

NEWSLETTER

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Mercury Amateur Radio Association - MARA - North America - North East

WHEN WE PLANT A GARDEN, IT IS AT THIS IS THE TIME OF THE YEAR THAT WE REALIZE THE HARVEST. WITH STUDY AND LEARNING, WE CAN HARVEST THE REWARDS EVERY DAY OF THE YEAR!



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OTHER STUFF

E-mail your comments, ideas, or submissions to marane@mara.net

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VIEW FROM THE TOWER



YOU SAW IT HERE FIRST...

Some of you may have heard Barry, N2PCT, announce on the Saturday morning net early in September that he and his xyl Sherry, KB2YXI were slated to fly to the MTC in Provo, later in the month, for training as senior missionaries. Well, it's true and we have the proof as shown below! By the time you read this, Elder and Sister Smith will be back in the east serving in the [New Jersey Morristown Mission](#) and living in their own home.



Sister Sherry Smith and Elder Barry Smith at the Provo MTC. September 2009.

The Smiths will work in the Mission office, with Sherry handling various office duties and Barry being, among other things, the car czar. They will be serving until March of 2011.

CULTURED CORNER

by ANØNMS

I WASN'T ALL THAT GREAT IN SCHOOL

*I wasn't all that great in school
And please don't tell my kids
It wasn't girls that caught my eye
But stuff like tubes and grids*

*I wasn't all that great in school
Although I managed to
Get past the stuff they made me take
In order to get through*

*I wasn't all that great in school
In stuff like algebra
Until I saw the need to solve
For things like antenna*

*I wasn't all that great in school
Until I saw the need
For all the things the teachers taught
That they did plant the seed*

GRANDMA MARA'S CORNER

GRANDMA'S SUMMER TRAVELS - PART 2

Once on the northern side of the [Canadian-U.S. border](#), which by the way is the longest undefended border in the world,

I discovered that things were about the same but a with subtle differences.

The border people on our side wear firearms; the Canadians don't. Maybe there is some truth to crime being lower up there.



There was the usual and familiar McDonald's on nearly every corner but with a maple leaf on the signs. Instead of Dunkin Donuts or Starbucks on the corners across from McD's there were [Tim Hortons](#). A lot of Canadians seem to run on coffee from 'Timmys' judging from the number of people I saw with 'Tim's' coffee cups in hand whether they were walking, driving, or sitting, or as discards on

the roadside. Grandma did rather develop a liking for their maple glazed donuts!

The money of course is different. The Canadian paper money is more colorful than ours and in similar denominations. While we Americans didn't want to use the dollar coin when it was introduced back in 1979, they have both



An old Canadian two dollar bill shown above with its replacement two dollar coin (toonie) shown on the left. The one dollar coin (loonie) is shown on the right.

\$1 and \$2 coins, called a loonie and toonie respectfully, which replaced their \$1 and \$2 bills (yes, they had a two dollar bill!). The first was named for the picture of a loon (the bird) on one side and the second because it is worth two

loonies (two-nie). Our buck was worth about 7¢ more but the rumor I heard was that it was supposed to become par by the end of the year. There are some places close to the border on our side that would take it even, dollar for dollar in order to get the business.

Filling up with gas was a bit strange the first few times as they are all about [metric](#), so the gas comes in liters (or litres as they spell it!) rather than gallons. One US gallon equals 3.875 liters and at a rough average price of \$1 per liter it works out to \$3.75 a gallon. But hey, it works the same so no big deal!

After spending the rest of the first day looking around [Piney, Manitoba](#), I was up and on the road early the next morning headed west to Winkler (again because the name fascinated me!).

[Winkler, Manitoba](#) (Henry Winkler who played the 'Fonz' in the sitcom Happy Days wasn't born here, nor did the city fathers name the place after him!) has the distinction of having the most heat units of any place in Manitoba, meaning it has the longest growing season and is the warmest place in the province. I can testify to that as it sure was warm on the few days I was there! Nice little city but by this time I was ready for the open country. I made a few calls on VE4VRG, the local 2 meter (or as they spell them there - 2 metre) repeater and got some advice on interesting places to visit. I also found that there were many places to connect to the internet (lots of the restaurants and coffee shops have free access points) with my netbook. My family were more than a bit worried about someone my age heading out on a Harley on her

own. Family members told me if I didn't check in at least once a day (with GPS coordinates!) I could expect them to send out the cavalry (that would be the [RCMP](#) in Canada).

And so, armed with info about places to visit and things to see, I headed off to the west, and the neighboring province of Saskatchewan.

Grandma Mara

TECH STUFF

by VE1VQ

BATTERIES & RELATED THINGS

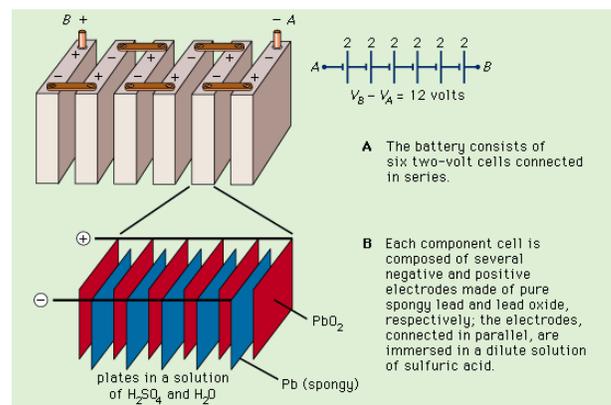
BATTERIES - PART 2

The typical battery is made up of two or more cells. Adding cells together is done to increase the total battery voltage. The cell in a zinc-carbon or an alkaline battery produces slightly better than 1.5 volts DC in a fresh unit. To make a 9 volt battery, manufacturers connect a total of six cells ($1.5v \times 6 = 9v$) in series. Strictly speaking, a double A (AA) battery of 1.5v should be called a cell, because it is only a single unit, but common usage has tagged it a battery.

Last month I talked a little bit about the early history of batteries, and the common non-rechargeable zinc-carbon and alkaline. This month we'll look at rechargeable types.

RECHARGEABLE

Rechargeable batteries come in several familiar flavors with the most common being the lead-acid. If you wonder about that statement, think about the battery hiding somewhere in the depths of your vehicle. This battery is an amazing invention, made to withstand hot and cold



temperatures, punishing vibration, and little or no maintenance, all without a thought on the user's part.

The only time most of us ever do anything is when our vehicle is hard to start or won't start at all. And then all it usually takes is a cleaning of the terminals and the clamps.

"Lead-acid batteries are made up of plates of lead and separate plates of lead dioxide, which are submerged into an electrolyte solution of about 35% sulfuric acid and 65% water. This causes a chemical reaction that releases electrons, allowing them to flow through conductors to produce electricity. As the battery discharges, the acid of the electrolyte reacts with the materials of the plates, changing their



CAR BATTERIES ARE INTENDED TO PROVIDE A LARGE AMOUNT OF CURRENT FOR A SHORT PERIOD OF TIME.

surface to lead sulfate. When the battery is recharged, the chemical reaction is reversed: the lead sulfate reforms into lead oxide and lead. With the plates restored to their original condition, the process may now be repeated." - from Wikipedia.

Car batteries are intended to provide a large amount of current for a short period of time (i.e. to start your vehicle) and then to return to the charge mode. The discharge from starting is in the order of 2-5%. Any more than this may ruin your battery. If your battery usage requires long periods of discharge then you need a deep discharge type.

DEEP DISCHARGE BATTERIES MAY BE SAFELY DISCHARGED DOWN TO 80% OF THE BATTERY RATING RATHER THAN 2-5% FOR AN ORDINARY CAR BATTERY.

These are made with solid lead plates instead of spongy lead and will provide discharge down to 80% of battery rating, time after time. The disadvantage of a deep discharge type is that you cannot call upon the battery to provide that sudden and large current (rated as continuous cranking amps or CCA) to start your car or truck on a sub-zero winter morning. Another variation are batteries

sold under the 'marine battery' label. These are usually a hybrid made with spongy lead plates that are courser in construction than those of normal vehicle batteries. They fall between the car battery and the deep cycle for initial current supply and percentage of allowable discharge.

The last commonly available lead-acid battery I'll mention here is the gelled type or the gel-cell. In these, the lead-acid electrolyte has an extra additive (silica gel) to make it into a sort of goeey Jell-O. The main advantage are that they are spill-proof and can be mounted in any orientation. They will not supply large amounts of current quickly nor can recharging be rushed or the plates will buckle and the battery will be ruined. Charge rates are typically 1/10 to 1/20 of their amp-hour rating. These are found in fire and burglar alarm panels as protection



against AC power failure, in emergency lighting, and in uninterruptible power supplies (UPS), where they are continuously trickle charged. QRPers are always on the lookout for alarm panel 'pulls' as often they are

replaced on a scheduled basis rather than waiting until failure.

If you are considering batteries as a source of power for your HF or VHF station, think about using a deep cycle or a marine type over the more common car/truck version. A few dollars more spent initially will provide protection against premature failure from excessive current draw. The amp-hour rating of the battery you buy will depend on how much and how long you operate, how much current your station requires, and how often you want to go

IF YOU USE A BATTERY FOR YOUR STATION'S POWER SOURCE, ALWAYS KEEP IT IN A WELL VENTILATED AREA.

between recharging. Most hams will operate with some kind of charger always connected depending solely on the battery in emergencies. For a VHF station of modest output power consider a motorcycle battery instead. In any case you will want a charger that drops to a trickle or 'maintenance' charge to avoid over charging and ruining your battery.

Even though modern lead-acid batteries are sealed, they will still produce hydrogen during the charging process and may vent this gas through the safety vents if too rap-

idly charged. Always keep your station battery in a well ventilated area and avoid the temptation to inspect it with a lighter!

To finish off this month's column, I'll leave you with a story about stupidity, and [safety practices](#) that weren't followed. In the late '60s and early '70s, I worked in a two-way radio shop with four service benches, all powered from a single large 12 volt truck battery. A charger kept the battery topped up, more or less, to 13.8 VDC, the nominal level of a properly charged car battery. The only servicing that battery ever got was when the charger whine became obvious (in the audio section of the receiver undergoing repair), indicating that the acid/water level was getting low. This was in the days when batteries had inspection caps for testing and topping up the electrolyte. It was the junior tech's responsibility to fill it up from the tap (no fancy distilled water here!) One day, one of the more experienced technicians thought that the battery was dead and decided to check it by quickly shorting the terminals with two crossed screw driver blades to see if there was any 'spark' left. After he picked himself up off the floor, he realized how lucky he was! The battery (and acid) had blown sideways out through the wall of the case instead of upwards into his face and eyes. He lost a pair of jeans and his shoes, but thankfully not his eyesight, to a moment's carelessness.

I know what you are thinking - but no, it wasn't me!

Next month in Part 3 - More rechargeable batteries

QUOTE OF THE MONTH

"Only two things are infinite, the universe and human stupidity, and I'm not sure about the former"

Albert Einstein

SWAP SHOP

List for free any items you wish to buy, sell, trade, or give away.

DI-DAH-DI-DAH-DIT

Some wise person once said, "Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime."

I'm curious. I love to learn about things. I love to read. I almost always have a book with me for airports and flights, visits to doctor's or dentist's offices, or any place where I have an idle moment. My maternal grandmother said they always knew where to find me when I was a child - somewhere quiet, with a book. My children all knew that I would have a book when I attended their school and university graduations. Any book I have with me is likely to be of a technical bent. There are so many things to discover, and to understand.

Perhaps it's the smell, but I love going into actual book stores like [Barnes & Noble](#), and on this side of the border, [Chapters-Indigo](#). Given the opportunity, every book lover should visit [Powell's](#), located in Portland OR, who claim to be the largest independent new and used book store in



Powell's new and used book store in Portland OR, just a short walk from Union train station.

the world. I don't know if it's the largest, but I do know from having been there that it is BIG! They have one building dedicated just to books on technical topics.

Beyond books there is the internet. For finding answers to questions, the 'net is hard to beat. Checking facts for something like this newsletter is simple, as long as you have enough patience to wade through all of the massive amounts of information you can find on-line, separating truth from untruth, accuracy from inaccuracy.

Various investors and companies are hoping that e-books will take off and take over from their paper cousins. But somehow they just don't have the 'look and feel' of their wood fiber cousins. Perhaps my grandchildren will some day think of them as normal, and using paper for books and newspapers as wasteful and old

fashioned.

There are lots of free books on-line. Some are easily readable in PDF format (what you're reading this newsletter in) while others require that you download a special reader program. Type 'free books' into your favorite search engine, follow the links to your topic of interest and start reading! Some sites give you instant access while others require you to register.

I don't know if reading all of these books over the years has made me a better fisherman, but I've certainly had fun with learning how.

Until next month,
VE1VQ

IN THE NOVEMBER NEWSLETTER...

... MORE of GRANDMA'S TRAVELS
... MORE about BATTERIES