



The Hamilton Amateur

The Hamilton Amateur Radio Club Newsletter – 75 Years of Amateur Radio 1932-2007

The Hamilton Amateur Radio Club
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 Est. 1932 Inc. 1956
<http://www.hamiltonarc.ca/>

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Next Meeting

Meeting room opens at 7:00 p.m.
 Meetings begin at 7:30 p.m.

Wednesday April 16th

This month, Bob McKinley, VE3GIV, from the Hamilton Wentworth Police, will speak to us about Police radio communications. If the Police Command Vehicle is not being used

in emergency service at the time of our meeting we may have it on site for a tour in connection with Bob's talk.

The meeting is open to both members and visitors. Hope to see you there.

President's Message

by Lorraine MacPherson, VA3NZ



Now that warmer weather is here and the snow disappearing people are venturing outdoors and amateur radio activity is going outdoors also with a number of events taking place.

The annual pancake and maple syrup breakfast at the Erland Lee Museum was held this past weekend and for a second year the Hamilton Amateur Radio Club was invited there to operate a demonstration station. The day went well. We arrived shortly after 7 am and set up the antenna, table and equipment. There were interested folk that dropped by and asked questions about Amateur Radio. Unfortunately there was a contest on the air that limited the amount of information we were able to exchange during each QSO, so the interested folk didn't get a chance to talk on the radio as much as we would have liked. However we did some work on packet radio this year.

The museum volunteers explained that this was the highest attended Pancake day ever! As this was a major fund raising event for the museum we decided to enjoy the breakfast and by so doing support the Erland Lee House. During the day, The Community News dropped by and took pictures for the next paper to be published so lets hope we make the cut. The community news did publish a press release prior to the event (reprinted below) which makes reference to our amateur radio demonstration.

Participants included Jerry VE3JSO, Paul VE3XPS, Joan VE3JNX Lorraine VA3NZ who together manned the HARC station, VE3DC, and answered questions. Roger VE3UFZ and John VE3DVV dropped by to give us moral support and enjoy breakfast.

I am pleased to thank all those who participated in making this a good club event.

While we are on the topic of events, here is another one coming up soon. The CANWARN weather observer training session, which is open to anyone, not just HAMs, will be taking place on April 12th at the Nash Auditorium at Chedoke Hospital from 9:00 A.M. until 12:00 Noon. The doors will be open from 8:00 A.M. to register before the presentation. This training, sponsored by Environment Canada, is excellent and free. Come and bring a friend.

There will also be a demonstration station set up at the Bay Front Park on May 10th where the City of

Club meetings – 3rd Wednesday each month – 7:30 pm (except July and August) at Hamilton District Christian High School, 92 Glanaster Road corner of Rymal Road (Hwy. #53) and Glanaster Road. Parking on location. Complimentary refreshments.

Hamilton holds its annual Emergency Preparedness Day. We have done this event for a number of years, because Amateur Radio is officially recognized in the City's Emergency Preparedness Plan. If you would like to be involved, or just come out to see what is going on, circle the date in your

calendar, and talk to Lorraine or Jerry. There will be a display of amateur radio capabilities and an opportunity to talk to the public and to other emergency responder groups. If you have never been down, it is worth a visit. There is lots to see and things the children and grandchildren will be interested in seeing also.

There is going to be a Great Ride and Stride this year on Sunday, May 25th at the Bayfront Park. For a number of years the Amateurs were invited to provide communication for this event when it was held on the Linc. but we have not received an invitation so far this year. If we do receive a request for assistance, that information will be passed on to members.

Coming up in May is the annual Home Brew contest and Show and Tell night. I hope a number of members are planning to participate and are getting ready by brewing up a project for the competition. If you know of someone with an idea to show and tell please invite them to join in at the May meeting.

In the meantime I hope everyone will be there at the April meeting for Bob McKinney's presentation on Police

MARCH 29/2008
www.stoneycreeknews.com

Celebrate spring with pancake breakfast

Join the Erland Lee Museum in celebrating nature's first signs of spring with its annual Maple Syrup Event and Pancake Breakfast.

On Saturday, March 29, from 8 a.m. to noon (snow date, April 5), bring the family and explore the heritage of one of Stoney Creek's famous families and enjoy breakfast at the Women's Institutes' museum.

Breakfast includes sausages courtesy of Highland Packers Ltd., local maple syrup and all-you-can-eat pancakes cooked by Stoney Creek's Battlefield Optimist Club. Also available is no-sugar added syrup donated by E.D. Smith.

The Erland Lee Museum is pleased to welcome back The

Hamilton Amateur Radio Club who will do a Ham radio demonstration and special broadcast from the museum.

Thank you to community sponsors, Highland Packers Ltd., E.D. Smith & Sons Limited, Fortinos-Fiesta Mall, Tim Hortons, Rymal Road and Highway 56, Battlefield Optimist Club, Hamilton Amateur Radio Club and the Women's Institutes.

The Erland Lee Museum is at 552 Ridge Rd.

Admission, \$4 for children, \$8 for adults. New this year, a special family rate, \$20 (two adults and up to three children).

For more information, call (905) 662-2691 or visit www.erlandlee.com.

communications. Until then we'll listen for you on the air.

New Marine Forecast and Warning Program

reported by Roger Pimm VE3UFZ

The following is a summary of a notice that the Meteorological Service of Canada (MSC) of Environment Canada issued back in November 2007. The changes discussed here will in all likelihood effect the way weather reports and forecasts are delivered on the standard weather channels which are operated by the Canadian Coast Guard and Environment Canada. These are the basic channels which are usually noted as WX1, WX2, etc in publications and on your rig or scanner. WX1 in this area is located at Pearson Airport and broadcasts with a frequency of 162.400 MHz. I have this frequency locked in on my mobile rig since I am always interested in the marine situation on Lake Ontario and surrounding area, especially since taking a weather course through the Canadian Power and Sail Squadrons.

HARC 2007-2008 Executive

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Some of the changes will include regular issues of: -a technical marine synopsis, -an extended wind forecast covering 3 to 5 days, -a separately issued wave height forecast, -a discretionary marine weather statement, and a localized marine warning bulletin warning mariners of hazardous conditions such as a high water level or a squall warning.

A new website will also be introduced giving mariners user-friendly online access to marine observations, forecasts, and warnings.

(continues on page 5 ----)

Matching an End-Fed Vertical

by Bob Zimmerman, VE3RKZ

I enjoy using an end-fed vertical antenna on 40 meters. The take-off angle (19.0° for a half-wave vertical over real earth on EZNEC) usually cannot be equaled with a horizontal antenna. But so many hams settle for a quarter-wave vertical, which requires an extensive ground plane or counterpoise system for moderate efficiency! A quarter-wave vertical fed at the bottom has a real impedance of 37 Ω. This means the ground loss must be small compared to 37 Ω. For a radiation efficiency of 90 %, the ground loss resistance must be less than about 3.7 Ω. This has always kept me from being impressed with quarter-wave verticals.

Alternatively, if a vertical is half a wavelength ($\lambda/2$) at its operating frequency, the driving point impedance at the bottom is close to 1000 Ω. For an efficiency of 90 %, a ground resistance of 100 Ω will work very nicely. This is easy to achieve with 1 or 2 copper ground rods.

So the only real problem is how to match a High-Z to 50 Ω coaxial cable. For verticals between a quarter-wave and a half-wave in height, the impedance will always have an inductive imaginary component (+). For such impedances, we can readily make use of an 'L-match' network as shown in Figure 1, consisting of a shunt capacitance and a series inductor leading to 50 Ω coaxial cable.

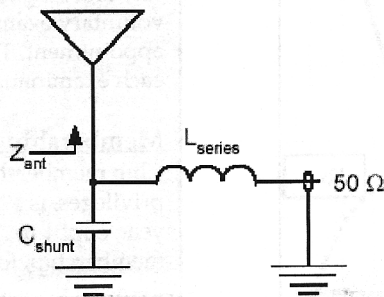


Figure 1 – L-match network, using a shunt capacitor and a series inductor.

The equation we must solve is a 'complex' equation, equivalent to two 'real' equations. We must solve:

$$\frac{1}{\frac{1}{Z_{ant}} + \frac{1}{jX_{shunt}}} + jX_{series} = 50\Omega$$

The plot in Figure 2 shows the EZNEC calculated vertical feed impedance (at the bottom) for a 2.5 inch diameter mast for vertical heights of 0.25λ through 0.45λ , where λ is the operating wavelength. The required X_{shunt} and X_{series} are plotted in Figure 3. λ may

HARC 2006-2007 Chairs

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be calculated in meters by dividing the speed of light (300×10^6 meters/second) by the frequency in MHz. For example, for $F = 7.200$ MHz,

$$\lambda = \frac{300}{7.200} = 41.66 \text{ meters}$$

If you still prefer to use feet, multiply the answer in meters by 3.2808 to get feet.

DESIGNING A VERTICAL WITH FIGURES 2 AND 3

- (1) Choose the vertical height of the antenna in wavelengths, between 25% and 47%.
- (2) Use Figure 2 to find $Z_{ant} = R_o + X_o$ in Ohms.
- (3) Use Figure 3 to find X_{shunt} (in negative Ohms) and X_{series} (in positive Ohms).
- (4) Change X_{shunt} and X_{series} into C_{shunt} and L_{series} .

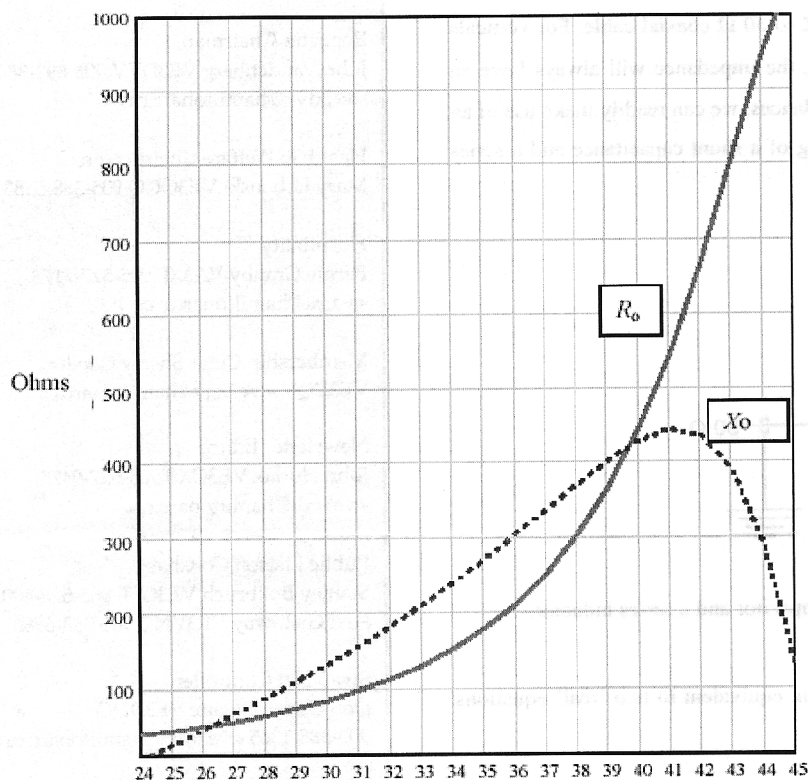


Figure 2 – Vertical antenna impedance $Z_{ant} = R_o + jX_o$. The solid line is R_o and the dashed line is X_o .

Important Points

Executive Meetings

HARC Executive committee meets each month, except July and August. Members are invited to attend and participate. The meetings are on the Wednesday following the club General Meeting each month. Ask an executive member for the location.

VE3NCF 146.760 - & 444.075 +

HARC operates VE3NCF repeater, located atop the Niagara Escarpment. It's open for use by all Amateurs. Special features are a privilege of membership.

Nets

HARC "check-in net" is held every Tuesday evening at 7:30 p.m. HARC "swap net" follows at 8 p.m. All contacts are welcome.

Examinations

Amateur radio license examinations are conducted the second Wednesday of each month, except July and August. Contact the voluntary examiners to make an appointment. There will be a fee for each examination.

Membership Information

Club membership, including all privileges, is \$25 per person, per year, Sept 1 to Aug 31. Additional membership, for immediate family living in the same home, is \$1 per person. One newsletter sent to each address.

The Hamilton Amateur

The Hamilton Amateur is published ten times each year (not in July or August). Deadline for article submission is the last Saturday of the month for the next month's issue. Preferred format is .txt file. Articles will be checked for spelling and grammar, but the author is responsible for factual content. E-mail submissions to Editor, John Hudak VE3CXB, <hudakjm@mcmaster.ca>

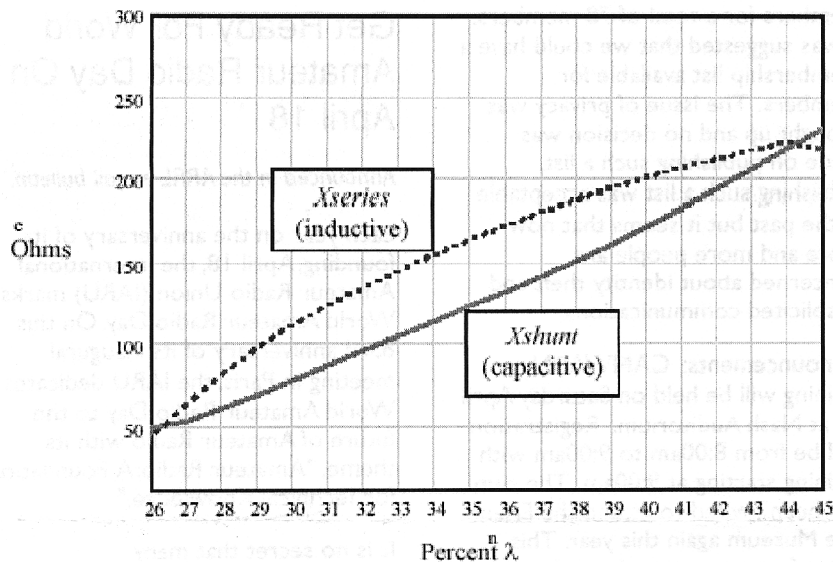


Figure 3 – L-match network reactances to obtain 50 Ω.

EXAMPLE: Design a 0.40 λ vertical for 7.200 MHz.

- (1) From Figure 2, read the antenna impedance for 40% λ. $Z_{ant} = 450 + j430 \Omega$
- (2) Read the L-match reactance values from the plot in Figure 3.

$$X_{shunt} = -170 \text{ } j\Omega \text{ (capacitive)}$$

$$X_{series} = +200 \text{ } j\Omega \text{ (inductive)}$$

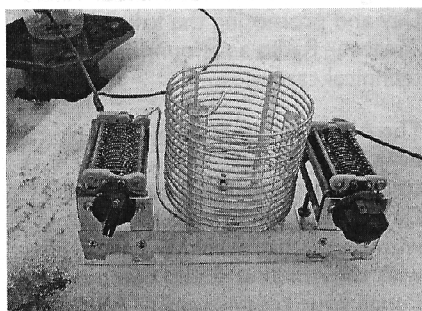
- (3) Convert the reactance values to capacitance and inductance for $F = 7.200 \text{ MHz}$.

$$C_{shunt} = \frac{1}{X_{shunt} 2\pi F} = 130 \text{ pF}$$

$$L_{series} = \frac{X_{series}}{2\pi F} = 4.4 \text{ } \mu\text{H}$$

SUMMARY:

With these plots, the hard math work is already done. I hope you will be encouraged to try a vertical antenna. If you need assistance, you may reach me at rkzimmerman@gmail.com



Author Bob Zimmerman, VE3RKZ and a matching network he built to feed a shortened half-wave vertical.



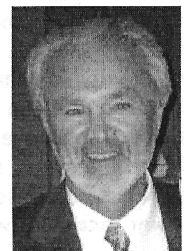
(---continued from page 2)

It was originally anticipated that this program was to be implemented prior to this summer’s boating season. Various outreach activities earlier in 2007 promoted this new service across the country, but the program roll-out date was unfortunately postponed. Extensive testing is ongoing and has regrettably taken longer than anticipated. The new program is now scheduled to be introduced in time for the 2008 boating season and as advertised, will be introduced “seamlessly” to the public.

I sincerely hope that these changes will provide both sailors and landlubbers with more detailed and reliable forecasts. Reports we need, but forecasts can involve life and death decisions when it comes to outdoor activities.

Minutes of the March 19th Meeting

by Secretary, Roger Pimm VE3UFZ



The minutes of the February General Meeting were not read or adopted. However, they were published in the club newsletter covering that meeting. The club secretary extends his apologies for not attending both the February and March meeting, however, minutes were taken via digital recorder and subsequently recorded in the club newsletter.

Education: Mardy VE3QEE reported that 3 students wrote their Basic Ham examination and all three achieved Basic + qualifications. Congratulations to all of the new Hams on their examination results. Two of the new HAM’s were at the meeting and were introduced; Bob Zimmerman and Warren Hyde were welcomed to our gathering. Bob Zimmerman also wrote the advanced examination two weeks after the

basic examination and now has his advanced qualification. Bob already had his HAM certification in the USA but since becoming a Canadian resident required is Canadian certification. Mardy was commended by all for his outstanding effort in creating new amateurs by teaching a consistently excellent Basic Amateur Radio course.

Field Day: Dave VE3DWJ announced that Field Day this year will be on June 28 and 29. Last year we had a total score of 3292 which gave us a ranking of 3rd place in Canada as a 3A operation. Rick VE3BK had some previous year's results for comparison to recent performance:

2004 – 4A – 2nd in Ontario, 2nd in Canada
 2005 – 3A – 1st in Ontario, 2nd in Canada
 2006 – 3A – 1st in Ontario, 2nd in Canada
 2007 – 3A – 1st in Ontario, 3rd in Canada

It appears that the overall result is that as a club we slipped a place in Canada but are holding on to our Ontario ranking. Some members are of the opinion that we could do a lot better and some effort could be made to improve our result this year. More operators, stations and participation in some of the "extra point" activities would help.

Repeater: John VE3DVV reported that the UHF repeater is back on the air with a tone of 131.8 KHz. The VHF and UHF repeaters are not linked together. Some discussion took place as to which repeater (or both repeaters) should be set up for IRLP. It was noted that whichever repeater is selected, that repeater must be monitored by members wishing to participate in IRLP communications. Those of us that don't have UHF capability wouldn't be able to access IRLP if IRLP was set up on UHF exclusively. The executive will have to weigh the pros and cons of any positioning we select.

Membership: Sherry VE3ZQV reported that we now have 70 paid-up primary members and 8 family

members for a total of 78 members. It was suggested that we could have a membership list available for members. The issue of privacy was brought up and no decision was made on publishing such a list. Publishing such a list was acceptable in the past but it seems that now more and more people are concerned about identity theft and unsolicited communications.

Announcements: CANWARN training will be held on Saturday April 12 at Nash Auditorium. Registration will be from 8:00am to 9:00am with training starting at 9:00am. The club has been invited to attend the Erland Lee Museum again this year. This event features a pancake and sausage breakfast. Volunteers will have a demonstration HF and VHF station set up in the barn as we did last year.

Contest: Rick VE3BK reviewed past and future contest activities. The ARRL DX contest is really intended to be a fun contest that hams can enjoy in their own shack. Rick participated in the 2007 contest and had 175 QSO's; in the 2008 contest Rick improved his performance and got 234 QSO's. Rick's advice is JUST DO IT! The CQ 160M World Wide contest was the latest contest the club contest group participated in. In 2007 there were 273 contacts with the result of 1st multi operator Ontario and 1st multi operator Canada. This year the results were TRIPLED! There were a total of 776 contacts.

Contests coming up in the near future are the CQ WW WPX contest at the end of March and the Ontario QSO Party on the third weekend in April. Last year we came in 1st in Haldiman County and 1st in South West Ontario. The QSO Party is a fun contest which is organized such that some of our older contesters can get some sleep between contesting sessions on that weekend.

Moved by Fred VE3GCP, seconded by Ron VA3OUW the meeting be adjourned.

Adjournment: at 9:11 P.M.

Get Ready For World Amateur Radio Day On April 18

Announced in the ARRL e-mail bulletin.

Each year on the anniversary of its founding, April 18, the International Amateur Radio Union (IARU) marks World Amateur Radio Day. On this 83rd anniversary of its inaugural meeting in Paris, the IARU dedicates World Amateur Radio Day to the future of Amateur Radio with its theme, "Amateur Radio: A Foundation for Technical Knowledge."

It is no secret that many professionals in the field of radio, TV, communications and electronics have started their technical education as young radio amateurs. Although Amateur Radio has a different face nowadays -- Digital Communications, Voice over Internet Protocol, Satellite up- and downlinks and more -- it is even of greater value as a foundation for technical knowledge for youngsters. And much more -- it is and should be used as a unique attraction for future young radio amateurs.

World Amateur Radio Day provides an occasion to promote and publicize Amateur Radio. Amateur Radio clubs are encouraged to find suitable ways of celebrating World Amateur Radio Day. Many ways can be considered -- inviting youngsters to visit radio clubs, showing up on the air with a special call sign, organizing a station in a public area with media coverage or publicly honoring amateurs who have made significant contributions. Whatever method is chosen, clubs should think about publishing a press release for the media, giving the background to World Amateur Radio Day and promoting the value of Amateur Radio as a foundation for a technical career.

The ARRL will be very pleased to hear how Amateur Radio clubs chose to celebrate World Amateur Radio Day. Share your stories and photos with us, so that they may be shared with the Amateur Radio community. E-mail your submissions to ARRL

Affiliated Club/Mentor Program Supervisor Norm Fusaro, W3IZ <clubs@arrl.org>. Please be sure to put "World Amateur Radio Day" in the subject line. -- Information provided by IARU

The Date of Easter

Easter came really early this year. The fact is, none of us will see it this early again.

By tradition: Easter is always the First Sunday after the First full moon after the Spring Equinox. This year the first day of spring was March 20th, a Thursday and the first full moon following that was on March 21st, Good Friday so Easter occurred on March 23rd. This dating of Easter is based on the Lunar Calendar that Hebrew people used to identify Passover, which is why the date moves around on our Roman calendar.

Here are the interesting facts: This year is the earliest Easter any of us will ever see the rest of our lives! And only the most elderly of our population have ever seen it this early (95 years old or above!). And none of us have ever, or will ever, see it a day earlier!

1) The next time Easter will be this early (March 23) will be the year 2228 (220 years from now). The last time it was this early was 1913 (so if you're 95 or older, you are the only ones who were around for that).

2) The next time it will be a day earlier, March 22, will be in the year

2285 (277 years from now). The last time it was on March 22 was 1818.

So, no one alive today has or will ever see it any earlier than this year!

Changes to the Newsletter

Every time the newsletter is published we include reference information in sidebars on pages 2 and 3. Taking advantage of new services built into our club website at <hamiltonarc.ca> the executive has decided to replace the personal e-mail addresses of chairpersons and directors with HARC e-mail addresses. Have a look at the sidebars to see the new e-mail addresses. This will make it simpler to send an e-mail as all the addresses will have the format: <callsign@hamiltonarc.ca>. You can also send an e-mail to the executive as a group with <executive@hamiltonarc.ca>

get some sleep for the Sunday portion. This contest is on the weekend after the meeting.

Let me know who can make it there to operate or run a station. There are still openings. We will try to have as many stations as possible on the air.

This is a Canadian contest, specifically for Ontario Ham Radio Operators. The OQP Contest is a Multi-multi, meaning we need as many stations as we can for each band. Consider operating a station, or at least coming out to learn about contesting, logging on a computer, and or being an operator to help us make contacts for our log.

Please let me know and for the newer guys, I will supply directions to the site if you need them.

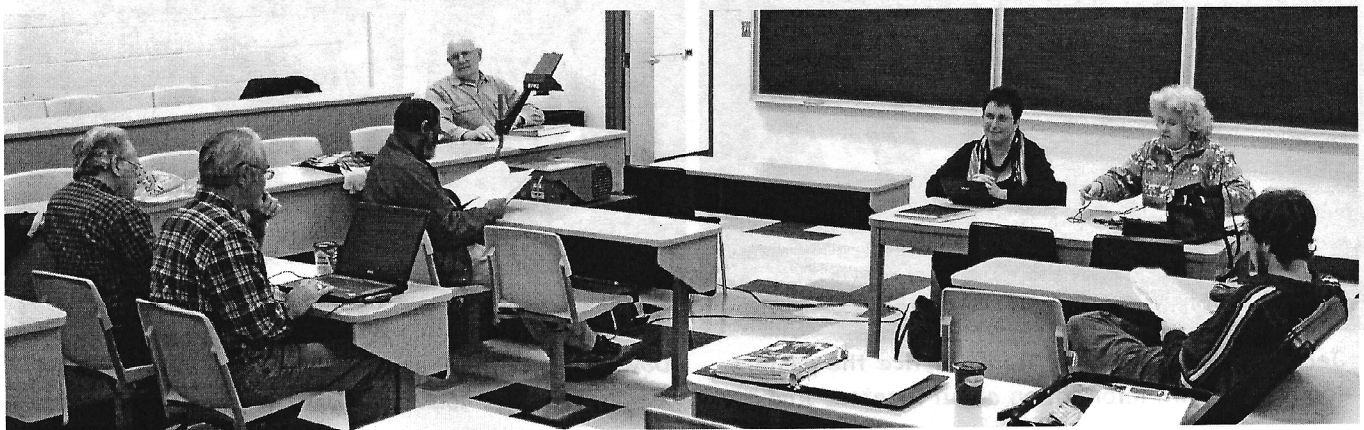
Here is a little background from the Contest Club Ontario web site. The Ontario QSO Party (OQP) began in 1998 under the thoughtful guidance of Bob Chandler VE3SRE. It quickly became a popular event among Ontario hams and beyond. In 2006 the organization of the party was turned over to Contest Club Ontario (CCO) who now manages the event.

In the contest, stations outside Ontario make as many contacts with Ontario amateur radio stations as possible. Ontario stations contact as many amateur radio stations as possible both in Ontario and worldwide. See the full set of rules for the contest exchange, frequencies, modes and categories at <cco.ve3xd.com/oqp/rules.htm>

Contest Corner

by Rick Danby, VE3BK

The next Contest is the Ontario QSO Party on the 3rd weekend of April, the 19th from 2pm Saturday till 1am on Sunday and again on Sunday from 8am till 2pm. This gives us time to recharge our batteries and

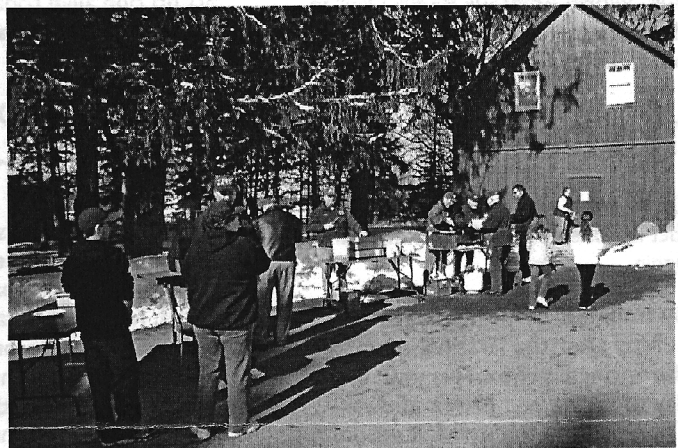


Casey VE3CVP, Roger VE3UFZ, Emsley VE3JAI, Fred VE3GCP, Anita VA3ANI Lorraine VA3NZ, Adam VE3BAU

Pictorial: Scenes from the Erland Lee Museum HARC Demonstration Station



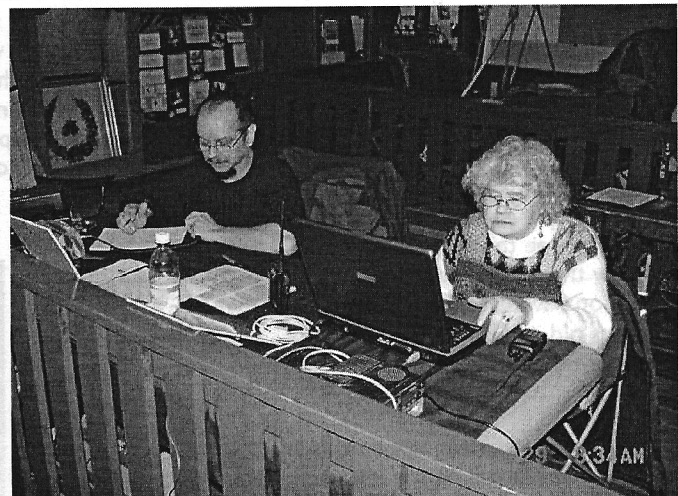
The museum, original home of the Erland Lee family, is located on the escarpment above Stoney Creek.



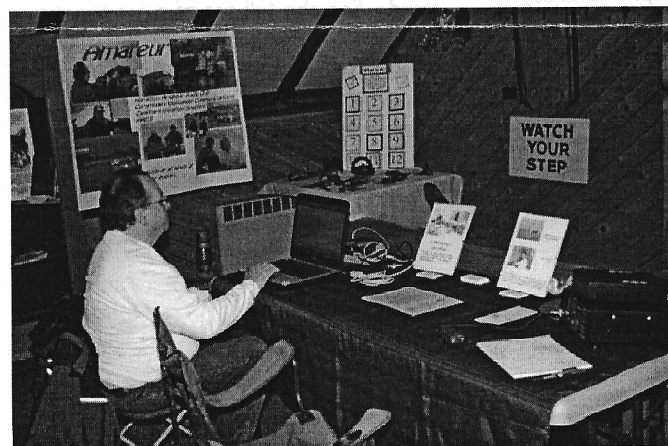
Rotary Club volunteers cook up the pancakes and sausages. Breakfast is served with real Maple syrup.



Joan, VE3JNX, Lorraine, VA3NZ, and Paul VE3XPS at the demonstration station VE3DC



Paul VE3XPS and Lorraine VA3NZ logging contacts upstairs in the Barn.



Jerry, VE3JSO on Packet Radio. Notice the posters on display with information about Amateur Radio.



Downstairs in the Barn guests enjoy breakfast. John VE3DVV looking toward the camera.