AWA Newsletter

#77

June 2012

A Member of the SARL

Antique Wireless Association of Southern Africa

Inside this issue:

AWA Committee:

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* Technical Advisor—Rad ZS6RAD
* Secretary/PRO—Andy ZS6ADY
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Reflections:

How original, is "original"?

I have asked myself this same question many times and I have been involved in rebuilding of classic cars, rebuilding of classic radios, restoration of antique furniture and a few others as well.

Always I seem to end up asking myself this same question .

I don't think it is one that can be answered easily, because in today's day and age, we don't have many of the "original" materials available to us when carrying out these restoration projects.

We re-coat cases of old radios to try and make them look new, and its no longer original. Why ? Well , because the paint we use is not original. It is a modern day derivative that maybe look exactly the same colour, because with computerised processing we can get the exact same colour, but it is not the same type of paint.

In all respects, its probably 10 or more times better in quality, it will last 3 times the life of the rig, it is ozone friendly. But, its not original.

So what do we do ?

I know there are some real old sticklers who will balk at the thought of replacing a tube with a set of diodes, but will not hesitate to replace a capacitor by placing it in the casing of the old "original" so it still "looks" original.

How far can we go with this whole issue of restoration?

I know for a fact, items that are restored to original without replacing parts or changing paint, are worth much more than those which have the slightest of modification or adaptation.

To me, its not about the monetary value, especially when it comes to radios, but about the usefulness of the item.

I am always proud to be able to say that I am using a rig that was manufactured in 1952, even though it has had some components replaced in order to keep it running. In our industry, we often talk about something being "Fit for Purpose", and that is the most important factor for me.

Yes, we will have to make sacrifices some times, but in the long run, its worth it.

WIKIPEDIA

Electrical resistivity (also known as **resistivity**, **specific electrical resistance**, or **volume resistivity**) is a measure of how strongly a material opposes the flow of electric current. A low resistivity indicates a material that readily allows the movement of electric charge. The SI unit of electrical resistivity is the ohm□metre (Ω□m). It is commonly represented by the Greek letter ρ (rho).

Electrical conductivity or **specific conductance** is the reciprocal quantity, and measures a material's ability to conduct an electric current. It is commonly represented by the Greek letter σ (sigma), but κ (kappa) (especially in electrical engineering) or γ gamma are also occasionally used. Its SI unit is Siemens per metre ($S \square m^{-1}$) and CGSE unit is reciprocal second (s^{-1}).

If there is electric field inside a material, it will cause electric current to flow. The electrical resistivity ρ (Greek: rho) is defined as the ratio of the electric field to the density of the current it creates. For example, rubber is a material with large ρ and small σ, because even a very large electric field in rubber will cause almost no current to flow through it. On the other hand, copper is a material with small ρ and large σ, because even a small electric field pulls a lot of current through it.

CW Net:

Reading the recent threads on the SARL website about CW, it would be wonderful to see more people oin the bands especially here in SA, playing CW.

I have never been a keen advocator of any particular style of CW using any particular instrument, because although my particular preference is for a paddle, I still love the sound of someone using a straight key. It has it's own characteristic sound and is very personal to every operator. Something which I don't think a paddle can bring out.

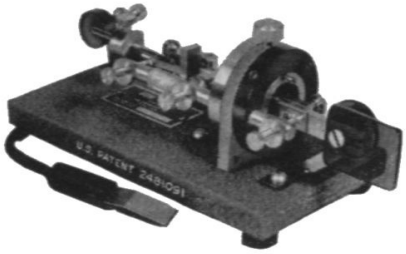
The vibroplex type bug, can be personalised to a certain extent on the "dah", but the "dits" are still determined by a pre-set system.

Having used a straight key for all of my CW when I first embarked on my 200 contacts, I remember how I developed my own particular style of sending CW, which most of the operators I had regular contact with could recognise as easily as we do voice recognition on phone.

Using paddle, I don't know if this is as easy to recognise any more. Using a paddle, one recognises more the tone generated as being unique to each operator than the style they use.

Of course learning CW these days has also become a very contentious issue, with the old school saying you don't touch a key until you can read CW and the new school saying it does not matter. Use an electronic keyer and start working at 18 wpm with large gaps in between.

Personally I think it differs with each person. Some will learn CW quite easily,



while others will battle to learn it, just as some learn to speak a language while others cant.

But you'll never know unless you try it. Until you actually make some attempt at learning CW and finding the joy of another mode of operation, you'll never know what it feels like.

SSB activity:

The bands are really doing strange things again these days. One never knows whether 40m is going to be open or not and sometimes communication is not very steady at all, while other times it is rock solid.

80m on the other hand has become as unstable as 40m was a year ago. You never know how long the band is going to open for when it does work and conditions change so quickly one cannot even try to determine when the band will go out.

Chatting the other evening with some of the local guys on 3615, when I handed it over to the next station, everyone was gone. The band had virtually gone out like a light in period of 2 minutes.

Has this cycle already peaked and on the way down again ? I don't know if even the pundits know the answer to that question. We have certainly been through some rough times with the bands but even then, there have been times that excellent results have been attained.

Closer to home, the Saturday morning nets are still well attended and of course its always good to hear new stations calling in to the net. The average call in rate these days seems to be around 20, which is an improvement on a few months ago when band conditions were playing havoc.

There are a few recon jobs on the go by various people and it would be good to hear what some are doing to restore the beauties of the past.

Hallicrafters HT37

AM:

What can be more pleasant than waking up early on a Saturday morning, warming up the valve rig and playing some MF's with a few ardent AM enthusiasts.

The warm glow of valves in the shack, the gentle tones of music from the early eras coming out of a nice big 10 inch speaker. The sun not even risen yet and the frost on the grass outside.

You're thickly wrapped in a fleecy top, tracksuit pants, winter jacket and the heater is blazing away in the shack.

Then all of a sudden the music changes and "House of the rising sun" comes blaring through the speaker and jolts you back to reality. Realizing you're almost frozen to the bone, you wonder what the heck you are doing out there ?

Well that can sometimes be the case in the midst of a winter morning, but then most of you don't have shacks that are wooden cabins outside where the winter frost can get to you.

Why do I do it ? Because I love it !

Ever since I first heard the MF's been transmitted many years ago, with the AM group that used to meet on an evening on 80m, I have loved it.

Of course there were some of the stations who really took it quite seriously and had fantastic AM transmissions, while others were there just for the fun of it. But no matter what the reason, it was enjoyed by listeners and participants all.

Hopefully that is still the case today with the AWA AM net on a Saturday morning. Enjoyed by one and all.

Hallicrafters SX28

Solid-State Those Pilot Lamps

By Phil Salas, AD5X

Tired of replacing pilot lamps in your radio ,gear? Use light-emitting diodes (LEDs) instead.

Lately, I've been really getting into restoring old boatanchor radios, my latest project being the restoration of an older Johnson Viking Ranger transmitter. Along with that older equipment, even relatively recent pieces of ham gear use the popular #44, #47 and #51 pilot lamps that operate at voltages of about 6 V ac. The Johnson Ranger uses five 6.3 V ac pilot lamps, each drawing about 250 mA, for a total draw of about 8 W of power, with much of that going into heat. Three of those lamps are enclosed in difficult-to-replace areas on the Ranger: the dial (two lamps) and the meter (one lamp). Long-term exposure to the approximately 1.5 W per lamp of heat in these enclosed places. was a concern to me. [In many-cases it also accounts for the dial and meter face discolorations in older equipment. Prolonged heat and plastics do not mix well.-'-Ed.]

Recently, the prices of ultra-bright white LEDs have dropped significantly.' These LED lamps are actually three times brighter than the incandescent pilot lamps used in the Johnson Ranger. LEDs do have a narrow viewing range, however, so they can normally only be used when the lamp is configured so that the LED faces forward. In the three enclosed pilot lamps of the Ranger, the pilot lamps do face forward, so I thought these would be perfect for LED replacements.

Making the LED Pilot Lamps

Most ultra-bright LEDs have normal operating currents of about 20 mA. To set this current properly, I put a 1kn potentiometer in series with a 6.3 V ac source and measured the current on a multimeter. Remember that LEDs are diodes, so they rectify the ac voltage and LED polarity, doesn't matter when they are used on an ac source. (polarity does matter if the LED is driven from a dc voltage source; the anode of the LED should then go to the positive side of the supply voltage.) Using this methodology, I determined that the series dropping resistors necessary to provide 20 mA from a 6.3 V ac source for most ultra-bright LEDs is as shown in Table 1. [Ohm's Law works just as well here. Just remember that the voltage is ac, which is then rectified by the LED. We are interested in the average ac voltage and current and $E_{avg}=0.9E_{rms}$. For a current of 20 mA, $R=E_d/I$, where $E_d = 5.67-V_{diode}$ and I =0.02 A. So, for the white LED, which requires a forward voltage of 4 V, R=1.67/0.02 = 83.5Ω. [Close enough!-Ed.]

Building a pilot lamp substitute is easy if you build the LED and dropping resistor directly into the associated pilot lamp socket. In my case, the pilot lamps all used bayonet bases. I chose to purchase 'some #47 bulbs? and sacrifice them for this purpose. You have some used bulbs in your junk box, so much the better.

To prepare the LED lamp base, do the following:

• Put on safety glasses!
• Wrap the pilot lamp in a small plastic sandwich bag and gently crush the glass part with pliers.
• Using the pliers, gently squeeze and rotate the base. This should break up the remainder of the glass and cement in the base. When complete, ensure that the base is as round as possible.
• Shake out the glass, and then use a solder sucker or wick to remove the solder from the tip of the base.
• Using needle nose pliers, pull the remaining pieces of bulb and wiring out of the base. If necessary, use the solder sucker or wick to clear out any remaining solder.

The bulb retrofit circuit is shown in figure 1. Let's build it! In my case, I used the 3000mcd ultra-bright white LEDs discussed earlier with a 112 W, 82 Ω series resistor. A 1/4 W resistor is fine, but Radio Shack didn't carry 82 Ω resistors in that size.

Table, 1

Dropping Resistors to Provide 20 mA

LED	-Voltage	Resistor
White	4 V	820
Green	3 V	1200
Amber	3 V	1200
Blue	3V	1200

Figure 2 shows two completed LED pilot lamps, and the parts for a third lamp.

Cut one lead of the resistor, and one lead of the LED to 1/8 inch. Overlap these short leads and solder them together. The - use of a desktop '"helping hand" is great.

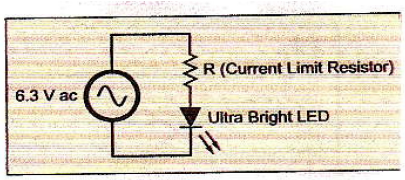


Figure 1—The LED lamp replacement circuit.

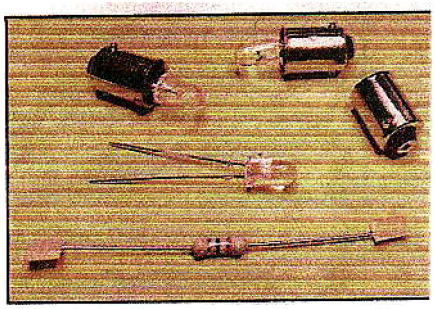


Figure 2- The 'LED' and its, associated current limit resistor. Some, completed LED bulb assemblies can seen to the rear.

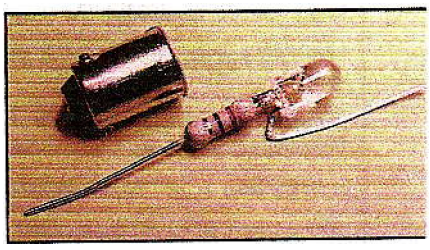


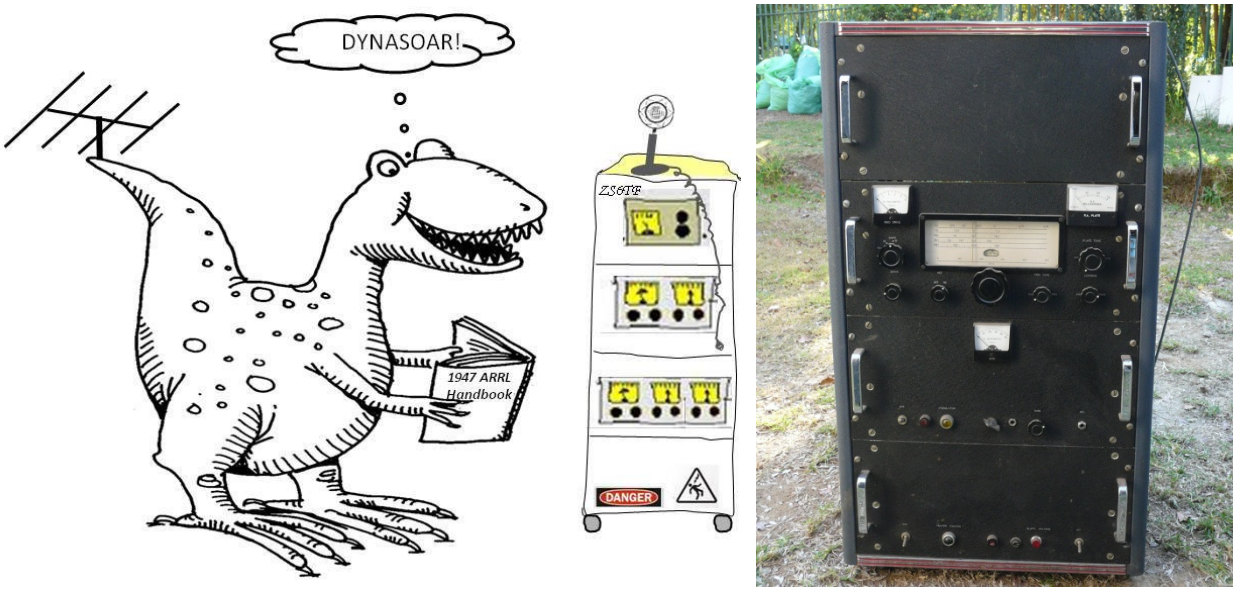
Figure 3-A completed LED and Its current limning resistor ready to be soldered into lhe bulb base. Note how the leads are positioned for soldering.

Presidents Corner

AFTER YOU SK

There is nothing so certain as death and taxes. Most people don't wish to think or talk about the former and try to minimize the latter without considering what happens afterwards.

The fact of the matter is that your President is guilty of assuming that he will live until he is 100 years old and that all his projects will be finished before he QSY's to the higher frequencies. This month I reviewed my list of 39 radio projects last updated in January and found that I had completed 4 of them, given away or swapped 2 and acquired another 6 including the "Dynasoar", a homebrew AM transmitter project.



The basic question for me is how to control all this whilst I'm living and what happens to it all when I'm no longer. My XYL is a little younger than me and statistically women live longer than men so it usually falls upon them or another non radio amateur relative to deal with the situation when it occurs.

The first assumption is that even the most disorganized radio amateur has a will, nominating an executor, heirs, and recording bequests and kept somewhere nearby is a schedule of assets.

The flavour of most wills drawn by banks, insurers, and lawyers who nominate themselves as executors is to turn everything into cash as soon as possible because it makes it easy to divide the estate exactly and also defines and secures their commission. If the thought of an ignorant auctioneer knocking down your beloved lifetime collection of boat anchors for not very much worries you, then read on.

The second assumption is that you care what happens to your stuff and therefore the scrap-man is not an option. At one end of the spectrum the needs of the surviving spouse or heir may require the cash proceeds to be maximized, and at the other for certain items to be donated to appropriate recipients. Whatever the case there is a lot that can be done to make the process easier while we are still around.

The most important of these is to have someone who is knowledgeable and that you trust to handle the logistics of dispersal or disposal of the shack equipment and radio collection, if applicable. Having obtained

that person's agreement, set out what you would like to be done and how incidental expenses are to be covered, in a letter to that person in your own writing, dated and signed.

Volunteer organizations such as the AWA and the radio clubs are willing to be involved in the process but are generally poorly equipped to take on the entire task. Museums should not be considered unless you have an exceptional item to be conserved.

The South African tax laws provide that an individual may receive a donation annually of up to R100,000 without incurring a tax liability. Few ordinary radio amateur stations exceed this value so it could be donated in its entirety with the understanding that the donor has a lifetime use of the equipment. For larger collections it is important to have a full list of equipment, and a space reserved in a cupboard, bookshelf or wardrobe to keep the documentation safe and orderly. Each major item should have a file containing manuals, repair and modification info, and some idea of value as this is not always obvious. Likewise keep spares and accessories in a labeled box so that they stay with the equipment.

As a footnote, the problem diminishes the less you have, and a strategy of cutting back and liquidating the excess in later years can help both sides of the equation.

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

Antique Wireless Association of Southern Africa

Mission Statement

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yesterdays radio's and associated equipment. To encourage all like minded amateurs to do the same thus ensuring the maintenance and preservation of our amateur heritage.

Membership of this group is free and by association.

Notices:

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

AM Net—Wednesday evenings from around 18:30: Saturday mornings from around 06:00 or when band conditions allow. Frequency—3615.

SSB Net—Saturday mornings from 08:30. Frequencies—7070 with a relay on 14125.

CW Net—Saturday afternoon from 14:00. Frequency—7020.
(Times given are CAT or SAST)

I have some fine ex-military rigs that have been donated to the AWA. If you are interested in any of these, contact me on 0824484368 or by email. A donation to the Awa coffers will secure one of these fine rigs for you.


A39 Manpack


B47


C42 + P/S


HF 156