

Kilowatter

The voice of the KW Amateur Radio Club

February 2007

Since 1922

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

EDITOR:- Dennis Tabbert VA3DLT
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Web site: <http://www.kwarc.org>

MONDAY'S MEETING

Date: Monday February 5th 2007
Time: 7:30pm
Place: RCAF Wing 404 Club. End of Dutton Dr. Waterloo. Off Weber St. N
Topic: Our Annual Show and Tell Event

UPCOMING EVENTS

Big Event 29 Flea Market and Hamfest Niagara Peninsula Amateur Radio Club, Inc. Saturday, February 3, 2007, St. Catharines, Ontario ON	BARC Spring Flea Market Burlington Amateur Radio Club February 24, 2007, Burlington, ON
IARC Eleventh Annual Flea Market Iroquois Amateur Radio Club Saturday, April 7, 2007, Iroquois ON	Ottawa Amateur Radio Club 11th Annual Hamfest Ottawa Amateur Radio Club, Inc Saturday, September 1, 2007, Ottawa (Carp) ON
Durham Region Hamfest (31st Annual) North Shore ARC & South Pickering ARC Saturday, April 21, 2007, Whitby ON	23rd Annual Smiths Falls Amateur Radio Flea Market Rideau Lakes Amateur Radio Club inc. Saturday, May 12, 2007, Smiths Falls ON
Annual K.W.A.R.C. Field Day Doon Pioneer Village June 23rd - 24th	Central Ontario Hamfest & Fleamarket Guelph ARC & Kitchener Waterloo ARC June 9, 2007, Fergus ON

KWARC Directors 2006-7

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

The Executive Committee Chairs

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

The Pres Sez Bob Pelling VE3XNB



Hello again.

To start with I would like to take this opportunity to express my most sincere condolences to the Riddell family at the passing of

Dr. Andrew (Drew) Riddell VE3AOR. May he rest in peace.

Winter has finally arrived. Ice and snow cover the ground. Traditionally this means it is now time to get out there and work on those antennas. Remember antennas that are put up in the ice and snow tend to stay up in the good weather.

February's meeting will be our annual "Show and Tell". Time to get out those special little treasures, or those extra special projects, bring them along and show them off. If you don't have any special goodies, dig up your best HAM RADIO related story and share it with the group. Feel free to bring along a friend to join the fun. That is Monday February 5, 2007.

Also as I mentioned last month, 2007 is the 100th anniversary of the Boy Scout Movement. Now would be a good time to introduce any Boy Scouts or Girl Guides (Girl Scouts is an American term for Guides) to our wonderful hobby of HAM RADIO. At one time, and I am told it still exists; Scouts could earn a "Radio Mans" merit badge. I am checking into the details of this with a Scout leader friend. I will pass along what I find out, however you just might be able to help a Scout earn a badge. We

may also be able to draw some new younger blood into the hobby.

Saturday February 3, 2007 is the start of the new Flea Market/Hamfest season. Saturday is the St. Catharines flea market and Ham Fest. Unfortunately due to an IMPORTANT family matter I will not be able to attend. (Moms 80th birthday HAPPY BIRTHDAY Mom.)

Our own Flea Market along with the Guelph Club is Saturday June 9, 2007, again in Fergus. We are in need of volunteers to help out with different jobs there. The more volunteers we get the shorter the time each one has to work. Please also remember, a lot of the Clubs operating revenue comes from our portion of the profits from this event. More information will follow. Now is the time to start and dig out the things you want to get rid of to make room for new things.

Also in June is Field Day. We are again booked into Doon. If anyone has a suggestion of another more suitable or better site please let someone on the exec know and we will examine the suggestion. Now is a good time to start and plan for Field Day. We will be in need of Band Captains, Operators and people just to help out. Again more information is to follow. This would be a good time to bring out some Scouts and let them see what's happening.

That's all for this month.

73 de Bob VE3XNB ve3xnb@rac.ca

*Kitchener Waterloo
Amateur Radio Club*

*General Meeting Minutes
Jan 2007*



Past President Gord Hayward VE3EOS presiding. President Bob VE3XNB was absent due to sickness

Gord Hayward opened the meeting at 7.30 pm and welcomed guests and members to the Jan 2007 general meeting. Twenty-six members were present. Adverse weather and driving conditions limited attendance.

Gord expressed on behalf of KWARC, condolences to the Riddle family present on the loss of our long standing club member Dr. Drew Riddell VE3AOR who became a "SK" Drew and his wife Mary VEMWE have been members of KWARC and attended all meeting religiously.

Gord passed the microphone amongst the members for the introduction of call signs of members and recognition of guests

Presentation of the Evening

Gord announced club member and guest speaker for the evening. Ken Willmott VE3MIX. Ken gave a very interesting power point presentation on the history and invention of the microphone. Ken displayed the invention of the microphone from the birth of the first microphone in 1869 by inventor Phillip Reis of Friedrichsdorf Germany.

In later years, Alexander Graham Bell, the inventor of the Telephone expanded on this invention and designed what is called the Centennial Microphone that was specific to the use of the Telephone. Graham Bell called his microphone, the variable reluctance armature mechanism. Ken continued his presentation and described variations of this

patent microphone to such designs as Dynamic, Condenser, Piezoelectric, variable resistance, to mention a few

Ken fielded questions from the membership after the presentation.

Thanks to Ken VE3MIX for this very informative and interesting presentation on Microphones.



Coffee Break call at 8.35 pm

Ham Courses. Ron Gimbel VE3DBD announced that Ham study course will commence for 2007 and encouraged interested parties to check out the details on the KWARC web page. There is stillroom for candidates to sign up. The start date is March 8th. Ham courses will run on the Thursdays of each week until completed. Gord Hayward hosts informal courses for the “advance course” if sufficient interest arises. Contact Gord VE3EOS if you are interested in upgrading to “advance” qualifications, a “must have” level if you wish to operate with extra power on the HF bands.

Technical Report.. Tedd Doda indicated that there were no malfunctions or action required by the technical committee, but did invite all club and non club members to “check-in” to the Wednesday night KWARC Net held on club repeater VE3KSR 146.970 pl 131.8 starting at 7.30 pm

Treasury Report. Club accounts are in the process of being changed to a new bank to gain banking advantages and minimize operating costs. Transaction should be completed by next month. Financially, the club is in a favorable condition.

Field Day Co-coordinator. The club requires a volunteer to co-ordinate this year’s field day event to be held at Doon Pioneer crossroads on Homer Watson Dr. The duties of the co-coordinator would be to insure that adequate provisions have been acquired, for food, operators, facilities, and score keeping of the station contacts for submittal to ARRL.

With the recent changes in the operating restrictions of “Basic” license holders, the club will welcome those that would like to peruse making contacts on the HF bands in this competition and fun event. Please call our Prez Bob VE3XNB if you are able to fill this requirement. Help is available to you in doing this.



50/50 Draw Winner. Bonnie VA3BLM won this months draw, and we seen a big smile on her face as she collected the prize.

Meeting called for adjournment by Bill Riddell, VE3WFR, second by Tedd Doda VE3TJD. Adjournment at 9.27pm

Thanks to all that braved the weather and attended this meeting. Next months February meeting topic is “Show-n-tell” and members are encouraged to bring and display their projects or interesting ham equipment to “show” the members.

Minutes by club Secretary

Ben Sasiela

VE3ST

Boatanchor Rehabilitation - The R390A Project



After the alignment there was one last adjustment to do - setting the IF gain. This is tricky because the setting involves the tradeoff between gain and noise. The real goal in receiving weak stations is to pull them out of the noise. Weak requires more gain but more gain means more noise. Chuck Rippel WA4HHG has posted a great procedure on the web. With a terminator for the antenna and maximum RF and audio gains I peaked the antenna trimmer for maximum noise at one of my favourite frequencies, 3800 kHz (the usual AM hunting ground on 80m). Then I adjusted the IF gain for approximately -5 db on the line level meter (somewhere from -4 to -7 db). This gives a good compromise on all bands. After setting the gain, the carrier level meter zero had to be reset. Now that the radio had been properly set up I wanted to see if its performance was as good as it should have been.

The first question was how good was the carrier level meter. I used a signal generator with attenuators and a buffer amplifier to provide reference signals into the set. Over a range from 8 uV to .4V (that's 94 dB!) The meter gave a straight line response with a 20 dB change for a 20 dB change in signal. It was dead on what it should have done. The 0 dB point was about 8 uV at the antenna so there was some delay in the AGC. This means that a reading of 25 dB corresponds to S9 and 0 dB to S5. The AGC was also linear so I ran the AGC to an external S meter but it doesn't work with weak signals. I plan to add a log amplifier to measure the IF directly when the AGC isn't active to read weaker signals.

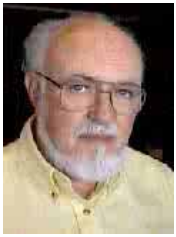
The second question was how

good is the AGC. I modulated the signal generator at 30% and ran the signal from 10 dB to 80 dB on the carrier meter. Over this change the audio level only changed by 4 dB. Not only is this good control, but 80 dB corresponds to 80 mV. There was no front end overload with this huge signal at the antenna.

Now that I had established how big the signal could be, how low could it get before it became unreadable. Again, sensitivity is a compromise between signal and noise. To measure sensitivity, I again followed a procedure suggested by Chuck Rippel. Like the IF gain set up, I set the RF gain to max with no AGC and set the audio gain with a terminated antenna to read -10 dB. Then I connected a signal generator at 30% modulation at 1 kHz audio to the antenna (again this was done at 3800 kHz). I adjusted the RF level on the generator to read 0 dB on the audio meter. This level corresponds to a 10 dB S/N+N sensitivity. The specification of the R390A is 3 uV but I measured between 0.4 and 0.5 uV.

The frequency stability is also excellent. I haven't done a hard measurement on it but I use the set to monitor the stability of my crystal sensors. One was giving some very funny readings, but listening to it with the BFO on showed that the frequency effects were due to the liquid on the crystals evaporating. I really do run crystals immersed in liquids!

The bottom line is that I have a great receiver that meets or exceeds its specifications. I use it all the time now and have had no problems with it. Next time I open it I have a few more things to do. These include replacing a few capacitors and a selenium rectifier but these are preventive rather than fixes.



It was 1957 that I started in broadcasting and now it is 50 years later. I got reminisin' about the changes in electronics in that time and thought you might be interested.

First, CFPL Radio. I started just at the end of the large live drama programs that are all gone now. We shifted into records, and many of them were 16" discs played on large turntables. Commercials were often recorded on acetate discs – a thin metal base with an acetate coating and cut on a lathe. There was an extra hole near the center to keep them from slipping. Audio tape came into its full bloom. That has all been replaced with digital recording.

CFPL-TV was one of the early private stations in the country, and those of us who worked there in the beginning years have been credited with 'inventing' many of the methods used to get pictures into your home. At the TV station we had no audio recording equipment. Movies were projected onto an iconoscope – a camera with a 5" glass plate coated with selenium particles which was scanned with an electron beam. The control unit had 11 knobs on it that someone had to constantly adjust when a film was playing. Everything was in black and white, of course.

The studio cameras were 4" orthicons with almost as many controls, and the operator has a small monitor and oscilloscope for each camera to make adjustments with. Cameras developed into much smaller devices with 1" vidicons and now are $\frac{3}{4}$ " CCDs and colour. It took two men to carry an

orthicon camera, and when colour arrived the cameras had 3 orthicons in them and 4 men to carry one of them. Today you may even have a tiny camera sitting on top of your computer that makes a better picture than any one of these old ones.

Video tape didn't arrive until 1961. The tape was 2 inches wide and one tape would run for 1 hour. The image was pretty good, but often the picture would break up and the operator would tweak some controls or spray a cleaner on the heads to fix it. Splicing the tape was a very rare thing because the tape could not be recorded on again if it had been spliced. The splicer was a special rig with a microscope and a guillotine type cutting blade. As a result we treated each taping as though it was a 'live' show. Those machines were 7' tall, 8' wide and 2' deep. Today you probably have a very small VCR near your TV set, or may even be using DVDs. Magnetic tape is pretty well a thing of the past.

Late in 1961 I moved to CFTO-TV which was built with all colour equipment (except for video tape), but the government wouldn't allow us to broadcast colour until the CBC had made the switch, so we put a filter in the transmitter input to block the colour. Very soon after that Ampex came out with the Editec machine that electronically edited video. What a difference that made to production methods. We even started doing frame by frame animation and I was part of the first team to do that in Canada.

From 2" tape, we saw progress to 1" tape, then $\frac{1}{2}$ " tape, then back to $\frac{3}{4}$ "

tape with colour. Editing required two players and one recorder with a special control panel to permit precise positioning of the tape in each machine before each machine rolled into position and the record machine 'dropped' into record at the specific frame.

Of course, today all video footage comes off of the camera direct into a digital storage unit and the production is created through a computer with both video and sound editing and effects. The end result is recorded onto DVD.

All of the transmitters involved were tube devices, slowly moving into solid state with large tube final amplifiers. Lots of power required and lots of heat produced. Most transmitter building were heated by the transmitter alone. Today, your ham radio transmitter is likely all solid state.

The amateur operator has many digital modes available. By the way, did you know that television transmission uses only one sideband? Guess who created SSB and made it practical –

the amateur did that.

I remember my Grandfather (one of the true Bell Pioneers) telling me about all the changes he saw in his lifetime. From no telephones, to the dial system and transoceanic calls). I've had the privilege of seeing and participating in all of the changes I've talked about here. Those many and great changes came about in the same time frame as what my Grandfather saw, and we are now at the beginning of the digital world.

The next generation will see another logarithmic advance that we can't even imagine. Grandpa couldn't image that I'd have a computer in the house and be typing this article on it. 50 years from now the home computer will be replaced with, perhaps, a couple of suction cups that will stick on the head, and whatever you want to happen will.

Don't even ask me to imagine what Ham Radio will be like.

[Treasurers Report Al MacDonald VA3TET](#)



We have finally transferred our Bizsmart account into a small business account (Bizsmart are discontinued this service) and we are able to issue cheques against the new account.

Our major expense (\$1133.00) for insurance has been processed and we are still in the black!!! (balance is over \$4000.00)

almac

Tech report and personal ramblings for February 2007



Welcome to Winter! Over the last few weeks, the phrase "Let it snow, let it snow, let it snow" couldn't be more true. A couple good snowfalls

makes many of us forget about the fantastic weather we had up until the first week of January.

So guess what time it is?? It's antenna time! I'm sure you've heard that an antenna installed in the Winter performs and lasts much better than one erected during the Summer. Well, I for one believe this. All my tower mounted antennas were installed some 12 years ago, and other than one element breaking off of my 6 meter Yagi, they still work as good as the day I put them up. Contrast that with the "Mystery" antenna which was installed in the middle of Summer. I disconnected the feedline from my trusty old TS-120S and water came out of the coax :) I knew I should have waited till Winter!

Thermor Update:

Last month I gave you some ideas on how to power your "power hungry" Thermor weather station from solar panels. I thought that mine finally gave up, as I noticed the WX receiver wasn't getting any more updates. Well, it turns out that one of the old NiCads I used developed an internal short (you've heard of the "whisker" issue with NiCads) which dropped the voltage below the minimum required. I tried to charge it back up and the charge wouldn't take. Enough playing with used crap, so I installed 2 brand new 1500mA NiMh cells and they are working just fine. Battery voltage across the 2 new cells stays at about 2.78 volts, and that was with 4 inches of snow on the solar cells!

If you have tried any of the Tech Tips that I have written about, please send me an email and let me know how you made out. I know Kevin, VA3KGL has had success with the solar panel project, so let's hear what YOU have been doing.

Digital repeaters? The latest fad coming out of Japan is digital transmissions on our 2 meter and UHF bands. Icom has a couple radios available which use the D-Star format. The advantages/disadvantages of analog vs digital are yet to be determined, but the main advantage of running digital is that 2 stations occupy less bandwidth than one conventional channel, or frequency. This means that a D-Star repeater could be placed in between 2 standard analog repeaters and cause no interference to either one! Amazing! Everyone knows that getting a repeater frequency pair is difficult.... is this the answer?

Unfortunately, it the old "chicken and egg" game again. Nobody is going to buy a digital radio without a repeater around, and no one is going to put up a digital repeater without knowing that someone will use it (sounds like what the club went through with the 220 repeater, eh!). The technology is still young and hopefully the pricing will come down.

Other than that, the clubs equipment is running flawlessly with no hiccups, and no trouble reports.

Till next month,

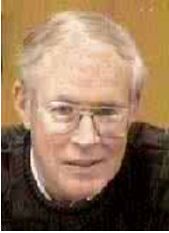
Tedd, VE3TJD

Technical Chairman for the KWARC Inc.

ve3tjd@rac.ca or

tedd@ve3tjd.com

[ARES IN ACTION Larry Gorman VE3LGN](#)



Emergency Services is currently in standby mode. However, Ben VE3ST and Larry VE3LGN did attend the quarterly Regional Social

Services Emergency Planning Advisory Council meeting January 25. The "not if but when" issue of a Pandemic (world wide epidemic) was part of the ongoing planning strategies. Our local Regional Health department is developing plans for dealing with a variety of possible situations. A minor consolation, perhaps: there will be considerable advance warning of an approaching event. Most people should be able to take "evasive" action for the first wave. In any case, there is currently no specific cause for concern.

However, there are other concerns that may have an equally bleak outcome. Maybe it's time to cut down on those second portions and /or to do a follow up on some of the "time to quit smoking" promos. The associated diseases can be equally devastating in a very personal way.

We are still working on plans for a wide participation emergency simulation at one of our spring club meetings. One of the best ways to gain confidence in the face of an emergency is to be part of the response team that trains to deal with emergencies.. Ours is a communications hobby. If recent disasters such as Hurricane Katrina, the Indian Ocean Tsunami, .. and even The Ice Storm of 1996, are any example, there will be a need for alternate mode message passing, between separated

families, the various social agencies, municipal service workers, etc. Only Amateur Radio operators can supply reliable connections, and that is us. Us includes -- you.

Ben and I are looking into organizing a follow up event in June that will operate from the Regional Emergency Headquarters.

Volunteers will be accepted from those who participate in the spring training exercise. They will be assigned in small teams to strategic locations around the Municipalities. Each will have a sealed envelope containing problems pertaining to their specific site.

Stay tuned. In the meantime, check out your radio batteries. I have seen two stores recently in K-W with 24 pacs of Alkaline AA's at under \$10. How is your battery supply? Batteries today have a very long shelf life. Why put off buying until faced with a dead power supply?

Remember, in an emergency situation 911 on your radio calls up the Regional Emergency response switchboard. Our club repeaters are rather quiet these days. How about some weather condition reports from those of you commuting, or on service trips out side the Region. Only the phone patch (still free to non-members) requires a *-519 prefix.

73 Larry VE3LGN
K-W Amateur Radio
Club

Emergency Services
Coordinator

David Johnson
dbjohnson@rogers.com



519-579-4110
Office



I HAVE MOVED!

My Real Estate Business is now located at
Remax Twin City Realty Inc. Brokerage
901 Victoria St. N, Kitchener

I look forward to meeting you at
the new location.

KWARC Membership Renewal

Please cut out the following renewal form and enclose it with your payment as your renewal date comes due. When you enter the birthday information; just your month and day are needed.

PLEASE MAIL TO: Kitchener-Waterloo Amateur Radio Club 133 Weber Street North, Suite #3-138 Waterloo Ontario N2J 3G9	
First Name	Call:
Address1:	Last Name:
City:	Address2:
Postal Code:	Email Address:
Phone Number: () -	Birthday: <u> </u> Month <u> </u> Day
This is a [] RENEWAL or [] NEW APPLICATION	Kilowatter Preference [] MAIL [] From WEB
<input type="checkbox"/> Full Membership @ \$20.00 <input type="checkbox"/> Family membership adder @ \$5.00 <input type="checkbox"/> Seniors Membership @ \$10.00 <input type="checkbox"/> Student or Challenged individuals @ \$10.00	<input type="checkbox"/> Associate (non voting) @ \$10.00. I am a member of the _____ Club. <input type="checkbox"/> Printed Kilowatter Newsletter "Mailed" @ \$8.00
Comments:	
Total Amount Enclosed: \$	Your Cheque Number :



INFORMATION GATEWAY SERVICES

Kitchener-Waterloo Cambridge and Guelph

Information Gateway Services
(Kitchener-Waterloo) Inc.
151 Frobisher Dr., Suite E-118,
Waterloo, Ontario, N2V 2C9

Owner Operator : Don Sinclair VE3ICD

Information Gateway Services (IGS) provides a complete range of Internet services ranging from entry level personal accounts for beginners, right up to the requirements of large commercial organizations.

SPECIAL OFFER TO KWARC MEMBERS

- No activation fee on standard personal accounts for KWARC members. A \$25.00 saving
- \$50 per six months or \$75 per year paid in advance for 5 hours/month --- (extra hours at \$2.00 per hour).
OR \$15/month \$150 year for 30 hours/month (this popular package has just been increased from 20 hrs)
- N E W Now get **UNLIMITED FREE** time from midnight until 7am
- One free KWARC e-mail address *urcall@kwarc.org* for KWARC members
No coupons or other discounts can be used in conjunction with these special offers to KWARC members ONLY.

For complete details, call Don Sinclair VE3ICD at 884-7200