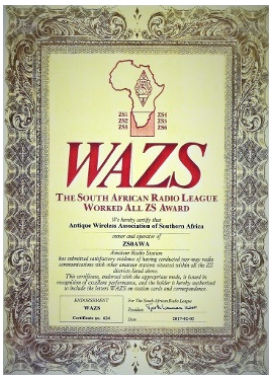
Antique Wireless Association of Southern Africa

 # 207 **October 2023**



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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
* Member—Wally ZS6WLY

Visit our website: www.awasa.org.za

Reflections:

October should be an interesting and active month for us with the Valve QSO Party on 07 and 08, possibly our last open day for the year on the 14th and our AGM on the 21st, both at the SAIEE. (See the notices in this newsletter).

There comes a time when each of us have to make decisions about our future and the movements involved surrounding that future. Many of you will remember a few years ago I went through a period where we were going to be relocating and then many things went pear shaped and we ended up staying right where we were.

Well the time has come that we are finally relocating down to the Northern Cape and a new chapter of our lives is about to open before us. I try not to think that this is the final chapter in my life, but I suppose it really is.

We, Denise and myself have been truly blessed with the friends we have made over the period we have lived here in Gauteng especially all of those in the AWA.

Change is inevitable in the lives we live these days.

I was proud to be one of the founding members of the AWA from the very first transmission when the few members of the Collins group changed the name to the Antique Wireless Association. One of the things about radio, is that you are never more than a PTT away.

Speaking of which, I must have my bi-annual message of encouragement to get as many of our members on their valve rigs as possible for the Valve QSO Party. It's always good to hear as many stations as possible using valve radio on the QSO party. Remember, it's the valve's that give you the points. So anyone using a 100% valve rig only has to make a third of the amount of QSO points to beat someone using a solid state radio. That is the advantage you have.

AM is not the easiest mode to use and is not very forgiving if your set-up is not right. One of the mistakes people tend to make is to try and put out too much power and then to try and turn up the mic gain too far and end up overmodulating and splattering on the band.

Do be careful with the setup and be extra careful if using a solid state rig to transmit on AM.

This is going to be a busy month, so don't be overwhelmed by all that is happening. Rather get yourself involved and join us on air, at the SAIEE open day and most of all, join us for the AGM either on skype or at the AGM itself.

Looking forward to seeing/hearing many of you. It's a twice a year event so we can do with as much attendance as possible.

Find them, fix them and use them.

Best 73

DE Andy ZS6ADY

Coronal Mass Ejection (CME)

Wikipedia

Initial acceleration:
Following initiation, CMEs are subject to different forces that either assist or inhibit their rise through the lower corona. Downward magnetic tension force exerted by the strapping magnetic field as it is stretched and, to a lesser extent, the gravitational pull of the Sun oppose movement of the core CME structure. In order for sufficient acceleration to be provided, past models have involved magnetic reconnection below the core field or an ideal MHD process, such as instability or acceleration from the solar wind.
In the majority of CME events, acceleration is provided by magnetic reconnection cutting the strapping field's connections to the photosphere from below the core and outflow from this reconnection pushing the core upward. When the initial rise occurs, the opposite sides of the strapping field below the rising core are oriented nearly antiparallel to one another and are brought together to form a current sheet above the PIL. Fast magnetic reconnection can be excited along the current sheet by microscopic instabilities, resulting in the rapid release of stored magnetic energy as kinetic, thermal, and nonthermal energy. The restructuring of the magnetic field cuts the strapping field's connections to the photosphere thereby decreasing the downward magnetic tension force while the upward reconnection outflow pushes the CME structure upwards. A positive feedback loop results as the core is pushed upwards and the sides of the strapping field are brought in closer and closer contact to produce additional magnetic reconnection and rise. While upward reconnection outflow accelerates the core, simultaneous downward outflow is sometimes responsible for other phenomena associated with CMEs (see § Coronal signatures).
In cases where significant magnetic reconnection does not occur, ideal MHD instabilities or the dragging force from the solar wind can theoretically accelerate a CME. However, if sufficient acceleration is not provided, the CME structure may fall back in what is referred to as a *failed* or *confined eruption*.

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 07 October 2023

2.2 SSB QSO Party
13:00 to 17:00 UTC (15:00 to 19:00 CAT) Sunday 08 October 2023

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 13 October 2023 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

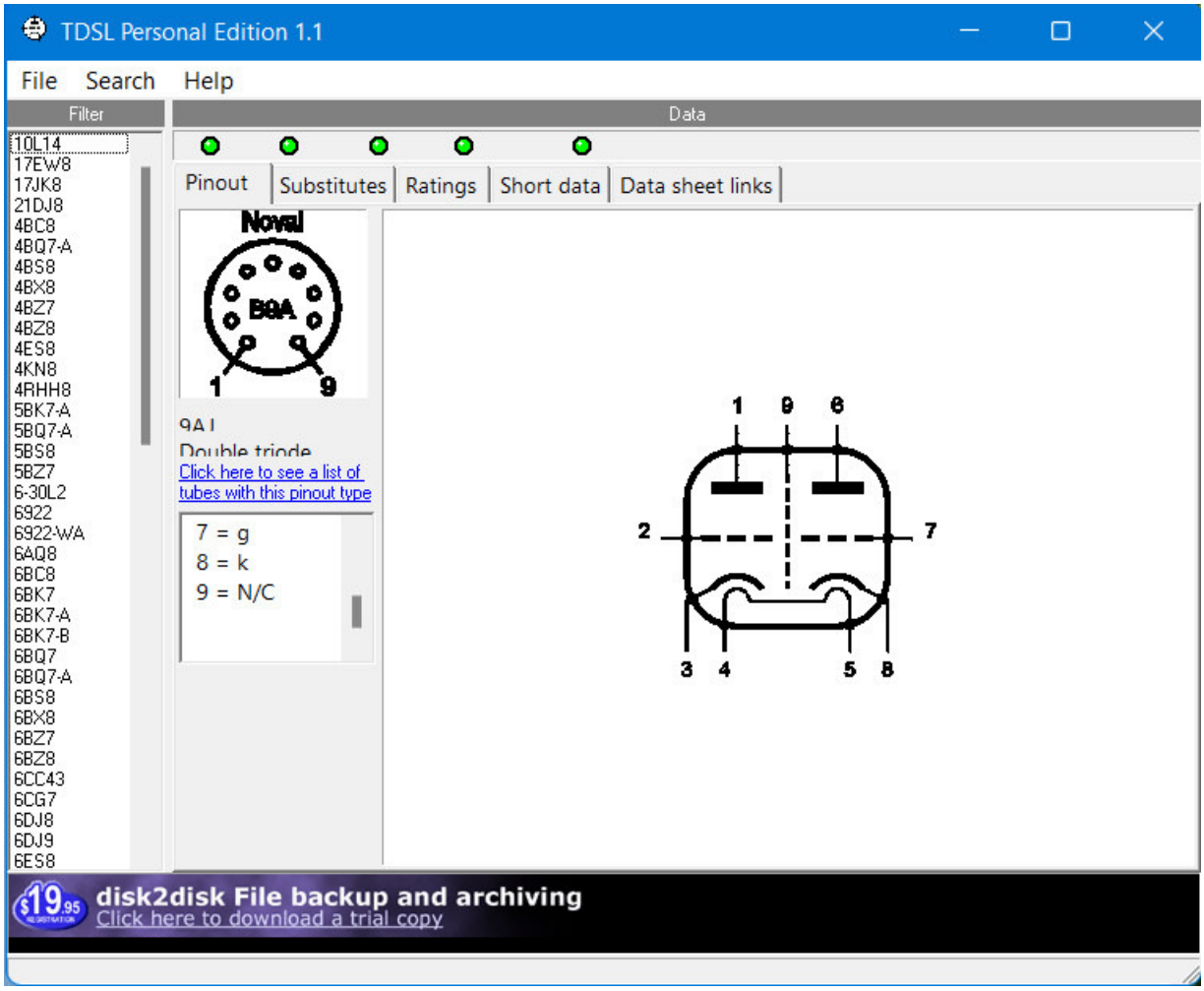
Hybrid

Solid State

Tube Datasheet Locator Software

by Daniel Romila VE7LCG

We are in 2023 and things done in 2006 look like ancient history for many people. Actually, it looks like something recent for me – because I am older – but somebody born in 2006 would be 17 years old now and have a different perspective. Let's say that most probably before 8 years old the chances to try a piece of software dedicated to some electronic components is low.
In other words, what I try to say is that a computer program made in 2006 most probably is completely unknown for a young 25 years old engineer from 2023. The software that I want to revive and eventually make known is TDLPE (Tube Datasheet Locator Personal Edition), which is free.



The program was written by Duncan Munro with help from Steve Bench. It can be downloaded from: https://www.duncanamps.com/tdslpe/download.html

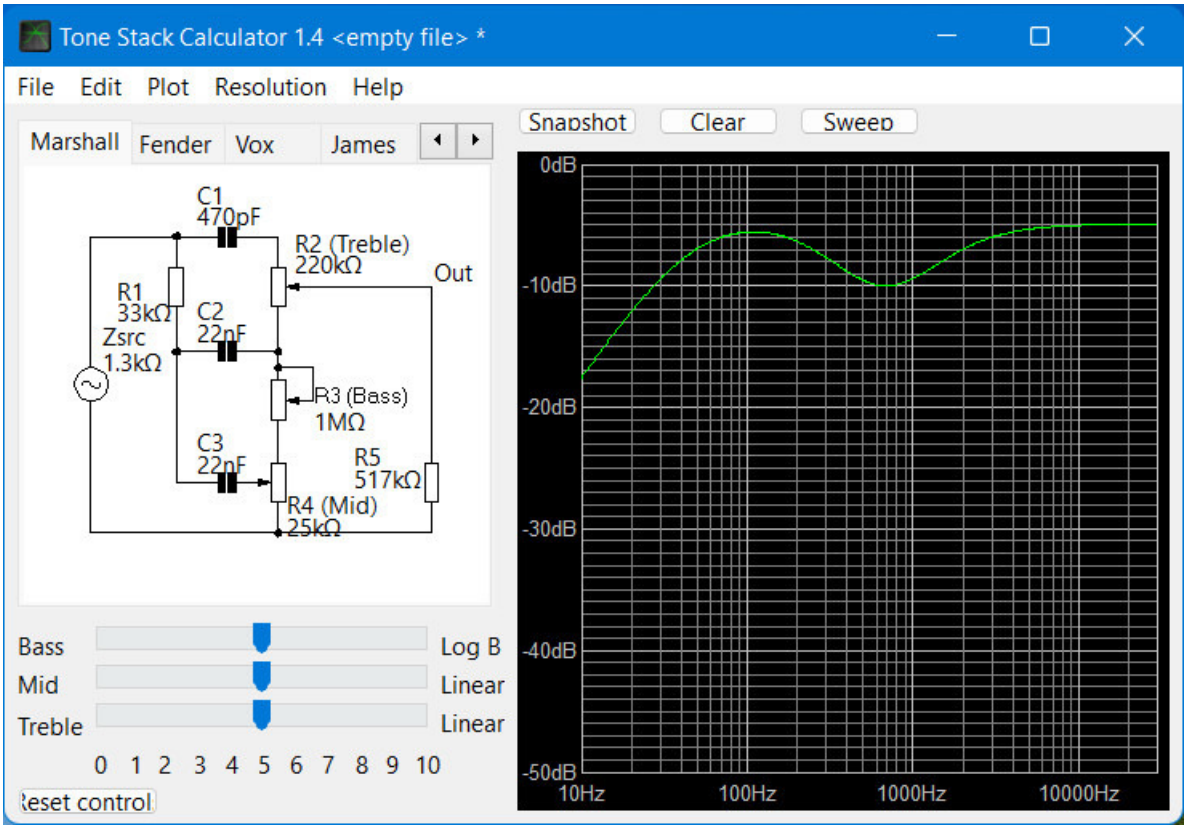
The first file is what we need today for installing this program. One has to click on the blue computer icon for the download to start. The rest of the text is not hyperlinked. While the part "recent

operating systems like XP (…)" looks funny in 2023, the program actually installs and work without anything special today in comparison with installing recent programs. The last update to the program was made in 2006 and the last update to the data pack was done in 2012.
As its name already says, the program gives us information about tubes, like pinout, internal schematics, electrical characteristics, equivalents and where to find complete datasheets. One just has to click in the upper left corner "Search", and has two options:

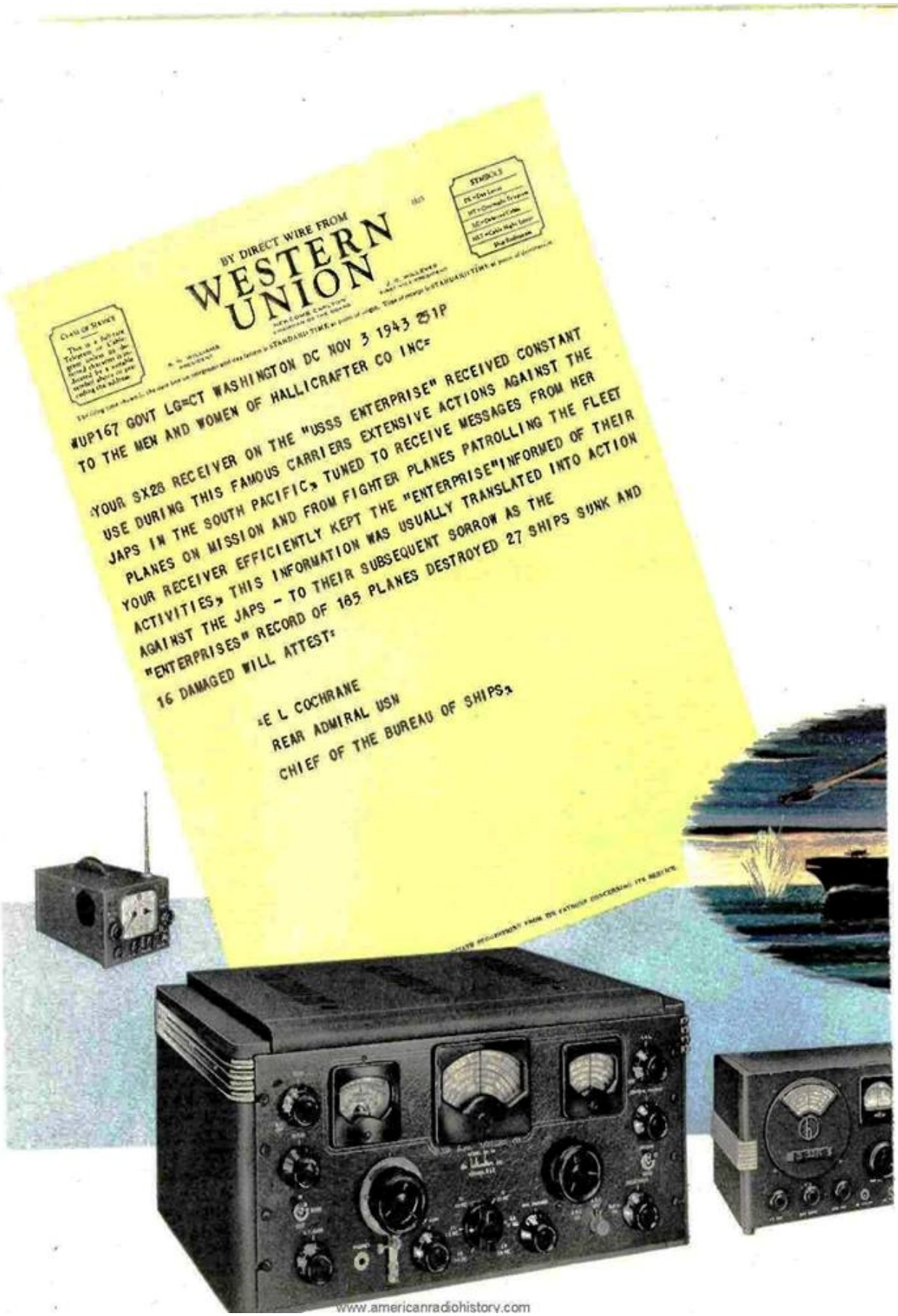
If I know what I want is the double triode tube ECC88 I use "Find by designator". If I only know what kind of general electrical characteristics I need and I let the program to find tubes for me, I use "Parametric search". For sure, if this program would have been made in 2023, many people would have said it is Artificial Intelligence (LOL).

The rest of the program is self-explanatory and taking more screenshots would just make this article too long.

The software is a good example of "it aint broke don't fix it". I cannot think of any improvement to be done to this simple program made in 2006. The website belonging to Duncan Munro is called Duncan's Amps Pages http://www.duncanamps.com/index.htm and contains a lot of useful information, but a lot of obsolete information. It is a combination of abandonware with modern info. For example, the software downloads section contains many utilities for mostly tube audio schematics, and some were updated in 2022, like the Tone Stack calculator. The Tone Stack calculator is designed to help you check out the design and response curves of a variety of tone stacks used in popular guitar amplifiers.



I wanted in this article to point to useful older software that might not be known by younger hobbyists, but also by older hobbyists who came later in life into the hobby. There is always something useful to use out there on the Internet, especially if it is free.



Carl and Jerry: The Black Beast
May 1960 Popular Electronics

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Wax nostalgic about and learn from the history of early electronics. See articles from *Popular Electronics*, published October 1954 - April 1985.

Before a plethora of readily available and affordable electronic and mechanical components of all sorts was at your fingertips (on a keyboard), often times project builders and repairmen either did without, substituted "close enough" parts, waited a long time for mail order, drove long distances to a supply house, or did like Carl and Jerry did in this May 1960 *Popular Electronics* magazine adventure - they modified on-hand equipment to suit the need. Replacing the center conductor of a length of RG-58 coaxial cable in order to change its capacitance (and impedance) might seem like an extreme measure to take, but half a century go it was de rigueur with hobbyist of all sorts. Magazines of the era nearly always had monthly hints, kinks, tip, and suggestions features, enthusiastically (and sometimes motivated by a nominal monetary reward) provided by readers who had already reaffirmed the old adage of necessity being the mother of invention. As is author John Frye's normal practice, the reader is also treated to a lesson on an electronics subject, in this case a heterodyne system.

By John T. Frye W9EGV

The bright May morning found Carl and Jerry furiously pedaling their bicycles along a dirt road paralleling the river west of their home town.

"As I told you," Carl was explaining to his puffing companion, "yesterday afternoon I was trying out my new spinning reel along the path that runs between the bottom of the limestone bluff and the river. On the very first cast I let go of the line at the wrong time, and my favorite fla-fish lure sailed backwards into some scrub trees growing right against the base of the cliff. In trying to free the lure, I spied this narrow opening that looks like the mouth of a cave. I didn't have a flashlight; it was getting late; I knew my favorite pal would want to explore the cave with me; so I came home."

"What you really mean is that you were scared to go in by yourself," Jerry said with a sniff as he braked his bicycle to a sliding halt at a point where a steep path led down to the river.

Carl led the way down this path and then along a narrow, rocky ledge between the water and the cliff for a hundred yards or so. Then he clawed his way through some stunted trees and thorn bushes, and finally stopped triumphantly in front of an opening a couple of feet wide and about six feet high in the white limestone wall. The boys turned on their flashlights and very cautiously entered the narrow tunnel. It twisted and turned for some hundred feet and then suddenly emerged in a domed, nearly circular room at least twenty feet in diameter.

"Hey, Jer, look at that!" Carl breathed in a hoarse whisper as his flashlight beam came to rest on a dim, crude picture painted on the smooth white wall of the cave. As the circles of light from the two flashlights followed each other around the room, paintings and drawings as high as a man could reach were revealed on the walls.

"They must have been painted by Indians many years ago," Jerry whispered, shivering in the chill damp air of the cave. "Hey! What are we walking on?" he exclaimed as he tripped over something.

Carl shined his light down at their feet and then said softly, "Oh, oh!" The floor of the cave was strewn with large bloody bones with bits of flesh still clinging to them.

"Man, let's get out of here," Carl exclaimed as he headed for the tunnel opening. "Maybe the-the-the thing that lives here comes home for lunch."

The boys left the cave a lot faster than they had entered it.

"No ninety-pound weakling lives in there," Jerry asserted. "Those bones belonged to an animal at least cow-size."

"Yeah, and look at this," Carl added as he reached up and plucked a tuft of black coarse hair from a thorny branch hanging down over the cave. "Whatever it is, it's black and hairy and taller than we are."

"A black beast!' Jerry exclaimed in awe as he stared at the lock of hair in Carl's hand. "Let's find out what it is!"

"Like how?" Carl questioned dubiously.

"Hm-m-m-m, that's a good question. We can't stay down here and watch the cave without danger of the thing's scenting us."

"And probably gnawing on us like he did on those bones," Carl added. "But we can't watch from the top of the bluff because that overhang of rock conceals the cave mouth from sight up there."

"I got it!" Jerry exclaimed. "Remember when we used a simple capacitance relay to make that chicken-stealing coon at my uncle's farm take his own picture? Well, I've been experimenting with a new-type capacity relay described in the February *Electronics World*. We can camp safely on top of the bluff and let this relay tell us when anything or anyone enters the cave."

"What's special about this relay?"

"The sensing probe can be some distance from the relay and connected to it through a coaxial cable. The relay has two identical low-frequency r.f. oscillators: one fixed-tuned with a 300-μμf. capacitor, and the other tuned by a semi-variable capacitor in parallel with the capacitance of the coax line. This oscillator is set about 1000 cps higher in frequency than the fixed oscillator. The heterodyned difference beat between the two oscillators is amplified and fed through a low-pass filter to the control grid of a thyratron tube with a relay in its plate circuit.

"As long as nothing is near the probe, the low-pass filter prevents the 1000-cycle signal from reaching the thyratron and firing it; so the relay contacts remain open. When a body approaches the sensing probe, the additional capacity thus produced lowers the frequency of the tunable oscillator and also the difference-frequency heterodyne fed to the amplifier. This lower frequency passes readily through the filter, fires the thyratron, and closes the relay.

"There's only one joker," Jerry added thoughtfully as his eye measured the distance between the cave and the overhanging ledge. "The RG-8/U coaxial cable I've been using has a capacitance of 29.5 μμf. per foot. It's about twenty feet from the cave to that overhang where we could conceal the gadget and then run lamp cord from the relay contacts on up to the alarm at the top of the bluff."

"And 20 times 29.5 is 590 μμf.-far in excess of the 300-μμf. total capacity required to tune the oscillator to the right frequency," Carl finished.

"Of course, there are special coaxial cables with less capacity, but none in this town...

"I can solve your problem!" Carl interrupted as he started back toward the path. "I'll tell you about it on the way home."

Once home, they set feverishly to work. A twenty-foot length of RG-8/U was firmly anchored at one end and the remainder stretched out straight. The anchored end had its inner conductor tinned and a No. 30 wire carefully soldered to it. Heavy leads from a low-voltage high-current transformer were run to the two ends of the center conductor. By means of an autotransformer in the primary circuit, the current through the inner conductor was gradually increased until the conductor grew noticeably warm. Carl watched the dielectric material around the conductor carefully, and when he decided it was softened the proper amount by the heat, he unsnapped the leads from the transformer, grasped the end of the conductor with a pair of vise-grip pliers, and, walking backwards, easily pulled the conductor out of the cable and the No. 30 wire into the cable in its place.

Since the capacity of the cable was chiefly a function of the ratio of the inside diameter of the shield to the diameter of the conductor, replacing the conductor with the No. 30 wire drastically reduced the capacity of the cable - and incidentally raised its characteristic impedance. Now, with the reworked cable in place and the capacitance relay powered from batteries, the oscillator could easily be tuned to the proper frequency.

Soon the boys were pedaling slowly back toward the cliff burdened with gear for an overnight camp plus a long length of strong rope and Carl's .22 rifle. They tied the rope to a tree on top of the bluff directly above the cave, and Carl lowered himself to the overhang of rock. There he set up the capacitance relay with its battery power supply.

The coax cable was run down to the cave, and a lamp cord was run to the top of the bluff from the relay contacts. Both were concealed by vines growing on the face of the cliff. A small wire was connected to the bottom end of the coax inner conductor and artfully concealed around the opening in the cliff. Carl adjusted the variable frequency oscillator so that the relay contacts remained open until Jerry approached the opening; then they closed. They even closed when he tried to sneak in on his hands and knees.

The boys pitched their tent right at the edge of the bluff. They connected a battery and small light bulb in series

across the two wires coming up from the relay contacts and fastened the lamp to the ridge -pole of their little tent. It was dark by the time they finished supper; and now, with nothing more to do except wait, the weariness resulting from the day's strenuous activities overtook them. After fighting sleep for a short time in the warmth of their campfire, they gave up, crept into the tent, and almost immediately lost consciousness.

When Carl was snapped wide awake some time later by a light shining in his face, he instinctively felt that several hours had passed. Reaching over, he roughly poked his still-sleeping companion in the ribs. "Come on, wake up! Something's entered the cave and turned on the light."

Jerry sat up and rubbed his eyes sleepily. "Maybe we ought to wait until morning," he said with a shiver as he looked at the darkness outside.

"None of that!" Carl said sternly. "We go look now before he gets away. Remember this was your idea."

Stealthily the two boys, Jerry carrying the flashlight and Carl carrying the rifle, stole down the steep path and back along the narrow strip of rock leading to the cave. Not a sound could be heard except the singing of the night insects and the gurgling of the river.

"You go first with the rifle. I'll be right behind you with the light," Jerry suggested in a shaky whisper as they stopped in front of the yawning, pitch-black opening in the rock.

"Okay, but just don't get in my way if I suddenly decide I want out," Carl warned.

Slowly and cautiously the two boys entered the tunnel. Carl held the rifle stiffly out in front of him, and Jerry walked right on his heels with the glowing flashlight thrust through the crook of Carl's elbow.

Nothing happened until they reached the last right-angle turn in the tunnel. Suddenly Jerry clutched Carl's shoulder. "Listen!" he hissed. "Didn't you hear something?"

"How can I with you breathing in my ear like an asthmatic grampus?" Carl retorted as he edged around the turn.

The beam of the flashlight shining across the room revealed nothing, but as the two boys stepped from the tunnel, a pair of hairy arms reached out from the side and grabbed both the rifle and the flashlight, wrenched them out of the boys' hands, and sent the two stumbling forward to their knees in inky darkness. Carl was on his feet like a cat, but when he turned toward where he thought the tunnel opening was, he ran against a great hairy creature that smothered him in a vise-like grip.

"Kick him! Bite him, Jer," Carl shouted as he sank his teeth into a loose fold of the skin of the beast.

"I wouldn't do that," a deep chuckling voice answered. "I don't think my dad will like it if you chew a hole in his beloved old raccoon coat."

At this instant the flashlight came on and revealed a large smiling young man dressed in a bulky fur coat. Over at one side of the room was a camera on a tripod.

"So you boys want an explanation, and you've got one coming," the personable youth went on. "My name is Dick Palmer, and I'm a junior at the state university. About a month ago I stumbled upon this cave. I have a hunch these pictures were' made by the mound builders that used to live around here. Photography is a hobby of mine, and I instantly got the idea of photographing the pictures and selling them to one of the big picture magazines. I need the money to finish my college education.

"I've been driving back here every night I could get away from school to photograph these walls. It took a lot of experimenting with lighting and so on, but I finished the job tonight. Yesterday afternoon I had a little free time and drove over, but just as I got here, you," he said, nodding at Carl, "discovered the cave. I simply had to have a few more hours to finish up; so last night I stopped at a butcher shop and got a big bag of beef bones to spread around the cave and maybe convince you that this was the lair of a dangerous animal.

"When I heard you two coming down the tunnel tonight and saw that rifle, I decided I'd better disarm you first and explain later. You sounded a little trigger-happy."

"Why the fur coat?" Jerry asked.

"It gets darned chilly in here; so I've been wearing the old fur coat dad had in college to keep me warm. Now I've got a couple of questions. How come you're prowling around here at midnight, and how did you know I was in here?"

Come on up to our camp on top of the bluff, and we'll show you, and give you a cup of hot chocolate," Jerry offered.

"And you needn't worry that we'll blab about that cave," Carl added. "You found it, and it's your secret."

"Fine, men. If I'd known you were that sort, we could have saved all of us a lot of trouble."
"And goose pimples," Jerry admitted with a grin.

AWA Open Day at SAIEE

The AWA in conjunction with the South African Institute of Electrical Engineers is holding another open day at the grounds of the SAIEE.

The museum will be open for viewing, the SAIEE shack will be operational. Should you wish to bring along some of your valuable jewels that you no longer have space for and want to either sell or barter them, bring them along. A boot sale will be available. There are no tables, so if you need one, you can bring your own along.

There will be refreshments available, and maybe even some rolls with meat inside.

If you want to come and view what the AWA is all about, (Our amateur Heritage) it is there to be seen in all it's glory.

Times will be from 10:30 to 14:00

The address is 18a Gill Street, Observatory or look for directions on the AWA website, under "Museum".

Next date. 14 October. This may be the last open day for the year.

Any members wishing to help out at the SAIEE can let Andy ZS6ADY or Renato ZS6REN know when you will be available. We need more hands to help out.

Notice of the Antique Wireless Association of Southern Africa 2023 AGM

Notice is hereby given for the Annual General Meeting to be held on Saturday 21st October 2023.

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 a bootsale will be available for those wishing to bring any excess items to dispose of.

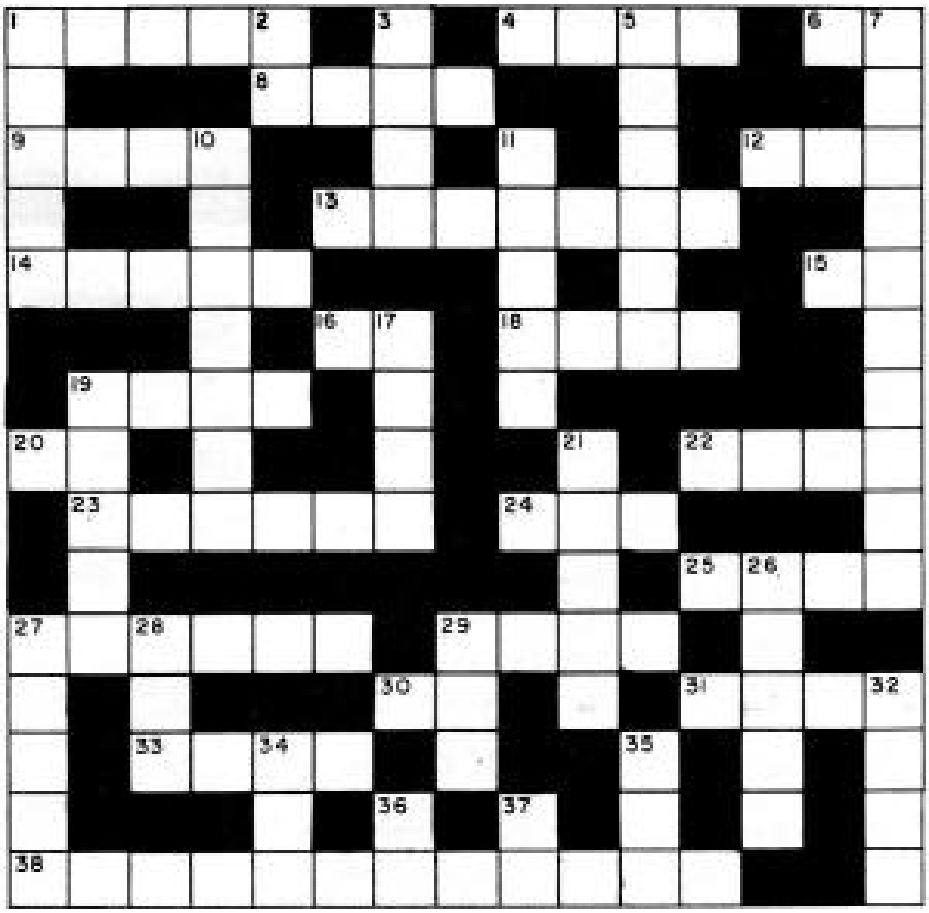
The Meeting will commence at 10h00 in the main auditorium of the SAIEE .

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 CW Floating Trophy
9. Election of President and Office bearers for the next year
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 @R75 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.



Across

1. Audio.
4. Sound energy dissipated without accomplishing any work.
6. Part of familiar term for full-range reproduction.
8. A regularly occurring pulsation of amplitude resulting from the combining of two sounds or tones.
9. Opposite of treble sound frequencies.
12. Device used in a sound system to attenuate a signal or couple two impedances.
13. Term often applied to a coaxially constructed speaker.
14. Electro-acoustic unit of power ratio based on the Napierian base of logarithms.
15. Coil found in speakers (abbr.).
16. Class of audio amplification.
18. Satisfactory in quality.
19. Transducer that picks up sound and converts it into electrical currents (fam.).
20. River in Italy.
22. Unit of loudness.
23. Material removed from surface of phonograph recording disc by the cutting stylus.
22. Undesirable noise in an audio system.
24. Opposite of a "dead" or highly damped room.
27. High frequencies.
29. Unit of stylus pressure.
30. Equipment used to address large gatherings (abbr.).
31. Essential component in a hi-fi system (abbr.).
33. Recording companies' trade association (abbr.).
38. Frequencies above 20,000 cps.

Down

1. Unit of sound absorption.
2. Electro-acoustic unit of relative power, voltage, or current (abbr.).
3. The amount that an audio amplifier can increase the amplitude of a signal.
5. Sound in its "third dimension."
7. In acoustics, inertance is the equivalent of _____
10. Transducer used in every audio system.
11. One circuit of audio amplification.
17. The _____ of audio frequencies extends from 15-20,000 cps,
19. The part of a speaker that receives power from the electrical circuit and converts it into mechanical energy.
21. Pertaining to the ear or sense of hearing.
26. The "receiving" circuit of an audio amplifier.
27. Ordinarily, sound is composed of a number of _____
28. Organ used for the perception of sound.
29. That portion of a magnetic circuit in which there is no ferromagnetic material.
32. Loud, undesirable sound.
34. Medium through which sound waves travel.
35. Sound ratio.
36. Meter watched by recording en-gineer (abbr.).
37. "Twin" of "hi."

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Get your backdated issues at
http://www.awasa.org.za/index.php/newsletters

Visit our Website:
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—7.125
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 the Telegram App first. …..+27824484368