

# Rambler

Newsletter of the  
Ottawa Valley Mobile  
Radio Club  
Incorporated



May 2014

Edition 58

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## President's Rambling:

April has been a slow month easing me back to earth from the March madness of the celebration of VE3JW's 40th anniversary. However, the slowness of spring is helping to unwind and getting me into a more normal club routine.

I enjoyed the April Home Brew session. This is the first time I have participated in this technical challenge. My entry was a 4 wire soldering effort, a challenge for me, however no prize. The real applause went to the heavy hitters: Maurice-André, VE3VIG, for his totally awesome compact, integrated communication kit and to Michel, VE3EMB, for his modern replication of the WW-II German

Enigma cypher machine. Showing the near future of amateur radio communications was Norm Rashleigh, VE3LC, who demonstrated his Peaberry kit SDR HF transceiver. This was followed by Ernie, VE3EJJ, presenting his project in progress, a regenerative receiver reflecting how creativity in the early years of radio communication was sparked by Edwin Armstrong's "Regenerative Circuit" circa 1912. The practical side of the Home Brew presentations came from Joe, VE3EUS. His presentation articulated the necessities required to facilitate the construction of a dual-headsets connection. My next year's project will challenge my technical capability with a 6 wire project, lucky one's a ground ☺. Well done and thanks to all who participated.

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## Meeting Date

**Club Meeting:**

**May 15<sup>th</sup>  
Thursday**

**SHOW & TELL**

In the main parking lot of the museum. Start time is same, 19:30 hrs. however come early to set up and impress us all. Show your mobility and capability so we can all learn something new.

## NOTICE OF CLUB ELECTIONS

**CALL FOR VOLUNTEERS TO FILL EXECUTIVE POSITIONS**

### FISCAL YEAR 2014-2015

Members in good standing are invited to consider running as Directors or Chairs of Standing Committees for the fiscal year that will begin on September 1, 2014.

Elections will take place at the Annual General Meeting that will be held in June 2014. All positions are open. Those interested in serving their fellow Club members should contact any of the current members of the Club Executive to indicate their willingness to serve and which of the many positions available they might be prepared to fill.

Signed "Joe VE3EUS," Treasurer

**OVMRC Executive****2013-2014****President:**

Sandy Haggart, VE3HAZ

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Vacant

**Treasurer:**

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Brian Williams, VE3KNE

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Chairpersons****Amateur Radio Exhibit:**

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[ve3oij@amsat.org](mailto:ve3oij@amsat.org)**Amateur Radio Training &****Accredited Examiner:**

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*For information about the duties and responsibilities about all Executive and Chair positions, please visit the OVMRC forums, Member section or contact any member of the Executive.*

**Sponsors**

The OVMRC acknowledges the following organizations for their support of our activities:

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• **BYTOWN MARINE,**

Ottawa, ON

• **ELKEL LTEE.,**

Trois-Rivières, QC

• **KENWOOD ELECTRONICS****CANADA INC.,**

Mississauga, ON

• **TRAVEL-MOR TRAILER SALES,**

Ottawa, ON

• **PEPPERS RADIO SALES,**

Rockland, ON

Email: [peppersradio@videotron.ca](mailto:peppersradio@videotron.ca)WEB site: [www.peppersradio.net](http://www.peppersradio.net)

The club's web site is hosted by:

**PRIMUS TELECOMMUNICATIONS  
CANADA INC..**[www.ovmrc.on.ca](http://www.ovmrc.on.ca)**Visit the OVMRC Store**

at

<http://www.cafepress.ca/ovmrc>**OVMRC Life Members**

Ernie Jury, VE3EJJ

Maurice-André Vigneault, VE3VIG

Ralph Cameron, VE3BBM

Doug Carswell, VE3ATY

Doreen Morgan, VE3CGO

Ed Morgan, VE3GX SK

**OVMRC Repeaters**

147.300 MHz(+)

444.200 MHz(+)

**Amateur Radio Exhibit****VE3JW**

Web site:

[ovmrc.on.ca/ve3jw.htm](http://ovmrc.on.ca/ve3jw.htm)Canada Science & Technology  
Museum

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Submit articles to the editor or by e-mail to:

[Robert Cherry, VE2AGE](mailto:Robert.Cherry@ncf.ca)[cw527@ncf.ca](mailto:cw527@ncf.ca)**Ottawa Valley Mobile Radio Club, Incorporated****PO Box 41145****Ottawa, ON K1G 5K9****[www.ovmrc.on.ca](http://www.ovmrc.on.ca)**

## Meeting Minutes

**April 16, 2014**

### Call to Order

The meeting was called to order at 19:30hrs by the President (Sandy VE3HAZ).

This meeting was advanced one day from the regularly scheduled Thursday meeting due to this being Easter week.

### Presentation: Home Brew

A good group of 6 presented their accomplishments:

1. Michel (VE3EMB) presented his Enigma cypher unit. This operational kit is a replication of the WW-II German cypher machine which Michel has been working on since 2009. Operation of this machine on the amateur radio bands is allowable if the keys are published. There is an international community of Enigma hobbyists who enjoy this challenge of using this historic equipment. Michel has Enigma cypher articles in the March 2009 Rambler and August 2009 TCA publications.
2. Maurice-André (VE3VIG) presented his portable, mobile station. Expertly configured within a musical instrument protective case were his HF, VHF, UHF and D-Start digital radios along with power distribution capability for 120V and 12V battery. Unique patching capability for speakers or ear phones were demonstrated along with flexible led lights for night work. All this was integrated with an antenna tuner and Lap Top running HRD software and a Signalink unit for PSK like digital communication.
3. Norm Rashleigh, VE3LC, demonstrated his Peaberry kit SDR HF transceiver and its integration for his selected amateur radio 60M, 40M, 30M, 20M HF bands. The integration of the SDR showed good control of the transceiver for reception and transmission except for CW. It is an indication of where technology is heading in component size and software control.
4. Ernie (VE3EJJ) presented his project in progress, a regenerative receiver, this is related to the 2012 100th anniversary of Edwin Armstrong's "Regenerative Circuit" (Sept. 22, 1912). One of the many challenges with this project is to secure old electronic designs and parts.
5. Sandy (VE3HAZ) present his simple adaption of a Trio-Kenwood MC-50 desk top mic to be pluggable into the more standard RJ-45 phone jack verses the old 4 pin connector. Four wires to match up, what could go wrong?
6. Joe (VE3EUS) presented a very practical display of the basic tools and necessities required to facilitate the construction of a dual-headsets connection. For this home brew effort. Joe showed the multiple tools and materials that were required to do the job. This project provided an opportunity to learn basic skills of soldering, wiring and construction techniques. This was a low cost effort which was accomplished in less than 3 hours (learning time included).

Results were by ballot for Best Home Brew and the People's choice:

Home Brew winner:  
Maurice-André, VE3VIG

People's Choice winner:  
Michel, VE3EMB

### Business Portion of the Meeting

The president noted that the positions of the VP and Membership were both open.

### Treasurer – Joe (VE3EUS)

No major issues. The 40th anniversary expenses were covered with funds not spent on potluck supper and funds intended for VE3JW.

### Training – Ernie (VE3EJJ)

Ernie reported that a transition plan is being reviewed with several people. It is anticipated that the necessary items will fall into place by September.

### 50/50 Draw

A draw with a total of \$7.50 was won by Michel, VE3EMB.

### Door Prizes

These were won by Maurice-André (VE3VIG), Ziggy (VE3RY) and Bill, (VE3???)

The meeting was then adjourned.



*Norm VE3LC with his Peaberry Software Defined Radio project.*

## Home Brew Night Photos



*Maurice-Andre VE3VIG presenting his gobox project.*

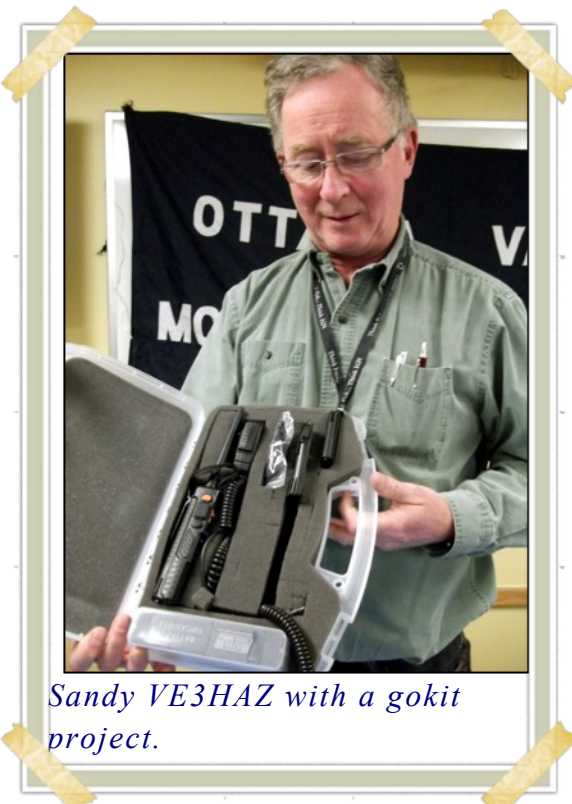


*Ernie VE3EJJ with a transceiver project.*



*Michel VE3EMB with his electronic Enigma project.*

*Photos courtesy of Michel Barbeau, VE3EMB*



*Sandy VE3HAZ with a gokit project.*



*Joe VE3EUS with his tools and a junction box project*

## Recent Developments in Amateur SDR

By: Michel Barbeau, VE3EMB

### Software Defined Radio defined

A software defined radio (SDR) is a radio communications unit resulting from a combination of hardware and software. The hardware part consists of three main aspects. On one side, there is radio frequency (RF) hardware consisting of components such as a preselector, a transmitter, a low pass filter and a power amplifier. The role of the RF part is to capture and generate radio signals, which are analog by nature. On the other side, there is digital data processing hardware, which may be a personal computer. The RF and digital data processing hardware are bridged together with an analog to digital converter (ADC) and digital to analog converter (DAC). The converters join the world of analog RF waves with the world of digital data.

The operation of a radio involves RF component control, signal processing (modulation, demodulation and filtering) and interaction with an operator. The actual implementation of RF component control, signal processing and operator-radio interaction is defined in software.

The SDR technology is interesting because the software part is stable, upgradeable, enhanceable and replicable. In software, precise and variable filtering can be implemented down to the Hertz. The graphical user interface greatly improves the experience of the radio operator. SDR software can be nicely integrated with other communication applications.

### First Generation

PowerSDR is a good example of first generation operator-radio interaction software, see Figure 1.

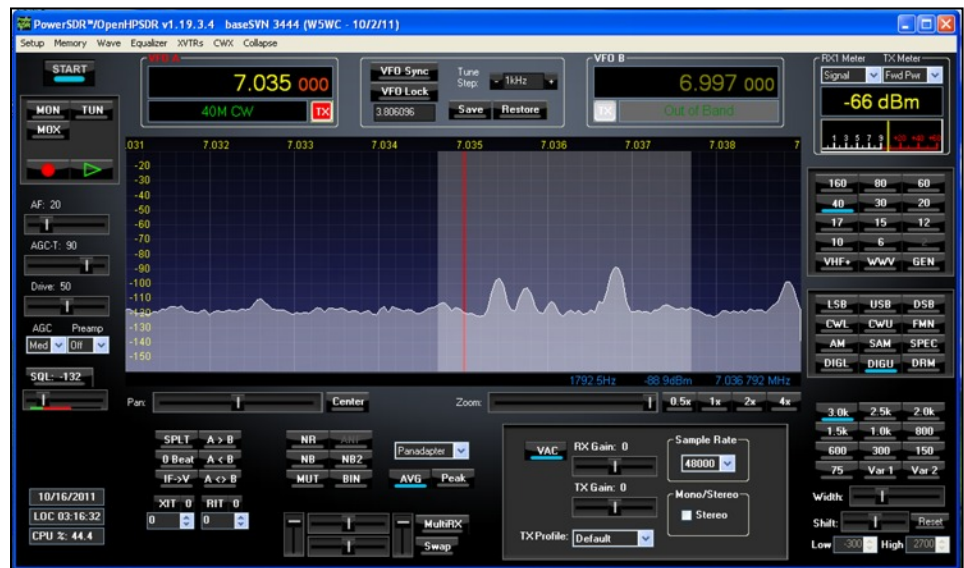


Figure 1: Graphical user interface of PowerSDR.

This particular version runs in combination with the High Performance Software Defined Radio (HPSDR) hardware. The central graphical element, or widget, is called a panadapter. It is a frequency domain representation of the radio pass band, in real time. The red vertical bar indicates the frequency to which the radio is currently tuned, 7.035 M Hertz in this example. This feature is particularly appreciated by SDR operators because not only signals can be heard, they can also be seen. Activity over a wide bandwidth can be observed, nine K Hertz in this example. Around the panadapter, there numerous buttons, controls and displays used by the operator to manage the communication process. What is striking about first generation operator-radio interaction software is the attempt to replicate in software the look of traditional analog radio.

### Second Generation

Let us look at second generation operator-radio interaction software, namely SmartSDR, see Figure 2. It

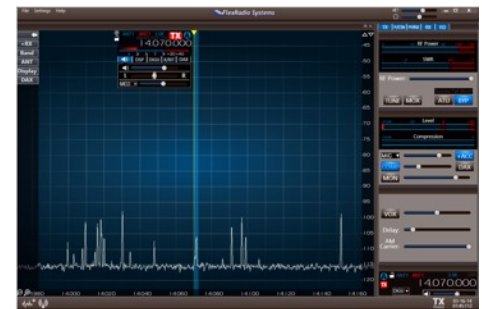


Figure 2: Graphical user interface of SmartSDR.

runs in combination with the Flex-6000 series of SDRs, see Figure 3.

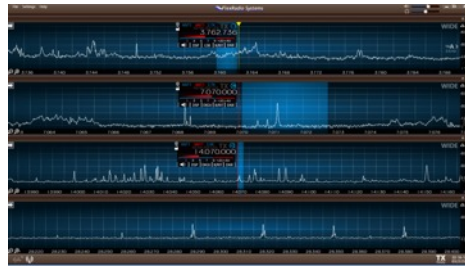


Figure 3: The FLEX-6500 SDR.

The attempt to mimic the look of a traditional analog radio has been

abandoned. More room is allocated to the panadapter, which is much needed because the latest hardware technology enables the real time representation of much wider bandwidth, 180 K Hertz in this example. Frequency, mode and audio controls are placed in a flag attached to the yellow vertical bar showing the tuned frequency. Other less frequently used buttons and controls are placed in a panel, on the right. They are organized in blocs. Since they are not frequently used, the display of the blocs can be disabled. Eventually, the full area of the computer screen can be occupied by the most useful panadapter.

The latest ADC technology allows the simultaneous display and demodulation of a large portion of the amateur radio spectrum, see Figure 4. In this example, the activities in four of the most popular amateur radio bands are displayed in real time, i.e., 80, 40, 20 and 10 meter bands. They can all



*Figure 4: Simultaneous display of the 80, 40, 20 and 10 meter bands.*

be watched at the same time. Furthermore, three signals are demodulated at the same time, in the 80, 40 and 20 meter bands.

Touchscreens permit human-computer interaction by touching the screen with a finger, as an alternative to pointing and clicking with a mouse. With smart phones and tablets, it greatly facilitates human-computer interaction. This form of interaction is possible with software such as PowerSDR and SmartSDR, because the interface is graphical. Some of the widgets are although very small and not easy to select. This is an area for future improvements.

## ***A Call for Volunteers: Rideau Lakes Cycle Tour***

Rideau Lakes Cycle Tour - a bicycle tour - not a race — organized by the Ottawa Bicycle Club and run by volunteers. It has been running for over 40 years, and typically involves about 2000 riders! **This year it takes place the weekend of June 7 and 8.**

The tour starts in Ottawa and travels to Queens University in Kingston on the Saturday, starting early morning, and returns to Ottawa on the Sunday, typically ending late afternoon to early evening. That's about 170 km each way!

Amateur radio is used to provide communication support for the event over this large area, and is done in conjunction with the Lanark and Frontenac ARES groups. The Ottawa team provides communication from the start (Algonquin College last year) through to just east of Perth. All comms take place using VHF (2m) communications through a series of repeaters, and using controlled nets. Travelling along the route are 6 mobiles that we equip with radios and operators for the event. Operators are also needed to man

locations (8 or more) along the route to maintain communication along the route.

Every year there are challenges: accidents, breakdowns, lost possessions, lost riders, police calls. Every year amateur radio has played an important role in dealing with those challenges. The benefits of being able to communicate point to multipoint by broadcasting information simultaneously to all locations is not lost on the organizers, who continue to value our contribution. In addition, the tour goes through areas where cell phone coverage is spotty to non-existent, and simply cannot be relied upon to provide reliable communication.

Some of your members already support this event, and their support is much appreciated. We are always, however, looking for new participants. Any of your membership who are interested in getting involved are encouraged to contact me (Gord Mein) at [ve3frb@rac.ca](mailto:ve3frb@rac.ca).

## 2014 Meeting Dates

**May 15**

### **Mobile Show n Tell**

Bring your mobile installation and we'll look and evaluate. Prize(s) to be awarded. To be held outdoors, 19:00h

**June 19**

### **Annual General Meeting Elections**

#### **NOTE**

All meetings at the museum will now have access by the front door as construction is now complete.

### **Coming Events:**

- **Field day:** June 28 – 29<sup>th</sup> on the museum grounds
- **ILLW:** August 15 – 17th near the museum's light house

### **OVMRC Repeaters**

If you are interested in learning about or helping with the OVMRC repeaters contact our technical chair-person, Paul Labbé, VE3NJS, (paul.e.labbe@gmail.com). Extra pairs of hands are always welcome.

### **Technical information:**

What have you found or read lately that might be interesting to others. Write it up and send the information to the Rambler Editor, Robert Cherry (cw527@ncf.ca) even if it is an URL

## What's Happening Elsewhere!

### **Ottawa Amateur Radio Club (OARC)**

[www.oarc.net/blog/](http://www.oarc.net/blog/):

### **Rideau Lakes Amateur Radio Club (RLARC)**

[ve3rlr.dyndns.org/](http://ve3rlr.dyndns.org/):

### **West Carleton Amateur Radio Club**

[www.wcarc.on.ca](http://www.wcarc.on.ca)

The next meeting of the West Carleton Amateur Radio Club will take place Tuesday, June 3<sup>rd</sup> beginning at 19:30 in the upstairs meeting room at Sobeys, 700 Terry Fox Drive in Kanata. Dave Goodwin (VE3AAQ) will give a presentation on contest operating, in preparation for the ARRL June VHF Contest. Many members meet for supper before the meeting, 17:45 at the Panda Garden Buffet, 420 Hazeldean Road in Kanata.

For the June VHF contest (June 14-16), the club will run multi-operator station VE3WCC from the Corkery Community Centre in grid square FN15xg. If you can offer equipment to the station or would like to operate, please contact Doug Leach, [ve3xk@rac.ca](mailto:ve3xk@rac.ca).

**VE3ORF/3730 Group**  
[www.ve3orf.com/](http://www.ve3orf.com/)

*Check it out; let us know what's going on in your club.*

## Rambler Deadline

Meeting date minus 13 days

Jun 06  
Jul/Aug 09

Please submit articles for the Rambler to the editor:

[Robert Cherry](#)

No later than the deadline for the desired edition.

**April Rambler submission deadline is:**

**Friday, 2<sup>nd</sup> May 2014**





## MEMBERSHIP FORM

- The membership year starts in September and runs to the end of August of the following year.*
- Regular membership is open to licensed amateurs.*
- Associate membership is open to all unlicensed radio enthusiasts.*
- Membership includes an e-mail subscription to the Club newsletter, the OVMRC Rambler.*

Date: **PLEASE PRINT**

RENEWAL       NEW       CHANGE       OVMRC NAME TAG (COST \$10.00)     No     Yes

Call Sign	Surname	Preferred First Name
Street		Apartment Number
City	Province	Postal Code
Home Phone	Work Phone	E-mail Address
Are you a member of Radio Amateurs of Canada (RAC)    Yes <input type="checkbox"/> No <input type="checkbox"/> RAC ID: _____    Expiry Date:    /    /		

- Full Membership (Not a Member of RAC)**      \$35.00/year      
**Full Membership (Member of RAC)**            \$25.00/year      
**Associate Membership (Unlicensed)**          \$15.00/year

Amount Enclosed  
\$ \_\_\_\_\_  
Cheque     Cash

My Interests are:       VHF/UHF Phone       VHF/UHF Digital       VHF/UHF CW  
 Satellite             HF Phone             HF Digital             HF CW

Current Occupation:  
If Retired, Former Occupation:  
Skills: (Please list them all)

### COMMENTS

### OVMRC NAME TAG – ORDER DETAILS

First Name:

Call Sign: