

# Kilowatter

The voice of the KW Amateur Radio Club

April 2007

Since 1922

Kitchener-Waterloo Amateur Radio Club  
133 Weber St. N. Suite #3-138  
Waterloo, Ontario  
N2J 3G9

EDITOR: Dennis Tabbert VA3DLT  
PHONE: 463-9641  
email: va3dlt@rac.ca  
Web site: <http://www.kwarc.org>

## MONDAY'S MEETING

**Date:** Monday April 2nd 2007  
**Time:** 7:30pm  
**Place:** RCAF Wing 404 Club. End of Dutton Dr. Waterloo. Off Weber St. N  
**Topic:** Operating on the Amateur Microwave Bands

## UPCOMING EVENTS

<a href="#">Peel Amature Radio Club and the Mississauga Amateur Radio Club</a> Saturday, March 31, 2007, Brampton ON	<a href="#">IARC Eleventh Annual Flea Market</a> Iroquois Amateur Radio Club Saturday, April 7, 2007, Iroquois ON
<a href="#">Durham Region Hamfest (31st Annual)</a> North Shore ARC & South Pickering ARC Saturday, April 21, 2007, Whitby ON	<a href="#">23rd Annual Smiths Falls Amateur Radio Flea Market</a> Rideau Lakes Amateur Radio Club inc. Saturday, May 12, 2007, Smiths Falls ON
<a href="#">Ottawa Amateur Radio Club 11th Annual Hamfest</a> Ottawa Amateur Radio Club, Inc Saturday, September 1, 2007, Ottawa (Carp) ON	<a href="#">Hamilton Amateur Radio Club "HAMFEST 2007"</a> Hamilton Amateur Radio Club Saturday, October 13, 2007, Ancaster ON
<a href="#">Annual K.W.A.R.C. Field Day</a> Doon Pioneer Village June 23rd - 24th	<a href="#">Central Ontario Hamfest &amp; Fleamarket</a> Guelph ARC & Kitchener Waterloo ARC June 9, 2007, Fergus ON

### KWARC Directors 2006-7

<b>President</b>	Bob Pelling	VE3XNB	885-9995
<b>Vice President</b>	Dennis Tabbert	VA3DLT	463-9641
<b>Past President</b>	Gord Hayward	VE3EOS	744-7205
<b>Treasurer</b>	Al Macdonald	VA3TET	741-0281
<b>Secretary</b>	Ben Sasiela	VE3ST	748-0445
<b>Director</b>	Tedd Doda	VE3TJD	634-5949
<b>Director</b>	Bill Riddell	VE3WFR	571-9875

### The Executive Committee Chairs

<b>Program</b>	vacant		
<b>Technical</b>	Tedd Doda	VE3TJD	634-5949
<b>Packet</b>	Tedd Doda	VE3TJD	634-5949
<b>Database Mgr</b>	Dave Schwartz	VA3DGS	884-3594
<b>Bulletin Editor</b>	Dennis Tabbert	VA3DLT	463-9641
<b>Edu. Co-Ord</b>	Ron Gimbel	VE3DBD	584-2009
<b>Chief Examiner</b>	Vern Stroud	VE3RVS	743-9342
<b>Auto Patch</b>	Ben Sasiela	VE3ST	748-0445
<b>ARES Manager</b>	Larry Gorman	VE3LGN	884-6782
<b>CANWARN Mgr.</b>	Ben Sasiela	VE3ST	748-0445
<b>QSL Manager</b>	Gord Gibson	VE3NQG	893-5148
<b>Inventory</b>	Ben Sasiela	VE3ST	748-0445
<b>Field Day</b>	vacant		
<b>Webmaster</b>	Dennis Tabbert	VA3DLT	463-9641
<b>Bereavement</b>	Marg Cassel	VE3RE	634-5139
<b>Flea Market</b>	Dennis Tabbert	VA3DLT	463-9641
<b>QCWA Rep</b>	Harold Braun	VE3DWH	884-2388

### KWARC Owned Repeaters/Nodes

Mode	Call	Freq.	PL	patch	Location
Voice	VE3KSR	146.970	131.8		Baden Hill
Voice	VE3RCK	146.865	131.8	Open	Mannheim
Packet	VE3KSR-0	145.010			Baden Hill
Packet	VE3KWQ	145.090			Waterloo
Voice	VE3IXY	224.340	131.8		Mannheim
IRLP	VE3RBM	444.875	131.8		Mannheim
Echolink	VE3SED	53.370	131.8		Baden Hill
Voice	VE3SED	442.200	131.8		Baden Hill
Special Events		147.510			Kitchener

### Other Area Repeaters/Nodes

Mode	Call	Freq.	PL	patch	Location
Voice	VE3ERC	444.700	N		Elmira
Voice	VE3KFM	442.000	Y	open	Kitchener
Voice	VE3RND	145.330	Y		Plattsville
Voice	VE3SWR	146.790	N		Cambridge
IRLP	VE3WFM	147.090	N		Waterloo
Voice	VE3WWW	146.835	N		U of W
Voice	VE3RSS	147.030	N	members	Acton
ULR Link	VE3BHR	447.075	Y		Baden Hill
Voice	VE3RKL	443.850	N		Guelph
Voice	VE3ZMG	145.210	N		Guelph
Packet	VE3VIQ	145.570			Guelph
TCP/IP	VE3MKY	145.570			Guelph
TCP/IP	VE3UOW	145.570			U of W B
Voice	VE3BAY	442.350	Y		Kitchener



Spring has finally arrived at least on the calendar it has. It won't be long and the flowers will be blooming the grass will need cutting and antennas will be erected. Plan ahead.

Also I wish to congratulate Bill VE3WFR on the excellent job he did in putting together his Web based Weather Station. There is a direct link to it from the club website.

On a somewhat more serious note, I was speaking to Mike VE3FAR this past week. For those that do not know Mike, he is the Guelph Co-chair of the Fergus Flea Market in June. Mike expressed a lot of concern on behalf of the Guelph club with regards to the lack of volunteers for the Flea Market. Every year it is the same situation. A hand full of the same people do most of the work. Volunteers are needed for all stages. A lot of these people are getting older and some would like to enjoy the Market at an early stage before all the good bargains are gone. When you consider that KWARC has almost 3 times the membership that the Guelph club has, we should have no problems mustering people to help out. I understand that many people do have other things they need to be involved with. But many others do not.

The Flea Market represents a lot of money to the individual clubs coffers. Both Mike and Bob VE3SFW, Guelph Club President have told me, that after 33 years this could be the last Flea Market for the two clubs. It is just getting to be too much work for too few people. It is not too late, it CAN be saved; PLEASE consider volunteering for some of the jobs. Guelph cannot and will not do it alone. If ANYONE has any

ideas on how to improve the Flea Market itself, or the participation factor, please let the Exec know. If you wish to help out contact Dennis VA3DLT KWARC Co-chair, Myself or any member of the club Exec. Email addresses and phone numbers are on the front of the KILOWATTER. And at the same time now would be a good time to start thinking about gathering together all the treasures you may wish to exchange for new treasures.

Also coming is FIELD DAY. We are still in need of someone to chair this event. Any volunteers? Please contact any member of the Exec. Again this year it will be a Doon Heritage Cross Roads as no one has been able to come up with a better site. Any suggestions? We also need Band Captains and operators.

While on the subject of Field Day, I was saddened to learn of the passing of long time KWARC member Hubbie Stumpf VA3BIQ. For many years Hubbie and his wife Eileen supplied an excellent home made Chili Dinner on the Saturday of Field Day. They would cook it up at home and then bring it out to the Field Day site and serve it up. The recipe is still a secret. It was always delicious and seemed to get better every year. (Eileen passed away in 2005) On behalf of the entire club, I wish to pass along the clubs deepest sympathies to the entire Stumpf family.

On a MUCH HAPPIER note I wish to formally announce that Bonnie VA3BLM and I are to be Married on Saturday September 29, 2007. The wedding will take place at 4pm at the Waterloo North Mennonite Church at the corner of Weber St North and Benjamin Rd in Waterloo. This is next to the Waterloo Market.



[Mark III](#)

The radio that got me started in this hobby was a friends 19 set. I remember listening to the 41 and 49 meter broadcast bands and lots of other signals. That was 1966 when HF was really active. I started my own SWL station with an RCA table radio followed by the guts of a Marconi console Hi-Fi but that's another story. This one is about the 19 set that I finally bought from another friend. It came with the manual for installing the set in a Ford Armoured Scout Car and had another sheet with the connector pinouts.

It was in pretty good shape but I only had the main unit and the dynamotor power supply. It ran, but I really needed an AC driven supply. I had the parts to build a choke input 250 volt supply with enough 12 volts to run the filaments. Peter had replaced the HF (A-Set) antenna connector with an SO-259 and the UHF (B-Set) with a BNC so I didn't have to scramble to find some kind of adapter for these but I didn't have the power and audio connectors. Like the R-392, I chopped up some molex connectors which fit the pins well. I powered it up and the receiver was alive.

The transmit section was more fun. I found a operating manual which described a lot of the magic in the set. It's a masterpiece of wartime economy. The set has only one variable oscillator, the local receiver oscillator which operates one IF frequency above the receive frequency. To get the transmit frequency, the designers used the BFO to beat the local oscillator down by the IF. The modulation signal provided by the audio final of the receiver is applied to the grid of the 807 final.

The first requirement was a 500 V power supply, so I got the transformer

at a fleamarket and built the supply. Rather than finding very high voltage capacitors I use electrolytics in series with load sharing resistors. These also work as the bleeder. In putting this together I added a jack for a plate current meter. It seemed to be a good idea, but I learned that when shutting down the power supply it's a good idea to give the bleeders some time to do their job. I flipped the switch off and unplugged the meter. The bang was really loud and the flash blew a substantial divot in the connector.

The antenna energy (AE) position on the meter shows the output but the diode that does the measurement is part of the variometer and the signal is sent back over the coax. The RF is AC coupled through a 4000 pF capacitor and the meter DC through a choke. Since I didn't have a variometer I built a directional coupler like an SWR meter and fed the DC back through another capacitor and choke.

I did the usual cleaning and inspection and found no major faults but I replaced the paper and electrolytic capacitors as these are always suspect. The last step was an alignment and I was on the air. The power output wasn't spectacular. With the grid modulation it puts out the grand total of 3 watts. The set seems to be under driven as there was no substantial plate current dip when I tuned the final so I used the AE meter setting to tune for 'maximum smoke'.

The final gotcha is my inability to get on the 19 set net. The frequency they chose is the 8<sup>th</sup> harmonic of the BFO so the birdie clobbers the net. I was going to do an all out effort to exorcise this problem but when I talked to one of the operators at the Glace Bay Marconi museum he told me that this is

normal and that he would be concerned if the birdie wasn't there. I've decided to leave the problem alone.

The final success of this project is the award for getting vintage equipment operational offered by the WS.19 set group. I made 8 contacts, 2 of them on SSB with the rest on AM. The 19 set

only does AM but if I tune an SSB station dead on (If I'm not dead on the carrier heterodyne is a real pain.) the other station doesn't know I'm an AM'er. I got the required 5 QSL's and the award is now on the wall.

### [Tech report for April 2007](#)



Greetings everyone:

It sure makes the tech committee's job easy when nothing breaks! All the club owned repeaters are working great.

Due to the long hours at work, I haven't had much time to do any sort of DIY (Do It Yourself) projects..... I need your help. If you are having a problem with any sort of Amateur gear, or if you would like me write about something that interests you, drop me a line. I can do only so many LED projects :)

One nice thing about Ham Radio (or electronics in general) is that you never stop learning. My next personal project is to start learning how to manipulate PIC controllers. These are standard DIP (Dual Inline Package) IC's that contain a microprocessor, RAM and enough input/output lines to keep you busy! The coding is done with Basic language and is uploaded to the PIC controller. It's like a stand alone computer.

There is lots of good reading about PIC's on the 'net, and a basic proto board can be had for less than \$50. The PIC's are cheap depending on which model you want to use. Stay tuned to this column for some cool projects that are lurking in the back of my cranium!

That's it for this month,

Tedd, VE3TJD

Technical Chairman for the KWARC

## Under the heading - You heard it here first!



Press release: Deli, India –amazing improvements in antenna performance

Indian Physicist, **Nala Dianod** of the **Academy of Science and Sociology/Burne**, India has apparently found a new method of intercepting Magnetic radiation using a process called “**Negative Flux Gradient**”.

Akin to Ferrite’s ability to concentrate magnetic fields the Negative Flux Gradient antenna utilizes a specially treated copper structure to do the same thing. Intersecting the magnetic lines of force with the specially treated copper generated amazing results.

The process changes the flux gradient of the newly aligned structure into crystalline layers that promote flux tunneling. This enhanced flux path gives the RF fields more “places” to induce electrical current and that in turn produces higher output voltages at the antenna terminals. Flux tunneling is well known in semiconductor materials, but to date, had not been known to exist in copper. There are indications that this phenomena may occur in other materials in the same atomic family.

Extensive measurements demonstrate the antenna to be less sensitive to man made interferences (QRM). Treated antenna systems show a 4 db higher gain over an equivalent untreated dipole.

The secret was to use pure copper with aligned crystal structures.

The crystal alignment process is as simple as heating a piece of copper to 457 C and slowly cooling the copper to the structure to –40C while applying a DC bias current. This enhances crystal alignment and increases the length of crystal layers. Strict attention must be given the stability and purity of the bias current to ensure maximum benefit.

A coupling coil of similarly treated copper is used to couple signals to a conventional coax. - Interesting enough, by treating the copper conductor in the coax feed also improved overall performance.

Dianod predicts that most new communications antennas will incorporate this concept with-in a year and these improvements will significantly improve antenna/receiver performance.

### *Editors note:*

Prototype dipole versions of the “NFG” antenna will be available in April 2007. Further information may be retrieved from their web site at [www.N.F.G. antenna.com](http://www.N.F.G.antenna.com)

N.F.G. Antenna is copy written and the sole property of A.S.S./BURNE

*Central Ontario Hamfest 2007 - June 9<sup>th</sup>.*

So far, we have volunteers for the following:

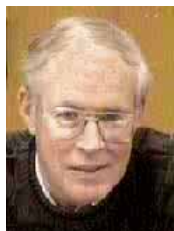
Mike Peleschak, Accounting, Flyer and Draw Ticket Production,  
Wrist Band Attainment, Arena rental, and Vendor Contact  
Dennis Tabbert, KWARC Co-Chair, Grand Events table rental,  
Flyers to other hamfests  
Mike Scott, GARC Co-Chair, Pylons, Flyers to other hamfests  
Larry Gorman, Admissions Table  
Linda Willis, Vendor Information Table  
Tedd Doda, Front Lot  
Bob Housser, Back Lot and Tailgate Vendor Admission  
Ben Sasiela, PA System Installation  
Mike Willis, Guelph EMCOMM trailer transportation

Please note that the following jobs are still open:

Door Prizes (maybe Gord VE3NQQ can be talked into this again)  
Direction signs (maybe Norm VA3NDK can be talked into this again)  
Back Security  
Marketing and Advertising.

Also, plan on coming out on Friday June 8th at 6:30pm to help set up for this most financially rewarding event. Please support your club.

For more information, or to volunteer, please call:  
Mike at 624-7352, or Dennis at 463-9641.



Environment Canada weather specialists will be visiting Waterloo Region again this spring for a refresher CANWARN severe storm spotter training session. This is the 20th Anniversary (since 1987) of this very worthwhile program. CANWARN now extends all across Ontario and into other parts of Canada.

After the widespread damaging storms of July 17th and August 2nd last year, the importance of having trained spotters able to report what they are witnessing directly to the Weather Centre in real-time has only been reinforced.

### **Training Date**

Tuesday, April 24th at 7 PM -

University of Waterloo's Carl A. Pollock Hall - CPH Room 1310  
200 University Avenue West, Waterloo

(Parking available in lot off Philip Street immediately north of the East Campus Hall - ECH). Just south of RIM. Directional signs will be posted.

From parking lot walk west over the railway tracks. Walk south along the ring road and enter CPH building after passing the "brown rollup garage door".

[>>http://www.uwaterloo.ca/map/map.php<<](http://www.uwaterloo.ca/map/map.php)

On behalf of the Kitchener-Waterloo Amateur Radio Club I encourage all members and any interested friends to attend. This will be both an informative and entertaining evening. Refreshments will be served. There will be no test.

More information at Monday 2 April meeting. I hope to see you there.

Larry VE3LGN

KWARC - Emergency Services Coordinator

