



Canadian  
Coast Guard

Garde côtière  
canadienne

# List of Lights, Buoys and Fog Signals



Safety First, Service Always

## Inland Waters 2026 Edition

Canada 

List of Lights, Buoys and Fog Signals – Inland Waters  
2026 Edition

Aussi disponible en français :  
Livre des feux, des bouées et des signaux de brume – Eaux intérieures  
Édition 2026

**Published under the Authority of:**

Canadian Coast Guard Programs  
Aids to Navigation and Waterways  
Montreal, QC H2Y 2E7

For more information, contact [DFO.Notmar-Notmar.MPO@dfo-mpo.gc.ca](mailto:DFO.Notmar-Notmar.MPO@dfo-mpo.gc.ca).

© His Majesty the King in Right of Canada,  
as represented by the Canadian Coast Guard, 2026.

Cat. No. D16-6E-PDF. (Electronic PDF, English)  
ISSN 2817-3651

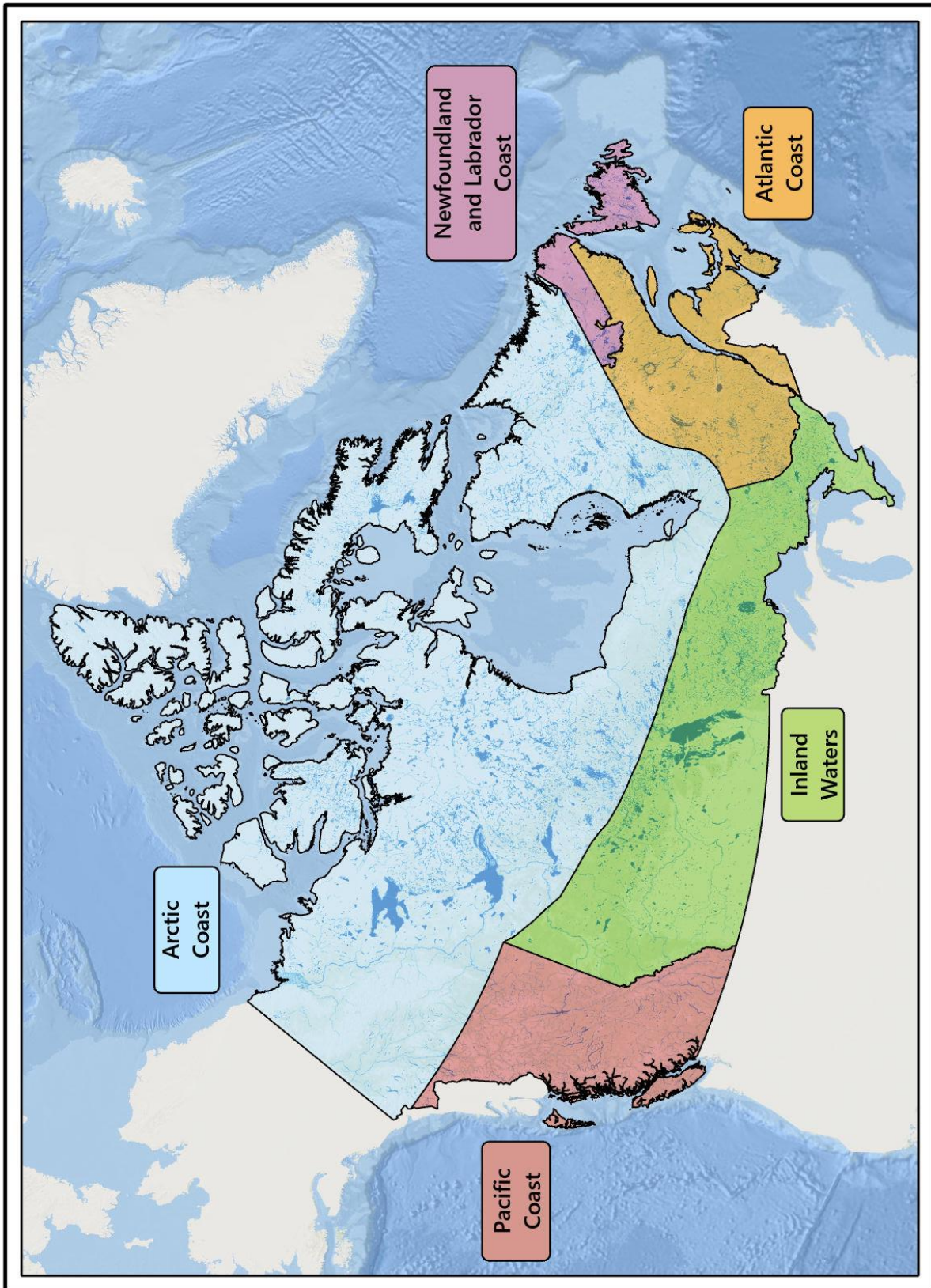
Cat. No. D16-6F-PDF. (Electronic PDF, French)  
ISSN 2817-366X

A web version is available here:

[List of Lights, Buoys and Fog Signals](#) (English)

[Livre des feux, des bouées et des signaux de brume](#) (French)

## Geographic Coverage of the List of Lights Volumes



## Record of Changes for 2026

LL No.	List of Lights Section	Corrections Published*
0.05 - 3.1	St. Lawrence Seaway, Canal de la Rive Sud	
4 - 32.4	St. Lawrence Seaway, Lac Saint-Louis	
33 - 401	St. Lawrence Seaway, Canal de Beauharnois to Kingston	Edn 02
401.1 - 401.7	Rideau Canal	
403.4 - 551	Lake Ontario	Edn 05
551.06 - 551.73	Welland Canal	
552 - 623	Lake Erie	
638.2 - 707.5	Detroit River	
710.1 - 730.7	Lake St. Clair	
731.2 - 766.8	St. Clair River	Edn 04
768 - 813	Lake Huron	Edn 02
814 - 982	Georgian Bay	
983 - 1041	North Channel - Lake Huron	
1046 - 1059	St. Joseph Channel	
1059.6 - 1081	St. Marys River	Edn 02
1082 - 1161	Lake Superior	Edn 04
1162 - 1171	Lake Nipigon	
1193 - 1226.95	Lac Saint-Louis - Secondary Channels	
1226.96 - 1245.5	Rivière des Prairies and Lac des Deux Montagnes	
1255 - 1322	Ottawa River	
1328	Lake Timiskaming	
1330 - 1346	Lake Temagami	
1346.2 - 1375.1	Trent-Severn Waterway	
1377.8 - 1406	Muskoka Lakes	
1410 - 1419	Lake of Bays	
1420 - 1441.4	Lake Nipissing	
1445 - 1467	Rainy Lake	
1470 - 1514.9	Lake of the Woods	
1520	Pelican Lake - Abram Lake - Minnitaki Lake	
1534 - 1540.5	Lac Seul	
1540.6 - 1553	Red Lake	

LL No.	List of Lights Section	Corrections Published*
1554 - 1557	Wabigoon Lake	
1557.7 - 1558	Dinorwic Lake	
1558.8 - 1561.9	Red River	
1563.1 - 1625	Lake Winnipeg	
1625.5 - 1644.5	Lake Winnipegosis	

\*Note: The detailed corrections to this volume of the *List of Lights, Buoys and Fog Signals* can be found in the following 2026 publications of the [Monthly Editions of Notices to Mariners](#) (Eastern edition only).

### Suggestions and Corrections Form

This form is specifically for suggestions and corrections to Notices to Mariners publications, including the *List of Lights, Buoys and Fog Signals* publications. It is available [online](#) and also in [fillable PDF format](#).

### For more information on the aids to navigation in this publication:

Please refer to the list of [Canadian Coast Guard Aids to Navigation offices](#) found at the end of this section of the publication.

### To report emergencies or navigational hazards:

[Contact your nearest MCTS centre](#)

- VHF channel 16 (156.8 MHz)
- MF/HF frequency 2182 kHz/4125 kHz (where available)
- \*16 on a cellphone (where available)

Emergency changes and, subsequently, the return to normal operation of the aid, are broadcast by [Navigational Warnings](#) as soon as possible.

## Table of Contents

<b>Introduction</b>	<b>v</b>
General Information .....	v
Regional Information .....	vii
<b>Abbreviations, Definitions and Explanations</b>	<b>viii</b>
International Abbreviations Used .....	viii
National Abbreviations.....	viii
Light Signals .....	ix
Audible Signals.....	ix
Electronic Aids to Navigation.....	x
<b>Reading the Tables</b>	<b>xi</b>
Column Descriptions for an Aid to Navigation (Lights, Lighted Buoys, Fog Signals) .....	xi
Column Descriptions for the RACON Annex.....	xv
Column Descriptions for the AIS AtoN Annex.....	xvi
<b>Information Relating to Lights</b>	<b>xvii</b>
Conversion Table for Heights and Distances (Metres to Feet).....	xvii
Table of Distances.....	xviii
Nomogram (Geographical Range) .....	xix
Nominal Range Diagram .....	xx
<b>Canadian Coast Guard Aids to Navigation Offices</b>	<b>xxi</b>

## Introduction

---

### General Information

#### The Canadian Aids to Navigation System

The Canadian Aids to Navigation System is comprised of a mix of visual, audible and electronic aids to navigation, which are provided to assist mariners in determining position and course, to warn of dangers or obstructions or to advise of the location of the best or preferred route.

It is a combined Lateral-Cardinal system and conforms to the IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) Maritime Buoyage System, Region B. Details of the Canadian aids to navigation system can be found in [The Canadian Aids to Navigation System 2023](#) publication. This publication also contains information on the [legal provisions relevant to, or governing aids to navigation](#).

#### Private Aids

Aids which are identified by the words “Private aid” are not owned by the federal government, a provincial government or a government agency. The Canadian Coast Guard considers any aid owned by a municipal government to be private. Since their quality of operations may not be maintained to Canadian Coast Guard standards, the user should ensure that the service provided by these aids is adequate for their needs in regard to navigating the ship safely.

#### Cautions in the Use of Aids to Navigation

1. Mariners are cautioned not to rely solely on buoys for navigation purposes. Navigation should be by bearings or angles from fixed aids on shore or other charted landmarks and by sounding or through the use of satellite or radio-navigation systems, whenever possible.
2. Most aids to navigation are not under continuous observation and mariners should be aware that failures and displacements do occur. The Canadian Coast Guard does not guarantee that all aids to navigation will operate as advertised or in the positions advertised, at all times. Mariners observing aids to navigation not operating, out of position, operating at reduced service, showing improper characteristics, damaged, or missing are responsible for reporting such problems to the nearest Canadian Coast Guard [Marine Communications and Traffic Services Centre](#) immediately or to the closest Canadian Coast Guard office.
3. Aids to navigation are subject to damage, failure and moving off position, which may be caused by ice, storms, vessel strikes, and power failures. Ice and storm damage may be widespread and require considerable time to repair. Damage to an isolated aid may exist for a long time without being discovered and reported. Floating aids and pier lights in or near the water which are exposed to particularly rigorous strain during ice movement are at the greatest risk of damage.
4. Mariners are cautioned that aids to navigation may fail to exhibit their advertised characteristics. Lights may be extinguished or appear at a reduced intensity and audible signals may not function due to ice, collisions, mechanical failure, and, in the case of bell and whistle buoys, calm water. The shape of an aid to navigation may be altered by ice formation or damage. The colour of an aid to navigation may be altered by freezing spray, marine growth, or fouling by birds. AIS aids, transponders, or shore-based systems may fail, and errors may be introduced by some electronic navigation systems.
5. Buoy positions shown on nautical charts should be considered as approximate positions. There are a number of limiting factors in accurately positioning buoys and their anchors. These factors include prevailing atmospheric and sea conditions, tidal and current conditions, seabed conditions and the fact that buoys are moored to anchors by varying lengths of chain and may drift about their charted positions within the scope of their moorings.
6. Since moving ice is liable to move buoys from their advertised positions, mariners should proceed with extreme caution under these circumstances.

7. Mariners are reminded that because of differences in horizontal datum (i.e. NAD 27, NAD 83, WGS84), grids on charts of an area may vary from one chart to another. When plotting the positions of aids to navigation by the latitude and longitude method, the results should be checked against other available information.
8. In some instances, it is necessary to establish a buoy in close proximity to or on a navigational hazard (e.g. shoal, reef or ledge). In these instances, the buoy symbol may be slightly offset on the chart in the direction of the preferred navigable water so that the existing hazard depicted on the chart will not be overprinted by the buoy symbol. Such offsets will be indicated on the chart by means of an arrow.
9. Mariners are cautioned not to navigate too closely to a buoy and risk a collision with it, its mooring, or with the underwater obstruction which it marks.
10. Many lights are equipped with sun switches. These lights, both on shore and on most buoys, may be unlit between sunrise and sunset. Mariners unable to see these lights during the daylight hours should not assume that the equipment is malfunctioning.
11. Atmospheric conditions can have a considerable effect on light transmission and the visibility of lights. For example:
  - a) The distance to a light cannot be reliably estimated from its apparent brightness.
  - b) It is difficult to distinguish between a white light and a yellow or blue light seen alone at night, except at a short distance.
  - c) Under some atmospheric conditions, white and yellow lights take on a reddish hue.
  - d) Alternating lights with phases of different luminous intensity may change their apparent characteristics at different distances because some phases may not be visible.
  - e) When observed from similar distances, lower intensity lights are more easily obscured by conditions of low visibility than more powerful lights. Coloured lights may appear to be a lower intensity than white lights and are more quickly lost under unfavourable circumstances.
  - f) Ice, frost, moisture, or dirt may form on lantern windows during cold weather or over time and more particularly this may reduce their visibility and could cause coloured lights to appear white.
  - g) A light exhibiting a very short flash may not be visible at as great a range as a light exhibiting a longer flash.
12. The mariner should not rely solely on colour when using a sector light, but should verify the vessel's line of position by taking a bearing on the light. On either side of the line of demarcation, between white and red, and also between white and green, there is always a small arc of uncertain colour.
13. When the arc of visibility of a light is cut off, for example by sloping land, the bearing at which it appears or disappears will vary with the observer's distance and height of eye.
14. The sighting of a light may be adversely affected by different situations, such as a strongly illuminated background, a colourful, or a changing background.
15. Audible aids to navigation. In view of the varying distances at which a fog signal can be heard at sea, and the frequent occurrence of fog near, but not observable from, a fog signal, mariners are cautioned that:
  - a) When approaching land in fog, they should not rely implicitly upon these fog signals, but should always take soundings, which in nearly all cases will give sufficient warning of danger.
  - b) Distance from a fog signal should not be judged by the power of the sound. Under certain atmospheric conditions, the sound may be lost at a very short distance from the signal. These conditions may vary within a very short period of time. Mariners should not assume that a fog signal is not in operation because they do not hear it, even when in close proximity.

16. Visual aids to navigation provided by the Canadian Coast Guard are for the purpose of assisting marine navigation. Hunters, snowmobilers and ice fishers are cautioned that aids to navigation installed for marine navigation purposes cannot be relied upon after the close of the marine navigation season. Such aids may stop operating without warning and will not be re-commissioned by the Canadian Coast Guard until the next opening of marine navigation season.
17. Mariners should be aware of the type of AIS aid to navigation they are using. Physical AIS aids are broadcast from a traditional aid, so their actual positions are reported, and they may be flagged as off position. Virtual AIS aids are broadcast from remote stations, and there are no associated traditional aids at their broadcast position. A Synthetic (Predicted) AIS aid is broadcast from a remote station as a signal placed over the position of a traditional fixed aid and its position will remain static if the associated aid is moved, damaged, or destroyed. AIS aid to navigation types may be differentiated by their information displays.

## Regional Information

### Central Region

Fixed lighted aids and fog signals are exhibited year round, except for the lights with the annotation “seasonal” in the “Remarks” column of the *List of Lights, Buoys and Fog Signals*. Seasonal lights are maintained approximately from April 1<sup>st</sup> to December 20<sup>th</sup>.

All other lights under the control of the Canadian Coast Guard are maintained in operation whenever navigation in the vicinity is open.

The majority of ranges and some fixed aids have an emergency mode. To identify which lights are equipped with an emergency mode, please refer to the “Remarks” column of the *List of Lights, Buoys and Fog Signals*. Consequently, range light showing a **F** fixed characteristic in the main mode will show an isophase light characteristic **ISO 1s (0.5 s flash; 0.5 s eclipse)**, with a reduced output in emergency mode.

Moreover, some range lights in restricted channels are equipped with a secondary light. This is a third light, which is neither the main light visible in line of range nor the emergency light. Most of these lights have different characteristics from those of the main or emergency light. This secondary light (for reference or positioning) is often visible over 360 degrees or for a given sector. Complete information concerning this light is available in the *List of Lights, Buoys and Fog Signals*.

Some floating aids are permanently replaced by new plastic or steel year-round lighted spar (YRLS) buoys moored for a two to four-year period, and left in the water year-round. Three models of four-season YRLS buoys are deployed in the St. Lawrence shipping channel. These models come in 3 sizes: 1.3 m, 1.0 m and 0.7 m, each designed for optimal use in different water conditions and depths.

These buoys can withstand very severe ice conditions. Although a lantern is present year-round on them, light service cannot be guaranteed in winter, particularly in the presence of ice. The YRLS buoys reported to be extinguished during this period will therefore not be prioritized and the light service may only be restored during the spring buoyage.

Details on changes made to the aids to navigation are advertised via Navigational Warnings and available on the [e-Navigation Portal](#).

For the winter season, many lighted buoys are replaced by winter spar buoys. Mariners are invited to contact the appropriate MCTS centre or to consult the [e-Navigation Portal](#) to obtain updates on the seasonal buoy tending activities and operations status report in their area.

The commissioning of seasonal aids may be delayed if weather and/or ice conditions preclude buoy tender operations. Mariners are urged to take every precaution and not to rely solely on aids to navigation.

## Abbreviations, Definitions and Explanations

### International Abbreviations Used

International Abbreviation	Term in English
AIS	Automatic Identification System
Al	Alternating
Bu	Blue
F	Fixed
Fl	Flashing
G	Green
h	Hour
Iso	Isophase
LFl	Long-flashing
m	Metre(s)
Mo	Morse Code
Oc	Occulting
ODAS	Ocean Data Acquisition System
Q	Quick
R	Red
s	Second(s) of time
V-AIS	Virtual AIS (AtoN)
VQ	Very Quick
W	White
WGS84	World Geodetic System 1984
Y	Yellow

### National Abbreviations

National Abbreviation	Term in English
E.	East
Intl	International
N.	North
NAD 27	North American Datum of 1927
NAD 83	North American Datum of 1983
NE.	North-east
NM	Nautical mile(s)
No.	Number
NW.	North-west
RACON	Radar beacon
S.	South
SE.	South-east
sil.	Silence
SW.	South-west
VHF	Very high frequency
W.	West

## Light Signals

### General Terms Related to Light Signals

- **Bearings:** limits of light sectors and areas of visibility of lights and the alignments of leading lights and directional lights, given as bearings from seaward. The bearings of sectors are given in clockwise order.
- **Character:** distinctive combination of various aspects of a light which appear regularly or rhythmically allowing it to be identified, for example: fixed, flashing, alternating, etc.
- **Colour:** colour exhibited by the light.
- **Period:** time occupied by an entire cycle of intervals of light (flash) and darkness (eclipse).
- **Phase:** each successive element of a rhythmic light's cycle (i.e. flash, eclipse).
- **Rhythm:** pattern of light (flash) and darkness (eclipse) displayed by the light of an aid that allows its function to be identified in conjunction with the period and the colour of the light.

Types of Light Signal	Definitions
Aeronautical Light	A light generally of great intensity and elevation principally for aircraft navigation. Because of their intensity, these are often the first lights to be seen when approaching land.
Direction Light	A light illuminating a very narrow sector, used to mark a direction to be followed. This sector may be flanked by sectors of greatly reduced intensity or by sectors of different colour or character.
Emergency Light or Emergency Mode	A light that will be illuminated should the main light fail and has a distinctive light characteristic and is at a reduced intensity.
Locator Light	A secondary all-round light, placed on or near the support of a main sectored light of higher intensity, to facilitate its location by mariners before being able to detect the directional light.
Main Light	The light providing the main function of the aid, or the most important light in a group of two or more lights on the same support or on neighbouring supports.
Range Lights (also known as "Leading Lights")	Two or more lights associated to form one or more leading lines (or ranges). A leading line defined by two such leading lights is called the axis of the lights. (Note: Lights are only visible in line of range, i.e. the specific bearing when the daymarks, if there are any, of the front and rear ranges are superimposed to make an hourglass shape.)
Secondary Light	A light placed on or near the support of a main light and having a special use in navigation.
Sector Light	A light presenting differing appearances (particularly in colour) over various parts of the horizon of interest to marine navigation. (Note: A white sector indicates the recommended course / safe passage.)

### Audible Signals

The specific audible signal of an aid to navigation is indicated in the "Remarks" column.

Types of Audible Signals	Definitions
Bell	Equipment producing a characteristic sound by striking a bell-shape.
Fog Horn	Equipment consisting of a tube of varying transverse dimensions producing a characteristic sound.
Whistle	Equipment producing a shrill sound by releasing compressed air or steam across an opening.

## Electronic Aids to Navigation

Details regarding radar reflectors, radar beacons (RACONS) and Automatic Identification System aids to navigation (AIS AtoN) can be found in [The Canadian Aids to Navigation System 2023](#) publication.

### Radar reflectors

All lighted buoys reflect radar and thus radar reflectors on buoys are not mentioned in the “Remarks” column.

Some shore lights have a radar reflector to enhance their radar conspicuousness and these are noted in the “Remarks” column.

### Radar Beacons (RACONS)

Radar beacons (RACONS) may be established at lighthouses, on buoys or at other specific charted locations ashore or afloat to enhance identification and detection range of these features by radar. A RACON can be identified by a series of coded pulses (Morse code). Some RACONS operate only in the “X” band (9320 to 9500 MHz), whilst others are dual band of “X & S” (“X” band plus “S” band of 2920 to 3100 MHz).

#### Notes:

- A RACON's actual range is dependent on many factors, including, but not limited to, the height of the RACON above the water, its type and model, the height of the radar antenna triggering the RACON, the radar type, model and settings, as well as the band used (X or S), the prevailing weather conditions, and whether there is a clear line of sight or not.
- As a guideline, and in ideal conditions, the nominal range for a RACON installed on a buoy should be between 6 and 8 nautical miles, while the range of a RACON installed on a shore structure should be somewhere between 10 and 20 nautical miles.

RACONS shown in this volume are indicated at the nearest light. The Morse code and the band of a RACON are noted in the “Name / RACON” column.

- A detailed listing of RACONS can be found in the dedicated annex at the end of each volume of the *List of Lights, Buoys and Fog Signals* publication.
  - This annex contains a list of all lighted aids with a RACON in order of their national number (No.), which are then listed under their respective section. Standalone RACONS are listed in the section that reflects most closely to their geographic location.

### Automatic Identification System Aids to Navigation (AIS AtoN)

Automatic Identification System aids to navigation (AIS AtoN) may be established to supplement existing aids to navigation or aid systems, or where physical aid placement is impractical.

The following types of AIS AtoN may be used in Canada:

- Physical AIS AtoN: signal transmitted from an aid to navigation that physically exists.
- Virtual AIS AtoN: signal transmitted from a remote base station, indicating an aid that is only displayed on electronic navigation equipment and does not physically exist.
- Synthetic (Predicted) AIS AtoN: signal transmitted from a remote base station, supplementing a physical fixed aid whose position is not monitored.

AIS AtoN shown in this volume are those deployed in a permanent manner, and are listed with their AIS AtoN type and Maritime Mobile Service Identity (MMSI) number. They can also be found listed in the dedicated annex for reference. Additional information may be obtained from the [Canadian Coast Guard e-Navigation Portal](#).

## Reading the Tables

Information on position, characteristic, colour, visible range, bearings, and arcs of visibility is intended for practical use in navigation. It should not be used as a basis for surveys or other work requiring a high order of precision.

### Column Descriptions for an Aid to Navigation (Lights, Lighted Buoys, Fog Signals)

Lights, lighted buoys and fog signals are listed and described in an eight-column table. The contents and principal conventions are used as follows:

No. ----- Intl No.	Name ----- RACON	Location ----- Latitude N. Longitude W.	Light Characteristics	Focal Height Above Water (m)	Nominal Range (NM)	Description ----- Height of Structure Above Ground Level (m)	Remarks ----- Audible Signals ----- AIS
--------------------------	------------------------	--	--------------------------	--	--------------------------	--	---

#### Column 1 – National and International Numbers

The national number (No.) is a number assigned to an aid to navigation to service a specific position. It is unique to its proper volume and can be one to eight digits long, including four decimal places. Generally, the numbering increases in the upstream direction.

The international number (Intl No.) is listed under the national number. It starts with one capital letter and followed by four to seven digits, including three decimal places. These numbers correspond to the numbers given in the *Admiralty List of Lights and Fog Signals* publication by the United Kingdom Hydrographic Office (UKHO).

There are two volumes that cover Canadian aids to navigation:

- Volume G: Western Side of South Atlantic Ocean and East Pacific Ocean
  - This covers the **Pacific Coast** volume of the *List of Lights, Buoys and Fog Signals*.
- Volume H: Northern and Eastern Coasts of Canada
  - This covers the **Newfoundland and Labrador Coast, Atlantic Coast, Inland Waters** and **Arctic Coast** volumes of the *List of Lights, Buoys and Fog Signals*.

#### Column 2 – Name and RACON

The name of an aid to navigation is based off official geographical names as per the [Canadian Geographical Names Database](#) by Natural Resources Canada. When there is no official name that is applicable to the aid, then local names would be used instead.

Other elements can be found in the name such as the type of light signal, the function of the aid (as described in [The Canadian Aids to Navigation System 2023](#) publication), and physical identifier (such as an aid designator on a buoy).

The typographic elements employed allow the following distinctions to be made:

- **Upright and bold type**: land-based lights with nominal range of at least 15 nautical miles
- Upright type: other land-based lights
- *Italic type*: buoys

If an aid to navigation is equipped with a RACON, then that will be indicated in a separate section underneath the aid name and includes the Morse Code letter and equivalent coded signal, and the radar band(s) that the RACON operates in.

### Column 3 – Location and Geographic Positions

Additional information on the location of the aid to navigation may be described to complement what is written in the aid name.

The geographic positions of all aids to navigation listed in this volume are shown in degrees, minutes and seconds and are given in the North American Datum of 1983 (NAD 83) with an accuracy to a tenth of second.

In the case of range lights, the position of the rear light is also given by bearing and distance from the front light. The bearing is from seaward.

### Column 4 –Light Characteristics

[Light characteristics](#) are composed of its [rhythm](#) (which includes the character), [colour](#), and [period](#).

- The [period](#) is not applicable to lights with a fixed (F) character.

Only the light characteristics of the main light of an aid to navigation are indicated in this column. Any additional light (secondary light, emergency light/mode, locator light or aeronautical light) is indicated in the “Remarks” column with their light characteristics.

Details regarding the basic types of light characters can be found in [The Canadian Aids to Navigation System 2023](#) publication.

### Common Light Flash Characters

Below is a list of common light flash characters with their typical flash and eclipse sequence. Definitions of these characters have been included for reference. (Please note that any uncommon light flash characters and variations on the sequence of a character listed below is indicated in the “Remarks” column.)

**Fixed (F) Light:** light which appears continuous and steady and of constant colour.

**Rhythmic Light:** light exhibiting its character in recurring regular cycles.

- **Isophase (Iso):** light in which the alternations of light (flash) and darkness (eclipse) are of equal length.
  - **“Iso 2s”:** flash 1.0 s; eclipse 1.0 s
- **Flashing (FI):** light in which the flash is clearly shorter than the duration of darkness and in which the flashes of light are all of equal duration.
  - **Single-flashing light:** flashing light in which a flash is regularly repeated at a rate of less than 50 flashes per minute.
    - **“FI 4s”:** flash 0.5 s; eclipse 3.5 s
  - **Long-flashing light:** flashing light in which an appearance of light of not less than 2 seconds in duration (long flash) is regularly repeated.
    - **“LFI 10s”:** flash 2.0 s; eclipse 8.0 s
  - **Group-flashing light:** flashing light in which a group of flashes, specified in number, is regularly repeated.
    - **“FI(2) 5s”:** flash 0.4 s; eclipse 0.6 s; flash 0.4 s; eclipse 3.6 s
    - **“FI(2) 10s”:** flash 1.0 s; eclipse 1.0 s; flash 1.0 s; eclipse 7.0 s
    - **“FI(5) 20s”:** 4(flash 0.5 s; eclipse 1.5 s); flash 0.5 s; eclipse 11.5 s
  - **Composite group-flashing light:** light similar to a group flashing light except that successive groups in a period have different numbers of flashes.
    - **“FI(2+1) 6s”:** flash 0.3 s; eclipse 0.4 s; flash 0.3 s; eclipse 1.2 s; flash 0.3 s; eclipse 3.5 s
    - **“FI(2+1) 10s”:** flash 0.5 s; eclipse 0.7 s; flash 0.5 s; eclipse 2.1 s; flash 0.5 s; eclipse 5.7 s

- **Occulting (Oc)**: light in which the flash is clearly longer than the duration of darkness (eclipse) and in which the intervals of darkness are all of equal duration.
  - **Single-occulting light**: occulting light in which an eclipse is regularly repeated.
  - **Group-occulting light**: occulting light in which a group of eclipses are regularly repeated. The total duration of light in each period may be equal to the total duration of darkness.
- **Quick (Q)**: light in which flashes are repeated at a rate of not less than 50 flashes per minutes but less than 80 flashes per minute.
  - **Continuous quick-flashing light**: quick light in which a flash is regularly repeated.
    - **“Q 1s”**: flash 0.3 s; eclipse 0.7 s
  - **Group quick-flashing light**: quick light in which a specified group of flashes, specified in number, is regularly repeated.
    - **“Q(3) 10s”**: 2(flash 0.3 s; eclipse 0.7 s); flash 0.3 s; eclipse 7.7 s
    - **“Q(9) 15s”**: 8(flash 0.3 s; eclipse 0.7 s); flash 0.3 s; eclipse 6.7 s
  - **Group quick-flashing and long-flash light**: light in which a group of quick flashes is followed by a single long flash.
    - **“Q(6) + LFI 15s”**: 6(flash 0.3 s; eclipse 0.7 s); flash 2.0 s; eclipse 7.0 s
- **Very Quick (VQ)**: very quick-flashing light in which a flash is regularly repeated at a rate of not less than 80 flashes per minute but less than 160 flashes per minute (usually either 100 or 120 flashes per minute).
  - **Continuous very quick-flashing light**: very quick light in which a flash is regularly repeated.
    - **“VQ 0.5s”**: flash 0.2 s; eclipse 0.3 s
  - **Group very quick-flashing light**: very quick light in which a specified group of flashes, specified in number, is regularly repeated.
    - **“VQ(3) 5s”**: 2(flash 0.2 s; eclipse 0.3 s); flash 0.2 s; eclipse 3.8 s
    - **“VQ(9) 10s”**: 8(flash 0.2 s; eclipse 0.3 s); flash 0.2 s; eclipse 5.8 s
  - **Group very quick-flashing and long-flash light**: light in which a group of very quick flashes is followed by a single long flash.
    - **“VQ(6) + LFI 10s”**: 6(flash 0.2 s; eclipse 0.3 s); flash 2.0 s; eclipse 5.0 s
- **Morse Code (Mo)**: light in which flashes of light of two clearly different durations are grouped to represent a character or characters in the Morse Code.
  - **“Mo(A) 6s”**: flash 0.3 s; eclipse 0.6 s; flash 1.0 s; eclipse 4.1 s

**Alternating (AI) Light**: rhythmic light exhibiting different colours during each cycle.

### Column 5 – Focal Height Above Water

Focal height of a light is above Higher High Water Large Tides, except in the St. Lawrence River west of Trois-Rivières, in the St. Lawrence Seaway, in the Great Lakes and in other inland waters where it is above chart datum.

The focal height is given in metres (m).

### Column 6 – Nominal Range

The nominal range of a light used as a marine aid to navigation is its luminous range in a homogeneous atmosphere in which the meteorological visibility is 10 nautical miles.

The nominal range is given in nautical miles (NM). It is in **upright and bold type** when it is greater than or equal to 15 NM, and in upright type when it is less than 15 NM.

### Column 7 – Description and Height of Structure Above Ground Level

For buoys, the shape and colour(s) of the buoy is described, along with its designator (if applicable).

For fixed aids, the shape and colours of the structure and daymark are described (if applicable).

- For range lights: if a daymark is mentioned, but no shape is described, then it can be assumed that the shape of the daymark is trapezoidal.
- The height of the structure above ground level will be indicated in a separate section underneath the aid description (if applicable).

### Column 8 – Remarks, Audible Signals and AIS

This column is dedicated to any notable remarks regarding an aid to navigation, including separate sections for audible signals and AIS aids to navigation (if applicable).

- **Private aid** (as applicable)
- **Period of service** of the aid to navigation (applies to all aids)
  - Seasonal: AtoN that is in service for a certain service period, usually determined by winter weather.
  - Seasonal (in place year round): AtoN that has a specific service period, but is not removed from its established position between periods.
  - Year round: AtoN that is operational all-year round. This includes summer buoys with winter spar replacements.
    - Year-round lighted spar (YRLS) buoys are mentioned here, if applicable.
- **Winter spar** (buoys only, if applicable)
  - This mention indicates if a summer buoy is replaced by a winter spar during the winter season.
- **Light operation** (as applicable)
  - The light on an aid to navigation operates at night only, unless otherwise indicated here (such as day or 24 hours).
- **Light flash character sequence** (as applicable)
  - The flash and eclipse sequence of any uncommon light flash character or variation on [common light flash characters described above](#) will be indicated here.
- **Arc of visibility** (lighted fixed aids only, if applicable)
  - The light of an aid to navigation is visible from all points of marine approach, unless indicated here (e.g. sector lights). The bearings are given from seaward.
- **Additional lights** (lighted fixed aids only, if applicable)
  - If there are any additional lights to the main light (such as a secondary light, emergency light/mode, locator light or aeronautical light), then they will be indicated here with their light characteristic.
    - Note: The light characteristic of “Emergency Mode” will not be indicated as it is always Iso 1s.
- **Radar reflector** (shore lights only, if applicable)
- **Additional remarks** (as applicable)
  - All other remarks will be listed here such as VHF activation procedures.

The “**Audible Signals**” section will indicate:

- the type of audible signal (bell, fog horn or whistle) and
- any other pertinent information (such as the sequence of blast and silence for fog horns).

The “**AIS**” section will indicate:

- the type of AIS AtoN (physical, virtual or synthetic AIS AtoN),
- the MMSI number, and
- the AtoN Type, as defined by The International Telecommunication Union (ITU), for virtual AIS AtoN.

**Column Descriptions for the RACON Annex**

No.	Name	Latitude N. Longitude W.	Morse Code Identifier	Radar Bands	Period of Service
-----	------	-----------------------------	--------------------------	-------------	-------------------

**Column 1 – National Number**

The national number (No.) is a number assigned to an aid to navigation to service a specific position. It is unique to its proper volume and can be one to eight digits long, including four decimal places.

If the RACON is part of a lighted aid, then this will be the same number as found in the table of lights.

**Column 2 – Name**

The name of an aid to navigation is based off official geographical names as per the [Canadian Geographical Names Database](#) by Natural Resources Canada. When there is no official name that is applicable to the aid, then local names would be used instead.

If the RACON is part of a lighted aid, then this will be the same name as found in the table of lights.

**Column 3 – Geographic Positions**

The geographic positions of all aids to navigation listed in this volume are shown in degrees, minutes and seconds and are given in the North American Datum of 1983 (NAD 83) with an accuracy to a tenth of second.

**Column 4 – Morse Code Identifier**

This column indicates the Morse Code letter and equivalent coded signal.

**Column 5 – Radar Bands**

This column indicates the radar band(s) that the RACON operates in.

**Column 6 – Period of Service**

This columns indicates the period of service of the aid.

**Column Descriptions for the AIS AtoN Annex**

LL No.	AIS Broadcast Name	Latitude N. Longitude W.	Type of AIS AtoN	AtoN Type (ITU)	Remarks
--------	--------------------	-----------------------------	---------------------	--------------------	---------

**Column 1 – LL No.**

The national number (LL No.) is a number assigned to an aid to navigation to service a specific position. It is unique to its proper volume and can be one to eight digits long, including four decimal places.

AIS AtoN, including virtual AIS AtoN, are also found in the table of lights.

**Column 2 – AIS Broadcast Name**

Due to the limitations on the number of characters allowed for this information in Message 21, the AIS Broadcast Name is a truncated or abbreviated version of the name found in the table of lights.

**Column 3 – Geographic Positions**

The geographic positions of all aids to navigation listed in this volume are shown in degrees, minutes and seconds and are given in the North American Datum of 1983 (NAD 83) with an accuracy to a tenth of second.

**Column 4 – Type of AIS AtoN**

The column indicates the specific type of AIS AtoN: physical, virtual or synthetic (AIS AtoN).

**Column 5 – AtoN Type (ITU)**

This column refers to the AtoN Type as defined by The International Telecommunication Union (ITU).

**Column 6 – Remarks**

This column indicates the MMSI number and the period of service of the aid.

## Information Relating to Lights

---

### Conversion Table for Heights and Distances (Metres to Feet)

Metres	Feet
1	3.2
2	6.5
3	9.8
4	13.1
5	16.4
6	19.6
7	22.9
8	26.2
9	29.5
10	32.8
20	65.6
30	98.4
40	131.2
50	164.0
100	328.0
200	656.1
300	984.2
400	1,312.3
500	1,640.4
1,000	3,280.8
2,000	6,591.6

**1 NAUTICAL MILE = 1852 metres**

Note:

The following conversion factors may also be of assistance:

- multiply feet by 0.3048 to obtain metres
- divide metres by 0.3048 to obtain feet

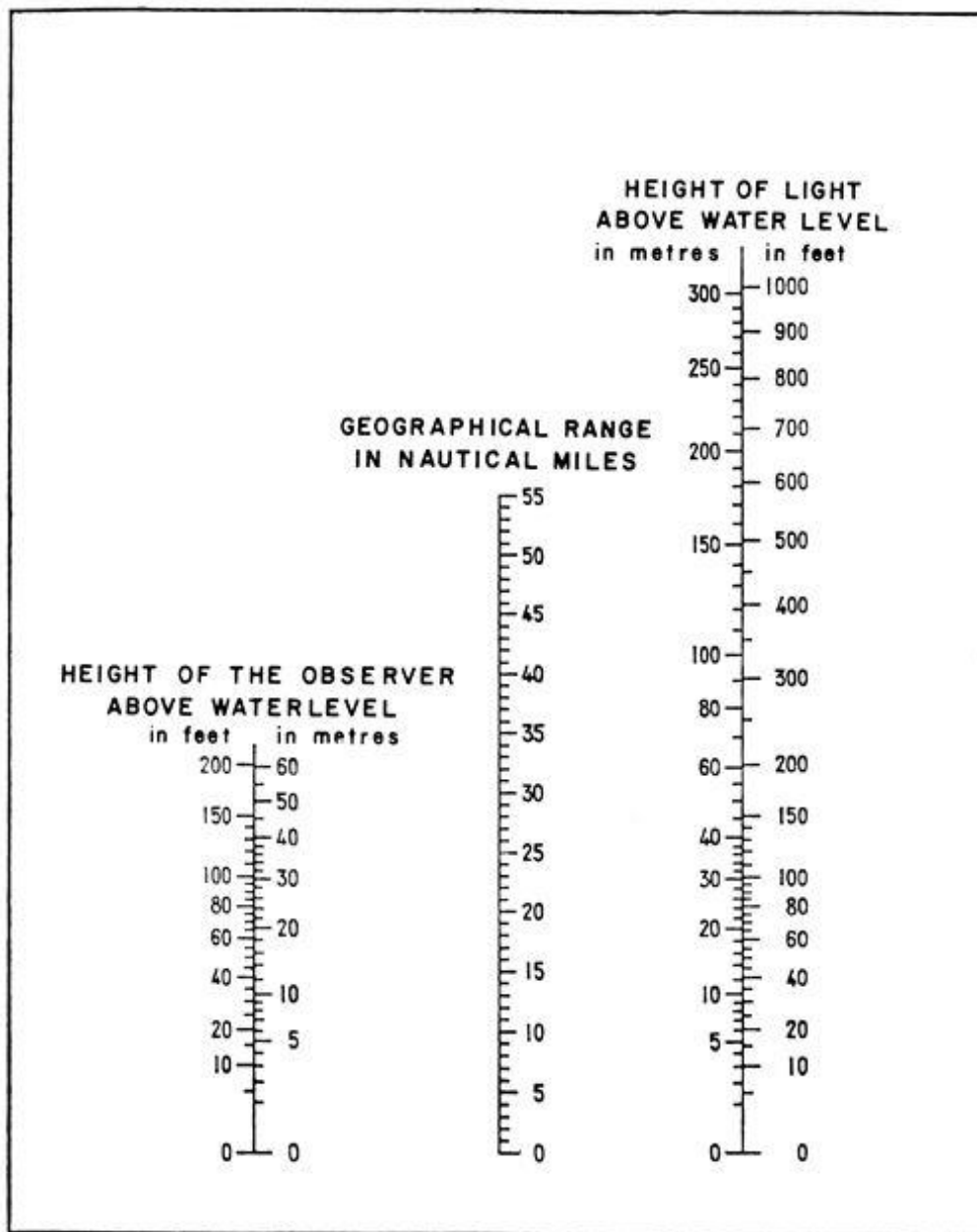
### Table of Distances

Table of Distances at which objects can be seen at sea, according to their respective elevations and the elevation of the eye of the observer.

Height (metres)	Distances (nautical miles)
2	2.9
3	3.6
4	4.2
5	4.6
6	5.1
7	5.5
8	5.9
9	6.2
10	6.6
12	7.2
14	7.8
16	8.3
18	8.8
20	9.3
25	10.4
30	11.4
35	12.3
40	13.1
45	13.9
50	14.7
55	15.4
60	16.1
70	17.4
80	18.6
90	19.7
100	20.8
120	22.8
140	24.6
160	26.3
180	27.6
200	29.4
250	32.9
300	36.0
350	38.9
400	41.6

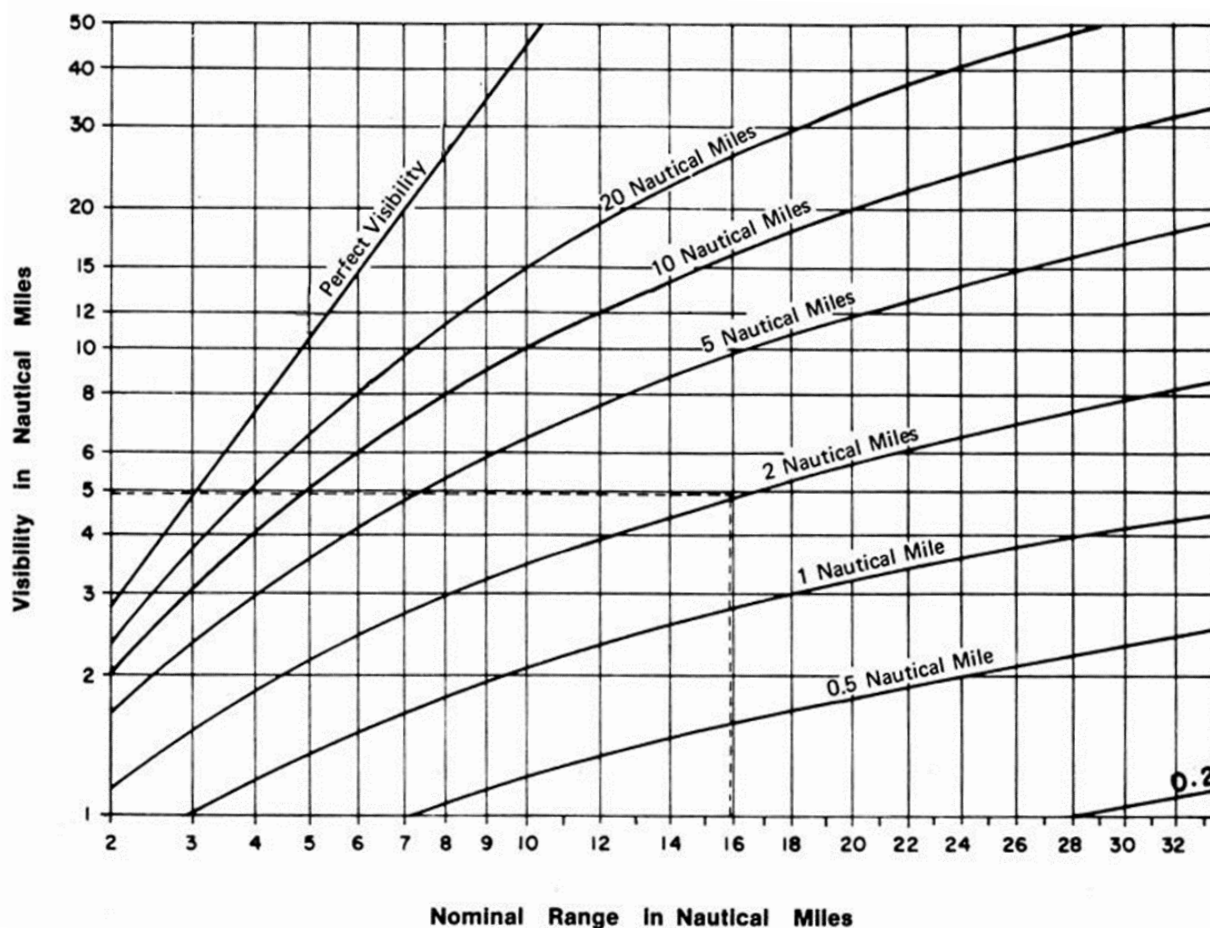
Example: An observer whose eye is 12 metres above the water can see a light having an elevation of 40 metres above the water at a distance of: **7.2 + 13.1 = 20.3 nautical miles.**

**Nomogram (Geographical Range)**



By using the above Nomogram, a geographical range can be determined by placing a straight edge against the height of the respective light and the height of the observer above water level.

### Nominal Range Diagram



Column 7 of the List of Lights gives the nominal range of each light, where there is sufficient light to be seen 2 nautical miles or more when the meteorological visibility is 10 nautical miles.

When the mariner obtains the meteorological visibility from the weather report, he can find the distance the light can be seen at night from the nominal range diagram.

Example: The List of Lights gives the nominal range of 16 nautical miles. The weather report gives the meteorological visibility of 2 nautical miles. The point on the bottom of the diagram marked “16” is followed upwards until it intersects the curve marked “2 Nautical Miles.” Follow that height horizontally to the left margin to find that the visibility of the light, which is 5 nautical miles.

Caution: The nominal range diagram is correct when the meteorological visibility is the same in the whole of the distance between the ship and the light. Conditions occur when this may not be true.

## Canadian Coast Guard Aids to Navigation Offices

Mariners or other persons wishing to communicate with the Canadian Coast Guard concerning aids to navigation may do so at the following offices:

<p style="text-align: center;"><b><u>ATLANTIC REGION</u></b></p> <p>Regional Headquarters P.O. Box 5667 St. John's, NL A1C 5X1</p> <p>Operations Supervisor, Aids to Navigation 175 McIlveen Drive Saint John, NB E2L 4B3 Telephone: 1-506-636-4708 <b>(B)</b></p> <p>MCTS Refer to RAMN <b>(H/N)</b></p> <p>Navigational Warnings Telephone: 1-709-695-2168 <b>(B) (H/N)</b> 1-902-564-7751 <b>(B) (H/N)</b> 1-800-686-8676 <b>(B) (H/N) (TF)</b></p> <p>Email: <a href="mailto:NAVWARN.MCTSPortAuxBasques@innav.gc.ca">NAVWARN.MCTSPortAuxBasques@innav.gc.ca</a> <a href="mailto:NAVWARN.MCTSSydney@innav.gc.ca">NAVWARN.MCTSSydney@innav.gc.ca</a></p>	<p style="text-align: center;"><b><u>CENTRAL REGION</u></b></p> <p style="text-align: center;"><b><u>St. Lawrence Sector</u></b></p> <p>Québec, QC Superintendent, Aids to Navigation Supervisor, Operations 1550, Avenue D'Estimauville Québec, QC G1J 5E9</p> <p>Telephone: 1-418-649-6999 <b>(B)</b> 1-581-443-6293 <b>(B)</b></p> <p>Email: <a href="mailto:DFO.AtoNStLawrence-StLaurentAalaN.MPO@dfo-mpo.gc.ca">DFO.AtoNStLawrence-StLaurentAalaN.MPO@dfo-mpo.gc.ca</a></p>
<p style="text-align: center;"><b><u>ARCTIC REGION</u></b></p> <p>Yellowknife, NT Superintendent Navigational Programs 5120 49th Street, 3rd Floor Yellowknife, NT X1A 1P8</p> <p>Telephone: 1-867-444-0109 <b>(B)</b></p> <p>Email: <a href="mailto:DFO.CCGArcticAidsNavigation-AidesalaNavigationArctiqueGCC.MPO@dfo-mpo.gc.ca">DFO.CCGArcticAidsNavigation-AidesalaNavigationArctiqueGCC.MPO@dfo-mpo.gc.ca</a></p> <p>Navigational Warnings Telephone: 1-867-979-5269 <b>(B) (H/N)</b></p> <p>Email: <a href="mailto:NAVWARN.MCTSIqaluit@innav.gc.ca">NAVWARN.MCTSIqaluit@innav.gc.ca</a></p>	<p style="text-align: center;"><b><u>Great Lakes Sector</u></b></p> <p>Sarnia, ON Supervisor, Operations Aids to Navigation 520 Exmouth Street Sarnia, ON N7T 8D1</p> <p>Telephone: 1-226-402-1052 <b>(E)</b> 1-705-773-4342 <b>(E)</b></p> <p>Email: <a href="mailto:DFO.CCGCentralAtoNGreatLakes-GrandsLacsAalaNCentreGCC.MPO@dfo-mpo.gc.ca">DFO.CCGCentralAtoNGreatLakes-GrandsLacsAalaNCentreGCC.MPO@dfo-mpo.gc.ca</a></p> <p>MCTS Refer to RAMN <b>(H/N)</b></p> <p>Navigational Warnings Telephone : 1-613-925-0666 <b>(B) (H/N)</b></p> <p>Email: <a href="mailto:AVNAV.SCTMPrescott@innav.gc.ca">AVNAV.SCTMPrescott@innav.gc.ca</a></p>
	<p style="text-align: center;"><b><u>WESTERN REGION</u></b></p> <p>Victoria, BC Superintendent Aids to Navigation and Waterways 25 Huron Street Victoria, BC V8V 4V9</p> <p>Telephone: 1-250-480-2600 <b>(E)</b> 1-800-667-2179 <b>(TF)</b></p> <p>Email: <a href="mailto:DFO.CCGWesternAidstoNavigation-AidesalaNavigationOuestGCC.MPO@dfo-mpo.gc.ca">DFO.CCGWesternAidstoNavigation-AidesalaNavigationOuestGCC.MPO@dfo-mpo.gc.ca</a></p> <p>Navigational Warnings Telephone: 1-250-627-3070 <b>(H/N)</b></p> <p>Email: <a href="mailto:NAVWARN.MCTSPrinceRupert@innav.gc.ca">NAVWARN.MCTSPrinceRupert@innav.gc.ca</a></p>

**(B) Bilingual Service**

**(E) English Only Service**

**(TF) Toll Free**

**(H/N) Holidays and Nights**