

# AMATEUR RADIO 101

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# Outline

- ▣ Overview of amateur radio.
- ▣ Our regional network.
- ▣ Atikokan Amateur Radio Club.
- ▣ Getting started.
- ▣ Licensing.
- ▣ The Basic Course Outline.

# Overview

*Ham radio provides the broadest and most powerful wireless communications capability available to any private citizen anywhere in the world.*

# What is amateur radio?

- ▣ Radio communications...
  - over a variety of frequencies, or “bands;”
  - using voice, Morse Code, digital modes, computers;
  - to send voice, text, pictures, video, e-mail;
  - direct (line-of-sight), via repeaters, bounced off satellites or planetary objects, assisted by the internet, reflected off the ionosphere, extended with repeaters;
  - for fun (hobby) technical experimentation, and community service.

# Who are “hams?”

- ▣ We are licensed by Industry Canada.
  - Exams covering regulations, technical, operating.
- ▣ We are issued call signs.
  - I am VE3FYN, and Vic is VE3AKX.
  - Our club repeater is VE3RIB.
  - Our emergency operations station is VA3EOA.
- ▣ We are authorized to operate on several bands.
- ▣ We are interested in communications, electronics, and community service

# Aspects of Amateur Radio

- ▣ Mobile radio
- ▣ DX'ing (long-distance communication)
- ▣ Portable (backpacking) HF
  - QRP (low-power) radio
- ▣ Amateur Radio satellite
- ▣ Amateur television
- ▣ Amateur Radio digital modes
- ▣ Space communications
- ▣ Morse code

# Amateur Radio Activities

- ▣ Contests and events.
- ▣ Awards.
- ▣ Emergency Communications.
- ▣ Public Service.
- ▣ Experimentation.
- ▣ DX-peditions.
  - Canadian Islands
- ▣ Rag-chewing.
- ▣ Keeping in touch.

# Our Regional Network

*It puts the cell phone network to shame.*





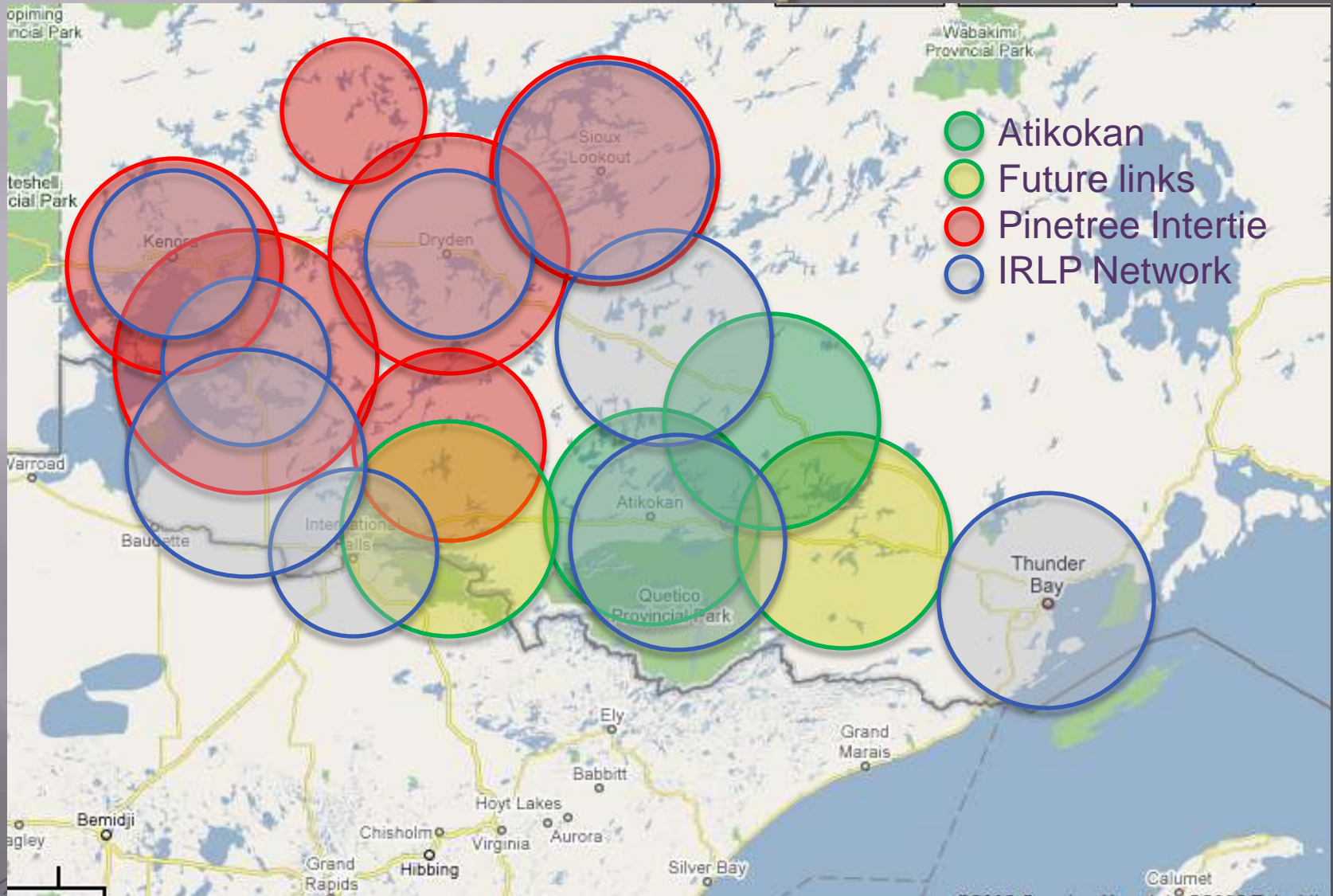
# VA3EOA Station

- ▣ Located in back of Town Hall on Marks St.
- ▣ Equipment supplied by Town and AARC.
- ▣ For emergency communications purposes.
  - Yaesu 857 HF/VHF/UHF radio.
  - GE MVS radio (VHF) for APRS/Winlink.
  - Computer for APRS/Winlink.

# VE3RIB Repeater

- ▣ Located on Highway 11, just West of 11B.
- ▣ Roughly 70 km radius coverage (mobile).
- ▣ Voice repeater on 147.120+.
- ▣ Linked regionally via IRLP (VOIP).
- ▣ APRS digipeater.
- ▣ Telephone Autopatch.
- ▣ Also houses the Weatheradio @ 162.400

# Regional Repeaters



# Atikokan Amateur Radio Club

*The only place where you can fasten a video camera and an antenna to your hat without getting laughed-at.*



# Atikokan Amateur Radio Club

- ▣ Significant infrastructure investment lately.
- ▣ Host of Camp 807 2009, August long-weekend.
  
- ▣ Needs new members, and active hams.
  
- ▣ Membership fees:
  - \$10 /year for non-licensed (non-voting) members.
  - \$10/year for out-of-town (non-voting) members.
  - \$25/year for licensed members.
  - \$40/ year for families in the same house.

# What do you get as a member?

- ▣ Associate members:
  - A very fancy-looking membership card.
  - Access to workshops and courses.
- ▣ Full members:
  - Voting rights.
  - A ring-bound guide to Amateur Radio in NWO.

# Radio Amateurs of Canada

- ▣ Your national voice in amateur radio.
- ▣ Why should you join?
  - Six magazines per year.
  - QSL bureau.
  - Spectrum defense.
  - Club liability insurance.
  - Personal liability insurance.
  - Advocacy.
  - [callsign@rac.ca](mailto:callsign@rac.ca) e-mail address



# Getting started

*When all else fails, there's amateur radio.*



# Equipment

- ▣ Hand-held radios.
- ▣ Mobile radios.
- ▣ HF rigs.
  - Base stations.
  - Portable stations.
- ▣ eBay deals.
  - Radios age much better than computers.
- ▣ Build your own equipment.

# Licensing

*It may be the only thing you get for free from the Feds.*

# Do I need to learn Morse Code?

- ▣ No.
  - ▣ You can gain all privileges on all bands without passing a Morse Code exam.\*
  - ▣ *However, many hams continue to use CW.*
- \* Certain countries require Morse Code certification for operation on the HF bands.

# Licensing Regime

	Bands	Max Pwr	Other
Basic	VHF	250 watts	
Basic w Honours	VHF/HF	250 watts	
Morse Code	HF	250 watts	
Advanced	HF	1000 watts	Club station Build radios Repeater

The Basic License must be earned before the Advanced or Morse Code exams can be taken.

There is no minimum age requirement.

There is no license fee, and no renewal requirement.

A Canadian license allows you to operate in the United States.

# Testing

- ▣ Basic Exam:
  - 100 questions from a 100 banks of 10 questions.
  - Multiple Choice.
  - Regulatory, operating, electronics and radio theory.
  
- ▣ Pass Mark:
  - 70% to acquire a Basic License.
  - 80% to acquire a Basic with Honours License.
  -
  
- ▣ Must be taken with an accredited examiner.

# Sample Questions

- ▣ The holder of an Amateur Radio Operator Certificate with Basic Qualification is limited to a maximum of \_\_\_\_\_ watts when expressed as direct current input power into the anode or collector circuit of the transmitter stage supplying radio frequency to the antenna:
  - 1000
  - 750
  - 250
  - 100

# Sample Questions

- ▣ What is the standard international phonetic for the letter R?
  - Romeo
  - Roger
  - Radio
  - Romania

# Sample Questions

- ▣ The electrodes of a semi-conductor diode are known as:
  - Gate and source
  - Anode and cathode
  - Collector and base
  - Cathode and drain



# The Basic Course

*It's actually not so basic.*

# The Course Proposal

- ▣ Eight modules
  - Eight weeks???
- ▣ One two-three hour evening per week.
- ▣ Eight-week completion requires home-study.

# Purpose of the Course

- ▣ Get you licensed.
- ▣ Teach you the skills you need to get on the air:
  - Setting-up a basic station
  - Operating practices
  - Antennas.
  - Propagation.
- ▣ *Following the course, we will run workshops on specific topics.*

# Course fees

## Individual

- ▣ \$15 course fee.
- ▣ \$10 club membership.

## Family

- ▣ \$25 course fee.
- ▣ \$10 club membership for each person.

- ▣ Only club members may take the course.
- ▣ Course fees will be applied entirely to course materials and related costs.
- ▣ Excess fees will be used to purchase texts, which will be donated to the library.

# Bibliography

- ▣ [www.rac.ca](http://www.rac.ca): Radio Amateurs of Canada
- ▣ [www.arrl.net](http://www.arrl.net): Amateur Radio Relay League
- ▣ [www.qsl.net/ve3jv](http://www.qsl.net/ve3jv): VE3JV's ham radio intro
- ▣ [www.ve3fyn/aarc](http://www.ve3fyn/aarc): Atikokan Club page
- ▣ [http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h\\_sf01709.html](http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf01709.html):  
IC's amateur radio site
- ▣ <http://www.rac.ca/acl/on/>:  
Ontario available callsigns

# End

*Questions?*