From the Gavel

The cutting edge has two sides

Something that I am regularly surprised by in Amateur Radio is how well the new blends with the old. Also how we seem to actually push in both directions, at the same time.

Some of the very first computer networks were over the air, and as networks grew, amateurs grew right along with them. Packet backbones transmitted files and messages back and forth and other modes allowed for "keyboard to keyboard" conversations. We now have more digital modes than you can easily remember the acronyms for, and some of them can get through at amazingly low power and at signal-to-noise ratios that nearly defy belief.

Some of the first Voice over IP (VOIP) work was done by amateurs. Technology now that is in use daily by perhaps millions of people through Skype, as well as for many of the new cheap local phone providers that piggyback on your internet connection, was pioneered by IRLP so that local repeater users could talk to other people further away.

Even more fascinating work on high speed, self configuring peer-to-peer mesh networks is being done right now (http://hsmm-mesh.org) making the previous generation of packet radio technologies look slow in comparison. These use standard WiFi equipment reprogrammed and make use of our allowable 2.4GHz space to allow for network speeds that VHF TNC people can only dream of.

Then there is looking back (to the future). SSB is SSB, and a brand new radio can talk to a vintage one. AM helps push us back even further while still using voice. Code is of course, still code, and other than a spark-gap transmitter, which would likely have trouble with spurious and out-of-band transmissions, almost any rig produced can communicate with any other.

Message board postings with tube designs, people proud of their simple designs for receivers, or for little QRP transmitters are everywhere. Some people complain about not finding through-hole components, but then someone else builds a reflow solder station out of a toaster oven, and I'm not overly worried about the future of homebrew.

Our bands seem to be looping back on themselves as well. With the experiments over the past while in the 600m range (500 KHz), we're heading back to the frequencies that the Titanic used to send their (unfortunately) not well heard distress call. Once IC finds the appropriate Gazette paper, we in Canada should have our 60m band, and yet one more antenna to build, support and tune.

For all the forwards and backwards, crystals, tubes, transistors and gigahertz radios. Not a bad hobby after all!

Keep on radiating signals.

Scott VA3NMI

Sunday Breakfast

Sunday breakfast are held on the first Sunday of each month. Time is 8:30AM at Bobby's Hideaway Restaurant, 20 Queen St, North, Streetsville (NW corner of Britannia Rd/Queen St in Streetsville). All are welcome to come out and have an opportunity to chat in an informal setting.

Club Nets
Join in on the chatter

2 Metre Tuesday Night Phone Net
Starts at 8:30PM every Tuesday on the club repeater. Hosted by various net controllers. 145.430 MHz Tone 103.5 Minus (-) offset. Contact our VHF Net Manager, Scott Gregory, VA3NMI if interested in becoming a net controller.

75 Metre Sunday Night Phone Net
Starts at 8:30PM every Sunday. Hosted by various net controllers. 3.775 MHz +/- QRM. Contact our HF Net Manager, **Michael (VE3TKI)**, if interested in becoming a net controller.

Direct from the editer's desk…

Well as if it doesn't surprise me, yet another year is rapidly drawing to a close, with its long drawn evenings. In one way, it is sad since summer has once again left us and as the earths tilt moves us ever so slowly and slightly away from the sun. And given the number of coronial mass ejections (CME) that have been happening on our local star even a little tilt might not be an entirely bad thing. As the sun or our local star brings light, heat, and many affects upon our planet, I find it interesting that it can bring so many wondrous thing's, but it can also disrupt an equal amount of things, one of those would be our beloved radio communications. And as most things in our life is a double edged sword, not enough solar activity, and long distant HF communication becomes nothing more than a beacon to the universe. Radio waves racing at the speed of light to someone, some where far away and in a different time. Too much solar activity and communications gets scrambled, garbled, and almost useless, pixilated satellite communication.

Now on a different note, I promised that I was not going to beg, plead, and hold hat in hand, to get submissions every month by email. And true to my world, I have not, but let me put a bug in the collective ear, I am on a never ending hunt for relevant articles from other sources, begging and pleading for permission. And still would be very appreciative for club participation, this is after all not the "Globe and Mail", with a fleet of reporters and photographers, "(hint, hint, nudge, nudge, wink, wink…)". So please, submit articles, but might I ask you to, "proof read", your work before submission. I am trying to make "The Communicator" interesting and pleasing to the eye, but I will print what is submitted, and those articles reprinted by permission will be reprinted here "as is". And with that I wish all those who read this, 73's and enjoy…

Valentine Stubbs, VE3VVS. Editor of ye old "communicator" newsletter….

The MARC DX Award Update

By Ed Spingola, VA3TPV

As reported in the September issue of The Communicator, the MARC DX Award is being offered to MARC members who submit a log to the MARC Awards Manager, VA3TPV, during the 2012 – 2013 club years. The MARC DX award is being offered for Mixed, SSB, CW, and Digital modes and is being issued for 10, 25, 50, 75, and 100 DXCC entities.

These past two months since the start of the club year, have been very slow start with respect to the MARC DX Award activity. There were no log submissions in September.

After the CQ WW SSB contest, John, VE3JOC and Asim, VE3VE/VE3XAP, submitted logs.

John, VE3JOC, submitted a log of his contacts since September 1st, 2012 and achieved 103 DXCC Entities.

Asim, VE3VE/VE3XAP, operating in the CQ WW SSB contest, the October 27th weekend, submitted a log for 10M with 111 DXCC Entities.

This past month good propagation has been spotty with occasional openings on 10m through 20M. Fortunately, the propagation opened up for the CQ WW SSB weekend especially on 10M to the Fareast. There are many contests throughout the year within which you can make DX contacts. There are of course regular DX openings on the bands. So get DXing and submit your logs

See the MARC web site under Club Events/MARC Awards for the MARC DX Award rules and entry forms. http://www.marc.on.ca/marc/events/events_awards.asp) or the September issue of The Communicator for details I will accept either a paper log or an ADIF log file if you need some assistance in determining your DXCC entities count. So get on the air and enjoy this hobby of ours and make some contacts.

John, VE3JOC, with Asim, VE3VE/VE3XAP

73's and Good DX. Ed, VA3TPV

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Radio Redux

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(This article was previously published in the autumn, 2012 issue of 2600: The Hacker quarterly.)
(Visit http://www.2600.com/ for more information.)

As an old-school radio hacker from back in the day, I'm pleased to see a revival of interest in wireless topics among the 2600 community. While RF hacking waxed and waned in popularity over the years, there's still a core group of us who pretty much only do radio, and who would like to see more hackers get into it. In this article, I'm going to get into some basic info for those of you who would like to get into RF Hacking, and talk about some of the latest news in the RF Hacking scene.

Hacking RF usually means learning a bit about electronics. Fortunately, the means to do so is available right on on the 'Net. Do a Google search for "NEETS Navy Electricity Electronics Training Series", and you will find links to a 24 volume set of PDFs that you can download. This is a complete electronics course used by the U.S. Navy to teach their economic draftees, and it's very good. The other item you should pick up is a copy of "The Handbook", by which I mean that bible of ham radio operators, The ARRL Handbook for Amateur Radio Operators, or more recently Handbook for Radio Communications. The material in the ARRL Handbook is a little more practical and how-to in nature, and complements the NEETS courses. A brand-new current copy costs $50 from the ARRL or your local ham shop. You can find recent used copies at ham radio swap meets (aka HAMFESTS), or on EBAY for much less. Any copy put out within the past 10 years will suffice, although you might find yourself collecting old ARRL Handbooks as the DIY material is different from year to year, and at less than $10 a copy you can put together a pretty impressive collection of ARRL Handbooks for not a lot of money. The last two copies I bought, dated 1994 and 1979, cost me $1 and $5 respectively.

There has always been a big controversy between the RF Hackers who have gotten their ham ticket versus those who remain unlicensed. I've been licensed for the past 28 years, and also have a commercial license since I used to do RF professionally. However I have to respect the opinion of those who don't want to deal with the geriatric "cranktards" who often populate the airwaves. I've been licensed since high school, and I'm still considered the "youngster". My attitude is "let them be to their own devices." I hang out with all the cool ham radio people instead, and there are quite a few of us. With that said, many of the cool hams are senior citizens with a shitload of practical RF know-how and a willingness to share. They unfortunately don't have much longer on this planet, so you should find them and learn what you can while they are still around. From an experimenter's standpoint, having your ham ticket gives you a shitload of spectrum to play with, ranging in frequency from just above the AM broadcast band to the upper microwave region. Hopefully soon there will even be a ham band below AM broadcast that promises all sorts of interesting opportunities. Getting the ticket is easy. The questions and correct answers to all the tests are available, and most people just simply memorize enough to get a passing grade. While passing the tests is cool, your real education doesn't really begin until you start plying the ether. For those of you who don't want to get the ticket for whatever reasons, there is still a
good amount of license-free spectrum you can experiment with. You'll be dealing with Part 15 and Part 95 limitations, but some take it as a challenge. To each their own… I guess.

If you follow ham radio news in magazines like QST and CQ VHF, you'll find that there is always something neat and new going on. Digital modes using a computer's sound card have gotten to the point where the equipment hears better than you can, and can pull stuff right out of the noise floor. Software-defined radios have gotten to the point where you can buy a hot VHF/UHF receiver the size of a USB stick for under US$100. Google "FunCube Dongle" or "RTL2832U USB HDTV SDR" for more information. The microwave "weak signal" guys keep going higher and higher in frequency as the equipment for playing up there becomes cheaper and more available. For the moment now, I'd like to talk about a few things in the RF scene that are of particular interest for beginners in RF.

Cheap Receivers

Back in the day, I started with a cheap Electra multi band-portable radio that covered the shortwave, and VHF-high public safety bands. It was a tag-sale find, and cost a lot less than a programmable police scanner. A good wide-band receiver setup is essential for not only hearing what's out there, but also as one of your first pieces of test equipment to check the quality of signals you might be put on the air.

If you look around, you could probably find a working CEI/WJ RS-125 set-up for a couple hundred bucks at a HAMFEST, and that would be more receiver than you would know what to with for a while, both in physical size and capability. If you're really lucky, you might even come across an RS-111, better known as the receiver that made G. Gordon Liddy famous. Radio Shack PRO-2004/2005/2006 scanners, the classic model that got most of us into radio hacking, are being offered at a fraction of their original cost. Most of them already have the appropriate mods done of them. For most beginners though, the most likely entry point would be one of the inexpensive USB stick-type SDRs (Software Defined Radio) receivers.

All of this started with the introduction of the FunCube dongle (FCD). The FCD is a receiver with nominal 64-1700 MHz. frequency coverage (closer to 51.5-2000 MHz. depending on the particular unit.) that uses standard sound card drivers under Windows, Linux, or OSX. At ~$175 with shipping to the US (depending on exchange rates), this was up until very recently one of the least expensive ways to buy a wide-band receiver.

If $175 is still too much for you, how about $20? It was recently discovered that USB DTV dongles with a RTL2832U chipset and an E4000 tuner can be used as wide-band SDR receiver with frequency coverage of 62-1700 MHz. At present, this is the least expensive route to get wide-band VHF/UHF receive coverage.

For more information, visit the following sites:
  http://www.funcubedongle.com/ - Info on the FCD.
  http://superkuh.com/gnuradio.html - RTL2832U/E4000 SDR
  http://sdr.osmocom.org/trac/wiki/rtl-sdr - RTL SDR
  http://zembecowicz.blogspot.com/2012/07/worlds-cheapest-software-defined-radio.html - Even more RTL SDR info,
including compiling software under Debian.

Narrow-banding

Narrow-banding is probably one of the best things to happen to the radio hobbyist scene when it comes to the availability of surplus equipment. I expect over the next year or so for the used market to have a lot of neat stuff available for repurposing. Narrow-banding is the implementation of an FCC mandate to reduce the amount of spectrum used by land mobile licensees, and double the amount of channels available. Previously, LMR systems ran FM with a maximum 5 KHz. deviation. The new standard calls for 2.5 KHz. The channel spacing will then go from 15 KHz. To 7.5 KHz. All land mobile radio (LMR) users in the VHF-high and UHF bands must switch their systems to a narrowband standard by 2013. All LMR radios made within the past 10 years or so are narrowband compliant, but there is still quite a bit of older stuff in use out there. Commercial radios are built to last!

This means that millions of perfectly serviceable radios will become unusable for LMR use after 2013. While most of them will find their way to developing countries or be scrapped/recycled, there will still be plenty around for hobbyist use. The two meter (144-148 MHz.) and 70 cm (420-450 MHz.) ham bands are directly adjacent to the VHF-high and UHF LMR bands respectively, and LMR gear can moved over to the ham bands with no or little adjustment, 90% of the time.

The best equipment for the hobbyist would be the 50-100 watt mobile radios, and any radio that is front-panel programmable (FPP). An FPP radio is exactly as described, a radio that you can program frequencies in from the front panel, without the need for a computer with the correct radio service software (RSS), radio interface box (RIB), and programming cable.

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VE3MIS/VE3RCX   Volume 15.11 - Page 5 of 14   November, 2012

One of the biggest differences between ham gear and commercial gear is that ham gear is designed to be set by the user to any frequency within the edges of a given ham band, while commercial gear is set to specific channels in the LMR band, usually by a radio shop, that the user is licensed for. So where a ham can simply tune right to 146.52 MHz. for example, a commercial LMR user goes to Channel N and the frequency is pretty irrelevant unless someone wants to listen in with a scanner (assuming the mode is analog FM or P25, and not something like TRBO or NXDN).

Being that LMR users are restricted to specific channels, the equipment cannot be ready programmed to go off their licensed frequencies. Older radios had quartz oscillator crystals in them that determined the specific frequency. Some can be programmed directly from the front panel by entering in an unlock code on the panel's keypad, usually after moving a programming jumper on the radio's circuit board or attaching a programming dongle to the radio. Most radios are done with a computer, using the proper RSS, RIB, and programming cable for the specific make and model of radio. In the days of USB ports, the RIB is becoming a thing of the past with a USB programming cable that goes directly from the computer to the radio.

Of the three items, the RIB and cable are the easiest to get. The RSS may be a different story however. Some LMR companies are not too bad with software availability, and may have it available at a reasonable cost (or free) without hassle. Other companies are a different story. They may restrict software availability to authorized service centers.., and discontinue software availability for obsolete. Products, some companies have been extremely aggressive in going after individuals who "pirate" their software. Motorola is notorious for this. Your mileage may vary.

There are also early-synthesized radios that are programmed by burning a PROM or EPROM that is then plugged into the radio. The programmers and chips range in availability from unobtanium to pretty common. Generally speaking, the Motorola stuff using their proprietary modules and "suitcase programmer", such as the MX-350S handhelds, should be avoided as it's almost impossible to get the stuff to get them reprogrammed. The old GE stuff used more common hardware that has since been reverse engineered by hobbyists, and is available in the ham community if you look and ask around.

The easiest and best option for the beginner RF hobbyist looking to get into "real radios" is an FPP model, as no external equipment is needed to get it up on running on the right frequencies. More likely than not you'll be getting a portable (HT) as that'll be the unit you'll be changing frequencies on most often. There are several types of FPP radios out there. My favorites are the Motorola JT1000, ICOM H-16 & U-16, "ham flashed" GE MPA, KENWOOD TK-350, and BENDIX King LPI (a/k/a U.S. Military PRC-127). If you can find an old Radio Shack simplex repeater box (cat# 190-0345), they work very well with the ICOM radios. On the mobile side, a lot of hams like the KENWOOD TK-705 (VHF) and TK-805 (UHF). ICOM also made the V-100 (VHF) and U-400 (UHF) mobiles that are FPP.

Older crystal controlled radios, in which each frequency is determined by an oscillator crystal inserted into the radio, are generally overlooked by hobbyist types. I've found them a useful source of RF parts, especially when acquired for free. Getting them having new crystals purchased and retuned for ham band frequencies is not too difficult, and they are reliable performers for certain fixed applications where you won't be changing the frequency. Many years ago I came across a Drake TR-22, which is a vintage solid-state crystal-controlled 2 meter rig, that was if new crystals where provided by the previous owner for all the AX.25 packet radio channels in the 145.01-145.09 MHz. region. It also had the 146.52 national simplex frequencies in it, and a couple other common simplex channels. The radio cost like $30, and it made a very handy packet rig. More recently I was given a donation of older vintage VHF-low band (30-50 MHz.) equipment to help out with a project I'm working on. Included was a Motorola Mocom-70 that had new crystals to operate on the 6 meter band (50-54 MHz.) simplex frequency of 52.525 MHz. Just attach an adequate 12V power source to the radio, and it's all ready to go. Stuff like this, despite its age, will continue to run like a tank for many years to come. When it does break, you can usually find a scanned copy of the service manual online, and fix it with commonly available electronic components, if you can't find someone with a "parts unit" they'd like to offload. If you come across any Motorola MT-500 portables, you might want to give them a second look. There have been copious ham-related "MODS" done to them, and one gentleman has done a great job converting them for APRS use on the 2 meter ham band.

That leaves the radios that require computer programming. As mentioned previously, getting RSS can be problematic, depending on the make/model of your radio.

Fortunately, there are plenty of hams who work in the LMR industry, and hams who like to work with surplus commercial gear. Assuming you don't come across as a total jerk or basket-case, they will likely be able to get your radio up on the ham bands. ***Do not ask them for copies of current production RSS, and do not ask them to program non-ham frequencies into your radio.*** I can assure you that the answer will be no, and that future assistance may not be very forthcoming. While hams who work in the LMR industry are for the most part very helpful in helping their fellow hobbyists get surplus commercial gear up and running on the ham bands, they're not going to do anything that will jeopardize their job, such as pirating software or putting someone on a frequency they're
not authorized for. With that said, some of the older stuff from companies that are not be around in their original incarnation may be available online if you look around. Downloading and using such obsolete, orphaned software for non-commercial (ham) purposes will probably not cause you grief. YMMV.

My first commercial portable was a Motorola MT1000. They come in a 99-channel variety, and if you find one you would do well to get it. Those Genesis series radios are true bricks. After that I ran Saber and HT-1000 portables, which are both excellent radios. Some of the early ASTRO Saber radios are also becoming available in the surplus market, which would be a good way to get a P25 handheld. For mobile radios, the two Motorola models to look for are the Maxtrac and the Spectra. Both of those have an accessory jack on the back of the radio that, among other things, gives you unfiltered demodulated audio, like a discriminator tap on a police scanner, which can be used for monitoring various digital modes such as POCSAG. These radios will also handle data transmission very well. There are plenty of older Spectras, and to a lesser extent Maxtracs, still in active service. Come 2013, they will not be able to be legally used on the LMR bands.

Some of the best radios to come out of the surplus LMR market are the 100-watt remote-mount mobile radios that also see use as base stations. The radio's control head has a nice small footprint that fits anywhere on a workbench, and the RF deck can be placed somewhere out of the way. Motorola Maratracs are nice, especially if you can get a 99-channel control head for it. The Primo unit in my opinion, however, is the VHF-low band Syntor X9000. Unlike other low-band radios that only cover a portion of the band, the Syntor has full 30-50 MHz. coverage and will operate on both the 10 meter and 6 meter ham bands with up to 128 channels. Syntors have been discontinued for some time now, and are beginning to become like unobtanium. If you find one, grab it and hold onto it!

The Internet is a great resource for ham operators who want to work with surplus LMR radios. Here are a few websites to get you started:

> o http://www.gemoto.com/
> o http://www.repeater-builder.com/
> o http://www.batlabs.com/

Pagers

After seeing my talk on pagers from the original HOPE re-released, it occurred to me that not only was it 18 years ago, but that it was time for an update. I then saw the pager article from the Summer, 2011 issue, and was heartened to discover that the topic still had maintained interest among the hacker community over the years. While pagers have been replaced by wireless devices with SMS and email among the general populace, they remain interesting and useful to the hacker hobbyist, especially those who concentrate on RF.

The first thing I need to say is that monitoring pagers in the United States is not necessarily illegal. Pager protocols are not encrypted, and their technical specifics are public information. The law applies to common carrier services, that is commercial paging services, and to radio system users who implement encryption. There exist in the land mobile radio bands many paging systems that are licensed under the Business-Industrial Land Mobile Radio (LMR) service, and these are fair game for monitoring. Amateur radio operators have also been known to use POCSAG for communications, and monitoring them is fine too. What may apply from a Federal Law standpoint is the section of the Communications Act of 1934 that makes it illegal to disclose or take advantage of the contents of an electronic communication intercepted by a third party. There has been some discussion as to whether that would only apply to common carrier services, or to radio communications in general, but legal discussion of the various communication laws is beyond the scope of this article.

As I've previously mentioned, pagers have mostly been supplanted by SMS and wireless device email. This has had two consequences from the hobbyist standpoint. The first is that the common carrier pager frequencies, at least here in New England, have but a fraction of their traffic compared to the 1990s. The second, and most important as far as this article is concerned, is that there has been an influx of surplus equipment that can be re-purposed for hobbyist experimentation. This is in addition to the POCSAG-friendly amateur radio equipment that has been available for some time. This shows an heartening paradigm shift from simply monitoring systems to hacking and re-purposing cast-off technology to be used for the implementation of hobbyist-type systems; a time-honored tradition among amateur radio operators and other technological hobbyists.

I'll start with the actual pagers themselves. I've seen dozens of these in the bottom of "make offer" bins at HAMFESTS, and I'm reasonably sure that you can probably pick them up for no more than a dollar or two apiece. Usually, ten or twenty bucks will get you the entire contents of a "make offer" bin, and the seller will throw in the bin just so that he or she doesn't have to load it back in their vehicle. The units you want to look for are the 1980s and early 1990s vintage POCSAG and tone pagers on VHF and UHF frequencies. The older tone and numeric pagers, such as the Bravo series, are useful in two ways.

They can have their frequency changed to a nearby ham band, and used as actual pagers, or you can salvage the very nice receiver board out of them, and use it in another project. From a frequency-changing standpoint, the pagers will be either crystal-controlled or computer-programmable. For those with access to the correct programming software and accessories, the latter are quicker and easier to reprogram. Otherwise, go with the rock-bound boards.

I previously mentioned the Motorola Maxtrac and Spectra. These are readily available surplus, can be easily converted over to the ham bands, and work very well for transmitting POCSAG data. Using these radios is one of the quickest and easiest ways to get a "discriminator tap" for monitoring low-speed wireless data. You will also want to keep an eye out of ham rigs that are advertised as "9600 baud packet ready." This feature is very common in Yaesu and Alinco VHF/UHF ham rigs. Also keep your eyes open for used Kantronics KPC-9612 TNCs as they do POCSAG rather well.

For those of you without ham tickets, provided you stayed within the necessary technical specifications and FCC regs, the MURS band can act as a substitute for two meters for your POCSAG system experimentation. All that surplus VHF-high band gear will move over to the MURS channels with no problems whatsoever. The older wide-band stuff will need to be used on the wide-band MURS frequencies (154.57 and 154.60 MHz.), and you will need to crank the power down to 2 watts or less.

In a similar vein, I was experimenting with some older Motorola Bravo pagers (POCSAG) on the UHF business band (464 MHz.) to see how well they would perform when the customer in question narrow-banded their business' radio system. For the test, I used my trusty KPC-9612 into the external modulation (EXT MOD) input of a service monitor. Without any modifications, the pagers were able to successfully decode POCSAG at narrowband transmitter deviation. (below 2.5 KHz.) In fact, I did not notice any problems with data decoding until the deviation dropped below 1 KHz. In practice, narrowband deviation is usually set at 60% of the maximum limit. That would be 1.5 KHz. in this instance. My recommendation based on my experiments would be to aim for a deviation around 2 KHz. That would give you plenty of swing for reliability, while still keeping you legal.

Epilogue

For those of you who really want to get their hands dirty, I have been reading this excellent RF book published by the ARRL titled. Experimental Methods in RF Design. This is for those of you who want to get seriously into rolling your own gear from scratch. Of particular interest to readers of this article is Chapter 7, Measurement Equipment. Test equipment can be an expensive proposition for the RF experimenter, and this chapter shows you how to make a lot of what you'd need.

There are certainly a lot of cool and interesting things going on in the RF hacking scene, and I only touched on a few of them in this article. If you'd like to see more of this material in the pages of 2600, please contact me via email at ticom.new.england@gmail.com.

𝔑ow the olde list of those who help the club continue, day by day....

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Emergency Coordinator	Dan Goodier	**VE3NI**	
	Thomas Bernard	**VA3TMB**	Assistant
	Michael Brickell	**VE3TKI**	Assistant
	Bob Boyer	**VE3XBB**	Assistant
	John Duffy	**VE3DRZ**	Assistant

**Special Interest
Groups**

Contest Manager	Asim Zaidi	**VE3XAP**	
	Rick Brown	**VE3IMG**	Assistant
QSL Manager	Michael Brickell	**VE3TKI**	
Project Group	Michael Brickell	**VE3TKI**	

And we thank them all, for the contributions they make.

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CLUB CALENDAR FOR 2012 - 2013

November, 2012
01 Thu Exec Meeting
03 Sat ARRL Sweepstakes - CW
04 Sun HF - 75/80 Meter Net
04 Sun Sunday Brunch – Bobby's Hideaway Restaurant
05 Mon Basic Class 8[5]
06 Tue VHF/UHF - 2 Meter Net
08 Thu Club Meeting - Member's night
11 Sun HF - 75/80 Meter Net
12 Mon Basic Class 9[5]
13 Tue VHF/UHF - 2 Meter Net
15 Thu ARES Meeting
17 Fri ARRL Sweepstakes - SSB
18 Sun HF - 75/80 Meter Net
19 Mon Basic Class 10[5]
20 Tue VHF/UHF - 2 Meter Net
22 Thu Club Meeting - Member's night
23 Fri CQ WW DX - CW
25 Sun HF - 75/80 Meter Net
26 Mon Basic Class 11[5]
27 Tue VHF/UHF - 2 Meter Net

December, 2012
02 Sun Sunday Brunch – Bobby's Hideaway Restaurant
02 Sun HF - 75/80 Meter Net
03 Mon Basic Class 12[5]
04 Tue VHF/UHF - 2 Meter Net
06 Thu Exec Meeting
09 Sun HF - 75/80 Meter Net
10 Mon Basic Class 13[5]
11 Tue VHF/UHF - 2 Meter Net
13 Thu Club Meeting - Member's night
16 Sun HF - 75/80 Meter Net
18 Tue VHF/UHF - 2 Meter Net
20 Thu ARES Meeting[3]
23 Sun HF - 75/80 Meter Net
25 Tue VHF/UHF - 2 Meter Net
27 Thu **No Club Meeting**
28 Fri RAC Winter Contest

January, 2013
02 Tue VHF/UHF - 2 Meter Net
03 Thu Exec Meeting
06 Sun Sunday Brunch – Bobbie's Hideaway Restaurant
06 Sun HF - 75/80 Meter Net

January, 2013 (continued)
08 Tue VHF/UHF - 2 Meter Net
10 Thu Club Meeting - Speaker's Night
13 Sun HF - 75/80 Meter Net
15 Tue VHF/UHF - 2 Meter Net
17 Thur ARES Meeting[3]
19 Sat North American QSO Party, SSB
20 Sun HF - 75/80 Meter Net
22 Tue VHF/UHF - 2 Meter Net
24 Thu Club Meeting - Speaker's Night
25 Fri CQ 160M Contest, CW
27 Sun HF - 75/80 Meter Net
29 Tue VHF/UHF - 2 Meter Net

February, 2013
01 Fri 10-10 International Winter Contest, SSB
03 Sun Sunday Brunch – Bobbie's Hideaway Restaurant
05 Tue VHF/UHF - 2 Meter Net
07 Thu Exec Meeting
10 Sun HF - 75/80 Meter Net
12 Tue VHF/UHF - 2 Meter Net
14 Thu Club Meeting - Speaker's Night
15 Fri ARRL International DX Contest - CW
17 Sun HF - 75/80 Meter Net
19 Tue VHF/UHF - 2 Meter Net
21 Thu ARES Meeting
22 Fri CQ 160M Contest, SSB
24 Sun HF - 75/80 Meter Net
26 Tue VHF/UHF - 2 Meter Net

March, 2013
01 Fri ARRL International DX Contest - SSB
03 Sun Sunday Brunch – Bobbie's Hideaway Restaurant
03 Sun HF - 75/80 Meter Net
05 Tue VHF/UHF - 2 Meter Net
07 Thu Exec Meeting
10 Sun HF - 75/80 Meter Net
12 Tue VHF/UHF - 2 Meter Net
14 Thu Club Meeting - Speaker's night
17 Sun HF - 75/80 Meter Net
19 Tue VHF/UHF - 2 Meter Net
21 Thu ARES Meeting
24 Sun HF - 75/80 Meter Net
26 Tue VHF/UHF - 2 Meter Net
28 Thu Club Meeting - Speaker's night

NOTES:
1) Club meetings start 7:30PM at St. Thomas A Becket Church Hall, 3535 South Common Court unless otherwise noted.
2) Sunday brunch is held at 8:30AM on the first Sunday of each month at Bobby's Hideaway Restaurant, 20 Queen St ,Streetsville (NW corner of Britannia Rd/Queen St in Streetsville)
3) ARES Meetings start at 7:30PM at the Red Cross, Ontario Zone Office (OZONE), 5700 Cancross Court, Mississauga, ON.
4) Executive meetings start 7:30PM at the Club Station, Danmax Electronics, 2311 Anderson Drive Unit B, Mississauga.
5) The Basic Classes start at 7:00 pm at the Red Cross OZONE, 5700 Cancross Court, Mississauga - Peel Training Room

Visit our website: http://www.marc.on.ca for any updates of the calendar.

DX Update By Ed Spingola, VA3TPV

LoTW Users List by HB9BZA

Logbook of The World (LoTW)[1] is a powerful tool for those chasing the ARRL DXCC award. No more waiting for that paper QSL card. You upload your log to LoTW and wait in hope of a QSL from the LoTW system. Does the contacted ham even use LoTW. The usual way to determine if the ham is a LoTW user is to check the ham's QRZ.com listing. Hopefully they will have posted whether they use LoTW as a QSL route.

Another approach is to consult the *LoTW Users List* compiled by Robert Chalmas HB9BZA[2]. Robert has compiled a list of 57, 856 callsigns in 339 current DXCC entities which are uploading their logs to LoTW.

The HB9BZA web site has links to the LoTW users information sorted by various key parameters such as a *Full list* and users by *DX country*, a very useful *Countries not on LoTW* and a list of *recently appeared entities.* The LoTW Users List is a compilation of information from many sources, including the DX-Cluster, DX bulletins, WEB sites and files received from other LoTW users. If you would like to help make this list even bigger, then upload your lotwreport.adi file of QSL call signs obtained from LoTW to the HB9BZA web site.

How to help

If you are already a LoTW user, you can email HB9BZA your list of LoTW QSL's so that HB9BZA can extract the calls which are still missing in the list.

Here is how to download this lotwreport.adi file:
- log into the LoTW users site;
- click on "Your QSOs";
- click on " Download Report";
- in the next screen, make sure that the "Show QSLs received since" field is empty (unless you already sent me a file and remember when; in this case you can put that date);
- checking "Include QSL detail" is not mandatory but recommended, as this may help in case I would have difficulties to identify the DXCC entity a call belongs to;
- Click on "Download report".

Your QSOs

Download Report

Here you can download a report of QSLs received. The report file is in ADIF format.

Show QSLs received since: [   ] (YYYY-MM-DD)
Include QSL detail: ☑ (May make the downloaded file a lot bigger.)
Your Call Sign: [- Any -   ▼]

[Download report]

Once you have downloaded the file, you can send it to HB9BZA by email (lotw-list@hb9bza.net).

Good to know HB9BZA states the following on his web site:

- Files I receive are used only to extract the new calls; they are not made available to anybody else.
- Even if you already sent your file some months ago, sending the latest version right now could be a good idea, as new credits appear frequently due to the increasing number of users of the system.
- After processing your file (which I usually do twice a week), I will send you a short confirmation mentioning the new calls found, if any. For technical reasons, this information is based only on the list currently online, so it does not matter if another user reported a new call before you as long as it does not appear on the online list yet.

I hope that this article has inspired you to get active on HF. The use of the *LoTW Users List* may also alleviate some anxiety in LoTW QSL's.

References:
1) *LoTW*, https://p1k.arrl.org/lotw/default
2) *LoTW Users List* by HB9BZA, http://www.hb9bza.net/lotw-users-list

73 and Good DX
Ed Spingola, VA3TPV

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/

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AMATEUR (HAM) RADIO CLUB MEMBERS VISIT CANADIAN WARPLANE HERITAGE MUSEUM
Saturday, Oct. 20, 2012

By IAN ROBERTSON

MOUNT HOPE — The sky was overcast and rain was falling as a dozen Toronto area Amateur Radio club members entered the Canadian Warplane Heritage Museum at John C. Munro Hamilton International Airport on Airport Rd. W.

But despite intermittent showers for the tour arranged by Ralph Welsh "VE3RWO" on Oct. 20, the weather cleared in time for the adults accompanied by family members to be escorted outside by veteran volunteer Frank Creamer.

Several aircraft are on static display on the tarmac outside the modern building — including a 1935-designed Douglas Aircraft DC-3 "Dakota."

Used during the Second World War as a troop carrier, air ambulance and to tow gliders, about 1,000 are still flying in revenue and freight service for owners whose favorite saying is "the only replacement for a DC-3 is another DC-3." Built at a cost of $79,500 U.S., or $1,347,641 in 2012 dollars, their longevity in the air is an amazing accomplishment when you realize the last 'Dak' was built in 1950.

Across from the museum's 1939-built DC-3 painted in dark, dull greenish-brown "Canucks Unlimited" wartime camouflage colors was a United Nations-marked De Havilland Canada DHC-5A turbo-prop Buffalo restored in 2009 following service with the Canadian Armed Forces before the air wing was renamed the Royal Canadian Air Force (RCAF) two years later.

What made this newer plane particularly interesting to members of the CenTor, Mississaug,Skwide, and Tarc radio clubs are the commutations used.

While the museum specializes in Canadian war-and peace-time aircraft over the past century, including biplanes and single-wing trainers, fighters and bombers, our visitors had a chance to examine an impressive collection of radio equipment used by flyers and their crews.

Members were so enthusiastic that the visit went longer than expected, with Mr. Creamer — whose father was in the RCAF in Mountainview, south of Belleville, Ont. — knowledgeably and patiently explaining the roles played by the aircraft, including anecdotes about several famous Canadians who flew in them or similar planes.

"I don't know how you remember so much," Jerry "VE3FAB" told him after a lengthy visit in the shadows beneath the massive bomb bay of the museum's most famous plane, a 1945 Lancaster bomber built at Victory Aircraft in Malton, just outside Toronto. Completed too late for war service, it was reassigned to RCAF Maritime Patrol in Nova Scotia, then in Newfoundland. Retired in 1964, it went to a museum, was then restored and flew again in 1988.

North America's only flying "Lanc" is painted in wartime dull dark greenish-brown livery and dedicated to the memory of Pilot Officer and mid-upper gunner Andrew Charles "Andy" Mynarski, of 419 (Moose) Squadron, who won 6 (RCAF) Group's only Victoria Cross after returning to the rear of his crippled, burning bomber to save the trapped tail-gunner as the bomber plunged earthwards in June, 1944 after it was shot up by a German fighter pilot following a bombing mission at Cambrai, France.

The Winnipeg native, whose suit was on fire as he struggled to wrench open the damaged rear turret, finally realized he couldn't free Pilot Officer Pat Brophy and reluctantly bailed out after giving him a respectful, farewell salute.
In an ironic and sad twist of fate, the would-be rescuer died from his burns but P/O Brophy was thrown free as the crashing bomber's tail tore free against a tree. He survived to tell the story that posthumously earned P/O Myrnarski the Commonwealth's highest award for gallantry in battle.

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Mr. Creamer had the full attention of club members as he related this amazing story, plus others about the bravery of several other flyers whose memories are honoured at the museum.

He also explained Canada's role in training tens of thousands of pilots, navigators, radio operators, gunner and bomb-aimers at more than 100 air bases built for the Royal Air Force of Great Britain during the Second World War under a program called the British Commonwealth Air Training Plan (BCATP). Both Mountainview and Hamilton were such bases, where men mainly from the UK, Australia, and New Zealand, plus Canadians and some Americans trained as members of the Allied service.

The collection includes a Fleet 60k Fort, the only aircraft designed and built by Canadians during the 1939-45 war. It was of particular interest to radio club members, for its use in training wireless operators.

Evaluated in 1940 at the RCAF Central Flying School in Trenton, Ont. — where CFB Trenton is Canada's largest military airport — the rear cockpits of Fleet Forts were filled with radio equipment.

Unfortunately, the Royal Air Force rejected them as too small for its wartime needs after judging the generators to be too small and the rear cockpits unable to carry sufficient gear. Forts were phased out and replaced by larger-capacity wireless training aircraft.

Another aircraft that had special significance for club members was a De Havilland DH82C Tiger Moth biplane. Painted in bright yellow with the distinctive tri-colour, blue-, white-and red RAF roundel, the museum's example was one of 1,784 assembled at Downsview in north Toronto from 1937 to 1944, with more than 1,500 used in BCATP service to train pilots, wireless radio operators, bomber-and-gunnery crews and for photo reconnaissance .

The tour ended with visits to the most modern aircraft inside the museum:
- A Korean War-era F-86 Sabre Mark VI jet painted in Golden Hawks aerobatical team demonstration colours.
- An A.V. Roe CF-100 jet fighter developed during the Korean War.
- A successor CF-101 Starfighter painted in black and yellow "Tiger" competition stripes.
- A T-114 Tudor used to train fighter pilots and still used by the Royal Canadian Air Force's 431 Air Demonstration Squadron, better-known as the Snowbirds.
- One of 135 Canadair CF-5A "Freedom Fighter" jet fighters that saw service from 1968 until their retirement in 1995.

"It was a great day ... I'm really glad so many of the club members were able to make it," said Ralph "VE3RWO", who recently undertook the task for 'CenTor' radio club of organizing tours that combine social and educational subjects of interest to amateur radio enthusiasts and their families.

MARC First Sunday of the Month Breakfast

The monthly club Sunday breakfasts are the first Sunday of the month
Come One, Come All – The location:
08:30 at Bobbie's Hideaway Restaurant,
20 Queen St North in Streetsville. (NW corner of Britannia Rd/Queen St. N in Streetsville)

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RAC MEMBERSHIP APPLICATION/TCA SUBSCRIPTION OPTIONS
For two- or three-year memberships or renewals please contact the RAC Office given at bottom of this page.
Please enter applicable choice(s)

Please indicate New or Renewal:	
1 year RAC membership; @**$52.00** plus GST or HST as applicable Total $54.60 in AB, MB, NT, NU, MB, PE, QC, SK, YT (5%) Total $58.76 in NB, NL, ON (13%). Total $59.80 in NS (15%)	
1 year RAC membership only; for a blind person <u>NO MAGAZINE</u> @**$25.00** plus GST or HST as applicable Total $26.25 in AB, MB, NT, NU, MB, PE, QC, SK, YT (5%) Total $28.25 in NB, NL, ON (13%). Total $28.75 in NS (15%)	
Family membership; price per extra family member @ **$25.00** plus GST or HST as applicable per year (one TCA per family) (Does not apply to simple subscriptions.) Total $26.25 per person in AB, MB, NT, NU, MB, PE, QC, SK, YT (5%) Total $28.25 per person in NB, NL, ON (13%). Total $28.75 per person in NS (15%)..	

CONTACT INFORMATION

Name:	**Call sign:**
Address:	**City/Town:**
Province:	**Postal Code:**
Family Member Name	**Family Member Call sign:**
If you enter something on line above, a charge of $20.00 (plus taxes) will be added to your membership	
Family Member Name	**Family Member Call sign:**
If you enter something on line above, a charge of $20.00 (plus taxes) will be added to your membership	
Email:	**Telephone #:**

DONATION OPTIONS

Donation to the RAC Foundation enclosed	$
Donation to the Defence of Amateur Radio Fund enclosed	$
Donation to the Youth Education Programme enclosed	$
Donation to the Amateur Radio Emergency Service (ARES) Programme enclosed	$
Grand Total:	$

PAYMENT OPTIONS (Cheque or)

Visa/MasterCard No:	**Card Expiry Date (MM/YY):**
Security code on back of card (CVV2):	
Name of person credit card is issued to:	

Mail to:
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Ottawa, ON, K1G 0Z5
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877-273-8304, Fax: 613-244-4369
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