



SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB

DECEMBER 2010



Season's Greetings
COMMUNICATION IS THE NAME OF THE GAME

Meeting A very nice turn out at the Braai held at Rex's qth. Thanks to Rex and Ingrid for the use of the property for the do. The weather was overcast so the braai fire/s were setup in the double garage and we all sat under cover. Fortunately there was no rain and as usual the sky cleared when it was time to go home. Frank ZS6TMV gave a short demo of the Instant Ladder Line to all present. Have a look at www.instantladderline.co.za for more detail.

SSC Meeting Combined with HVB braai.

---oooOOOooo---

Life a number centuries ago

Thanks to Gert ZS6BA

Houses had thatched roofs-thick straw pile high, with no wood underneath. It was the only place for animals to get warm, so all the cats and other small animals (mice, bugs) lived in the roof. When it rained it became slippery and sometime the animals would slip and fall off the roof.

Hence the saying, "It's raining cats and dogs."

There was nothing to stop things from falling into the house. This posed a real problem in the bedroom where bugs and other droppings could mess up your nice clean bed. Hence, a bed with big posts and a sheet hung over the top afforded some protection.

That's how canopy beds came into existence.

The wealthy had slate floors that would get slippery in the winter when wet, so they spread thresh (straw) on the floor to help keep their footing.

As the winter wore on, they added more and more thresh until, when you opened the door, it would all start slipping outside. A piece of wood was placed in the entrance way.

Hence the saying: "a thresh hold."

Lead cups were used to drink ale or whisky. The combination would sometimes knock the imbibers out for a couple of days. Someone walking along the road would take them for dead and prepare them for burial. They were laid out on the kitchen table for a couple of days and the family would gather around and eat and drink and wait and see if they would wake up.

Hence the custom of holding a wake

Most people got married in June because they took their yearly bath in May, and still smelled pretty good by June. However, they were starting to smell, so brides carried a bouquet of flowers to hide the body odour.

Hence the custom today of carrying a bouquet when getting married.

Bimetallic (galvanic) corrosion risks from contact with galvanised steel or aluminium

Introduction

Something to consider when building an outside antenna

Bimetallic corrosion can only occur when two dissimilar metals are in 'electrical' contact and are bridged by an electrically conductive liquid. The 'cell' produced can result in corrosion to one of the paired metals. This can be an issue when stainless steels are in contact with other metals, depending on the circumstances.

What is needed to set up the corrosion 'cell'?

To set up a galvanic cell between two conducting materials (metals or graphite), the two metals must have differing potentials or be more or less 'noble' than each other.

The more noble metal (cathode) is protected as the less noble metal (anode) sacrificially corrodes.

The table below is an example of these 'metal to metal' relationships, including graphite as conductive non-metal.

ANODIC (Least Noble)
Magnesium
Zinc
Aluminium
Carbon steel or cast iron
Copper alloys (brass, bronze)
Lead
STAINLESS STEEL
Nickel alloys (Incoloy 825, Hastelloy B)
Titanium
Graphite
CATHODIC (Most Noble)

The further apart the metals are, in terms of relative potentials, the greater the driving force in a cell. So, for example, stainless steel in contact with copper is less likely to be a risk than when it is in contact with aluminium or galvanised (zinc coated) steel.

To complete the cell, a conductive liquid must bridge the contact metals. The more electrically conductive the liquid is, the greater the danger of corrosion. Seawater or salt laden moist air is more of a risk than contact with rain water or towns water.

If the metals are dry, bimetallic (galvanic) corrosion cannot occur.

Corrosion risks with galvanised steel and stainless steel in contact

Galvanised steel in contact with stainless steels is not normally considered to be a serious corrosion risk, except possibly in severe (marine type) environments.

In these situations, precautions such as insulating barriers are usually considered adequate to avoid bimetallic corrosion in most practical situations.

Corrosion risks with aluminum and stainless steel in contact

Aluminium and stainless steel together also appears to be a bi-metallic corrosion risk, from the 'nobility' table. With this combination the affect of relative surface area on corrosion is important.

A large area of 'cathode' relative to 'anode' will accelerate the anodic corrosion. Although aluminium is anodic to stainless steel, large relative surface areas of aluminium to stainless steel can be acceptable, dependant on local conditions.

Stainless steel fasteners in aluminium plates or sheets are normally considered safe, whereas aluminium rivets or bolts holding stainless steel parts together is an unwise combination, as there is a practical risk of corrosion.

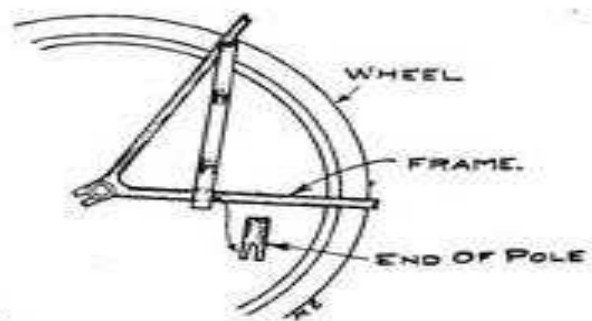
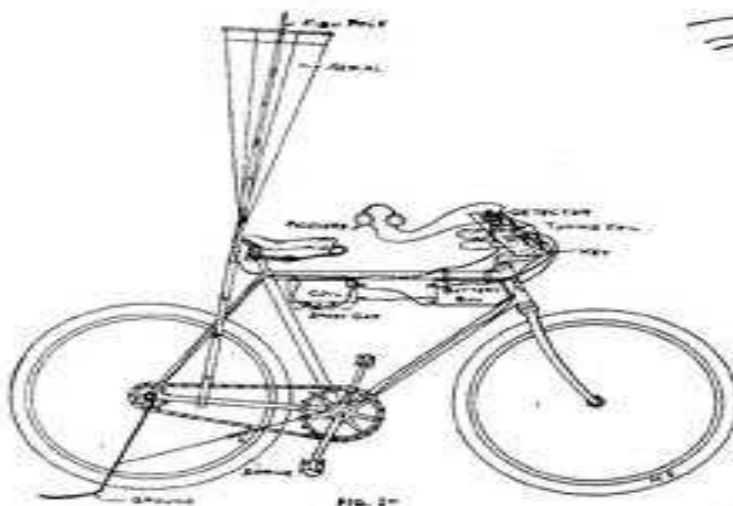
An example of the safe use of stainless steel and aluminium together is where stainless steel fasteners and hold down bolts are used to secure aluminium roadway or bridge parapet guards.

Even with no insulation between the metals, there should be little risk of corrosion.

In contrast, in a marine environment, severe localised pitting corrosion to the aluminium treads has been observed where un-insulated stainless steel bolts were used to secure the treads in place.

On the same ladder however, bolts with sound insulating washers did not show any pitting on the surrounding aluminium.

Contd. On page 3



-FIG. 2-



-FIG. 4-

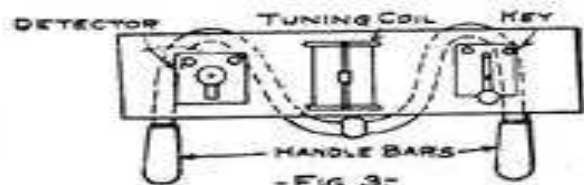
HOW TO MAKE A BICYCLE WIRELESS OUTFIT.

Many amateur wireless operators who have bicycles and go out for a long ride with their friends, can attach their wireless outfit on their bicycle and carry on communication between each other.

To attach their wireless outfit to their bicycle, it should first be fastened on a board, about 8 inches by 2 feet. Before fastening the apparatus to the board small straps should be fastened on the bottom side of the board so as to keep the board on the handle bars. Only the receiving apparatus should be fastened to the board, as the sending apparatus can be fastened to another part of the bicycle. The spark gap should be fastened on top of the coil and the latter suspended upside down. A small box should be put over the spark gap so as to protect the rider from a shock. The coil and gap should then be fastened on the bar just below the seat. The batteries should be fastened on the bar below the handle bars. The coil and batteries should be fastened very tight so as to prevent them from shaking. The ground wire can be made as follows: Get a long piece of galvanized iron wire about 22 inches long by 1/4 inch thick, about 6 inches from one end bend it as shown in the diagram. The other end should be bent into a small hook and should be fastened under the nut of the back wheel.

About 5 inches from the bottom of the wire a rope should be fastened. This rope should have a spring attached to it as shown in the diagram. The other end of the rope should be fastened near the sprocket. The rope with the spring on it keeps the ground wire dragging along the ground so as to make contact with it.

For the aerial, a large fish pole about 15 feet long will do. On the bottom end of the pole a notch should be cut so as to fit in the bar near the back wheel as shown in the diagram. The pole should then be tied near the seat with some rope.



-FIG. 3-

The aerial wires can be fastened as shown in the sketch. No. 14 wire, rubber covered or Pirelli cable should be used in all the wiring. The key of the sending station should also be fastened on the board over the handle bars. A lot of fun can be had with an outfit like this, as one rider can ride ahead of the rest and can still carry on a conversation.

Contributed by **WILLIAM DETTMER.**

From page 2

This illustrates the beneficial effect of breaking the corrosion cell by isolating the two 'dissimilar' metals in marginal cases.

Discolouration of stainless steel by corrosion products

Staining effects on stainless steels from corrosion products of the coupled metal can also be an issue. Lead and copper are quite close on the nobility table to stainless steel and so the bimetallic corrosion risks should be small.

Any corrosion product, if washed onto stainless steel, may however result in problems not associated with the bi-metallic effect and so not be predicted from the tables.



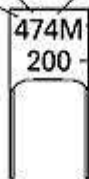
A refresher

CAPACITOR GUIDE

The Result of Capacitor Code is Given in pF

1st Digit Of Value 2nd Digit Of Value Multiplier Tolerance (±%)

474 =
47 x 10,000 pF
= .47 μF



Max. Voltage

F = 1%
G = 2%
J = 5%
K = 10%
M = 20%
Z = +80%/-20%

On some capacitors the value is shown as a straight number (4.7pF). On others the decimal point is replaced with the first letter of the prefix (4p7 = 4.7pF).

Prefix	Abbr.	Multiplier
pico	p	10 ⁻¹²
nano	n	10 ⁻⁹
micro	μ	10 ⁻⁶

1000 pico = 1 nano
1 nano = .001 micro
1000 nano = 1 micro

EXAMPLES:

223J = 22 x 10³ pF = 22nF = 0.022μF 5%

151K = 15 x 10¹ pF = 150pF 10%



CLUB INFORMATION

Postal address PO Box 19937 Sunward Park 1470

Website <http://www.qsl.net/zs6hvb/>

Back Issues of Shacknews available on the club website

e-mail zs6hvb@gmail.com

Repeater 145.1875 MHz input - 145.7875 MHz output

Linked to 70 cm - 438.850 Mhz (Sunday bulletins)

Bulletins Sunday morning - 145.7875 MHz & 7062 KHz @ 08h45.
Relay - 80M - 3662KHz

Monthly meeting venue

Germiston Methodist Church
Hall
Lady Duncan Rd
Germiston

3rd Saturday of the month at 14:30

Committee

Chairman	Ton van Dijk	ZS6ANA	011-432-5494
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
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Club bank details

First National Bank - Current Account 62116557309. Branch Code for EFT 250655

2011

ZS6HVB meetings

January 2011						
Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

ZS6SSC Social meetings

February 2011						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

ZS6SSC Social meetings

March 2011						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

April 2011

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

May 2011

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

June 2011

Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

July 2011

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

August 2011

Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September 2011

Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

October 2011

Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November 2011

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

December 2011

Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

End of year social sometime in December