

# 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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<http://www.hwcn.org/link/harc/>

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### Amusing, Although

#### Ambiguous, News Headlines:

- Red Tape Holds Up New Bridges
- Kids Make Nutritious Snacks
- Hospital Sued by Seven Foot Doctors
- New Study of Obesity Looks for Larger Test Group

## News About the January 17<sup>th</sup> Meeting

**We have changed our meeting start time by advancing it 1/2 hour. The meeting room will open at 7:00 p.m. for an informal rag chew and our new meeting start time will be 7:30 p.m.**

The executive is delighted to welcome **Steve Bratina** from Cambridge who will be speaking to us at the January meeting; on the topic of Live Steam Engines and Locomotives. Steve has been collecting and restoring live steam locomotives for many years. He will be illustrating his talk with a Power Point presentation. Steve's interest began as a young boy doing H.O. and 3/4 scale live steam locomotives. Later he moved on to doing full size restorations. He has taught and worked on live steam and is now building a 1920s Powerhouse in his back yard. Steve is related to Hamilton's well known Bratina family. Visitors welcome. Please join us on Wednesday January 17th.

## Reminding Members about the QSL Card Design Contest

*The year 2007 marks the 75th year of continuous operation for the Hamilton Amateur Radio Club, (1932 —2007).*

You may recall in the December issue of T.H.A. (The Hamilton Amateur) we announced a QSL card design contest for a card to commemorate HARC's 75th year. You still have a few days left to put forward your ideas. It can be done on computer, or just in pencil on a piece of paper. Contest closes on the Wednesday following the January meeting i.e. the night of the executive meeting. A decision will be made then. We plan to use the well known VE3DC call for our commemorative QSL card.

## Contest Corner

by Rick Danby VE3BK



Hi Everyone,  
 Two contests are coming up soon. The CQ160m SSB contest is next on our agenda for sure. The sideband

contest occurs at the end of February and we will operate from the site. The CQ 160 m CW contest comes earlier i.e. the end of this month. Anyone who wants to do the CW contest can do it at home or if we get enough interest, give me a call and we will do it from the site. (You may not have a 160 meter antenna at home but we have a good one at the site.)

More about the CQ160m SSB Contest. It starts 0:00z February 24 to 23:59z Feb.25, 2007. Converting that to local time the contest goes from Friday night at 7pm Feb. 23, 2007 to Sunday Feb. 25, 2007. Yep, this

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.

is a 24hr contest and means that nothing happens much till darkness on the Friday night. This is a night time contest because that is when 160m is open. For us brave souls, this means operate all Friday night-Saturday morning, go to the Burlington Amateur Radio Club Spring Flea Market, (if you can stay awake) then get some sleep in the daytime so that you can go again on Saturday night. Sunday morning is time for sleep and that is when we usually decide to either pack it in or continue at darkness and go till 7pm, depending on how tired etc. everyone is.

We will be running MO or Multi Operator which means we run only one station with high power, so we can take turns and make a schedule if someone wants a specific time. Let me know if you want to be on the schedule or you want to use your station for this contest. Send me an email either way so that I know who is coming. This is a good contest that we have had good results over the years. It is very surprising what DX you can work on 160m. Come out for the Contest and you will be amazed at some of the stations we will work.

Here's is the address for the rules. Please get your copy. It is a single page long in PDF format. If anyone wants it in text form, I will convert it and send it to you, let me know. We will be looking forward to this one. <<http://www.cq-amateur-radio.com/awards.html>>

73 Rick VE3BK

## Where's My Signal Going?

by John Hudak  
VE3CXB

I imagine that at one point or another in our careers as ham radio operators we might have wondered just exactly where our signals get to after



## HARC 2006-2007 Executive

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they leave our antennas. This idea popped into my head as I sat there at the 20m station with Emsley (VE3JA1) during the Canada Day Contest last July. We were using a 20m beam on a rotator and as is usual there was the ever present beam rotator control. On the little dial are the compass points S - W - N - E. One would think that if we point our beam in the direction of West that our signal is going to go west. However, what does this exactly mean? Of course those hams who have been around a while will know that West doesn't always mean what we think it means as far as where our signal is going.

First we have to have some knowledge of what our antenna beam pattern is. Antenna beam patterns is a topic for another time and another article but for now let's say we know what the pattern of our antenna is. Of course if you have a vertical antenna then our RF signal is going out in a 360 deg. pattern (hopefully) so we need not concern ourselves so much with where our signal is going as it is going everywhere. However just about any other kind of antenna will have a pattern that is directive. In other words the radio waves leaving the antenna do so in a manner that is preferential in some direction, or directions. A simple dipole antenna will have two lobes coming off the sides of the wire. A yagi antenna will have a pattern that is something like a searchlight where our radio waves will come out from the front of the antenna in a well defined pattern.

This is all fine and dandy, but where is our signal really going? Our half wave dipole might be strung up in our backyard so that the wire runs North-South, therefore our signal will come out preferentially in the East-West direction. Our yagi antenna is most likely sitting on a rotator so that we can swing it around in any direction. Still this does not tell us exactly where our signal is going from the perspective of compass points.

We all remember the atlas we were given in public school where our spherical world was forced to lay flat on a page in a book. You may recall how big Greenland looked because the process of "laying flat" our earth caused Greenland to become stretched out. This is a function of the Mercator method of plotting the earth on a map. A Mercator plot map shows that, for those of us in the Hamilton area, directly East puts us in France and Spain, Italy and Romania. So if we want to work some DX in middle Europe we turn our beam until the little pointer on our rotator control box sits on "E", right? Wrong.

The easiest way to see where our signal is going is to take a globe (you

did keep your world globe from your childhood, didn't you?) and get a piece of string. Lay the string on the globe and orient it directly East of your location. Don't force it to go where you want it to go. Just let it lie in a straight line in an Easterly direction away from Hamilton. Now we see that our beam coming from our antenna in Hamilton actually winds up heading towards Africa and into the Indian Ocean south of Madagascar. Quite a bit different from our original supposition of our beam going through mid Europe.

What we have done is to plot the "great circle" path that our signal takes. For those targets that are closer to our location, East, West, North and South really don't vary too much from our intuitive sense of direction. Toronto is to our North-East, and Parry Sound is to our North. Even Vancouver is pretty much where we expect it to be, to our North-Northwest, but maybe a bit more than our flat Mercator map might imply. What about Australia? What direction would you point your beam to work this country? Our flat earth Mercator map would show Australia to be to our South-West. Wrong! On the "great circle" path Australia is to our North-West! Or it could be to our South-East if we send our signal over the opposite path around the world in the opposite direction. If you have a rotatable beam try both. For distant targets you may find one better than the other. The shortest path may not be the best one.

How to get around this problem of knowing which way our signal is really going? We must use an "azimuthal equidistant (great circle) projection map". You've probably seen one of these maps. It's the one where the earth seems to be plotted in the shape of a globe but on a flat map. What this allows us to do is take a ruler and lay it down on the map, one end on our location and the other on our target, and get the true bearing direction. Great, so where do you buy one of these maps? Well you don't. Problem is that the map must be set up for your own unique location. The map is in the form of a

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circle with your location at dead centre. What is East and West for us is not the same as what is East and West for someone in Australia. Each map has to be generated for each unique location on the earth, or at least reasonably close to it. As you can imagine there is no way one could offer for sale the thousands or perhaps millions of maps for all the unique locations of hams around the world. So what to do? I do actually have in my possession a great circle map that was printed many years ago (30 years ago I'm guessing) by Fred Hammond (VE3HC). It was centered on Toronto. For many years this was all I had, and it had to do. If you come across a printed map that is centered on a location near to your own it will probably do for most purposes.

Now that we are fully into the computer age we can obtain computer generated maps for our own location. You can do a search for "azimuthal equidistant maps" and come up with a number of "hits". Fear not as I will make life a bit simpler for you. Here is a "do-it-yourself" map web page:

<http://www.wm7d.net/azproj.shtml>

This web page is not well laid out and is a bit messy and confusing but from here you can generate your own great circle map. Scroll down about half way to "Making a map here on the Server". You will see two choices, "short form" and "long form". To keep life simple start with "short form". First, as with any great circle map generator, you must tell it where you live. Scroll down to "Location of center of azimuthal equidistant projection". You'll see three "data entry" boxes. The first one will have the site owner's callsign in it (WM7D). Either ignore it or put in your own callsign. What you really want are the two smaller boxes immediately below. Here you must enter the geographic coordinates of your location. To keep it simple use the coordinates for Hamilton. In the first box enter 43.25. This is our latitude. In the next box enter -79.8. Make sure you put in that minus sign. This is because our longitude is a

negative number in relation to the zero longitude line going through Greenwich England. Next scroll down to "Continents to include in map". This is where you decide how much to show on the map. You can choose just North America, the whole world or variations thereof. Your choice. Try them all to see what you get. Next comes "Map scale". This determines the scale of the map in km/cm (kilometres/centimetre). Once again try different values to see what you get. Try 400km/cm for a start. Next comes "Output Format". For now pick "GIF". Lastly comes "Paper (page) Size". Pick "US letter 8.5x11". Now press "generate map" and presto, you have a great circle map centered on Hamilton. What you will get is a nice little map of North America with a yellow circle and compass points. If you need to get in closer, or further away, change the "Map Scale". If you want to see the whole world select "whole world" in "Continents to include in map", and 2500km/cm in "Map Scale". You can now print out this map or save it to your hard drive for later use. Try different values in the data entry boxes to see what you get. If you want to tighten down your location, or you live far away from Hamilton you will have to know your geographic coordinates for your new location. You'll either have to get these from a Canadian geological survey map (or some map of similar accuracy) or you can use something like "Google Earth".

You could also download a program to do so. There is a freeware program called "Pizza" for generating your own map. Go to this web site:

<http://www.tonnesoftware.com/pizza.html>

This program is oriented towards the ham radio operator. It does not contain any instructions so you will have to play with it. Of course you will have to enter your location and then you can generate a map with different features such as cities, prefixes, compass points, distances, etc. It seems you can only print out the map and not save it to your hard drive. This program is very slow. I

## 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 Tuesday following the club General Meeting each month.

### 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](mailto:hudakjm@mcmaster.ca)>

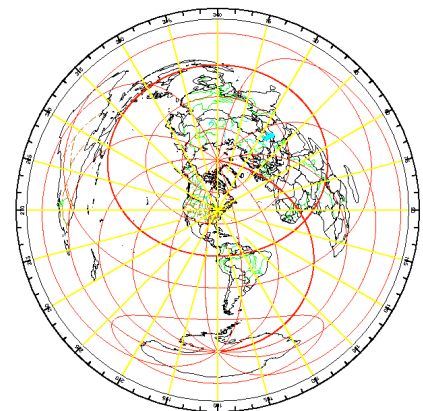
have a 2.6 GHz. computer and the program runs very slowly. The author warns of this, especially if you have an older, slower computer. I'm not sure why it is so slow. It's a bit of an annoyance. Also there seem to be some glitches but I can't predict how they will present themselves on your computer. Otherwise the program seems to work just fine (no lock-ups or crashes) but your mileage may vary depending on your computer.

Then you could buy a program to generate maps. A map generation feature is included in "DX Atlas" ([www.dxatlas.com](http://www.dxatlas.com)). This program is a whole suit of programs geared to ham radio. You may wish to purchase it just for this fact. The map generator is only part of the program. However there is a trial version available for free so you could download the program and then just generate a map.

There are other programs and web sites out there for making great circle maps but these are the three I've tried. None of the maps I've generated are what I would call "high resolution". Do a search and try them. For most purposes though I think the "free" map generators will probably suffice for most hams.

So there you have it. I'm sure this is "old hat" to more experienced hams but this might be useful to our newer members as it's not something we think about or understand intuitively when we get on the air and hunt down that rare DX. Good luck.

Hamilton Azimuthal Projection



Azimuthal Equal-Area Projection  
From VE3CXB  
Radial scale: 25000m/cm  
<http://www.hamradioapp.com>  
AZ\_PROJ\_v1.1 (Rev. 5, Jan 2002) ©1994-2002 Joseph Black HART, Uchael Karamann NY2Z



## THE GOLDEN AGE OF RADIO, PART II

Submitted by Roger Pimm, VE3UFZ

What happened when a HAM radio operator put a microphone in front of a phonograph player?

Modern radio was born. Here is part II of the story. Part I can be found in the December issue of the "The Hamilton Amateur".



### MORE THAN JUST MUSIC

Radio offered numerous advantages over phonographs in the 1920's: Listeners weren't limited to the records in their own collections, and they didn't have to get up every five minutes to flip the record over and wind the record player back up. (Long playing, or "LP" records, which had about 30 minutes of playing time on each side instead of four and a half minutes, weren't introduced until 1948.) Even better: radio broadcasts were FREE! Yet as early as 1926, opinion polls began showing that listeners were hungry for something to listen to besides music. The networks responded by developing a variety of shows for every member of the family.

### WHAT WAS ON

**Comedies:** Comedy shows were some of the earliest hits on radio - it was easy for vaudeville stars like Jack Benny, Eddie Cantor, and the husband/wife team of George Burns and Gracie Allen to move their acts to the new medium. At first these comedians did their usual standup routines, but over time they pioneered the "situation comedy" format that's still being used on TV today: A situation is set up at the beginning of the episode - Jack Benny has to go to the doctor, for example - and then it's milked for jokes for the rest of the show.

**Kiddie Shows:** These shows were on in the afternoon when kids got home from school, in the early evening, and on Saturday mornings. Established movie and comic-strip characters like Superman and Little Orphan Annie were quickly adapted for radio. In later years the trend reversed itself, as characters created for radio - like Captain Midnight, Sergeant Preston of the Yukon, and Jack Armstrong, the All-American Boy moved on to comic books, movies and eventually television.

**Soap Operas:** Soaps appealed primarily to housewives, and dominated the daytime. The soap-opera format came about only by chance in 1932, when NBC moved a show called Clara, Lu' n' Em' from its evening time slot to the middle of the day because that was the only place for it in the schedule. Clara, Lu' n' Em' was more of a satire than a soap, but it did so well that NBC began programming other shows for women during the day. Soaps proved to be the most popular shows; by 1940 the four networks offered more than 60 hours of soap operas a week.

**Dramas:** One of the nice things about radio is that you can transport the listener anywhere using only sound effects. You want to tell a story about space colonists on Mars? About cops in L.A.? Maintaining order in Dodge City, Kansas? You don't need fancy costumes or sets - you just need the right background sounds. Police and detective shows came early to radio. They were easy to produce because they were dialogue heavy, filled with characters who spent a lot of time standing around trying to solve crimes. And they were popular with audiences.

Surprisingly, science fiction shows and Westerns targeted at adults appeared relatively late in radio and never really caught on. All four networks introduced science fiction series for adults in the 1950's, but only two of them, "2000 Plus" (Mutual, 1950-52) and "X Minus One" (NBC 1955-58) lasted longer than two years.

**Gunsmoke,** the first adult themed Western, didn't appear until 1952, but it fared much better than the science fiction shows. It became one of the most popular programs on the air and ran until the summer of 1961. The TV version ran for 20 years, from 1955 to 1975, making it the longest running drama in history.

### SIGNING OFF

What ended the Golden Age of Radio? TV, of course. In retrospect it's amazing that radio lasted as long as it did - both NBC and CBS began making experimental television broadcasts from their New York stations in 1939, and both stations were issued commercial licenses in 1941. Were it not for World War II, TV might have swept the continent over the next few years. But when the United States entered the war, further development was halted as the stations cut their broadcasts back to almost nothing and TV manufacturers switched over to making electrical equipment for the war effort.

### AS SEEN ON TV

When World War II ended in 1945, fewer than 10,000 US households had a television, and most of the sets were in the New York City area. The industry got a big boost in 1947, when the World Series was broadcast on television for the first time. It's estimated that of the nearly 4 million people who watched the game, at least 3.5 million of them watched on sets in their neighborhood taverns. Many of these patrons then went out and bought TV's for their own homes - and when curious neighbors came over to watch, they wanted TV's too. The TV craze was on.

By 1951 television broadcasts were available coast to coast and six million homes had TV's. People were buying them as fast as manufacturers could make them. By the end of the decade more than 60 million homes had TV's and as Americans abandoned their radios in favour of television, so did the advertisers, and so did the stars. The most successful radio shows like Gunsmoke and The

Jack Benny Show moved to TV (Gunsmoke stayed on the radio for a time as well); less successful shows just went off the air. As the big advertising dollars left radio, big-budget shows became impossible to air. Many radio stations with hours of programming to fill and very little money to do it with went back to what radio had been in the very beginning: a single person, sitting alone in a booth, playing records for anyone who happened to be listening.

### THEY'RE BAAAACK

Today the classic shows of the Golden Age of Radio are largely absent from AM and FM radio, but thanks to satellite radio and the Internet, they're more widely available now than they've ever been since original airing. Both XM Radio and Sirius offer channels that play classic radio shows 24 hours a day; and you can buy collections of old shows in bookstores or download them on iTunes. If you've never heard them, you're in for a treat.

From Uncle John's Curiously Compelling Bathroom Reader

## Workbench Tips

By Mardy Eedson,  
VE3QEE



Have you ever been working on a printed circuit board and found a hole that is blocked by unwanted solder?

Here is a method of clearing the hole using a stainless steel dental pick. Stainless steel is not affected by ordinary rosin core solder. Because of this property, you can easily clear holes blocked by solder. Take a stainless steel pick with a needle point, and press the tip against the solder-plugged hole. Touch a hot iron to the solder so it melts and allows the pick to push up through the hole. Let the solder set without removing the pick. After the solder

solidifies the pick can be removed and the hole will be clear.

I used this same property, (i.e. that stainless steel is not affected by ordinary solder), to help me solder brass nuts to a brass plate designed for attaching radials. The plate was drilled in a number of locations where I wanted to attach the radials. With a stainless steel bolt I tightened a brass nut against the bottom of one of the holes, and soldered the nut in place. When the solder was set, I backed off the stainless steel bolt and used it again to repeat the process on the next hole. If you plan to use this method you'll have to find a stainless bolt with the same thread as the brass nut. Often stainless threads are finer than those cut in brass for the same sized stock.

Still on the topic of solder, I was trying to desolder a component with many contacts, and was having difficulty getting all the contacts to let go at the same time. Solder wick wasn't doing the job so I tried something drastic. Using a tank of compressed air from my days as a SCUBA diver and a valve attachment I have for blowing compressed air, I put the project in a cardboard box and heated the solder, then gave it a sudden blast of compressed air. It was a quick and dirty method but it worked. The blast of air blew the melted solder off the part allowing me to remove it easily. Some hot solder did spatter on the circuit board but that was easily removed with a pick.

I hope some of you are planning a building project for Home Brew night which comes again in May. There are inexpensive kits out there and holders of the Basic qualification can now build transmitting equipment which has been professionally designed and sold as a kit. How about a single frequency QRP transmitter, or a piece of test equipment? Here are a few web sites where project kits are advertised.

<http://www.kangaus.com/>  
<http://www.farcircuits.net/>  
<http://aade.com/>  
<http://radio.tentec.com/>

<http://www.norcalqrp.org/>  
<http://www.proaxis.com/>  
<http://www.geocities.com/hagtronics/>

## FCC to Drop Morse Testing for All Amateur License Classes

From the ARRL e-bulletin to members at December 15, 2006

In an historic move, the FCC has acted to drop the Morse code requirement for all Amateur Radio license classes. The Commission today adopted a Report and Order (R&O) in WT Docket 05-235. In a break from typical practice, the FCC only issued a public notice at or about the close of business and not the actual Report and Order, so some details -- including the effective date of the R&O -- remain uncertain. The public notice is located at, [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-269012A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-269012A1.pdf).

"With today's elimination of the Morse code exam requirements, the FCC concluded that the disparity between the operating privileges of Technician Class licensees and Technician Plus Class licensees should not be retained,"

"This change eliminates an unnecessary regulatory burden that may discourage current Amateur Radio operators from advancing their skills and participating more fully in the benefits of Amateur Radio,"

The wholesale elimination of a Morse code requirement for all license classes ends a longstanding national and international regulatory tradition in the requirements to gain access to Amateur Radio frequencies below 30 MHz. ... A number of countries, including Canada, no longer require applicants for an Amateur Radio license to pass a Morse code test to gain HF operating privileges. The list has been increasing regularly.







