

# Hot Bananas

Oakville Amateur Radio Club VE3HB

December 2000



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## Message from the President

**Hubert Heath**

VE3HLD

For those who were present at the last meeting I hope you enjoyed the APRS demonstration very capably put on by Duncan and Gary. The future holds some other surprises as we will see the last part of the movie "The Men Who Invented Radio" and in January we will have another demonstration that I am sure you will find interesting. At this time on behalf of the Directors and myself I would like to wish you all a Very Merry Christmas and a Happy and Prosperous New Year.

Keep communicating!

Hubert L. (Shot) Heath Ω

## High Speed Internet Communications: Cogeco @ HOME VS Look's Ultrafast 2

**Graham Chatfield**

VA3GPC

*(The following are strictly my experiences and opinions. Please draw your own conclusions - Graham)*

Those that have high speed CABLE internet, know of the systems strengths and weaknesses. Lately, there has been many problems with the @home email system. This prompted me to look elsewhere for a

*"High Speed - Continued on Page 4*

## CALENDAR OF CLUB EVENTS

### OARC ANNUAL CHRISTMAS DINNER

THE MANDARIN RESTAURANT, MISSISSAUGA  
DECEMBER 4, 2000, 6:30PM  
RSVP Carvell, 827-4956 by November 28, 2000

### CLUB MEETING

OAKVILLE RED CROSS BUILDING  
DECEMBER 11, 2000, 7:30PM  
REGULAR CLUB MEETING & CONCLUSION OF VIDEO "THE  
MAN WHO MADE RADIO"

### CLUB MEETING

OAKVILLE RED CROSS BUILDING  
JANUARY 8, 2001, 7:30PM  
REGULAR CLUB MEETING & METEOR PRESENTATION  
WITH PHILIP GEBHARDT

### CLUB MEETING

OAKVILLE RED CROSS BUILDING  
FEBRUARY 12, 2001, 7:30PM  
Regular Club Meeting & QRP Presentation with  
Mike Brown

### CLUB MEETING

Oakville Red Cross Building  
March 12, 2001, 7:30pm  
Regular Club Meeting

## Just the Facts

*About the OARC...*

### Meetings

Meetings are held on the Second Monday of each month from September to June at the Red Cross Building, 167 Navy Street, Oakville. Meetings begin at 7:30pm and all are welcome. An informal Saturday breakfast is held at 7:00am, at Aldo's Bistro, 2345 Wyecroft Road, Oakville. **UPDATE**

The OARC is a RAC affiliated club.

### Repeater

VE3OAK 147.015 +.600 (131.8Hz CTCSS)

VE3OAK 444.325 +5.00

### Digipeater

VE3OAK 145.750 (Packet)

**UPDATE**

VE3OAK 144.390 (APRS)

**NEW**

### Net

Mondays at 7:30pm (except meeting nights/holidays)

### Phone Patch Access

Code & Tel No (do not pause while dialing)

### Web Site

<http://www.oakvilleamateurs.net>

**NEW**

### Mailing Address

Oakville Amateur Radio Club

PO Box 69615

109 Thomas Street

Oakville ON L6J 7R4

### Email Address

oarc@mvw.net

Hot Bananas is published 10 times per year from September to June and is distributed to all members of the OARC. Articles may be reproduced without additional permission provided credit is given to Hot Bananas and the Oakville Amateur Radio Club.

Submit story ideas, feedback, comments, articles or artwork to [va3afa@rac.ca](mailto:va3afa@rac.ca) or mail to Hot Bananas, PO Box 69615 109 Thomas St, Oakville ON L6J 7R4. Fax is available, address to John Clarke at (416) 982-8471. Electronic format is preferred, however we can accommodate any media, including handwritten stories, audio recordings or in-person interviews! Ω

## Who's Who

Your Access Point to the Movers and Shakers of OARC

### EXECUTIVE

President	Hubert Heath, VE3HLD
Vice President	Jack Livingstone, VE3ITM
Membership Director	Russ Schwandt, VE3JUJ
Director at Large	Doug Smith, VE3RG
Secretary	John Clarke, VA3AFA
Finance	Jim Fitzpatrick, VE3ITT
Activity Director	Mike Brown, VA3GRL

### COORDINATORS

Emergency Coordinator	Greg Foster, VA3GGF
Regional Emergency Liaison	Phil Thompson, VE3RD
Help Committee	<b>NEW</b> Harry Kosterman, VE3HKC
VHF Net Activities	Greg Foster, VA3GGF
Repeater Programming	Graham Chatfield, VA3GPC
Repeater Maintenance	Gary Hetherington, VE3TGH Harry Kosterman, VE3HKC
Packet BBS	Michael Willems, VA3MWW
Special Event Catering	Carvell Pelkey, VE3CPQ
Training-Basic & Advanced	Jack Livingstone, VE3ITM
Examiner	Jack Livingstone, VE3ITM
Internet Web Site	Michael Willems, VA3MWW
Public Relations	Doug Smith, VE3RG
Equipment/Shack	Jack Livingstone, VE3ITM
QSL Manager	Ron O'Reilly, VE3FII
DX Interest Group	Ron O'Reilly, VE3FII
Library	TBD

### CLUB BULLETIN

Editor	John Clarke, VA3AFA
Production	Richard Davis Jr
Distribution	Duncan Smith, VE3HFG

## ARES/RACES ACTIVATED AS BUFFALO IS BRIEFLY BURIED

### Reprinted with Permission

ARRL Newsletter

In the case of the upstate New York snow belt recently, when it snows, it snows! The Erie County Amateur Radio Emergency Service and Radio Amateur Civil Emergency Service found themselves literally snowed under just before Thanksgiving when more than two feet of "lake effect" snow covered the greater Buffalo area like a big, heavy winter blanket. More than two dozen amateurs volunteered to help their community through the severe weather that struck November 20.

Karl Weir, N2NJH--who's ARES Western New York District Emergency Coordinator and RACES Officer for Erie County--activated an emergency net, and an informational net was brought up on another area repeater. "At this point, the City of Buffalo and suburbs of Amherst, Cheektowaga and Lancaster had received 24.3 inches of snow in less than 24 hours," Weir said. Traffic was at a standstill, and hundreds--perhaps thousands--of schoolchildren found them selves stranded on buses, while many others were still stuck at their schools.

ARES was activated at 7:30 Tuesday morning in Erie County. Erie County emergency services activated RACES with a specific request to garner as many 4x4 vehicles as possible and to establish a ham station at the county emergency operations center. First order of business was to take Red Cross people to examine the shelters and make any critical deliveries of food and medication."

The Millard Fillmore Hospital was happy to accept the assistance of three ham-driven 4x4s and an additional ham volunteer to assist in transporting medical staff. By 4:30 on the afternoon of November 21, road crews had begun to open up major highways. And ARES and RACES stood down at the end of a very long Tuesday. Ω

## CALENDAR OF HAM RADIO EVENTS

### Big Event 23

NIAGARA PENINSULA AMATEUR RADIO CLUB

FEBRUARY 3, 2001

ST. CATHARINES ON

### BURLINGTON AMATEUR RADIO CLUB FLEA MARKET

Saturday, February 17, 2001

Burlington ON

### LANCASTER ARC FLEAMARKET

Sunday, February 18, 2001

Buffalo New York NY

### HAMEX 2001

Peel Amateur Radio Club & Mississauga Amateur  
Radio Club

Saturday, March 24, 2001

Brampton ON

### DURHAM REGION AMATEUR RADIO HAMFEST

South Pickering A.R.C. North Shore A.R.C.

Saturday, April 28, 2001

Whitby ON

### ANNUAL SPRING HAMFEST AND FLEAMARKET

Skywide ARC

Saturday, May 12, 2001

Etobicoke ON

### BARRIE AMATEUR RADIO CLUB - HAMFEST 2001

Barrie Amateur Radio Club

September 8, 2001

Barrie ON

high speed connection.

Sympatico high speed (phone lines) is not an option for me at the time this article was written. A relatively new service, Look Communications is offering high speed 2-way internet through the use of a roof-top antenna pointed at one of the local tower sites (CN Tower, Hamilton, or Milton). So I decided to try Looks new service as they were advertising download speeds of 3Mbps (Mega-bits per second), whereas the TV cable provides at its best around 1.5Mbps.

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*Stay far, far away from the new "Look UltraFast 2" high speed Internet service*

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It all started with a phone call to the 1-800 "sign me up" number. After a 45 minute wait, I managed to get an install date for Nov. 18<sup>th</sup>. The install date arrived as did the contract installers. A quick check of the roof-top and a signal strength check, and the installers started work. The team of two were very professional, and the install was both smooth and very neat. After their work was completed and they had left, a technician arrived on site to perform the final checks and hookup the computer to the system. I have to report a few minor problems with the technician who obviously had inadequate training for the job. That aside, by the time he left, the system was working. And I use the term "working" very loosely. I still had no beginning email address. Back on the 1-800 "wait for 1 hour 13 minutes" number for someone to set up my email account. Now we were able to sit back and start testing the new connection.

Well! If first impressions count for anything, right from the start I knew I wasn't going to be happy. When the system

"High Speed" - Continued on Page 9

## Next Month in Hot Bananas

- Shack of the Month
- Activity from the International Space Station
- Hamming in Bermuda
- Submission deadline for January issue is Dec 29!

## Call To Order

*Minutes of the Oakville Amateur Radio Club Meeting of November 13, 2000*

**John Clarke, Secretary**  
VA3AFA



## Opening Remarks

- The meeting was called to order by President Hubert Heath at 7:30pm. Hubert welcomed the 28 attendees.

## Motions

- A motion to accept the minutes of the October 16 regular meeting as published in the November issue of Hot Bananas was PROPOSED by Hubert Heath, VE3HLD and SECONDED by Ken Hillier, VE3WKH. The motion was CARRIED.

## Discussion

- Hubert, VE3HLD introduced Harry Kosterman, VE3HKC as the Help Committee coordinator. Harry will be able to help members obtain assistance in any aspect of setting up or maintaining your station.
- The Christmas dinner will be held on December 4. Please RSVP to Carvell Pelkey, VE3CPQ.
- A regular club meeting will be held on December 11.
- Insurance coverage was questioned in terms of coverage for the club repeater. The Secretary will report back to the membership at the December regular club meeting.
- 50/50 draw was won by Alan Farmaner, VA3AVF.

## Closing

- A motion to adjourn the meeting at 1935hrs was PROPOSED by Ed Samborski, VE3TAS and SECONDED by Greg Foster, VA3GGF. Motion was CARRIED and the members were introduced to Gary Heatherton, VE3TGU and Duncan Smith, VE3HFG who provided a presentation on APRS.

## **Keynote Speakers - Gary Hetherington VE3TGH & Duncan Smith VE3HFG**

### **APRS Overview and Demo**

*(Gary and Duncan are among a group of OARC members who have been exploring and developing APRS in the Oakville area. More information on APRS can be found in the October issue of Hot Bananas. If you have any questions or require assistance on setting up your own APRS configuration, help is available from Gary and Duncan. The following is a summary of the remarks from their excellent presentation. Thanks from the entire membership! - VA3AFA)*

### **What is APRS?**

This is not an easy question to answer. The text book answer to quote Bob Bruninga, WB4APR, who created APRS is that it is a "combination of REAL-TIME PACKET COMMUNICATIONS and MAPS".

However, in my experience, APRS since its inception in 1992 may be a bit more fuzzy to define now, because of its flexibility of application, APRS is not just a communications tool like Packet or RTTY but a whole set of tools designed to work together drawn from a combination of Ham Radio, Global Positioning System, Tracking, Computers, the Internet, Satellites and more. There is a great deal of fun and satisfaction (and at times challenge and frustration) to be derived from putting together so many different technologies to make various applications work. It is the fun aspect of APRS in ham radio that is the most attractive feature for many people, including myself.



"Keynote" - Continued on page 9

**Gary, VE3TGH and Duncan, VE3HFG**

# Radio Amateurs of Canada News



## UPCOMING OPERATING EVENTS

### CONTESTS

December

- 1-3 ARRL 160-Meter Contest
- 2-3 TARA RTTY Sprint
- 2-3 TOPS Activity 3.5 MHz CW Contest
- 3 QRP ARCI Holiday Spirits Sprint
- 9-10 ARRL 10-Meter Contest
- 9-10 28 mHz SWL Contest 2000

### SPECIAL PREFIX

November 24 to December 23, 2000.

The special event call sign VC4X has been authorized to be used by Mr. Derrick Belbas from November 24, 2000 to December 23, 2000 to celebrate the 75th anniversary of the International Amateur Radio Union.

## New Basic Question Bank Issued

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[www.rac.ca](http://www.rac.ca)

The second edition of RIC-7 was issued by Industry Canada earlier this month. This circular contains the questions that will be used effective January 01, 2001, for making Basic Qualification examinations for the Amateur Radio Operator Certificate. This early release is

intended to enable course providers sufficient time to prepare course material for future Amateur Radio Operator Courses. Until this time, examinations will be compiled using the existing question banks. The question bank can be downloaded from the Industry Canada website at <http://strategis.ic.gc.ca/SSG/sf01900e.html>

The RAC Study Guide for Basic Exam, 6th Edition fully covers the new questions. Ω

## ARISS Ham Radio Equipment Test a Success

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[www.rac.ca](http://www.rac.ca)

According to Will Marchant, KC6ROL, the International Space Station crew has completed installation of the Amateur Radio hardware in the Functional Cargo Block. With the successful execution of engineering tests today, the Amateur Radio on the International Space Station (ARISS) project has passed a significant milestone.

The initial two passes were tested at the Gagarin Cosmonaut Training Center (GCTC) ham shack R3K in Star City near Moscow. The control operators were Sergej Samburov, RV3DR, and Vladimir Zagainov, UA3DKR. Sergej is the Russian delegate to the ARISS team. Subsequent tests at the NN1SS station at the Goddard Space Flight Center (Greenbelt, MD) and the W5RRR station at Johnson Space Center (Houston, TX) were equally successful.

Engineering tests with the packet rig still need to be organized. The crew, while still very busy, expressed their interest and support of Amateur Radio activities on the ISS. It seems likely that over the next few weeks, as the crew's schedule settles out, that we may be able to look forward to more Amateur Radio activity from humanity's latest foothold in space.Ω

## Profiles

**Submitted by Doug Smith, VE3RG**

*This month's Amateur of Distinction is...*

**John Stevens, VE3KXX/VP9!**

John Stevens, VE3KXX/VP9 has been living and working in BERMUDA for the last 5 years. He moved here in 1995 as a Senior Network Engineer for a local computer consulting company. Since then he has moved to a local insurance company and is responsible for managing their local and wide area networks between Bermuda, Nassau Bahamas and Grand Cayman.

He has worked in various capacities in Information Technology since 1984 and has been a computer hobbyist since 1980. In these capacities he has worked with everything from a single board microcomputer sans monitor and alphanumeric keyboard, through mini and microcomputer technologies, networking and Internet technologies.

In Bermuda he operates both HF and 2 Meters from his "shack" which currently consists of a Yaesu FT-100, a Yaesu VX-5R, a Gap Voyager DX HF antenna and a number of homebrew VHF antennas.

While not hamming, he is an avid Scuba diver logging over 100 dives, and he participates with a group known as the "Bermuda Air Force" which travels yearly to New Mexico to hone up on their flying skills.

He would like to come back to Canada some year but is enjoying the perks of living in a sub-tropical island for the time being. Ω



John VE3KXX /VP9



CQ Oakville! CQ Oakville!

actually let data download to the computer, it did so at speeds equal, perhaps slightly faster than the TV cable system.

However, trying to surf anywhere was a pain, with time-outs, and continually having to hit the "Refresh" button.

Email was sporadic at best with the above described timeouts. I did manage to try several FTP sites and HTTP sites downloading various files. The data downloaded very quickly in bursts, but with delays every few seconds of between 3 and 10 seconds. This made for an overall download time 5-10x longer than that of the @home service.

Another call to the help center... wow, actually got through in 35 minutes this time. I described many things to the technician who basically couldn't do much to remedy the situation. Because of the sheer number (in excess of 1600) subscribers pointed at the CN Tower, things were just a little bogged down on a Saturday afternoon. Remember, this is a radio transmitter operating around 2Ghz, and like any "packet" system, it will only transmit a mouse-click or otherwise upload (transmit) when it can squeeze in between the packets of data being received by the other subscribers. Also, I'm sure there must be packets of transmitted data colliding with other systems transmitting on the same frequency.

So, I went to bed Saturday evening disappointed, but thinking I would give the system a few days work out. Sunday morning I could not send or receive email, and the system was sluggish overall. I cursed a few times, the air here was quite blue. Less than 10 minutes later I had my Cogeco @ home hookup back online and the first mouse click made me sigh "Ahhhhh.... That's better". Another call to the help center, strangely enough they answered in less than 2 minutes!!

I scheduled an "UN-INSTALL", and very politely told them their new UltraFast 2 system was garbage.

Like I said, those were my experiences, draw your own conclusions. My personal RECOMMENDATION is that you stay far, far away from the new "Look UltraFast 2" high speed internet service. Ω

## **PACKET RADIO ASPECT**

APRS uses Packet Radio with AX.25 UI packet frames to communicate position and telemetry. The radio frequencies most commonly used in APRS to transmit these packets is 144.39 MHz on VHF/FM at 1200 baud data rate and 10.1492 , 10.1515 and MHz LSB on HF at 300 baud. The 10.1515 HF LSB frequency is used as a Gateway.

## **APRS DIGIPEATERS**

APRS digipeaters rebroadcast the UI frames, usually on the same frequency that they receive on. One of the key features of APRS is the ability to broadcast the same information to a large number of users so that everyone gets new information almost as soon as it becomes available ( i.e. virtually real time).APRS uses four different kinds of digipeaters which use the aliases RELAY , WIDE, ECHO and GATE. The Club recently installed a relay-Digi at the VE3OAK repeater site thanks to Greg VA3GGF and Gary VE3TGH and this has allowed local amateurs running APRS using low power two meter handheld transceivers to be "heard" on a wider basis. Using Digi information can be relayed over distances up to 400miles. To avoid network saturation, packets are normally repeated only three times, hence the 400mile limit.

## **INTERNET GATEWAYS (Igates)**

In addition to the common relay /wide digipeaters there is a further method of relaying APRS data transmissions on a worldwide basis using an Igate. An APRS to internet gateway ( Igate )connects to the master Igate server on the internet via a commercial internet connection and listens to an APRS channel (144.390 Mhz). The Igate basically repeats all packets heard on the APRS channel back to the master Igate server via the internet connection. The master Igate server then "echoes" those packets out to every other Igate server via the internet connection.

In Oakville, Phil VE3RD runs an Igate so that mobile or home stations in the local area appear on the internet and can be accessed at the CANAPRS site (<http://www.canaprs.net>). The CANAPRS site shows the location of a station on three different scale maps down to street level. The progress of a mobile station can be tracked on the CANAPRS internet site by refreshing the maps on a periodic basis. Speed in Km/hr is also displayed as well as location and heading direction.

## **APRS SOFTWARE**

The tool which helps tie all the parts together is the APRS software which sorts the incoming data into meaningful tables. APRS software versions may be run on almost any computer which supports operating systems such as MS DOS (version 2.0 or higher), MS Windows (version 3.1 and up), Win CE, Macintosh, Palms, LINUX, and Java. The various versions can be downloaded for free from the Tucson Amateur Packet Radio (TAPR) site on the internet.

## **DISPLAY of WinAPRS DATA**

Various icons are available to indicate what the APRS station is when displayed on a map. For example, an icon of a house with an antenna (along with the station's callsign) indicates a home base station. An icon of a car (with the callsign followed by a -9) indicates a mobile passenger vehicle or a picture of a van (with the callsign followed by a SSID (service set identifier) -15) indicates a van. Most of the icons such as pictures of a sailboat (SSID -5), truck (SSID -14), balloon (SSID -11) are self evident while others such as a six pointed green star (a digipeater) and a numbered diamond (Gateway station) are less so.

## **What can APRS do?**

**TRACKING** -When, for example, a moving vehicle, aircraft, balloon or a hiker equipped with a radio, tnc and gps, or a Kenwood THD7 and gps, transmits a position periodically they can be tracked. APRS provides for the display of the transmitted data on a wide variety of maps which can be displayed on a computer. The display can be two dimensional, displaying only the position on the earth's surface or three dimensional including altitude.

One station in the USA even watched his stolen car being driven across town on his APRS map. The police couldn't believe it when he told them his car was on the move and that he was tracking it. There are a number of public service or safety and disaster relief activities where APRS could be of benefit such as marathons, bike rides and races, search and rescue, balloon launch missions etc.

**MESSAGING**- In addition to status packets, two-way messages with acknowledgement are supported. Short text messages either addressed to an individual call sign or to "nets" can be sent. People will say but this is not very useful unless you have a laptop to send and receive messages in addition to the TNC, radio and antenna. However, thanks to Kenwood all of this can be combined into a single HT. The Kenwood TH-D7A has a built in TNC, built in GPS modes (with an external GPS unit), built in APRS displays, built in APRS messaging, built in APRS mic-encoder and built in DX cluster spotting.

**WEATHER STATIONS** - In addition to location information APRS can be used for weather reporting. This is because APRS position reports can also include the wind speed and direction, temperature, barometric pressure, humidity, rainfall etc. Such data, if available, could be entered manually by keyboard but APRS supports a serial interface option to weather sensing equipment such as those made by Davis and Peet Brothers for home weather stations. APRS stations so equipped can automatically include WX conditions in their position report for display at all other stations in the network.

**DIRECTION FINDING**- APRS incorporates a new aspect to direction finding by permitting the plotting of signal strength contours. Thus, not only can the APRS software be used to display the intersection of bearing lines from a number of reporting stations but also overlapping signal strength contours. This is possible since APRS has line-of-sight power-height - gain (PHG) reporting and display format which it can

use to draw range circles around each station showing its relative communication range. It includes the Fade-Circle Search and Rescue technique, which can be used by a mobile with only a simple omni-directional antenna to locate a hidden transmitter. Applications which come to mind are fox hunts and the use of remote stations in the tracing of an interfering signal from a troublesome transmitter.

## **GLOBAL POSITIONING SYSTEM**

A GPS receiver is not required for many APRS operations since location can be entered manually. However if you want to operate a tracking station then a GPS receiver with an NMEA 0183 output port is required. GPS uses a constellation of 24 satellites in precise orbits approximately 12,000 kilometres above the Earth. The satellites transmit data with a power of approx 25 watts at a frequency around 1.575 GHz. At any given time and from any point on earth at least four satellites (usually between six and nine) will be above the horizon. For GPS to work it must have a very accurate time reference. The time reference is provided by atomic clocks at the U.S. Naval Observatory. Each satellite has its own atomic clock, and once a day it checks its own sense of time and position with a ground station and makes minor corrections.

From the ground, any GPS receiver contains a computer that "triangulates" its own position from a minimum of three satellites. It does this by using three channels to lock on to three satellites and measures the travel time of the signals transmitted from the satellites and then multiplies them by the speed of light to determine exactly how far the unit is from every satellite it's sampling. By locking on to a minimum of three satellites a GPS unit can calculate a 2D positional fix, consisting of latitude and longitude. BY locking on to a fourth satellite the GPS can compute a 3D fix, calculating altitude as well as latitude and longitude. Additional channels can track other visible satellites, then add these data to the data from the original satellites. Position accuracy within 10 to 20 metres can now be attained. Truly an amazing technology which cost upwards of \$12 billion to install which is available free for navigation. Ω

## **Canada Winter Contest**

In December each year, the Radio Amateurs of Canada (RAC) sponsors the Canada Winter Contest. Amateurs all over the world are invited to participate.

Contest Period: 0000 to 2359 UTC, 30 Dec 2000

Bands and Modes: 160, 80, 40, 20, 15, 10, 6 and 2 metres, CW and phone (SSB, FM, AM, etc.)

Exchange: Stations in Canada send RS(T) and province or territory. VEØs and stations outside Canada send RS(T) and a serial number.

QSOs: Contacts with stations in Canada or VEØs are worth 10 points. Contacts with stations outside Canada are worth 2 points. Contacts with RAC official stations are worth 20 points. You may work any station once on each of the two modes, on each of the eight contest bands.

Multipliers: 10 provinces and three territories may be counted once on each mode on each band.

Final Score: Total your QSO points from all bands, and multiply by the total multiplier points from all bands.

Categories:

- Single Operator All Bands;
- Single Operator Low Power (max. 100 W)
- Single Operator QRP (max. 5 W output);
- Single Operator Single Band;
- Multi-operator.

Awards: Plaques will be awarded to the top scoring entrants in each category. Certificates will be awarded to the top-scoring entrant in each category in each province, territory, USA call area, and DXCC country.

Results: will be published in the May issue of "The Canadian Amateur", and will be sent to certificate winners.

Entries: Send entries by 31 January to:

Radio Amateurs of Canada, 720 Belfast  
Road, Suite 217 Ottawa, On K1G 0Z5 Ω

# **The Canadian HF Band Plan**

## **How the RAC HF Band Plan was developed**

The HF Band Plan is a voluntary, gentleman's agreement, intended for the guidance of and observation by Canadian Radio Amateurs. Without these guidelines chaos would set in. The main mode of enforcement is peer pressure. Industry Canada as a government department regulates the amateur radio spectrum. They regulate the frequencies and the bandwidth, but not the modes of operation within the amateur spectrum. A Band Plan (even though it is voluntary) is necessary for the guidance of the users.

The Canadian HF Band Plan was formulated by a committee of Radio Amateurs representative of a cross section of each geographical district. After a consensus was reached by the committee the HF Band Plan was submitted to the Board of Directors of Radio Amateurs of Canada for approval.

The Plan was approved on April 22, 1995.

The HF Band Plan reflects the interests of Canadian Radio Amateurs, while taking into account the regional and international concerns of the International Amateur Radio Union. The plan addresses the needs of Canadian Radio Amateurs for a workable HF Band Plan.

## **New HF Band Proposals**

As many of you are aware, there have been proposals emanating from the U.S. Amateur community which may impact our current RAC HF Band Plans. The proposed changes could effect all of us differently, since we are varied in modes, times of operation, and particular HF interests.

If you wish to read about some of the USA and International proposals for the Amateur Bands, some of the details are available in the following reports:

NTIA Amateur spectrum requirements

NTIA Special Publication 96-332 Table of Contents

ARRLWeb W1AW Bulletin ARLB097

IARUWeb Spectrum Requirements of the Amateur and Amateur-Satellite Services

RAC is seeking comments on these proposals in order to formulate a comprehensive and workable HF Band Plan for Canadian Amateurs which takes into consideration Region 1 and 3 HF Band usage. You can send comments and suggestions to RAC HF band planning chair Bob Nash VE3KZ [rtash@netcom.ca](mailto:rtash@netcom.ca)

## CANADIAN HF BAND PLAN

160 Metre Band	Maximum bandwidth 6 kHz	1.800 to 1.820 MHz - CW
		1.820 to 1.830 MHz - Digital Modes
		1.830 to 1.840 MHz - DX Window
		1.840 to 2.000 MHz - SSB and other wide band modes
80 Metre Band	Maximum bandwidth 6 kHz	3.500 to 3.580 MHz - CW
		3.580 to 3.620 MHz - Digital Modes
		3.620 to 3.635 MHz - Packet/Digital Secondary
		3.635 to 3.725 MHz - CW
		3.725 to 3.790 MHz - SSB and other side band modes*
		3.790 to 3.800 MHz - SSB DX Window
		3.800 to 4.000 MHz - SSB and other wide band modes
40 Metre Band	Maximum bandwidth 6 kHz	7.000 to 7.035 MHz - CW
		7.035 to 7.050 MHz - Digital Modes
		7.040 to 7.050 MHz - International packet
		7.050 to 7.100 MHz - SSB
		7.100 to 7.120 MHz - Packet within Region 2
		7.120 to 7.150 MHz - CW
		7.150 to 7.300 MHz - SSB and other wide band modes
30 Metre Band	Maximum bandwidth 1 kHz	10.100 to 10.130 MHz - CW only
		10.130 to 10.140 MHz - Digital Modes
		10.140 to 10.150 MHz - Packet
20 Metre Band	Maximum bandwidth 6 kHz	14.000 to 14.070 MHz - CW only
		14.070 to 14.095 MHz - Digital Mode
		14.095 to 14.099 MHz - Packet
		14.100 MHz - Beacons
		14.101 to 14.112 MHz - CW, SSB, packet shared
		14.112 to 14.350 MHz - SSB
		14.225 to 14.235 MHz - SSTV

17 Metre Band	Maximum bandwidth 6 kHz	18.068 to 18.100 MHz - CW
		18.100 to 18.105 MHz - Digital Modes
		18.105 to 18.110 MHz - Packet
		18.110 to 18.168 MHz - SSB and other wide band modes
15 Metre Band	Maximum bandwidth 6 kHz	21.000 to 21.070 MHz - CW
		21.070 to 21.090 MHz - Digital Modes
		21.090 to 21.125 MHz - Packet
		21.100 to 21.150 MHz - CW and SSB
		21.150 to 21.335 MHz - SSB & other wide band modes
		21.335 to 21.345 MHz - SSTV
		21.345 to 21.450 MHz - SSB & other wide band modes
12 Metre Band	Maximum bandwidth 6 kHz	24.890 to 24.930 MHz - CW
		24.920 to 24.925 MHz - Digital Modes
		24.925 to 24.930 MHz - Packet
		24.930 to 24.990 MHz - SSB & other wide band modes
10 Metre Band	Maximum band width 20 kHz	28.000 to 28.200 MHz - CW
		28.070 to 28.120 MHz - Digital Modes
		28.120 to 28.190 MHz - Packet
		28.190 to 28.200 MHz - Beacons
		28.200 to 29.300 MHz - SSB and other wide band modes
		29.300 to 29.510 MHz - Satellite
		29.510 to 29.700 MHz - SSB, FM and repeaters

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