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Radiocommunication Information Circular

Guide for Examiners Accredited to Conduct Examinations for Amateur Radio Operator Certificates

Preface

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: Spectrum Management Operations

E-mail: spectrum_pubs@ic.gc.ca

All Spectrum Management and Telecommunications publications are available on the following website: <http://ic.gc.ca/spectrum>.

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Foreword

Accrediting examiners to conduct Amateur Radio Operator Certificate examinations is consistent with Industry Canada's policy of improving the delivery of the various departmental programs offered to the general public. This policy provides improved access to examiners for candidates wishing to obtain Amateur Radio Policy Operator Certificates.

Purpose

This circular outlines the policies and procedures for examiners who conduct Amateur Radio Operator Certificate examinations on behalf of Industry Canada.

Policy

1. Accreditation

1.1 Eligibility for Accreditation

The Department may accredit any recognized Canadian educational institution, amateur radio club or individual to administer the qualification examinations for Amateur Radio Operator Certificates. In order to retain their accreditation, institutions and clubs must maintain qualified staff members who meet the requirements of section 1.2 to administer the qualification examinations.

1.2 Compulsory Requirements

All persons who administer qualification examinations must be holders of an Amateur Radio Operator Certificate with basic, Morse code (5 wpm) and advanced qualifications, and be 18 years of age or older. For further details regarding Amateur Radio Operator Certificates, refer to Radiocommunication Information Circular, *Information on the Amateur Radio Service* (RIC-3).

Persons who wish to become accredited examiners must demonstrate that they possess a valid electronic mailing address and have access to the Internet. Access to the Department's website is required to generate exams from the updated question bank and is a requirement of the accreditation process. The Internet allows Industry Canada to remain in contact with accredited examiners in the most efficient manner and to provide its clients with quality service by communicating regulatory, procedural and policy amendments in a timely fashion.

1.3 Accrediting Educational Institutions

The educational institution should offer related training courses in amateur radio, including electronic theory, regulations pertaining to amateur service, Morse code (where applicable) and practical station operations. The application for accreditation should be co-signed by the school principal, dean or president. Accredited educational institutions may nominate any suitably qualified staff member who meets the requirements outlined in section 1.2 to administer the qualification examinations.

Accredited examiners for educational institutions may determine prerequisite or course requirements before an examination can be taken.

1.4 Accrediting Amateur Radio Clubs

Amateur radio clubs that have members who are actively involved in providing training courses for the Amateur Radio Operator Certificate qualification examinations may nominate one or more individuals as accredited examiners. Clubs that nominate more than two examiners may be required to justify their request.

The application for accreditation should be co-signed by the club's president or vice-president.

Amateur radio club examiners must agree to provide examination services to non-club members.

1.5 Accrediting Individuals (sponsorship)

Persons who wish to become accredited examiners, who meet all the requirements in section 1.2 and who live in areas where there are no local amateur radio clubs or educational institutions as defined in section 1.3 or section 1.4, may be sponsored by the Radio Amateurs of Canada (RAC). Industry Canada will consider applications supported in writing by the RAC Regional Director for the region.

The expected number of examinations to be conducted versus the number of accredited examiners in any particular service area will be taken into consideration before additional examiners are accredited.

Applicants for accreditation who are not sponsored by an educational institution or an amateur radio club are encouraged to contact the Amateur Radio Service Centre (ARSC) before submitting their application.

2. Accreditation Procedures

2.1 Application for Accreditation

Educational institutions, amateur radio clubs and individuals wishing to become accredited to conduct amateur examinations should submit the application shown in Annex A to the following address:

Amateur Radio Service Centre
Industry Canada
P.O. Box 9654
Postal Station T
Ottawa ON K1G 6K9

Toll free: 1-888-780-3333

Fax: 613-991-5575

E-mail: spectrum.amateur@ic.gc.ca

The application includes a declaration to demonstrate the applicant's commitment to observe all departmental procedures in the administration of amateur examinations.

2.1.1 Electronic application for accreditation

Alternatively, educational institutions, amateur radio clubs and individuals may request accreditation via the Amateur Radio Operator Certificate Services website at www.ic.gc.ca/callsign. The information will be received electronically at the ARSC where it will be processed.

2.2 Letter of Accreditation

Accreditation will be granted in the form of a letter of accreditation issued by the Department and, unless otherwise specified, the accreditation will be valid for three (3) years (see Annex B.)

The Department reserves the right to cancel the accreditation of examiners at any time.

2.3 Renewal

To renew an accreditation, the requestor must resubmit the application shown in Annex A. This procedure is required to confirm continuing support from sponsoring organizations. In some cases, a renewal briefing may be required if the individual has not been actively conducting examinations for a period during which many changes have occurred or a period of three (3) years has passed since the candidate last conducted examinations and submitted results to the ARSC.

This renewal request may also be performed by submitting the electronic form, which can be found on the Amateur Radio Certificate Services website at www.ic.gc.ca/callsign

2.4 Briefing

The ARSC processes applications for accreditation. District offices will be consulted on initial appointments and are responsible for conducting initial briefings for examiners. Follow-up briefings will be conducted on an exceptional basis. Accredited examiners must be familiar with the examination content and format, how to mark the exam, and how to report results.

3. Accredited Examiners

3.1 Conduct and Duties

Examiners:

- are expected to conduct examinations with integrity and in a credible manner;
- must not conduct examinations for immediate family members;

- must advise the ARSC of any change in their mailing address, telephone number or electronic mail address; and
- should only provide examination services for persons residing within their province or territory. An exception would be in the case of border communities, where an examiner would normally be expected to provide service to residents of more than one province or territory. For other circumstances, the examiner should first consult the ARSC.

3.2 Examination Documentation and Procedures

Candidate application forms and examination materials are available on Industry Canada's website at www.ic.gc.ca/callsign

To ensure examination integrity, examiners must store examination material in a secure location immediately after the completion of an examination. It is highly recommended that new exams be generated for every examination session in order to ensure that exam questions are current and that they do not reflect any errors that have been corrected in the database. Industry Canada's Amateur Radio Exam Generator must be used for this purpose and can be found at http://ic.gc.ca/epic/site/smt-gst.nsf/en/h_sf05378e.html (updated April 2007).

The examiner must inform the candidate of examination results once the completed examination has been marked.

The examiner must forward the examination results of the successful candidates to the ARSC within ten (10) working days of the examination. **Note:** Although this process is not yet automated, examiners will require access to the Internet in order to implement future enhancements to the amateur radio service, such as filing exam results electronically.

The Department will issue the Amateur Radio Operator Certificates, with appropriate qualifications, when examination results are received from the accredited examiner.

Examiners must preserve the confidentiality of information provided by candidates, such as birth dates and telephone numbers.

All completed written examinations and Morse code test material are to be retained by examiners for a period of at least three (3) years. If required, this material must be made available for Industry Canada audits or other purposes. Disposal of aged examination material must be handled in a manner that will ensure confidentiality.

All examination material and records must be returned to the ARSC if the examiner resigns or if accreditation is withdrawn or not renewed.

3.3 Examination Fees

The *Radiocommunication Regulations* prescribe 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. The same fees are applicable to re-examinations.

Accredited examiners may not charge this fee; however, they may recover, from the candidate, the cost of administering an examination. There is no remittance, in whole or in part, of these costs to Industry Canada, as the *Radio Regulations* prescribed fee applies only to examinations conducted by Industry Canada staff.

4. Candidate Requirements

4.1 Age and Nationality

There are no age or nationality restrictions on those who take the examinations.

4.2 Conduct

Candidates must follow the examiner's instructions. Failure to comply with instructions will result in the cancellation of the examination.

4.3 Identification

To prevent fraud, a candidate must provide adequate photo identification to the examiner prior to the examination.

4.4 Persons with Disabilities

Accredited examiners may not exempt a candidate from the requirement for an examination. However, in the following specific cases, accredited examiners may provide accommodated testing when a candidate is unable to complete an examination due to a physical disability.

When the candidate has a severe 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 5.3).

In the case of Morse code examinations, a candidate may have a disability that severely 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.

The examiner may request that a candidate provide medical evidence from a practising medical physician before conducting an accommodated examination. This is highly recommended, especially in cases where the disability is not apparent, to minimize potential criticism of the examiner. Such documentation is confidential and should be retained by the examiner for three (3) years. Refer to

Annex C, *Notice to Physician Certifying to a Disability*, for more information.) Examiners are urged to consult with the ARSC in unusual situations.

5. Written Examinations

5.1 Requirements

Examination requirements are described in Radiocommunication Information Circular, *Information on the Amateur Radio Service* (RIC-3).

There are four (4) qualifications associated with Amateur Radio Operator Certificates: Basic, Basic with Honours, Advanced and Morse code (5 wpm). A candidate may attempt one or all qualifications at any time, but no certificate will be issued unless the candidate has passed the examination for the Basic qualification.

Examinations must be based on the current version of RIC-7, *Basic Qualification Question Bank for Amateur Radio Operator Certificate Examinations*, or RIC-8, *Advanced Qualification Question Bank for Amateur Radio Operator Certificate Examinations*.

5.2 Procedures

To ensure that candidates are aware of the examination procedures and conditions, examiners should take a few minutes before the exam to explain the examination process and answer any questions.

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.

There is no time limit specified for examinations. Most examinations are completed within one (1) hour and would normally not take more than two (2) hours to complete. Examiners will use their discretion in ensuring that reasonable time is made available for the examination.

Examinations are closed-book. Reference material must not be used during the examination. The use of calculators is permitted provided that the calculator does not have the capability of storing formulas or text. The examiner may forbid the use of calculators that are deemed unacceptable.

5.3 Pass Marks

The pass mark for a written examination is 70%.

However, a pass mark of 80% provides the candidate with additional HF operating privileges (< 30 MHz). This is referred to as “Basic with Honours” or “basic +.”

Refer to section 6.7 for Morse code information related to testing and marking.

5.4 Re-examination

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

6. Morse Code Examinations

6.1 Receiving and Sending Tests

For the receiving test, examiners may send Morse code by hand, cassette tape, or computer generated code. Timing and length of text must be closely observed.

Examiners may produce their own tests based on the following Morse code specifications.

6.2 Morse Code Specifications

Candidates for the Morse code (5 wpm) qualifications of the Amateur Radio Operator Certificate are required to:

- (a) correctly send, by hand, a plain-language text, in international Morse code, for a minimum of three (3) consecutive minutes, at a speed of not less than 5 wpm, using an ordinary radiotelegraph key, a semi-automatic key or an electronic hand key. In addition to the 26 letters, the text may include figures, punctuation marks and Q-signals.
- (b) correctly receive, by ear, a plain-language text, in international Morse code, for a minimum of three (3) consecutive minutes, at a speed of not less than 5 wpm, copying legibly by hand, typewriter or word processor. In addition to the 26 letters, the text may include figures, punctuation marks and Q-signals.

A Morse code "word" consists of five characters. The letters A through Z are counted as one (1) character each, and figures and punctuation signs are counted as two (2) characters each.

Morse code tests shall only use letters of the alphabet, numbers, the period, the comma, the question mark, the dash and the fraction bar.

The basic unit in Morse code is the dot. A dash is three dots long. Pauses between character elements are one dot long, pauses between characters are three dots long, and pauses between words are seven dots long.

Morse code shall be sent at a character speed of 12 wpm. It is the length of the spacing between characters and between words that determines the speed of the test. The additional time required for the 5 wpm space sequence is approximately 2.5 times as long at 5 wpm as it is for 12 wpm. Therefore, for the 5 wpm test, the spaces between letters would be approximately 7 dots in length, and the spaces between words approximately 17 dots in length.

To verify the speed of a Morse code sending machine, the word “Paris” sent five times in one minute results in a code speed of 5 wpm.

When the text is sent by the candidate, the speed of the characters is immaterial, as long as the necessary number of characters is sent. That is, at 5 wpm, at least 75 characters are sent in the three (3) minutes allocated. Any characters omitted at the end of the text due to lack of time will count as errors. Accented letters are not to be used during Morse code testing.

6.3 Example of Code Test

Qualification for Morse Code (5 wpm)

FORECAST PERIODS WILL BE SHORTENED DURING HEAVY STORMS. FRONTAL ZONES
KEEP QSJ 1962

The above example of Morse code shall not be used in an examination.

6.4 Briefing and Familiarization

Examiners should allow time for adjusting equipment, briefing and familiarization prior to the test. The familiarization may include sending and receiving sample texts, excluding the text being used for the examination. The text for the sending test shall be different from that of the receiving test.

6.5 Timing

Examiners must ensure that the code receiving and sending examinations are timed.

6.6 Review

Examiners shall allow two (2) minutes at the end of the receiving test for candidates to review their copy and make any changes or corrections, if necessary.

For the sending test, candidates may send the error signal and resend the character as many times as they wish, but they must send the complete text within the time allotted.

6.7 Marking

Examiners shall assign marks for Morse code receiving tests by counting errors and giving a mark of 100% where there are 5 errors or less, 99% for 6 errors, 98% for 7 errors, 97% for 8 errors, and so on. The pass mark for code receiving is 100%.

Notations of dots and dashes on an examination paper will be considered as evidence of inability and cause for rejection of the test.

In both the sending and receiving Morse code tests, each character, including figures and punctuation, that is omitted or incorrectly sent or received, is counted as one (1) error.

6.8 Re-examination

A candidate who fails a Morse code test may be retested as often as necessary, at the convenience of both the examiner and the candidate. The examiner must ensure that different Morse code tests are used for each re-examination.

7. Audits

7.1 Purpose

In order to ensure that departmental guidelines are adhered to and that accredited examiners remain up-to-date regarding amateur radio service policies and procedures, audits will be performed on a random sample basis in accordance with the guidelines contained in IPC-3-24-10. The frequency and the extent of the audit program are the responsibility of the area manager with Industry Canada.

It is also necessary to periodically perform audits to ensure that the Department has relevant, current and credible information on the effectiveness of the accredited examiner program. Audits are intended to be a constructive review.

As well, audits may be performed as a result of complaints lodged with the Department. The auditor will notify the accredited examiner, in writing, of any concerns that should be addressed. Where a discrepancy is discovered, the auditor will work with the examiner to correct the problem.

7.2 Fraud or Negligence

Where the auditor determines that there may be a situation of fraud or negligence, or when valid complaints of such activities are received, the appropriate Industry Canada district office will conduct an investigation. Where warranted, the Department will revoke the accreditation of examiners. Certificates fraudulently issued may also be revoked.

Annex A - Application for Accreditation and Examiner Attestation

Name: _____
Address: _____
City and Province: _____
Postal Code: _____
Telephone: Home: () Work: ()

Note: Unless otherwise indicated, telephone numbers listed on this application may be released to others, or shown or published in lists of accredited examiners. If a number listed here is only intended for Industry Canada use, please indicate this clearly.

Call sign: _____ E-mail: _____
Geographical area where examinations are normally conducted: _____

I, the undersigned, certify that I will, on behalf of Industry Canada, carry out the examiner's duties conscientiously, professionally and impartially when conducting statutory examinations for Amateur Radio Operator Certificates.

I will comply with the examination procedures as outlined in Radiocommunication Information Circular, *Guide for Examiners Accredited to Conduct Examinations for Amateur Radio Operator Certificates* (RIC-1).

I understand that the authorization to conduct examinations may be withdrawn at any time by the Department and I accept that periodic audits may be carried out by the Department.

Note: Any person fraudulently using the powers conferred under this authorization may be prosecuted under the *Radiocommunication Act* and/or the *Criminal Code*.

Signature: _____ Date: _____

Name of sponsoring educational institution or amateur radio club: _____

Telephone: () _____

Sponsor's Position: _____

Sponsor's Signature: _____ Date: _____

Complete this application for new accreditation, as well as renewal of accreditation.

Sample Signature for Examination Report Verification

Attach this completed form with the initial application for accreditation. This signature block will be used to authenticate the signature of accredited examiners on Amateur Radio Operator Certificate examination report forms.

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Please sign your usual signature in the above box.

Print Name: _____

**Annex B - Sample Letter of Accreditation to Conduct Examinations
for Amateur Radio Operator Certificate**

Date: _____ Our File: _____
Name: _____
Street: _____
City and Province: _____ Postal Code: _____

TO WHOM IT MAY CONCERN:

This certifies that *accredited examiner's name* is accredited to conduct Amateur Radio Operator Certificate examinations on behalf of Industry Canada.

This accreditation is valid until *December 31, 200x* and is subject to the following conditions:

- Valid only for examinations conducted in the province of *British Columbia*.
- Expires on termination of association with the *Prince George Amateur Radio Club*.
- Examinations must be conducted and results reported in accordance with the procedures described in Radiocommunication Information Circular, *Guide for Examiners Accredited to Conduct Examinations for Amateur Radio Operator Certificates* (RIC-1).
- Examination results must be sent to the Amateur Radio Service Centre, P.O. Box 9654, Postal Station T, Ottawa Ontario, K1G 6K9, within 10 working days of successful completion of an examination.
- This letter of accreditation to conduct examinations supersedes all those previously issued.

Your accredited examiner identification number is *16-001*.

Thank you for participating in this important function for the amateur radio service.

Signature
Title

Annex C - Notice to Physician Certifying to a Disability

You are being asked to certify that, because of a severe disability, the applicant/patient, named on the *Patient's Release* form, is unable to pass a standard telegraphy examination. If you sign the certification, the person will be given an "accommodated" telegraphy examination, as described below. Before you sign the certification, please consider the following:

Reason for the Examination - Radiotelegraphy is a method of radiocommunication in wide use among amateur radio stations around the world. Industry Canada, the Government of Canada department that regulates radiocommunications in Canada, authorizes additional operating privileges to amateur radio operators who pass an examination in Morse code proficiency. Annually, thousands of amateur radio operators around the world prove, by passing examinations, that they have acquired the skill. In Canada, these examinations are administered by radio amateurs in the local community who volunteer their time and efforts to be examiners accredited by Industry Canada.

Standard Telegraphy Examination Procedure - As a receiving test, the accredited examiner (AE) sends a short examination message in Morse code. The candidate must decipher a series of audible Morse code dot and dash tones into the different alphabetic, numeric and punctuation characters used in the message, using pencil and paper, or typewriter. Following a successful test of the candidate's receiving ability, the candidate then uses a manual telegraph key to send, in Morse code, a different message back to the AE, who evaluates the candidate's sending ability.

Must a person with a disability seek accommodated testing? - No, a person with a disability is not required to request an accommodated telegraphy examination, nor is anyone denied the opportunity to take the examinations because of a disability. There are also available to all Canadian radio amateurs (with or without disabilities) the privileges of the basic qualification that do not require passing a telegraphy examination.

The Basic qualification authorizes access to all the Very High Frequency (VHF) amateur radio bands above 30 MHz, and allows all modes of voice, digital and video communication, including worldwide communication through amateur radio satellites. Access to the High Frequency (HF) amateur radio bands (1.8 to 30 MHz) is restricted by Industry Canada to those who have passed the advanced examination and received the Advanced qualification, those who have achieved a mark of 80% or higher on the basic examination and achieved the Basic with Honours qualification, or those who have passed a prescribed telegraphy examination. It is not necessary to pass a telegraphy examination in order to gain access to HF.

Accommodating Persons with Disabilities - Many persons with disabilities accept and benefit from the personal challenge of passing a standard telegraphy examination, in spite of their disabilities. For those persons who have difficulty in proving that they can decipher or send messages in Morse code, the examiners may make exceptionally accommodative arrangements. They may administer the examination at a place convenient and comfortable to the candidate, even at bedside. They may adjust the tone in frequency and volume to suit the candidate. In cases of severe hearing impairments, examiners may send the dots and dashes to a vibrating surface or flashing light. They may write the candidate's spoken transcription of the examination message. Where warranted, they will pause in sending the message after

each sentence, each phrase, each word, or even each character, to allow the candidate additional time to absorb and interpret what was sent. Candidates with physical disabilities are allowed to verbally recite the Morse code sounds (dit, dah, etc.) as a substitute for physically sending the examination message using a telegraph key.

Your Decision - The AE will rely upon you to make the necessary medical determination, using your professional judgment. You are being asked to decide if the person's disability is so severe that he/she cannot pass the examination without the accommodative procedures, and, in your professional opinion, the impairment will last more than one year.

Detailed Instructions - If you decide to execute the certification, you should complete and sign the *Physician's Certification of Disability* on the reverse side of this notice. The applicant/patient must also sign the *Patient's Release*, permitting disclosure to Industry Canada, on request, of medical information pertaining to the applicant's disability.

Please Note:

To pass a telegraphy examination, considerable practice is required. *This procedure is not intended to exempt a person who simply wants to avoid expending the effort necessary to acquire a skill in telegraphy.*

The person requesting that you sign the certification will provide names and addresses of at least one local AE and other local amateur radio operators who can provide you with more information on this matter.

Physician's Certification of Disability

I certify that:

I have read the *Notice to Physician Certifying to a Disability*, and the person named as Applicant/Patient below has a severe disability, the duration of which will extend for more than 365 days beyond this date. Because of this severe disability, this person is unable to pass a standard telegraphy examination.

I am licensed to practice in Canada as a Doctor of Medicine (M.D.).

Physician's Name (Print or type)

Physician's Signature (Do not print, type, or stamp)

Date Signed

Patient's Release

Authorization is hereby given to the physician named above, who participated in my care, to release to Industry Canada any medical information deemed necessary to process my application for an amateur operator certificate qualification, or in the event of an Industry Canada audit.

Applicant/Patient's Name (Print or type)

Applicant/Patient's Signature (Do not print, type or stamp)

Date Signed