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Spectrum Management and Telecommunications Policy

Radiocommunication Information Circular

# Information on the Amateur Radio Service

Radiocommunication Information Circulars are issued for the guidance of those engaged in radiocommunications in Canada. The information contained in these circulars is subject to change without notice. It is therefore suggested that interested persons consult the nearest district office of Industry Canada for additional details. While every reasonable effort has been made to ensure accuracy, no warranty is expressed or implied. As well, these circulars have no status in law.

Comments and suggestions may be directed to the following address:

Industry Canada  
Radiocommunications and  
Broadcasting Regulatory Branch  
300 Slater Street  
Ottawa, Ontario  
K1A 0C8

Attention: DOSP

via e-mail: [spectrum\\_pubs@ic.gc.ca](mailto:spectrum_pubs@ic.gc.ca)

All spectrum publications are available on the Internet at:

<http://strategis.gc.ca/spectrum>

## Foreword

The *Radiocommunication Regulations* describe the *amateur radio service* as 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.”

The Department of Industry believes that amateur radio should be readily accessible to Canadians, so that those who are interested in the science and art of radiocommunication may avail themselves of every reasonable opportunity to learn, enjoy, contribute or participate in this service. The necessity for operators to have some technical and operating knowledge before being allowed access to amateur radio bands is a well established and internationally recognized principle.

To learn more about amateur radio in Canada, we encourage contacting local amateur radio clubs or one of the following organizations:

Radio Amateurs of Canada Inc. (RAC)  
720 Belfast Road, Suite 217  
Ottawa, Ontario  
K1G 0Z5  
Telephone: (613) 244-4367  
Fax: (613) 244-4369  
E-mail: rachq@rac.ca

Radio Amateur du Québec Inc. (RAQI)  
4545 Pierre-de-Coubertin Avenue  
P.O. Box 1000, Station "M"  
Montréal, Quebec  
H1V 3R2  
Telephone: (514) 252-3012  
Fax: (514) 254-9971  
E-mail: raqi@sympatico.ca

Industry Canada's Amateur Radio Service Centre is responsible nationally for all amateur licensing, certification and examiner accreditation. The processing centre should be the first point of contact concerning all amateur matters. Correspondence and enquiries should be directed to:

Amateur Radio Service Centre  
Industry Canada  
P.O. Box 9654  
Postal Station T  
Ottawa, Ontario  
K1G 6K9  
Telephone: (613) 780-3333  
Toll free: (888) 780-3333  
Fax: (613) 998-5919  
E-mail: spectrum.amateur@ic.gc.ca

## Purpose

This circular describes, in general terms, procedures, policies and general information concerning the amateur radio service. Also, included are syllabuses for Amateur Radio Operator Certificate qualification examinations.

## Other Circulars

Other Radiocommunication Information Circulars pertaining to amateur radio are:

RIC-1 *Guide for Examiners Accredited to Conduct Examinations for the Amateur Radio Operator Certificate*

RIC-2 *Standards for the Operation of Radio Stations in the Amateur Radio Service*

RIC-7 *Basic Qualification Question Bank for Amateur Radio Operator Certificate Examinations*

RIC-8 *Advanced Qualification Question Bank for Amateur Radio Operator Certificate Examinations*

RIC-9 *Call Sign Policy and Special Event Prefixes*

Printed copies of Industry Canada circulars are available for a fee from Tyrell Press Ltd. at 1-800-267-4862 or from Canada Communication Group Inc. at 1-888-562-5561. Industry Canada documents are also available at no cost from the Department's Web site at <http://strategis.gc.ca/spectrum>.

## 1. Qualifications

### 1.1 Certification

Authority to operate radio apparatus in the amateur radio service is issued to holders of an Amateur Radio Operator Certificate with Basic Qualification.

Other qualifications available with the Amateur Radio Operator Certificate are Morse Code and Advanced Qualifications.

### 1.2 Certificate Equivalency

The holder of an Amateur Radio Operator's Certificate or the Amateur Radio Operator's Advanced Certificate issued under the repealed *Radio Operator's Certificate Regulations* has the same operating privileges as the holder of an Amateur Radio Operator Certificate with Basic, Morse Code and Advanced Qualifications.

The holder of an Amateur Digital Radio Operator's Certificate issued under the repealed *Radio Operator's Certificate Regulations* has the same operating privileges as the holder of an Amateur Radio Operator Certificate with Basic and Advanced Qualifications.

Persons holding any of the following Canadian certificates may be issued an authorization to operate in the amateur radio service with the same operating privileges as the holder of an Amateur Radio Operator Certificate with Basic, Morse Code and Advanced Qualifications:

- Radiocommunication Operator's General Certificate (Maritime)
- Radio Operator's First Class Certificate
- Radio Operator's Second Class Certificate

Persons holding any of the following Canadian certificates may be issued an authorization to operate in the amateur radio service with the same operating privileges as the holder of an Amateur Radio Operator Certificate with Basic Qualification:

- Radiotelephone Operator's General Certificate (Aeronautical)
- Radiotelephone Operator's General Certificate (Maritime)
- Radiotelephone Operator's General Certificate (Land)
- First-class Radioelectronic Certificate

### 1.3 Privileges and Restrictions

Privileges and restrictions can be found in the *Radiocommunication Regulations* and Radiocommunication Information Circular 2 (RIC-2), *Standards for the Operation of Radio Stations in the Amateur Radio Service*. A brief summary follows:

#### **Basic Qualification:**

- access all amateur bands above 30 MHz
- use a maximum of 250 watts DC transmitter input power
- build and operate all station equipment, except for "home-made" transmitters

#### **Morse Code:**

- Access all amateur bands below 30 MHz

#### **Advanced Qualification:**

- use maximum transmitter power of 1000 watts DC input
- build and operate transmitting equipment
- establish repeaters and club stations
- remotely control fixed stations, including the use of radio links

### 1.4 Non-Qualified Persons

Non-qualified persons may use an amateur radio station provided a qualified operator is in attendance to perform the control functions.

## 2. Examinations

### 2.1 Basic Qualification Examination

An examination of 100 questions is made by drawing one question from a series of questions applicable to the following 100 topic areas. The pass mark is 60%.

#### **Regulations and Policies - 001**

- 1-1 radio licences, applicability, eligibility of licence holder
- 1-2 licence fee, term, posting requirements, change of address

- 1-3 licence suspension or revocation, powers of radio inspectors, offenses and punishments
- 1-4 operator certificates, applicability, eligibility, equivalents, reciprocal recognition
- 1-5 operation, repair and maintenance of radio apparatus on behalf of other persons
- 1-6 operation of radio apparatus, terms of licence, applicable standards, exempt apparatus
- 1-7 content restrictions - non-superfluous, profanity, secret code, music, non-commercial
- 1-8 installation and operating restrictions - number of stations, repeaters, home-built, club stations
- 1-9 participation in communications by visitors, use of station by others
- 1-10 interference, determination, protection from interference
- 1-11 emergency communications (real or simulated), communication with non-amateur stations
- 1-12 non-remuneration, privacy of communications
- 1-13 station identification, call signs, prefixes
- 1-14 foreign amateur operation in Canada, banned countries, third-party messages
- 1-15 frequency bands and qualification requirements
- 1-16 maximum bandwidth by frequency bands
- 1-17 restrictions on capacity and power output by qualifications
- 1-18 unmodulated carriers, re-transmission
- 1-19 amplitude modulation, frequency stability, measurements
- 1-20 International Telecommunication Union (ITU) *Radio Regulations*, applicability
- 1-21 operation outside Canada, ITU regions, reciprocal privileges, international licences
- 1-22 examinations - department's fees, delegated examinations, fees, disabled accommodation
- 1-23 antenna structure approval, neighbour and land-use authority consultation
- 1-24 radiofrequency electromagnetic field limits
- 1-25 criteria for resolution of radio frequency interference complaints

### **Operating and Procedures - 002**

- 2-1 voice operating procedures - channelized VHF/UHF repeater
- 2-2 phonetic alphabet
- 2-3 voice operating procedures - simplex VHF/UHF and HF
- 2-4 tuneups and testing, use of dummy load, courteous operation
- 2-5 Morse code (CW) operating procedures, procedural signs
- 2-6 RST system of signal reporting, use of S meter
- 2-7 Q signals
- 2-8 emergency operating procedures
- 2-9 record keeping, confirmation practices, maps/charts, antenna orientation

### **Station Assembly, Practice and Safety - 003**

- 3-1 functional layout of HF stations
- 3-2 functional layout of FM transmitters
- 3-3 functional layout of FM receivers
- 3-4 functional layout of CW transmitters
- 3-5 functional layout of SSB/CW receivers
- 3-6 functional layout of SSB transmitters
- 3-7 functional layout of digital systems
- 3-8 functional layout of regulated power supplies

- 3-9 functional layout of Yagi-Uda antennas
- 3-10 receiver fundamentals
- 3-11 transmitter, carrier, keying, and amplitude modulation fundamentals
- 3-12 carrier suppression, SSB fundamentals
- 3-13 frequency and phase modulation fundamentals
- 3-14 station accessories for telegraphy, radiotelephony, digital modes
- 3-15 digital mode fundamentals (RTTY, ASCII, AMTOR, packet)
- 3-16 cells and batteries, types, ratings, charging
- 3-17 power supply fundamentals
- 3-18 electrical hazards, electrical safety, security
- 3-19 electrical safety ground, capacitor discharge, fuse replacement
- 3-20 antenna and tower safety, lightning protection
- 3-21 exposure of human body to RF, safety precautions

### **Circuit Components - 004**

- 4-1 amplifier fundamentals
- 4-2 diode fundamentals
- 4-3 bipolar transistor fundamentals
- 4-4 field-effect transistor fundamentals
- 4-5 triode vacuum tube fundamentals
- 4-6 resistor colour codes, tolerances, temperature coefficient

### **Basic Electronics and Theory - 005**

- 5-1 metric prefixes - pico, micro, milli, centi, kilo, mega, giga
- 5-2 concepts of current, voltage, conductor, insulator, resistance
- 5-3 concepts of energy and power, open and short circuits
- 5-4 Ohm's law - single resistors
- 5-5 series and parallel resistors
- 5-6 power law, resistor power dissipation
- 5-7 AC, sinewave, frequency, frequency units
- 5-8 ratios, logarithms, decibels
- 5-9 introduction to inductance, capacitance
- 5-10 introduction to reactance, impedance
- 5-11 introduction to magnetics, transformers
- 5-12 introduction to resonance, tuned circuits
- 5-13 introduction to meters and measurements

### **Feedlines and Antenna Systems - 006**

- 6-1 feed line characteristics, characteristic impedance
- 6-2 balanced and unbalanced feed lines, baluns
- 6-3 popular antenna feed line and coaxial connector types
- 6-4 line losses by line type, length and frequency
- 6-5 standing waves, standing wave ratio, SWR meter

- 6-6 concept of impedance matching
- 6-7 isotropic source, polarization via element orientation
- 6-8 wavelength vs physical length
- 6-9 gain, directivity, radiation pattern, antenna bandwidth
- 6-10 vertical antennas - types, dimensions, characteristics
- 6-11 Yagi antennas - types, dimensions, characteristics
- 6-12 wire antennas - types, dimensions, characteristics
- 6-13 quad/loop antennas - types, dimensions, characteristics

### **Radio Wave Propagation - 007**

- 7-1 line of sight, ground wave, ionospheric wave (sky wave)
- 7-2 ionosphere, ionospheric regions (layers)
- 7-3 propagation hops, skip zone, skip distance
- 7-4 ionospheric absorption, causes and variation, fading, phase shift, Faraday rotation
- 7-5 solar activity, sunspots, sunspot cycle
- 7-6 MF and HF, critical and maximum useable frequencies, solar flux
- 7-7 VHF and UHF, sporadic-E, aurora, ducting
- 7-8 scatter - HF, VHF, UHF

### **Interference and Suppression - 008**

- 8-1 front-end overload, cross-modulation
- 8-2 audio rectification, bypass capacitors, ferrites
- 8-3 intermodulation, spurious, key-clicks
- 8-4 harmonics, splatter, transmitter adjustments
- 8-5 use of filters: low-pass, high-pass, band-pass, band-reject

### **2.2 Morse Code Qualification Examination**

The examination for this qualification consists of sending and receiving Morse code at a speed of not less than 5 w.p.m. for three consecutive minutes.

The Morse code examination is in plain language and may include the twenty-six letters, the ten numbers, comma, period, question mark, dash, fraction bar, Q-signals and emergency signals. In both the sending and receiving examinations, each character omitted or incorrectly sent or received is counted as one error. A mark of 100 percent is awarded for five errors or less, 99 percent for six errors, 98 percent for seven errors, 97 percent for eight errors, etc. The examiner will allow candidates two minutes to review and correct their copy before it is graded. The pass mark is 100 percent.

### **2.3 Advanced Qualification Examination**

An examination of 50 questions is made by drawing one question from a series of questions applicable to the following 50 topic areas. The pass mark is 60%.

### **Advanced Theory - 001**

- 1-3 time constant - capacitive and inductive
- 1-2 electrostatic and electromagnetic fields, skin effect
- 1-3 series-resonance
- 1-4 parallel resonance
- 1-5 quality factor (Q)

### **Advanced Components and Circuits - 002**

- 2-1 germanium, silicon, gallium arsenide, doping, P-type, N-type
- 2-2 diodes - point-contact, junction, hot-carrier, Zener, etc.
- 2-3 transistors - NPN/PNP
- 2-4 field effect transistor (FET), JFET, MOSFET
- 2-5 silicon controlled rectifier (SCR)
- 2-6 amplifiers - classes A, AB, B and C
- 2-7 amplifier circuits - discrete and IC
- 2-8 operational amplifiers, properties and applications
- 2-9 mixers, frequency multipliers
- 2-10 digital logic elements
- 2-11 quartz crystal - properties and applications
- 2-12 advanced filter circuits - AF, RF

### **Measurements - 003**

- 3-1 AC - peak, peak-to-peak, average, RMS
- 3-2 PEP, PEP relative to average power, PEP relative to voltage across load
- 3-3 dip meter, signal generator
- 3-4 crystal calibrator, marking generator, frequency counter
- 3-5 oscilloscope
- 3-6 meters, multimeter, power meter

### **Power Supplies - 004**

- 4-1 transformer and rectifier circuits, voltage doubler circuit, PIP
- 4-2 filter circuits, bleeder resistor function
- 4-3 linear and switching voltage regulator circuits
- 4-4 regulated power supplies

### **Transmitters, Modulation and Processing - 005**

- 5-1 oscillator circuits, phase locked loop (PLL)
- 5-2 RF power amplifiers
- 5-3 transmitters, neutralisation
- 5-4 AM, single sideband, linearity, two-tone test
- 5-5 FM deviation, modulation index, deviation ratio, deviation meter
- 5-6 FM transmitter, repeater circuits
- 5-7 signal processing - AF, IF, and RF

- 5-8 codes and protocols, Baudot, ASCII, parity, CRC, X.25, ISO layers
- 5-9 spread spectrum - frequency hopping, direct sequence

### **Receivers - 006**

- 6-1 single, double conversion superheterodyne architecture
- 6-2 oscillators, mixers, tuning
- 6-3 RF, IF amplifiers, selectivity
- 6-4 detection, audio, automatic gain control
- 6-5 performance limitations - instability, image, spurious, etc.

### **Feedlines - Matching and Antenna Systems - 007**

- 7-1 antenna tuner/transmatch, impedance matching circuits
- 7-2 velocity factor, effect of line terminated in non-characteristic impedance
- 7-3 antenna feed arrangements - tee, gamma, stub
- 7-4 current and voltage distribution on antenna
- 7-5 polarization, helical beam, parabolic antennas
- 7-6 losses in real antenna systems, effective radiated power
- 7-7 ground and elevation effects, vertical radiation (take off) angle
- 7-8 radiation resistance, antenna efficiency, beamwidth
- 7-9 waveguide, microstrip line

## **2.4 Examination Procedures**

Examinations are closed book. Reference material must not be made available during the examination. Use of calculators with capability of storing information in memory or any other similar devices are prohibited during the examination.

There is no time limit specified for examinations. Most examinations are completed within an hour and would normally not take more than two hours to complete. Examiners will use their discretion in ensuring reasonable time is made available for the examination.

## **2.5 Re-examination**

A candidate who fails a written test may be retested as often as necessary, at the convenience of both the examiner and candidate. The examiner is required to provide a different examination for each re-examination.

### **3. Examiners**

#### **3.1 Accredited Examiners**

Industry Canada has accredited examiners throughout Canada. To find out who conducts examinations for the Amateur Radio Operator Certificate in your location, candidates are encouraged to contact local amateur operators, amateur clubs, technical schools or Industry Canada's Amateur Radio Service Centre.

Accredited examiners are free to negotiate the payment of a fee with candidates in order to recover the cost of administering an examination. There is no remittance to Industry Canada and the department will not arbitrate any disputes between candidates and examiners.

#### **3.2 Industry Canada Examiners**

Most examinations are conducted by accredited examiners. In circumstances where this is not possible, Industry Canada staff may be able to conduct the examination. Please contact the Amateur Radio Service Centre to determine your options.

The *Radiocommunication Regulations* prescribes a fee of \$20 for each examination conducted by Industry Canada personnel. This fee is charged for each qualification being examined. Morse code sending and receiving are considered to be one examination.

### **4. Candidates**

#### **4.1 Age and Nationality**

There are no age or nationality restrictions to those who may take the examinations. Candidates must provide adequate photo identification to examiners prior to the examination.

#### **4.2 Candidates with Physical Disabilities**

No candidates may be exempted from being tested for any of the qualifications of the Amateur Radio Operator Certificate.

Candidates who have physical disabilities that prevent them from completing examinations in the normal manner should discuss their situation with their examiner to determine whether an accommodated testing procedure may be considered. The examiner may require that medical evidence from a practicing medical physician be provided.

#### **4.3 Accommodation for Language**

When a candidate fails a written examination because the language he or she normally uses is neither English nor French, or because academic limitations restrict the ability to read the questions properly, an oral examination may be given by the examiner.

## **5. Reciprocal Operating Agreements and Arrangements**

### **5.1 Convention between Canada and the United States of America**

The operation of amateur radio service equipment and stations in the territory of the other country is covered in Treaty Series 1952 No. 7 — Operation of Certain Radio Equipment or Stations, *Convention between Canada and the United States of America*.

Visiting amateurs are not required to register or receive a permit before operating their amateur radio stations.

Each amateur station shall indicate at least once during each contact with another station its geographical location as nearly as possible by city and state or city and province.

The amateur station shall be operated in accordance with the laws and regulations of the country in which the station is temporarily located.

Canadian amateurs operating in the U.S.A. have the same privileges as they have in Canada, limited by U.S.A. band edges and mode restrictions in accordance with the Code of Federal Regulations (CFR), Title 47, Chapter I (FCC), Part 97, *Amateur Radio Service*.

U.S.A. amateurs operating in Canada must abide by the *Radiocommunication Regulations* and Radiocommunication Information Circular 2 (RIC-2), *Standards for the Operation of Radio Stations in the Amateur Radio Service*. Those who are qualified to send and receive Morse code at a speed of at least 5 w.p.m. may operate in accordance with privileges accorded to holders of the Amateur Radio Operator Certificate with Basic, Morse Code and Advanced Qualifications. U.S.A. amateurs who are not qualified to send and receive Morse code may operate in accordance with privileges accorded to holders of the Amateur Radio Operator Certificate with Basic and Advanced Qualifications.

### **5.2 Temporarily Operating Canadian Amateur Stations in Other Countries**

Canada has negotiated the following reciprocal operating agreements that allow Canadians to operate their amateur radio stations while temporarily visiting certain countries.

#### **5.2.1 CEPT Recommendation T/R 61-01**

CEPT is the acronym for Conférence européenne des administrations des postes et des télécommunications, translated as the European Conference of Postal and Telecommunications Administrations. Participating CEPT countries are the following:

Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco\*\*, Netherlands, Norway, Portugal, Romania, San Marino, Slovak Republic, Slovenia, Spain\*, Sweden, Switzerland, Turkey and United Kingdom.

- \* Implemented only for other CEPT countries.
- \*\* Location of station to be provided to the administration of Monaco.

Canada, Israel, Netherlands Antilles, New Zealand, Peru, South Africa and USA are non-CEPT Countries that participate in Recommendation T/R 61-01.

A Canadian-issued CEPT permit has no legal status in Canada.

The permit is issued in two classes: Class 1 and Class 2. Class 1 permits are issued to those who hold an Amateur Radio Operator Certificate with Basic and Morse Code (12 w.p.m.) Qualifications, while Class 2 permits are issued to those amateurs who hold only the Basic Qualification. The Advanced and Morse Code (5 w.p.m.) Qualifications are of no consequence to determine the class of the CEPT permit.

Those who hold a Class 1 permit are authorized to use all frequencies and emissions allocated in the amateur radio service, while those who hold the Class 2 permit are limited to all the amateur allocations above 30 MHz, subject to the provisions of the country visited for the amateur radio service.

Foreign amateurs who are licensed by other administrations participating in the CEPT program must apply for the appropriate permit in accordance with the provisions stipulated by their home administration.

The Minister of Industry has delegated Radio Amateurs of Canada Inc. (RAC) to issue CEPT permits. The application for a CEPT permit requires the name, address, call sign and class of certificate of the applicant, along with photocopies of the station licence and operator certificate. RAC has set a fee of \$10 for this permit to cover the cost of administration and handling. More details about how to apply for a CEPT permit can be found on the RAC's Web site, at [www.rac.ca](http://www.rac.ca).

### **5.2.2 International Amateur Radio Permit (IARP)**

The International Amateur Radio Permit (IARP) is a document issued pursuant to the terms of the *Inter-American Convention on an International Amateur Radio Permit*. Canada is a signatory to this Convention. Other participating countries are the following:

Argentina, Brazil, Peru, United States of America, Uruguay and Venezuela.

The IARP is issued in two classes: Class 1 and Class 2. Class 1 permits are issued to those who hold an Amateur Radio Operator Certificate with Basic and Morse Code (12 w.p.m.) Qualifications, while Class 2 permits are issued to those amateurs who hold only the Basic Qualification. The Advanced and Morse Code (5 w.p.m.) Qualifications are of no consequence to determine the class of the IARP.

Those who hold a Class 1 permit are authorized to use all frequencies and emissions allocated in the amateur radio service, while those who hold the Class 2 permit are limited to all the amateur allocations above 30 MHz, subject to the provisions of the visited country for the amateur radio service.

A Canadian-issued IARP has no legal status in Canada.

Foreign amateurs who are licensed by other administrations participating in the IARP programs must apply for the appropriate permit in accordance with the provisions stipulated by their home administration.

The Minister of Industry has delegated Radio Amateurs of Canada Inc. (RAC) to issue IARP's. The application for an IARP requires the name, address, call sign and class of certificate of the applicant, along with photocopies of the station licence and operator certificate, and ***a recent passport-size photo of the applicant***. RAC has set a fee of \$25 to cover the cost of administration and handling. More details about how to apply for an IARP can be found on the RAC's Web site, at [www.rac.ca](http://www.rac.ca).

### **5.3 Other Reciprocal Agreements or Arrangements**

Canada has concluded other agreements or arrangements with the following countries for reciprocal operating privileges:

Antigua and Barbuda, Argentina, Australia, Bahamas, Barbados, Bermuda, Bolivia, Botswana, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, Greece, Grenada, Guatemala, Haiti, Honduras, India, Indonesia, Jamaica, Japan, Malta, Nicaragua, Norway, Panama, Papua New Guinea, Philippines, Poland, Saint Lucia, Senegal, Slovenia, Spain, Surinam, Trinidad and Tobago, United States of America\*, and Venezuela.

Canadians are urged to contact the responsible administrations well in advance in order to obtain the necessary documentation.

\* Canadian citizens holding a Canadian licence may operate in the territory of the United States without having to obtain a permit.

### **5.4 Third-party Agreements and Arrangements**

Canada has concluded agreements or arrangements with the following countries to permit the transmission and reception of international communications by Canadian amateurs on behalf of third parties:

Antigua and Barbuda, Australia, Bolivia, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Israel, Jamaica, Mexico, Nicaragua, Paraguay, Peru, Saint Vincent and the Grenadines, Trinidad and Tobago, United States of America, Uruguay, and Venezuela.

## **6. Aeronautical Obstruction Clearance for Antenna Supporting Structures**

Transport Canada establishes standards for obstruction markings and determines whether or not antenna supporting structures should be painted and/or lighted in accordance with those standards.

Transport Canada requires that an *Aeronautical Obstruction Clearance Form* be submitted for alterations of structures which increase the structure's height or for proposed new structures if:

- (i) the new structure is within six (6) kilometres of the centre of an aerodrome, or within two (2) kilometres of a Transport Canada/NAV CANADA radar, radio navigation or radio communication antenna; or
- (ii) the new structure exceeds 20 metres in height; or
- (iii) the new structure is within 15 metres and exceeds the height of a dominant structure already in place.

In situations where the antenna supporting structure is located within the area of (i) but does not exceed the criteria of (ii) or (iii), Transport Canada recommends that they be consulted before submitting an *Aeronautical Obstruction Clearance Form*. In some circumstances, an informal evaluation by Transport Canada may be required.

If you need further information or wish to obtain forms, contact one of the following Transport Canada offices:

Pacific Region	604-666-7562
Prairie and Northern Region	780-495-3850 or 204-983-4335
Ontario Region	416-952-3301
Quebec Region	514-633-3252
Atlantic Region	506-851-3342

The granting of an authorization to install a radio station does not confer any authority for the construction of an antenna structure, unless the structure has also been approved by Transport Canada. Conversely, the granting of an approval by Transport Canada does not confer any authority to install a radio station.

## 7. Environmental Process, Radiofrequency Fields and Land-Use Consultation

Industry Canada recognizes the importance of considering the potential impact of antennas and their supporting structures on their surroundings. As such, the Department has instituted procedures for users of the radio frequency spectrum which give consideration to the following three areas:

- (i) the environment;
- (ii) Health Canada's *Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, Safety Code 6*; and
- (iii) land-use consultation.

Amateur radio stations are considered non-site-specific. Therefore, a specific filing procedure has not been prescribed. Owners and operators do have responsibility for complying with Safety Code 6 and consulting with land-use authorities prior to installing antenna structures which may raise community concerns. For detailed information on this subject, refer to Client Procedures Circular 2-0-03 (CPC-2-0-03), *Environment Process, Radiofrequency Fields and Land-Use Consultation*, and Internal Procedures Circular 2-0-03 (IPC-2-0-03), *Environmental Process, Radiofrequency Fields and Land-Use*

*Consultation.*

## **8. Extracts from the *Radiocommunication Regulations***

The following extracts from the *Radiocommunication Regulations* pertaining to the Amateur Radio Service are provided in this circular for convenience only.

### *Operation of Radio Apparatus*

**30.** A person may operate radio apparatus in respect of which a radio authorization has been issued only where the person complies with the terms and conditions of the authorization.

**32.** (1) A person may operate radio apparatus only to transmit a non-superfluous signal or a signal containing non-profane or non-obscene radiocommunications.

### *Applicability of International Regulations*

**37.** In addition to these Regulations, every person who operates radio apparatus shall do so in accordance with the *Radio Regulations* of the International Telecommunication Union.

### *Proof of Radio Authorization*

**38.** The holder of a radio authorization shall, at the request of an inspector appointed pursuant to the Act, show the radio authorization or a copy thereof to the inspector within 48 hours after the request.

### *Operation in the Amateur Radio Service*

#### Operating Qualifications

**"42.** An individual may operate radio apparatus in the amateur radio service if the individual is the holder of one or more of the following certificates or licences:" SOR/2000-78

(a) an Amateur Radio Operator Certificate with Basic Qualification;

(b) a Radiocommunication Operator General Certificate (Maritime);

(c) a Radio Operator's First Class Certificate;

(d) a Radio Operator's Second Class Certificate;

(e) a Radiotelephone Operator's General Certificate (Aeronautical);

(f) a Radiotelephone Operator's General Certificate (Maritime);

(g) a Radiotelephone Operator's General Certificate (Land);

(h) a First-Class Radioelectronic Certificate;

(i) a radio licence in the amateur radio service and an amateur radio operator authorization, issued

by the responsible administration of a country other than Canada, if

- (i) the individual is a citizen of that country, and
- (ii) a reciprocal arrangement that allows similar privileges to Canadians exists between that other country and Canada; and" SOR/2000-78

(j) a radio licence for a radio station in the amateur radio service issued to a citizen of the United States by the Government of the United States.

#### Installation and Operating Restrictions

**43.** "Section repealed." SOR/2000-78

**"44.** A person who operates radio apparatus in the amateur radio service must hold an Amateur Radio Operator Certificate with Advanced Qualification in order to" SOR/2000-78

(a) install or operate a transmitter or a radio frequency amplifier that is not commercially manufactured, for use in the amateur radio service; or

(b) install any radio apparatus to be used specifically

(i) for receiving and automatically retransmitting radiotelephone communications within the same frequency band, or

(ii) for an amateur radio club station.

#### Technical Requirements

**"45.** A person shall operate radio apparatus in the amateur radio service in accordance with the technical requirements set out in the *Standards for the Operation of Radio Stations in the Amateur Radio Service*, issued by the Minister, as amended from time to time." SOR/2000-78

#### Participation in Communications

**"46.** (1) Any person may participate in the operation of radio apparatus in the amateur radio service under the supervision and in the presence of an individual referred to in section 42.

(2) A holder of a certificate or licence referred to in section 42 may

(a) permit any person who does not hold such a certificate or licence to operate radio apparatus, subject to compliance with the terms and conditions of that holder's certificate or licence; and" SOR/2000-78

(b) permit the participation in the operation referred to in paragraph (a) by any person only in accordance with subsection (1).

#### "Communications with Radio Apparatus in the Amateur Radio Service

**47.** A person who operates radio apparatus in the amateur radio service may only

(a) communicate with a radio station that operates in the amateur radio service;"

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(b) use a code or cipher that is not secret; and

(c) be engaged in communication that does not include the transmission of

(i) music,

(ii) commercially recorded material,

(iii) programming that originates from a broadcasting undertaking, or

(iv) radiocommunications in support of industrial, business or professional activities.

#### Emergency Communications

"**48.** In a real or simulated emergency, a person operating radio apparatus in the amateur radio service may only communicate with a radio station that is in the amateur radio service in order to transmit a message that relates to the real or simulated emergency on behalf of a person, government or relief organization." SOR/2000-78

#### Remuneration

"**49.** A person who operates radio apparatus in the amateur radio service shall do so without demanding or accepting remuneration in any form in respect of a radiocommunication that the person transmits or receives." SOR/2000-78