

HOT BANANAS

Oakville Amateur Radio Club

May 2005

VE3HB



Meetings: The Oakville Amateur Radio Club meets on the second Monday of the month at 7:30 p.m. The January to April meetings will be held at the Oakville Fire Department Training Campus at 1144 South Service Road West.

Breakfast: We also meet for breakfast at 7am most Saturdays at *Angel's Diner*, at 369 Speers Road.

Coffee: Finally, we meet at Friday 10:30 a.m. for coffee at Tim Horton's on Cross Ave.

Please join us at all these meetings: All current and future radio amateurs are welcome!

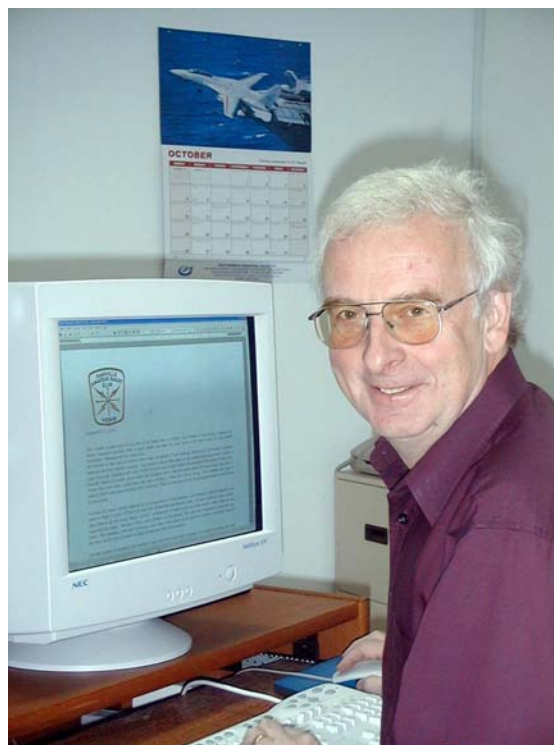
VE3OAK - 147.015 +.600 (131.8Hz CTCSS)
VE3OAK - 444.325 +5 MHz

NET: Mondays at 7:30 pm (except meeting nights and holidays) on 147.015 VHF.

www.oakvilleamateurs.net

President's Message

May – grass is green, the trees show some leaves, warm weather allows you to climb the antenna towers, annual pilgrimage to Dayton is marked on the calendar page, Field Day not too far did I forget something?



This is the last bulletin of 2004/2005-club season and for me personally, last in other ways as well.

My everyday life is hectic and quite often I have to juggle the available time between my duties and a few pleasures.

As my work goes, I am contracting my body and soul to do electrical engineering projects with different companies. Needless to say, in today's very

competitive business world, it is hard work. There is very little time left at the end of the day to spend with my family or at my hobby desk.

For three years I served OARC members to the best of my ability, wearing different hats, depending on my assignment. One year as a Vice-president and two years as the club President. Yes, time is running fast!!

Now I have come to the conclusion that the time has arrived to step down and stay in the background of mainstream decision making for the Radio Club. I also hope, now I will have more time to sit in the front of my radio, enjoy the contest rush or just try to design and build some electronic gadgets. I am still planning to help, when needed and requested. So, you might hear of me from time to time.

It was an honor and privilege to be the President of Oakville Amateur Radio Club. It was a pleasure to meet and cooperate with so many interesting and friendly people.

Stepping down as President, my photo will also disappear from the front page of this bulletin. You know that English is not my first language and therefore writing the President's Message was sometimes a hard task. I have always tried to write the articles with a little bit of humor. Well, what sounded good to me was not always funny on paper.

Here comes the time to prize my – sometimes - harsh critics, my wife and 2 daughters. Many times, while grinding my teeth I had to say, “Yes dear, you are right again” and rewrite the sentence, which just a minute ago I was considering a strike of genius.

I hope that you found my President's message informative and entertaining as well. I wish the best of luck and plenty of inspiration to my successor.

Now that I have spilled the news, I can go back and write about the regular issues of the day. I have poured myself a glass of wine for inspiration and I can start.

At the beginning of April I went to Europe to visit my family in Prague and generally speaking, enjoy the early spring. The grass in the parks was already green, some trees were blooming and the slim girls were wearing miniskirts. Enjoyable visit! I also had a chance to visit an electronic and ham radio store and talk to Czech ham radio guys. The store itself has a large selection of electronic components. I was looking for coax connectors and ferrite cores. The price was right and the selection excellent. Another interesting point

was a selection of magazines. I found three magazines related to construction of electronic devices and ham radio. On top of that they had the German magazine Funk Amateur. Needless to say, I spent a quite a bit of time in the store. Just compare - how many technical magazines can you buy in stores in this country?

After I came back home to Canada, life returned to usual hectic pace. I went to Saturday morning breakfast to tell the guys about some of my travel experience and find out about the latest news here. In the mean time, Jack VE3ITM was organizing the group of the willing to dismantle an antenna tower for Ron O'Reilly, VE3FII. After many years of being an active and experienced ham operator, Ron is moving into an apartment with all the consequences and limitations to his hobby. Here, I should emphasize his generosity and thank him for all ham equipment which he donated to Oakville Amateur Radio Club. Thank you Ron and many happy years of continued ham radio activities!!

On a personal note, it was a sad occasion to see the ham shack being disassembled. All of us have a very emotional attachment to the radio equipment for which we saved the pennies in order to purchase it and then spent countless hours enjoying the hobby. But life goes on and we have to accept the changes. I believe, as long as the radio, cables, antennas and books are passed on for some good use to the club or other ham operators, the memories will be passed with the hardware.

Jack, Russ and I helped to sort and catalogue all Ron's ham equipment. Believe me, it was a lot of stuff. We loaded all the boxes into the back of Jack's van and it was full! We are planning to auction some of the equipment and raise the money for our club.

To dismantle the antenna tower was a bigger task than originally anticipated. The tower was standing in Ron's backyard for many years and all screws were quite rusted. Eight of us went there after the Saturday breakfast to work on this task. The weather was warm and sunny, and the mood was cheerful. As usual, Derek VE3DLL climbed on top of the tower and with his strong voice commanded the crew of “advisors” on the ground, which rope to pull. More than four hours later the antenna was disassembled and the tower was neatly stored in the backyard. Again, thanks to all who participated. Jack was taking pictures to save this occasion for eternity, so I presume Brian, VE3DNF will publish them on our club's web site.

This season we were quite fortunate and had speakers at almost all club meetings. Change is good every once

in awhile. The next meeting, which will be held on May 9th, 2005, will be kept as a free forum for the club members. Anybody can stand on the soapbox and talk about the club issues or general interests related to our hobby. There are few issues, which we have to definitely discuss.

The election will be held in June and we need to nominate the directors for upcoming season 2005/2006. End of the season is also the time for awards.

As every year, we have to find among us one fellow who worked hard the whole year for the benefit of the club and call him Amateur Of The Year.

The second award "Dizzy Izzy" goes to the most active amateur of the year. For the past four years Mike, VA3GRL was holding this honor. Well, it is a time to challenge his position. Think about those awards and contact me or any other director with your nomination.

We also have to discuss the preparation for the Field Day contest. Greg, VA3GGF is again in charge of organizing this action. Same as last year, Mike, VE3QSK and his wife will let us install the antennas, radios and the noisy generators at their country property in Burlington and work the contest for 24 hours in June. Greg promised to publish the rules for this important contest somewhere in this bulletin. Last year we placed second in our category, so I believe this year we can do even better.

Last, but not the least important issue to discuss is the location of room for our meetings. Keep in mind, that the present location at the Fire Department Training Center is just temporary. We are still looking for a place where we can permanently install a club radio station and other equipment and have regular meetings.

So, come to the May meeting and discuss in circle of likeminded friends these issues.

I feel that at the end of this President's Message I should do a short recapitulation of the last year. During the 2004/2005 club season we were quite busy. At the seven meetings of this season, we had very interesting, knowledgeable and entertaining speakers. It is difficult to find such people and we were lucky to have them. Actually, luck has very little to do with it. Thanks to a few hard working club members (Jim, VE3YZA and Russ, VE3JUZ) we achieved such a success. By the way, Jim told me that he has already found another speaker for the next year.

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Education is an important aspect of every hobby taken seriously. In the previous issue of Hot Bananas I mentioned three club members who completed the course and exam for Advanced License. Shall I mention them again? Rick, VE3RWA, Neil, VA3NRH and myself, VE3OKD. This year, the club is also organizing the Basic and Morse code course. Jack, VE3ITM, Peter, VE3HG and Mike VE3QSK are teaching the course. They must be good educators! Nobody quit the course and I have heard that a few people are ready for the code exam. Congratulation.

I should not forget the contesting. I mentioned many times, our club has experienced and enthusiastic radio operators who participate in every competition. Again, few names – Harry, VA3EC, Peter, VE3HG, Ian, VE3ESH, Tony, VE3RZ and Greg, VA3GGF.

Looking at these achievements, I can say – Oakville Amateur Radio Club is doing quite well.

Good luck and continued success in the years to come.

73

Denny, VE3OKD
OARC President

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CQ CQ CQ

Executives & Coordinators

President	Denny Zidek	VE3OKD
Vice President	Brian Kremer	VE3DNF
Secretary	Greg Foster	VA3GGF
Treasurer	Jim Byers	VE3YZA
Director	Russ Schwandt	VE3JUZ

Club Coordinators 2004-2005

Membership	Russ Schwandt	VE3JUZ
Meeting Programs	Denny Zidek	VE3OKD
Emergency Services	Rick Harrison	VA3NV
Assistant Emergency Coordinators	Russ Schwandt	VE3JUZ
	Jack Livingstone	VE3ITM
	Rob Hagley	VA3WXR
VHF Net	Denny Zidek	VE3OKD
	& Club Directors	
Repeater Maintenance	Greg Foster	VA3GGF
	Harry Kosterman	VA3EC
	Gary Hetherington	
VE3TGH		
Web Site	Brian Kremer	VE3DNF
Bulletin Editor	Ian Amos	VE3ESH
Training and Examiner	Jack Livingston	VE3ITM
Public Relations	Peter West	VE3HG

Editor's Note

Welcome to the May issue of Hot Bananas for the 2004 / 2005 club year. Well the year has really passed by quickly, and as far as the club is concerned we have had some great meetings with really good speakers.

For the remainder of the year, there are only 2 meetings left and of course my personal favorite, Field Day.



On a personal note I am off to Kentucky with my family for a few days in a new trailer and I am hoping to try some portable operation. If the trailer works out as a shack on the road, I am going to work on better antennas other than my hustler mobiles verticals. Then maybe, just maybe I will get the blessing from XYL to try "ROVER" ing out in the next contest.

Hope you enjoy the bulletin and see you at the next meeting.

73s
Ian, VE3ESH

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Hot Bananas
The Oakville Amateur Radio Club
PO Box 69615
109 Thomas St., Oakville, Ont., L6J 7R4.

Editor:
Ian S. Amos, VE3ESH

Publisher:
Oakville Amateur Radio Club
President Denny Zidek, VE3OKD

Oakville Amateur Radio Club's

Field Day 2005

It is now May and Field Day is less than 2 months away (June 25 & 26). Boyd by our strong showing last year (third place in Canada, in our category) the team shooting for the top spot this year.

This year the organizing team has settled on a 2A category with a "Get On The Air" (GOTA) station. This will allow us to run 2 HF transmitters and a third HF transmitter designed to allow clubs to entice operators who do not normally operate HF to come out and try their hand. Along with the HF stations we will be running 6 meters, 2 meters and 70 cm. These stations will account for the majority of contacts the team will amass but there are additional bonus points that cannot be overlooked.

There are plans to attempt satellite communications, slow scan TV, packet, APRS and alternate power capabilities. As you can see there are many facets of the hobby we hope to display and operate throughout the 24-hour period.

Mike VE3QSK has volunteered his yard as our Field Day site. Mike is located about 5 miles north of Dundas on Appleby line in Burlington. He has a large lot with lots of room for antennas. There are plans underway for a family event on the Saturday afternoon and evening and everyone and their family is welcome.

For the two primary HF stations we will be running a ICOM 756Pro II and an ICOM 756 and will have their computer logs network to allow each to monitor the others activity. The GOTA station will run a Kenwood TS-850 with its own computer for logging.

The antenna situation has not yet been resolve but look for a combination of beams and wire antennas. .

As always there are many areas that one can become involved in Field Day and everyone is welcome to participate. If you would like to become involved please contact me. Field Day is not only a contest but another opportunity for hams to get together and demonstrate their operating ability while at the same time sharing their fondness for the hobby.

Greg
VA3GGF

Greg VA3GGF - 905-822-8726 greg.foster@sympatico.ca

The DIZZY IZZY

The DIZZY IZZY award is awarded annually at the June meeting to the club member who meets the following criteria. Please keep in mind it is not the number of contacts but the number of countries worked. Here are the official rules.

1. You must be a member in good standing of the Oakville Amateur Radio Club in the current year.
2. Credit will be given once for each country on each band irrespective of the mode used.
3. Any band may be used for which you are licensed including the WARC bands.
4. Any mode may be used for which you are licensed.
5. Repeaters may not be used
6. The ARRL DX country list will be used
7. No confirmations are required. Log extracts must be submitted showing:
 - a. Call sign of the station worked
 - b. The date
 - c. The mode
 - d. The signal report
8. The contest is an annual event and will commence at 00:01 Hrs UTC October 1 and will conclude at 24:00 Hrs March 31 of the following year.
9. The club executive must receive log extracts by May 20th of each year. Each application must be accompanied by a summary showing total countries worked out by hand.
10. The award will be presented to the winning Amateur at the regular meeting in June of each year.

The contest for this year (2004 – 2005) is closed so please review your logs and get those submissions in.

HF Propagation Part 4b - Signal Refraction in the Ionosphere

Signal refraction is dependant on three separate items. They are:

- 1) Frequency or wavelength of the signal. As previously discussed, the refraction of a radio wave decreases as the frequency increases. This means that a signal at 3.5 Mhz will bend (refract) back to the earth easier than a signal at 28 MHz, but the 28MHz signal will travel further when refracted (skip distance). Also, during the day signals with a frequency lower than 10 MHz will be absorbed in the “D” layer which means they will generally be useable for ground wave communication only. As the frequency increases, signal absorption in the “D” layer will decrease and the signal will pass through to the “E” layer and then eventually to “F” layer and will be refracted by to the earth. Depending on where the refraction occurs will determine the amount of skip. “E” layer refraction has a maximum skip distance of approximately 2000 km, where as the “F2” layer has approximately a 4000 km skip distance.

- 2) Degree of ionization. The amount of ionization in the ionosphere determines the Maximum Useable Frequency (MUF), which means a signal at or lower than the MUF can be refracted (this has been discussed in my earlier articles).
- 3) Wave Angle. This is the angle that the signal enters the ionosphere. The angle that a signal will no longer be refracted back to earth is called the critical angle (see Figure 1). The critical angle also relates to the skip distance and skip zone. The skip distance is the distance that a signal makes from the transmitting antenna to where it contacts the earth's surface in one hop. The skip zone or dead zone is the distance between where the ground wave signal fades out and where the point the refracted signal first touches down on the earth's surface from one hop. The skip zone size increases with frequency because ground wave signal attenuation increases with frequency, and compounding this is the fact that skip distance also increases with frequency.

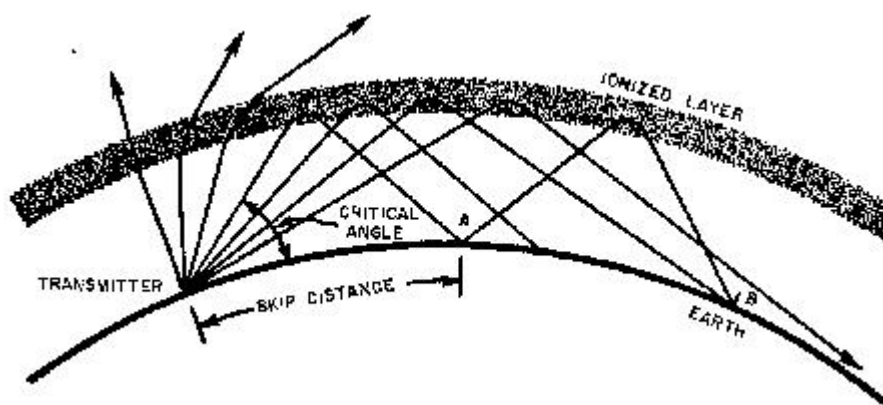


Figure 1 – Signal Refraction in the Ionosphere

Multi – Hop Propagation

To be able to communicate world wide, a signal must be able to hop or skip multiple times. A signal will continue to skip until it runs out of energy due to attenuation or absorption. Remember that for each hop it loses energy because it goes through the ionosphere twice as well as losing energy when it reflects off of the earth's surface. Oceans (salt water) are excellent signal reflectors, but dry desert sand is a very poor reflector. Also note that multi-hop propagation will use a combination of "E" and "F" layer refraction which are all dependant on the above three variables, as well as time of day.

To better understand multi-hop propagation you should run a W6ELProp propagation prediction. Start the program and select the "Predictions - On-screen" menu items. Using my previous example select Prefix = JA, date = 01/20/04, solar flux = 121, and K = 4 and select the "OK" button. Next, select "Show Prediction" button and then select the "Advanced" menu item. I prefer to use the "Sort by Time" option. The prediction is shown in Figure 2.

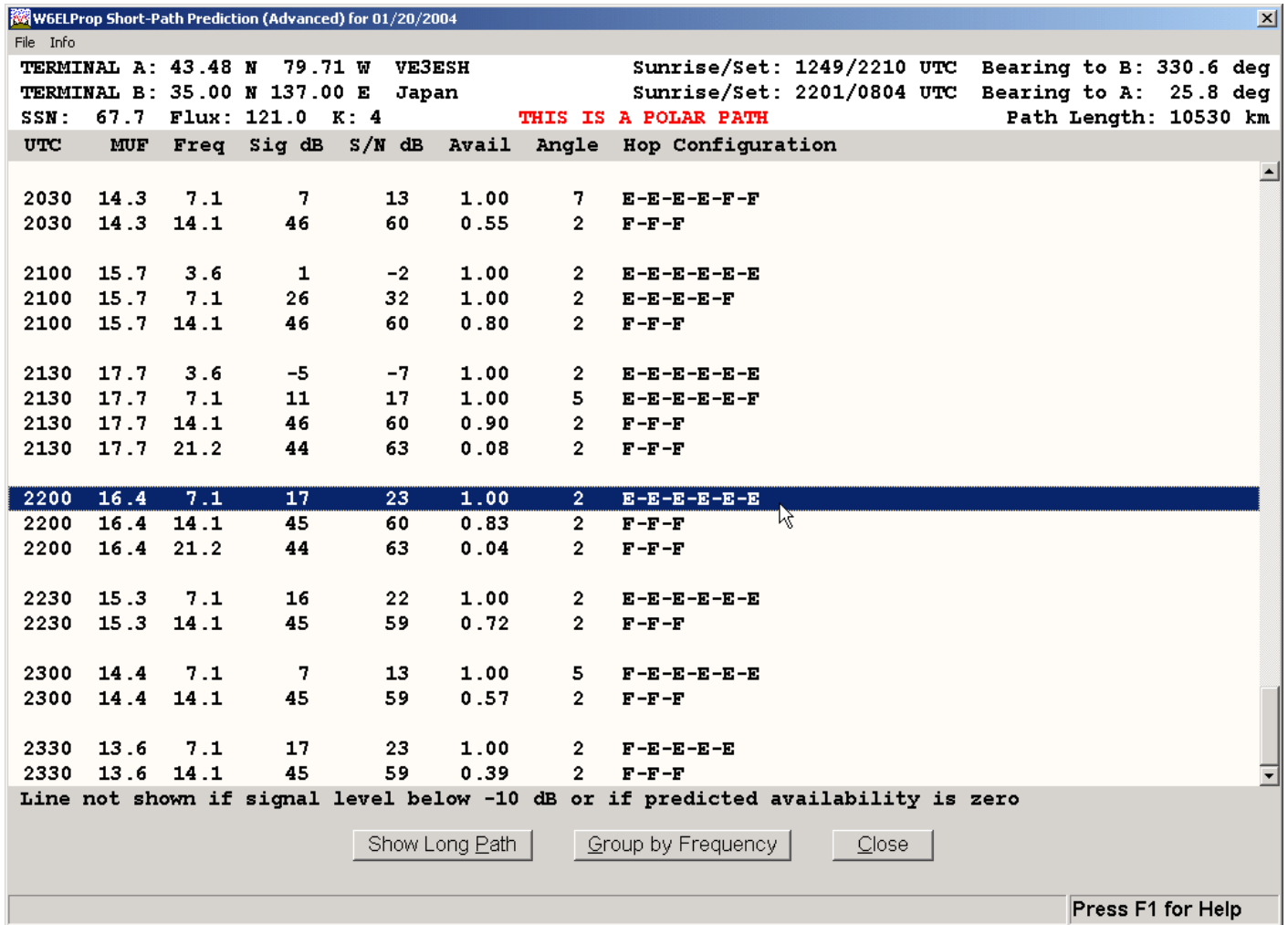


Figure 2 – Short Path Propagation Prediction (Advanced) to Japan

Scroll down until you see 2200 UTC (this is the same as my example in HF Propagation Part 3 – Improving Propagation Predictions). If you analyze the data for 2200 UTC you will see:

1. At 7.1 MHz (the highlighted line) that there is six “E” layer hops (with up to 2000 km per hop this gets the signal to Japan at approximately 10,000 kms away), also at 14.1 and 21.2 MHz there are three “F” layer hops.
2. At 7.1 MHz the signal strength is 17 db with an Availability of 1.00 will mean there is a possible path to Japan however, given the time of day and six hops it would probably make for a poor quality contact.
3. At 14.1 MHz, it is much more likely to be able to make a contact to Japan because signal strength is 45 db with an availability of 0.83 (A - level). Also note that the MUF is 16.4 MHz , and remember signal propagation is generally more reliable as you get closer to the MUF.
4. At 21.2 MHz even though a path is calculated with a signal strength of 44 db, the availability is very low (0.04), and the MUF is below this frequency.

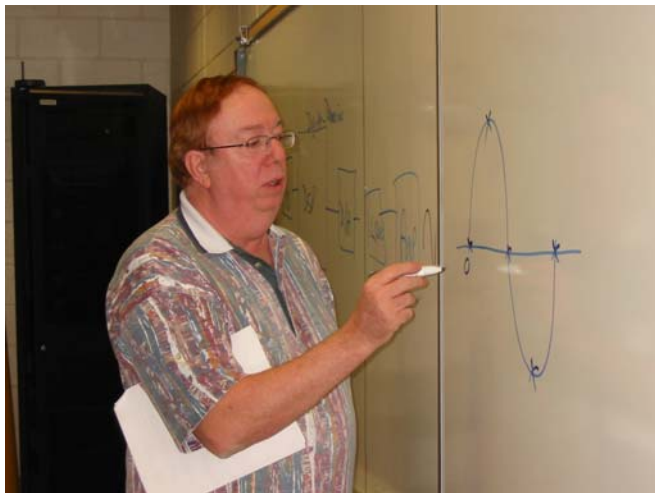
By using this advanced propagation chart, you can view the different skip combinations that are calculated based on frequency, and time. This will allow you understand more about why you can make a contact or not.

Conclusion

Now you should now be able to predict propagation from your QTH to any location and understand how it is actually getting there. In my next article, HF Propagation Part 5 – Geomagnetic Influences, I will discuss what effect's the earth's magnetic field and how it in turns effects propagation.

QRT by VE3HG

Some of you folks haven't been getting your money's worth from the Oakville Amateur Radio Club. I know this is going to come as a shock to you but you're getting ripped off. You are not getting your due's worth of value and something should be done about it!



Here's what's been happening: In my opinion, the Oakville Amateur Radio Club has had a year of meetings featuring some of the best speakers I've ever heard talk on ham radio and other topics. And, when I say "ever" I'm going back 40 years now! The last OARC meeting featuring Alan Bauld, VE3CBR, on digital techniques was no exception. Alan managed to explain digital processing (How it works. Why it works. Why I should care it works and how to work it.) without

ever resorting to higher mathematics or big technical terms.

I got so excited about what Alan had told us that the next day I plugged a cable into the headphone jack of my Drake R8 receiver and plugged the other end into the line-in plug on my computer sound card. I *Googled* "DSP software" and came up with a freebie digital processor which installed in seconds. I then plugged a set of headphones into the audio-out plug and suddenly and for no cost I'd upgraded my 10-year-old receiver into the digital age.

So how are you getting ripped off? Easy: If you weren't there (and there is a bunch of you who regularly attend the Saturday morning breakfasts and always respond to the calls for tower erection and disassembly and show up for Field Day at whom I'm pointing at) you missed a great meeting.

Last Monday's meeting saw less than 20 attendees which has to be a disappointment to President Denny, VE3ODK, who I suspect is primarily responsible for arranging for these great speakers. So if you want to get your money's worth of value from OARC come on out and support the club. Who knows some of you guys might even learn something! I know I sure did.