

# SHACKNEWS

## HIGHVELD AMATEUR RADIO CLUB

PO Box 1111, Bedfordview, 2008

OCTOBER 2005

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Sunday morning BULLETINS - 145.7875 MHz &  Hz @ ±08h45.

### COMMUNICATION IS THE NAME OF THE GAME

**Meeting** There was not a large turn out at the last meeting. Wonder why? Taking the form of a very informal get together various point about the hobby was discussed. One being the setting up of a 3 element 3 band yagi and how to test for a faulty trap. Thanks for all the input by those present. The next meeting will be the last for this year. The December meeting will be the usual social do joining up with the SSC.

**SSC** This meeting was held at the QTH of Gus and Merna. Interesting how Gus has set-up his antenna/s in a townhouse complex. Thank to them for the eats. The next meeting and the last for the year will be held at the QTH of Doug and Merle. The address is :- 29 Anson Rd/Str, Robertsham. This is an easy one to find. Use Xavier st either from the M1 or the N12. Anson runs parallel to Xavier on the East side and closest to Riflerange rd.

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### **Charging lead-acid batteries with a power supply**

Lead-acid batteries can be charged manually with a commercial power supply featuring voltage regulation and current limiting. Calculate the charge voltage according to the number of cells and desired voltage limit. Charging a 12-volt battery (6 cells) at a cell voltage limit of 2.40V, for example, would require a voltage setting of 14.40V.

The charge current for small lead-acid batteries should be set between 10% and 30% of the rated capacity (30% of a 2Ah battery would be 600mA). Larger batteries, such as those used in the automotive industry, are generally charged at lower current ratings. Cells constructed of a non-antimonial lead grid material allow higher charge currents but have a lower capacity. The cylindrical Cyclone is sealed and can sustain a pressure of up to 3.5 Bar (50 psi). A pressurized cell assists in the recombination of gases.

Observe the battery temperature, voltage and current during charge. Charge only at ambient temperatures and in a ventilated room. Once the battery is fully charged and the current has dropped to 3% of the rated current, the charge is completed. A good car battery will drop to about 40mA when fully charged; a bad battery may not fall below 100mA.

After full charge, remove the battery from the charger. If float charge is needed for operational readiness, lower the charge voltage to about 13.50V (2.25V/cell). Most chargers perform this function automatically. The float charge can be applied for an unlimited time.

Correct settings of the voltage limits are critical and range from 2.30V to 2.45V. Setting the voltage limit is a compromise. On one end, the battery wants to be fully charged to get maximum capacity and avoid sulfation on the negative plate. A continually over-saturated condition at the other end, however, would cause grid corrosion on the positive plate. It also promotes gassing, which results in venting and loss of electrolyte.

The voltage limit shifts with temperature. A higher temperature requires slightly lower voltages and vice versa. Chargers that are exposed to large temperature fluctuations should be equipped with temperature sensors to adjust the charge voltage for optimum charge

The battery cannot remain at the peak voltage for too long; the maximum allowable time is 48 hours. When reaching full charge, the voltage must be lowered to maintain the battery at between 2.25 and 2.27V/cell. Manufacturers of large lead-acid batteries recommend a float charge of 2.25V at 25°C.

Car batteries and valve-regulated-lead-acid batteries (VRLA) are typically charged to between 2.26 and 2.36V/cell. At 2.37V, most lead-acid batteries start to gas, causing loss of electrolyte and possible temperature increases. The exceptions are small sealed lead acid batteries (SLA), which can be charged to 2.50V/cell without adverse side effect.

Large VRLA batteries are often charged with a float-charge current to 2.25V/cell. A full charge may take several days. It is interesting to observe that the current in float charge mode gradually increases as the battery ages in standby mode. The reasons may be electrical cell leakages and a reduction in chemical efficiency.

Aging affects each cell differently. Since the cells are connected in series, controlling the individual cell voltages during charge is virtually impossible. Even if the correct overall voltage is applied, a weak cell will generate its own voltage level and intensify the condition further.

Much has been said about pulse charging lead-acid batteries. Some experts believe there is a benefit in reduced cell corrosion but manufacturers and service technicians are not in full agreement on the effectiveness. There are also disagreements on the 'equalizing charge'. An equalizing charge raises the battery voltage for several hours above that specified by the manufacturer. Although beneficial in reversing sulfation, the side effects are elevated temperature, gassing and loss of electrolyte if the service is not administered correctly. A periodic discharge of about 10% is said to benefit the battery but little conclusive evidence is available.

Lead-acid batteries must always be stored in a charged state. A topping charge should be applied every six months to avoid the voltage from dropping below 2.10V/cell on an SLA. Prolonged storage below the critical voltage causes sulfation, a condition that is difficult to reverse. (See also: "How to restore and prolong lead-acid batteries")

## THE END

### **Subject: Did you ever wonder**

Here are a few things to think about that you probably have never thought about;

Can you cry under water?

How important does a person have to be before they are considered assassinated instead of just murdered?

Why do you have to "put your two cents in"... but it's only a "penny for your thoughts"? Where's that extra penny going?

Why does a round pizza come in a square box?

Why is it that people say they "slept like a baby" when babies wake up like every two hours?

If a deaf person has to go to court, is it still called a hearing?

Why are you IN a movie, but you're ON TV?

Why do people pay to go up tall buildings and then put money in binoculars to look at things on the ground?

Why is "bra" singular and "panties" plural?

Why do toasters always have a setting that burns the toast to a horrible crisp, which no decent human being would eat?

If the professor on Gillian's Island can make a radio out of a coconut, why can't he fix a hole in a boat?

Why do people point to their wrist when asking for the time, but don't point to their crotch when they ask where the bathroom is?

If corn oil is made from corn, and vegetable oil is made from vegetables, what is baby oil made from?

Do the Alphabet song and Twinkle, Twinkle Little Star have the same tune?

Why do they call it an asteroid when it's outside the hemisphere, but call it a haemorrhoid when it's in your butt?

Did you ever notice that when you blow in a dog's face, he gets mad at you, but when you take him for a car ride; he sticks his head out the window?

## 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 we 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!!!"