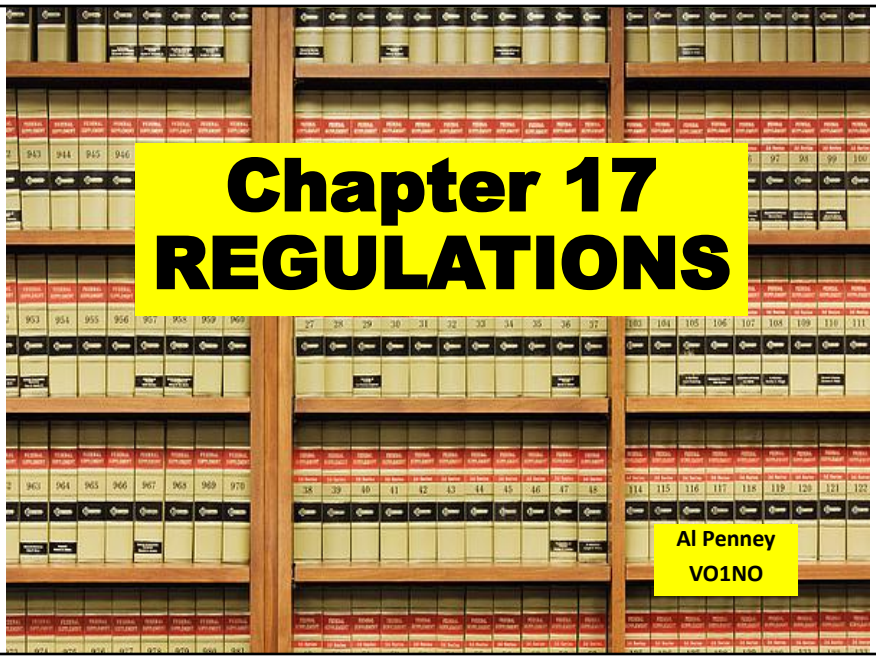

Chapter 17
REGULATIONS

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1

Objectives

- Learn about the Rules and Regulations, both national and international, that govern Amateur Radio in Canada.

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Radio Regulations - International

- Radio communications regulated at international level by the **International Telecommunication Union (ITU)**.
- Created by merger of International Telegraph Union (1865) and International Radiotelegraph Union (1906) in 1932.
- Became specialized agency of United Nations 1947.
- All sovereign nations have right to be represented and have opinion considered when new regulations or changes proposed.

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By 1865 it was agreed that a comprehensive agreement was needed in order to replace all previous telegraph agreements and create a framework to standardize telegraphy equipment, set uniform operating instructions, and lay down common international tariff and accounting rules. Between 1 March and 17 May 1865, the French Government hosted delegations from 20 European states at the first International Telegraph Conference in Paris. This meeting culminated in the International Telegraph Convention which was signed on 17 May 1865.
As a result of the 1865 Conference, the International Telegraph Union, the predecessor to the modern ITU, was founded as the first international standards organization. The Union was tasked with implementing basic principles for international telegraphy. This included: the use of the Morse code as the international telegraph alphabet, the protection of the secrecy of correspondence, and the right of everybody to use the international telegraphy.

Another predecessor to the modern ITU, the International Radiotelegraph Union, was established in 1906 at the first International Radiotelegraph Convention in Berlin. The conference was attended by representatives of 29 nations and culminated in the International Radiotelegraph Convention. An

annex to the convention eventually became known as radio regulations. At the conference it was also decided that the Bureau of the International Telegraph Union would also act as the conference's central administrator.
Between 3 September and 10 December 1932, a joint conference of the International Telegraph Union and the International Radiotelegraph Union convened in order to merge the two organizations into a single entity, the International Telecommunication Union. The Conference decided that the Telegraph Convention of 1875 and the Radiotelegraph Convention of 1927 were to be combined into a single convention, the International Telecommunication Convention, embracing the three fields of telegraphy, telephony and radio.
On 15 November 1947, an agreement between ITU and the newly created United Nations recognized the ITU as the specialized agency for global telecommunications. This agreement entered into force on 1 January 1949, officially making the ITU an organ of the United Nations

International Telecommunication Union

- The **ITU**:
  - coordinates the shared global use of the radio spectrum;
  - promotes international cooperation in assigning satellite orbits:
  - works to improve telecommunication infrastructure in the developing world; and
  - assists in the development and coordination of worldwide technical standards.

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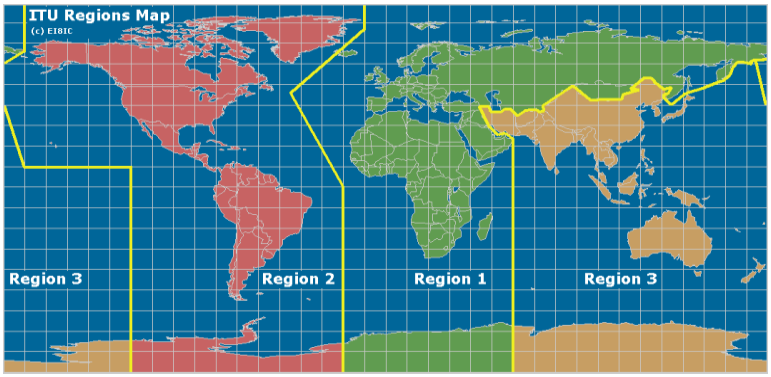
The **International Telecommunication Union**, originally the **International Telegraph Union**, is a specialized agency of the United Nations that is responsible for issues that concern information and communication technologies. It is the oldest global international organization.
The ITU coordinates the shared global use of the radio spectrum, promotes international cooperation in assigning satellite orbits, works to improve telecommunication infrastructure in the developing world, and assists in the development and coordination of worldwide technical standards. The ITU is also active in the areas of broadband Internet, latest-generation wireless technologies, aeronautical and maritime navigation, radio astronomy, satellite-based meteorology, convergence in fixed-mobile phone, Internet access, data, voice, TV broadcasting, and next-generation networks.

ITU Regions



- Canada is in ITU Region 2.
- If in territorial waters or airspace of another country, use that country's radio regulations.
- Most countries recognize 12 Nautical Mile territorial seas.
- International waters – use bands/modes specified in appropriate ITU Region in RBR-4.

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The International Telecommunication Union (ITU), in its International Radio Regulations, divides the world into three **ITU regions** for the purposes of managing the global radio spectrum. Each region has its own set of frequency allocations, the main reason for defining the regions.

Boundaries

•**Region 1** comprises Europe, Africa, the former Soviet Union, Mongolia, and the Middle East west of the Persian Gulf, including Iraq.

•**Region 2** covers the Americas including Greenland, and some of the eastern Pacific Islands.

•**Region 3** contains most of non-Former Soviet Union Asia east of and including Iran, and most of Oceania.

Radio communications worldwide are regulated cooperatively by the ITU, the International Telecommunications Union, a branch of the United Nations. All sovereign countries have the
right to be represented there and to have their opinion considered when new regulations or changes are being considered. Canada is represented on most working committees. A subset of
a region is the countries within a region. So if one is operating outside of Canada one

must follow not only the ITU regulations but those of the country you are visiting.

From RBR-4:
7.1 An amateur station that is operating on board a ship in international waters or on board an aircraft in international airspace may operate on any frequency within the frequency bands and corresponding bandwidths set out in Schedule I, II or III, as the case may be and subject to the requirements for operator qualifications. I.E.: An amateur station in international waters or airspace must follow the frequency plans as laid down by the ITU for the ITU Region they are in.

If in another country or that country's waters or airspace – you must use the frequency plan laid down for that country PROVIDED you have permission to operate there.

Radio Regulation in Canada

- **Radiocommunication Act** gives Minister of Industry the authority to implement these international regulations, modified as necessary for Canadian requirements.
- It states **fines/penalties** for non-compliance to regulations.
- **Innovation, Science and Economic Development (ISED) Canada** is responsible for administering the Radiocommunication Act.
- ISED still often called **Industry Canada (IC).**

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The ***Radiocommunication Act*** is an Act of Parliament respecting radiocommunication in Canada. It was enacted in 1985. The *Radiocommunication Act* is administered by the Government of Canada's Innovation, Science and Economic Development Canada department. It governs the licensing and regulation of radio equipment and the technical certification of radio communications equipment.

The Radiocommunication Act is the authority that allows ISED to draft documents that govern how radio is used in Canada.

ISED / Industry Canada

- ISED makes regulations that directly affect Amateur Radio.
- Responsible on a day-to-day basis for:
  - Operator testing;
  - Issuing callsigns;
  - Responding to interference complaints; and
  - Any and all operational issues.

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Innovation, Science and Economic Development Canada (**ISED**; legally, the **Department of Industry**; is the department of the Government of Canada with a mandate of fostering a growing, competitive, and knowledge-based Canadian economy. ISED specifically supports Canadian innovation efforts, trade and investment, enterprise growth, and customized economic development in Canadian communities.

ISED has three core responsibilities. These responsibilities are to oversee Canadian companies, investment and growth; people, skills and communities; and science, technology, research and commercialization. It addresses these responsibilities by doing work in four areas. These areas are research and development; economic development; market integrity, regulation, and competition; and internal services. This work is done by distributing grants and contributions, providing programs and services, managing federal activities, and overseeing relevant regulation and legislation.

Amateur Radio

- **Amateur Radio Service** is defined in the **Canadian Radiocommunication Regulations:**
- The "amateur radio service" is a radiocommunication service in which radio apparatus are used for the purpose of self-training, intercommunication or technical investigation by individuals who are interested in radio technique solely with a personal aim and without pecuniary interest.

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From ISED Website: The **"amateur radio service"** is a radiocommunication service in which radio apparatus are used for the purpose of self-training, intercommunication or technical investigation by individuals who are interested in radio technique solely with a personal aim and without pecuniary interest.

Classes of Certificates

- Since 2005, two classes of certificates;
  - **Basic Certificate**
  - **Advanced Certificate**
- Pass mark for Basic exam is **70%**.
- A mark **of 80%** or more is an **Honours Pass** and grants extra privileges.
- Morse Code qualification is voluntary.
- Amateur Radio Certificate is **valid for life**.

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Basic Qualification

- First step – all that many need.
- Following privileges:
  - Access to all bands **above 30 MHz**
  - Max transmitter power of **250 watts DC input**, **560 watts PEP on SSB, and 190 watts carrier power on other modes.**
  - May build/operate commercial kits
- **Honours pass** - access to bands below 30 MHz.
- **5 wpm Morse** Certificate also gives access to bands below 30 MHz.

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Advanced Qualification

- Emphasis is on technical subjects.
- **Must** pass the Basic Qualification before you can operate on the air.
- Extra privileges:
  - Can **build** and operate transmitters;
  - Can operate **repeaters** and **automated** stations;
  - Can use **higher power**; and
  - Can **sponsor** club stations,

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Eligibility

- **No** age or nationality restrictions.
- Must have a **valid Canadian address**.
- Must provide **Photo ID** to write the exam.
- Exam available in **English or French**.
- **Oral examination** is possible.
- Examiners are **no longer** limited to own geographic area.
- **Both** the examiner and candidate must be **in Canada** at time of exam.
- **NO EXEMPTIONS** to completing the exam.

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The Basic Exam!

- 100 question multiple choice exam.
- **Pass mark 70%, Honours Pass 80%.**
- **ENTIRE QUESTION BANK** is available on the Industry Canada website!
  - http://www.ic.gc.ca/eic/site/025.nsf/eng/h_00043.html
- IC website has a practice exam generator
  - http://www.ic.gc.ca/eic/site/025.nsf/eng/h_00040.html

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Canadian Amateur Prefixes

- CY0 Sable Is
- CY9 St-Paul Is
- VA1 Nova Scotia
- VA2 Quebec
- VA3 Ontario
- VA4 Manitoba
- VA5 Saskatchewan
- VA6 Alberta
- VA7 British Columbia
- VE0 Stations at sea
- VE1 Nova Scotia
- VE2 Quebec
- VE3 Ontario
- VE4 Manitoba
- VE5 Saskatchewan
- VE6 Alberta
- VE7 British Columbia
- VE8 Northwest Territories
- VE9 New Brunswick
- VO1 Newfoundland
- VO2 Labrador
- VY0 Nunavut
- VY1 Yukon VY2 Prince Edward Is
- VY9 Government of Canada

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VY1
VE8
VYØ
VEØ
International waters
VA7
VE7
VA6
VE6
VA4
VE4
VA5
VE5
VA3
VE3
VA2
VE2
VO2
VO1
CY9
St. Paul Island
VY2
VE9
VA1
VE1
CYØ
Sable Island
VY9
Government of Canada
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ISED Regulations Summary

- In Canada, the authority to make Radiocommunication Regulations is derived from the **Radiocommunication Act**.
- Authority to make Standards for the Operation of Radio Stations in the Amateur Service is also derived from the **Radiocommunication Act.**
- The Department that is responsible for the **administration** of the Radiocommunication Act is **Innovation, Science and Economic Development – ISED**.

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ISED Regulations Summary

- The **amateur radio service** is defined in the **Radiocommunication Regulations.**
- In addition to complying with the Radiocommunication Act, the Radiocommunication Regulations, Canadian radio amateurs must also comply with the **regulations of the International Telecommunication Union (ITU).**

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ITU Regulations Summary

- ITU Radio Regulations requires the administration of the various membership countries to take such measures as they judge necessary to **verify the operational and technical qualification** of amateurs.
- ITU no longer requires proficiency in CW:
  - WRC-03 - "**Administrations shall determine whether or not a person seeking a licence to operate an amateur station shall demonstrate the ability to send and receive texts in Morse code signals.**

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CHAPTER VI Provisions for services and stations RR25-1 ARTICLE 25 Amateur services Section I – Amateur service 25.1 § 1 Radiocommunication between amateur stations of different countries shall be permitted unless the administration of one of the countries concerned has notified that it objects to such radiocommunications. (WRC-03) 25.2 § 2 1) Transmissions between amateur stations of different countries shall be limited to communications incidental to the purposes of the amateur service, as defined in No. 1.56 and to remarks of a personal character. (WRC-03) 25.2A 1A) Transmissions between amateur stations of different countries shall not be encoded for the purpose of obscuring their meaning, except for control signals exchanged between earth command stations and space stations in the amateur-satellite service. (WRC-03) 25.3 2) Amateur stations may be used for transmitting international communications on behalf of third parties only in case of emergencies or disaster relief. An administration may determine the applicability of this provision to amateur stations under its jurisdiction. (WRC-03) 25.4 (SUP - WRC-03) 25.5 § 3 1) **Administrations shall determine whether or not a person seeking a licence to operate an amateur station shall demonstrate the ability to send and receive texts in Morse code signals.** (WRC-03) 25.6 2) Administrations shall verify the operational and technical qualifications of any person wishing to operate an amateur station. Guidance for standards of competence may be found in the most recent version of

Recommendation ITU-R M.1544. (WRC-03) 25.7 § 4 The maximum power of amateur stations shall be fixed by the administrations concerned. (WRC-03) 25.8 § 5 1) All pertinent Articles and provisions of the Constitution, the Convention and of these Regulations shall apply to amateur stations. (WRC-03) 25.9 2) During the course of their transmissions, amateur stations shall transmit their call sign at short intervals. 25.9A § 5A Administrations are encouraged to take the necessary steps to allow amateur stations to prepare for and meet communication needs in support of disaster relief. (WRC-03) 25.9B § 5B An administration may determine whether or not to permit a person who has been granted a licence to operate an amateur station by another administration to operate an amateur station while that person is temporarily in its territory, subject to such conditions or restrictions it may impose. (WRC-03) RR25-2 CHAPTER VI Provisions for services and stations Section II − Amateur-satellite service 25.10 § 6 The provisions of Section I of this Article shall apply equally, as appropriate, to the amateur-satellite service. 25.11 § 7 Administrations authorizing space stations in the amateur-satellite service shall ensure that sufficient earth command stations are established before launch to ensure that any harmful interference caused by emissions from a station in the amateur-satellite service can be terminated immediately (see No. 22.1). (WRC-03)

ITU Regulations Summary

- Canada along with the rest of North and South America is in **ITU Region 2.**
- Australia, Japan and Southeast Asia are in ITU Region 3.
- Europe, Africa and the former Soviet Union are in ITU Region 1.

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ISED Radio Information Circulars

- **Radio Information Circular 1 (RIC-1):** Guide for Examiners Accredited to Conduct Examinations for the Amateur Radio Operator Certificate.
- **RBR-4 (was RIC-2):** Standards for the Operation of Radio Stations in the Amateur Radio Service.
- **Radio Information Circular 3 (RIC-3):** Reciprocal Operating and Third Party Traffic Agreements and Arrangements in the Amateur Radio Service.

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ISED Radio Information Circulars

- **Radio Information Circular 7 (RIC-7):** Basic Qualification Question Bank for Amateur Radio Operator Certificate Examinations.
- **Radio Information Circular 9 (RIC-9):** Call Sign Policy and Special Event Prefixes.
- **Radio Information Circular 24 (RIC-24):** Information on the Amateur Operator's Certificate Examinations
- **CEPT Agreement:** Amateur Radio Licence for Canadian hams in signatory foreign countries.
- **EMCAB-2:** Criteria for Resolution of Immunity Complaints Involving Fundamental Emissions of Radiocommunications Transmitters

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The **European Conference of Postal and Telecommunications Administrations** (**CEPT**) was established on June 26, 1959 by nineteen European states in Montreux, Switzerland, as a coordinating body for European state telecommunications and postal organizations. The acronym comes from the French version of its name *Conférence européenne des administrations des postes et des télécommunications*.

The European Conference of Postal and Telecommunications Administrations (CEPT) was established on June 26, 1959, by nineteen European states in Montreux, Switzerland, as a coordinating body for European state telecommunications and postal organizations. The acronym comes from the French version of its name Conférence européenne des administrations des postes et des télécommunications.

CEPT Permits
Temporarily Operating Canadian Amateur Stations in Other Countries
Pending updates, Radio Amateurs of Canada continues, under delegated authority from Innovation, Science and Economic Development Canada (formerly Industry Canada), to issue CEPT and IARP permits to Canadian Amateurs wishing to operate while traveling abroad. Please refer to Section 8 of Radiocommunication Information

Circular (RIC-3) for details on which permit, if any, applies or is required.
Section 8 of Radiocommunication Information Circular-RIC-3
For travel to countries other than the USA and its territories and which are not signatories to either the CEPT or IARP recommendations, Canadian Amateurs should contact the administration of the foreign country directly for authorization. Information and application can often be carried out by email or web form.

ISED Terminology – Control Operator

- **Control Operator:** An amateur operator designated by the licensee of a station to be responsible for the transmissions from that station to assure compliance with the Radiocommunication Regulations.
- An amateur radio station **must** have a control operator **whenever it is transmitting.**
- Any **qualified** amateur radio operator **chosen by the station owner** may be the **control operator.**
- The control operator must be at the **station's control point**.
- **BOTH the station owner and the control operator** are responsible for the operation of an amateur radio station.

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ISED Regulations Summary

- If a Canadian amateur operates his/her station in another country, he/she must **comply with that country's rules and regulations**. Sort of *when in Rome do what the Romans do.*
- There are three different qualifications that you can obtain in amateur radio. They are:
  - **Basic** Qualification
  - **Advanced** Qualification
  - **5 word per minute** (5 wpm) Morse Code Qualification.

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ISED Regulations Summary

- Even if you have all the other qualifications, you **must obtain the Basic Qualification** in order to qualify for the Amateur Radio Operator Certificate.
- **You may take the qualifications in any order**. You will **not attain operating privileges** however, until you obtain your Basic Qualification.
- The now defunct Amateur Digital Radio Operator's Certificate equates to having the Basic and Advanced Qualifications.

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ISED Regulations Summary

- When issued your Amateur Radio Operator Certificate, it is **valid for life**.
- Once you have obtained your Amateur Radio Operator Certificate, you are **authorized to operate a radio station** in the amateur service according to the restrictions of that certificate.

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ISED Regulations Summary

- In July of 2005, Industry Canada (now ISED) modified the requirements for operating within the HF bands as follows:
  - **Morse code will no longer be the sole additional requirement** by which Canadian radio amateurs will gain access to the HF bands, but it will remain as **one valid criterion.**
  - Amateurs showing superior knowledge of operational, technical and regulatory requirements by attaining an **80% score** on the basic exam or passing the advanced exam, will also be **granted access to the HF bands.**

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Equivalent Certificates

- Only the holders of the **Canadian Radiocommunication Operator General Certificate Maritime (RGMC)** may be issued an Amateur Radio Operator Certificate without passing the exam.
- This does **NOT include** the ROC (MC), ROC (M), or ROC (A).
- The holder of an Amateur Radio Operator Certificate with Advanced Qualification is **NOT authorized to operate a station in any other service.**

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ISED Regulations Summary

- Radio apparatus may be installed, placed in operation, repaired or maintained by the holder of an Amateur Radio Operator Certificate with Basic, Basic plus 5 wpm, or Advanced Qualification on behalf of another person if the other person is the **holder of a radio authorization to operate in the amateur radio service.**
- **You may not install, put in operation, modify, repair, maintain or permit the operation of a radio apparatus for a person who does not have a radio authorization to operate in the amateur service.**

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ISED Regulations Summary

- An amateur radio operator can **reprogram** a land mobile transmitter on behalf of another person for use on 2 meters **ONLY** if the **other person holds an Amateur Radio Operator Certificate.**
- To **install** an amateur radio transmitter on behalf of another person, **BOTH you** and the **other person** must hold an **Amateur Radio Operator Certificate.**
- To **repair** an amateur radio transmitter on behalf of another person, **BOTH you** and the **other person** must hold an **Amateur Radio Operator Certificate.**
- To **place** an amateur radio transmitter **in service** on behalf of another person, **BOTH you** and the **other person** must hold an **Amateur Radio Operator Certificate.**

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ISED Regulations Summary

- It doesn't matter how little the power output of a transmitter is, **it must be licensed** at all locations.
- An amateur station may only communicate with **similarly licensed stations.**
- The holder of an Amateur Radio Operator Certificate with the **Advanced Qualification** may build transmitting equipment for use in the amateur radio service.

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ISED Regulations Summary

- There are **no age restrictions** for applying for an Amateur Radio Operator Certificate.
- You do **NOT** have to be a Canadian citizen or permanent resident.
- You **MUST** have a **valid address in Canada.**
- The Amateur Radio Operator Certificate must be **retained at your station,** i.e.: the **address provided to ISED**.
- When you change your postal address, you must inform ISED within **30 days** of your new postal address.
- The holder of an Amateur Radio Operator Certificate may install or operate radio apparatus **at any location in Canada.**

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ISED Regulations Summary

- Amateur radio operators must use only the **minimum** legal transmitter power necessary to communicate.
- An amateur with **Basic**, or the **Basic plus 5 w.p.m.** Qualification is restricted to a **maximum of 250 watts DC input power to the anode or collector circuit of the final RF stage of the transmitter (560 watts PEP output for SSB signals, or 190 watts carrier for other types of emissions) on all bands.**

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ISED Regulations Summary

- An amateur with an Amateur Radio Operator Certificate plus the **Advanced qualifications** is restricted to a maximum **1000 watts DC (2250 watts PEP when using SSB) power input to the anode or collector circuit of the final RF stage of the transmitter** on those bands that his/her qualifications allow.
- Power measurements are made at the **antenna terminals of the transmitter or amplifier.**

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For ISED, PEP = 2.25 x DC Power

ISED Regulations Summary

- When operating on all frequencies below 148 MHz the frequency stability of the transmitter must be comparable to **crystal control.**
- A reliable means to prevent or indicate **overmodulation** must be employed at an amateur station if radiotelephony is used. The maximum percentage of modulation that is allowed using radiotelephony is **100 percent**.

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ISED Regulations Summary

- All amateur stations, regardless of the mode of transmission used, must be equipped with a **reliable means of determining the operating radio frequency.**
- An amateur radio station that automatically re-transmits the signals of other amateur radio stations is known as a **repeater.**
- **New digital encoding techniques or cyphers** are permitted to transmit data over amateur radio bands as long as it is **published in the public domain**.

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ISED Regulations Summary

- Radiotelephone signals in a **band below 29.5 MHz cannot be automatically retransmitted**, unless these signals are received from a station operated by a person **qualified to transmit on frequencies below the above-mentioned frequency**.

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ISED Regulations Summary

- Radiotelephone signals may be retransmitted in the 29.5-29.7 MHz band and in all the VHF/UHF bands when received from a station operating in a VHF/UHF band from a person with only the Basic qualification. **Retransmission of a signal received from holder of a Basic only qualification operating in the VHF/UHF bands is not allowed below 29.5 MHz.**
- Note that 10M repeater operation is 29.52 – 29.7 MHz.

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This permits Basic operators to use VHF/UHF repeaters that are connected to 10M repeaters. It does not allow you to use a satellite that has a downlink below 29.52 MHz however (10M satellite is 29.3 to 29.52 MHz).

ISED Regulations Summary

- An **unmodulated carrier** may only be transmitted for **brief periods below 30 MHz**. This is usually for station adjustment purposes.
- In order to install any radio apparatus, to be used specifically for receiving and automatically retransmitting radiotelephone communications **(repeaters)** within the same frequency band, a radio amateur must hold an **Amateur Radio Operator Certificate** with a minimum of the **Basic and Advanced Qualification**.

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ISED Regulations Summary

- In order to install any radio apparatus, to be used specifically for an **amateur radio club station**, the radio amateur must hold an Amateur Radio Operator Certificate with a **minimum of the Basic and Advanced Qualification.**
- In order to **install or operate a transmitter or RF amplifier** that is **not commercially manufactured** for use in the amateur service, a radio amateur must hold the Amateur Radio Operator Certificate with the minimum of the **Basic and Advanced Qualification.**

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ISED Regulations Summary

- The holder of an Amateur Radio Operator Certificate **must comply** with the authority that that certificate bestows on the operator and station owned by the operator.
- **Both the station licensee and the control operator** are responsible for the proper operation of an amateur radio station and **normally this is the same person**, you, however if you are using someone else's station, then **both of you** are responsible for the proper operation of the station.

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ISED Regulations Summary

- As a station owner, **you are responsible** for the proper operation of the station in accordance with the regulations. A control operator **may be any qualified amateur chosen by the station owner**. A station **must have a control operator** whenever the station is transmitting, be it yourself or someone qualified chosen by you, the owner. The **control operator** must be at the **station's control point**.

NOTE: A station's control point could be at a remote location, connected by a radio link or over the Internet, but the control operator would have to have the Advanced qualification to use it.

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ISED Regulations Summary

- The owner of an amateur station **may allow anyone** to operate the station **under the supervision** and in the **presence of the holder of the amateur operator certificate.** This is known as **third party communications** and you must continuously monitor and supervise the third party's participation.

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ISED Regulations Summary

- If you allow **another amateur** with additional qualification than yours control your station, he/she is **only allowed** the **operating privileges of your Amateur Radio Operator Certificate**.
- If **you are the control operator** of a station of another amateur who has **additional qualifications** to yours, you are allowed only your own operating privileges**.**
- **(This assumes you use the owner's callsign)**

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This refers to using the other operator's callsign when operating.

ISED Regulations Summary

- If you are using the station of an Amateur with greater privileges than you do, and **you are using your callsign**, you are limited to **your own privileges.**
- If you are using the station of an Amateur with greater privileges than you do, and **you are using their callsign**, and **YOU are the Control Operator**, then you are limited to **your own privileges**.

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ISED Regulations Summary

- If you are using the station of an Amateur with greater privileges than you do, and you are **using their callsign**, and **THEY are the Control Operator**, then you can **use their privileges**.
- If an operator with additional privileges uses your station and your callsign, **he/she is limited to your privileges**.
- So, the only time you can use the additional privileges is when you use the other operator's callsign **AND** the Control Operator also has those additional privileges.

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ISED Regulations Summary

- A transmission that disturbs other communications is called **harmful interference**. You are **not allowed to disturb** another station's communications.
- **VHF and UHF FM radios** purchased for use in the amateur radio service can also be programmed to communicate on frequencies used in the **land mobile service ONLY if the radio is certified and licensed for use in the land mobile service.**

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ISED Regulations Summary

- In the event of interference to a neighbor's radio receiver, stereo, VCR, TV set or other "radio sensitive equipment" *capable of receiving RF signals*, if the **field strength of the amateur station is below 1.83 volts per meter**, it will be deemed that the affected equipment's **lack of immunity is the cause**. However, if the field strength of the amateur station **exceeds 1.83 volts per meter**, it will be deemed that the **amateur's transmission is the cause of the problem**.

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From EMCAB-2: https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01005.html
(**Electromagnetic Compatability Advisory Bulletin)**

This is for receivers and associated equipment. For radio sensitive equipment not supposed to receive signals, it is 3.16 volts/meter.

ISED Regulations Summary

- **Radio-sensitive** equipment is considered to be "any device, machinery or equipment, other than radio apparatus, the use or functioning of which is, or can be, **adversely affected by radiocommunications emissions".** These may include electronic organs, microwave ovens, furnace controllers and a host of other non-radio type of equipment.

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ISED Regulations Summary

- Where interference to the reception of radiocommunications is **caused by the operation of an amateur station**, the Minister may require that **necessary steps** for the prevention of the interference be taken by the **radio amateur**.
- If the **Minister** of Innovation, Science and Industry determines that an amateur radio station is causing **harmful interference**, the Minister **may order** the station's operation to **cease or change**.

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ISED Regulations Summary

- If regulations say that the amateur service is a secondary user of a frequency band, and another service is a primary user, this means amateurs are allowed to use the frequency band **only if they do not cause interference to primary users**. Two of the bands where the amateur service is secondary users are **440.0 to 450.0 MHz** and **902 to 928 MHz.**
- **Secondary User** - Amateur radio operators are allowed to use the frequency band only if they do not cause interference to primary users.

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ISED Regulations Summary

- There are **several other bands** above these lowest two where the radio amateur has secondary user status. See **Schedule 1 of RBR-4** for the other bands.
- If two amateur stations want to use the **same frequency at the same time,** it should be remembered that **both station operators** have an **equal right** to operate on the frequency and some arrangement should be worked out to avoid conflict.

Al Penney
VO1NO

ISED Regulations Summary

- Out of band operations is **not allowed** by any amateur radio operator, and penalties could be assessed to the control operator.
- A radio amateur **may not operate**, or permit to be operated, a radio apparatus, which he knows is **not performing to the Radiocommunication Regulations tolerances**.
- **Interference that seriously degrades, obstructs or repeatedly interrupts** a radiocommunication service is called **Harmful Interference.**

Al Penney
VO1NO

ISED Regulations Summary

- A person may operate or permit the operation of a radio apparatus **only** where the apparatus is maintained to the **Radiocommunication Regulations tolerances**. These standards are the performance standards set by Industry Canada regulations and policies.

Al Penney
VO1NO

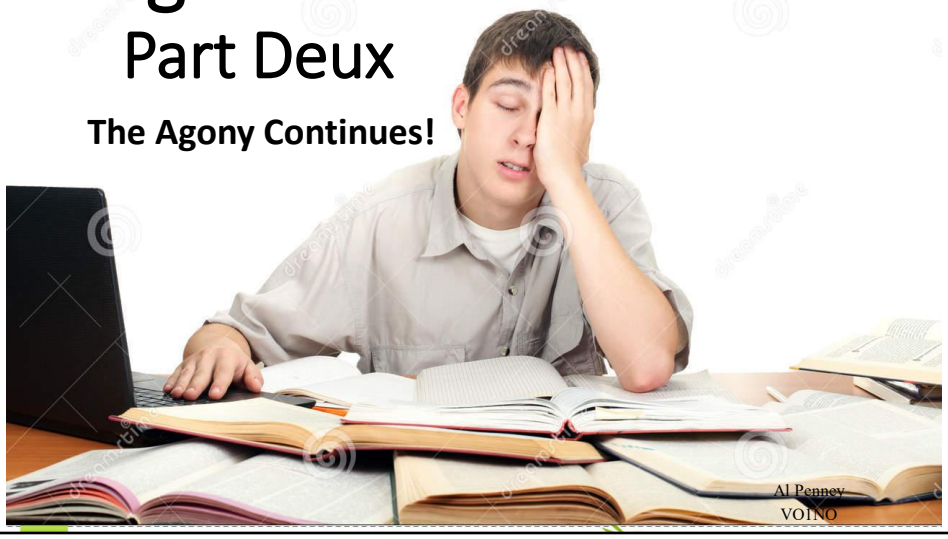
ISED Regulations Summary

- **No person** shall possess or operate any device, for the purpose of **amplifying** the output power of a **licence-exempt radio apparatus** (e.g.: FRS, Citizens Band).
- A person may operate an amateur radio station when the person **complies** with the **Standards for the Operation of Radio Stations in the Amateur Radio Service.**

Al Penney
VO1NO

Regulations
Part Deux

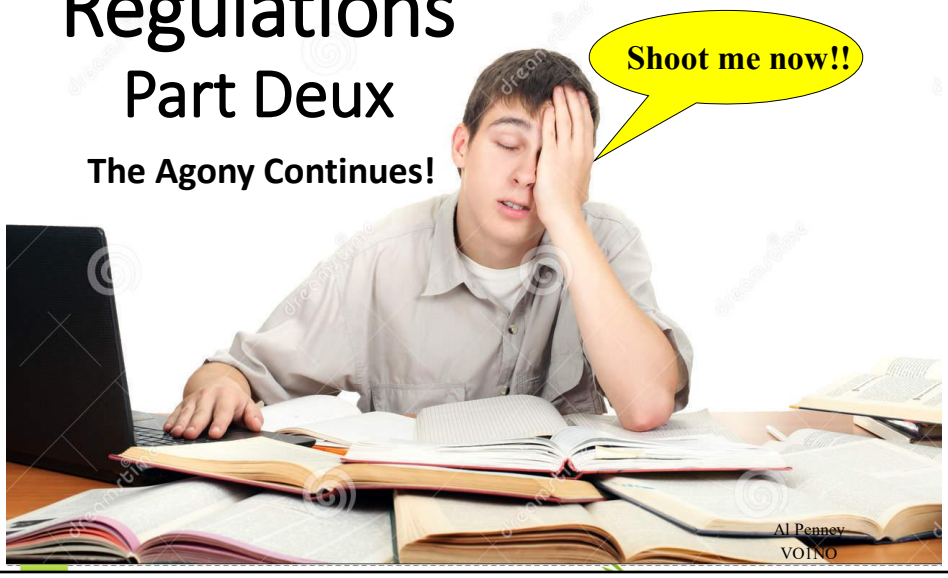
The Agony Continues!



Al Penney
VOIHO

Regulations
Part Deux

The Agony Continues!



ISED Regulations Summary

- While in Canada, the station licensed by the government of the United States shall identify his station by:
  - By transmitting the **call sign assigned by the FCC**.
  - By adding to his call sign the **Canadian call sign prefix** for the **geographic location** of the station.
  - By radiotelephone, adding to the call sign the word **“portable" or "mobile”** or by radio telegraphy adding the **oblique character /.**
- Canadians operating in the USA **follow the same procedure**, but with the US callsign prefix for the area they are in, for example “VO1NO mobile W Two”.
- Canadian **Basic** amateurs are allowed to operate in the USA.

Al Penney
VO1NO

ISED Regulations Summary

- Foreign amateur radio operators may operate in Canada if they qualify for a **CEPT (European Conference of Postal and Telecommunications Administrations**) Amateur Radio Licence. They are granted **Advanced operating privileges**.
- Other foreign amateur radio operators may operate while visiting Canada if **their country has an agreement with Canada**, and they **have obtained the appropriate permit**.
- Canadian amateur radio operators must have an **Advanced qualification** to qualify for a **CEPT licence when visiting a participating country.**

Al Penney
VO1NO

ISED Regulations Summary

- When communicating with a foreign country, only messages of a **technical nature** or **personal remarks of relative unimportance** should be sent.
- To keep your amateur radio station from retransmitting music or signals from a non-amateur station, **turn down the volume of background audio.**

Al Penney
VO1NO

ISED Regulations Summary

- Amateur radio communication should only be of a technical or personal nature. You are **not allowed to**:
  - **Conduct business** planning on amateur radio.
  - **Broadcast** information to the **general public**.
  - **Retransmit music or signals** originating from a **non-amateur station.**
  - Originate music or other **broadcast type signals** from an amateur station.
  - Use **secret codes** in order to obscure the meaning of a message.
  - Transmit **profane or obscene** language or messages.

Al Penney
VO1NO

ISED Regulations Summary

- **No person shall send** or cause to be sent a **false, fraudulent or deceptive signal** such as MAYDAY when no such emergency exists.
- **No person shall decode an encrypted subscription** programming signal **without permission** of the lawful distributor.
- An amateur radio operator may **NEVER broadcast to the general public.**

Al Penney
VO1NO

ISED Regulations Summary

- **No person shall**, without lawful excuse, **interfere with or obstruct** any radio communication
- A person **found guilty** of transmitting a false or fraudulent distress signal, or interfering with, or obstructing any radio communication, without lawful cause, may be liable, **on summary conviction, to a penalty of a fine, not exceeding $5,000, or a prison term not exceeding one year, or both**.
- The government document that states the **offences and penalties** relating to radiocommunications is the **Radiocommunication Act**.

Al Penney
VO1NO

Amount of the fine may have changed.

ISED Regulations Summary

- The holder of a radio authorization shall, **at the request of a duly appointed radio inspector**, show that radio authorization, or a copy thereof, to the inspector, **within 48 hours of the request**.

Al Penney
VO1NO

ISED Regulations Summary

- A duly appointed radio inspector may request to inspect a radio station. The person in charge of a place entered by a radio inspector **shall give the inspector information that the inspector requests**. Where entry is refused, and it is necessary to perform his duties under the Act:
  - In executing a warrant, **a radio inspector shall not use force, unless accompanied by a peace officer, and force is authorized.**
- A radio inspector may **NOT** enter a dwelling **without the consent of the occupant and without a warrant.**

Al Penney
VO1NO

ISED Regulations Summary

- The Minister **may suspend a radio authorization**, **upon notice** and **with the opportunity to make representation thereto**:
  - Where the authorization was obtained through **misrepresentation.**
  - Where the holder has **contravened the Act or Regulations.**
  - Where the holder has **contravened the terms and conditions of the radio authorization.**

Al Penney
VO1NO

ISED Regulations Summary

- The minister **may suspend or revoke** a radio authorization **WITHOUT NOTICE** where the holder has **failed to comply** with a request to pay fees or interest due.
- Any abbreviation may be used as long as it **doesn't obscure the meaning of the communication**.

Al Penney
VO1NO

ISED Regulations Summary

- The following one-way communications are authorized in the amateur service:
  - **Telecommands** to model craft on **all amateur bands above 30 MHz.**
  - **Brief transmissions** to make **adjustments** to the station below 30 MHz.
  - **Morse code practice**.
  - A **beacon station** in the amateur radio service.
- The holder of an Amateur Radio Operator Certificate may operate radio-controlled models on **all bands above 30 MHz**.
- You can make **test transmissions** provided will **not cause interference** to stations in the amateur radio service or other services.

Al Penney
VO1NO

ISED Regulations Summary

- You are **not allowed** to **divulge** any radio communications unless it is from a **broadcast station** or another **amateur radio station.**
- The following are **exceptions** from penalties to this under the Radiocommunication Act:
  - Where it is for the purpose of **preserving or protecting property**, or for the prevention of **harm to a person**.
  - Where it is for the **purpose of giving evidence in a criminal or civil proceeding** in which persons are required to give evidence.
  - Where it is **on behalf of Canada**, for the purpose of **international or national defense or security**.

Al Penney
VO1NO

ISED Regulations Summary

- Amateur radio stations may communicate with any station involved in a **real or simulated emergency.**
- In the amateur radio service, business communications are only permitted if they are for the **safety of life or immediate protection of property.**
- If you hear an unanswered distress signal on an amateur band **you should offer assistance.**

Al Penney
VO1NO

ISED Regulations Summary

- In the amateur radio service, it is **permissible** to **broadcast radio communications** required for the **immediate safety of life of individuals or the immediate protection of property**.
- An amateur radio station in **distress** may **use any means of radiocommunications.**

Al Penney
VO1NO

ISED Regulations Summary

- During a **disaster**, an amateur station may **make transmissions necessary to meet essential communications needs and assist relief operations when normal communication systems are overloaded, damaged or disrupted.**
- During an emergency, there are **no limitations to an amateur radio stations output power.**
- During relief operations in the days **following a disaster**, using frequencies **outside** amateur radio bands is **never permitted**.

Al Penney
VO1NO

ISED Regulations Summary

- During a disaster, most communications are handled by **nets**, using predetermined frequencies in the amateur bands. Operators **not directly involved** with disaster communications **are requested to avoid making unnecessary transmissions on or near frequencies** being used for disaster communications.

Al Penney
VO1NO

ISED Regulations Summary

- Messages from **recognized public service agencies** may be handled by amateur radio stations during **peace time and civil emergencies and exercises.**
- It is **permissible to interfere** with the working of another station **if your station is directly involved with a distress situation.**

Al Penney
VO1NO

ISED Regulations Summary

- The operator of an amateur station **shall not accept nor demand any remuneration** in any form, in respect of a radiocommunications that the person transmits or receives.
- There are **no fees** associated with the **issuing of your Amateur Radio Operator Certificate** or **any of your upgrades**, or the **issuing of a new call sign if you move** to another province **or your Amateur Radio Operator Certificate is lost or destroyed.**
- The **fee for changing an existing callsign**, including changing to a two-letter call sign, is **$60.00**.

Al Penney
VO1NO

ISED Regulations Summary

- The **fee** for taking an examination given by **an accredited examiner** is to be **negotiated** between the accredited examiner and the candidate.
- There is **no fee** for taking examinations at an **ISED office.**
- An accredited examiner must hold the **Amateur Radio Operator Certificate with Basic, 5 w.p.m. and Advanced qualifications.**

Al Penney
VO1NO

ISED Regulations Summary

- Examinations for **disabled candidates** may be given **orally**, or **tailored to the candidate's ability** to complete the examination.
- A disabled candidate **must pass a normal radio amateur certificate examination** before being granted any qualification.
- An examiner may request **medical evidence** from a practicing medical physician before accommodating testing.
- A candidate with insufficient knowledge of English or French **may NOT be accompanied by an interpreter.**
  - **From RIC-1:** Due to the complex nature of the subject matter, candidates must be able to comprehend both the terminology and the technical language used during the examination process without the need for detailed explanations by the examiner.

Al Penney
VO1NO

ISED Regulations Summary

- From RIC-1:
  - Accredited examiners **may not exempt a candidate from the requirement for an examination.** However, accredited examiners may provide accommodated testing when a candidate is unable to complete an examination due to a disability.
  - When a candidate has a disability that prevents that person from completing a written examination, **the examiner may conduct an oral examination** by reading each exam question to the candidate. The candidate must obtain the required pass mark for the class of certificate sought (see section 7.3).

ISED Regulations Summary

- From RIC-1:
  - In the case of the Morse code examination, a candidate may have a disability that limits or prohibits the ability to either send or receive Morse code. In order to test the candidate's knowledge of Morse code, the sending portion of the examination should be conducted by asking the candidate to recite the exam text in Morse code. For the receiving portion of the exam, the examiner should send the required text manually and have the candidate verbalize the characters. The exam should be graded with respect to errors. Code speed cannot be taken into account in these cases.

ISED Regulations Summary

- From RIC-1:
  - The examiner may request that a **candidate provide an attestation from a medical practitioner before conducting an accommodated examination.** Such documentation is confidential and should be retained by the examiner for three (3) years. Examiners who are considering requesting an attestation are urged to consult with the ARSC.

Al Penney
VO1NO

ISED Regulations Summary

- An amateur radio station must use his **call sign** to identify his station at the **start and the end of a communications** with another station and at **intervals no greater than 30 minutes** during an ongoing communication.
- You must use **your call sign to identify your station**. There is no requirement to use the other station's call sign in your communications. **Each station must transmit its own call sign.**

Al Penney
VO1NO

ISED Regulations Summary

- The **only exception for not using your call sign** is when the transmission is **telemetry, digital or similar type of transmission** to a **radio control model.** These types of transmissions are only allowed on amateur bands **above 30 MHz.**
- Call signs are to be sent in **English or French**, either one of Canada's two official languages.

Note: You are allowed to use whatever language you want to, and to give your call sign in that language, but you must also give it in either English or French.

Al Penney
VO1NO

ISED Regulations Summary

- Amateur **third party communications** is the transmission of **non-commercial or personal** messages **to or on behalf of a third party**. These are messages sent to a **non-amateur via an amateur station.**
- A message originating from the **Canadian Forces Affiliated Radio Service (CFARS)** or the **United States Military Auxillary Radio System (MARS)** are **not considered** to be **third party messages**, even though the messages originated from a non-amateur station.

Al Penney
VO1NO

ISED Regulations Summary

- A person operating a Canadian amateur station is **forbidden to communicate** with amateur stations of another country when that country has **filed an objection to such communications with the International Telecommunication Union.**
- International communications on behalf of a third party may be transmitted by an amateur station **only if the countries concerned have authorized such communications.**
- Canadian amateur radio operators **may** use their stations to transmit international communications on behalf of a third party because Canada **does not prohibit international communications on behalf of third parties.**

Al Penney
VO1NO

North Korea and Yemen do not permit Amateur Radio. Myanmar may be another.

ISED Regulations Summary

- If a non-amateur friend is using your station under your control and supervision to talk to someone in Canada, and a foreign station breaks in to talk to your friend, **you continue monitoring the communications of your friend.**
- Canadian amateur radio stations may provide communications on behalf of third parties with **any other amateur radio station**.
- Third party communications must **only be of a personal and non-commercial nature.**
- Third parties include **non-certified persons**.

Al Penney
VO1NO

From RIC-3:

8.3 Third-Party Agreements and Arrangements

International third-party communication in case of emergencies or disaster relief is expressly permitted unless specifically prohibited by a foreign administration.

Any foreign administration may permit its amateur stations to communicate on behalf of third parties without having to enter into any special arrangements with Canada.

Canada does not prohibit international communications on behalf of third parties.

Antenna/Tower Installations

- Antenna structures have become a concern in many communities and as a result are **regulated by various authorities** in communities across Canada. Concerns can also be raised by **neighbors,** and their concerns should also be considered when planning antenna or tower installations. Gone are the days when we could do basically what we want to do.

Al Penney
VO1NO

Antenna/Tower Installations

- Antennas are classified as two types as far as their physical structures and locating are concerned and as a result, different rules apply.
  - **Type 1 (site specific) antennas are the large broadcasting structures**
  - **Type 2 (non-site specific) are the structures that amateur radio stations install.**

Al Penney
VO1NO

Antenna/Tower Installations

- Industry Canada is **not normally involved with Type 2 structures** but local land-use authorities and your neighbors may be of concern to you. You should contact both your **local land-use authority and your neighbors before any antenna installation,** and if you fail to do so, you must accept any consequences for your actions.

Al Penney
VO1NO

Antenna/Tower Installations

- There is **no requirement** to receive **prior approval from Industry Canada** to construct an antenna or its structure.
- Prior to an installation of an antenna or structure, for which community concerns could be raised, **radio amateurs should consult with their land-use authority.**
- You do **NOT** need to participate in public meetings for antenna projects.
- The **Minister of Innovation, Science and Industry** has **authority over antenna installations,** including antenna masts and towers.

Al Penney
VO1NO

Antenna/Tower Installations

- Industry Canada expects radio amateurs to **address community concerns in a responsible manner and to consider land-use authority requests.**
- If a radio amateur erects an antenna structure **without consulting** the land-use authority, he/she must **accept any consequences**.
- For the purpose of environmental filing, amateur stations are considered to be **Type 2** (non- site specific).
- You are **NOT required** to contact land-use authorities to determine public consultation requirements for an antenna system **when an exclusion criterion** defined by Innovation, Science and Economic Development Canada applies.

Al Penney
VO1NO

Antenna/Tower Installations

- Ignoring other requirements regarding the installation or modification of an antenna system, the **tallest antenna structure** you could erect **without public consultation** is the **tallest exempted by the land-use authority or ISED.**
- The **municipality** or local **land-use authority** determines how **public consultation should take place**.

Al Penney
VO1NO

Antenna/Tower Installations

- ISED's default public consultation process for antenna systems requires proponents to **address reasonable and relevant concerns** provided in writing within the **30-day public comment period**.
- Public consultation is **NOT required** when the system is **excluded** by the municipal process **OR** the provisions of Client Procedures Circular CPC-2-0-03.
- If no agreement can be reached, ISED will make decisions on antenna or tower projects.
- https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/learn-more/key-documents/procedures/client-procedures-circulars-cpc/cpc-2-0-03-radiocommunication-and-broadcasting-antenna-systems

Al Penney
VO1NO

Q Codes

- **QRS** - Shall I send more slowly?
- **QTH** - What is your position?
- **QRL** - Are you busy?
- **QRM** - Are you being interfered with?
- **QRN** - Are you troubled by static?
- **QRZ** - Who is calling me?
- **QRX** - When will you call me again?

Al Penney
VO1NO

http://www.arrl.org/files/file/Get%20on%20the%20Air/Comm%20w%20Other%20Hams-Q%20Signals.pdf

Amateur Radio Bands

- 160m Band: 1.800 – 2.000 MHz
- 80m Band: 3.500 – 4.000 MHz
- 40m Band: 7.000 – 7.300 MHz
- 20m Band: 14.000 – 14.350 MHz
- 15m Band: 21.000 – 21.450 MHz
- 10m Band: 28.000 - 29.700 MHz

Al Penney
VO1NO

Bandwidths

- The **maximum bandwidth** permitted on the **6m and 2m** bands is **30 kHz**.
- The **maximum bandwidth** of an amateur radio station's transmission allowed in the band **28 MHz to 29.7 MHz is 20 kHz**.
- Except for one band (30m) the allowed bandwidth on amateur radio bands between **7 MHz and 25 MHz is 6 kHz**.
- The **10.100 to 10.150 MHz amateur radio band** (30m) has a maximum allowed **bandwidth of 1 kHz** (i.e.: less than 6 kHz). **SSB is not permitted**.

Al Penney
VO1NO

Operating Regulations

- When transmitting **near band edges**, you must ensure that the **entire occupied bandwidth** falls within the amateur radio band.
- **Fast-scan television (ATV)** is **not permitted** on 14.23 MHz or 145 MHz.
- **Single Sideband (SSB)** is **not permitted on 10.12 MHz**.
- The **maximum effective radiated power** (ERP), expressed as peak envelope power (PEP), the holder of an Amateur Radio Operator Certificate with Advanced Qualification **may use on 60m is 100 watts.**
- On **630 metres and 2200 metres**, the **key antenna characteristic** that must be taken into account to comply with **power limitations** expressed as **equivalent isotropically radiated power** (EIRP) is **antenna gain**.

Al Penney
VO1NO

Al Penney
VO1NO

CONGRATULATIONS!

- You have completed the Canadian Basic Amateur Radio Course, and are now ready to write the exam and become a Ham!

Al Penney
VO1NO

Some Advice…

- Write the exam sooner rather than later.
- Recordings will remain online until after next course is finished.
- Become a member of Radio Amateurs of/du Canada (RAC) – see upcoming slide.
- Join a club in your area.
- Keep learning – there is always something else to learn!
- GET ON THE AIR!!!

Al Penney
VO1NO

Next Course

- The next course will probably start in **19 February 2026**.
- Registration will open in January.
- Those who need extra time to prepare for the exam, or those who want to review certain topics, **can sit in on the next course free of charge.**
- Reply to my e-mail (in January) if you want to do this.
- **LET OTHERS KNOW ABOUT THE COURSE!**
- (They have to pay the registration fee however!)

Al Penney
VO1NO

RAC Membership

- RAC offers new Amateurs one-year free membership.
- You should receive an application form with your ISED certificate.
- It has instructions to go to a special page on the RAC website.

Radio Amateurs of Canada / Radio Amateurs du Canada

Al Penney
VO1NO

RAC Membership

- In case there is no application form with your certificate, you can do the following:
- Send the following information to the RAC Officer Manager at racgm@rac.ca :
  - Full name, preferred contact email, and amateur radio call sign;
  - Full mailing address and contact phone number; and
  - A scan or photo of your amateur radio certificate provided by ISED Canada with the certificate number visible.

Al Penney
VO1NO

Good Luck
and
73 de Al, VO1NO

Al Penney
VO1NO