

# ***Navigating using Radar***

## **COLREGS Attachment**

### **Extracts from Canadian Collision Regulations (COLREGS).**

CANADA SHIPPING ACT  
Collision Regulations

#### **REGULATIONS FOR THE PREVENTION OF COLLISIONS**

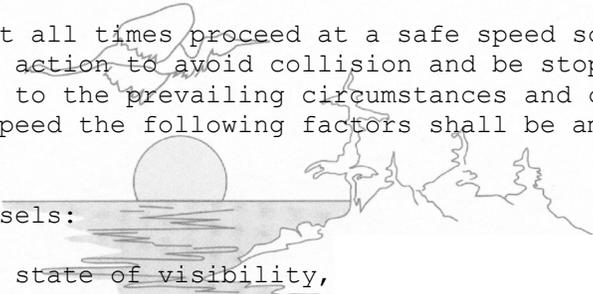
INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT  
SEA, 1972 WITH CANADIAN MODIFICATIONS  
PART A--GENERAL

.....< **SNIP** >.....  
**Quote.**

#### **Rule 6**

Safe Speed--International

Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions. In determining a safe speed the following factors shall be among those taken into account:

- 
- (a) By all vessels:
    - (i) the state of visibility,
    - (ii) the traffic density including concentrations of fishing vessels or any other vessels,
    - (iii) the manoeuvrability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions,
    - (iv) at night the presence of background light such as from shore lights or from back scatter of her own lights,
    - (v) the state of wind, sea and current, and the proximity of navigational hazards,
    - (vi) the draught in relation to the available depth of water.
  - (b) Additionally, by vessels with operational radar:
    - (i) the characteristics, efficiency and limitations of the radar equipment,
    - (ii) any constraints imposed by the radar range scale in use,
    - (iii) the effect on radar detection of the sea state, weather and other sources of interference,
    - (iv) the possibility that small vessels, ice and other floating objects may not be detected by radar at an adequate range,
    - (v) the number, location and movement of vessels detected by radar,
    - (vi) the more exact assessment of the visibility that may be possible when radar is used to determine the range of vessels or other objects in the vicinity.

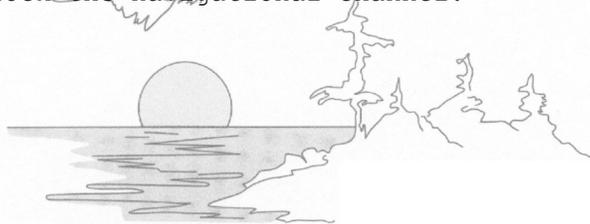
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## Safe Speed--Canadian Modifications

- (c) In the Canadian waters of a roadstead, harbour, river, lake or inland waterway, every vessel passing another vessel or work that includes a dredge, tow, grounded vessel or wreck shall proceed with caution at a speed that will not adversely affect the vessel or work being passed, and shall comply with any relevant instruction or direction contained in any Notice to Mariners or Notice to Shipping.
- (d) For the purpose of paragraph (c), where it cannot be determined with certainty that a passing vessel will not adversely affect another vessel or work described in that paragraph, the passing vessel shall proceed with caution at the minimum speed at which she can be kept on her course.
- (e) In the Canadian waters of a roadstead, harbour, river, lake or inland waterway, every vessel shall navigate with caution and shall comply with any relevant instruction or direction contained in any Notice to Mariners or Notice to Shipping where abnormal water levels, ice conditions or a casualty to a vessel or aid to navigation may:
- (i) make navigation difficult or hazardous,
  - (ii) cause damage to property, or,
  - (iii) block the navigational channel.

## Rule 7

### Risk of Collision



- (a) Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.
- (b) **Proper use shall be made of radar equipment if fitted and operational, including long-range scanning to obtain early warning of risk of collision and radar plotting or equivalent systematic observation of detected objects.**
- (c) **Assumptions shall not be made on the basis of scanty information, especially scanty radar information.**
- (d) In determining if risk of collision exists the following considerations shall be among those taken into account:
- (i) such risk shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change,*
  - (ii) such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large vessel or a tow or when approaching a vessel at close range.*

.....< SNIP >.....

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## SECTION III--CONDUCT OF VESSELS IN RESTRICTED VISIBILITY

### Rule 19

#### Conduct of Vessels in Restricted Visibility

- (a) This Rule applies to vessels not in sight of one another when navigating in or near an area of restricted visibility.
- (b) Every vessel shall proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility. A power-driven vessel shall have her engines ready for immediate manoeuvre.
- (c) Every vessel shall have due regard to the prevailing circumstances and conditions of restricted visibility when complying with the Rules of Section I of this Part.
- (d) **A vessel which detects by radar alone the presence of another vessel shall determine if a close-quarters situation is developing and/or risk of collision exists. If so, she shall take avoiding action in ample time, provided that when such action consists of an alteration of course, so far as possible the following shall be avoided (by):**
  - (i) **an alteration of course to port for a vessel forward of the beam, other than for a vessel being overtaken,**
  - (ii) **an alteration of course towards a vessel abeam or abaft the beam.**
- (e) Except where it has been determined that a risk of collision does not exist, every vessel which hears apparently forward of her beam the fog signal of another vessel, or which cannot avoid a close-quarters situation with another vessel forward of her beam, shall reduce her speed to the minimum at which she can be kept on her course. She shall if necessary take all her way off and in any event navigate with extreme caution until danger of collision is over.

.....< **SNIP** >.....

**Unquote.**

**Note:** The emphases have been added to the paragraphs above and are for clarity only. You are advised to refer directly to the Canadian COLREGS for legally binding information.

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## **Some Useful References**

### **Websites:**

<http://www.furuno.com/radars/radars.html>

Manufacturer of Furuno radar equipment. Extensive information available.

<http://www.jrc.co.jp/product/marine/marine-e.html>

Manufacturer of JRC Radar equipment. Limited information.

<http://www.marconi-marine.com/koden/radar.htm>

Manufacturer of Koden Radar equipment.

<http://www.raymarine.com/recreational/products/index/radar/index.html>

Manufacturer of Raytheon Radar equipment. Extensive information and links.

<http://www.simrad.com/Yachting>

Manufacturer of Simrad Radar equipment.

[http://www.si-tex.com/html/marine\\_radar.html](http://www.si-tex.com/html/marine_radar.html)

Manufacturer of Si-TeX Radar equipment.

<http://www.northseanavigator.com/cyclops.htm>

Information on the excellent Cyclops Radar reflector system with technical evaluation and specifications.

[http://marelmar.com/html/body\\_radar\\_nav.htm](http://marelmar.com/html/body_radar_nav.htm)

A list of links to various marine electronics sites.

**Note:** Due to the nature of “the Web” site addresses change and/or whole site evaporate; however, a quick “Google” can produce reams of good “Gen” to quench one's thirst for more info.