless Association of Southern Africa 2022 AGM

Notice is hereby given for the Annual General Meeting to be held on Saturday 12th November 2022.

The AGM will be held at the premises of the SAIEE in Observatory from 09h00.

The Museum will be opened for those wishing to browse and fleamarket tables will be available for those wishing to bring any excess items to dispose of.

The Meeting will commence at 10h00 in the main auditorium of the SAIEE and all Covid protocols will be observed.

Items for discussion:

1. Presidents report.
2. Membership Figures
3. Financial Report
4. Donations
5. Feedback on QSO parties
6. Nets
7. Museum
8. Geoff Wright SK Floating Trophy
9. Election of President and Office bearers for the next two years
10. Open Discussion

A bring and braai will be held after the meeting for those wishing to stay and socialise for a while.
Braai packs and cold drinks will be available for those who wish @R70 per braai pack, or bring your own.
(Please confirm with Andy ZS6ADY should you want braai packs - 0824484368)

Directions to the SAIEE are available on the AWA website www.awasa.org.za under “Museum”.

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Get your backdated issues at
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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 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. Join by logging in to our website.

Notices:

Net Times and Frequencies (SAST):
Saturday 07:00 (05:00 UTC) —Western Cape SSB Net— 3.640; Every afternoon from 17:00—3.640
Saturday 08:30 (06:30 UTC)— National SSB Net— 7.125; Sandton repeater 145.700
Echolink—ZS0AWA-L
Relay on 10.125 and 14.135 (Try all and see what suits you)
Saturday 14:00 (12:00 UTC)— CW Net—7025

AWASA Telegram group:

Should you want to get on the AWA Telegram 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. You must download Telegram App first. …..+27824484368