



...wait for this...**29 years** and still going strong...Is this not a club that needs your aid and support!

The Gavel

As I sat down to write this months 'Gavel', I couldn't help wonder how quickly this club season has gone past. Could it be we have been busy ... but no, that can't be. Looking back it seems we did very little as a 'big' group but a lot as smaller special interest groups. This begs the question, where are all the 100 plus members? Yes we are a 100 plus strong but it certainly does not appear so. *Food for thought* .

For those members that may still be unaware of what we have in our yearly agenda, consider the list of managers or coordinators as listed on our web site. Did you even consider contacting any of the listed people and offering advice or volunteer a bit of your time in the hope that you may learn something or others may learn 'from you'. Remember the more you share the more you learn.

The kit building project for the SDR receivers are almost ready. Minor hardware and software bugs are being addressed as you read this. We now have a handful people who are well versed what this is all about. Bob VE3CWU, Michael VE3TKI and Brian can be consulted if anyone has questions. The plan is to make this facility available for members and others via the internet. Presently it will be providing HF coverage only. More to come.

If you are looking for a bargain on ham radio equipment, mark your calendars for HamEx 2014. This happens March 22, at the Brampton fair grounds. For directions point your browser to : <http://www.ham-ex.ca/> .

Did you find anything in your basement that you are ready to 'toss', of course has to be radio related? Contact Wayne, Bryan or myself. We will be happy to

accept the donations for the club table for HamEx.

Walks and community service events are just around the corner, as we march into spring. I'm just an optimist and don't think the winter will last much longer. It's time to start planning and get back into step, ready for another cool Field day happening in late June. Even though we have had a minor setback, namely our regular venue since 2009, Meadowvale conservation area, is no longer available to us to pitch our tents, we are looking at an alternate, that might turn out to be a better spot. Sometimes changes are hard to adjust to looking at the brighter side, we may have a better venue. Stay tuned David will be announcing the new location once we have it hooked, booked and delivered.

We are approaching elections for the executive in April. Yes it's that time again. A nomination committee will be announced at one of our March meeting. If you have the inclination to serve the club in any capacity either as a member of the nominating committee or would like to place your name in the hat for an executive board member, I thought I should give a heads.

If you have missed the email Rick sent out about volunteers for HamEx, and would like to provide assistance for HamEx, contact Rick asap. Plan to attend HamEx 2014 in any case. See you all there.

Asim VE3XAP

The new and improved **COMMUNICATOR**, utilizing state of the art graphic's text publishing. A small taste of the old and a heaping shovel full of what today's publishing, image processing, and modern presentation technologies, can bring. To learn more read the editors column.

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This edition is an experiment, one since I didn't have much content, and I thought it was time to shake things up, maybe get people stimulated.

This is only the beginning of the possibilities available, pitch in, and not just the regulars, come on people you as members of this club this is your and there by your newsletter.

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**The Editors column:
from the keyboard of editor in chief
Valentine Stubbs
VE3VVS**



MARC Members Yahoo Group

The MARC Members Yahoo Group is the primary way to disseminate club information about upcoming events.

Join the MARC
Members Yahoo Group

To receive club related
communications
and to contact
other club members

http://groups.yahoo.com/group/marc_members

Well it has finally arrived, after all the planing after the trials and tribulations, it finally arrived the beginning of the next generation of the **COMMUNICATOR** the voice of the Mississauga Amateur Radio Club. Now there was not a lot of people gathered around a table, arguing relentlessly about silly things like public studies, or intensely boring debates of what should be where, why it should be there, if it should be there, and is the font right.

As some of you know my day time job is as a system administrator at a Canadian animation studio, where the best of the best gather having casual conversations how technology can be pushed to its limits, to create something out of nothing.

If you cast your mind back a few issues of this publication I had made reference to making changes to this humble publication, utilizing newer technology, and quite honestly either nobody ready what was presented or just though nothing of it,

Well guess what after saying nothing, or questioning the

ramblings of the editor of the publication, a few moments of time allowed me to take out the roadmap of modern publication, and build from scratch a new newsletter, in a new format, that could be fashioned in any way that anyone could conceive.

And that road map based on the current media technology pipeline's has given this. Simple enough for anyone to to use, yet modern enough to be flexible.

Now when you read through this maybe as you are thinking about how much you not willing to spend at HAMEX, maybe you will think of putting together some words that could be displayed in this new and improved newsletter.

You actually thought that I would not yet again plead for content.

Valentine Stubbs
Chief Editor - Communicator
VE3VVS



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Home backup battery bank

by:Mike Wilde, VA3EMW.

After the past winter, with its ice storm and associated and realized risk of power interruptions, my desire for having some means to keep my furnace going in the case of a power interruption was reignited. I figured if we got hit with loss of power during winter home heating season I would be facing the annoyance of draining the pipes, and the cost of putting the family up in a hotel somewhere that still had power. The annoyance factor of draining pipe is not priced here, but the cost during a power loss to live in a hotel, and eat all meals away from home is easily estimated for my family of four to be at least \$150/day, and the chance that the time away from home might easily exceed two nights.

At a February 2014 MARC meeting, Bob Hudson VE3CWU announced that he had a lead on surplus UPS batteries for a reasonable per unit price. I picked up my units from Bob's garage. And I do mean pickup... these batteries weigh in at a bit more than 100lbs each. They were bought for \$90 each. Their future scrap value is likely to be \$25 each. New they have a list price of \$360 each. They are 12V batteries rated at 135Ah. New they are rated for 260 100% discharge cycles. The vendor, Eaton/Powerware rates them to not to be recharged at more than 50A per battery. They should be recharged to overcome self-discharge at intervals of no longer than 6 months.

Who buys 5 year old batteries? Well I am banking on them not ever being very heavily discharged, if they only bridged between utility power and a generator set. Mine came with a no load voltage of 12.7V, with no sign of any case bulging that marks the beginning of so many AGM battery's demise. I charged them on my battery tender, and it called them topped off at 12.9v after about 8 hours of charge. Hopefully they will live for another 5- 8 years for me if I don't discharge them often, and keep them periodically float charged, and keep them somewhere not too hot.

I plan to relocate them to my garage, and place them on some rigid foam on the floor under a set of shelves. I will put them next to the wall abutting the house, and insulate them so they get the house temperature influencing their local environment. The temperature variances there can be made to be not too extreme. Lead batteries die faster if they live a hot life, and don't like being too cold either. I have wired the three batteries in parallel, and fed them, using #8 wires (good for 60+ amps), into a 350VA inverter which has a 700VA surge capacity. I intend to use this to power the furnace, via extension cords, in times of lost utility power.

Our furnace is quite energy efficient. Low speed the furnace consumes a bit less than 2A, but up to 3.5A on high speed. High speed is usually only encountered for 5 minutes or so when the furnace is recovering from an overnight temperature setback. The pilotless start pulls 5A for about 20 seconds; the inverter does handle this starting condition. I have fitted the power lead for furnace with a u-ground cord and plug to easily allow it to be connected to an extension cord lead for alternate power supply. Fancier wiring using a transfer switch can thus wait for further emergency power developments in the future when the right deal on a generator comes along.



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Now it is time to figure how long these batteries might run it before they need to be recharged. The inverter shut off at 10 DC input to keep the batteries from being totally discharged. In this battery configuration that corresponds to 1.66V/cell. This is considered an 85% exhausted level by the battery maker when assigning the a/h rating.

The run time of the battery bank is set by the Peukert Equation. It tells you how long (T, in hours) your battery bank (C, in Ah) will last, depending on the rate of discharge you are subjecting them to (I, in amps).

It says $T=C/(I \text{ raised to the power of } n)$. n is the Peukert Factor, and is found empirically for your battery situation; typically it has a value between 1.1 and 1.3. The furnace draws 2A the vast majority of the time it runs furnace, so we need approximately 20A most of the time at nominally 12V dc. For now we will presume the inverter is 100% efficient. If our n factor is between 1.1 and 1.3 and I is considered to stay constant at 20A for a nominal constant voltage of 12V, then our time to exhaust this bank is between 8.24 and 15 hours. This is much more time than the furnace actually runs in a day, even when the weather is really cold. So in this configuration we should be able to easily keep the furnace running for more than a day without needing recharging

Locating the battery bank in the garage will allow an automobile to be idled and its alternator output used to recharge the batteries via jumper cables. The battery bank should not be recharged at currents higher than 150A, since we have max 3x50A in parallel, well above the alternator output rating of all modern cars. I have yet to experiment to see what charging current is actually available to recharge the depleted bank, to see how long it will take. If the bank is heavily depleted, i.e. we pull 20A out of it for 8 hours, I estimate recharge could take say 60A of charging something likely more than 3 hours to bring the batteries back to a comparable pre discharge level of charge. Still, it beats idling the car or running a generator 100% of the time, particularly overnight to keep the furnace ready to run.

In the longer term the battery bank is to be augmented in two ways. A set of solar panels will be sourced. The next step will be to purchase a generator. I want to get a generator to support my ham radio communication abilities through periods of commercial power outages. Being cheap, I just will wait for the right price to come to me before acquiring these items.

Attend all the
regular club meetings,
all times and events are posted on the club website:

WWW.MARC.ON.CA

Radio Amateurs of Canada

Ontario



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Full - Regular - paper TCA \$56.00 + \$7.28 (tax) = \$63.28
Full - Family \$25.00 + \$3.25 (tax) = \$28.25
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Associate - Blind \$25.00 + \$3.25 (tax) = \$28.25
Associate - Regular - e-TCA Only \$48.00 + \$6.24 (tax) = \$54.24
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Note that the family membership fee applies to each family member who joins in addition to the principle member.

I wish to join for 1 yr

Donations: RAC \$ _____ | ARES \$ _____ | DARF (International Use) \$ _____ | YEP \$ _____ | RAC Foundation \$ _____ |

Visa/Mastercard _____ Exp: ____ / ____ Signature _____ Join or renew online! www.rac.ca	Paying by Cheque? Please make payable to: Radio Amateurs of Canada #217-720 Belfast Rd. Ottawa, ON K1G 0Z5 1-877-273-8304
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or the callsign you held when you were previously a member _____

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