

Spectrum Management

Radiocommunication Information Circular

# Professional Radio Operator's Certificates

Restricted Operator's Certificate  
General Operator's Certificate  
Radiocommunication Operator's General Certificate (Maritime)  
Coast Guard Radiotelegraph Operator's Certificate  
Coast Guard Radiotelephone Operator's Certificate  
Radiotelephone Operator's Restricted Certificate (Aeronautical)  
Radiotelephone Operator's Restricted Certificate (Land)

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Attention: DOSP

## Background

Canada issued its first Commercial Radio Operator's Certificate in 1912. Over the years, we have created a number of different certificates to provide the specific expertise that was needed at the time. We have now again come to a crossroads in the certificate requirements, and this document will outline the changes and how they are being implemented.

## Present (1993)

The present certificate structure is as follows:

- 1) Restricted Operator's Certificate [ROC]
- 2) General Operator's Certificate [GOC]
- 3) Radiocommunication Operator's General Certificate (Maritime) [RGMC]
- 4) Coast Guard Radiotelegraph Operator's Certificate [CGRO W/T]
- 5) Coast Guard Radiotelephone Operator's Certificate [CGRO R/T]
- 6) Radiotelephone Operator's Restricted Certificate (Aeronautical) [ROR(A)]
- 7) Radiotelephone Operator's Restricted Certificate (Land) [ROR(L)]

## Summary

Industry Canada currently issues five different professional certificates. We also validate, reissue or replace thirteen existing certificates. The Coast Guard issues two certificates. (See page 3.)

## General Information for all Professional Certificates

The following information applies to all professional certificates.

There is no age restriction or nationality requirement.

The examiner must determine during the examination whether the candidate is physically capable of operating the different types of equipment that would be used in the appropriate environment. In the case of an obvious problem, such as paralysis, the candidate may be required to show a certificate of medical fitness.

The applicant must fill out and sign a copy of Form 16-900 "Application For Radio Operators' Certificates" and present it to the examiner.

When an examination contains only multiple-choice questions, any person who is duly authorized by the Department may supervise and mark the examination. However, if the examination contains essay or oral questions, the person who supervises and marks the examination should hold an equivalent or superior class certificate.

The passing mark is 100% for Morse code sending and receiving and 70% for the written, oral or practical examinations.

### Summary of Existing Radio Operator's Certificates

CERTIFICATE NAME	ACRONYM	STATUS			PHOTO REQUIRED	DURATION OF VALIDITY OF CERTIFICATE
		ISSUE	VALIDATION	REPLACE		
Radiocommunication Operator's General (Maritime)	RGMC	Y	Y	Y	Y	5 YEARS
Certificate of Proficiency in Radio First Class	FIRST CLASS	N	Y	Y	Y	5 YEARS
Certificate of Proficiency in Radio Second Class	SECOND CLASS	N	Y	Y	Y	5 YEARS
Radiotelephone Operator's General (Maritime)	ROG(M)	N	Y	Y	Y	5 YEARS
Radiotelephone Operator's General (Aeronautical)	ROG(A)	N	N	N		5 YEARS
Radiotelephone Operator's General (Land)	ROG(L)	N	N	N		5 YEARS
Radiotelephone Operator's Restricted (Maritime)	ROR(M)	N	N	Y	N	VALID FOR LIFE
Radiotelephone Operator's Restricted (Aeronautical)	ROR(A)	Y	N	Y	N	VALID FOR LIFE
Radiotelephone Operator's Restricted (Land)	ROR(L)	Y	N	Y	N	VALID FOR LIFE
General Operator's	GOC	Y	Y	Y	Y	5 YEARS
Restricted Operator's	ROC	Y	N	Y	N	VALID FOR LIFE
Coast Guard Radiotelephone Operator's	CGRO R/T	N/A NOTE 1				
Coast Guard Radiotelegraph Operator's	CGRO W/T					
Radiotelephone Operator's Restricted (Compulsory)	ROR(C) (NOTE 2)	N	N	N	N	VALID FOR LIFE
Radiotelephone Operator's Restricted (Voluntary)	ROR(V) (NOTE 2)	N	N	N	N	VALID FOR LIFE

Note 1. The Coast Guard Radiotelephone Operator's Certificate and the Coast Guard Radiotelegraph Operator's Certificate are issued only by the Canadian Coast Guard.

Note 2. Although Compulsory and Voluntary ROR Certificates [ROR(C) and ROR(V)] were issued, there were never any regulations recognizing them. As a result, they are considered to be Radiotelephone Operator's Restricted Certificates (Maritime) [ROR(M)].

The certificates, which are valid for five years, may be validated for another five years if the following criteria are met:

- a) the applicant is physically capable of operating the equipment which he or she proposes to use; (In cases where an obvious problem exists, the applicant may be required to produce a certificate of medical fitness.)
- b) the certificate was originally issued within the preceding six years; and either
- c) the applicant has had, during the past three years, a minimum of two years' service as a radiocommunication operator in the Maritime Mobile Service; or
- d) the applicant has been, during the past five years, actively engaged in radiotelegraph or radiotelephone communications and maintenance of modern radiocommunication equipment.

When a candidate wishes to renew his or her Radiotelephone Operator's General Certificate (Maritime) [ROG(M)], an examination for the General Operator's Certificate (GOC) must be administered if the candidate wishes to operate on a ship equipped under the Global Maritime Distress and Safety System (GMDSS).

When the Radiotelephone Operator's General Certificate (Aeronautical and Land) [ROG(A) and ROG(L)] has to be validated or reissued, the ROG can be replaced with the Radiotelephone Operator's Restricted Certificate (Aeronautical and Land) [ROR(A) and ROR(L)]. Where more than one environment is indicated on a certificate (i.e., Aeronautical and Land), the replacement generic certificate is so endorsed in the "Qualifications or Restrictions" box. However, in the case of a certificate that is indicated to be Maritime and Land or Aeronautical, or Maritime and Land and Aeronautical, two certificates have to be issued, one for Land and/or Aeronautical, and one for Maritime. As indicated in the paragraph above, to obtain the GOC, the candidate must write the entire examination.

The ROR(M) Certificate is valid for the life of the holder.

When applicants do not meet each of the four requirements stated above, they may be required to demonstrate in an oral or written examination their ability to:

- 1) transmit and receive Morse code at 20 wpm in plain language for both the First and Second Class Certificates; (More detailed instructions on the Morse code examination can be found under "Radiocommunication Operator's General Certificate (Maritime) [RGMC].")
- 2) perform the necessary maintenance tasks, demonstrating skill equivalent to that required for the RGMC; and
- 3) follow the correct radiotelegraph and radiotelephone operating procedures.

Applications for the replacement or renewal of First Class or Second Class Certificates are to be accompanied by:

- 1) a recent passport photograph signed by the applicant;
- 2) Form 16-36 "Application for a Replacement Radio Operator's Certificate of Proficiency", when the original has been lost or mutilated; (When a lost or mutilated certificate is no longer valid, the instructions for renewal apply.) and
- 3) a credit for the Marine Emergency Duty (MED) course. This is required under *Regulation I/2 of the Standards of Training, Certification and Watchkeeping for Seafarers (S.T.C.W.) '78 (EXN24)*. Approved marine schools offer this course. (See further details under RGMC.)

N.B. Certificates issued or renewed prior to January 1, 1994, will be "grandfathered" for S.T.C.W. endorsement purposes and an endorsement under the *S.T.C.W. Convention '78* can be issued without the prerequisite MED course.

### **Restricted Operator's Certificate (ROC)**

No fee is required for the ROC examination.

A candidate writing an ROC examination may be required to answer:

- 1) technical questions on basic maintenance practices for communications equipment (e.g., changing fuses, repairing connectors, storage and battery maintenance);
- 2) questions on general radiotelephony distress and urgency operating procedures;
- 3) questions on the regulations;
- 4) additional questions for the Maritime Qualification on: direct printing telegraphy apparatus; digital selective calling; emergency-position-indicating radiobeacons (EPIRBs); radiotelephone safety procedures; use of alarm signals, radiobeacons, weather forecast areas; pilotage messages; frequencies and broadcast times for traffic lists and navigational warnings; exchanging of messages with other stations and handling of public correspondence traffic; and
- 5) questions on safety precautions.

## **General Operator's Certificate (GOC)**

No fee is required for the GOC examination.

A candidate writing a GOC examination is responsible for all the material listed for the ROC and may be required to answer:

- 1) technical questions on:
  - a) apparatus generally used in a ship station, including radiotelephones, direct printing telegraphy, portable emergency equipment, radiotelephone alarm systems, navigation systems, ancillary equipment and antennas;
  - b) apparatus generally used in a ship-earth station, including transmitters, receivers, modems, encoders and decoders;
  - c) the purpose and function of panel controls in a ship-earth station, antenna tracking and orientation, modes of transmission, satellite systems and services, satellite footprints, changeover zones and elevation limitations; and
  - d) the theory of radio propagation.
- 2) questions on domestic and international regulations regarding ship-earth stations as well as Medium and High Frequency radiotelephone communications;
- 3) questions on distress control activation, geography, sector and global calling, and safe operation and adjustment of a ship-earth station.

## **Radiocommunication Operator's General Certificate (Maritime) [RGMC]**

All applications for an RGMC certificate (new, reissue or replacement) must be accompanied by a recent passport photograph signed by the applicant.

One fee of twenty-two dollars (\$22) is levied on each candidate who wishes to write the RGMC examinations.

A candidate writing an RGMC examination is responsible for all of the material listed for the ROC and GOC and may be required to answer:

- 1) technical questions requiring in-depth knowledge of:
  - a) the principles of electricity and electronics, the theory of radio and radio propagation;
  - b) apparatus used for communications and navigation, as well as components and test equipment required for their repair and maintenance;

- c) digital technology, including number systems, logic, multivibrators, counters, dividers, registers and microprocessors; and
  - d) autoalarm and ancillary equipment.
- 2) procedural questions to determine knowledge of:
- a) neutral transport identification procedures, including identifying signals, frequencies and the type of information to be conveyed; and
  - b) radiotelegraph procedures for general, distress, urgency and safety communications.
- 3) oral and practical questions to determine knowledge of:
- a) the operation and function of components shown in schematic or block diagrams;
  - b) the adjustment and operation of apparatus or equipment;
  - c) preventive maintenance and the identification and correction of apparatus or equipment defects; and
  - d) adjustment and maintenance of a ship-earth station.

Each RGMC candidate must hold an EXN24 certificate issued by a Coast Guard-approved marine school attesting to the successful completion of a (MED) course at the B1 or B2 level. On presentation of an EXN24 certificate duly signed by the principal of an approved marine school, the candidate will receive a (S.T.C.W.) endorsement issued by Industry Canada in compliance with the *S.T.C.W. Convention '78 Regulation I/2*.

N.B. Certificates issued or renewed prior to January 1, 1994, will be "grandfathered" for S.T.C.W. endorsement purposes and an endorsement under the *S.T.C.W. Convention '78* can be issued without the prerequisite MED course.

## Certificate Validation and Reissue

- 1) After a five-year period, a Radiocommunication Operator's General Certificate (Maritime) [RGMC] has to be validated for another five-year period. The Department may validate the certificate if the holder has:
  - a) successfully completed an examination for the validation of the certificate;
  - b) accumulated, during the preceding five years, at least six months of service as a radio operator performing duties in accordance with the certificate held, of which at least three months shall have been on board a ship that was not permanently moored; or
  - c) accumulated, during the preceding five years, at least one year of service as:
    - i) a radio operator engaged in radiotelegraphy or radiotelephone communications in accordance with the certificate held; or
    - ii) a radio technician engaged in the maintenance of modern radiocommunication apparatus, who has passed:
      - a practical examination relating to radio apparatus used on board ships;
      - a written examination on the regulations made under the *Radiocommunication Act*; and
      - sending and receiving international Morse code tests, at a speed of not less than 20 wpm.
- 2) Where a certificate referred to is invalid (i.e., eleven or more years have passed since the certificate was originally issued) or about to become invalid, and the holder has applied to the Department for reissuing of the certificate, the Department may issue a new certificate if the holder has:
  - a) passed the full examination for the certificate; or
  - b) accumulated, during the preceding five years, at least one year of service as a radio operator engaged in communications commensurate with the RGMC.
- 3) Where a certificate held by a radio inspector of the Department is invalid, or about to become so, and the holder has applied to the Department for validation of the old certificate or issuing of a new one, the Department may make such arrangements if the radio inspector has been actively involved in the examination process for at least one of the past five years.

## **Additional Information**

The technical and equipment examinations will take the better part of a day, and the regulations and procedures examinations will require another half-day. The Morse code examination should be given separately; therefore, for these examinations supervision will be required for at least two days.

All of the examination material, including scrap paper, pencils and erasers, will be provided. The candidate may use a non-programmable calculator to do the calculations required. A time limit for each of the examinations will appear on the examination paper, and if the candidate has not completed the examination in the time allotted, the examination material will be collected by the examiner.

The written examinations will contain essay and multiple-choice questions.

The Morse code examination, both sending and receiving, is in plain language and may include any of the letters of the alphabet, any number from 0 to 9, and the following punctuation marks: comma, period, question mark, dash and fraction bar. The speed is to be no less than 20 wpm, for a period of no less than five minutes. No accented letters are used. Each missing character is counted as one error and the candidates are allowed a total of five. In the receiving examination, the candidates will be allowed two minutes after completing the examination to read through the material and to make any necessary corrections. In the sending examination, corrections can be made during transmission, but the text must be sent within the five-minute period. Since no accented letters are used, the 16 wpm cypher examination is no longer required.

## **Coast Guard Certificates**

### **Coast Guard Radiotelegraph Operator's Certificate (CGRO W/T)**

### **Coast Guard Radiotelephone Operator's Certificate (CGRO R/T)**

In the case of the two Coast Guard certificates, we have concluded an agreement with the Department of Transport, Coast Guard, to have it act in our stead in the issuance and maintenance of these certificates. We will assist Transport in establishing the criteria for the certificates, including the examinations, but only the Coast Guard will be permitted to issue the certificates, and these certificates will only be issued to persons employed by Transport.

**Radiotelephone Operator's Restricted Certificate (Aeronautical) [ROR(A)]**

No fee is required for the ROR(A) examination.

A candidate for an ROR(A) examination may be required to answer:

- a)* technical questions on Very High Frequency radiotelephone fundamentals;
- b)* questions on distress, urgency and general radiotelephony operating procedures; and
- c)* questions on domestic and international regulations applicable to aircraft stations.

In addition to administering the written examination, the examining officer may test the candidate orally to clarify situations or to confirm extent of knowledge.

**Radiotelephone Operator's Restricted Certificate (Land) [ROR(L)]**

No fee is required for the ROR(L) examination.

A candidate writing an ROR(L) examination may be required to answer:

- a)* technical questions on radiotelephone fundamentals;
- b)* questions on distress, emergency and general radiotelephony operating procedures; and
- c)* questions on domestic and international regulations applicable to land stations.

In addition to administering the written examination, the examining officer may test the candidate orally to clarify situations or to confirm extent of knowledge.