

5 ESTABLISH WATCHKEEPING ARRANGEMENT AND PROCEDURES

5.1 Bridge team management

The need for good management of bridge procedures

International Chamber of Shipping attaches the utmost importance to safe navigation. Safe navigation means that the ship is not exposed to unnecessary danger and that at all times the ship can be controlled within acceptable margins.

At all times, safe navigation requires effective command, control, communication and management. It demands that the situation, the level of bridge manning, and the operational status of navigational systems, the ship's engines and auxiliaries are all taken into account.

It is people that control ships, and it is therefore people, together with management and teamwork, which are the key to reliable performance. People entrusted with the control of ships must be competent to carry out their duties.

People also make mistakes and so it is necessary to ensure that monitoring and checking prevent chains of error from developing. Mistakes cannot be predicted and, once a mistake has been detected, it is human nature to seek to fit circumstances to the original premise, thus compounding a simple error of judgment.

Passage planning is conducted to assess the safest and most economical sea route between ports. Detailed plans, particularly in coastal waters, port approaches and pilotage areas are needed to ensure appropriate margins of safety. Once completed, the passage plan becomes the basis for navigation. Equipment can fail and the unexpected can happen, so contingency planning is also necessary.

The above comments apply equally to maneuvering and operations conducted using any Dynamic Positioning (DP) capability of the ship. Ship maneuvers in and around a worksite must be the subject of a comprehensive operational plan covering contingencies and appropriate "escape" maneuvers.

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Ergonomics and good design are essential elements of good bridge working practices. Watch keepers at sea need to be able to keep a look-out, as well as monitor the chart and observe the radar. They should also be able to communicate using the VHF without losing situational awareness. When boarding or disembarking pilots, handling tugs or berthing, it should be possible to monitor instrumentation, particularly helm and engine indicators, from the bridge wings. Bridge notes should be provided to explain limitations of any equipment that has been badly sited, pointing out the appropriate remedies that need to be taken.

-In summary, good management of bridge procedures combines:

-Clarity of purpose;

-The ability to delegate authority as appropriate;

-Effective organization.

Motivation and the ability to motivate others.

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STCW CHAPTER VIII

Standards regarding watch keeping

Section A-VIII/1

Fitness for duty

- 1** Administrations shall take account of the danger posed by fatigue of seafarers, especially those whose duties involve the safe and secure operation of a ship.
- 2** All persons who are assigned duty as officer in charge of a watch or as a rating forming part of a watch and those whose duties involve designated safety, prevention of pollution and security duties shall be provided with a rest period of not less than:
 1. A minimum of 10 hours of rest in any 24-hour period; and
 2. 7.7 hours in any 7-day period.
- 3** The hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length, and the intervals between consecutive periods of rest shall not exceed 14 hours.
- 4** The requirements for rest periods laid down in paragraphs 2 and 3 need not be maintained in the case of an emergency or in other overriding operational conditions. Musters, fire-fighting and lifeboat drills, and drills prescribed by national laws and regulations and by international instruments, shall be conducted in a manner that minimizes the disturbance of rest periods and does not induce fatigue.

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- 5** Administrations shall require that watch schedules be posted where they are easily accessible. The schedules shall be established in a standardized format* in the working language or languages of the ship and in English.
- 6** When a seafarer is on call, such as when a machinery space is unattended, the seafarer shall have an adequate compensatory rest period if the normal period of rest is disturbed by call-outs to work.
- 7** Administrations shall require that records of daily hours of rest of seafarers be maintained in a standardized format, in the working language or languages of the ship and in English, to allow monitoring and verification of compliance with the provisions of this section. The seafarers shall receive a copy of the records pertaining to them, which shall be endorsed by the master or by a person authorized by the master and by the seafarers.
- 8** Nothing in this section shall be deemed to impair the right of the master of a ship to require a seafarer to perform any hours of work necessary for the immediate safety of the ship, persons on board or cargo, or for the purpose of giving assistance to other ships or persons in distress at sea. Accordingly, the master may suspend the schedule of hours of rest and require a seafarer to perform any hours of work necessary until the normal situation has been restored.

**The IMO/ILO Guidelines for the development of tables of seafarers' shipboard working arrangements and formats of records of seafarers' hours of work or hours of rest may be used.*

As soon as practicable after the normal situation has been restored, the master shall ensure that any seafarers who have performed work in a scheduled rest period are provided with an adequate period of rest.

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9 Parties may allow exceptions from the required hours of rest in paragraphs 2.2 and 3 above provided that the rest period is not less than 70 hours in any 7-day period. Exceptions from the weekly rest period provided for in paragraph 2.2 shall not be allowed for more than two consecutive weeks. The intervals between two periods of exceptions on board shall not be less than twice the duration of the exception.

The hours of rest provided for in paragraph 2.1 may be divided into no more than three periods, one of which shall be at least 6 hours in length and neither of the other two periods shall be less than one hour in length. The intervals between consecutive periods of rest shall not exceed 14 hours. Exceptions shall not extend beyond two 24-hour periods in any 7-day period.

Exceptions shall, as far as possible, take into account the guidance regarding prevention of fatigue in section B-VIII/1 STCW.

10 Each Administration shall establish, for the purpose of preventing alcohol abuse, a limit of not greater than 0.05% blood alcohol level (BAC) or 0.25 mg/l alcohol in the breath or a quantity of alcohol leading to such alcohol concentration for masters, officers and other seafarers while performing designated safety, security and marine environmental duties.

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Section A-VIII/2

Watchkeeping arrangements and principles to be observed

PART 1 – CERTIFICATION

- 1** The officer in charge of the navigational or deck watch shall be duly qualified in accordance with the provisions of chapter II or chapter VII appropriate to the duties related to navigational or deck watchkeeping.
- 2** The officer in charge of the engineering watch shall be duly qualified in accordance with the provisions of chapter III or chapter VII appropriate to the duties related to engineering watchkeeping.

PART 2 – VOYAGE PLANNING

General requirements

- 3** The intended voyage shall be planned in advance, taking into consideration all pertinent information, and any course laid down shall be checked before the voyage commences.
- 4** The chief engineer officer shall, in consultation with the master, determine in advance the needs of the intended voyage, taking into consideration the requirements for fuel, water, lubricants, chemicals, expendable and other spare parts, tools, supplies and any other requirements.

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Planning prior to each voyage

5 Prior to each voyage, the master of every ship shall ensure that the intended route from the port of departure to the first port of call is planned using adequate and appropriate charts and other nautical publications necessary for the intended voyage, containing accurate, complete and up-to-date information regarding those navigational limitations and hazards which are of a permanent or predictable nature and which are relevant to the safe navigation of the ship.

Verification and display of planned route

6 When the route planning is verified, taking into consideration all pertinent information, the planned route shall be clearly displayed on appropriate charts and shall be continuously available to the officer in charge of the watch, who shall verify each course to be followed prior to using it during the voyage.

Deviation from planned route

7 If a decision is made, during a voyage, to change the next port of call of the planned route, or if it is necessary for the ship to deviate substantially from the planned route for other reasons, then an amended route shall be planned prior to deviating substantially from the route originally planned.

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PART 3 – WATCHKEEPING PRINCIPLES IN GENERAL

- 8** Watches shall be carried out based on the following bridge and engine-room resource management principles:
1. Proper arrangements for watchkeeping personnel shall be ensured in accordance with the situations;
 2. Any limitation in qualifications or fitness of individuals shall be taken into account when deploying watchkeeping personnel;
 3. Understanding of watchkeeping personnel regarding their individual roles, responsibility and team roles shall be established;
 4. The master, chief engineer officer and officer in charge of watch duties shall maintain a proper watch, making the most effective use of the resources available, such as information, installations/equipment and other personnel;
 5. Watchkeeping personnel shall understand functions and operation of installations/equipment, and be familiar with handling them;
 6. Watchkeeping personnel shall understand information and how to respond to information from each station/installation/equipment;
 7. Information from the stations/installations/equipment shall be appropriately shared by all the watchkeeping personnel;
 8. Watchkeeping personnel shall maintain an exchange of appropriate communication in any situation; and
 9. Watchkeeping personnel shall notify the master/chief engineer officer/officer in charge of watch duties without any hesitation when in any doubt as to what action to take in the interest of safety.

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PART 4 – WATCHKEEPING AT SEA

Principles applying to watchkeeping generally

9 Parties shall direct the attention of companies, masters, chief engineer officers and watchkeeping personnel to the following principles, which shall be observed to ensure that safe watches are maintained at all times.

10 The master of every ship is bound to ensure that watchkeeping arrangements are adequate for maintaining a safe navigational or cargo watch. Under the master's general direction, the officers of the navigational watch are responsible for navigating the ship safely during their periods of duty, when they will be particularly concerned with avoiding collision and stranding.

11 The chief engineer officer of every ship is bound, in consultation with the master, to ensure that watchkeeping arrangements are adequate to maintain a safe engineering watch.

Protection of marine environment

12 The master, officers and ratings shall be aware of the serious effects of operational or accidental pollution of the marine environment and shall take all possible precautions to prevent such pollution, particularly within the framework of relevant international and port regulations.

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Part 4-1 – Principles to be observed in keeping a navigational watch

13 The officer in charge of the navigational watch is the master's representative and is primarily responsible at all times for the safe navigation of the ship and for complying with the International Regulations for Preventing Collisions at Sea, 1972, as amended.

Lookout

14 A proper lookout shall be maintained at all times in compliance with rule 5 of the International Regulations for Preventing Collisions at Sea, 1972, as amended and shall serve the purpose of:

- 1.maintaining a continuous state of vigilance by sight and hearing, as well as by all other available means, with regard to any significant change in the operating environment;
- 2.fully appraising the situation and the risk of collision, stranding and other dangers to navigation; and
- 3.detecting ships or aircraft in distress, shipwrecked persons, wrecks, debris and other hazards to safe navigation.

15 The lookout must be able to give full attention to the keeping of a proper lookout and no other duties shall be undertaken or assigned which could interfere with that task.

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16 The duties of the lookout and helmsperson are separate and the helmsperson shall not be considered to be the lookout while steering, except in small ships where an unobstructed all-round view is provided at the steering position and there is no impairment of night vision or other impediment to the keeping of a proper lookout. The officer in charge of the navigational watch may be the sole lookout in daylight provided that, on each such occasion:

- 1.The situation has been carefully assessed and it has been established without doubt that it is safe to do so;
- 2.Full account has been taken of all relevant factors, including, but not limited to:
 - State of weather,
 - Visibility,
 - Traffic density,
 - Proximity of dangers to navigation, and
 - The attention necessary when navigating in or near traffic separation schemes; and
- 3.Assistance is immediately available to be summoned to the bridge when any change in the situation so requires.

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17 In determining that the composition of the navigational watch is adequate to ensure that a proper lookout can continuously be maintained, the master shall take into account all relevant factors, including those described in this section of the Code, as well as the following factors:

1. Visibility, state of weather and sea;
2. Traffic density, and other activities occurring in the area in which the vessel is navigating;
3. The attention necessary when navigating in or near traffic separation schemes or other routing measures;
4. The additional workload caused by the nature of the ship's functions, immediate operating requirements and anticipated manoeuvres;
5. The fitness for duty of any crew members on call who are assigned as members of the watch;
6. Knowledge of, and confidence in, the professional competence of the ship's officers and crew;
7. The experience of each officer of the navigational watch, and the familiarity of that officer with the ship's equipment, procedures, and manoeuvring capability;
8. Activities taking place on board the ship at any particular time, including radiocommunication activities, and the availability of assistance to be summoned immediately to the bridge when necessary;
9. The operational status of bridge instrumentation and controls, including alarm systems;
10. Rudder and propeller control and ship manoeuvring characteristics;
11. The size of the ship and the field of vision available from the conning position;
12. The configuration of the bridge, to the extent such configuration might inhibit a member of the watch from detecting by sight or hearing any external development; and
13. Any other relevant standard, procedure or guidance relating to watchkeeping arrangements and fitness for duty which has been adopted by the organization.

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Watch arrangements

18 When deciding the composition of the watch on the bridge, which may include appropriately qualified ratings, the following factors, inter alia, shall be taken into account:

1. At no time shall the bridge be left unattended;
2. Weather conditions, visibility and whether there is daylight or darkness;
3. Proximity of navigational hazards which may make it necessary for the officer in charge of the watch to carry out additional navigational duties;
4. Use and operational condition of navigational aids such as ECDIS, radar or electronic position-indicating devices and any other equipment affecting the safe navigation of the ship;
5. Whether the ship is fitted with automatic steering;
6. Whether there are radio duties to be performed;
7. Unmanned machinery space (ums) controls, alarms and indicators provided on the bridge, procedures for their use and their limitations; and
8. Any unusual demands on the navigational watch that may arise as a result of special operational circumstances.

Taking over the watch

19 The officer in charge of the navigational watch shall not hand over the watch to the relieving officer if there is reason to believe that the latter is not capable of carrying out the watchkeeping duties effectively, in which case the master shall be notified.

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20 The relieving officer shall ensure that the members of the relieving watch are fully capable of performing their duties, particularly as regards their adjustment to night vision. Relieving officers shall not take over the watch until their vision is fully adjusted to the light conditions.

21 Prior to taking over the watch, relieving officers shall satisfy themselves as to the ship's estimated or true position and confirm its intended track, course and speed, and UMS controls as appropriate and shall note any dangers to navigation expected to be encountered during their watch.

22 Relieving officers shall personally satisfy themselves regarding the:

- 1.Standing orders and other special instructions of the master relating to navigation of the ship;
- 2.Position, course, speed and draught of the ship;
- 3.Prevaling and predicted tides, currents, weather, visibility and the effect of these factors upon course and speed;
- 4.Procedures for the use of main engines to manoeuvre when the main engines are on bridge control; and
- 5.Navigational situation, including, but not limited to:

1.The operational condition of all navigational and safety equipment being used or likely to be used during the watch;

- 2.The errors of gyro- and magnetic compasses;
- 3.The presence and movement of ships in sight or known to be in the vicinity;
- 4.The conditions and hazards likely to be encountered during the watch; and
- 5.The possible effects of heel, trim, water density and squat on under-keel clearance.

23 If, at any time, the officer in charge of the navigational watch is to be relieved when a manoeuvre or other action to avoid any hazard is taking place, the relief of that officer shall be deferred until such action has been completed.

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Performing the navigational watch

24 The officer in charge of the navigational watch shall:

- 1.Keep the watch on the bridge;
- 2.In no circumstances leave the bridge until properly relieved; and
- 3.Continue to be responsible for the safe navigation of the ship, despite the presence of the master on the bridge, until informed specifically that the master has assumed that responsibility and this is mutually understood.

25 During the watch, the course steered, position and speed shall be checked at sufficiently frequent intervals, using any available navigational aids necessary, to ensure that the ship follows the planned course.

26 The officer in charge of the navigational watch shall have full knowledge of the location and operation of all safety and navigational equipment on board the ship and shall be aware and take account of the operating limitations of such equipment.

27 The officer in charge of the navigational watch shall not be assigned or undertake any duties which would interfere with the safe navigation of the ship.

28 When using radar, the officer in charge of the navigational watch shall bear in mind the necessity to comply at all times with the provisions on the use of radar contained in the International Regulations for Preventing Collisions at Sea, 1972, as amended in force.

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- 29** In cases of need, the officer in charge of the navigational watch shall not hesitate to use the helm, engines and sound signaling apparatus. However, timely notice of intended variations of engine speed shall be given where possible or effective use shall be made of UMS engine controls provided on the bridge in accordance with the applicable procedures.
- 30** Officers of the navigational watch shall know the handling characteristics of their ship, including its stopping distances, and should appreciate that other ships may have different handling characteristics.
- 31** A proper record shall be kept during the watch of the movements and activities relating to the navigation of the ship.
- 32** It is of special importance that at all times the officer in charge of the navigational watch ensures that a proper lookout is maintained. In a ship with a separate chartroom, the officer in charge of the navigational watch may visit the chartroom, when essential, for a short period for the necessary performance of navigational duties, but shall first ensure that it is safe to do so and that proper lookout is maintained.
- 33** Operational tests of shipboard navigational equipment shall be carried out at sea as frequently as practicable and as circumstances permit, in particular before hazardous conditions affecting navigation are expected. Whenever appropriate, these tests shall be recorded. Such tests shall also be carried out prior to port arrival and departure.

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34 The officer in charge of the navigational watch shall make regular checks to ensure that:

- 1.The person steering the ship or the automatic pilot is steering the correct course;
- 2.The standard compass error is determined at least once a watch and, when possible, after any major alteration of course; the standard and gyro-compasses are frequently compared and repeaters are synchronized with their master compass;
- 3.The automatic pilot is tested manually at least once a watch;
- 4.The navigation and signal lights and other navigational equipment are functioning properly;
- 5.The radio equipment is functioning properly in accordance with paragraph 86 of this section; and
- 6.The ums controls, alarms and indicators are functioning properly.

35 The officer in charge of the navigational watch shall bear in mind the necessity to comply at all times with the requirements in force of the International Convention for the Safety of Life at Sea (SOLAS), 1974*. The officer of the navigational watch shall take into account:

- 1.The need to station a person to steer the ship and to put the steering into manual control in good time to allow any potentially hazardous situation to be dealt with in a safe manner; and
- 2.That, with a ship under automatic steering, it is highly dangerous to allow a situation to develop to the point where the officer in charge of the navigational watch is without assistance and has to break the continuity of the lookout in order to take emergency action.

36 Officers of the navigational watch shall be thoroughly familiar with the use of all electronic navigational aids carried, including their capabilities and limitations, and shall use each of these aids when appropriate and shall bear in mind that the echo-sounder is a valuable navigational aid.

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- 37** The officer in charge of the navigational watch shall use the radar whenever restricted visibility is encountered or expected, and at all times in congested waters, having due regard to its limitations.
- 38** The officer in charge of the navigational watch shall ensure that the range scales employed are changed at sufficiently frequent intervals so that echoes are detected as early as possible. It shall be borne in mind that small or poor echoes may escape detection.
- 39** Whenever radar is in use, the officer in charge of the navigational watch shall select an appropriate range scale and observe the display carefully, and shall ensure that plotting or systematic analysis is commenced in ample time.
- 40** The officer in charge of the navigational watch shall notify the master immediately:
- 1.If restricted visibility is encountered or expected;
 - 2.If the traffic conditions or the movements of other ships are causing concern;
 - 3.If difficulty is experienced in maintaining course;
 - 4.On failure to sight land, or a navigation mark or to obtain soundings by the expected time;
 - 5.If, unexpectedly, land or a navigation mark is sighted or a change in soundings occurs;
 - 6.On breakdown of the engines, propulsion machinery remote control, steering gear or any essential navigational equipment, alarm or indicator;
 - 7.If the radio equipment malfunctions;
 - 8.In heavy weather, if in any doubt about the possibility of weather damage;
 - 9.If the ship meets any hazard to navigation, such as ice or a derelict; and
 - 10.In any other emergency or if in any doubt.

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41 Despite the requirement to notify the master immediately in the foregoing circumstances, the officer in charge of the navigational watch shall, in addition, not hesitate to take immediate action for the safety of the ship, where circumstances so require.

42 The officer in charge of the navigational watch shall give watchkeeping personnel all appropriate instructions and information which will ensure the keeping of a safe watch, including a proper lookout.

Watchkeeping under different conditions and in different areas

Clear weather

43 The officer in charge of the navigational watch shall take frequent and accurate compass bearings of approaching ships as a means of early detection of risk of collision and shall bear in mind that such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large ship or a tow or when approaching a ship at close range. The officer in charge of the navigational watch shall also take early and positive action in compliance with the applicable International Regulations for Preventing Collisions at Sea, 1972, as amended and subsequently check that such action is having the desired effect.

44 In clear weather, whenever possible, the officer in charge of the navigational watch shall carry out radar practice.

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Restricted visibility

45 When restricted visibility is encountered or expected, the first responsibility of the officer in charge of the navigational watch is to comply with the relevant rules of the International Regulations for Preventing Collisions at Sea, 1972, as amended with particular regard to the sounding of fog signals, proceeding at a safe speed and having the engines ready for immediate manoeuvre. In addition, the officer in charge of the navigational watch shall:

1. Inform the master;
2. Post a proper lookout;
3. Exhibit navigation lights; and appropriate sound signals
4. Operate and use the radar in hours of darkness

46 The master and the officer in charge of the navigational watch, when arranging lookout duty, shall have due regard to the bridge equipment and navigational aids available for use, their limitations, procedures and safeguards implemented.

Coastal and congested waters

47 The largest scale chart on board, suitable for the area and corrected with the latest available information, shall be used. Fixes shall be taken at frequent intervals, and shall be carried out by more than one method whenever circumstances allow. When using ECDIS, appropriate usage code (scale) electronic navigational charts shall be used and the ship's position shall be checked by an independent means of position fixing at appropriate intervals.

48 The officer in charge of the navigational watch shall positively identify all relevant navigation marks.

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Navigation with pilot on board

49 Despite the duties and obligations of pilots, their presence on board does not relieve the master or the officer in charge of the navigational watch from their duties and obligations for the safety of the ship. The master and the pilot shall exchange information regarding navigation procedures, local conditions and the ship's characteristics. The master and/or the officer in charge of the navigational watch shall co-operate closely with the pilot and maintain an accurate check on the ship's position and movement.

50 If in any doubt as to the pilot's actions or intentions, the officer in charge of the navigational watch shall seek clarification from the pilot and, if doubt still exists, shall notify the master immediately and take whatever action is necessary before the master arrives.

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Ship at anchor

51 If the master considers it necessary, a continuous navigational watch shall be maintained at anchor. While at anchor, the officer in charge of the navigational watch shall:

1. Determine and plot the ship's position on the appropriate chart as soon as practicable;
2. When circumstances permit, check at sufficiently frequent intervals whether the ship is remaining securely at anchor by taking bearings of fixed navigation marks or readily identifiable shore objects;
3. Ensure that proper lookout is maintained;
4. Ensure that inspection rounds of the ship are made periodically;
5. Observe meteorological and tidal conditions and the state of the sea;
6. Notify the master and undertake all necessary measures if the ship drags anchor;
7. Ensure that the state of readiness of the main engines and other machinery is in accordance with the master's instructions;
8. If visibility deteriorates, notify the master;
9. Ensure that the ship exhibits the appropriate lights and shapes and that appropriate sound signals are made in accordance with all applicable regulations; and
10. Take measures to protect the environment from pollution by the ship and comply with applicable pollution regulations.

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5.2 International Regulations for Preventing Collisions at Sea

PART A-GENERAL

RULE 1

Application

(a) These Rules apply to all vessels upon the inland waters of the United States, and to vessels of the United States on the Canadian waters of the Great Lakes to the extent that there is no conflict with Canadian law.

(b) (i) These Rules constitute special rules made by an appropriate authority within the meaning of Rule 1(b) of the International Regulations,

(ii) All vessels complying with the construction and equipment requirements of the International Regulations are considered to be in compliance with these Rules.

(c) Nothing in these Rules shall interfere with the operation of any special rules made by the Secretary of the Navy with respect to additional station or signal lights and shapes or whistle signals for ships of war and vessels proceeding under convoy, or by the Secretary with respect to additional station or signal lights and shapes for fishing vessels engaged in fishing as a fleet. These additional station or signal lights and shapes or whistle signals shall, so far as possible, be such that they cannot be mistaken for any light, shape, or signal authorized elsewhere under these Rules. Notice of such special rules shall be published in the Federal Register and, after the effective date specified in such notice, they shall have effect as if they were a part of these Rules.

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5.2 International Regulations for Preventing Collisions at Sea

(d) Traffic separation schemes may be adopted by the Organization for the purpose of these Rules.

(e) Whenever the Government concerned shall have determined that a vessel of special construction or purpose cannot comply fully with the provisions of any of these Rules with respect to the number, position, range or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signalling appliances, such vessel shall comply with such other provisions in regard to the number, position, range or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signalling appliances, as her Government shall have determined to be the closest possible compliance with these Rules in respect to that vessel.

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5.2 International Regulations for Preventing Collisions at Sea

Insert Video
Figure 2 I

RULE 2 Responsibility

(a) Nothing in these Rules shall exonerate any vessel, or the owner, master or crew thereof, from the consequences of any neglect to comply with these Rules or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

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5.2 International Regulations for Preventing Collisions at Sea

Insert Video
Figure 2 II

RULE 2 Responsibility

(b) In construing and complying with these Rules due regard shall be had to all dangers of navigation and collision and to any special circumstances, including the limitations of the vessels involved, which may make a departure from these Rules necessary to avoid immediate danger.

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5.2 International Regulations for Preventing Collisions at Sea

RULE 3

General Definitions

For the purpose of these Rules, except where the context otherwise requires:

- (a) The word "vessel" includes every description of water craft, including nondisplacement craft and seaplanes, used or capable of being used as a means of transportation on water.
- (b) The term "power-driven vessel" means any vessel propelled by machinery.
- (c) The term "sailing vessel" means any vessel under sail provided that propelling machinery, if fitted, is not being used.
- (d) The term "vessel engaged in fishing" means any vessel fishing with nets, lines, trawls or other fishing apparatus which restrict maneuverability, but does not include a vessel fishing with trolling lines or other fishing apparatus which do not restrict maneuver-ability.
- (e) The word "seaplane" includes any aircraft designed to maneuver on the water.
- (f) The term "vessel not under command" means a vessel which through some exceptional circumstance is unable to maneuver as required by these Rules and is therefore unable to keep out of the way of another vessel.
- (g) The term "vessel restricted in her ability to maneuver" means a vessel which from the nature of her work is restricted in her ability to maneuver as required by these Rules and is therefore unable to keep out of the way of another vessel.

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5.2 International Regulations for Preventing Collisions at Sea

The term "vessels restricted in their ability to maneuver" shall include but not be limited to:

- (i) a vessel engaged in laying, servicing or picking up a navigation mark, submarine cable or pipeline;
 - (ii) a vessel engaged in dredging, surveying or underwater operations;
 - (iii) a vessel engaged in replenishment or transferring persons, provisions or cargo while underway;
 - (iv) a vessel engaged in the launching or recovery of aircraft;
 - (v) a vessel engaged in mineclearance operations;
 - (vi) a vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from their course.
- (h) The term "vessel constrained by her draft" means a power-driven vessel which, because of her draft in relation to the available depth and width of navigable water is severely restricted in her ability to deviate from the course she is following.
- (i) The word "underway" means that a vessel is not at anchor, or made fast to the shore, or aground.
- (j) The words "length" and "breadth" of a vessel means her length overall and greatest breadth.
- (k) Vessels shall be deemed to be in sight of one another only when one can be observed visually from the other.
- (l) The term "restricted visibility" means any condition in which visibility is restricted by fog, mist, falling snow, heavy rain-storms, sandstorms or any other similar causes.

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PART B-STEERING AND SAILING RULES

Section I-Conduct of Vessels in Any Condition of Visibility

RULE 4

Application

Rules in this Section apply to any condition of visibility.

RULE 5

Look-out

Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

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RULE 6

Safe Speed

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 maneuverability 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 draft 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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Insert Video
Figure 7 I

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.

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Insert Video
Figure 7 II

RULE 7 Risk of Collision

(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.

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RULE 8

Action to Avoid Collision

- (a) Any action taken to avoid collision shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.
- (b) Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar; a succession of small alterations of course and/or speed should be avoided.
- (c) If there is sufficient sea room, alteration of course alone may be the most effective action to avoid a close-quarters situation provided that it is made in good time, is substantial and does not result in another close-quarters situation.
- (d) Action taken to avoid collision with another vessel shall be such as to result in passing at a safe distance. The effectiveness of the action shall be carefully checked until the other vessel is finally past and clear.
- (e) If necessary to avoid collision or allow more time to assess the situation, a vessel shall slacken her speed or take all way off by stopping or reversing her means of propulsion.

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(f) (i) A vessel which, by any of these rules, is required not to impede the passage or safe passage of another vessel shall, when required by the circumstances of the case, take early action to allow sufficient sea room for the safe passage of the other vessel.

(ii) A vessel required not to impede the passage or safe passage of another vessel is not relieved of this obligation if approaching the other vessel so as to involve risk of collision and shall, when taking action, have full regard to the action which may be required by the rules of this part.

(iii) A vessel, the passage of which is not to be impeded remains fully obliged to comply with the rules of this part when the two vessels are approaching one another so as to involve risk of collision.