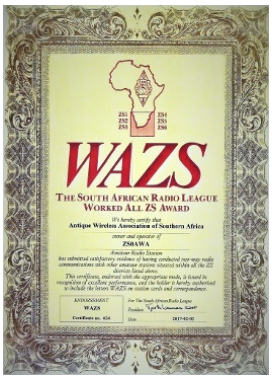
Antique Wireless Association of Southern Africa Newsletter

 # 199 **February 2023**



Inside this issue:

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www.awasa.org.za

Reflections:

I am not one for New Year Resolutions, but this year I set myself a goal to start doing some DX on CW and try to reach at least 2 QSO's every day.

I have never really been big into DX contacts because of the speed these guys run at and then because of the pile-ups that inevitably occur with most of the stations. Then of course I'm not really just a numbers exchange type of operator, I like to chew the rag a bit and find out things about the person on the other side.

Take note, I said "person" on the other side, just in case there are any lady ops out there. I have never met a lady op on CW yet, but I believe they are out there and pretty good ones too.

I started out with my first call on the 6th January and to date, 31st January, have made 94 QSO's on the 10, 15 and 20m bands.

Who said that CW was dead and the bands were terrible ?

The majority of the QSO's have been into the US and Europe, with the odd others into Malaysia, China and Japan.

I have also been busy with some FT8 contacts on the same bands. Take note, I say contacts because FT8 is just a numbers exchange.

One thing I must say in defence of the FT8 ops, who are forever being told that CW is like FT8, but for men….is that the QSL rate of the FT8 guys is about 95%, whereas the CW ops is only about 25%.

This is probably because most of the CW ops are old timers who do things the old way and that is cards. This is great when you are in countries where your postal system still works, but not so in SA.

I was digging through a box with many old QSL cards the other evening and came across some interesting ones. When I first started out on CW, everyone sent QSL cards by mail. I found my first ever CW QSO with Evert ZSAQW. My 200th QSO was with Tom ZS1ADF, after which I applied for permission to use phone.

Many cards from friends made using CW, a lot of who are now SK. Many cards using phone too.

Unfortunately my log book from my early days of ZS4AC got lost in the moves made over the years and I so wish I still had it, but that is not to be.

I often wonder how many out there still rue the day they picked up a microphone and pushed the key to one side and eventually either be sold at a flea market, given away, or just put in the cupboard to gather dust ?

Sunday 05 Feb is the AWA CW activity day. A good opportunity to dust off the key, if you still have it ?

Lost, but not forgotten.

Best 73

DE Andy ZS6ADY

Wikipedia

Solar Flares:

Examples of large solar flares

The most powerful flare ever observed is thought to be the flare associated with the 1859 Carrington Event.While no soft X-ray measurements were made at the time, the magnetic crochet associated with the flare was recorded by ground-based magnetometers allowing the flare's strength to be estimated after the event. Using these magnetometer readings, its soft X-ray class has been estimated to be greater than X10. The soft X-ray class of the flare has also been estimated to be around X50.

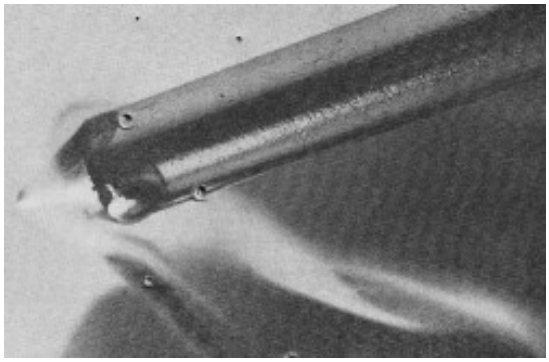
In modern times, the largest solar flare measured with instruments occurred on 4 November 2003. This event saturated the GOES detectors, and because of this its classification is only approximate. Initially, extrapolating the GOES curve, it was estimated to be X28. Later analysis of the ionospheric effects suggested increasing this estimate to X45. This event produced the first clear evidence of a new spectral component above 100 GHz.

Other large solar flares also occurred on 2 April 2001 (X20+), 28 October 2003 (X17.2+ and 10), 7 September 2005 (X17), 9 August 2011 (X6.9), 7 March 2012 (X5.4), and 6 September 2017 (X9.3).

Electronic Soldering
July 1967 Popular Electronics

Even if you are not new to electronics, there is a good chance that either you have not done much (or any) soldering, or have never had proper instruction in the art. A nice hand-made solder joint is truly a beauty to behold - at least to some of us. The qualities that make a good solder connection are not really a matter of subjective preferences. Too little solder creates a weak joint that might pull apart. Too much solder can cause temperature gradients through the volume and across the surface to which results in improper cooling. A glob of solder is more likely to harbor contaminants and/or air pockets that can cause the joint to fail over time. When soldering, the attitude of, "If a little solder makes a good joint, then a lot of solder must make a really great joint," does not hold true. Other factors like overheating due to either too hot of an iron or dwelling too long on a joint can over stress and potentially ruin components and mounting surfaces (circuit board, terminal lug, etc.). The way in which component leads and wires are attached to termination points also affects the joint. High quality, reliable soldering is in some cases actually rocket science, because NASA has its own specifications for how to solder equipment that goes into its projects. I went through a two week NASA soldering course back in the 1980's while working on Mil-Spec equipment at Westinghouse Electric's Oceanic Division in Annapolis, Maryland. Re-qualification was required on a yearly basis. To this day I try to apply what I learned when doing any type of soldering.

Electronic Soldering



Do You Make Good Connections the First Time, Every Time?

By John McNarney

There is nothing difficult about soldering. Yet most kits returned to the manufacturer and many home-built projects sent to the repair shop usually suffer from little more than poor soldering. Although the bulk of all soldering troubles can be attributed to cold soldered connections, there are also other types of soldering faults; heat damage, short circuits, corrosion, etc.

Cold soldered junctions have different effects on a circuit. They can appear as open, intermittent, high resistance and normal connections. They can fool you into thinking that you have noisy and otherwise defective components.

It doesn't take much time or effort to learn and put into practice good soldering habits. Nor does good soldering require any expensive tools or difficult-to-master skills. If you stick to a few common sense rules, you will be able to produce well soldered connections.

Types of Soldering Tools. There are all kinds of non-specialized soldering tools designed for general-purpose work. There are soldering irons (including soldering pencils), soldering guns, and soldering pistols. They are all rated according to electrical power consumption. High efficiency factors make it possible to disregard losses and think of the wattage rating as heat power.

Heat power is either light duty (20 to about 50 watts), medium duty (50 to about 125 watts), or heavy duty (125 watts and higher). Manufacturers' duty ratings are often misleading, however, since their designations are based on comparisons of the same types of soldering tools. For example, some soldering guns may be designated as light-duty tools, even though few - if any - guns develop less than 100 watts of heat power.

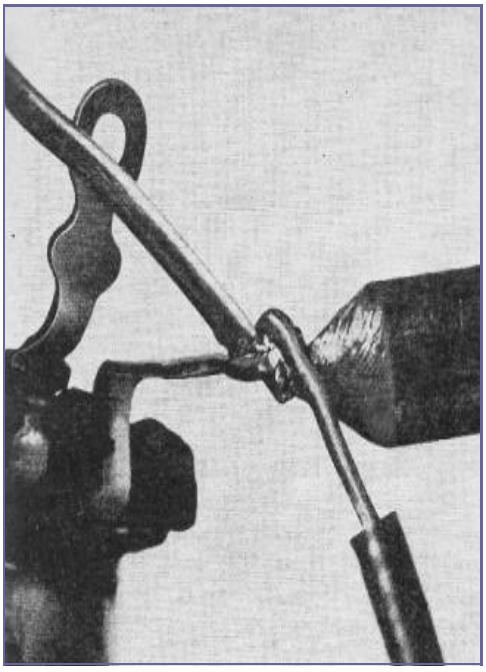
Soldering Irons. Soldering irons and pencils, taken as a group, are characteristically lightweight and compact, weighing in at less than a half-pound, (without power cord). These tools cost from as little as $1.50 up to about $20 for elaborate or precision units and kits complete with special attachments.

The soldering iron and pencil are designed for constant use over a long period of time and with a minimum amount of tip deterioration. As such, this type of tool is especially adapted for extensive project work and kit building.

Soldering irons and pencils have a heat-generating device (resistance element) which is electrically isolated from the soldering tip, but closely thermally coupled. The size and weight of the tip affect the tool's initial heating and heat recovery times. Different kinds of metal and a multitude of shapes and sizes are available. A simple copper tip having one or more flat faces at the pointed end is generally used.

A new type of soldering iron, constructed in such a manner as to provide a selection of different heat power ranges, has recently become popular among hobbyists. This type of tool employs a separate step-down transformer, the secondary of which is tapped in several places, to provide the correct amount of low voltage and high current for the heat power range selected.

Clockwise from bottom, pencil soldering iron, transformer soldering gun, and soldering pistol are most often used types of soldering tools. Each type of tool is available with different heat power ratings plus a variety of specialized tip configurations.



Heat and solder should be applied to opposite sides of connection for best results. This allows solder to flow properly into and around joint. Use only enough solder to insure a good, solid connection.

Soldering Guns. The soldering gun, because of its built-in transformer, is a rather heavy and bulky device, but its unique pistol-like construction makes it comfortable to use and easy to manipulate. Soldering guns can be purchased for from $4 to about $14.

The built-in transformer of the soldering gun provides low voltage and high current directly to the tip. The tip appears to be a short circuit across the transformer's secondary, and comes up to soldering temperature almost instantly.

Because of the instantaneous heating - and cooling - feature of the soldering gun, this type of tool is often preferred for intermittent applications. It is also used by those advocates of get in and get out fast with high heat to prevent damage to transistors and other solid-state components.

Soldering Pistols. The soldering pistol has about the same shape as the soldering gun. The pistol is a hybrid affair, combining features of both the soldering iron and the soldering gun. For example, this type of tool employs both a heating element and a step-down transformer, and its soldering tip resembles those found on many soldering irons.

The step-down transformer serves the same basic function as in the soldering gun; it provides a low voltage-high current source for almost instantaneous heat.

As a general rule, soldering irons and pencils are light- to medium-duty tools, soldering guns are medium- to heavy-duty, and pistols can be obtained in either light-, medium-, or heavy-duty units. Take your choice; but remember, the tool you do choose must be capable of producing enough heat power to efficiently solder the connection in the shortest possible time. This doesn't mean that the higher the power the better. On the contrary, excessively high power tools are more likely to cause more damage in the hands of a person who doesn't have experience in using them.

Solders and Fluxes. Solder is simply a tin-lead alloy that flows at a relatively low temperature (about 370°F). Because of this low melting temperature, solder connections can be made quickly and economically.

Most solders are identified by their tin-to-lead combination. A solder alloy that contains 60% tin and 40% lead is described as 60/40 solder - with the percentage of tin always shown as the first number in the ratio.

Solder is most convenient to use in 16- or 18-gauge strand form. The small cross-sectional area allows conservatively rated tools to make it flow quickly, and the quantity of solder used for each terminal can be easily controlled.

In order for solder to adhere properly to a connection, the joint must be clean, free of oxides, and properly heated. The most effective way to combat oxidation is to use an oxide-reducing flux. However, solder flux will not remove dirt, grease, paint, etc.

Acid and chloride salt fluxes are highly corrosive and have no place in electronics. Use a rosin-type flux for general-purpose soldering and an aluminum oxide-reducing flux for soldering components to aluminum. (Yes, you can solder to some types of aluminum alloys.)

Solder and fluxes are so closely related that solder manufacturers have combined the two in precisely balanced proportions for general and specialized applications by fabricating the solder so that it contains one or more cores of rosin flux.

How To Solder. The cardinal rule is to "keep it clean." That goes for your soldering tools as well as for the connection to be soldered. If the soldering tool you use is a pencil or iron that has a large copper tip, the tip must be coated (tinned) with a thin film of solder to prevent deterioration resulting from oxidation. Tinning also helps heat transfer from the tip to the work.

Even before you proceed to make a connection, the components and terminals to be soldered must be clean. A dirty solder lug or component lead can be quickly cleaned by rubbing it with medium-grade emery cloth or coarse steel wool.

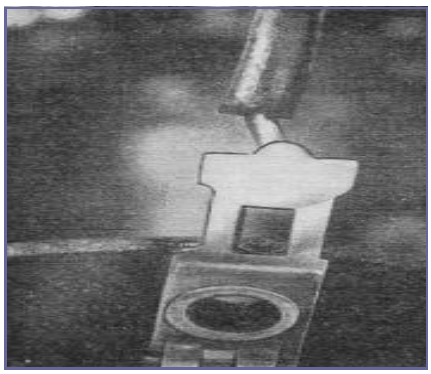
Once the components and terminals to be soldered are cleaned, they are connected together in such a way as to form a good electrical and mechanical joint. The unsoldered connection should be electrically conductive and mechanically solid.

Heat-sink the leads of heat-sensitive components. (The heat sink can be a commercially available item, the jaws of long-nose pliers, or even a paper clip in a pinch.) The heat sink serves as a heat radiator and should be placed

as close to the component as possible.

Finally, apply the heat to the connection to be soldered - not the solder! When the connection is hot enough to cause the solder to flow, apply just enough of the solder to form a thin coat. To improve the efficiency of the heat transfer from the soldering tip to the terminal, or connection, many electronics enthusiasts allow a bead of solder to form on the soldering tip. When this bead of solder "surrounds" the connection, heat flows into the joint from "all" sides.

Remove the. solder feed first, then the heat, and do not allow the newly soldered connection to move while the solder is in a mobile state. That's all there is to it.



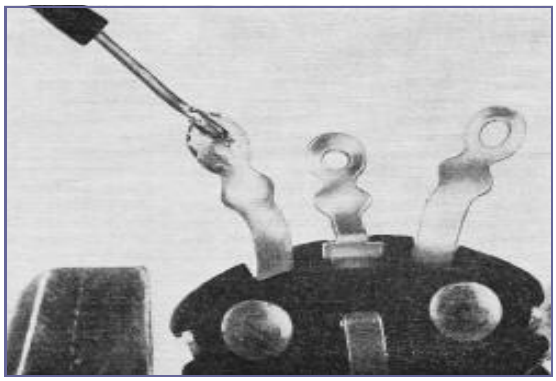


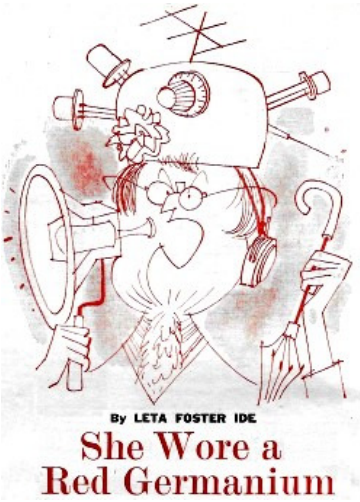
Photo show examples of good (above) and poorly (right) soldered connections. Good connection is usually bright and smooth, while poorly soldered connection is more often than not dull and grainy due to improper application of heat and/or solder.

She Wore a Red Germanium

January 1965 Popular Electronics

Allegory is not an often seen style of prose in the electronics writing world, and typically is not meant to be humorous; however, there have been a few instances of it in the vintage electronics magazines I read. One of the most famous examples of allegory is a story by Paul Bunyan titled "Pilgrim's Progress." "She Wore a Red Germanium," by Leta Foster Ide, is a more contemporary form of allegory that RF Cafe visitors will appreciate. Mike R. Fonic (microphonic) is the lead character in the story who complains to his doctor, "I'm off my feed. Got no capacity. Fact is, I'm in a breakdown." Mike's wife's Aunt Enna (antenna) is no help, evidently. Come to think of it, the author's name, Leta Foster Ide, almost sounds like it might be a play on words, to wit, "Let A Foste Ride" or "Let a Foster Ide" (whatever those might mean). Nope, Leta's byline can be found in many magazines of the era.

You might also like another allegory which appeared in a 1943 issue of *QST* titled, "Who Killed the Signal?."



She Wore a Red Germanium

By Leta Foster Ide

Mike R. Fonic, chief technician for Happy Henry's Hi-Fi Hippodrome, went to see his doctor.

"What's the matter, Mike?" the physician asked. "Watts your current problem?"

"Doctor, I'm only half a life!" Mike moaned. "I'm off my feed. Got no capacity. Fact is, I'm in a breakdown."

"Oh come now," the doctor protested cheerfully. "It can't be that bad. A little component aging, perhaps. But what do you expect in your voltage? How's your pulse rate?" He reached for his patient's wrist.

"But Doc," Mike insisted, "I tell you I'm a terminal case. I'm short-circuited."

"Nonsense, Mike," the doctor replied.

He pushed a thermometer into his patient's mouth, probed deeply into his diaphragm, and examined his solenoids.

"It's nothing of specific gravity," the doctor concluded. "Your resistance is low, your temperature point is up, and your heart pulsations are somewhat erratic. How long has this condition persisted ?"

"Faraday. And Faraday about two weeks ago."

"Then it's only intermittent. Something must be bugging you either at the office or at ohm. How's your ohm life?"

"Terrible, Doc, terrible. It's my wife's Aunt Enna. She's driving me hard."

"She's visiting you ?"

"Yeah. She comes with high frequency and leaves with reluctance."

"I see," the doctor said. "Then for all practical purposes the situation is static? And she bugs you, eh?"

"Yeah. It's her constant interference.

And her impedance. And her loud voice."

"She's a loud speaker, is she?"

"You said it, Doc! A real woofer."

"Can't you tuner down? Ask her to reducer volume?"

"Not that old baud. She isn't about to modulator voice."

"You've tried to rectifier?" the doctor asked.

"Sure. I can't controller."

The doctor reached for his prescription pad. "Well ... I'll give you something to anodize your nerves and get your feed back." He scribbled on the pad. "Here. This should reduce your sensitivity. Take two quartz every three hours."

"Thanks, Doc," Mike said. "I node you could fix me up."

"Yes, over a short range. But these are just palliatives for your hysteresis. What you need is a long-range schematic to clear up the Ant Enna problem."

Perhaps you've been using the wrong approach," the doctor suggested. "If you'll analyzer, I think you'll find that she behaves as she does because she's lonely and frustrated."

"She's frustrated?" Mike exclaimed.

"What about me?"

"Yes, yes, I know. She keeps you under high tension; but that's because she lives in a vacuum. Having no interests of her own, she channels her energies into disrupting your balance. I suggest you getter into a bridge circuit. Take her out to local receptions."

"You couldn't cell her on the bridge, Doc. Cards repeller. And I'm not about to take that old walkie-talkie to any reception."

"You see!" the doctor exclaimed "The trouble is, you resister. Instead of trying to suppressor, you should learn to acceptor."

"Resister! Suppressor! I can't even interrupter!"

"She isn't married, I take it?" the doctor asked.

"Naw. A typical old maid."

"I see. She's probably starved for affection. If you'd tweeter nicer, maybe you could transformer. Play a.c.-d.c. with her. Buy her joules."

"That's no good, Doc. I tried to overcome her bias when the wife and I were first married."

"You're positive, then, that the plan has no potential? Well ... if you can't converter, and can't acceptor, the only alternative is to get rid of her."

"I've thought of that. There are times I'd like to decapacitator, but I don't know if I conduit. What if she puts up resistance?"

"Well ... assault and battery isn't quite what I had in mind. There's a better way to transmitter. Simply conductor to the door."

"She wouldn't budge," Mike gloomily.

"Well, then, here's another brain wave. If she's so noisy, she probably disturbs the other tenants. Try secondary emission. Call the management and let the superconductor."

"Naw! She'd raise such a howl, she'd get us all evicted. And if Antinode I'd called the super, she'd think up some way to get even."

"There must be some solution," the doctor said. "Let me think a moment ... I have it! This old lady is at loose ends. What we should do is connector."

"I don't get you, Doc."

"I mean coupler. Marry her off." "You're way off the beam, Doc," Mike protested.

"Your attitude is negative, Mike.

Can't you engineer an induction ?"

Mike thought it over. "Hmm," he said. "I sure would like to unloader." Suddenly his expression brightened.

"The idea gives you a charge?" the doctor asked.

"Positive! I can see the pictorial now! There's my boss, Happy Henry. He and Ant Enna are two of a kind."

"You think they deserve each other?"

"Sure, Doc. A matching pair! We pull a switch. Instead of both bugging me, they can bug each other. How's that ?"

Mike beamed from ear to ear. Then his face fell.

"Do I detect a flat response?" the doctor asked. "Why the image rejection ?"

"It won't work," Mike said glumly.

"How am I going to make this hookup? Where's my lead-in ?"

Oh, come now, Mike," said the doctor. "Use your magnetism. Generate his interest. Whenever you see him, booster. Then invite him ohm to dyne."

"Watthour?"

"Dinner at eight, let's say. Get your wife to break out her best diode plate in his honor."

"I get your drift," Mike said. "We'll feed the brute good. Ham and spaghetti. Sort of soften him up, huh?"

"That's it, Mike. Now, pretty the old gal up. Have her go out and get her hair coiled. Buy her a germanium. Then, at dinner, don't forget to broadcaster virtues ... amplifier charms."

"But that isn't quite honest," Mike protested. "I could lose my job! The boss is strong on employee fidelity."

"What's a little distortion in a good cause?"

"I just don't know, Doc. Ant Enna can be a bad veractor."

"It'll work, Mike. Her trouble is, she's been repressed. Give her half a chance and she'll currector dissipation."

"You're a great guy, Doc!" Mike exclaimed. "I feel better already."

The doctor walked with his patient to the door, and in parting, clapped a jovial hand on his shoulder.

"Oscillator, alligator."

"Sure thing!" Mike replied. "Soon as I unloader, you and I are gonna go out and throw a big calibration!"
"After a while, crocodile!"

AWA CW ACTIVITY DAY

The aim of the CW Activity Day is for participants to contact as many amateurs as possible on the 20, 40 and 80 m amateur bands.

Date:
Sunday 05 February 2023 From 13:00 UTC (15:00CAT) to 15:00 UTC (17:00 CAT)

Frequencies
14,000 to 14,060 MHz; 7,000 to 7,035 MHz; 3,500 to 3,560 MHz

Categories
a) Single Operator All Band – Low Power (maximum 100W)
b) Single operator All Band – QRP (Maximum 5W)
c) Single Operator Single Band - Low Power (maximum 100W)
d) Single operator, single band – QRP (maximum 5W)
g) Short Wave Listener (SWL)

The exchange is RST, operator name and Grid Square locator and the scoring is
1 point for low power, 2 points for QRP.

Certificates are awarded to the first three places and the highest single band score.

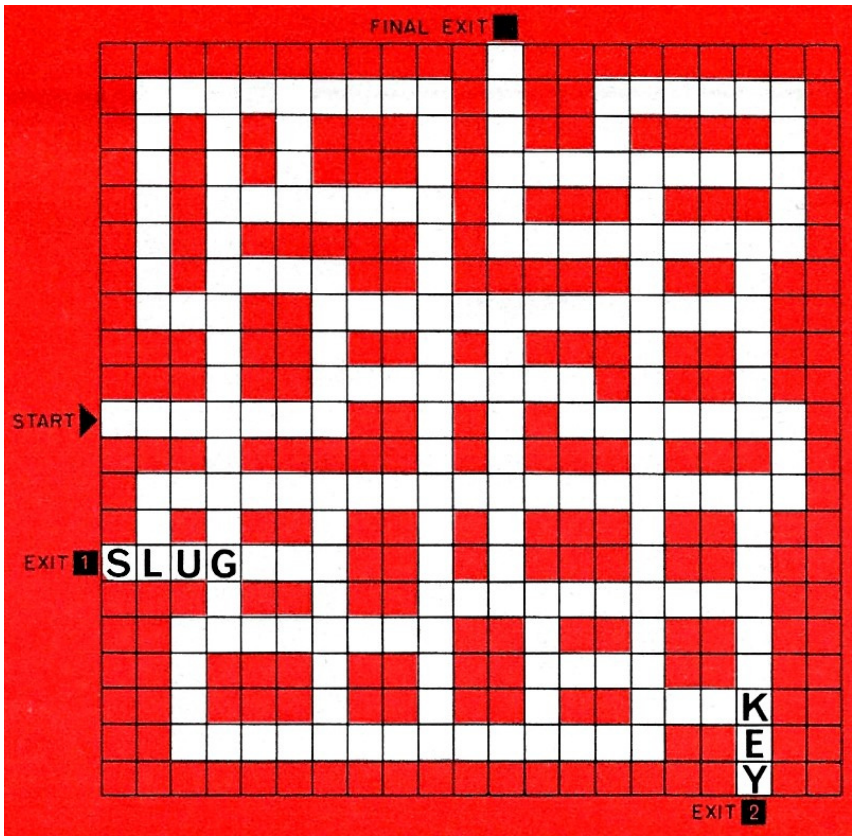
Log sheets in ADIF or Excel should be sent to: andyzs6ady@gmail.com

Closing date for log submission is Friday 10 February 2023

Electronics Crossword

By Robert C. Radford

Here's a new kind of crossword puzzle designed to test your knowledge of electronic terminology. Refer to the clues given and fill in the word called for by the first clue. Start at the arrow. Thereafter, fill in each new word called for by the following clues perpendicular to each preceding word. The last letter in each preceding word will be common to the first or lost letter of each new word, and all words will read vertically downward or from left to right. The tenth word will have a letter in common with the word at the first exit. Nine more correct entries will take you to the word at the second exit, which will also share a letter with the last of these nine words. In each case, the first or last letter of the exit word will be the first or last letter of the next word. An additional nine correct entries will put you at the final exit for a perfect score. The Editors invite your comments on this type of puzzle.



Clues:

1 A component that introduces inductance in on a.c. circuit.

2 Single unit of a device that converts chemical energy into electrical energy.

3 A luminous glow formed by the difference of potential between two electrodes.

4 Conductors used for transmitting and receiving r. f. energy.

5 Antennas specifically arranged or grouped together so as to produce a desired directivity pattern.

6 High-gain VHF antenna array whose directors are made progressively shorter toward the front of the array.

7 The video information reproduced by a television receiver.

8 Conductor used to establish electrical contact with a non-metallic part of a circuit.

9 Lines produced by a TV receiver flyback pulse.

10 Slang term for ham radio equipment.

Exit 1. The adjustable iron core of a coil.

11 A circuit operating as a switch. The presence or absence of a control voltage can apply or eliminate a signal.

12 Abbreviation for the force that causes current to flow in a circuit.

13 Narrow metallic strips used to produce clutter on enemy radar screen to obscure targets.

14 A The paper diaphragm of a loudspeaker.

15 Waveform of a modulated carrier.

16 Two-element electron tube.

17 The unit used to express power ratio.

18 Path of a completed circuit, especially in servo systems.

19 Maximum amplitude of a sine wave.

Exit 2. A hand-operated switch used in radio telegraphy.

20 System of interconnected electrical circuits.

21 Flow of electrons in a vacuum tube.

22 A three-element electron tube.

23 Group of three phosphor dots on a color television picture tube.

24 Slang word for a parabolic reflector.

25 In solid-state technology, empty space in the valence bond of on impurity atom.

26 Preparation of a computer routine in machine language.

27 To remove gases from on electron tube envelope.

28 A secondary emission electrode in a multiplier-type photo-tube.

Jan Answers

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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 Telegram App first. …..+27824484368

HEATHKIT ITEMS FOR DISPOSAL

SB-301 Rx and SB-401 Tx SSB/CW Transceiver pair. Qty 2. With manuals and interconnecting cables. Also some spare valves.

LG-1 "Laboratory Generator; 100Kc to 30Mc"

Peter ZS6FS
073 141 3326
Gauteng