SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB

August/September 2014

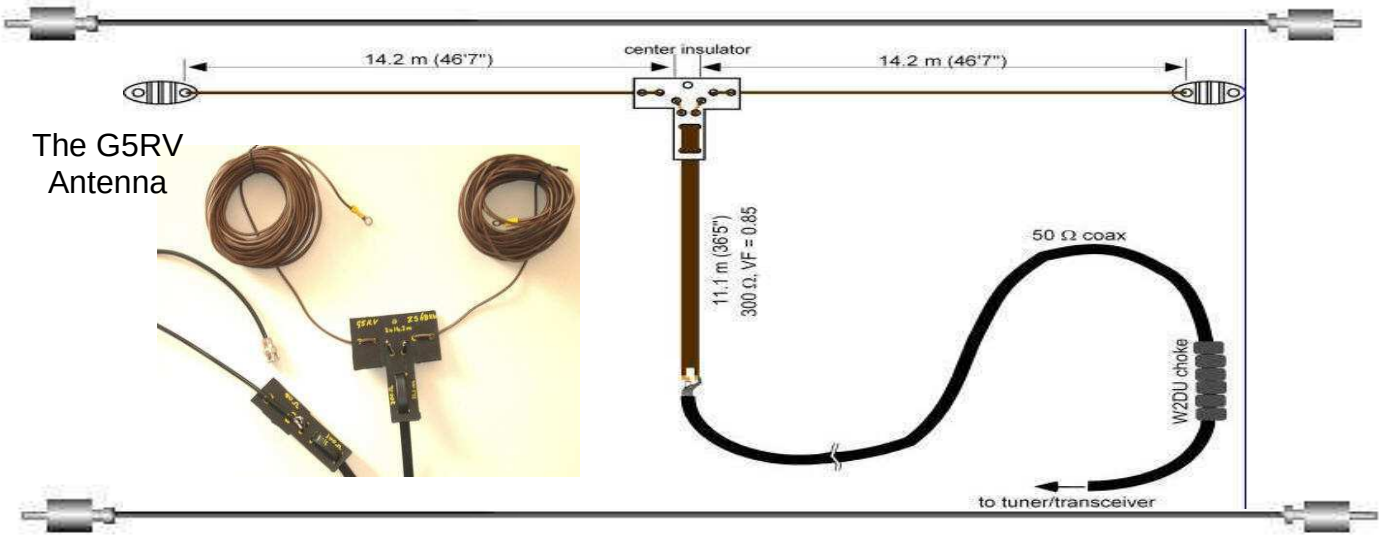
We're on

ZS6HVB
Affiliated to the SARL

COMMUNICATION IS THE NAME OF THE GAME

The next meeting will be at the house of Doug and Merle which takes place on the 20 September. This is the Social get together where the ladies join in. The usual catering arrangements apply. Time 14:30

The G5RV Antenna



The bear truth

Baby Bear goes downstairs and sits in her little chair at the table.
She looks into her little bowl. It is empty.
"Who's been eating my porridge?!!" she squeaks.
Daddy Bear arrives at the table and sits in his big chair..
He looks into his big bowl and it is also empty.
"Who's been eating my porridge?!!" he roars.
Mummy Bear puts her head through the serving hatch from the kitchen
and yells...
"For xxxxx's sake, how many times do I have to go through this with you idiots?
It was Mummy Bear who got up first,
it was Mummy Bear who woke everyone in the house,
it was Mummy Bear who made the coffee,
it was Mummy Bear who unloaded the dishwasher from last night, and put everything away,
it was Mummy Bear who went out in the cold early morning air to fetch the newspaper,
it was Mummy Bear who set the damn table,
it was Mummy Bear who put the friggin cat out, cleaned the litter box and filled the cat's water and food dish, and now that you've decided to drag your sorry bear-xxxxs downstairs and grace Mummy Bear's kitchen with your grumpy presence, listen good, coz I'm only going to say this one more time...
I HAVEN'T MADE THE *******IN PORRIDGE YET!!!"

Here goes with a "dom" question.

Heat waves travel through a vacuum.

ie: Heat from the sun reaches earth through a vacuum, heat from the filament of a light bulb (vacuum type) reaches the glass of the lamp and it gets hot.....very hot.

The question is.....why is a vacuum used to insolate heat in a "thermos" or vacuum flask.

Quick answer - not so dumb question...

Heat can travel in 3 basic ways:

- Conduction through any matter - solid, liquid or gas
- Convection - where a liquid or gas picks up heat at one point, circulates, and dumps the heat at another point
- Radiation - Throughout the spectrum, but predominantly in the infrared region

A vacuum flask effectively gets rid of the first two (well, not completely, because the "inner" flask does not float inside the "outer" flask but the two are connected around the neck. Also some conduction through the stopper.)

That leaves radiation to worry about, which can travel through the vacuum. Now, the amount of energy which is radiated from any object is dependent on the absolute temperature of the object. And the amount of energy radiated is proportional to the fourth power of the absolute temperature... IE: T^4. So if your coffee is at 50 C and the outside temperature is at 20 C, the radiation *outwards* from the hot inner flask will be greater than the radiation *inwards* from the cooler outer flask, and there will certainly be some nett loss. BUT at these relatively low temperatures the loss is much lower than would occur with conduction and/or convection. Simple?

Galvanic Corrosion Chart

Galvanic corrosion is the corrosion that results when two dissimilar metals with different potentials are placed in electrical contact in an electrolyte.

A difference in electrical potential exists between the different metals and serves as the driving force for electrical current flow through the corrodant or electrolyte. This current results in corrosion of one of the metals. The larger the potential difference, the greater the probability of galvanic corrosion.

Galvanic corrosion only causes deterioration of one of the metals. The less resistant, active metal becomes the anodic corrosion site. The stronger, more noble metal is cathodic and protected.

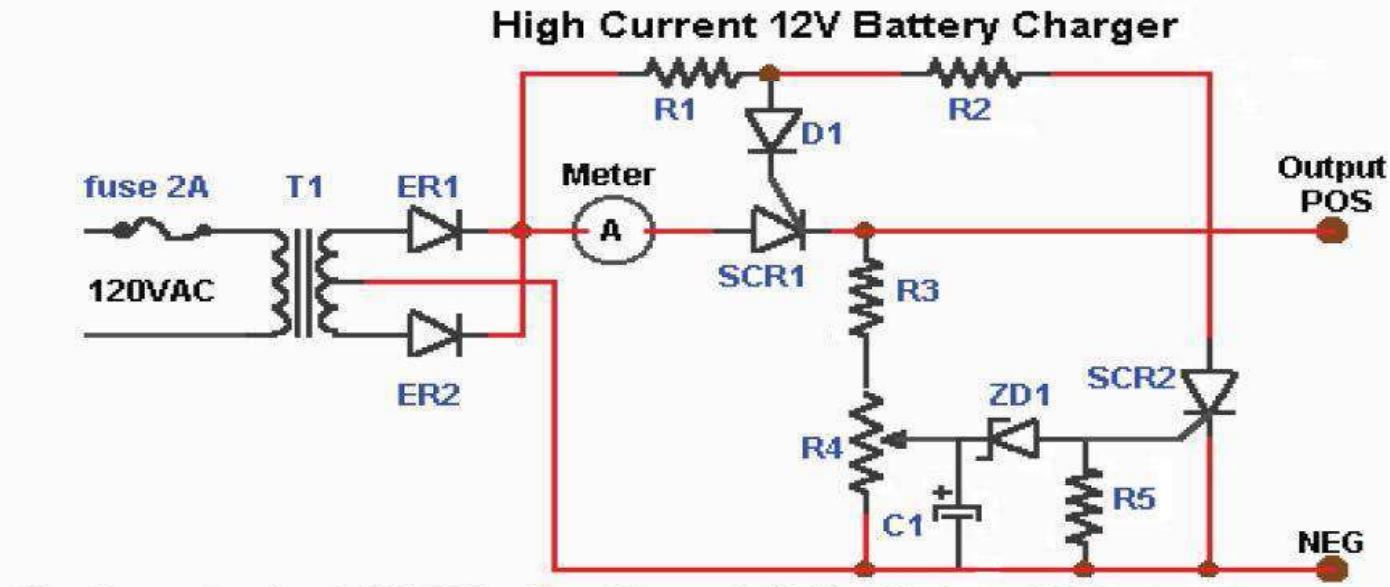
Galvanic corrosion potential is a measure of how dissimilar metals will corrode when placed against each other in an assembly. Metals close to one another on the chart generally do not have a strong effect on one another, but the farther apart any two metals are separated, the stronger the corroding effect on the one higher in the table.

This table lists the potential differences for various metals in water. The order of the series can change for different electrolytes (for example, different pH, ions in solution).

Electrode Potential at 77 F (25 C)		
Anodic end (this is where the corrosion occurs)		
Element	Standard Electrode Potential (Volts)	
Lithium	-3.045	⇧ Anodic or Active
Potassium	-2.920	
Sodium	-2.712	
Magnesium	-2.340	
Beryllium	-1.700	
Aluminum	-1.670	
Manganese	-1.050	
Zinc	-0.762	
Chromium	-0.744	
Iron; Mild Steel	-0.440	
Cadmium	-0.402	Cathodic or Passive ⇩
Yellow Brass	-0.350	
50-50 Tin-Lead Solder	-0.325	
Cobalt	-0.277	
Nickel	-0.250	
Tin	-0.136	
Lead	-0.126	
Hydrogen reference electrode	0.000	
Titanium	+0.055	
Copper	+0.340	
Mercury	+0.789	
Silver	+0.799	
Carbon	+0.810	
Platinum	+1.200	
Gold	+1.420	
Graphite	+2.250	
Cathodic end, passive - (no corrosion here)		

Something on traps

Hy-Gain traps (TH7/TH3 style) are pre-tuned at the factory. To check them, first visually inspect them for broken or missing trap-caps. These can allow water to enter the trap and detune it.
Replacements are available. Also, look for breaks or cracks in the outer aluminium tubing where it is bent to connect to the smaller inner tubing. Also check the screw used to make this connection. Older (before 1985) traps used plated screws that may be rusty. Check this connection with an ohm-meter and replace the screw if necessary. Check inside the trap for insect and spider nests (especially if stored on the ground). Clean nests out by using a high-pressure air hose. DO NOT take the trap apart! If all connections and caps are good, then the trap may be checked with a grid-dip meter for the proper resonant frequency. 10 meter traps are resonant approx. 27.6 MHz, 15 meter traps are resonant approx. 20.6 MHz. Couple a dipper coil to the outer end of the trap to obtain the resonance.



M = Current meter 1-10ADC (optional)
D1 = Diode .750mA/200V
ZD1 = Zener Diode 8.2V/1W
C1 = Capacitor 100 mfd @ 25V
T1 = Center tap 12V/10A(min)
ER1,2 = Rectifier Diodes 15A,200V

R1,R2 = 27 ohms / 5W
R3 = 47 ohms 1W
R4 = 500 ohms / 2W
R5 = 100 ohms @ 1/2 W
SCR1 = 20 A @ 50 V
SCR2 = 2 A @ 50 V

Adjust R4 using a fully charged battery so that the charging just ceases. Automatically start charging when battery voltage drops below R4 setting and stops when battery is fully charged.

Club Information

Postal address PO Box 19937 Sunward Park 1470

Website http://www.zs6hvb.za.net
Back Issues of Shacknews available on the club website
e-mail zs6hvb@zs6hvb.za.net
Repeater 145.1875 MHz input - 145.7875 MHZ output

Bulletins Sunday morning - 145.7875 MHz & 7062 KHz @ 08h45.
Relay - 80M - 3662Khz (Winter) 30M - 10.132Mhz (Sum)

Monthly meeting venue

Germiston Methodist Church
Room at back of the offices
Lady Duncan Rd
Germiston

3rd Saturday of the month at 14:30

Committee

Chairman	Vacant		
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
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Branch Code 201209 - Sunward Park