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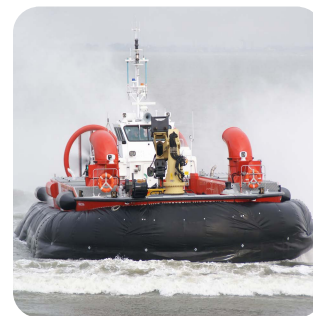
Pêches et Océans  
Canada

Garde côtière  
canadienne

# Fleet Safety Manual



Safety First, Service Always



Fleet Safety Manual

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# Fleet Safety Manual

## Register of Amendments

| AL No.         | Section             | Comments   | Date Issued | Date Entered | By |
|----------------|---------------------|--|-------------|--------------|----|
|                | 4 <sup>th</sup> Ed. | New edition.   | 2012-09-01  | 2012-09-01   | JM |
| 2014-A         | T of C              | Ver. 4-1 Table of Contents.<br>Dated 2014-01-09  | 2014-01-09  | 2014-01-09   | JM |
|                | Table of Con.       | Ver. 4-0 Table of Concordance.<br>Dated 2014-01-09   |             |              |    |
|                | 1.0                 | Ver. 4-1 Update to sections 5 & 7.<br>Dated 2014-01-09   |             |              |    |
| 2014-B         | T of C              | Ver. 4-2 Table of Contents<br>Dated 2014-06-05   | 2014-06-05  | 2014-06-05   | JM |
|                | 2.0                 | Ver. 4-1 Policy Plaque Update<br>Dated 2014-06-05  |             |              |    |
| 2014-C         | T of C              | Ver. 4-3 Table of Contents<br>Dated 2014-06-05   | 2014-12-05  | 2014-12-05   | JM |
|                | 4.0                 | Ver. 4-1 Title change to remove "Ashore" and all position titles now match approved org chart.<br>Dated 2014-11-05 |             |              |    |
|                | 6.0                 | Ver. 4-2 Update to sections 1.3 & 3.<br>Dated 2014-11-05   |             |              |    |
|                | 6.D.1               | Ver. 4-2 Update to sections 3.1& 3.3.<br>Dated 2014-10-17  |             |              |    |
|                | 9.0                 | Ver. 4-2 Update to sections 1.<br>Dated 2014-11-05   |             |              |    |
| 2015-A         | 11.A.3              | Vessel Certificates  | 2015-09-09  | 2015-09-09   | LP |
|                | Annex C             | Guidance Documents   |             |              |    |
| 2015-A revised | 11.A.3              | Error corrected on previous package<br>Uncontrolled watermark was remove from previous mail out.                   | 2015-09-09  | 2015-10-20   | LP |
|                | Annex C             | Error corrected on previous package<br>Uncontrolled watermark was remove from previous mail out.                   |             |              |    |
| 2015-B         | 7.A.12              | Potable Water Quality  | 2015-12-04  | 2015-12-04   | LP |
| 2016-A         | 6.D.1               | Supernumerary Personnel Carried Aboard Vessels   | 2016-02-10  | 2016-02-10   | LP |
|                | 4.0                 | Designated Person(s) Ashore  |             |              |    |

| AL No. | Section    | Comments   | Date Issued | Date Entered | By |
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| 2016-B | 7.A.11     | Hotel Services<br>Suggestion for Change #'s<br>HQ-2014-018, HQ-2014-024, HQ-2014-025<br>HQ-2015-011, HQ-2015-052                                       | 2016-06-05  | 2016-06-05   | LP |
| 2016-C | 9.C.1      | Shipboard Occupational Health and Safety (OHS)<br>Suggestion for Change #'s<br>HQ-2015-022   | 2016-06-08  | 2016-06-08   | LP |
| 2016-D | 11.A.4     | Maintenance of Vessel Logs<br>Suggestion for Change #'s<br>HQ-2014-016   | 2016-06-23  | 2016-06-23   | LP |
| 2016-E | 7.C.3      | Combined Operations with Helicopters   | 2016-07-07  | 2016-07-14   | LP |
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|        | 10.A.2     | Maintenance and Refits<br>Suggestion for Change #'s<br>HQ-2014-005   | 2016-07-14  | 2016-07-14   | LP |
| 2016-F | 6.C.1      | Training for Vessel and Shore Management Positions   | 2016-07-15  | 2016-07-15   | LP |
|        | 7.C.3      | Combined Operations with Helicopters<br>Reprint (minor corrections)  | 2016-07-07  | 2016-07-15   | LP |
|        | 10.A.2     | Maintenance and Refits<br>Reprint (minor corrections)  | 2016-07-14  | 2016-07-15   | LP |
| 2016-G | 6.A.1      | Crew complement<br>Suggestion for Change #'s<br>HQ-2015-023, HQ-2015-054   | 2016-07-26  | 2016-07-26   | LP |
|        | Annex D    | Forms<br>Suggestion for Change #'s<br>HQ-2015-023, HQ-2015-054   | 2016-07-26  | 2016-07-26   | LP |
|        | 6.A.1 Form | Marine Certification Exemption Risk Assessment<br>Suggestion for Change #'s<br>HQ-2015-023, HQ-2015-054  | 2016-07-26  | 2016-07-26   | LP |
|        | 6.A.2      | Medical fitness for seagoing personnel   | 2016-07-26  | 2016-07-26   | LP |
|        | 7.E.1      | Handling petroleum products<br>Suggestion for Change #'s<br>HQ-2014-015, HQ-2014-28, HQ-2015-049   | 2016-07-26  | 2016-07-26   | LP |
| 2016-H | 3.0        | Responsibilities and Authorities<br>Suggestion for Change #<br>HQ-2014-004   | 2016-09-19  | 2016-09-19   | LP |
| 2016-I | 7.B.6      | Electrical Safety – Working on Energized<br>Electrical Conductors or Circuit Parts<br>Suggestion for Change #<br>HQ-2015-007, HQ-2015-039, HQ-2015-040 | 2016-09-29  | 2016-09-29   | LP |

| AL No. | Section | Comments   | Date Issued | Date Entered | By |
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| 2016-J | 7.E.5   | Handling, Storage, and Disposal of Hazardous Materials<br>Suggestion for Change #<br>HQ-2015-008   | 2016-11-14  | 2016-11-14   | LP |
| 2016-K | 7.A.10  | Handling and Containing Asbestos Materials<br>Suggestion for Change #<br>HQ-2014-002   | 2016-12-08  | 2016-12-08   | LP |
| 2017-A | 8.A.1   | Vessel and Shore-based Contingency Plan<br>Suggestion for Change #<br>HQ-2014-003, HQ-2015-045, HQ-2015-051  | 2017-01-16  | 2017-01-16   | LP |
|        | 8.A.2   | Vessel and Shore Emergency Exercises<br>Suggestion for Change #<br>HQ-2014-003, HQ-2015-045, HQ-2015-051   | 2017-01-16  | 2017-01-16   | LP |
| 2017-B | 8.A.1   | Vessel and Shore-based Contingency Plan Update<br>To provide clarity for the Fleet Contingency Plans that are already developed and those which will be required to be developed. To reduce workload in changing 15 Contingency Plans per vessel when lesser changes are required. | 2017-02-07  | 2017-02-07   | LP |
|        | 8.A.2   | Vessel and Shore Emergency Exercises Update<br>To provide clarity for the Fleet Contingency Plans that are already developed and those which will be required to be developed. To reduce workload in changing 15 Contingency Plans per vessel when lesser changes are required.    | 2017-02-07  | 2017-02-07   | LP |
| 2017-C | 13.0    | Certification and Verification<br>Suggestion for Change #<br>HQ-2015-056   | 2017-02-24  | 2017-02-24   | LP |
| 2017-D | 12.A.2  | Safety Management System Review<br>Suggestion for Change #<br>HQ-2013-021, HQ-2014-026, HQ-2015-031<br>HQ-2015-033, HQ-2015-043  | 2017-04-23  | 2017-04-23   | LP |
| 2017-E | 12.A.2  | Safety Management System Review<br>Corrections made to 12.A.2 from Amendment 2017-D dated 2017-04-23   | 2017-05-17  | 2017-05-17   | LP |
| 2017-F | 7.E.8   | Use of Halocarbons<br>Suggestion for Change #<br>HQ-2015-041, HQ-2015-048  | 2017-05-24  | 2017-05-24   | LP |
|        | 7.E.6   | Handling and Discharge - Solid Waste<br>Suggestion for Change #<br>HQ-2014-001, HQ-2015-009  | 2017-06-19  | 2017-06-19   | LP |
|        | 11.C.1  | Sailing Orders<br>Suggestion for Change #<br>HQ-2014-010   | 2017-06-19  | 2017-06-19   | LP |

| AL No. | Section                    | Comments  | Date Issued | Date Entered | By |
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| 2017-F | 7.A.12                     | Potable Water Quality<br>Suggestion for Change #<br>HQ-2015-055, HQ-2016-F025   | 2017-06-26  | 2017-06-26   | LP |
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| 2017-H | 7.C.2                      | Small Craft Operations<br>Suggestion for Change #<br>HQ-2013-014, HQ-2013-023   | 2017-07-03  | 2017-07-03   | LP |
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| 2018-B | 7.B.6                      | Electrical Safety Working on Energized Electrical<br>Conductors or Circuit Parts  | 2018-04-24  | 2018-04-24   | LP |
|        | 10.B.1                     | Maintenance of Lifting Appliances and Cargo<br>Handling Gear<br>Suggestion for Change #<br>HQ-2015-027, HQ-2015-030   | 2018-04-24  | 2018-04-24   | LP |
|        | Annex D -<br>Form<br>7.B.6 | Energized Electrical Work Permit<br>Form 7.B.6 - Modifications  | 2018-04-24  | 2018-04-24   | LP |
| 2018-C | 7.C.6                      | Cargo Handling<br>Suggestion for Change #<br>HQ-2016-F023   | 2018-07-26  | 2018-07-26   | LP |
| 2019-A | 7.E.6                      | Handling and Discharge – Solid Waste<br>Suggestion for Change #<br>HQ-2017-F013   | 2019-02-20  | 2019-02-20   | LP |
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| 2019-D | 9.C.1   | Shipboard Occupational Health and Safety<br>Suggestion for Change #<br>HQ-2018-F015    | 2019-07-04  | 2019-07-04   | LP |
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|        | 7.B.3   | Entry into Confined Spaces<br>Suggestion for Change #<br>HQ-2015-017, HQ-2015-058      | 2020-04-02  | 2020-04-22   | LP |
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| 2020-C | 7.A.10  | Handling and Containing Asbestos Materials<br>Suggestion for Change #<br>HQ-2016-F007  | 2020-07-22  | 2020-07-22   | LP |
| 2020-D | 6.A.1   | Crew Complement<br>Suggestion for Change #<br>HQ-2017-F003                             | 2020-07-30  | 2020-07-30   | LP |
| 2020-E | 9.B.1   | Reports of Hazardous Occurrences, Marine<br>Occurrences and Other Reportable Incidents | 2020-08-06  | 2020-08-06   | LP |
| 2020-F | 7.A.13  | Potable Water Tank Coatings<br>Suggestion for Change #<br>HQ-2017-F010                 | 2020-08-28  | 2020-08-28   | LP |
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| 2020-G | 5.0     | Commanding Officer Responsibility and Authority  | 2020-09-29  | 2020-09-29   | LP |
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| 2021-B | 7.A.12  | Potable Water Quality  | 2021-04-12  | 2021-04-12   | LP |
| 2021-C | 8.B.1   | Security of the Vessel   | 2021-05-06  | 2021-05-06   | LP |
| 2021-D | 7.C.1   | Air Cushion Vehicle Operations<br>Suggestion for Change #<br>HQ-2020-F010              | 2021-06-24  | 2021-06-24   | LP |
| 2021-E | 7.E.8   | Use of Halocarbons<br>Suggestion for Change #<br>HQ-2020-F007                          | 2021-08-09  | 2021-08-09   | LP |
| 2021-F | Intro   | Introduction   | 2021-09-15  | 2021-09-15   | LP |

| AL No. | Section | Comments  | Date Issued | Date Entered | By |
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| 2021-G | 7.B.4   | Hot Work  | 2021-09-28  | 2021-09-28   | LP |
|        | 7.C.7   | Periodically Unattended Machinery Spaces<br>Suggestion for Change #<br>HQ-2015-026        | 2021-09-23  | 2021-09-28   | LP |
| 2021-H | 12.A.2  | Safety Management System Review<br>Suggestion for Change #<br>HQ-2018-S017 & HQ-2021-S004 | 2021-11-03  | 2021-11-03   | LP |
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# Fleet Safety Manual

## Introduction

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### 1 Purpose

- a) The Canadian Coast Guard (CCG) Fleet safety management system (SMS) began its implementation in 1999.
- b) This publication is the primary source of information and guidance for the CCG Fleet SMS. The office of the Director, Coast Guard Safety Management (CGSM) develops and maintains the technical content in this publication, and is responsible for its promulgation.

### 2 Scope

#### 2.1 General

The following provides general information and guidance regarding this publication:

- a) The order of precedence for CCG management of occupational health, safety, security, and environmental matters are:
  - i. [Canada Labour Code](#) Part II and applicable regulations
  - ii. Other Government of Canada legislation, policies, directives, and systems
  - iii. Fisheries and Oceans Canada [Occupational Health and Safety Manual](#)
  - iv. CCG/5737 - Fleet Safety Manual (FSM) [1.0 - Safety Management System](#), Section 7, Precedence of CCG Controlled Publications
- b) The primary controlled version of the FSM must be carried on board vessels/stations, and made available to all personnel. The electronic version of the [FSM](#) is available on the CCG intranet.
- c) As of October 1, 2018, this publication adheres to the rules outlined in the [Canada.ca Content Style Guide](#), and the processes described in [CCG/6115 - Operations Publications Instruction Manual](#).
- d) Procedures that have yet to be promulgated within this publication do not relieve those with authority of their obligations under legal and other requirements.
- e) A generic job title may be used to describe roles and/or responsibilities. The use of a generic title does not relieve those with authority of their responsibilities within a policy/procedure.
- f) The organizational structure of the CCG is subject to change without notice. Organizational changes that have not been applied to the FSM do not relieve those

with authority of their responsibilities within a policy/procedure. The controlled version of the CCG organizational chart takes precedence over similar charts published in this manual.

- g) Changes to titles of positions and publications, hyperlinks etc., cited in the FSM can occur without notice. Their precedence and authority remain in place unless otherwise stated. Amendments to the FSM reflecting these changes will be made at the next available opportunity.
- h) Amendments are indicated by a vertical bar in the left margin.
- i) When a procedure is promulgated without vertical lines, the procedure is considered re-written/new.
- j) Existing and recently promulgated policies and procedures in this manual must be read in their entirety before any associated tasks are started.

## 2.2 Continuous improvement

- a) A suggestion for change that alters the guidance in this manual must be submitted in accordance with FSM [11.B.1 - Procedure Approval and Change Process](#).
- b) If the suggestion is to amend a CCG controlled publication other than the FSM, follow the instructions within the publication. If no instructions exist, the suggestion should be sent to the Directives division via: [InfoPol.XNCR@dfo-mpo.gc.ca](mailto:InfoPol.XNCR@dfo-mpo.gc.ca)
- c) Notification of a broken hyperlink, difficulty printing any part of the manual, an error in spelling, grammar or translation, questions about formatting, etc. within this publication, are to be sent to the Directives division via: [Infopol.XNCR@dfo-mpo.gc.ca](mailto:Infopol.XNCR@dfo-mpo.gc.ca)

## 2.3 Commercial standards, International Maritime Organization publications, codes and guides

- a) Commercial standards referenced in legislation and the FSM, unless otherwise stated, can be viewed for free at [Canadian Centre for Occupational Health and Safety](#) (CCOHS) website. Contact them directly for questions/technical support.
- b) National Research Council of Canada (NRC) codes and guides referenced in the FSM, unless otherwise stated, can be viewed for free through their [Codes Canada Publications](#) web page. Click on the code or guide and scroll to product details. Contact them directly for questions/technical support.
- c) Additional information on commercial/industrial standards, International Maritime Organization (IMO) publications, and codes and guides can be found on the CGSM Intranet under "[Tools](#)".

## 2.4 Contact information

- a) Additional questions or comments about the promulgation of this publication are to be sent to the Directives division via: [Infopol.XNCR@dfo-mpo.gc.ca](mailto:Infopol.XNCR@dfo-mpo.gc.ca)
- b) Additional questions or comments about the CCG SMS can be sent to the Director, CGSM in headquarters (HQ) via: [SMS.XNCR@dfo-mpo.gc.ca](mailto:SMS.XNCR@dfo-mpo.gc.ca)
- c) The [CGSM Intranet](#) web page provides additional information related to the CGSM branch.

# Fleet Safety Manual

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# Fleet Safety Manual

## 1.0 – Safety Management System

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### 1 Purpose

- a) The objectives of the *International Safety Management Code* (ISM Code) are to ensure prevention of human injury or loss of life, safety at sea, and avoidance of damage to the environment, in particular to the marine environment and to property.
- b) The many acts, regulations, policies, and guidelines the Canadian Coast Guard (CCG) is to abide by; referenced within this manual and together with the ISM Code requirements, make up the framework of the CCG Safety Management System. This publication, inclusive of all areas, references and associated documentation contained within, must be referenced as the CCG/5737 - Fleet Safety Manual (FSM).

### 2 Fisheries and Oceans Canada safety management objectives

- a) Ensuring health, safety and security protection for all employees and anyone granted access to Fisheries and Oceans Canada (DFO) workplaces.
- b) Providing and maintaining a work environment that complies with, and at times exceeds DFO's regulatory health, safety and security requirements. DFO must strive to protect employees from any known or foreseeable hazards, which could result in personal injury, illness, loss or damage to property. This Department is committed to promoting a healthy and safe work environment by providing programs and information sessions on, including but not limited to, occupational health and safety (OHS), and [workplace well-being](#).
- c) Providing adequate OHS training to all managers and supervisors, and inform them of their responsibilities under the [Canada Labour Code](#) – Part II. Managers and supervisors must comply with the Department's OHS requirements specified in the [Canada Labour Code](#) – Part II, the [National Joint Council](#) (NJC) OHS Directives and the DFO [Occupational Health and Safety Manual](#).
- d) All employees must perform their work in accordance with established safe work procedures, legislative requirements and departmental OHS policies, directives and guidelines.

### 3 Functional requirements

- a) The functional requirements of the ISM Code are covered in detail in published procedures covering:
- i. reporting of accidents, hazardous occurrences, and non-conformities
  - ii. identification of hazards and aspects and the assessment of risk
  - iii. preparation and response to emergency situations
  - iv. internal audits, management reviews, and responding to non-conformities
  - v. shipboard maintenance and associated records for propulsion, electrical, auxiliary and domestic equipment, and systems that have been fitted to ensure safe vessel operation and environmental protection
  - vi. management of vessels and appropriate shore-based operations
  - vii. document control and maintenance of records
  - viii. assignment of competent<sup>1</sup> and qualified<sup>2</sup> operational personnel
  - ix. management of change and continuous improvement
  - x. ensuring occupational health, safety and environmental (OHSE) are incorporated into the procurement and contracting processes

### 4 Description of vessels

- a) The CCG owns and/or operates assets such as: vessels, small craft, aircraft, air cushion vehicles and dynamically supported craft including but not limited to the following [classes](#):
- polar icebreaker
  - heavy icebreaker
  - medium icebreaker
  - high-endurance multi-tasked vessel
  - medium-endurance multi-tasked vessel
  - offshore oceanographic science vessel
  - offshore fishery science vessel
  - offshore patrol vessel
  - mid-shore patrol vessel
  - air cushion vehicle
  - special nav aids vessel
  - SAR lifeboat
  - mid-shore science vessel
  - channel survey and sounding vessel
  - near-shore fishery research vessel
  - specialty vessel
  - inshore research vessel
  - multipurpose vessel
  - training vessel
  - small craft

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<sup>1</sup> [Canadian Centre for Occupational Health and Safety \(CCOHS\)](#) – OH&S Legislation in Canada - Competent

<sup>2</sup> [Maritime Occupational Health and Safety Regulations](#) – Part 1 - General, Interpretation

- b) The assets above are capable of performing but not limited to, one or more of the following capacities:
- icebreaking
  - aids to navigation work and lighthouse resupply
  - search and rescue (SAR)
  - hydrographic and scientific research
  - fisheries research
  - fisheries management and enforcement operations
  - environmental response
  - security patrol
  - training

## 5 Locations

### 5.1 Headquarters – Ottawa

Commissioner  
Canadian Coast Guard  
15th floor  
200 Kent Street  
Ottawa, ON K1A 0E6  
Tel: 613-990-5813  
Fax: N/A  
Email: [DFO.RCCGHQCommissionersOffice-BureauDuCommissaireQGGCCR.MPO@dfo-mpo.gc.ca](mailto:DFO.RCCGHQCommissionersOffice-BureauDuCommissaireQGGCCR.MPO@dfo-mpo.gc.ca)

Director General, Fleet and Maritime Services  
Canadian Coast Guard  
5th floor  
200 Kent Street  
Ottawa, ON K1A 0E6  
Tel: 613-990-9172  
Fax: N/A  
Email: [CCG.DGOpsOffice-BureauDGOps.GCC@dfo-mpo.gc.ca](mailto:CCG.DGOpsOffice-BureauDGOps.GCC@dfo-mpo.gc.ca)

### 5.2 Regional offices

Assistant Commissioner, CCG  
Atlantic Region  
Canadian Coast Guard  
Southside Base  
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PO Box 5667  
St. John's, NL A1C 5X1  
Tel: 709-772-5150  
Fax: 709-772-4194

Assistant Commissioner, CCG  
Arctic Region  
Canadian Coast Guard  
3rd floor Diamond Plaza  
5204 – 50th Avenue  
Yellowknife, NT X1A 1E2  
Tel: 867-446-3126  
Fax: N/A

Assistant Commissioner, CCG  
Central Region  
Canadian Coast Guard  
105 McGill Street  
Montreal, QC H2Y 2E7  
Tel: 514-283-0051  
Fax: N/A

Assistant Commissioner, CCG  
Western Region  
Canadian Coast Guard  
25 Huron Street  
Victoria, BC V8V 4V9  
Tel: 250-480-2765  
Fax: N/A

## 6 Management authorities

- a) On behalf of the owner, Her Majesty the Queen in Right of Canada, CCG assets are represented by the Minister of Fisheries, Oceans and the Canadian Coast Guard.
- b) The authorized representative<sup>3</sup> of the CCG, for the purposes of the [Canada Shipping Act, 2001](#), is the Office of the Commissioner of the Canadian Coast Guard.

## 7 Precedence of CCG controlled publications

- a) The [CCG/5737 - Fleet Safety Manual](#) (FSM) is the primary source of reference for the conduct of operations in the CCG Fleet with the exception of these publications in the following order:
  - i. [Operations safety bulletins](#)
  - ii. [technical Bulletins](#)
  - iii. [circulars](#)
  - iv. [national standard operating procedures](#)
  - v. national orders
  - vi. [Operations orders](#)
  - vii. [program specific directives](#)
- b) The FSM takes precedence over all other orders, procedures, instructions, or guidelines unless specifically excepted.
- c) Directives specified in the noted excepted documents must take precedence over the FSM for the specified subject matter only.
- d) If a procedure is not included in the FSM, the [CCG/6026 - Shore-based Safety Manual](#) (SBSM) is to be referenced and the relevant procedure is to be applied where appropriate.
- e) Operations safety bulletins (OSBs) communicate items of interest and importance, directly affecting the safety, security, and health of CCG personnel. An OSB will be issued “as required” to quickly communicate information including, but not limited to:
  - i. safety, security, health, and the environment
  - ii. increase awareness on issues brought forward by the marine industry
  - iii. changes in regulation
  - iv. incidents
  - v. internal investigations
  - vi. Transport Safety Board recommendations
  - vii. Transport Canada recommendations
- f) Technical bulletins (CCGTBs) communicate urgent, time sensitive technical information regarding health, safety and/or the environment, which are related to systems and/or equipment.

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<sup>3</sup> [Canada Shipping Act, 2001](#) – Section 2, Interpretation



- i. CCGTBs include updated information and/or requirements for the physical operation, maintenance, and repair of the related system(s) and/or equipment.
  - ii. CCGTBs provide necessary technical direction to achieve implementation of the new requirement(s), repair(s), maintenance, alteration(s), inspection(s), etc.
  - iii. CCGTBs have a limited lifespan, and if necessary, the other related “long standing” technical documentation must be amended within a reasonable time, to include the necessary information and/or direction.
  - iv. CCGTBs take precedence over other related technical documentation until the CCGTB expires, is cancelled, repairs/maintenance/alterations/inspections etc. as directed are completed, or related technical documentation is amended to include content from the CCGTB.
  - v. In most instances, a CCGTB is to only affect a procedure or document which is referenced in the FSM and will not directly affect the FSM. On rare occasions, a CCGTB will directly affect the FSM, and in such instances the CCGTB must have precedence over the FSM. The FSM must be amended to reflect these requirements.
- g) Canadian Coast Guard circulars (CCGCs) are authority documents issued by the Director General, Fleet and Maritime Services to communicate operational policies and guidelines. The CCGC provide instructions when action is necessary in support of CCG operations.
- h) CCGCs may:
- i. be issued on an interim basis pending the development of a policy or guideline on the operations of the CCG
  - ii. indicate the mandatory feature of a policy or how a policy ought to be interpreted and applied
  - iii. provide guidelines that apply in exceptional circumstances (for example, during special events)
- i) National standard operating procedures (NSOPs) are authority documents issued by the area of responsibility as required.
- j) National orders (NOs) are authority documents issued by the Commissioner, Canadian Coast Guard governing CCG operations as required.
- k) Operations orders (CGOOs) are authority documents that govern operations and management of the Fleet other than safety and security.
- l) Program specific directives are authority documents that govern the operation of CCG programs.

## 8 References

- [Canada Shipping Act, 2001](#)
- [Canada Labour Code](#) – Part II
- [CCG/6026 - Shore-based Safety Manual](#)
- International Safety Management Code (ISM Code)
- [National Joint Council \(NJC\) - Occupational Health and Safety Directive](#)
- [DFO Occupational Health and Safety Manual](#)

- [DFO OHS General Policy Statement](#)
- [DFO Workplace Well-Being](#)



# Fleet Safety Manual

## 2.0 - HEALTH, SAFETY, SECURITY AND ENVIRONMENTAL POLICY – DRUG, ALCOHOL AND PSYCHOACTIVE SUBSTANCES POLICY

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### 1 HEALTH, SAFETY, SECURITY AND ENVIRONMENTAL POLICY (HSSE)

#### 1.1 GENERAL

- a) The Canadian Coast Guard (CCG) is an organization committed to the safety and security of its employees and anyone granted access to our workplace.
- b) The CCG is an organization committed to protecting the environment while remaining operational by meeting or exceeding all applicable environmental legislation.
- c) The CCG uses integrated management systems based upon the ISM Code for vessels and CSA Z1000 and ISO 14001 standards for shore side. These systems provide amplifying information and instructions to our supervisors and employees on how to comply with the codes, acts, regulations and operational guidelines for a safe, healthy and violence free workplace.
- d) The CCG, through its Health, Safety, Security and Environmental Management Systems shall:
  - Ensure that all personnel are active participants in the development and implementation of new procedures, and continuous improvement to Health, Safety, Security and Environmental management practices.
  - Maintain and operate vessels and worksites in a manner that provides a safe, secure, healthy and violence free working environment while respecting the environment.
  - Identify, assess and eliminate or mitigate all known or reasonably foreseeable health, safety, security and environmental risks.
  - Establish and maintain clear levels of authority and lines of communication both internally and externally.
  - Ensure that a sufficient number of personnel, trained and suitably qualified, are provided to safely operate, maintain and support our vessels, deliver CCG Programs, protect the environment, and safeguard our assets.
  - Ensure compliance with; Canadian-recognized international, national, provincial, municipal and; departmental; health, safety, security and environmental protection legislation, regulations, directives and policies.
  - Ensure that incidents and non-conformities are reported, are analyzed, and that corrective actions are effectively implemented.
  - Ensure that procedures are in place and periodically exercised for dealing with foreseeable emergencies.

- Continuously improve the health, safety, security and environmental management skills of personnel through: formal and on the job training; system audits; evaluation of the audit results; management reviews; routine drills and training exercises.
- Appoint “Designated Persons” to ensure that the management system is established, maintained, and periodically reviewed. They provide reports to senior management of the overall performance of the system and identify any need for improvement.

## 1.2 ALL CCG EMPLOYEES

- a) All CCG employees are required to comply with the laws of Canada at all times, to faithfully apply the procedures developed under this Policy, and to take any necessary precautions to protect themselves, their colleagues, CCG assets, cargoes, and the environment.

## 2 DRUG, ALCOHOL AND PSYCHOACTIVE SUBSTANCES POLICY (DAPS)

- a) Canadian Coast Guard (CCG) vessels and aircraft are multi-taskable platforms that can be engaged in escort, fisheries enforcement, search and rescue or maritime security activities with little or no warning.
- b) In addition to their program-related duties, CCG vessels are required to be self-sustaining in the event of on-board emergencies such as fire, collision, equipment failure, personnel injury or sudden illness. Each member of the crew is assigned an emergency duty and this duty is contained in the Emergency Muster List required by Section 7 of the *Fire and Boat Drill Regulations* of the *Canada Shipping Act 2001 (CSA 2001)*.
  - It is incompatible with these roles and these responsibilities, for persons aboard the vessels or aircraft to be unable to perform their duties due to being impaired by psychoactive substances.
- c) Under the *Criminal Code of Canada* (Section 253), an offence is committed by anyone who operates a motor vehicle, a vessel or aircraft, or who has the care and control of a motor vehicle, a vessel or aircraft, whether the motor vehicle, vessel or aircraft is in motion or not, while that person's ability is impaired by a psychoactive substance. This would include all persons required to be on watch as defined in *CSA 2001 Marine Personnel Regulations*.
- d) The following policy shall apply on all CCG vessels, aircraft and CCG shore based work areas and shall be enforced:
  - All persons boarding CCG vessels or aircraft and those conducting work activities ashore are to be made aware of the rules of conduct and behaviour expected of them. The familiarization routine for persons boarding CCG vessels and aircraft (Section 6.B.1 of the FSM) shall include a reference to this policy.
  - No person shall perform, or attempt to perform, any duties while impaired by a psychoactive substance.
  - No person shall consume any mood-altering substance while on watch or duty. A person may consume a legal prescription or non-prescription drug, provided it does not cause the person to become impaired.
  - No person shall consume a beverage containing alcohol, or consume any other psychoactive substance which causes them to be impaired, in the eight-hour period immediately prior to their scheduled period of work.

- No person shall turn over the conduct of a watch or duty to any other person who appears, on reasonable grounds, to be impaired.
  - While engaged as crew to a CCG vessel that is tasked to primary duties in Search and Rescue, Environmental Response, Conservation and Protection, Maritime Security or enforcement-related duties, no person shall consume a beverage containing alcohol or consume any other psychoactive substance which causes them to be impaired. Permitted consumption aboard other vessels shall cease whenever these vessels are temporarily assigned to, and for the duration of, these duties.
  - Any contravention of this policy shall be regarded as a serious misconduct that could potentially lead to severe disciplinary penalties including discharge.
  - Any person, over whom the Commanding Officer or shore side manager has no line authority, who is found to be in contravention of this policy shall be formally reported to the Assistant Commissioner, CCG, who shall report the incident, in detail, to the appropriate person having authority over the individual concerned.
  - The Commanding Officer or shore side manager has the absolute authority to remove any person from the vessel or aircraft or workplace who is in violation of this policy.
- e) No person shall carry or offer to transport any illegal substances on any CCG motor vehicle, vessel or aircraft unless specifically tasked as part of an enforcement tasking from the Regional Operations Center (ROC).
- f) The Department of Fisheries and Oceans has an Employee Assistance Program which can provide professional assistance to employees who have alcohol or chemical dependencies. It is the responsibility of the employee to request this assistance. Contacts with the Employee Assistance Program are confidential and shall not be revealed to the supervisor.

### **3 POSTING**

- a) These policies shall be prominently posted aboard vessels and in all work areas ashore where CCG staff may be located. On small vessels, where space requirements make it difficult to post these policies, in lieu of posting a copy of these policies, they shall be included with the familiarization signed by each employee.

### **4 DOCUMENTATION**

- Posted Policies
- Site-Specific Familiarizations



# Drug, Alcohol and Psychoactive Substances Policy

Canadian Coast Guard (CCG) vessels and aircraft are multi-taskable platforms that can be engaged in escort, fisheries enforcement, search and rescue or maritime security activities with little or no warning.

In addition to their program-related duties, CCG vessels are required to be self-sustaining in the event of on-board emergencies such as fire, collision, equipment failure, personnel injury or sudden illness. Each member of the crew is assigned an emergency duty and this duty is contained in the Emergency Muster List required by Section 7 of the *Fire and Boat Drill Regulations* of the *Canada Shipping Act 2001 (CSA 2001)*.

It is incompatible with these roles and these responsibilities, for persons aboard the vessels or aircraft to be unable to perform their duties due to being impaired by psychoactive substances.

Under the *Criminal Code of Canada*, (Section 253) an offence is committed by anyone who operates a motor vehicle, a vessel or aircraft, or who has the care and control of a motor vehicle, a vessel or aircraft, whether the motor vehicle, vessel or aircraft is in motion or not, while that person's ability is impaired by a psychoactive substance. This would include all persons required to be on watch as defined in *CSA 2001 Marine Personnel Regulations*.

The following policy shall apply on all CCG vessels, aircraft and CCG shore based work areas and shall be enforced;

- .1 All persons boarding CCG vessels or aircraft and those conducting work activities ashore are to be made aware of the rules of conduct and behaviour expected of them. The familiarization routine for persons boarding CCG vessels and aircraft (Section 6.B.1 of the FSM) shall include a reference to this policy.
- .2 No person shall perform, or attempt to perform, any duties while impaired by a psychoactive substance.
- .3 No person shall consume any mood-altering substance while on watch or duty. A person may consume a legal prescription or non-prescription drug, provided it does not cause the person to become impaired.
- .4 No person shall consume a beverage containing alcohol, or consume any other psychoactive substance which causes them to be impaired, in the eight-hour period immediately prior to their scheduled period of work.
- .5 No person shall turn over the conduct of a watch or duty to any other person who appears, on reasonable grounds, to be impaired.
- .6 While engaged as crew to a CCG vessel that is tasked to primary duties in Search and Rescue, Environmental Response, Conservation and Protection, Maritime Security or enforcement-related duties, no person shall consume a beverage containing alcohol or consume any other psychoactive substance which causes them to be impaired. Permitted consumption aboard other vessels shall cease whenever these vessels are temporarily assigned to, and for the duration of, these duties.
- .7 Any contravention of this policy shall be regarded as a serious misconduct that could potentially lead to severe disciplinary penalties including discharge.
- .8 Any person, over whom the Commanding Officer or shore side manager has no line authority, who is found to be in contravention of this policy shall be formally reported to the Assistant Commissioner, CCG, who shall report the incident, in detail, to the appropriate person having authority over the individual concerned.
- .9 The Commanding Officer or shore side manager has the absolute authority to remove any person from the vessel or aircraft or workplace who is in violation of this policy.
- .10 No person shall carry or offer to transport any illegal substances on any CCG motor vehicle, vessel or aircraft unless specifically tasked as part of an enforcement tasking from the Regional Operations Center (ROC).
- .11 The Department of Fisheries and Oceans has an Employee Assistance Program which can provide professional assistance to employees who have alcohol or chemical dependencies. It is the responsibility of the employee to request this assistance. Contacts with the Employee Assistance Program are confidential and shall not be revealed to the supervisor.

Commissioner, Canadian Coast Guard





# Health, Safety, Security and Environmental Policy

The Canadian Coast Guard (CCG) is an organization committed to the safety and security of its employees and anyone granted access to our workplace.

The CCG is an organization committed to protecting the environment while remaining operational by meeting or exceeding all applicable environmental legislation.

The CCG uses integrated management systems (based upon the ISM code for vessels and CSA Z1000 and ISO 14001 standards for shore side). These systems provide amplifying information and instructions to our supervisors and employees on how to comply with the codes, acts, regulations and operational guidelines for a safe, healthy and violence free workplace.

The CCG, through its Health, Safety, Security and Environmental Management Systems shall:

- .1 Ensure that all personnel are active participants in the development and implementation of new procedures, and continuous improvement to Health, Safety, Security and Environmental management practices.
- .2 Maintain and operate vessels and worksites in a manner that provides a safe, secure, healthy and violence free working environment while respecting the environment.
- .3 Identify, assess, and eliminate or mitigate all known or reasonably foreseeable health, safety, security and environmental risks.
- .4 Establish and maintain clear levels of authority and lines of communication both internally and externally.
- .5 Ensure that a sufficient number of personnel, trained and suitably qualified, are provided to safely operate, maintain and support our vessels, deliver CCG Programs, protect the environment, and safeguard our assets.
- .6 Ensure compliance with Canadian-recognized international, national, provincial, municipal and departmental; health, safety, security and environmental protection legislation, regulations, directives and policies.
- .7 Ensure that incidents and non-conformities are reported, are analyzed, and that corrective actions are effectively implemented.
- .8 Ensure that procedures are in place and periodically exercised for dealing with foreseeable emergencies.
- .9 Continuously improves the health, safety, security and environmental management skills of personnel through: formal and on the job training; system audits; evaluation of the audit results; management reviews; routine drills and training exercises.
- .10 Appoint "Designated Persons"; to ensure that the management system is established, maintained, and periodically reviewed. They provide reports to senior management of the overall performance of the system and identify any need for improvement,

All CCG employees are required to comply with the laws of Canada at all times, to faithfully apply the procedures developed under this Policy, and to take any necessary precautions to protect themselves, their colleagues, CCG assets, cargoes, and the environment.

Commissioner, Canadian Coast Guard



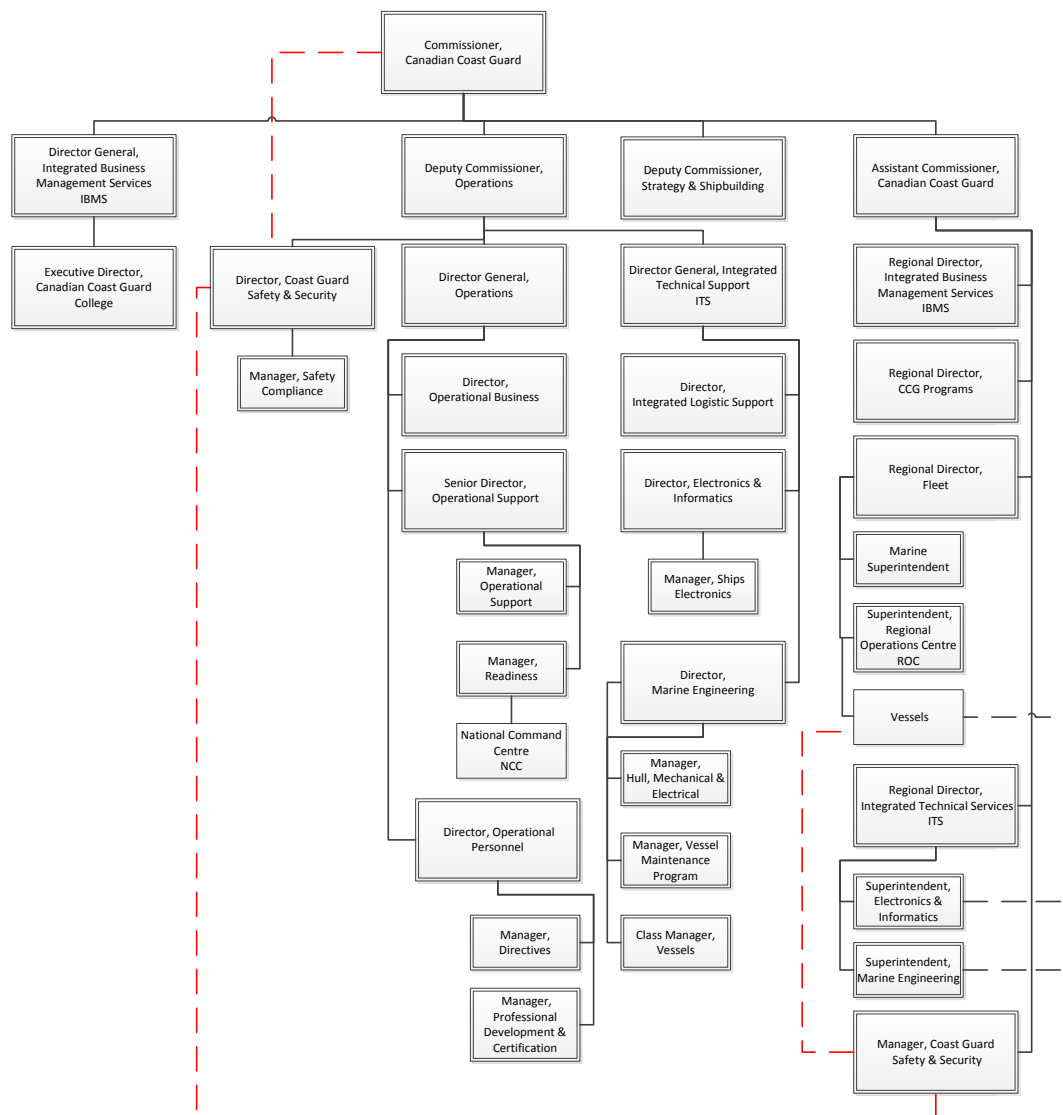


# Fleet Safety Manual

## 3.0 - RESPONSIBILITIES AND AUTHORITIES

### 1 SHORE-BASED ORGANIZATION CHART

Depicts only those positions ashore having Safety Management System (SMS) responsibilities.



## **2 RESPONSIBILITIES AND AUTHORITIES – SHORE-BASED PERSONNEL - HEADQUARTERS**

### **2.1 COMMISSIONER, CANADIAN COAST GUARD**

#### **2.1.1 Overview**

- a) Is the most senior position and has full accountability for the performance of the Canadian Coast Guard (CCG).
- b) Ensures that priorities of the CCG are aligned with those of the Department of Fisheries and Oceans (DFO) and the Government of Canada in general, and represents CCG interests within DFO, across other governmental departments, and with other relevant stakeholders, including industry.
- c) The Commissioner, CCG is an Associate Deputy Minister of DFO and is responsible for participating in senior-level corporate decision-making within the Department.
- d) Under the [Canada Shipping Act, 2001](#), is designated as the Authorized Representative for the CCG Fleet, and is accountable for the development of national policies governing the safe operation of the Fleet to comply with the requirements of the [International Safety Management \(ISM\) Code](#), [Policy on Government Security \(PGS\)](#), and the departmental Safety and Security Program.

#### **2.1.2 Responsibilities**

The Commissioner is responsible for:

- a) ensuring that the CCG complies with safety, security, and environmental policies, standards, and practices.
- b) through the Safety Management System (SMS), ensuring the provision of a healthy and safe working environment and establishes safeguards for employees and other individuals, assets, and information within his/her areas of responsibility.
- c) establishing effective CCG Workplace Health and Safety Committees.
- d) ensuring that adequate resources are allocated to safety management and that an effective SMS is in place to adequately manage compliance for shore-based operations and personnel.

### **2.2 DEPUTY COMMISSIONER, STRATEGY AND SHIPBUILDING**

#### **2.2.1 Overview**

- a) Is accountable for the acquisition of vessels and helicopters.
- b) Provides leadership with regard to the CCG's long-range procurement issues and is accountable for the procurement of new fleet assets for the CCG.
- c) Provides horizontal perspective and ensures the strategic integration of critical files and issues on behalf of the Commissioner, including those directly related to the procurement process and to vessel design and construction.

#### **2.2.2 Responsibilities**

The Deputy Commissioner, Strategy and Shipbuilding is responsible for:

- a) participating in senior-level corporate decision-making as an Assistant Deputy Minister of DFO
- b) ensuring that all new construction meets applicable safety standards, including ergonomic design factors, as part of the CCG's commitment to hazard prevention.

## **2.3 DEPUTY COMMISSIONER, OPERATIONS**

### **2.3.1 Overview**

- a) Serves as the Chief Operating Officer of the CCG and second in command to the Commissioner for all non-vessel procurement related activities.
- b) Is an Assistant Deputy Minister of DFO, and is responsible for participating in senior-level corporate decision-making.
- c) Provides leadership and functional direction in the development of CCG strategic and operational policy frameworks, monitors their implementation, and ensures that the strategic direction for the cost-effective delivery of CCG programs and services are reflected in policy and planning frameworks, guidelines, standards, procedures and processes.

### **2.3.2 Responsibilities**

The Deputy Commissioner, Operations is responsible for:

- a) the development and sustainability of the CCG SMS.
- b) ensuring that the CCG SMS meets the legislated and departmental requirements and that appropriate monitoring and reporting on the system is being provided.
- c) representing safety, security, and environmental issues, as well as related interests before the Commissioner of the CCG and the CCG Management Board.
- d) for ensuring that the necessary CCG safety, security, and environmental policies, procedures, standards, and practices are established and that the appropriate resources are allocated for the effective management of the SMS.

## **2.4 DIRECTOR, COAST GUARD SAFETY AND SECURITY**

### **2.4.1 Overview**

- a) Provides the national functional lead on safety management issues. The Director, Coast Guard Safety and Security, also provides leadership to the Coast Guard Safety and Security personnel in the regions to ensure national consistency in delivery of the CCG SMS.

### **2.4.2 Responsibilities**

The Director, Coast Guard Safety and Security is responsible for:

- a) administering and monitoring the effectiveness of the CCG SMS.
- b) performing the duties of National Designated Person Ashore (NDPA) for the CCG SMS.

## **2.5 MANAGER, SAFETY COMPLIANCE**

### **2.5.1 Responsibilities**

The Manager, Safety Compliance is responsible for:

- a) administering and monitoring the effectiveness of the CCG SMS at the national level.
- b) monitoring the effectiveness of the SMS. The Manager, Safety Compliance, coordinates the scheduling of audits, review audit reports and non-conformities and develops policies, procedures and guidelines where weaknesses have been identified.
- c) developing, implementing, and monitoring the National SMS, including the development of related frameworks, policies, standards and procedures.
- d) providing national advice and guidance to the Manager, Coast Guard Safety and Security, in the region.

## **2.6 DIRECTOR GENERAL, INTEGRATED BUSINESS MANAGEMENT SERVICES**

### **2.6.1 Overview**

- a) Provides national leadership for the consistent integration, management and coordination of the CCG's strategic and horizontal business; workforce planning and reporting (including training); information management (including web and communications support) as well as ongoing oversight of CCG's workforce, the CCG College, and CCG's financial resources.

### **2.6.2 Responsibilities**

The Director General, Integrated Business Management Services is responsible for:

- a) being primary contact for Integrated Business Management Services (IBMS) matters related to the CCG's SMS.
- b) ensuring that the Directorate complies with departmental safety and security policy, standards and practices.
- c) issuing National policies, procedures, and instructions to the CCG College and IBMS in order to:
  - i. support the policies established by the Commissioner for the safe operation of fleet and shore-based operations within the IBMS branches and the CCG College;
  - ii. conform to the CCG SMS requirements; and
  - iii. meet the requirements of the departmental safety, security, and environmental program policies, directives, standards, etc., as well as the [Canada Labour Code Part II](#) and its Regulations and Treasury Board policies.

## **2.7 EXECUTIVE DIRECTOR, CANADIAN COAST GUARD COLLEGE**

### **2.7.1 Overview**

- a) Is responsible for the development of program of studies, training courses, and development of networks with external learning partners to train and develop marine professionals in support of CCG-mandated programs in marine safety, security, and environmental protection.

### **2.7.2 Responsibilities**

The Executive Director, Canadian Coast Guard College is responsible for:

- a) developing, maintaining and monitoring compliance with policies, processes and procedures for the Canadian Coast Guard College (CCGC) areas noted in the above overview.
- b) the implementation of the SMS at the CCGC, as well as the allocation of adequate resources to manage the SMS.
- c) participating in reviews of the SMS to ensure program effectiveness.
- d) within the context of the SMS, the Executive Director, CCGC, in collaboration with the Safety and Security Branch, setting and maintaining compliance of the SMS for the CCGC.

## **2.8 DIRECTOR GENERAL, OPERATIONS**

### **2.8.1 Overview**

- a) Under the leadership of the Director General, the Operations Directorate develops CCG operational requirements, ensures operational readiness, develops and certifies operational personnel, plans annual national service delivery and maritime security in support of regional service delivery for all fleet and shore-based operations.

**2.8.2 Responsibilities**

The Director General, Operations is responsible for:

- a) providing executive leadership in the development, implementation and monitoring of a management framework for the effective and efficient operation of CCG Operations. This includes operational policies, standards, approaches, and mechanisms required to optimize the utilization of fleet units (predominately vessels, and aircraft) and operational personnel in support of the delivery of mission critical programs and services.
- b) ensuring that outcomes are in alignment with allocated resources and business plans in support of the CCG's strategic directions and operational requirements.
- c) ensuring that the Operations Directorate complies with departmental safety and security policy, standards and practices.
- d) issuing national policies, procedures, and instructions to the CCG Fleet and Shore-based organizations in order to:
  - i. support the policies established by the Commissioner for the safe operation of fleet and shore-based operations;
  - ii. conform to the CCG SMS requirements; and
  - iii. meet the requirements of the departmental safety, security, and environmental program policies, directives, standards, etc., as well as the [Canada Labour Code Part II](#) and its Regulations and Treasury Board policies.
- e) providing functional guidance for the implementation of these services to the operators in the three (3) regions, and to this end ensures the development of national plans, programs and projects, as well as national regulations, procedures, standards, and related international agreements.

**2.9 DIRECTOR, OPERATIONAL PERSONNEL****2.9.1 Overview**

- a) Leads the Operational Personnel Branch, which is comprised of three (3) streams: Operational Personnel Management, Directives, and Professional Development & Certification.

**2.9.2 Responsibilities**

The Director, Operational Personnel is responsible for:

- a) providing national standardized direction and guidance in the areas of operational personnel management.
- b) overseeing the production, publishing and managing of directives, guides and other internal documents for operational personnel.
- c) the identification of competencies, certification and training requirements and compliance with those requirements for all operational positions within the CCG.
- d) implementing and ensuring the monitoring of national policies, plans, and standards governing the operations of the CCG.

## **2.10 MANAGER, PROFESSIONAL DEVELOPMENT AND CERTIFICATION**

### **2.10.1 Overview**

- a) The Professional Development and Certification unit is responsible for the identification of competencies, certification and training requirements and compliance with those requirements for all operational positions.

### **2.10.2 Responsibilities**

The Manager, Professional Development and Certification, is responsible for:

- a) ensuring that there are competency standards for CCG operational personnel, including a national operational training policy, competency profiles, qualification standards, and training profiles.
- b) conducting quality checks of training methodologies and processes through the development of performance indicators and evaluation criteria and makes recommendations for modifications to training.
- c) the implementation and monitoring of the examination and certification system for the award of CCG Certificates of Competency, as well as maintaining supporting files on the issuance of certificates.
- d) managing the exemption process on behalf of the Director General, Operations.
- e) leading a variety of projects involving the development and maintenance of competency profiles, qualification, training, and certification standards, crewing profiles, and safe manning documents.

## **2.11 MANAGER, DIRECTIVES**

### **2.11.1 Overview**

- a) The Directives unit is responsible for producing, publishing, and managing directives, guides, and other internal documents for operational personnel.

### **2.11.2 Responsibilities**

The Manager, Directives is responsible for:

- a) assisting Operations in developing and promulgating departmental policies, bulletins, circulars, Coast Guard Fleet Orders, Standard Operating Procedures, etc. for all of CCG.
- b) assisting other Directorates in publishing specific documents

## **2.12 DIRECTOR, OPERATIONAL BUSINESS**

### **2.12.1 Overview**

- a) Operational Business Branch has three (3) distinct streams: Operational Service Delivery, Ship Operational Service Delivery, and Operations Data Management (the CCG functional authority related to the business component of operations systems).

### **2.12.2 Responsibilities**

The Director, Operational Business is responsible for:

- a) operational planning, measuring, and reporting on financial or business applications.
- b) examining and reporting on the financial implications and overall business impact of all proposed changes and/or expenditures (e.g. to vessels or other assets) within the CCG.
- c) for overseeing and coordinating the development, costing and implementation of a national integrated operations plan for CCG Programs and Fleet Operations.



- d) Operations performance measurement and for providing data in support of program performance measurement (for the services to Canadians), and ensures data quality management.

## **2.13 SENIOR DIRECTOR, OPERATIONAL SUPPORT**

### **2.13.1 Overview**

- a) The Operational Support Branch provides support to senior management through the National Command Centre (NCC), provides operational requirements for assets that shore-based and seagoing personnel utilize, and conducts operational requirements analysis.
- b) Operational Support has three (3) streams: Operational Support, Operational Requirements, and Readiness.

### **2.13.2 Responsibilities**

The Senior Director, Operational Support is responsible for:

- a) the provision or co-ordination of aircraft support to the departmental programs.
- b) the link between Headquarters program users of Fleet resources and the Headquarters Fleet staff for the definition of vessel operational requirements.
- c) providing direction and advice on marine security and vessel and aircraft operationally-related matters to regional and Headquarters senior management.
- d) providing national operational oversight functions for all Coast Guard programs (Environmental Response, Search & Rescue, Marine Communications & Traffic Services, Icebreaking, Waterways Management and Aids to Navigation).

## **2.14 MANAGER, OPERATIONAL SUPPORT**

### **2.14.1 Overview**

- a) Oversees the operational support of the regional service delivery of the six (6) CCG Services: Environmental Response, Search & Rescue, Marine Communications & Traffic Services, Icebreaking, Waterways Management and Aids to Navigation.
- b) Provides operational requirements for all seagoing (Fleet) including helicopters and marine assets.
- c) Provides direction and advice to the seagoing and shore-based operational projects.

### **2.14.2 Responsibilities**

The Manager, Operational Support is responsible for:

- a) coordinating and developing analysis and standards for the six CCG services. The Manager, Operational Support, is also responsible for the CCG services delivery databases.
- b) planning and conceptualizing the development and implementation of an integrated, national system of analysis, policies, standards and methodology governing Fleet Operational Requirements for the CCG Fleet Orders.
- c) the preparation and follow-up of projects for the modernization, addition, or modification of the configuration of vessels in the present Fleet and for other shore-based projects related to the CCG services delivery.

## **2.15 MANAGER, READINESS**

### **2.15.1 Responsibilities**

The Manager, Readiness, is responsible for:

- a) in the safety management context, ensuring that the National Incident Management Team (NIMT) is supplied with sufficient operational information and support logistics so that the team can effectively discharge its collective responsibilities.
- b) ensuring that the NCC or an alternate facility is equipped and staffed to provide support to the NIMT.
- c) offering current operational advice on the capabilities and disposition of all Fleet assets and provides analysis on impacts to CCG programs.

## **2.16 NATIONAL COMMAND CENTRE**

### **2.16.1 Overview**

- a) The National Command Centre (NCC) serves the purpose of acting as a liaison between the Regional Operation Centre (ROC) and Coast Guard headquarters senior management by way of communication and support.

### **2.16.2 Responsibilities**

The NCC is responsible for:

- a) preparing the daily operations briefing;
- b) preparing ARC Geographical Information System (ArcGIS) maps in support of publications or senior management decision-making;
- c) keeping senior management aware of all CCG operations, highlighting any Fleet or Shore-based issues;
- d) providing a 24/7 duty officer;
- e) supporting the NIMT during emergencies;
- f) communicating with ROCs and sharing information with DFO and other government departments;
- g) participating in plans and protocols led by Public Safety (e.g. *Marine Event Response Protocol* (MERP), [\*Federal Emergency Response Plan \(FERP\)\*](#)); and
- h) carrying out other relevant tasks directed at the headquarters level.

## **2.17 DIRECTOR GENERAL, INTEGRATED TECHNICAL SERVICES**

### **2.17.1 Overview**

- a) Oversees the Integrated Technical Services Directorate (ITS), which is the Functional Authority within the CCG for the development and implementation of technical solutions for the Life Cycle Material Management of all CCG physical assets.
- b) The national Headquarters structure is comprised of four branches, each led by a Director reporting to the Director General: Marine, Civil Infrastructure, and Environmental Response, Electronics & Informatics, Marine Engineering, and Integrated Logistic Support.
- c) Each of the asset branches; Marine, Civil Infrastructure and Environmental Response, Electronics & Informatics and Marine Engineering, has an engineering, project management and asset class management stream.

**2.17.2 Responsibilities**

The Director General, ITS is responsible for:

- a) providing functional guidance for the implementation of these services to the operators in the three (3) regions, and to this end ensures the development of national plans, programs and projects, as well as national regulations, procedures, standards, and related international agreements.
- b) as the CCG national technical authority to the Commissioner, for ensuring that the Director General, Operations is provided with technical and engineering support, counsel and advice to assist Programs in meeting their organisational goal.
- c) being the primary contact for ITS matters related to the [International Safety Management \(ISM\) Code](#).
- d) coordinating ITS involvement in SMS audits and ensuring that corrective action is taken to address any ITS non-conformities identified during an audit.
- e) ensuring that their Directorate complies with departmental safety and security policy, standards and practices.
- f) issuing national policies, procedures, and instructions to the CCG Fleet and Shore-based organizations in order to:
  - i. support the policies established by the Commissioner for the safe operation of Fleet and Shore-based operations;
  - ii. conform to the CCG SMS requirements; and
  - iii. meet the requirements of the departmental safety, security, and environmental program policies, directives, standards, etc., as well as the [Canada Labour Code Part II](#) and its Regulations and Treasury Board policies.

**2.18 DIRECTOR, ELECTRONICS & INFORMATICS****2.18.1 Overview**

- a) Oversees the Electronics and Informatics Branch of ITS, which includes the following three (3) streams: asset class planning, engineering, and project management.
- b) The Branch provides technical support in planning and directing the development and implementation of a comprehensive National Technical Services Program to optimize the design integrity of all CCG electronic assets.
- c) The Director, in cooperation with the other ITS Directors, develops the directives, technical standards, processes, structures, and tools required to effectively and efficiently deliver technical services to partners and clients.

**2.18.2 Responsibilities**

The Director, Electronics & Informatics is responsible for:

- a) developing, keeping current, and monitoring compliance to national engineering and maintenance standards and procedures, as they pertain to CCG electronics and informatics equipment and systems.
- b) ensuring that the integrity of technical data necessary to execute maintenance activities of electronics and informatics equipment and systems.
- c) ensuring that the technical reviews and investigations of equipment and systems are conducted.
- d) monitoring emerging technologies and advises CCG personnel of their potential application.
- e) undertaking the conceptual, preliminary, and detailed design, procurement and/or systems development, and manages technical projects required to transform statements of operational requirements into affordable, cost effective solutions.

- f) the effective and efficient life cycle management of Electronic and Informatics assets in the regions, in support of CCG Operations.
- g) Oversees the Branch management of the CCG proprietary information technology hardware and software, including information technology security.

## **2.19 DIRECTOR, MARINE ENGINEERING**

### **2.19.1 Overview**

- a) Oversees the Marine Engineering Branch. The Marine Engineering Branch, like the other asset branches within ITS, has an engineering, project management, and asset class management stream. The engineering stream represents the national technical authority and life cycle management aspects for all associated CCG national managed assets in their respective areas of responsibility.
- b) The Marine Engineering Branch also includes a Centre of Expertise stream which focuses on vessel condition audit and evaluation activities.

### **2.19.2 Responsibilities**

The Director, Marine Engineering is responsible for:

- a) the Hull, Mechanical, and Electrical disciplines for the through-life design integrity and the life cycle management of nationally managed equipment and systems.
- b) the delivery of research and development, acquisition, in-service, and disposal projects.
- c) managing the acquisition, in-service support, and disposal of vessels and their installed equipment and systems to meet the Statement of Requirements developed by the Operations Directorate.
- d) developing management procedures that shall ensure that the vessels in-service support responds to regulatory, operational and fiscal requirements, and other relevant standards, throughout their in-service operations.
- e) ensuring that health, safety, and environmental legislative requirements are included in the design, operation and maintenance of CCG assets.

## **2.20 MANAGER, HULL, MECHANICAL AND ELECTRICAL**

### **2.20.1 Responsibilities**

The Manager, Hull, Mechanical and Electrical is responsible for:

- a) developing and keeping current national hull, mechanical and electrical engineering and maintenance standards and procedures in accordance with legislation, manufacturer's recommendations, and industry best practices.
- b) monitoring emerging technologies and advises CCG personnel of their potential application.
- c) transforming the Fleet's Statements of Operational Requirements into affordable cost-effective solutions.

**2.21 MANAGER, VESSEL MAINTENANCE PROGRAM****2.21.1 Responsibilities**

The Manager, Vessel Maintenance Program is responsible for:

- a) monitoring compliance with maintenance standards and procedures.
- b) conducting technical reviews, surveys, and investigations of CCG vessels and provides technical solutions and support in the area of vessel maintenance.
- c) providing ongoing technical support to regional personnel.

**2.22 CLASS MANAGER, VESSELS****2.22.1 Responsibilities**

The Class Manager, Vessels is responsible for:

- a) the effective life-cycle management of CCG capital assets by vessel class and sub-class.
- b) the effective planning, implementing, controlling and close-out of national acquisition, in-service and disposal projects.

**2.23 DIRECTOR, INTEGRATED LOGISTIC SUPPORT****2.23.1 Overview**

- a) Provides direction to ITS staff nationally on Integrated Logistics Support (ILS) elements, including: life cycle management, asset management, configuration management, technical data management, supply chain management, project management methodology, planning and performance management, central project coordination, maintenance management and technical training management.

**2.23.2 Responsibilities**

The Director, Integrated Logistic Support is responsible for:

- a) developing, maintaining and monitoring compliance with processes and procedures for the ILS areas noted in the above overview.
- b) in the context of the SMS, in collaboration with the CCG Safety and Security Branch, is responsible for setting and maintaining technical guidelines and directives for the ITS organization nationally.

**3 RESPONSIBILITIES AND AUTHORITIES SHORE-BASED PERSONNEL – REGIONS****3.1 ASSISTANT COMMISSIONER****3.1.1 Overview**

There are three Assistant Commissioners, CCG. Each having the responsibility for a specific geographic region. Within their region, the Assistant Commissioner is accountable for: all aspects of service delivery, ensuring their direct reports deliver on the functional responsibilities established by the national functional leads, providing the regional perspective in the development of national policy and directives, a variety of functions representing the CCG in the region and directly responsible for the oversight of the safety and security function in their region.

### **3.1.2 Responsibilities**

The Assistant Commissioner is responsible for:

- a) developing and implementing operational plans, guidelines, standards, processes, and procedures for the cost-effective management of the delivery of the DFO programs and services related to the mandate of the CCG.
- b) ensuring the provision of a healthy and safe working environment and establishing safeguards for his/her employees and other individuals, for assets under his/her custodianship, and information within his/her area of responsibility
- c) the implementation of DFO departmental safety and security policies, regulations, standards, and guidelines for the provision of regional safety and security program services.
- d) the regional implementation of the CCG SMS developed to comply with the requirements of the [International Safety Management \(ISM\) Code](#), [Policy on Government Security](#), [Canada Labour Code Part II](#), and applicable legislation.
- e) ensuring that an effectual environment for safety and security is provided to the, designated Senior Officers and CCG assigned ownership asset managers.

## **3.2 REGIONAL DIRECTOR, FLEET**

### **3.2.1 Overview**

- a) Oversees, regionally, the Branch which delivers front line air and on-water services to clients, striving for operational excellence and national consistency in program and service delivery.

### **3.2.2 Responsibilities**

The Regional Director, Fleet is responsible for:

- a) developing and implementing plans and processes and managing and directing the cost-effective operation and deployment of CCG vessels, small craft, aircraft, and other delivery platforms to fulfill the operational program requirements of the region.
- b) leading the Regional Incident Management Team (RIMT) and determining, in consultation with the Regional Response Team members and where practical the Commanding Officer, what level of support is needed.
- c) supporting the implementation of, and the allocation of adequate resources to manage, the SMS within their directorate.

## **3.3 MARINE SUPERINTENDENT**

### **3.3.1 Responsibilities**

The Marine Superintendent is responsible for:

- a) advising the Regional Director, Fleet on Fleet operational matters and providing day-to-day management of the regional fleet and seagoing personnel on behalf of the Regional Director, Fleet.
- b) co-ordinating the provision of relief and/or support personnel for extended or large-scale emergency operations.
- c) supporting the implementation of the SMS.

**3.4 SUPERINTENDENT, REGIONAL OPERATIONS CENTRE****3.4.1 Responsibilities**

The Superintendent, Regional Operations Centre is responsible for:

- a) planning, organizing, and coordinating the day-to-day utilization of regional vessels, aircraft, and specialized vehicles on behalf of the Regional Director, Fleet for the delivery of departmental programs and services.
- b) supporting the implementation of the SMS.

**3.5 MANAGER, COAST GUARD SAFETY AND SECURITY****3.5.1 Overview**

- a) Administers and monitors the effectiveness of the CCG SMS at the regional level.

**3.5.2 Responsibilities**

The Manager, Coast Guard Safety and Security is responsible for:

- a) performing the functions of the Regional Designated Person Ashore (RDPA) for the region and has a functional relationship with the Director, Coast Guard Safety and Security and the Commanding Officers.
- b) reporting to the Assistant Commissioner on a day-to-day basis and reports immediately to the Deputy Commissioner, Operations through the Director, Coast Guard Safety and Security, on regionally significant issues or issues that may have national implications arising from the employment of the CCG SMS.

**3.6 REGIONAL DIRECTOR, INTEGRATED TECHNICAL SERVICES****3.6.1 Overview**

- a) Oversees the management, provision and delivery of the CCG Technical Program in the assigned region.

**3.6.2 Responsibilities**

The Regional Director, Integrated Technical Services, is responsible for:

- a) developing and implementing plans, processes, and procedures for the cost-effective management of the delivery of engineering and technical services in support of program delivery and capital investments. The Regional Director, Integrated Technical Services (ITS) has a functional relationship with the Director General, ITS.
- b) for supporting the implementation of, and the allocation of adequate resources to manage, the SMS within the directorate.
- c) participating in reviews of the SMS to ensure program effectiveness.

**3.7 SUPERINTENDENT, ELECTRONICS AND INFORMATICS****3.7.1 Responsibilities**

The Superintendent, Electronics and Informatics, is responsible for:

- a) managing the regional Centre of Expertise and is the regional technical authority for Electronics and Informatics systems and services with regard to international and national acts and regulations, as well as CCG and industry standards.
- b) delivering effective engineering and technical solutions to meet the requirements of regional and national programs, including leading the development of regional policies and procedures and providing input into the development of national policies and procedures.

- c) supporting the implementation of the SMS.
- d) ensuring compliance with applicable standards and regulations.

### **3.8 SUPERINTENDENT, MARINE ENGINEERING**

#### **3.8.1 Responsibilities**

The Superintendent, Marine Engineering, is responsible for:

- a) providing engineering and technical advice on behalf of the Regional Director, ITS to regional managers on vessel refit, maintenance management and associated support functions.
- b) supporting the implementation of the SMS.

### **3.9 REGIONAL DIRECTOR, INTEGRATED BUSINESS MANAGEMENT SERVICES**

#### **3.9.1 Overview**

- a) Provision of direct and functional regional leadership, governance, management and enhancement concerning a broad range of strategic and operational integrated business management services that enable the effective delivery of critical regional and national CCG and DFO programs.

#### **3.9.2 Responsibilities**

The Regional Director, Integrated Business Management Services, is responsible for:

- a) developing, leading, managing, and enhances the delivery and whole-of-region implementation of an integrated CCG IBMS matrix management model.
- b) supporting the implementation of the SMS.

### **3.10 REGIONAL DIRECTOR, CCG PROGRAMS**

#### **3.10.1 Overview**

- a) Oversees the development and implementation of all CCG programs through effective consultation with clients and all stakeholders, through the optimal allocation of resources to meet short and long term program and service requirements, and by monitoring the performance of program delivery and developing strategies to improve cost and service effectiveness.

#### **3.10.2 Responsibilities**

The Regional Director, CCG Programs, is responsible for:

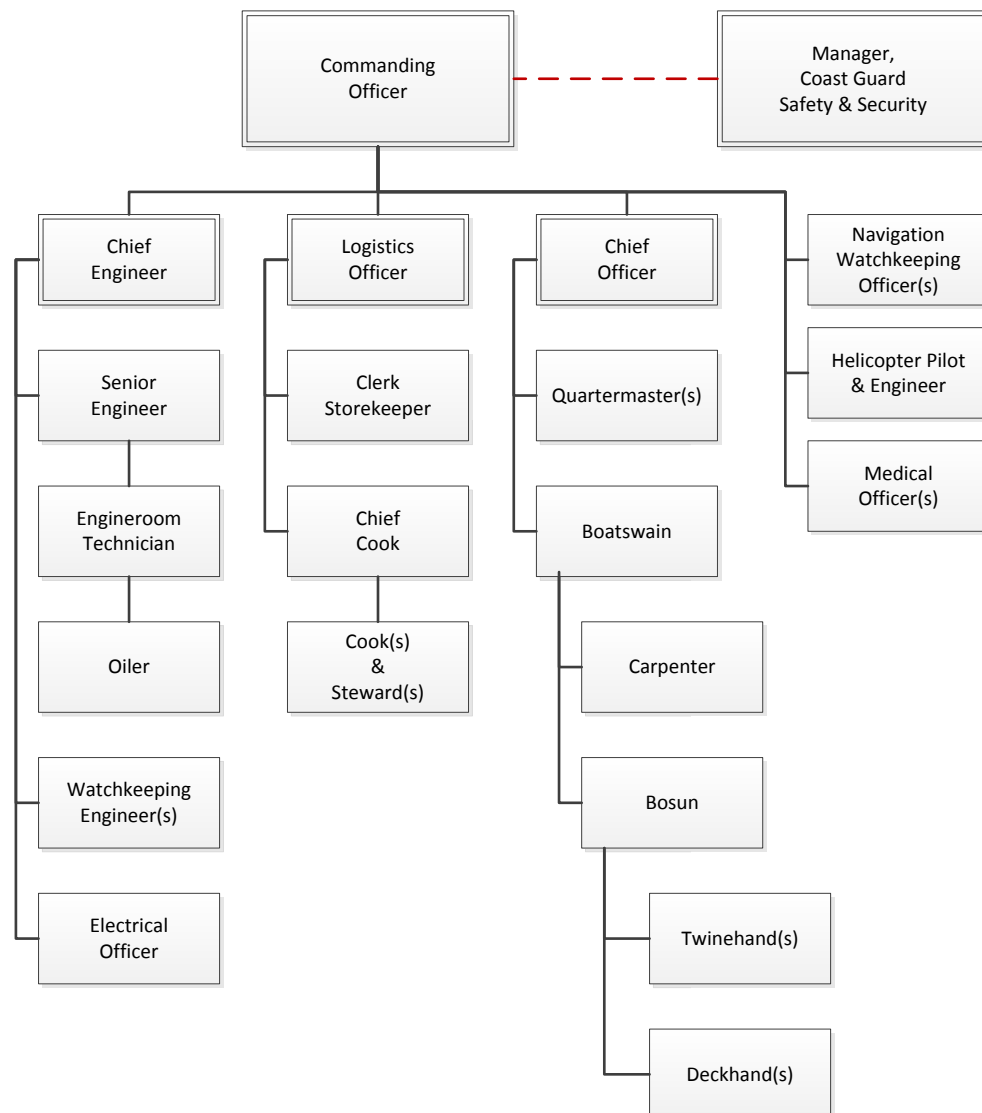
- a) developing and monitoring the implementation of plans, strategies, and priorities to ensure the cost effective delivery of operational programs and services in a manner that meets the approved level of services in the most efficient way.
- b) developing regional policy frameworks and strategies to facilitate the acceptance of government, private sector, and marine industry officials on matters such as marine rescue, and environmental response incidents and related issues.
- c) developing the framework and manages the regional consultative process with internal DFO clients and external stakeholders including mariners, industry, and other government departments.
- d) supporting the implementation of, and the allocation of adequate resources to manage, the SMS within the Directorate.



## 4 SHIP-BASED ORGANIZATION CHART

### 4.1 GENERAL

- a) Due to the differences between the types of CCG vessels and the types of work performed on board those vessels, there is not a standard vessel organization chart for the CCG.
- b) An example of a typical arrangement for a large vessel is identified below. Each vessel shall post in a conspicuous location on board, the organization structure that is employed on board the vessel for the shipboard SMS to an equivalent level of detail as the example:



## **5 RESPONSIBILITIES AND AUTHORITIES – SEAGOING PERSONNEL**

### **5.1 GENERAL**

- a) Work descriptions for seagoing personnel are maintained on board each vessel, with copies held ashore in the offices of the Regional Director, Fleet and the Marine Superintendent.
- b) A copy of the work description for their position is to be provided to each member of the vessel's complement upon first joining or upon a change in their position on board the vessel.
- c) Work Descriptions shall contain a general description of the duties of the position.

### **5.2 COMMANDING OFFICER**

- a) The detailed description of this position can be found in Section 5.0 of this manual.

### **5.3 CHIEF OFFICER**

The Chief Officer is responsible for:

- a) as second-in-command, the general work, cleanliness and good order of the vessel excepting that which is the responsibility of the Chief Engineer or the Logistics Officer (where carried).
- b) being in charge of all deck stores and is to keep an account of their receipt and expenditure in the proper forms and be responsible for stores and cargo in transit. The Chief Officer is responsible for maintaining the CCG Fleet Tackle Register and for the recording and keeping of the certificates which accompany the Register (T2 to T5).
- c) carrying out general superintendence of all work carried out by the deck department and is always to be present (or a responsible person designated by the Chief Officer) when loading or discharging stores, cargo or equipment.
- d) keeping watch when required.

### **5.4 NAVIGATION OFFICER**

The Navigation Officer is responsible for:

- a) supporting the Commanding Officer in the conduct of the navigation of the vessel and the general direction of the navigation watch by closely following the pertinent regulations of the [\*Canada Shipping Act, 2001\*](#), by diligently respecting the common practices of seamen, and by observing the Commanding Officer's Standing Orders.
- b) standing watch on the Bridge as assigned by the Commanding Officer.
- c) supervising parts of the vessel when coming alongside or leaving a jetty or berth, during docking and undocking operations, during anchoring and unmooring, or when shifting the vessel. The Navigation Officer may also supervise the working deck of the vessel during hoisting, lowering and helicopter operations.
- d) maintaining navigational charts and publications and is responsible for the care of navigational and communications appliances and equipment.
- e) the good order and condition of lifeboats, rafts, life-saving appliances and fire-extinguishing equipment.
- f) taking charge of the vessel's boats and barges when and where required.

### **5.5 CHIEF ENGINEER**

The Chief Engineer is responsible for:

- a) as the ship's technical expert and manager, planning, developing, and implementing procedures designed to manage the mechanical operation of the vessel and to ensure the safe, efficient, and cost-effective operation and maintenance of the machinery, equipment, ship's potable water supply and physical integrity of the hull.
- b) the development and delivery of contingency plans dealing with any mechanical emergency or undesired result of mechanical or structural failure on board the vessel.
- c) for the working efficiency, cleanliness and entire management of the Engine Room Department and for the conduct of all staff who are under the Chief Engineer's general control.
- d) ensuring that the engine room logbook is kept, and is to prepare the End of Shift Report in accordance with the [Vessel Maintenance Management Manual \(VMMM\) section 4.7.](#)
- e) ensuring adequate quantities of engineering/mechanical supplies.
- f) or their delegate, all activities concerning the vessel's potable water supply and production is monitored and logged.

### **5.6 SENIOR ENGINEER**

The Senior Engineer is responsible for:

- a) as the Chief Engineer's second, the general work, cleanliness and good order of the Engine Room Department.
- b) having charge of the day-to-day maintenance of the vessel.
- c) supervising and participates in preventative maintenance and time-based maintenance on machinery, equipment, services and systems.
- d) supervising and participates in the refit and the repair of the vessel's machinery, hull, equipment and systems.
- e) carrying out general superintendence of all work carried out by the Engine Room Department with the exception of watchkeeping.
- f) keeping watch when required.

### **5.7 ENGINEER OFFICER**

The Engineer Officer is responsible for:

- a) as the watchkeeping Engineer Officer, being a representative of the Chief Engineer while they are in charge of machinery in the Engine Room Department.
- b) as the Engineering Officer in charge of the Watch, the safe, economical and efficient operation of all machinery and compartments under their charge.
- c) as the watch keeping Engineer Officer, the vessel in general at all times and conduct themselves accordingly.
- d) ensuring that all the Chief Engineer's standing orders are carried out.

## **5.8 ELECTRICAL OFFICER**

The Electrical Officer is responsible for:

- a) providing technical advice to the Chief Engineer and other vessel personnel on electrical matters. The Electrical Officer shall make recommendations regarding the engine room's electrical materiel resource needs.
- b) planning and executing the maintenance and repair of the electrical components of the main propulsion plant, electrical plant, auxiliary machinery, deck machinery, hotel equipment and miscellaneous systems.
- c) assisting in the creation, modification and/or upgrading of electrical/electronic equipment on board. They compile and recommend electronic refit specifications, vessel's additions and alterations, and other contract work required for the upkeep of the vessel.

## **5.9 LOGISTICS OFFICER**

The Logistics Officer is responsible for:

- a) the planning, organizing, directing, and controlling the operation of the vessel's Logistics Department. The Logistics Department provides to the vessel a support in management of the materiel, finance, administration, and hotel services.
- b) organizing and supervising subordinates and provides on-the-job training.
- c) the provisioning of the vessel and must hold appropriate records, of the reception and the consumption of this provisioning
- d) the maintenance of material management systems and the safekeeping of the vessel's major stores.
- e) coordinating and controlling all hotel services activities.
- f) administering the vessel's administration and financial management activities.
- g) participating in multiple activities such as health, safety and security, which are assigned responsibilities.

## **5.10 HELICOPTER PILOT AND ENGINEER**

- a) The Helicopter Pilot is responsible to the Commanding Officer for the safe and efficient operation of the helicopter. The Helicopter Pilot shall advise the Commanding Officer on joining the vessel of any anticipated helicopter maintenance that is likely to curtail helicopter availability and to provide forewarning in this regard throughout the voyage.
- b) The Helicopter Pilot is responsible for communication with helicopter's base concerning operational and administrative matters. If more than one pilot is on board, one shall be designated as the Senior Helicopter Pilot and charged with the above responsibilities.
- c) When the Helicopter Engineer is not available, the Helicopter Pilot shall be present during helicopter refuelling operations and shall check fuel samples when so involved. The Helicopter Pilot shall be responsible for securing the helicopter when the Helicopter Engineer is not available and shall provide advice and direction to the Flight Deck Officer regarding flight operations.
- d) When available, the Helicopter Engineer shall be a member of the Flight Deck Party during flight operations. The Helicopter Engineer shall be responsible for moving and securing the helicopter, and shall be present, when available, during helicopter refuelling and check the fuel samples.

- e) The Helicopter Engineer is responsible for all maintenance associated with the helicopter and related equipment, and for ensuring that the aircraft is in an airworthy state ready for safe and efficient flight operations.
- f) The Helicopter Engineer shall advise the Helicopter Pilot, and, in the absence of the pilot, the Commanding Officer of anticipated maintenance requirements that may impact on helicopter availability.
- g) The Helicopter Engineer is responsible for communication with the helicopter's base concerning maintenance and related administrative matters. When there is more than one Helicopter Crew on board, one Helicopter Engineer shall be designated the Senior Engineer and charged with the above responsibilities.





# Fleet Safety Manual

## 4.0 – Designated Person Ashore

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### 1 Purpose

- a) To describe the roles and responsibilities of the designated person ashore. The regional designated persons ashore are assigned (RDPA), one to each region with the National Designated Person Ashore (NDPA) based at the Canadian Coast Guard (CCG) headquarters.

### 2 Responsibilities

#### 2.1 Director, Coast Guard Safety and Security

- a) The Director is the NDPA.
- b) The Director reports directly to the Deputy Commissioner, Operations on a day to day basis, and reports immediately to the Commissioner of the CCG on issues arising from the employment of the safety management system (SMS), which have an impact on a person's health and safety, vessel safety and security, or potential pollution not immediately correctable within the normal reporting structure.
- c) The Director has a functional relationship with the regional manager, Coast Guard Safety and Security, and provides general guidance and direction regarding the CCG SMS.

#### 2.2 Manager, Coast Guard Safety and Security

- a) The manager is the RDPA.
- b) The manager reports directly to the assistant commissioner, CCG on a day to day basis, and reports immediately to the assistant commissioner, CCG and the Director, Coast Guard Safety and Security on issues arising from the employment of the SMS, which have an impact on a person's health and safety, vessel safety and security, or potential pollution not immediately correctable within the normal reporting structure.

## **2.3 Director, Coast Guard Safety and Security and the manager, Coast Guard Safety and Security**

- a) The Director and manager, within their area of operation, are responsible for ensuring overall conformity with the SMS as defined in this manual. Specific requirements and responsibilities are outline in the individual procedures within this manual. They include but are not limited to the following:
  - i. providing effective implementation and maintenance of the SMS
  - ii. ensuring proper scheduling of vessel/station and shore-based audits of the SMS
  - iii. monitoring reports made by the Fleet
  - iv. investigating reported non-conformances with commanding officers and shore management staff
  - v. ensuring that investigation teams are established to determine root causes of hazardous occurrences
  - vi. verifying that recommendations to correct hazardous situations are implemented
  - vii. holding regular system review meetings and keeping records of the same
  - viii. verifying that the SMS is understood by seagoing personnel and shore support employees
  - ix. liaising with commanding officers and other officials with concurrent interests on routine issues of the SMS
  - x. identifying training requirements for personnel involved with the SMS
  - xi. ensuring adequate resources and shore-based support are applied to regional Fleet operations
  - xii. controlling and maintaining an effective documentation system
  - xiii. act as mediator when concerns are raised regarding SMS and refer them to the NDPA when all parties cannot agree
- b) No duties or responsibilities related to the active management of the operation of the Fleet are to be assigned to the Director, Coast Guard Safety and Security or the manager, Coast Guard Safety and Security. When a person who normally occupies one of these positions is to be used in place of an Operations/Fleet manager, they must be relieved of their responsibilities under this section of the manual and an appropriate individual assigned these duties.
- c) In the event of an absence or the departure of the incumbent Director, Coast Guard Safety and Security or the regional manager, Coast Guard Safety and Security, the Deputy Commissioner, Operations or the assistant commissioner, CCG, as appropriate, must assign a responsible replacement immediately.
- d) The name and contact information for the incumbent or replacement is to be made available to all vessels/stations and personnel within their area of responsibility, and the information is to be posted in a conspicuous location.



### **3 Contact information for the designated person ashore**

#### **3.1 Director, Coast Guard Safety and Security NDPA**

200 Kent Street  
Ottawa, ON  
K1A 0E6  
(613) 990-3375 – Office  
No fax number available

#### **3.2 Manager, Coast Guard Safety and Security Atlantic - RDPA**

Southside Base  
250 Southside Road  
St. John's, NL  
A1C 5X1  
(709) 552-6478 – Office  
No fax number available

#### **3.3 Manager, Coast Guard Safety and Security Central and Arctic - RDPA**

1550 Avenue D'Estimauville  
Québec, QC  
G1J 5E9  
(418) 648-7513 – Office  
No fax number available

#### **3.4 Manager, Coast Guard Safety and Security Western - RDPA**

25 Huron Street  
Victoria, BC  
V8V 4V9  
(250) 480-2636 – Office  
No fax number available





# Fleet Safety Manual

## 5.0 – Commanding Officer Responsibility and Authority

### 1 Purpose

- a) To ensure the commanding officer is aware of their responsibilities and authority for the safety of the crew, the security of the vessel/station and the protection of the environment.

### 2 Commanding officer

- a) The commanding officer is accountable to the Commissioner<sup>1</sup> for ensuring the vessel/station under their command is operated in accordance with policies and procedures established for the safe, secure, and environmentally responsible operation of a Canadian Coast Guard (CCG) vessel/station.

#### 2.1 General

- a) The commanding officer is responsible to the senior director, Fleet for the day-to-day operation of the vessel/station.
- b) Under the [Canada Labour Code](#), including all appropriate regulatory authorities, the commanding officer is considered the “employer”<sup>2</sup>. The commanding officer is responsible for the health and safety of the crew, supernumeraries, and non-CCG personnel on board the vessel/station. In the absence of a commanding officer, an individual with delegated authority is to take on the responsibilities of the commanding officer.
- c) Under the [Canada Shipping Act, 2001](#), as the master of a Canadian vessel<sup>3</sup>, the commanding officer is obligated and responsible for the safe conduct of all vessel operations and activities. This includes but is not limited to compliance with all appropriate regulatory authorities pertaining to:
  - i. navigation of the vessel
  - ii. crew training
  - iii. verification of crew qualifications
  - iv. vessel inspections

<sup>1</sup> [Fleet Safety Manual - 3.0 Responsibility and Authorities](#), Section 2.1d)

<sup>2</sup> [Canada Labour Code](#), Part II Occupational Health and Safety, Subsection 122(1)

<sup>3</sup> [Canada Shipping Act, 2001](#), Part 4

- v. the safety of all those on board, including those conducting loading and unloading activities of the vessel
  - vi. reporting of navigational hazards
  - vii. the obligation to assist vessels in distress, report collisions, and stay with a vessel after a collision
- d) The commanding officer has the ultimate authority<sup>4</sup> and responsibility for taking all necessary actions for ensuring the health and safety of the crew, passengers and supernumeraries, safety and security of the vessel/station, and protection of the environment. In certain situations, this may mean that a deviation from documented procedures is necessary.
- e) The commanding officer is to verify that specified orders, instructions, and standards are observed.
- f) The commanding officer is responsible for the vessel/station safety and security by ensuring emergency and familiarization training, as well as drills and exercises are conducted as required. The commanding officer is to liaise with the appropriate shore management team when training and familiarization deficiencies are identified.
- g) The commanding officer is to issue, in a clear and concise manner, orders or instructions to guide crew members in the completion of routine tasks on board the vessel.
- h) The commanding officer is responsible for reporting on all matters which affect the health and safety of the crew, security of the vessel, and protection of the environment.
- i) For additional assistance in dealing with any situation on the vessel/station, the commanding officer should request assistance of the Regional Operations Centre, the senior director, Fleet, or any law enforcement agency.
- j) If a conflict between safety and security requirements of the vessel arises during the vessel's operations, the commanding officer must give precedence to requirements to maintain the safety of the vessel in accordance with [Fleet Safety Manual \(FSM\) - 8.B.1 Security of the Vessel](#). Temporary procedures that the commanding officer determines appropriate under the circumstances must satisfy the security requirements of the current Maritime Security (MARSEC) level.
- k) The commanding officer is to continually motivate the crew in the execution of the various policies affecting health, safety, security and the environment, as well as the onboard Safety Management System (SMS), which includes steps for ensuring crew members are up to date on their duties and responsibilities through familiarization, training, and drills.

## 2.2 Safety Management System

- a) The commanding officer is responsible for the SMS on board the vessel/station. The commanding officer must be up to date on the policies and procedures of the SMS.
- b) The commanding officer is responsible for the effectiveness of the on board SMS by assigning SMS roles to senior officers.
- c) The commanding officer is to conduct periodic reviews of the vessel/station SMS pursuant to [FSM - 12.A.2 Safety Management System Review](#).

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<sup>4</sup> International Convention for Safety of Life at Sea (SOLAS), Chapter V – Safety of Navigation, Regulation 34.1



# Fleet Safety Manual

## 6.0 - RESOURCES AND PERSONNEL

### 1 VESSEL COMPLEMENT

#### 1.1 COMMANDING OFFICER

- a) In addition to meeting the certification requirements for command, the Commanding Officer shall also meet the Canadian Coast Guard (CCG) Fleet's own requirements for any Commanding Officer.
- b) CCG shall ensure that the Commanding Officer is fully conversant with the Fleet Safety Management System (FSMS).
- c) CCG shall ensure that adequate resources are available both ashore and onboard to support the Commanding Officer in the safe and efficient operation of their vessel.

#### 1.2 CREW CERTIFICATION

- a) CCG shall ensure that each vessel is adequately manned with qualified crew members in accordance with the standards (*Seafarers' Training, Certification and Watchkeeping Code — STCW Code*), National and CCG Fleet standards and that they are medically fit in accordance with Public Service standards for seagoing occupations.

#### 1.3 CREWING LEVEL

- a) CCG shall ensure that each vessel is crewed with both certified officers and crew members, as a minimum, in accordance with the predetermined, vessel-specific crewing profile. Crewing Profiles shall be respected for the purpose of conducting operations relating to CCG programs and services. Crewing Profiles also establish a minimum compliment for the purpose of transit only which is not part of an operational tasking. No CCG operations shall be performed while the vessel is operating with a minimum compliment except where for the purpose of Safety of Life at Sea (SOLAS).

### 2 SAFETY MANAGEMENT SYSTEM — FAMILIARIZATION

- a) CCG shall ensure through suitable instructions, checklists, information packages, etc., that shipboard personnel are aware of their individual responsibility for safe operation of the vessel and overall protection of the environment.
- b) CCG personnel shall be made aware of international regulations, codes, and national standards, etc. that are both applicable to the safe operation of the vessel and are relevant to their position.

- c) Canada is a bilingual country and the use of both official languages shall be promoted throughout the CCG. However, a single language of work for the purpose of issuing orders and instructions necessary for navigation, direction, and control shall be established for each vessel.
- d) CCG shall ensure that all shipboard personnel receive relevant FSMS information in the official language of Canada that is understood by them. CCG shall ensure that individuals are able to communicate effectively in the performance of their duties in the official language used aboard the vessel.
- e) To ensure that new personnel and personnel transferred to new assignments related to safety and protection of the environment are given proper familiarization to their duties, certain essential instructions associated with the FSMS have been defined aboard each vessel.

### **3 TRAINING**

- a) CCG shall continually identify training requirements which may be required for both shore and seagoing personnel in support of the FSMS, and commits to provide training that is deemed necessary.
- b) Training requests are to be identified in the employees annual Performance Agreement. Relevant training necessary to employee's current position, or the current and future needs of the Agency are to be identified, and commitments to provide training that is deemed necessary are to be made.

### **4 SUPERNUMERARY PERSONNEL CARRIED ABOARD CCG VESSELS**

- a) There are many risks associated with bringing inexperienced, unprepared personnel onboard a CCG vessel. Supernumerary personnel shall be made aware of associated risks in advanced to allow time for them to be better prepared when joining a CCG vessel.
- b) The state of health for the supernumeraries must be evaluated prior to them joining the vessel. In some cases this evaluation may be conducted by a physician but in all cases the supernumerary shall ensure that they are medically fit to join a CCG vessel.
- c) Security clearances for all supernumeraries must be in place in order to have access to the CCG workplace.



# Fleet Safety Manual

## 6.A.1 – Crew Complement

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### 1 Purpose

- a) To ensure the health, safety and security of personnel, as well as the protection of the environment, during Canadian Coast Guard (CCG) operations by having a crew complement that is competent, certified and medically fit.

### 2 Responsibilities

#### 2.1 Director General, Operations

The Director General, Operations is responsible for ensuring:

- a) the granting or denying of an exemption to the requirements to hold a specific certification, as defined in the [Canada Shipping Act, 2001](#) or [Coast Guard Operations Order 530.00 – Qualifications Required of Canadian Coast Guard Seagoing Personnel](#), and shown in the approved [Crewing Profile](#)
- b) that the granting or denying of an exemption is exercised through the Manager, Support during working hours
- c) the granting or denying of certification exemption requests which do not respect the requirements stated in Section 3.4 b), or requests for sailing with a reduced crew as stated in Section 3.4 c)
- d) the approval of all Crewing Profiles required by this procedure

#### 2.2 Manager, Operational Support

The Manager, Support is responsible for ensuring that:

- a) they review exemption requests for:
  - i. sailing short in either a certified position or a safe manning position
  - ii. the requirement to hold a specific certification as shown in the approved Crewing Profile
- b) when the usual conditions for granting a certification exemption are met, the approved MariTime exemptions function is used
- c) when a certification exemption request falls outside of the usual conditions, the [Marine Certification Exemption Risk Assessment \(FP 5295 E\)](#), found in Annex D, is forwarded to the Director General, Operations, and input the decision into MariTime

## 2.3 Senior director, Fleet

The senior director, Fleet is responsible for ensuring they:

- a) monitor the assignment of persons in seagoing positions, ensuring that this procedure is fully respected and applied
- b) grant or deny exemptions to all elements of a Crewing Profile, except when:
  - i. the certification requirements shown in a Crewing Profile cannot be met, or
  - ii. sailing short of a certified position or a safe manning position
- c) grant an exemption in case of an emergency or unforeseen circumstance with the understanding that an official exemption request must be entered at the earliest opportunity in MariTime, and is subject to oversight and approval from headquarters

## 2.4 Marine superintendent

The marine superintendent is responsible for ensuring that:

- a) all personnel assigned to seagoing positions meet the qualifications as identified in the Crewing Profile established for the respective vessel
- b) all requests for the following are routed through the regional manager, Coast Guard Safety and Security and the Manager, Support:
  - i. any exemption to a Crewing Profile requirement, regardless of the approval authority
  - ii. amendment requests to a Crewing Profile and equivalent safe manning document
- c) all requests for an exemption request are entered into MariTime
- d) the Regional Operations Centre (ROC) is notified when the Crewing Profile is not met and there are operational limitations that could affect the delivery of the program

## 2.5 Regional Operations Centre

The Regional Operations Center is responsible for ensuring that:

- a) a list of current exemptions for each vessel is kept at the ROC
- b) in the event of a search and rescue response, immediately inform the Joint Rescue Coordination Centre of any limitations of the vessel; for example: whether or not there is a rescue specialist on board the vessel

## 2.6 Commanding officer

The commanding officer is responsible for ensuring they:

- a) inspect all original copies of Canadian maritime documents<sup>1</sup> and review all documentation indicating experience before permitting any person to be engaged in any position on board their vessel
- b) receive official documents for exemptions to the Crewing Profile in writing before sailing

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<sup>1</sup> [Canada Shipping Act, 2001](#) – Section 2 Interpretation



- c) complete program delivery with a reduced crew due to unplanned or unforeseen events and circumstances provided safe manning is met, and in consultation with the shipboard management team, the marine superintendent, the manager, Coast Guard Safety and Security; and if required, the senior director, Fleet. The decision is subject to oversight at the earliest opportunity by the appropriate authority (see Sections 2.1 to 2.3 of this procedure) for that particular case and must be tracked through the proper exemption process
- d) notify the ROC when the Crewing Profile is not met and there are operational limitations that could affect the delivery of the program

## 2.7 Manager, Coast Guard Safety and Security

- a) The manager, Coast Guard Safety and Security is responsible for reporting all requests for exemptions in the annual safety management system (SMS) review.

## 2.8 Seagoing personnel

Seagoing personnel are responsible for ensuring that:

- a) only original copies are to be presented as proof of certification
- b) they present their passport for inspection as required. Please refer to [CCG/6014 - Seagoing Personnel Management Manual \(SPMM\)](#) for further information

# 3 Instruction

## 3.1 General

- a) All certified seagoing personnel must provide a copy of their valid Canadian maritime document and supporting certificate(s) to the office of the marine superintendent. The marine superintendent must maintain a register of the documents held, any endorsements, and validity periods. This register must be reviewed to ensure that documents have not expired and are valid for service.
- b) The Crewing Profile must be posted on board, and in a conspicuous location. Where it is impractical to post it on board due to the small size of the vessel, it must be filed with other controlled documents required to be carried on board for the safe operation of the vessel. For those vessels that have a search and rescue station or a shore base associated with them, the original must be posted ashore and a copy kept on board with the other controlled documents. Controlled copies of Crewing Profiles must be maintained in the office of the marine superintendent.

## 3.2 Crewing Profiles

- a) The Crewing Profile must normally be the minimum requirements for the vessel to sail and conduct CCG operations.
- b) The Crewing Profile contains information from the following sources:
  - i. [CCG/5730 - Training Standard for Ship's Officers and Crew](#). This publication identifies and describes competencies for basic on-the-job training, rescue specialist training, competencies covered by vessels' officers', certificates of competency, as well as CCG specific competencies. Certificate requirements such as bridge watchman, engine room rating, ship's cook, marine emergency duties, and first aid for ship's crew, are also specified in the training standard.

- ii. The minimum certification requirements for the vessel's complement must be based on operational analysis requirements and the [Marine Personnel Regulations](#).
  - iii. The minimum certification requirements for electrical officers, logistics officers and ship's cooks must not be less than prescribed in the [Coast Guard Operations Orders - 530.00 Qualifications Required of CCG Seagoing Personnel](#).
  - iv. In developing the profiles, the guidance provided by the International Maritime Organization's (IMO) Assembly Resolution [A.1047\(27\) – Principles of Minimum Safe Manning](#)<sup>2</sup> must be considered.
- c) When sailing short of the minimum crew complement required by the vessel's Crewing Profile, the muster list must be amended accordingly, especially if a person with key responsibilities is removed.

### 3.3 Assignments

- a) Prior to assigning a person to a seagoing position, the individual's qualifications and validity of certificates must be reviewed to ensure the candidate meets the requirements of the position as shown in the applicable Crewing Profile.
- b) Pre-deployment familiarization: the marine superintendent is required to arrange a period of time that allows key vessel management positions to be properly familiarized with a vessel, its programs, systems, equipment, and SMS. Pre-deployment familiarization is outlined in [Fleet Safety Manual - 6.B.1 Familiarization, Section 3.3](#).

### 3.4 Exemption process - Certification and crewing requirements

- a) An exemption must be requested for elements of the Crewing Profile that are subject to the SMS. The appropriate authority, as subject to Section 2, is responsible for ensuring that the following conditions are met:
  - i. an exemption is only necessary when the vessel is operational
  - ii. an exemption is to be issued for the shortest time practicable, usually on a per voyage basis, and for a period not exceeding 180 continuous calendar days or the equivalent of 6 continuous calendar months
  - iii. the proposed alternative detailed in an exemption request should be as effective as actual compliance with the original requirement
  - iv. the appropriate authority must be satisfied that the person named in the exemption has the abilities to perform the service required. These abilities must be outlined in the exemption request and the request must include a recommendation from the marine superintendent
  - v. the appropriate authority for the exemption must be satisfied that there is no suitable and properly qualified individual available for the position before issuing an exemption. The responsibility for providing this proof rests with the marine superintendent

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<sup>2</sup> Only available in English

- b) For certification exemptions, the following additional conditions must be met:
  - i. the complement of the vessel must be that no more than one position per department (deck, engineering, and logistics) is to be filled by a person named in a certification exemption
  - ii. the person named in the exemption must hold a valid certificate for the duration of the exemption that is not more than one grade lower than the certificate required by the Crewing Profile
  - iii. for commanding officer positions, the certificate of the person named in the exemption must be at the master/command level
- c) A specific risk assessment is required for an exemption request if the position requires a provincial or TC certification, or is part of safe manning, and if:
  - i. all of the conditions mentioned in paragraph 3.4 b) cannot be met, or
  - ii. the request results in crew reduction (sailing short of the crewing profile requirements)
- d) The risk assessment is to include an analysis of:
  - i. whether the exemption request results in a crew reduction or not (sailing short), the timeframe to find a suitable replacement and the impact on program delivery and safety
  - ii. the vessel's intended voyage and planned operations
  - iii. the impact of legal obligations regarding certification (Maritime Personnel Regulations, Standard for Training, Certification and Watchkeeping for Seafarers) in relation to the waters in which the vessel is sailing
  - iv. the replacement person's certification training against the required certificate for the position as found in TC document [TP 2293 - The Examination and Certification of Seafarers](#)
  - v. the replacement person's previous or relevant experience
  - vi. the replacement person's knowledge, skills and abilities
  - vii. the replacement person's ability to maintain watch and to respond to an on board emergency
  - viii. the overall level of competency of the crew and the department related to the exemption
- e) The Director General, Operations, has the sole authority to grant or deny an exemption request with an attached risk assessment.
- f) Conditions and/or limitations to the certification exemption may be imposed based on the result of the risk assessment.
- g) All certification exemptions must be recorded in the MariTime.
- h) Approval for any type of exemption must be provided in a form that can be confirmed and audited. A copy of the exemption must be sent to the subject vessel. The vessel must not sail until the exemption approval has been received.
- i) An extension to an existing approved exemption can be requested by e-mail to the generic e-mail address: [certificates.xncr@dfo-mpo.gc.ca](mailto:certificates.xncr@dfo-mpo.gc.ca). It must comply with this process in place and will follow normal approval process.

### 3.5 Retention of documents

- a) The vessel must retain<sup>3</sup> the marine certification exemptions, including associated documents for the duration of the exemption. Once the exemption expires, the documents may be destroyed.
- b) The ROC must retain<sup>3</sup> the marine certification exemptions, including associated documents for the duration of the exemption. Once the exemption expires, the documents may be destroyed.
- c) The marine superintendent must, at a minimum, retain<sup>3</sup> all marine certification exemptions, including associated documents for 6 months following the year of issue. At which time the documents may be destroyed.
- d) The marine certification exemptions, including associated documents may be maintained<sup>3</sup> electronically or paper-based until they are destroyed.

## 4 Documentation

- [Crewing Profiles](#)
- Safe manning documents
- Ship's book
- Regional training file
- [Annex D - Forms](#) - Marine Certification Exemption Risk Assessment (FP\_5295\_E)

## 5 References

- [Government of Canada Publications](#) - TP 2293 - The Examination and Certification of Seafarers
- [International Maritime Organization Resolutions](#) – A.1047(27) – Principles of Minimum Safe Manning
- [Marine Personnel Regulations](#)
- [CCG/5737 - Fleet Safety Manual](#) - 6.B.1 Familiarization - Section 3.3
- [CCG/5349 - Coast Guard Operations Order](#) - 530.00 Qualifications Required of CCG Seagoing Personnel
- [CCG/6014 - Seagoing Personnel Management System](#)
- [Publications – Operations](#) - CCG/5730 Training Standard for Ship's Officers and Crew

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<sup>3</sup> CCG requirement as determined by Fleet Requirements and Support



# Fleet Safety Manual

## 6.A.2 - MEDICAL FITNESS FOR SEAGOING PERSONNEL

### 1 PURPOSE

- a) To ensure that all seagoing personnel in the Canadian Coast Guard (CCG) meet the health requirements for their position, as established in the Treasury Board [Occupational Health Evaluation Standard](#) and further specified in the [Occupational Health Assessment Guide \(OHAG\)](#).

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTOR, FLEET

- a) The Regional Director, Fleet is responsible for monitoring the engagement and assignment of persons in seagoing positions to ensure that this procedure is fully respected and applied.

#### 2.2 MARINE SUPERINTENDENT

- a) The Marine Superintendent is responsible for ensuring that all personnel assigned to seagoing positions hold a valid medical certificate. The Marine Superintendent is also responsible for facilitating medical examinations.

#### 2.3 COMMANDING OFFICER

- a) The Commanding Officer is responsible for inspecting all original copies of medical fitness certificates to ensure their validity and applicability to the duties that the named holder will be assigned on board the vessel.

#### 2.4 ALL SEAGOING PERSONNEL

- a) All seagoing personnel shall have their valid medical certificate with them for inspection as and when required. All seagoing personnel are responsible for attending medical appointments, as required, to maintain the validity of their certificate.

### 3 INSTRUCTION

#### 3.1 MEDICAL FITNESS

- a) It is a Treasury Board policy that seagoing personnel are medically examined at regular intervals by a Health Canada physician to determine fitness for duties at sea. This examination also serves to medically validate a Transport Canada Certificate of Competency and complies with the requirements of the [Marine Personnel Regulations](#) of the [Canada Shipping Act, 2001](#).

**MEDICAL FITNESS FOR SEAGOING PERSONNEL**

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- b) Medical examinations will normally take place in the employee's headquarters area (homeport). All respective arrangements shall be made by employing departments and agencies through the regional office of the designated occupational health provider by the Health Canada, [Public Service Occupational Health Program](#) (PSOHP) using the prescribed forms and procedures.
- c) In addition to the periodic medical evaluations, also known as an Occupational Health Assessment, Fitness to Work Evaluation (FTWE) shall be done prior to returning to work after any illness or injury requiring Medical Evacuation (MEDEVAC), or any prolonged absences<sup>1</sup> for reason of illness or injury, or when a medical examination is warranted by reason of employee work performance. Details regarding prolonged absences can be found in the [Treasury Board Secretariat Guidelines - Injury-on-Duty Leave](#)<sup>2</sup>
- d) If during the visit, the physician<sup>3</sup> downgrades the seriousness of an illness or injury, upon written notification (physicians note), the crewmember may be returned to the vessel retaining their full medical status. Details regarding the use of a private physician can be found in the [Occupational Health Evaluation Standard \(OHES\)](#)<sup>4</sup>
- e) Where a physician makes a determination of "temporarily fit" and does not specify a validity period for this finding, the maximum period of validity is understood to be no more than 90 days from the date of the examination, or until subsequently advised that a conclusive finding has been reached, whichever comes first.
- f) For seagoing personnel renewing their current medical certificate in advance of the expiry date, the current certificate becomes invalid upon the physician making a finding based on the most recent examination. The current certificate immediately expires on the issue of the new certificate or with a finding of "unable to assess" or "unfit".
- g) The MariTime System, which tracks the expiry dates of all medicals, helps to ensure all seagoing personnel complete their medical evaluations in advance of requirements.

**3.2 CHANGES TO MEDICAL CONDITION**

- a) All seagoing personnel, when consulting a physician or optometrist, shall advise the physician or optometrist that they are employed in a seagoing position with the CCG and shall obtain a medical opinion as to whether the condition for which they are being diagnosed or treated could constitute a hazard to themselves or their fellow crew (Refer to Section 90 of [Canada Shipping Act, 2001](#)).
- b) Upon being advised by a medical professional that the seagoing personnel's condition may constitute a hazard, the seagoing personnel must advise the Marine Superintendent that they are unfit for duty at sea.
- c) Seagoing personnel who become ill while on board a vessel or at a shore station, or who find themselves suffering from symptoms which give rise to any question as to whether they can fully satisfy their assigned duties must immediately advise their supervisor or the Commanding Officer so that they can be relieved and medical attention can be sought (Refer to Section 113 (c) of [Canada Shipping Act, 2001](#)).
- d) Seagoing personnel who become unfit for seagoing duty during the period of validity of their medical certificate shall not be assigned to a seagoing position until reassessed by a medical practitioner and found to be "Fit" or "Fit with Limitations". Fitness shall be confirmed in writing by the assessing physician and such confirmations shall be sent to an Occupational Health Medical Officer (OHMO), Public Service Occupational Health Program (PSOHP) at Health Canada for review.

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<sup>1</sup> Prolonged absence is defined as: six calendar months

<sup>2</sup> Section 3

<sup>3</sup> Physician is defined as: any treating physician.

<sup>4</sup> Section 9

**3.3 MEDICAL EVACUATION (MEDEVAC)**

- a) Where seagoing personnel require a medical evacuation to attend to a personal medical emergency situation (whether pre-existing, resulting from illness or injury suffered on board or suddenly arising while on board), if this evacuation requires further medical attention or an overnight stay in hospital, that seagoing person's medical certificate shall be considered to be invalid. If during the initial visit the physician downgrades the seriousness of the illness or injury, upon written notification (physicians note), the seagoing personnel may be returned to the vessel, retaining their full medical status.
- b) Following cases of medical evacuations, the seagoing personnel shall have their case reviewed by an Occupational Health Medical Officer (OHMO), Public Service Occupational Health Program (PSOHP) before being permitted to return to duty. If during the review, the physician downgrades the seriousness of an illness or injury, upon written notification (physicians note), the crewmember may be returned to the vessel, retaining their full medical status.

**3.4 MEDICATION**

- a) Seagoing personnel who are required to maintain a medicated state to be qualified as "Fit" or "Fit with Limitations" are required to ensure that they are in possession of sufficient quantities of such medication so as to cover their period of time on board, plus some additional quantity (25% more than forecast requirement is considered sufficient) to allow for the potential for delays due to weather, sea conditions or emergency operations.
- b) As soon as it becomes apparent to seagoing personnel, who are required to maintain a medicated state that they will consume all of their available medication before the vessel is due to reach port, they must advise the Commanding Officer immediately.
- c) If required medication is only to be taken upon the onset of certain symptoms, then this information should be shared with the vessel's medical officer (if carried), or the Rescue Specialist, or a supervisor so that treatment will not be delayed in the event that the seagoing personnel is incapacitated or injured. In providing this information, the seagoing personnel must advise as to where the medication is kept and the dosage to be administered.
  - For personal privacy concerns, this information may be tendered in a sealed envelope that is to be opened only in the event of an emergency.

**3.5 RECOMMENDED IMMUNIZATION:**

- a) Td vaccination (tetanus and diphtheria), unless contra indicated.
- b) Hepatitis B for employees who are members of armed boarding parties or who have responsibilities for law enforcement activities. Employees potentially exposed to blood during search and rescue activities should be protected. Such employees should identify themselves or be identified by management.
- c) Employees potentially exposed to blood while performing their duties may wish to receive immunization for Hepatitis B. Such employees should identify themselves to management.
- d) Employees potentially exposed to bodily fluids while performing their duties may wish to receive immunization for Hepatitis A. Such employees should identify themselves to management.

**4 DOCUMENTATION**

- [Canada Shipping Act, \(2001\)](#)
- [Treasury Board – Occupational Health Evaluation Standard \(OHES\)](#)
- [Occupational Health Assessment Guide \(OHAG\)](#)
- [Marine Personnel Regulations](#)
- [Treasury Board Secretariat Guidelines - Injury-on-Duty Leave](#)





# Fleet Safety Manual

## 6.B.1 – FAMILIARIZATION

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### 1 PURPOSE

- a) To ensure that persons joining the vessel, new personnel, and personnel in new assignments are given proper familiarization as to their duties and responsibilities as it relates to health, safety, security, and protection of the environment.

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTORS AND SUPERINTENDENTS

- a) Regional Directors and Superintendents are responsible for ensuring that all essential instructions in support of the Safety Management System (SMS) at their site are identified, documented, given, and understood.

#### 2.2 COMMANDING OFFICER

- a) The Commanding Officer is responsible for ensuring that all essential instructions are identified, documented, given, and understood prior to sailing.

### 3 INSTRUCTION

#### 3.1 FREQUENCY

- a) Persons joining the vessel for the first time, or persons who have not served on board the vessel for a period greater than the previous six calendar months, shall receive familiarization. In the case of seasonally operated vessels, persons who were not on board the vessel at the end of the previous operational cycle shall be given a familiarization upon their rejoining.
- b) Personnel employed in shore management positions with the responsibility for the management of vessels, or the assignment of crew shall be familiarized upon first assuming their duties.
- c) Persons acting in vessel or shore management positions shall be given a familiarization upon first assuming their duties, and again where a period greater than six months has occurred between the same acting assignments.
- d) All personnel who have continually served in their position shall, on an annual basis review their familiarization, and sign as having acknowledged the process. An annual familiarization serves to ensure that changes which have occurred in the past year within the SMS are reflected in the familiarization process.

### 3.2 SHIPBOARD FAMILIARIZATION

- a) Upon joining the vessel, if at sea or prior to being assigned any duties when in port, the following familiarization shall take place so that as a minimum, the crew member:
  - understands both the Health, Safety, Security, and the Environmental Policy and Drug, Alcohol, and Psychoactive Substance Policy;
  - understands the safety and security information, symbols, signs, and alarm signals;
  - understands and communicates with others on board regarding basic safety matters;
  - knows what to do in the event of a person in the water, detection of fire or smoke, or abandon ship alarm.;
  - can identify muster and embarkation stations and emergency escape routes;
  - is familiar with the layout of the vessel;
  - is able to locate and don lifejackets and immersion suits. The donning of immersion suits shall take place upon first joining, and annually thereafter;
  - knows how to raise the fire alarm and familiar with the use of portable fire extinguishers;
  - can take initial action on finding an accident or medical emergency;
  - can close and open fire, weather tight, and watertight doors as required;
  - understands the use of safety equipment; and
  - knows their responsibilities related to the security of the vessel under the direction of the Commanding Officer or their delegate.
- b) In addition to the basic safety and security familiarization, all new personnel and personnel taking on a new assignment shall, within the first week of joining the vessel, complete supervised on-the-job training in the following areas:
  - the employee shall be aware of the SMS used in the Fleet and the obligations of an employee under the [Maritime Occupational Health and Safety Regulations](#), and the [Canada Labour Code Part II](#);
  - each employee shall be instructed in, and shall understand, the duties of their position and be informed of any known workplace hazards identified on the Site-Specific Risk Register (SSRR). The employee shall be familiar with the control measures currently in place, such as, but not limited to, Personal Protective Equipment (PPE), Standard Operating Procedures (SOPs), and Site Specific Work Instructions (SSWIs);
  - the employee shall be instructed in, and understand, the operation and basic maintenance of equipment used in the performance of their duties;
  - the employee shall receive Workplace Hazardous Material Information System (WHMIS) familiarization appropriate to their duties;
  - the employee shall read, understand, and sign the Commanding Officers Standing Orders;
- c) Until such time that the immediate supervisor is satisfied with the level of familiarity attained, new personnel or newly assigned personnel, shall not perform any duty that is unsupervised.
- d) To ensure that familiarization is systematically completed, familiarization checklists and SSWIs shall be used.
- e) The completion of the familiarization shall be recorded.

### 3.3 PRE-DEPLOYMENT FAMILIARIZATION

- a) The Marine Superintendent is responsible to arrange a period of time that allows personnel in key vessel management positions, to be properly familiarized with a vessel, its programs, systems, equipment, and a SMS. This familiarization period shall be realistic and practical as to ensure that the individual can safely perform the tasks assigned to their position. Parts of the familiarization may be done without being on board the vessel, for example, reviewing SSWIs.
- b) The vessels' [Crewing Profile](#) specifies the pre-deployment familiarization requirements. These apply in the case of an individual not having worked onboard the vessel in the previous twelve (12) months. The days required is based on the crewing system of the vessel.
- c) Pre-Deployment Familiarization refers to two principal SMS Checklists:
  - General Vessel Familiarization; and
  - a separate pre-deployment checklist for key vessel-management positions.

Proper completion of these checklists ensures that the new individual is properly familiarized. The checklists shall include familiarization on communicating safety information and location, and the operation and condition of machinery and specialized equipment.

**Note:** The key positions requiring additional site specific familiarization shall be at a minimum: the Commanding Officer, Chief Engineer, Chief Officer, Senior Engineer (MAO-04 and above), Officer in Charge (OIC), Engineer, Boatswain, and Electrical Officer.

### 3.4 SHORE SITE FAMILIARIZATION

- a) At each shore site, instructions that are essential to ensuring the effectiveness of the operation of the SMS, shall be identified, documented, given, and understood by applicable personnel.
- b) To ensure that familiarization is systematically completed and can be verified, the office shall use site specific familiarization checklists, SSRRs, and SSWIs appropriate to that office and its relationship to the vessels that the office supports.
- c) This completion of the familiarization shall be recorded.

## 4 DOCUMENTATION

- Familiarization Checklists
- Standard Operating Procedures
- Site-Specific Work Instructions (SSWIs)
- Site-Specific Risk Registers - Vessel and Shore Site (SSRRs)
- [Crewing Profile](#)
- Work Descriptions





# Fleet Safety Manual

## 6.C.1 - TRAINING FOR VESSEL AND SHORE MANAGEMENT POSITIONS

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### 1 PURPOSE

- a) To ensure all personnel involved in the Safety Management System (SMS) are trained to perform their assigned duties safely.

### 2 RESPONSIBILITIES

#### 2.1 DIRECTOR GENERAL, OPERATIONS IN CONSULTATION WITH THE DIRECTOR GENERAL, INTEGRATED TECHNICAL SERVICES

- a) The Director General, Operations in consultation with the Director General, Integrated Technical Services, is responsible for the identification of the core competencies for seagoing positions.
- b) The Director General, Operations and the Director General, Integrated Technical Services are responsible for ensuring that sufficient financial and human resources are available to provide required training.

#### 2.2 ASSISTANT COMMISSIONER, THE DIRECTOR GENERAL, OPERATIONS OR DIRECTOR GENERAL, INTEGRATED TECHNICAL SERVICES

- a) The Assistant Commissioner, Canadian Coast Guard (CCG) the Director General, Operations or Director General, Integrated Technical Services, are responsible to ensure that shore-based vessel management positions, with direct responsibility for issuing directions to vessels, are filled by qualified persons. Normally, possession of a marine certificate of competency issued by Transport Canada Marine Safety or the CCG would constitute appropriate qualification to fill these positions. However, and as appropriate, an acceptable combination of experience and/or education would also constitute appropriate qualification. For clarity, the shore-based vessel management positions are:
  - Director General, Operations
  - Director General, Integrated Technical Services
  - Senior Director, Operational Support
  - Director, Coast Guard Safety and Security
  - Director, Operational Personnel
  - Director, Marine Engineering
  - Manager, Professional Development and Certification
  - Manager, Safety Compliance – Fleet
  - Manager, Hull, Mechanical Electrical
  - Manager, Ship Electronics

TRAINING FOR VESSEL AND SHORE MANAGEMENT POSITIONS

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- Class Manager, Vessels
- Senior Naval Architect
- Regional Director, Fleet
- Regional Director, Integrated Technical Services
- Marine Superintendent
- Superintendent, Regional Operations Centre
- Superintendent, Marine Engineering
- Manager, Coast Guard Safety and Security
- Deputy Marine Superintendent (Central & Arctic and Atlantic)
- Supervisor, Small Vessels (Western)

**2.3 IBMS TRAINING UNIT**

- a) The IBMS Training Unit is responsible for maintaining the individual training records of courses taken for vessel personnel, scheduling of common training courses, and negotiating training delivery with training agents.
- b) The IBMS Training Unit is responsible for the development of the training plan for persons assigned to the vessel based on information provided by the Commanding Officer.

**3 INSTRUCTION****3.1 IDENTIFY TRAINING REQUIREMENTS**

- a) A training plan shall be developed based upon training requirements to meet the competencies required aboard the vessels. This plan shall be reviewed and updated annually as a minimum.
- b) Unique training requirements for units or vessels due to the vessel's operations or the vessel's equipment shall be identified by each unit. In coordination with the regional training staff, a plan is to be developed and scheduled to satisfactorily address these specific needs.

**3.2 MAINTAIN AUDITABLE RECORDS**

- a) Training records shall be maintained by the IBMS Training Unit for each employee, detailing the employee's work and training history. These records must be clear, concise and readily available for scrutiny.
- b) The MariTime Fleet Management System will be the platform used to maintain the training records.

**4 DOCUMENTATION**

Individual Training Records

Training Plans

Training Profiles

Competency Profiles

Crewing Profiles

Records of Annual and Biennial Reviews

[Training Standard For Ship's Officers and Crew](#)

[CFGO 530.00 Qualifications Required of CCG Seagoing Personnel](#)



# Fleet Safety Manual

## 6.D.1 - SUPERNUMERARY PERSONNEL CARRIED ABOARD VESSELS

### 1 PURPOSE

- a) To ensure that all supernumerary personnel:
  - Understand and accept the risks inherent in taking passage aboard a Canadian Coast Guard (CCG) vessel;
  - Are in a state of health that will not be compromised by exposure to variable marine conditions or pose a hazard to others aboard; and
  - Meet the security expectations of the Government of Canada in respect to their being granted access to a CCG vessel.

### 2 RESPONSIBILITIES

#### 2.1 FLEET SHORE-MANAGEMENT TEAM

- a) The Fleet Shore-Management team (Regional Director, Fleet; Marine Superintendent; Superintendent and the Regional Operations Centre (ROC)) shall, when planning vessel deployments where there will be supernumerary personnel carried aboard, ensure that the contents of this procedure are communicated to the persons or agency responsible for these persons to allow sufficient time for the appropriate examinations and formalities to be completed.

#### 2.2 FLEET SHORE MANAGEMENT TEAM AND THE COMMANDING OFFICER

- a) The Fleet Shore Management team and the Commanding Officer are jointly responsible to ensure that neither the planned number of supernumeraries plus crew nor the number of supernumeraries actually carried aboard the vessel plus the crew shall not exceed the number specified on the ship Safety Certificate issued by Transport Canada.
- b) If in any doubt, as to the number of supernumeraries and crew that can be safely carried, the local office of Transport Canada Marine Safety should be consulted.

#### 2.3 REGIONAL OPERATIONS CENTRES (ROCs)

- a) The ROCs, at the earliest opportunity before supernumeraries are intended to join the vessel, shall contact the Regional Security Officer (RSO) for the Department of Fisheries and Oceans (DFO) to ensure that the supernumeraries have the appropriate security clearance.

#### 2.4 THE REGIONAL SECURITY OFFICER (RSO)

- a) The RSO for DFO shall notify the Superintendent Operational Business or delegate, as early as possible prior to the anticipated joining date as to the validity of the supernumerary's security clearance. This information is to be communicated to the vessel concerned.

## 2.5 COMMANDING OFFICER

- a) The Commanding Officer is responsible to ensure that supernumerary personnel taking passage on board CCG vessels are cognizant of the potential risks related to service at sea.
- b) The Commanding Officer, taking into account the recommendations and/or advice of medical professionals, shall be the final arbiter of acceptance of any person aboard the vessel who has been deemed to be fit, subject to medical limitations, for the intended voyage. Before any person is denied boarding in accordance with the discretion granted to the Commanding Officer in this paragraph, the Commanding Officer shall consult with the Regional Director, Fleet to thoroughly explore all reasonable avenues for accommodating the medical limitations.

## 2.6 SUPERNUMERARY PERSONNEL

- a) All supernumerary personnel shall read, understand and acknowledge by signature the [General Statement of Risk](#) and complete a [Statement of Medical Fitness \(Annex D – Forms\)](#). Supernumerary personnel who require unescorted access shall obtain a valid security clearance. Where any question in the [General Statement of Risk](#) is answered true, the supernumerary person is responsible for contacting their medical practitioner for further assessment. They shall not arrive at the vessel without an appropriate medical certificate or valid statement of medical fitness.
- b) All supernumerary personnel on board CCG vessels, including icebreakers deployed to the Arctic, that could potentially call on a US or foreign port for any reason, including medical evacuation, must be in possession of a valid Canadian Passport. The passport shall be presented for inspection as required. Please refer to [CCG/6014 – Seagoing Personnel Management Manual \(SPMM\)](#) for additional information.

## 3 INSTRUCTION

### 3.1 GENERAL

- a) Supernumerary personnel shall sign on the Ship's Book when they join the vessel and be signed off upon their departure at the conclusion of their program. Supernumerary personnel who decline to sign the Ship's Book shall not be carried aboard.
- b) Prior to departure, a signed copy of the [General Statement of Risk](#) and the signed [Statement of Medical Fitness](#) shall be deposited with the Commanding Officer, or the Commanding Officer's designate. Persons who cannot produce a Seafarer's Medical Certificate or equivalent or refuse to provide completed documentation shall not be carried aboard. For verification of documents only original certificates shall be accepted.
- c) Supernumerary personnel who frequently board CCG vessels shall, at a minimum, complete these forms annually or whenever they have not visited the same vessel for a period in excess of six calendar months.
- d) Supernumerary personnel who will be sailing aboard CCG vessels for less than 12 hours are not required to complete the [Statement of Medical Fitness](#).
- e) Prior to departure, supernumerary personnel shall provide their Next-of-Kin information, shall receive a safety and security briefing, are to be familiarized with their duties, responsibilities, and obligations and meet with the Health Officer if present on board.
- f) This procedure also applies in part to the carrying of passengers and official guests aboard CCG vessels. For more information, see [Canadian Coast Guard Fleet Order CGFO 454.00 – Passengers Aboard Ships](#).



### 3.2 STATEMENT OF MEDICAL FITNESS

- a) Supernumerary personnel who must respond TRUE to any of the questions numbered one (1) through six (6), when answering questions contained in the [Statement of Medical Fitness](#), must consult a medical practitioner for a health assessment. The practitioner conducting the assessment must be made aware of the proposed duties of the supernumerary, the length of the voyage, and must be aware of the information contained in the [General Statement of Risk](#).
- b) Supernumerary personnel who hold a valid Medical Fitness Certificate for Seagoing Personnel issued under the [Canada Shipping Act, 2001 Marine Personnel Regulations](#) do not need to complete the [Statement of Medical Fitness](#). While aboard the vessel, such persons shall be bound by the medical limitations stated on the certificate.

**Note 1:** Pilots and aircraft maintenance engineers operating CCG helicopters from Coast Guard vessels who hold medically valid aviation licences are considered to possess an equivalent to a Seafarer's Medical Certificate.

**Note 2:** DFO Fishery Officers assigned to a CCG vessel that hold current Health Canada medical certificates for the *Fishery Officer Occupational Standard* are considered to possess an equivalent to a Seafarer's Medical Certificate.

**Note 3:** Federal Government Scientists assigned to a CCG vessel who hold a current Health Canada medical certificate for the *Field Scientist Occupational Standard* are considered to possess an equivalent to a Seafarer's Medical Certificate.

**Note 4:** Royal Canadian Mounted Police (RCMP) assigned to a CCG vessel must hold a current RCMP medical certificate for members in active status to be considered to possess an equivalent to a Seafarer's Medical Certificate.

**Note 5:** Non-Fleet Employees while onboard a CCG vessel have a responsibility to report all hazardous occurrences, injuries, significant near misses, and unsatisfactory conditions to the Commanding Officer in addition to their supervisor for their information and follow-up.

### 3.3 SECURITY DOCUMENTATION

- a) Supernumeraries carried aboard a CCG vessel, who require unescorted access and who are not employees of the Government of Canada already in possession of a valid security clearance, shall obtain, at a minimum, a RELIABILITY STATUS or for a foreign national, a RELIABILITY FOR ACCESS. For more information refer to the [Departmental Security Standard - Personnel Security](#).
- b) For most Canadian citizens obtaining a determination of RELIABILITY STATUS is possible within 48 hours of providing proof of name and birth date. Some individuals may additionally require fingerprinting before a determination can be made and in these circumstances the determination process may take up to 3 months to complete.
- c) Foreign nationals wishing to gain access to CCG vessels shall be directed to the [Departmental Security Guideline – Foreign Visitors](#). Foreign nationals are advised that obtaining a determination may take up to one year from the date of application depending upon their citizenship and personal circumstances.
- d) Any documentation provided by the supernumerary in conjunction with the application of this procedure, such as completed copies of the [General Statement of Risk](#), completed copies of the [Statement of Medical Fitness](#), medical practitioner's statements, or lists of medication, shall be handled as PROTECTED information.

Documents shall be retained aboard for a period of at least six (6) months following the voyage, after which the documents shall be destroyed in a manner appropriate for PROTECTED material, or be transferred ashore for destruction.

**Note 1:** For reasons of privacy, supernumerary personnel may choose to provide information regarding allergies and prescription medication in a sealed envelope which should be handed to the Health Officer if present on the vessel, on the provision that the envelope is not to be opened except in the event of their being unconscious and unresponsive. If a Health Officer is not carried by the vessel, the envelope shall be handed to the Commanding Officer under the same provisions as when handed to the Health Officer. Upon completion of the voyage, the envelope, if unopened, can be returned to the supernumerary for destruction. If circumstances were such that the envelope had to be opened, the contents shall be retained and handled as PROTECTED information.

### 3.4 MINORS

- a) The agency or organization responsible for placing a minor aboard a CCG vessel shall provide supervision.

## 4 DOCUMENTATION

- [CGFO 454.00 – Passengers Aboard Ships](#)
- Ship's book
- [General Statement of Risk](#)
- [Statement of Medical Fitness](#)
- [Departmental Security Standard - Personnel Security](#)
- [Departmental Security Guideline – Foreign Visitors](#).
- Security Clearance
- Familiarizations



# Fleet Safety Manual

## 7.0 - DEVELOPMENT OF PLANS FOR SHIPBOARD OPERATIONS

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### 1 ISM CODE REQUIREMENTS

- a) The Canadian Coast Guard (CCG) shall establish and clearly define; procedures, plans and instructions including checklists, as appropriate, for key shipboard operations concerning the health and safety of personnel, the safety of the vessel and the protection of the environment.
- b) The responsibilities for these procedures, plans and instructions shall be clearly defined and assigned to qualified personnel.

### 2 PLANS

- a) Plans for shipboard operations have been sub-divided into the following sections for ease of reference:
  - Administrative and Guidance Procedures
  - Safety Procedures
  - Fleet Operational Procedures
  - Client Based Operational Procedures
  - Environmental Procedures





# Fleet Safety Manual

## 7.A.1 - ASSESSING RISK

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### 1 PURPOSE

- a) To provide personnel at all levels with a risk assessment and decision making tool for both routine and non-routine situations. This tool is to be used as an additional step when performing tasks whether guidelines, procedures or work instructions exist or not.
- b) Operational Risk Assessment is a continuous, systematic process of identifying and controlling risks in all activities by applying appropriate Safety Management System (SMS) policies and procedures. This process includes detecting hazards, assessing risks, and implementing and monitoring risk controls to support effective, risk-based decision-making.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer has overriding authority to accept or deny mission tasking, taking into account crew and vessel capabilities.
- b) The Commanding Officer is responsible to ensure that all crew are aware of operational risk and hazard prevention management, to ensure that the health and safety of every person working aboard the vessel, equipment and the environment are protected and that all work is performed in accordance with these requirements.
- c) The Commanding Officer or their delegate: shall stop any unsafe work performed by any individual including a Contractor or their representative; when the activity puts any person, asset or the environment at risk.

#### 2.2 DEPARTMENT HEADS AND OR THE SITE SUPERVISOR RESPONSIBLE

- a) The Department Heads and or the Site Supervisor Responsible shall ensure that proper risk assessments and safety briefings are completed before starting any shipboard or contracted work.

#### 2.3 ALL TEAM MEMBERS

- a) All team members have the responsibility to continually reassess the situation while the work is being completed. To immediately communicate to their supervisor, any risks or hazards to their own safety, the safety of the team or to the safety of the vessel and the environment as they arise.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) Prior to performing any task, an assessment of the risk shall be performed by all persons involved. An assessment of the risk shall include identifying the risk, identifying the Personal Protection Equipment (PPE) if necessary, identifying individual responsibilities, identifying measures to mitigate all risk identified and those foreseen during the operation or task.
- b) A Safety Briefing shall be conducted with all persons associated with the task to ensure that all persons are aware of the risks associated with the task, their responsibilities, the necessary PPE, the measures necessary to mitigate the risks and to review any procedures.
- c) Where necessary, for non-routine work or for routine work in hazardous areas, written risk assessments shall be completed to allow for baseline and for future risk assessments for the same task.
- d) Work places contain a wide range of risks and hazards; some known, others less obvious. We have learned to control most of them, sometimes instinctively, sometimes intentionally. Given the ever-increasing complexity of work places, we can no longer rely on instinct alone. The negative impacts are so costly in human and financial terms that we must actively endeavour to control them.
- e) Risk and Hazard assessments are an essential part of an efficient SMS; it requires clear identification of the work to be performed, the risks and hazards present at the workplace and the control measures to mitigate them. Risk and hazard assessments have to be conducted to set governing parameters for a new shipboard procedure or to provide guidance for a one time activity.
- f) The following procedures are used to mitigate risk in the workplace;
  - Identify Mission Objectives– this includes identifying the skill sets required of the individuals to conduct the mission as well as all activities required to see the mission through to its completion
  - Identify Hazards – Identify hazards for all of the activities required to complete the mission. This includes considering all existing procedures already in place to mitigate risk during a specific mission (i.e. Personal Protective Equipment (PPE)).
  - Establish Control Measures- for each identified hazard, including a clear plan of the mission, communication protocol, adequate briefing of team members, list PPE to be worn and contingency measures.
  - Evaluate Risk vs. benefit - Is it safe, efficient or necessary to perform the activity either as planned or at all? Is the risk worth the benefit and does it apply all principles for risk management. The International Maritime Organization (IMO) defines risk as:
    - The combination of the frequency and the severity of the consequence.
    - In simple terms a risk is a combination of factors, how often do you do the job, its complexity and the consequence if something goes wrong.
    - The combination of likelihood and consequence is normally illustrated by the IMO RISK ESTIMATOR as follows: determine the level of consequence in relation with the likelihood to obtain the level of risk.

- Execute Decision – Make a decision at the appropriate level depending on the complexity of the mission. For example, when determining whether or not an FRC is to be launched, the decision making should be at the level of the Commanding officer and confirmed by the FRC Coxswain.
  - Monitor Situation- Situations can change due to weather and other environmental factors as well as a change in the capability of the personnel executing the mission. Decision-makers must have a contingency plan in place to execute should the situation change and/or risk is increased.
- g) In order to address identified risks and assess the hazards, department heads or the contractors shall implement preventive measures to address them. The following order of priority shall be used;
- Identify the risk, what could happen
  - The elimination of the hazard; example: remove the hazard from the workplace
  - The reduction of the hazard, including isolating it; example: the use of guards, containment measures.
  - The provision of personal protective equipment, example: clothing, devices or materials; and
  - Administrative procedures; example: site specific work instructions.
- h) When establishing a record of known risks and hazard assessments; the following information shall be captured:
- the nature of the risk/hazard;
  - the employees' level of exposure to the risk/hazard;
  - the frequency and duration of employees' exposure to the risk/hazard;
  - the preventive measures in place to address the risk/hazard;
  - any employee reports;
  - any other relevant information.

### **3.2 SAFETY SELF-CHECK**

- a) Any operational or maintenance work performed in the workplace either routine or non-routine in nature will have inherent hazards. It is crucial that before any work is started that employees; as a group or individually, take a few minutes to safely review the work to be performed. This review covers the various key steps of a Safety Self-Check.
- b) This Safety Self-Check at a minimum shall cover these key points:
- Identify the Hazards
  - Assess the risks associated with each hazard
  - Plan a safe way to carry out the work.

- c) The Safety Self-Check is to be applied equally for site operations or maintenance routines. The hazards and their associated risks and exposures are to be assessed, a safe work plan to carry out the task is to be considered, and identifying the PPE needed as necessary and identify responsibilities. It is not intended to have these Safety Self-Checks logged or recorded, the intent is to promote safety awareness so that employees are aware of the hazards, and have considered the risks and safeguards. If questioned, an employee working on the site shall be aware of this safety requirement.
- d) The Pre-Job Safety Assessment (PJSA) is a pre-work checklist developed to ensure that hazards are identified, assessed and controlled in a systematic manner, thus creating a safe and healthy worksite and thereby ensuring due diligence and compliance with the requirements stated in the Guide on the Safety Responsibilities of DFO in Relation to Contractual Agreements, Partnering & Volunteers.

## **4 DOCUMENTATION**

- Risk Assessments
- Safety Briefings
- Site Specific Work Instructions
- Personnel training records





# Fleet Safety Manual

## 7.A.2 - CREW CHANGES / CHANGE OF COMMAND

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### 1 PURPOSE

- a) To ensure that changes of personnel aboard Canadian Coast Guard (CCG) vessels are conducted in a coordinated manner so that information relevant to the operation, capabilities, and known deficiencies of the vessel are accurately reported.

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTOR, FLEET OR DELEGATE

- a) The Regional Director, Fleet or delegate, is responsible to ensure that crew changes are conducted in an effective manner. Sufficient time shall be provided for completing the changeover, taking into consideration fatigue of individuals on extended travel, who are expected to take over a watch upon joining the vessel.

#### 2.2 MARINE SUPERINTENDENT OR DELEGATE

- a) The Marine Superintendent or delegate shall ensure that incoming and outgoing crews are made aware of transportation arrangements for crew changes as soon as they have been finalized. A copy of the arrangements shall be maintained on file until the next crew change.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) The Commanding Officer is to receive a crew change message from the Marine Superintendent indicating the personnel that will be joining the vessel in sufficient time for review as the joining crew composition may affect the time required for the changeover (i.e. extended travel prior to joining, familiarizations, depth of notes etc).
- b) Vessels shall provide updated People on Board (POB) and Next of Kin (NOK) lists to the Regional Operations Center (ROC) as soon as possible but prior to departure. In the event of a personnel change while the vessel is under operations, the updated POB and NOK lists shall be provided to the ROC by the most appropriate means available at the time. In any case, the updated People on Board (POB) and Next of Kin (NOK) lists information shall be sent to the ROC at the earliest opportunity.

- c) All persons joining the vessel should provide information related to a known medical condition, prescription medication, or known allergies to aid emergency medical attention providers. If this information is considered too private to discuss, it can be provided in a sealed envelope to be opened only in the event of an emergency. This information shall not be transmitted in the crew list sent ashore.

### **3.2 CHANGEOVER NOTES**

- a) The Commanding Officer and Department Heads shall produce changeover notes. Department Heads may require additional handover notes be created by subordinate personnel however these notes are left to the discretion of the Department Head.
- b) Changeover notes shall be produced for the relief person and signed by both parties. Changeover notes shall be retained onboard for a minimum of one year for easy reference when required.

### **3.3 CHANGE OF COMMAND DOCUMENT**

- a) The Change of Command Document provides for the formal change of command for a CCG vessel. This document is to be completed during the crew change process and after a change of command has taken place, this and supporting information shall be forwarded to the Regional Director, Fleet or their delegate.
- b) For consistency a National Change of Command form has been created for use by all regions. (Annex D – Forms)

## **4 DOCUMENTATION**

- Changeover Notes
- Change of Command Document (Annex D – Forms)
- Log Book Entries
- Ship's Book
- Crew List



# Fleet Safety Manual

## 7.A.3 - MANAGEMENT OF WATCHES AND HOURS OF REST

### 1 PURPOSE

- a) To ensure that watch systems aboard Canadian Coast Guard (CCG) vessels are arranged so that the efficiency of all Watchkeeping personnel is not impaired by fatigue and that duties are organized that the first watch at the commencement of a voyage and subsequent relieving watches are sufficiently rested and otherwise fit for duty.

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTOR, FLEET AND COMMANDING OFFICER

- a) The Regional Director, Fleet and Commanding Officer have a joint responsibility whenever possible; to minimize extended travel fatigue for crew members expected to assume a watch upon joining the vessel.

#### 2.2 COMMANDING OFFICER

- a) The Commanding Officer is responsible to ensure that an appropriate watch is maintained at all times. Watches shall be structured in accordance with the requirements laid out in 3.1.
- b) The Commanding Officer is responsible to ensure that watch schedules are posted for both Bridge and Engine room in areas where they are easily accessible to all personnel. The posted watch schedule shall be used to track hours of work and manage hours of rest for potential fatigue factors that may impact the operational capacity of the crew or vessel.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) All Watches aboard CCG vessels shall be arranged so that they comply with the requirements of: *Section A-VIII/1 and parts 2, 3 and 3-1 of Section A-VIII/2 of Chapter VIII of the Seafarers' Training, Certification, and Watchkeeping (STCW) Code; Part 2 Crewing (213, 216) and Part 3 of the [Marine Personnel Regulations - Canada Shipping Act 2001](#); and Division 3 - 319, 320, 321 of the Maritime Labour Standards;*

*Fatigue Management – A Guide for Canadian Coast Guard Managers, Officers and Crew*, may be considered while organizing watch schedules. All crewmembers shall be provided:

- at least 6 consecutive hours of rest in every 24-hour period; and
  - at least 16 hours of rest in every 48-hour period,
  - and not more than 18-hours but not less than 6-hours elapses between end of a rest period and the beginning of the next rest period.
- b) Watches aboard CCG vessels on Near Coastal Voyages shall be arranged so that all Watchkeepers shall:
- not work more than 14 hours in any 24-hour period or more than 72 hours in any 7-day period; or
  - have at least 10 hours of rest in any 24-hour period and 77 hours of rest in every 7-day period; or
  - the hours of rest are divided into no more than two periods, one of which is at least 6 hours in length; and
  - the interval between two consecutive rest periods does not exceed 14 hours.
- c) The requirements of the Code need not be maintained in the case of emergency situations where the safety of life is impacted or for the conduct of emergency drills.

## **4 DOCUMENTATION**

- Ship Watch Schedule
- *Fatigue Management – A Guide for Canadian Coast Guard Managers, Officers and Crew*



# Fleet Safety Manual

## 7.A.4 - SAFETY OF NAVIGATION

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### 1 PURPOSE

- a) To ensure that access to the navigation bridge is controlled and that watches are arranged so the environment in the bridge is conducive to the safe navigation aboard Canadian Coast Guard (CCG) vessels.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer shall ensure that this procedure is implemented aboard the vessel and that the applicable site-specific work instructions, as outlined in Section 4 of this procedure, are provided and followed.
- b) The Commanding Officer shall ensure that the Commanding Officer's Standing Orders contain specific instructions related to the access to the Bridge and that these instructions are enforced.
- c) The Commanding Officer shall ensure that watchkeeping arrangements are adequate for maintaining a safe navigational watch with due regard to the prevailing conditions and the operations being performed.
- d) Under the Commanding Officer's general direction and principals of Bridge Resource Management (BRM), the Officers-of-the-Watch (OOW) are responsible for the safe navigation of the vessel during their periods of duty. All members of the Bridge Watch have a shared responsibility for the safety of the crew, supernumeraries, passengers, the vessel and for the protection of the environment.
- e) On smaller vessels where an OOW is not carried, the Commanding Officer or Coxswain is the responsible person for safe navigation, safety of the crew, supernumeraries, passengers and the vessel.

### 3 INSTRUCTION

#### 3.1 BRIDGE ORGANIZATION

- a) The *International Regulations for Preventing Collisions at Sea, with Canadian Modifications*, are to be strictly observed by all navigating officers and a copy of the latest edition is to be kept on the bridge and be readily available.

- b) Watches shall be conducted in accordance with the general procedures and practices provided in 7.A.3 – Management of Watches and Hours of Rest, and the specific practices and procedures detailed in the Commanding Officer's Standing Orders.
- c) The composition of the Bridge watch shall be in accordance with the established and approved Crewing Profiles which have been created inline with the requirements set out in the *Marine Personnel Regulations (CSA-2001.)*
- d) The change of watch shall be logged. The times when any officer takes control or relinquishes control of the navigation of the vessel shall be logged.
- e) Visitors to the Bridge may be required to vacate the Bridge at any time upon the order of the person having responsibility for the conduct of navigation of the vessel.
- f) Entrances to the Bridge shall be placarded with signs indicating that entry is restricted.

### **3.2 NIGHT ORDERS**

- a) The Commanding Officer shall maintain a Night Order Book to supplement the Standing Orders that are in effect. The Orders for each night if necessary or appropriate; shall include items such as courses to be steered, speeds to be used, additional precautions to be taken, and any other pertinent navigational or operational information. These night orders shall be recorded in date sequence over the Commanding Officer's signature.
- b) Watch-keepers shall ensure at the start of their watch, that Night Orders are read, understood and followed. If unable to comply or the Night Orders are not understood, the Commanding Officer shall be contacted immediately.

### **3.3 CONSUMABLE FUEL**

- a) Vessels less than 125 GRT shall at all times carry enough useable fuel for the readiness posture established for the vessel. Where vessels are anticipated to surpass their capable range, additional bunkering arrangements shall be considered.

## **4 DOCUMENTATION**

- *International Regulations for Preventing Collisions At Sea* (with Canadian Modifications)
- *Chapter VIII of the Seafarers' Training, Certification, and Watchkeeping (STCW) Code*
- *STCW Regulation A-VIII/2 Watchkeeping Arrangements and Principles to be Observed*
- Commanding Officer's Standing Orders
- Bridge Resource Management
- Restricted Entry Signage

- Site-specific Work Instructions, including but not limited to the following:
  - Navigation in Restricted Visibility
  - Navigation in Ice (where ice may be present or may develop)
  - Navigation in Confined Waters
  - Passage Planning
  - Lookouts
  - Anchoring
- Log Book Entries







# Fleet Safety Manual

## 7.A.5 - PRE-DEPARTURE AND PRE-ARRIVAL

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### 1 PURPOSE

- a) To ensure that the operational status of systems critical to safe arrival or departure are known prior to their intended use.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer shall ensure vessel departure/arrival procedures are carried out by Department Heads prior to each departure/arrival.
- b) On vessels with no department heads the Commanding Officer may assign these duties to a responsible crew member

### 3 INSTRUCTION

#### 3.1 DEPARTURE

- a) As early as possible, the crew is to be notified of the sailing time and operational status of the vessel.
- b) Prior to sailing, checks are carried out throughout the vessel, mainly to ensure seaworthiness. During these checks, the condition of the vessel, propulsion system and steering gear are inspected. The results of this inspection are to be logged in the relevant logbook (Deck and Engineroom).
- c) Apart from the above inspection, the Department Heads are also responsible for the good condition and operation of all instruments, machinery and equipment under their supervision as well as for the presence onboard, and the ability, of their personnel to undertake their duties.
- d) If the seaworthiness or the operations of the vessel are affected, the heads of departments shall report such conditions to the Commanding Officer immediately.
- e) Attention shall be paid to safety matters, as well as to all cargo, stores, fittings and equipment that must be lashed or secured.
- f) Department Heads shall ensure that all members of their department are aboard and that any discrepancies are immediately reported to the Commanding Officer.

- g) All tests and checks shall be completed and log entries made prior to departure. As some vessels are maintaining a 30 minute to sail standby status, some equipment may be required to be kept in a constant state of readiness.
- h) In liaison with the Chief Engineer, the Commanding Officer shall ensure that there is sufficient fuel and lubricating oil aboard to safely carry out the operating requirements of the vessel for the intended tasking.

### **3.2 ARRIVAL**

- a) Examples of elements to be considered when developing the Ship's Specific Work Instructions:
  - Available port information, sailing directions and other navigational information, including restriction on draft, speed, ballasting, entry time, etc. are studied
  - Engineroom notified
  - Crew at stations and relevant instructions given
  - Mooring machinery tested, mooring lines, etc. ready
  - Internal communication equipment, signal equipment and deck lighting tested

### **3.3 ENTERING AND DEPARTING LOCKS**

- a) Vessels that normally transit locks more than twice annually shall prepare site-specific checklists to guide this transition. Other vessels shall prepare a transit plan only for those specific occasions when a lock will be transited.
- b) Prior to the transit of a lock system, the appropriate *Canal Regulations and Sailing Directions* and latest *Notice to Shipping (NOTSHIP)* shall be consulted and shall be available on the Bridge.

## **4 DOCUMENTATION**

- Site-Specific Checklists
- Log Book Entries
- Crew Lists
- Defect Lists



# Fleet Safety Manual

## 7.A.6 - VESSEL'S MANOEUVRING DATA

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### 1 PURPOSE

- a) To ensure that correct manoeuvring data is available for the use of the Officer-of-the-Watch and Pilot, where applicable, to make safe decisions about the navigation of the vessel.

### 2 RESPONSIBILITIES

#### 2.1 SUPERINTENDENT, MARINE ENGINEERING

- a) The Superintendent, Marine Engineering shall ensure that whenever major modifications are to be made to a vessel that the contract or statement of work includes the requirement to test the manoeuvring characteristics prior to the vessel being returned to service.

#### 2.2 COMMANDING OFFICER

- a) The Commanding Officer shall ensure that information received following major modification, and observations on manoeuvring characteristics made during the normal operation of the vessel, are reflected in the vessel's manoeuvring data.
- b) The responsible person for the conduct of navigation is to ensure that they are familiar with location and content of the manoeuvring characteristics for the vessel.

### 3 INSTRUCTION

- a) Manoeuvring characteristics will be affected by differing conditions of current, draft, draft in relation to depth of water, trim and, wind. Therefore, the best interpretation of this information will be as a result of experimentation in various conditions. Major modifications, which may be made to a vessel, may also cause changes to manoeuvring characteristics and vessel's officers are advised to conduct trials following any such changes and record results obtained.
- b) Manoeuvring data shall be posted in a convenient location on the Bridge or in the case of smaller vessels with limited space, shall be in a location readily accessible to the navigator. This information shall be used in planning vessel manoeuvres, especially in restricted waters or areas of high traffic density.

- c) Vessel manoeuvring characteristics and manoeuvres which do not correspond to those described on the manoeuvring data shall be reported to the Commanding Officer. The onboard data shall be annotated accordingly.

#### **4 DOCUMENTATION**

- Site-specific manoeuvring data (Wheelhouse Poster)



# Fleet Safety Manual

## 7.A.7 - MAINTENANCE OF WATERTIGHT INTEGRITY

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### 1 PURPOSE

- a) To ensure that the safety of the vessel and the crew are enhanced by maintaining the vessel's watertight integrity at all times.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible to ensure the vessel's watertight integrity is maintained.
- b) The Commanding Officer shall ensure all crew members are aware of the importance of the watertight integrity of the vessel and shall ensure that this procedure is followed.

### 3 INSTRUCTION

#### 3.1 WATERTIGHT DOORS:

- a) Watertight doors that have been identified by the Marine Safety and Inspection Directorate of Transport Canada as being required to be closed are to be placarded, or otherwise permanently marked, and shall be closed when underway. The doors are to be opened only for the minimum amount of time necessary to permit passage through the door.
- b) Where fitted, the watertight doors and their indicator systems are to be tested at intervals of not more than one month to ensure that indications are correct and indicator lamps are working. The test shall be logged.
- c) Regular inspection and maintenance of rubber seals and dogging arrangements shall be conducted on weather-tight doors, cargo hatch covers, escape hatch covers, compartment access covers, viewing hatch covers, and other related equipment.

#### 3.2 SOUNDING:

- a) Tank and void space soundings shall be taken as required and recorded in the sounding book. Any discrepancies shall be brought to the immediate attention of the department head.

**3.3 DRAUGHTS:**

- a) Draught readings shall be entered in the Deck logbook at a minimum:
- Prior to sailing;
  - After loading or unloading cargo or bunkering; or
  - Every morning when along side.

**3.4 DECK SCUPPERS:**

- a) Deck scuppers shall be left open at all times, except during bunkering or as otherwise required by the Commanding Officer, and shall be labelled accordingly.
- b) Where scuppers valves and extended spindles are fitted; all members with the responsibility for their operation, shall be familiar with their location and operation.

**4 DOCUMENTATION**

- Log Book Entries
- Sounding Book Records
- Watertight Door Markings
- Deck Scupper Valve Markings
- Familiarization and Training Records



# Fleet Safety Manual

## 7.A.8 - STABILITY

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### 1 PURPOSE

- a) To ensure that complete and up to date stability data is maintained aboard Canadian Coast Guard (CCG) vessels and at shore support locations.
- b) To ensure that the vessel's operational stability condition can be accurately assessed and operated within acceptable limits of stability as stated in the Ships Stability Book.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible for ensuring that the Ship's Stability Book is updated to reflect any changes to the vessel's structure or equipment that may affect the vessels' stability.
- b) The Commanding Officer has overall responsibility for vessel's stability, including but not limited to, the proper distribution of fuel, water, stores and cargo.

#### 2.2 CHIEF ENGINEER AND CHIEF OFFICER

- a) The Chief Engineer and Chief Officer are responsible to ensure the Commanding Officer is informed of any matter which in their opinion may affect the stability of the vessel.

#### 2.3 CHIEF OFFICER

- a) The Chief Officer shall be responsible for assessing and producing a detailed stability condition for the Commanding Officer as required.

#### 2.4 OFFICER-OF-THE-WATCH

- a) The Officer-of-the-Watch is responsible to ensure that during their watch, any change to stability, or any circumstance which could result in a change to the stability is brought to the attention of the Commanding Officer. (i.e. ice accretion)

#### 2.5 SUPERINTENDENT, MARINE ENGINEERING

- a) The Superintendent, Marine Engineering is responsible to ensure that updated stability data is provided to the vessel when any changes to the vessel's structure or equipment occur which affect the vessels stability.

## **2.6 DIRECTOR GENERAL, INTEGRATED TECHNICAL SERVICES**

- a) The Director General, Integrated Technical Services is responsible to ensure that all changes to the configuration of the vessel from the as-fitted drawings and plans are coordinated and will result in any necessary calculations and tests to determine the effect on the vessel's stability. The results of these changes and any subsequent calculations are to be provided to the Superintendent, Marine Engineering in the applicable home region of the vessel.

## **3 INSTRUCTION**

### **3.1 MAINTAINING STABILITY DATA**

- a) When work is to be carried out which, in the opinion of the Superintendent, Marine Engineering or the Configuration Change Request (CCR) Coordinator at the National level, may affect a vessel's stability, the professional opinion of a Naval Architect will be sought to determine the theoretical effect on stability.
- b) When deemed necessary, and when required by Regulations, inclining experiments shall be conducted and the results of these experiments shall be maintained aboard in the Ship's Stability Data Book.
- c) The temporary installation of fixed equipment should also be assessed when it is of significance. The cumulative affect of many small changes should not be discounted as the addition of many small items over time can result in a significant addition to weight.
- d) Changes to a vessel are to be carried out following the process outlined in the Configuration Change Management Procedures, to ensure that the effect on stability is adequately assessed.
- e) Each vessel shall make readily available, the official Stability Data Book for the vessel. This book shall contain the necessary information required by the [CSA 2001 – Hull Construction Regulations](#).

### **3.2 MAINTENANCE OF STABILITY**

- a) The Commanding Officer shall ensure that prior to departure and while at sea consideration shall be given to the load condition of the vessel and the operational program to be performed to determine that the stability of the vessel is adequate for the vessel's operation and the expected weather.

### **3.3 47 FOOT "CAPE" CLASS SAR LIFEBOATS**

- a) Although this lifeboat is self-righting and safe under the worst sea conditions, it does not have a great reserve of stability for icing conditions. Equipment added to this lifeboat and its subsequent distribution and stowage must be strictly controlled.
- b) A specific spreadsheet has been developed for each lifeboat to track the location of all weights aboard and to reflect the effect of these weights on the stability of the vessel. A copy of the spreadsheet, with an appropriate media copy for computer manipulation, must be maintained in conjunction with the vessel's stability book.



- c) This spreadsheet is to be considered as a CONTROLLED document and there must be a record maintained of all changes made to the document and a clear identification of the latest version by reference to date.
- d) Information from this spreadsheet shall be used with generic reference tables of forecast ice accretion and the class-specific ice build-up reference tables to forecast the actual and potential cumulative effect on vessel stability.

#### **4 DOCUMENTATION**

- Ship's Stability Data Book
- Record of Changes to Ship's Configuration
- Architect's Calculations of Stability
- Results of Inclining Experiments
- 47 Foot MLB Equipment Placement Spreadsheet
- Accretion Forecast Tables for Icing Conditions





# Fleet Safety Manual

## 7.A.9 - ENGINE ROOM WATCHKEEPING

---

### 1 PURPOSE

- a) To ensure that engineering watches and watch handovers are conducted in accordance with the general procedures and practices provided in *Sections A-VIII/2 and B-VIII/2 of the [Seafarers' Training, Certification and Watchkeeping \(STCW\) Code](#)*, and the specific practices and procedures detailed in the Commanding Officer and Chief Engineer's Standing Orders.
- b) To ensure that engineering watches and watch handovers are performed in a consistent, safe manner and that the changes of each watch are logged.
- c) To ensure that main propulsion machinery and auxiliary machinery is operated correctly and safely.

### 2 RESPONSIBILITIES

#### 2.1 CHIEF ENGINEER

- a) The Chief Engineer shall issue written instructions for the direction of the engineroom staff.

#### 2.2 ENGINEER OF THE WATCH

- a) The Engineer of the Watch is to ensure all pertinent information regarding the operation of equipment under their care has been collected and recorded where necessary and is available and passed to the Relieving Engineer.

### 3 INSTRUCTION

#### 3.1 CHIEF ENGINEER'S STANDING ORDERS

- a) Chief Engineers shall issue appropriate written instructions for guidance in the proper completion of routine engineering tasks aboard the vessel.

#### 3.2 TAKING OVER THE WATCH

- a) Before taking over the watch, relieving personnel shall ensure that:
  - a pre-watch inspection round is completed and logged.

### **3.3 CONDUCTING THE WATCH**

- a) Site specific work instructions shall include all watch-keeping duties and engine room systems.

### **3.4 HANDING OVER THE WATCH**

- a) Before handing over the watch, the Engineer of the Watch shall ensure that a final round is carried out to check the operating condition of the machinery

## **4 DOCUMENTATION**

- Chief Engineer's Standing Orders
- Log Book Entries
- Site Specific Work Instructions



# Fleet Safety Manual

## 7.A.10 – Handling and Containing Asbestos Materials

### 1 Purpose

- a) When asbestos has been identified on board Canadian Coast Guard (CCG) vessels, the CCG must monitor and manage its handling and containment to prevent asbestos exposure.

### 2 Responsibilities

#### 2.1 Chief engineer

The chief engineer or their delegate is responsible for ensuring that:

- a) they are designated as the asbestos coordinator
- b) as the asbestos coordinator, they monitor and update the shipboard [Vessel Specific Asbestos Management Plan](#) (VSAMP)

**Note 1:** The VSAMP provides guidance and information for crew members. It includes:

- i. the hazards of asbestos exposure
- ii. a complete listing of asbestos containing material found on board and the locations
- iii. identification of the asbestos coordinator
- iv. asbestos survey and periodic<sup>1</sup> assessments and annual<sup>2</sup> air sampling conducted by a third-party qualified surveyor
- v. a listing of all asbestos abatement equipment carried on board the vessel
- vi. asbestos abatement procedures
- vii. records of all asbestos-related activities

<sup>1</sup> See 3.1 e), Note 3 of this procedure

<sup>2</sup> [Integrated Technical Services - Technical Bulletins](#) – 2019-13 Asbestos Management Plans

## 2.2 Superintendent, Marine engineering

The superintendent, Marine engineering or their delegate is responsible for ensuring that:

- a) they follow-up on baseline surveys completed on CCG vessels within their region to verify that asbestos-containing material on board is maintained in an encapsulated state or controlled and monitored. Consideration must also be given to having asbestos-containing material removed during vessel modernization processes
- b) they coordinate with the asbestos coordinator to confirm that all vessels with asbestos-containing material have a [Vessel Specific Asbestos Management Plan](#) (VSAMP)

## 2.3 Marine superintendent

The marine superintendent or their delegate is responsible for ensuring that:

- a) they provide the appropriate training for crew members involved in asbestos abatement
- b) a minimum of 2 crew members per vessel are trained in asbestos abatement
- c) in consultation with the asbestos coordinator and the superintendent, Marine engineering, refresher training is provided as appropriate

# 3 Instructions

## 3.1 Asbestos coordinator instructions

- a) The asbestos coordinator must prepare the VSAMP following the template provided.
- b) The asbestos coordinator must coordinate all activities that may expose personnel to asbestos.
- c) Following an initial asbestos survey, the asbestos coordinator must continue to monitor asbestos-containing material through periodic asbestos assessments, and annual air sampling by a third-party qualified surveyor. Surveys and assessment findings must be kept in VSAMP section 5.4.
- d) The asbestos coordinator is to ensure the VSAMP is up to date, and contains records of all areas or equipment that may contain asbestos.
- e) The asbestos coordinator must monitor all asbestos-containing material on board the vessel and carry out periodic asbestos management reviews according to sections 3.1 c) and d) of this procedure.

**Note 2:** Asbestos-containing material is defined as any material found to contain asbestos that is at or above the limit defined by provincial standards. Friable asbestos product means an asbestos-containing material that when dry, can be crumbled, pulverized or powdered by hand pressure.

**Note 3:** The VSAMP defines “periodic” as: “approximately once per year, and coordinated with vessel refit or other opportune docking”<sup>3</sup>.

- f) The asbestos coordinator must prepare and update the VSAMP with the required information for their vessel.

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<sup>3</sup> VSAMP, 2019 - section 3.1

- g) The asbestos coordinator must advise a member of the workplace occupational health committee of any work pertaining to asbestos-containing material.

### 3.2 General

- a) If the period of reassessment is to be greater than 1 year, this assessment must be based in part on the status of asbestos-containing material as determined in the previous surveys after discussion between the chief engineer, the superintendent, Marine engineering, and a qualified surveyor. The rationale for such a decision must be recorded in the VSAMP and signed by the chief engineer.
- b) If the state of asbestos-containing material is found to have changed, the:
  - i. asbestos coordinator must notify the superintendent, Marine engineering
  - ii. superintendent, Marine engineering must consult with a third-party qualified surveyor to determine whether a visit to the vessel for a survey or an assessment is necessary
  - iii. VSAMP must be amended as necessary indicating any changes, the state of remaining asbestos, and any mitigation measures taken
- c) Asbestos abatement must be carried out only on an emergency basis, by trained shipboard personnel as defined in section 3.4 and only when using appropriate personal protective equipment and abatement tools.
- d) All vessels with asbestos-containing material must carry an asbestos abatement kit.
- e) The handling of type 3 asbestos-containing material must be performed only by personnel trained and certified in the removal or treatment of friable asbestos.
- f) Records of all friable and non-friable asbestos-related activities must be recorded in the VSAMP.
- g) The VSAMP must be reviewed annually during shipboard occupational health and safety committee meetings, ensuring that both crews on dual crewed vessels are aware of the VSAMP. Upon completion of the annual VSAMP review, a signature page must be completed by appropriate members of both crews<sup>4</sup>.

### 3.3 Asbestos awareness

- a) Awareness of the location, status and hazard of asbestos-containing material must be provided by the asbestos coordinator to all employees and contractors who may come into contact with, or conduct work in areas known or suspected to have asbestos-containing material.
- b) The workplace occupational health committee must be advised of any work pertaining to asbestos-containing material.
- c) Contractors must sign the Contractor Notification and Acknowledgement Form<sup>5</sup>, which is to be kept on file in the VSAMP.
- d) Notification to employees and contractors must include clear labelling of the asbestos-containing material where appropriate and in accordance with best practice.

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<sup>4</sup> VSAMP, 2019 - section 5.7

<sup>5</sup> Form can be found in the VSAMP

**Note 4:** The intent is to reduce the likelihood of accidental disturbance of known asbestos-containing material.

- e) As part of the crew's and officer's familiarization to the vessel, the asbestos coordinator must provide basic asbestos awareness for vessels with asbestos-containing material. This may include viewing the training video titled "[Asbestos](#)" on the Integrated Technical Services (ITS) Reference Links intranet page.
- f) Familiarization checklists must include the review of the VSAMP and the training video identified above.
- g) Pursuant to the [Maritime Occupational Health and Safety \(MOHS\) Regulations](#)<sup>6</sup>, the CCG must keep the shipboard personnel's exposure to asbestos as close to 0 as practicable<sup>7</sup>, and not exceed the value for airborne asbestos fibres of 0.1 fibres per cm<sup>3</sup> by all airborne asbestos fibers on a time-weighted average of 8 hours<sup>8</sup>.

**Note 5:** Section 246 of the [MOHS Regulations](#) has words to the effect that hazardous substances must not be used if it is reasonably practicable to use a less hazardous substance.

**Note 6:** Further, section 4 of the [Prohibition of Asbestos and Products Containing Asbestos Regulations](#) has words to the effect that the importation, sale, and use of asbestos is prohibited.

### 3.4 Asbestos abatement training

- a) Asbestos abatement training, to the level of type 2 work must be provided to crew members identified by the asbestos coordinator by a provincially recognized training provider.

**Note 7:** Training includes both low-risk activity and moderate-risk activity as defined in section 243 of the [MOHS Regulations](#) and detailed in appendix C of the VSAMP.

- b) A minimum of 2 per crew must be trained. See Section 4.3 of the VSAMP.

**Note 8:** Trainees should normally be from the engineering department.

- c) Refresher training will be provided on a periodic basis as determined by the asbestos coordinator and superintendent, Marine engineering, and defined within the VSAMP.

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<sup>6</sup> *Maritime Occupational Health and Safety Regulations*

<sup>7</sup> *Maritime Occupational Health and Safety Regulations* – Part 20, Division 1, Section 255 (1.1)

<sup>8</sup> [Canadian Centre for Occupational Health and Safety - Appendix C – Supplementary Exposure Limits](#)



## 4 Documentation

- Logbook entries
- Within the VSAMP:
  - Past surveys and assessments
  - Contractor notification and awareness forms
  - Asbestos related work log

## 5 References

- [Integrated Technical Services – Reference Links](#) – Training videos - Asbestos
- [Integrated Technical Services – Publications](#) – Guides - Vessel Specific Asbestos Management Program – Template
- [Integrated Technical Services - Technical Bulletins](#) – 2019-13 Asbestos Management Plans
- [Canadian Centre for Occupational Health and Safety – OSH Answers](#) - Asbestos
- [Maritime Occupational Health and Safety Regulations](#)
- [Prohibition of Asbestos and Products Containing Asbestos Regulations](#)
- [Health and safety reports and publications - Technical guideline to asbestos exposure management programs](#)





# Fleet Safety Manual

## 7.A.11 - HOTEL SERVICES

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### 1 PURPOSE

- a) Promote sanitary practices in hotel service operations to avoid risk to the vessels or stations from food-borne illness, injury or disease.

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTOR, FLEET

- a) The Regional Director, Fleet is responsible for ensuring that all vessels with living accommodations are inspected with regard to health and sanitation by a certified Public Health Inspector.

#### 2.2 NATIONAL COORDINATION CENTRE (NCC)

- a) The National Coordination Center (NCC) is responsible for reviewing Canadian Food Inspections Agency (CFIA) Health Hazards Alerts and forwarding the alerts, if applicable, to the Regional Operations Centres (ROC).

#### 2.3 REGIONAL OPERATIONS CENTER

- a) The ROC is responsible for reviewing CFIA Health Hazard Alerts received and forwarding the alerts, if applicable, to all operational vessels or stations in their region.

#### 2.4 COMMANDING OFFICER

- a) The Commanding Officer shall advise the ROC of actions being taken when it has been confirmed that a vessel has products onboard which are indicated in a CFIA Health Hazard Alert.
- b) The Commanding Officer is responsible for ensuring that health and sanitation inspections are conducted on the vessel or station and for ensuring that Occupational Health and Safety Inspections are conducted at regular scheduled intervals.
- c) All personnel performing hotel service duties shall observe good personal hygiene as well as sanitary working practices in order to avoid the risk of contamination.

### 3 INSTRUCTION

#### 3.1 INSPECTIONS

- a) When managing Hotel Services, the requirements within the [Canadian Coast Guard Fleet Order 450.00 Hotel Services](#), [Canadian Coast Guard Logistics Standards \(DFO 5758\)](#), [Canadian Coast Guard Fleet Order 452.00 Officer and Crew Accommodation - CCG Ships](#), *Food Safety Code of Practice for Canada's Food Service Industry* and annual Sanitary Inspections shall be applied.
- b) Crew accommodation must be inspected once per operational cycle. For vessels with crew change intervals greater than 28 days, inspections are to be conducted at intervals no greater than 4 weeks. Refer to [Coast Guard Fleet Order 452.00 Officer and Crew Accommodation – CCG Vessels](#) for additional information.
- c) As per the [Maritime Occupational Health and Safety Regulations](#)<sup>1</sup>, if the vessel is in operation, an inspection must be made once a week of:
  - (a) the supplies of food and water on the vessel;
  - (b) all spaces and equipment used for the storage and handling of food; and
  - (c) the galley and equipment used for the preparation and service of food.

A record of each weekly inspection must be kept for a period of three years after the day on which the inspection is made.

- d) As per section 3.10 of [Canadian Coast Guard Fleet Order 452.00 Officer and Crew Accommodation - CCG Ships](#), all vessels with living accommodations must be inspected with regard to health and sanitation by a certified Public Health Inspector at least once in every twelve (12) month period or in the case of vessels engaged in northern operations, twice per year, once prior to departure north and once following their return but prior to the next subsequent voyage.

A valid Ship Sanitation Certificate (SSC) is compulsory on board vessels sailing to international waters.

- e) Records of health and sanitation inspections shall be recorded in the deck log.

#### 3.2 HEALTH HAZARD ALERTS

- a) When Health Hazard Alerts are received onboard the vessel, the person in charge of the galley shall verify if the alert applies to the vessel and, where required, remove and properly dispose of the food.

#### 3.3 FOOD SAFETY

- a) Food service operations shall always be performed in accordance with the standard set in the *Food Safety Code of Practice for Canada's Foodservice Industry and Canadian Coast Guard Logistics Standards (DFO 5758)*. An updated copy of these publications shall be maintained aboard each vessel or station. Personnel performing Hotel Services shall have read understood and apply the information contained within these publications.
- b) All personnel performing hotel services duties are required to have the food safety and sanitation training. This training shall meet or exceed the recommendations in the National Guidelines for Food Safety Training Programs in the Food Retail and Food Services Sectors produced by the Federal/Provincial Committee on Food Safety Policy and published by Health Canada.

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<sup>1</sup> Section 62

- c) Supervisors are responsible for ensuring that the work site has sufficient training materials that meet or exceed the recommendations in the national guidelines. Training materials may include work site instruction, posters, videos, case studies and updates to food safety procedures produced by authoritative persons or institutions whose work is based on sound scientific evidence. This would include any materials produced by the provinces and territories.
- d) Supervisors are responsible for ensuring that new employees, who have not had previous food safety training, receive interim familiarization and instruction in the safe handling of food based on the tasks assigned to them using the training materials. New employees shall not work unsupervised with food until they have received the interim familiarization.
- e) All personnel performing hotel services duties shall review and update their knowledge on food safety on a yearly basis.
- f) Each vessel or station shall prepare standing orders and work instructions to ensure that messing areas, food preparation areas, food storage areas and the equipment used to prepare food, are used according to the manufacturer's recommendations and maintained so as to ensure sanitation and avoid cross contamination and bacterial growth. These documents shall be easily accessible by hotel services personnel.
- g) Food premises, which have become infested or where extermination activities have taken place shall be reported through the use of an Incident Investigation Report as an unsatisfactory condition.
- h) Where the employer provides employees with a food preparation area including a fridge and a heating appliance, the requirements within the *Food Safety Code of Practice for Canada's Foodservice Industry* shall apply to avoid risk to the vessel's or station's complement from food-borne illness, injury or disease.
- i) Temperatures in non-commercial refrigerators shall be recorded once per day. Hotel services employees shall report any irregular variance in temperature while performing their daily routines.
- j) Each vessel shall establish a list of environmentally friendly cleaning products, detergents, soaps and chemicals to be used onboard.

#### DOCUMENTATION

- [Canadian Coast Guard Fleet Order 450.00 Hotel Services](#)
- [Canadian Coast Guard Fleet Order 452.00 Officer and Crew Accommodation - CCG Ships](#)
- [Canadian Coast Guard Logistics Standards \(DFO 5758\)](#)
- [Maritime Occupational Health and Safety Regulations](#)
- Standing Orders
- Training tools and videos that meet Canadian standards and are recognized by provincial authorities
- Site Specific Work instruction
- Deck Log Entries
- Refrigerators and freezers temperatures log
- Food Safety Code of Practice for Canada's Foodservice Industry





# Fleet Safety Manual

## 7.A.12 – Potable Water Quality

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### 1 Purpose

- a) To ensure that potable water supplied from Canadian Coast Guard (CCG) facilities and on board CCG vessels for drinking and food preparation meet the Government of Canada [Canadian Drinking Water Guidelines](#). The information provided in this Fleet Safety Manual (FSM) procedure applies to the drinking, cooking, washing water produced, purchased in bulk, and stored and distributed from CCG facilities and on board CCG vessels.

### 2 Responsibilities

#### 2.1 Senior director, Fleet

The senior director, Fleet or their delegate is responsible for ensuring:

- a) information pertaining to the quality of water at specific locations where the vessel intends to load potable water is available
- b) they review recommendations for corrective measures from Integrated Technical Services (ITS), Marine Engineering (ME) in a timely manner, and implement the appropriate corrective measures

#### 2.2 Commanding officer

The commanding officer is responsible for ensuring:

- a) potable water taken on board the vessel, or manufactured on board, is tested on a regular basis to ensure that water quality meets the standards prescribed in the Government of Canada [Canadian Drinking Water Guidelines](#)
- b) any potable water irregularities and observations, including any measures that have already been taken, are reported to the regional manager, Coast Guard Safety Management (CGSM)
- c) all documents concerning potable water quality are adequately completed, checked, readily available upon request, and maintained on board
- d) potable water obtained for the vessel from hydrants or fill stations is water that is suitable for consumption and use on board CCG vessels

## 2.3 Chief engineer

The chief engineer is responsible for ensuring:

- a) fitted water production, storage, purification, and distribution equipment is maintained to the manufacturer's standard, and that potable water tanks are inspected regularly
- b) all maintenance performed on the potable water system is recorded in the on-board asset management system (AMS)
- c) only equipment suitable for use in potable water applications is used
- d) potable water quality related issues that may present a health or safety risk are to be documented, when appropriate, by completing an [Incident Investigation Report](#) (IIR) in accordance with FSM [9.B.1 - Reports of Hazardous Occurrences, Marine Occurrences and Other Reportable Incidents](#)

## 2.4 Manager, Coast Guard Safety Management

The regional manager, CGSM, is responsible for ensuring:

- a) the information in 2.3 d) is forwarded to the regional superintendent, Marine Engineering and the ME group in headquarters at the following generic email address: [cgmmedoccontrol.xnat@dfo-mpo.gc.ca](mailto:cgmmedoccontrol.xnat@dfo-mpo.gc.ca)

## 2.5 Regional Operations Centre

- a) The Regional Operations Centre (ROC) is the emergency contact point for laboratories reporting contamination in vessel/station test water samples.
- b) The ROC is responsible for ensuring that all lab results have been distributed to the vessel, ME, and the regional manager, CGSM.

## 2.6 Director, Marine Engineering

The Director, Marine Engineering, or their delegate, is responsible for ensuring:

- a) potable water quality related issues raised by the vessel or station are responded to in a timely manner
- b) potable water records held by ME are maintained per Section 3.11 b)

## 2.7 Director, Coast Guard Safety Management

The Director, CGSM, or their delegate, is responsible for ensuring:

- a) potable water quality related issues raised by the vessel or station are responded to in a timely manner

# 3 Instructions

## 3.1 General

- a) All personnel with potable water responsibilities must review the training media and documentation in accordance with Section 3.12.
- b) Site specific work instructions (SSWIs) are to be developed to ensure recording of potable water activities on board vessels/stations are consistent and records are readily available upon request.



- c) Copies of all water analysis reports received in accordance with this procedure, regardless of the results, are to be sent to ME at [ccgmedoccontrol.xnat@dfompo.gc.ca](mailto:ccgmedoccontrol.xnat@dfompo.gc.ca)
- d) All faucets accessible to the vessel/station complement that are not connected to a supply of potable water are to be clearly marked “NON-POTABLE WATER / EAU NON POTABLE”, to indicate that the water provided from the faucet is not suitable for drinking or food preparation.
- e) To ensure potable water safety, in empty cabins or seldom-used spaces, SSWIs or AMS tasks must include:
  - i. on a weekly basis, the potable water fixtures in these areas are opened for a minimum of 30 seconds, in order to allow stagnant water in the piping system to be flushed
  - ii. appropriate signage is placed above the potable water source
  - iii. new occupants of a cabin are to open the potable water fixtures for a minimum of 30 seconds to allow the pipes to be flushed

### **3.2 Marine Engineering headquarters – Instructions**

- a) ME is to recommend corrective measures to the senior director, Fleet and/or the superintendent, Marine Engineering, when appropriate, in the following, but not limited to, situations:
  - i. an exceedance of maximum acceptance concentration (MAC) values is indicated on a water analysis report
  - ii. a review of the inspection reports indicates a problem in the vessel or station potable water system
- b) ME is to provide subject matter expertise to the Fleet on matters related to potable water systems on board vessels or at shore sites.
- c) Participate in corrective measures as appropriate

### **3.3 Shore supply**

- a) To ensure that standing water in the shore supply system has been cleared from the pipe, dock hydrants or fill stations water must be flushed for at least 5 minutes at full volume, before being connected to the vessel's fill hose.
- b) Water obtained from dock hydrants or fill stations must be carried from the hydrant to the vessel in potable water grade hoses, which have been specifically marked for the carriage of potable water. These hoses are to only be used for the purpose of carrying potable water.
- c) When not in use these hoses are to be drained, kept capped, and are to be stored in a clean secured locker fitted with a tamper resist mechanism. The locker is to be used only for potable water equipment.
- d) Potable water fill stations and all exterior potable water sounding pipes, unless they double as the vent piping for the tank, must be fitted with a locking mechanism that is

to be in use at all times. This locking mechanism will be checked regularly for any breach to security<sup>1</sup>.

- e) If, at any time, it becomes necessary to temporarily supplement the vessel's potable water grade supply hoses with an additional hose(s), or to connect to a tank operators' hose, the additional hose(s) must be doused with unscented bleach.

**Note 1:** Hoses used for oily water, sewage, grey water, or fuel must not be used to supplement the vessel's potable water supply hose.

- f) The concentration of bleach is to be 1 cup (250 ml) per 25 feet of 2 inch hose filled with water and let sit for 30 minutes. The hose must then be flushed with the equivalent of 5 volumes of water or for 2 minutes prior to use. For longer hoses, and hoses with a larger diameter, a calculation is required to determine the necessary amount of chlorine.

### 3.4 Water produced on board

- a) Variances:
  - i. There may be occasions where, due to the nature of the operations being conducted, or the physical capacities of the vessel, parts of this procedure cannot be followed exactly. In such situations, the commanding officer must take all prudent measures to ensure that the potable water provided is safe for consumption.
  - ii. When the vessel is in a contracted refit where the contractor is to supply potable water to the crew, the commanding officer must ensure that the contractor supplies the necessary potable water certificates.
- b) Potable water production equipment must be operated and maintained in accordance with the manufacturer's instructions and the SSWIs.

### 3.5 Engineer officer of the watch

- a) The engineer officer of the watch (EOW) must produce water only when advised by the deck officer of the watch (OOW) that the geographic and operational limitations are favourable. The EOW must stop producing water immediately upon being advised by the OOW on the bridge that conditions are no longer favourable.
- b) When vessels manufacture water on board, the following conditions must be considered. The vessel must:
  - i. be underway
  - ii. assess the possibility of contamination from shore sources in the area
  - iii. monitor overboard discharges to avoid contamination in the area
  - iv. be a minimum of 1 nautical mile from shore, or ensure that there is no contamination in the area
  - v. not be in an area where there is a red tide algae bloom warning
- c) Where raw water for producing potable water is being drawn from a shared sea bay that is also used for sea water cooling, the sea water cooling system must not be in recirculation mode.

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<sup>1</sup> [Marine Transportation Security Regulations](#), Section 240 and the Vessel Security Plan

- d) Regionally specified local prohibitions must be observed.
- e) When water production equipment is observed to be operating outside of manufacturer's specifications, the equipment is to be tagged and locked-out from the potable water system until the equipment is repaired.

### 3.6 Disinfection

- a) All potable water, whether bulk purchased or produced on board, must be tested to ensure that an appropriate amount of free chlorine exists in the piping distribution system and if fitted, it passes through a functioning irradiation device prior to being used. See section 3.7.1 b).

**Note 2:** Chlorination standard is 0.2 to 0.5 mg/L. To attain a free chlorine level of 0.5 mg/L, add unscented bleach in accordance with the following equation:

- Litres of bleach to be added per 100 m3 of water in the tank =  $5/Y\%$  sodium hypochlorite.

As an example:

- i. For 5% sodium hypochlorite, add 1 L / 100 m3 of water in the tank  
( $5/5 = 1$  L)
- ii. For 6.1% sodium hypochlorite, add 0.82 L / 100 m3 of water in the tank  
( $5/6.1 = 0.82$  L)
- iii. For 12% sodium hypochlorite, add 0.42 L / 100 m3 of water in the tank  
( $5/12 = 0.42$  L)

**Note 3:** Irradiation standard is 254 nm at a minimum ultraviolet dosage of 16,000  $\mu\text{W.s/cm}^2$ .

- b) After entry into a potable water tank for any purpose, the tank must be cleaned and super-chlorinated with bleach to a level of 50 mg/L of free chlorine. All taps from this tank must be turned on to supply super-chlorinated water to all pipes. It may be necessary to bypass charcoal filtration to ensure chlorinated water is in all parts of the system. The super-chlorinated water must be allowed to sit in the tanks for a minimum of 4 hours before being flushed.

**Note 4:** Super-chlorination is achieved by adding unscented bleach in accordance with the following equation:

- Litres of bleach to be added per 100 m3 of water in the tank =  $500/Y\%$  sodium hypochlorite.

As an example:

- i. For 5% sodium hypochlorite, add 100 L / 100 m3 of water in the tank  
( $500/5 = 100$  L)
- ii. For 6.1% sodium hypochlorite, add 82 L / 100 m3 of water in the tank  
( $500/6.1 = 82$  L)
- iii. For 12% sodium hypochlorite, add 42 L / 100 m3 of water in the tank  
( $500/12 = 42$  L)

- c) Discharges of wastewater containing free chlorine with a concentration of 0.5 mg/L or greater, are restricted by the [Vessel Pollution and Dangerous Chemicals Regulations](#)<sup>2</sup>.
- d) Super-chlorinated water must be de-chlorinated to a free chlorine level below 0.1 mg/L if the discharge takes place at least 100 meters from any seawater intake or aquaculture holding area.
- e) If super-chlorinated water cannot be treated for overboard discharge as outlined in this procedure, then the water must be removed by tanker truck for disposal in accordance with provincial or territorial regulations.
- f) Water can be dechlorinated by the introduction of hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>):
  - i. 71 grams of free chlorine are removed by 34 grams of hydrogen peroxide
  - ii. 1 m<sup>3</sup> of water at 50 mg/L free chlorine contains 50 grams of free chlorine
  - iii. 1 L of 35% strength hydrogen peroxide contains 350 grams of H<sub>2</sub>O<sub>2</sub>
  - iv. To ensure complete free chlorine removal, 33% overdosing with hydrogen peroxide is the Fleet standard. Use the following formula to determine the dosing level Y = amount of free chlorine (in grams) to be removed:

$$Y \times 0.478 \times 2.857 \times 1.33 = \text{ml of H}_2\text{O}_2 \text{ solution}$$

To treat 1 m<sup>3</sup> of water containing 50 mg/L of free chlorine requires approximately 91 mL of 35% hydrogen peroxide:

$$50 \times 0.478 \times 2.857 \times 1.33 = 90.81 \text{ ml H}_2\text{O}_2 \text{ solution}$$

- g) The procedure to be followed for dechlorination is as follows:
  - i. Using the formula given above, add the calculated amount of hydrogen peroxide required to a mixing tank. A ballast tank is suggested but the potable water tank can be used.
  - ii. Using a hose and a quick-connect backflow prevention fitting on the potable water tank drain; dump the potable water tank through the valve manifold to the mixing tank. Permanent connections between the potable water tank and any other tank without an anti-siphoning device or backflow preventers are not permitted.
  - iii. Test water in the mixing tank for free chlorine level – must be less than detectable level (i.e. <0.1 mg/L).
  - iv. If any free chlorine is detected, add an additional amount of hydrogen peroxide (50% of the original amount used) through the appropriate tank vent(s) and retest.
  - v. If the free chlorine level in the mixing tank is less than 0.1 mg/L, discharge water in accordance with 3.6 d) above.
  - vi. If the free chlorine level in the mixing tank is above 0.1 mg/L; advise the chief engineer and lockout the tank to prevent the potential for overboard discharge, unless there is an emergency affecting the safety of the vessel. Otherwise, the water in the mixing tank must be discharged to a tanker truck on shore for disposal.

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<sup>2</sup> [Marine Transportation Security Regulations](#), Section 240 and the vessel security plan

- h) Record the volume of water discharge, location, and the results of tests, including the type of test kit, showing free chlorine levels less than detection (<0.1 mg/L) for a minimum of 3 samples: beginning, middle, and end of discharge.

### **3.7 Potable water testing and reporting<sup>3</sup>**

#### **3.7.1 Disinfection – vessels or stations that store water**

- a) A vessel/station using chlorine as a disinfection agent must conduct daily<sup>4</sup> checks of the free chlorine level of the potable water in the tanks to ensure that free chlorine is maintained between 0.2 and 0.5 mg/L. Tests must be conducted at the tank, and at a minimum, 2 other downstream outlets: 1 outlet must be selected at random; and 1 outlet on the longest run of pipe. The results must be recorded and readily available upon request.
- b) Regardless of the source of supply, if the vessel/station uses ultraviolet irradiation on each potable water tank for disinfection, the level of irradiance is to be checked daily to ensure that it is within the manufacturer's specification for adequate drinking water disinfection. The results will be recorded and readily available upon request.
- c) If chlorine is not introduced to establish a residual chlorine level for maintaining disinfection in the distribution system, then weekly checks must be made for Escherichia coli (E. coli) and total coliform bacteria. Tests must be conducted at the potable water tank and on a minimum of 2 downstream outlets: 1 outlet must be selected at random; and 1 outlet at the termination of the longest run of pipe. The results are to be recorded.
- d) Free chlorine test kits must have sufficient accuracy to determine 0.1 mg/L and greater of free chlorine.
- e) When free chlorine levels are observed to be below 0.2 mg/L, tanks must be re-chlorinated with a secondary chlorine source (for example: bleach) to be brought back to approximately 0.5 mg/L by dosing the tanks as outlined in Section 3.5 a) above. If there are any concerns regarding the suitability of the water for consumption, the tank must be emptied, flushed with fresh water, super-chlorinated at a level of up to 50 mg/L free chlorine as outlined in Section 3.5 b) above and then recharged.

#### **3.7.2 Potable water testing - vessels or stations that store water**

- a) A CCG vessel or station that stores water must collect potable water samples for analysis in accordance with the 29 water quality parameters identified in Annex I of this procedure every 3 months when in service, or prior to returning a potable water tank into service following any maintenance or repairs conducted to the internal parts of the tank, including the coating and internal parts of the system:
  - i. Samples must be collected from the potable water tank(s), and at a minimum, from 2 downstream outlets: 1 must be selected at random; and 1 must be at the outlet furthest from the tanks.

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<sup>3</sup> See Annexes II to III for tables summarizing the frequencies for testing and disinfection

<sup>4</sup> Industry best practice

### 3.7.3 Potable water testing - continuous municipal source only

- a) A station on a continuous supply of municipal water must collect water samples for analysis of all 29 water quality parameters identified in Annex I once per year, or prior to returning a system into service following any maintenance or repairs conducted to the internal parts of the system.
  - i. Samples must be collected at a minimum, from 2 downstream outlets: 1 must be selected at random; and 1 must be at the outlet furthest from the source.
- b) If the station is seasonal, the sample is to be taken at the commencement of the operational season

### 3.7.4 Handling of water samples

- a) The samples are to be shipped and delivered within 24 hours of being collected, to an independent laboratory. The independent laboratory must be ISO 9002 certified, with accreditation from a recognized Canadian accreditation body for conducting the 29 water quality parameters. The recognized body must include at least one of the following:
  - i. the Canadian Association for Laboratory Accreditation Inc. (CALA)
  - ii. a Canadian provincial ministry, for example: British Columbia Ministry of Environment, Ministry of Sustainable Development, Environment and the Fight against Climate Change — Quebec (MSDEFC), the Ontario Ministry of the Environment (MOE)
  - iii. the Standards Council of Canada (SCC)
- b) The analysis should be completed and returned to the vessel and shore management within 5 working days.
- c) When sending water samples to the laboratories for analysis, the vessel/station must ensure that the ROC and ME at [ccgmedoccontrol.xnat@dfo-mpo.gc.ca](mailto:ccgmedoccontrol.xnat@dfo-mpo.gc.ca) are listed as the immediate contact points for the vessel/station in the event that sample results exceed any of the MAC values described in Annex I. If the laboratory will only accept one immediate contact, the results are to be sent to the ROC.
- d) If the test results indication an exceedance of the MAC values, the vessel must report this as an incident in accordance with FSM [9.B.1 Reports of Hazardous Occurrences, Marine Occurrences and other Reportable Incidents](#).

## 3.8 Connections to the potable water system

- a) When potable water is delivered under pressure to a non-potable water system, the potable water must be protected against backflow/contamination through the use of backflow preventers, air gaps, or anti-siphoning devices as appropriate, between the potable water system connections and the non-potable water systems. Backflow preventers must be located so they can be serviced and maintained.
- b) The maintenance and testing of these devices must be done per the manufacturer's recommendations, and must be included in the vessel/station preventative maintenance system.
- c) Backflow preventers must be fitted on the following potable water connections:
  - i. ballast systems
  - ii. bilge or other waste water connections
  - iii. boiler feed water tanks

- iv. chilled water fountains
- v. coffee machines
- vi. dishwashers
- vii. fire systems
- viii. garbage grinders
- ix. ice machines
- x. international shore connections
- xi. laundry equipment
- xii. self-cleaning range hoods
- xiii. sick bays and their associated equipment
- xiv. steam tables
- xv. toilets

### 3.9 Potable water tank inspections

- a) At the time of the potable water tank inspection, verification must be made of the physical piping (bulkhead, vent, load lines, fill line, hoses, etc.) to ensure new repairs or alternations conform with the current version of standard [NSF/ANSI/CAN/61 - 2020 Drinking Water System Components – Health Effects](#)<sup>5</sup>.
- b) The results of the inspection, including photos, are to be sent to the attention of ME at [ccgmedoccontrol.xnat@dfo-mpo.gc.ca](mailto:ccgmedoccontrol.xnat@dfo-mpo.gc.ca) within 21 days following the inspection.

### 3.10 Potable water tank coatings

- a) Information on the management of potable water tank coatings can now be found in FSM [7.A.13 – Potable Water Tank Coatings](#).

### 3.11 Record retention

- a) Potable water sample analyses and tank inspections must be maintained on board or at the station for a period of 5 years<sup>6</sup> from the receipt of the results.
- b) Records maintained by ME will be retained for 5 years<sup>6</sup>. Records of exceedances held by ME will be archived for a minimum of 25 years<sup>6</sup>.

### 3.12 Training media

- a) Vessel and station personnel who are responsible for water quality, filling potable water storage tanks, bottled water exchange, and/or the maintenance of any portion of the potable water system from source to final distribution point, as applicable to their site, must view the applicable training media and read the supplied documentation. This requirement must be added to the initial familiarization routines of the identified positions on board each vessel or at each site.

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<sup>5</sup> Available for purchase

<sup>6</sup> CCG requirement

- b) [Water Quality Training](#) (9 videos available online):
- i. all directors, directors general, assistant commissioners, the Deputy Commissioner, Operations, and the Commissioner must view video 1 from the following list
  - ii. all managers and supervisors must view videos 1 and 2 from the following list
  - iii. all CGSM personnel, (director, managers, compliance auditors and officers) must view videos 1 thru 9 from the following list
  - iv. all users of water on board CCG vessels are encouraged to view videos 1 thru 9 from the following list to become familiar with the process of providing potable water

**The following 9 videos are available on the [Water Quality Training](#) website:**

1. Safe Drinking Water – Your Responsibility
2. Water Sampling in Federal Facilities
3. Ultraviolet & Reverse Osmosis for Micro-Systems
4. Drinking Water Storage Tanks
5. Bottled Water: Selection & Application in Federal Facilities
6. Water Wells for Micro-Systems
7. Water Filtration and Ion Exchange for Micro-Systems
8. Disinfection for Micro-Systems
9. Advice for the Operation of Potable Water Field Test Equipment

**The following 9 documents are available on the [Water Quality Training - Documents & Related Information](#) website for reference:**

1. Safe Drinking Water Narration
2. Water Filtration and Ion Exchange for Micro-Systems
3. Water Wells for Micro-Systems
4. Bottled Water in Federal Facilities
5. Drinking Water Storage Tanks
6. Ultraviolet & Reverse Osmosis
7. Water Sampling
8. Disinfection for Micro-Systems
9. Advice for the Operation of Potable Water Field Test Equipment

## 4 Documentation

- Deck log records of water taken on board
- Engine room log of water produced on board
- Laboratory test certificates
- Records of on board testing:
  - disinfection tests – free chlorine or ultraviolet levels
  - dechlorinated water discharge tests
- Records of any repairs, modifications, or maintenance



- Records of annual audits conducted on the potable water system and control documentation that confirm compliance with this procedure
- Site specific work instructions

## 5 References

- [Canadian Drinking Water Guidelines](#)
- [Guidance for Providing Safe Drinking Water in Areas of Federal Jurisdiction](#)
- [Vessel Pollution and Dangerous Chemicals Regulations](#)
- [Water Quality Training](#) – Videos
- [Water Quality Training](#) – Documents & Related Information
- [CCG/5737 - Fleet Safety Manual](#) - 7.A.13 – Potable Water Tank Coatings
- [NSF/ANSI/CAN/61 - 2020 Drinking Water System Components – Health Effects](#)<sup>7</sup>

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<sup>7</sup> Available for purchase.

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## Annex I Potable water testing parameters – Section 3.7

The following is a list of the 29 water quality parameters that must be analyzed in accordance with the testing requirements in Sections 3.7.2 and 3.7.3. The MAC values from the current [Canadian Drinking Water Guidelines](#) are shown on the right of each test parameter. Please note that the Guidelines can change without notice. Prior to collecting potable water samples, please consult the [Canadian Drinking Water Guidelines](#) to ensure that the health-based and aesthetic objectives values listed below have not changed since the publishing of this document.

In the event the MAC values in the table below change before the table can be updated, the testing performed at the laboratory uses the most current information identified in the [Canadian Drinking Water Guidelines](#).

| Health-based Objectives |              | Aesthetic Objectives   |                     |
|-------------------------|--------------|------------------------|---------------------|
| Antimony                | 0.006 mg/L   | Chloride               | 250 mg/L            |
| Barium                  | 1.0 mg/L     | Colour                 | 15 TCU              |
| Benzene                 | 0.005 mg/L   | Copper                 | 1.0 mg/L            |
| Boron                   | 5.0 mg/L     | Iron                   | 0.3 mg/L            |
| Cadmium                 | 0.005 mg/L   | Manganese              | 0.02 mg/L           |
| Chromium                | 0.05 mg/L    | pH                     | 7.0 – 10.5 pH Units |
| <i>E. coli</i>          | 0 per 100 ml | Sodium                 | 200 mg/L            |
| Ethylbenzene            | 0.14 mg/L    | Sulphates              | 500 mg/L            |
| Fluoride                | 1.5 mg/L     | Toluene                | 0.024 mg/L          |
| Lead                    | 0.005 mg/L   | Total dissolved solids | 500 mg/L            |
| Mercury                 | 0.001 mg/L   | Zinc                   | 5 mg/L              |
| Nitrate/Nitrite         | 45 mg/L      |                        |                     |
| Selenium                | 0.05 mg/L    |                        |                     |
| THM                     | 0.1 mg/L     |                        |                     |
| Total coliform          | 0 per 100 ml |                        |                     |
| Turbidity               | 1 NTU        |                        |                     |
| Uranium                 | 0.02 mg/L    |                        |                     |
| Xylenes                 | 0.09 mg/L    |                        |                     |

**Note 5:** Aesthetic quality guidelines address parameters, which may affect consumer acceptance of drinking water, such as taste, odour, and colour.

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## Annex II Potable water testing frequency – Section 3.7

| Type of supply                       | # of parameters to be tested | Testing frequency   | Collection points for samples   |
|--------------------------------------|------------------------------|---|---|
| Vessels or stations that store water | 29                           | Every 3 months or prior to returning the system to service after maintenance or repairs   | Must be collected from the potable water tank(s), and at a minimum, from 2 downstream outlets: 1 must be selected at random; and 1 must be at the outlet furthest from the tanks. |
| Continuous municipal supply only     | 29                           | Annually or prior to returning the system to service after maintenance and repairs.<br>If the station is seasonal, at the commencement of the operational season. | Must be collected at a minimum, from 2 downstream outlets: 1 must be selected at random; and 1 must be at the outlet furthest from the source                                     |

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## Annex III Disinfection testing frequency – Section 3.7

When chlorine is used to establish a residual level of maintaining disinfection in a distribution system:

| Type of supply   | Level of chlorine        | Testing frequency | Collection points for samples   |
|--|--------------------------|-------------------|---|
| Vessels or stations that store water and use chlorine for disinfection | between 0.2 and 0.5 mg/L | Daily             | Must be collected from the potable water tank(s), and at a minimum, from 2 downstream outlets: 1 must be selected at random; and 1 must be at the outlet furthest from the tanks. |

When chlorine is not used to establish a residual level for maintaining disinfection in the distribution system:

| Type of supply   | Level of <i>E. coli</i> and total coliform bacteria | Testing frequency | Collection points for samples   |
|--|---|-------------------|---|
| Vessels or stations that store water and do not use chlorine to establish a residual level for maintaining disinfection in the distribution system | 0 per 100 ml  | Weekly            | Must be collected from the potable water tank(s), and at a minimum, from 2 downstream outlets: 1 must be selected at random; and 1 must be at the outlet furthest from the tanks. |

When ultraviolet irradiance is used for the disinfection of water in the distribution system:

| Type of supply  | Minimum level of irradiance | Measurement frequency | Location Point            |
|---|-----------------------------|-----------------------|---------------------------|
| Vessels or stations that store water and use ultraviolet irradiation for disinfection | 254 nm                      | Daily                 | At the unit display meter |







# Fleet Safety Manual

## 7.A.13 – Potable Water Tank Coatings

### 1 Purpose

- a) To ensure that potable water supplied from coated potable water tanks at Canadian Coast Guard (CCG) facilities and on board CCG vessels is safe. The following applies to the application and maintenance of CCG potable water tank coatings.

### 2 Responsibilities

#### 2.1 Senior director, Fleet

The senior director, Fleet or their delegate is responsible for ensuring:

- a) that all the necessary steps are taken by Fleet personnel to ensure that the potable water tank coatings are applied, and cured in accordance with the manufacturer's recommendations.

#### 2.2 Commanding officer

The commanding officer or their delegate is responsible for ensuring that:

- a) potable water in the recently coated tank is sampled, sent for analysis, and confirmed to meet the maximum acceptable concentration (MAC) limits for the 29 water quality parameters listed in Annex I of the [Fleet Safety Manual \(FSM\) 7.A.12 – Potable Water Quality](#), prior to returning the tank to service
- b) all potable water tank coating deficiencies are communicated as soon as possible to shipboard personnel, the appropriate occupational health and safety committee, the appropriate vessel maintenance manager, and the Marine Engineering (ME) group in headquarters at the following generic email address: [ccgmedoccontrol.xnat@dfo-mpo.gc.ca](mailto:ccgmedoccontrol.xnat@dfo-mpo.gc.ca)
- c) all documents concerning potable water tank coatings are adequately completed, checked, readily available upon request, and maintained on board the vessel

#### 2.3 Chief engineer

The chief engineer or their delegate is responsible for ensuring that:

- a) the selected coating holds a valid National Sanitation Foundation (NSF) / American National Standards Institute (ANSI) / Canada (CAN) Standard 61 certification for the

intended use, including tank volume, throughout the duration of the coating work period

- b) when an epoxy coating is used, only 100% solids epoxy, volatile organic compound (VOC) free (United States Environmental Protection Agency [USEPA] Method 24) products are to be used to coat or patch potable water tanks
- c) if a different NSF/ANSI/CAN 61 coating other than the currently applied coating is being considered, an approval must be requested from ME by emailing [ccgmedoccontrol.xnat@dfo-mpo.gc.ca](mailto:ccgmedoccontrol.xnat@dfo-mpo.gc.ca), prior to application
- d) written proof or certification of a valid NSF/ANSI/CAN Standard 61 certification for the coating applied is provided by the contractor
- e) the contractor follows the manufacturer's application processes and cure time
- f) the service of a certified National Association of Corrosion Engineers (NACE) International coating inspector with a minimum certification of Coating Inspector Program Level 2, be provided by the CCG to verify the entire coating application process is conducted in accordance with the coating manufacturer's instructions
- g) the contractor is to use all new equipment for the application of the coating, including pumps, hoses, spray guns, and brushes with the following considerations:
  - i. equipment that was cleaned using thinners or solvents must not be used during the coating application process
  - ii. equipment that was cleaned using thinners or solvents must not come in to contact with the coating at any stage prior to, during, and/or after the coating is applied
- h) the re-use of pumps, not hoses, may be permitted if the contractor demonstrates that they have been cleaned and/or flushed with a product that is ANSI/NSF/CAN Standard 61 certified for use in potable water tanks, and the product does not contain any solvents
- i) when the tank coating is cured, the tank is to be filled with potable water for the purpose of testing for VOCs only. After 24 hours, water samples are to be collected directly from the tank and sent for analysis to ensure VOCs are not present in the water. Refer to [FSM 7.A.12 - Potable Water Quality](#), Section 3.7.4 for instructions on submitting the sample for VOC testing. Provided the VOC analysis results are acceptable, the tank is to be super-chlorinated in accordance with the procedures outlined in Section 3.6 of [FSM 7.A.12 – Potable Water Quality](#)
- j) following the completion of the super-chlorination procedures, baseline water samples are to be collected directly from the tank and analyzed in accordance with the 29 water quality parameters listed in Annex I of [FSM 7.A.12 – Potable Water Quality](#)

## 2.4 Manager, Coast Guard Safety and Security

The regional manager, Coast Guard Safety and Security (CGSS) or their delegate is responsible for ensuring:

- a) the information in 3.1 b) is sent to the attention of the regional superintendent, Marine Engineering and to the ME in headquarters at [ccgmedoccontrol.xnat@dfo-mpo.gc.ca](mailto:ccgmedoccontrol.xnat@dfo-mpo.gc.ca).

## 3 Instructions

### 3.1 General

- a) The commanding officer and the chief engineer must immediately report, by phone or email, any potable water VOC contamination to the appropriate vessel maintenance manager.
- b) The commanding officer and the chief engineer must follow the instructions listed in [FSM 9.B.1 – Reports of Hazardous Occurrences, Marine Occurrences and Other Reportable Incidents](#), to report any potable water VOC contamination or coating non-adherence, or any other deficiency of the potable water distribution system by completing an Incident Investigation Report (IIR).
- c) When sending water samples to the laboratories for analysis, the vessel/station must ensure that the ROC and ME at [ccgmedoccontrol.xnat@dfo-mpo.gc.ca](mailto:ccgmedoccontrol.xnat@dfo-mpo.gc.ca) are listed as the immediate contact points for the vessel/station in the event that sample results exceed the MAC values in [FSM 7.A.12 Potable Water Quality](#), Annex I. If the laboratory will only accept one immediate contact, the results are to be sent to the ROC. The regional manager, CGSS, is to forward the results to ME.
- d) The vessel must retain a copy of the results of the 29 water quality parameters analysis based on the actions taken in 2.3 i) and j) of this procedure, and in accordance with Section 3.11 of [FSM 7.A.12 Potable Water Quality](#).
- e) Copies of all water analysis reports received in accordance with this procedure, regardless of the results, are to be sent to ME at [ccgmedoccontrol.xnat@dfo-mpo.gc.ca](mailto:ccgmedoccontrol.xnat@dfo-mpo.gc.ca).

## 4 Documentation

- Deck log records of water taken on board
- Engine room log of water produced on board
- Laboratory test certificates
- IIR
- Records of on board testing:
  - disinfection tests – free chlorine or ultraviolet levels
  - dechlorinated water discharge tests
- Records of any repairs, modifications, or maintenance

## 5 References

- [CCG/5737 – Fleet Safety Manual](#) – 7.A.12 – Potable Water Quality
- [CCG/5737 - Fleet Safety Manual](#) – 9.B.1 - Reports of Hazardous Occurrences, Marine Occurrences and Other Reportable Incidents
- [Water Quality – Reports and Publications](#)
- [Canadian Drinking Water Guidelines](#)
- [CCG ITS Technical Bulletin](#) – 2015-01 Potable Water Tank Epoxy Based Surface Coatings



# Fleet Safety Manual

## 7.B.1 - DIVING OPERATIONS

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### 1 PURPOSE

#### 1.1 GENERAL

- a) To ensure safe working conditions are provided for all diving operations deployed from or in support of, Canadian Coast Guard (CCG) vessels.

**Diving: Includes any underwater activity that employs scuba or surface supply air.**

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTOR, FLEET OR REGIONAL DIRECTOR, INTEGRATED TECHNICAL SERVICES

- a) The Regional Director, Fleet or Regional Director, Integrated Technical Services (ITS) (as applicable) are responsible for ensuring that this procedure is observed for all diving operations conducted from, or in support of, CCG vessels or units.

#### 2.2 COMMANDING OFFICER

- a) The Commanding Officer shall in all cases provide assistance to Diving Supervisors and divers with respect to provision of safe working conditions, planning of diving operations, and emergency and contingency planning.

#### 2.3 ANY CCG OFFICIAL WHO ENGAGES A COMMERCIAL DIVING SERVICE

- a) Any CCG official who engages a commercial diving service is responsible for ensuring that the requirements of this procedure, and any other procedures issued by the regulatory authority responsible for the enforcement of regulations for the safety and protection of divers, are incorporated within the body of the contract.

#### 2.4 DIVING SAFETY COORDINATORS

- a) The Local Area Diving Safety Coordinator has the authorization to review and approve all scientific diving plans. This review and approval shall be communicated to the National and Regional Diving Safety Coordinators, as well as the Commanding Officer in writing, or by facsimile message, prior to the commencement of diving operations. Where there is no Local Area Diving Safety Coordinator, the Regional Diving Safety Coordinator shall review and approve scientific diving plans.
- b) Prior to the commencement of any dives, the Regional or Local Area Diving Safety Coordinator is responsible for ensuring that the regulations appropriate to the dive are identified and shall be observed by the party conducting the dive.

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### 3 INSTRUCTION

#### 3.1 GENERAL

- a) When contracting diving services, a statement shall be included in the body of the contract to direct compliance with this procedure. An UNCONTROLLED copy of this procedure should be attached to the contract and supplied to the contractor.

#### 3.2 BASIC REQUIREMENTS

- a) The diver shall operate within the existing Provincial, Territorial, or Federal Diving Regulations as appropriate to the location and mode of dive planned. Contact the Regional Diving Safety Coordinator for DFO, for clarification on regulations that may apply. Contact information can be located on the [DFO Diving Safety Program](#) site.
- b) Prior to being contracted, a commercial diving company shall provide proof of appropriate liability insurance.
- c) A commercial diving company shall provide notice of the diving operation to the Provincial Regulatory Authority (as appropriate) and a copy of this notification shall be produced before the dive commences.
- d) Divers operating under a scientific program, either sponsored, assisted, or operated by the Department, shall have clearance for conducting diving operations that have been endorsed by the Local Area or Regional Diving Safety Coordinator.
- e) The Commanding Officer shall ask, and receive assurances from, the Diving Supervisor that the diving operation shall be conducted in accordance with regulatory requirements including verification of diver logbooks, proper equipment and fitness to dive.
- f) Vessels shall develop a site-specific checklist for ensuring that procedures are followed in the conduct of diving operations.

**Note 1:** There may be confusion regarding regulatory authority for diving operations. Diving operations performed by federal government employees are required to meet the standard provided in the [Part XVIII - Diving Operations of the Canada Occupational Health and Safety Regulations](#) of the [Canada Labour Code](#). Contractors supplying diving services shall meet provincial and territorial regulations, as provinces and territories have specific regulations for diving operations. The Regional Diving Safety Coordinator can assist in determining what regulations may apply in a given situation.

#### 3.3 PLANNING OF DIVING OPERATIONS

- a) A detailed plan of diving operations including the contingency plan shall be presented by the contractor/diver and be discussed between the Diving Supervisor and the Commanding Officer (or the Designated Officer having knowledge of the diving operations plan), and agreed upon by all parties prior to the commencement of diving operations. The plan shall include:
  - A description of the underwater work that will be done.
  - The location of the work.
  - The planned maximum depth and bottom time of each dive.
  - The number of dives per day and the time of each dive.
  - The number of divers that will be in the water at any one time.
  - The number of dive attendants that will be on duty while divers are down.
  - The signal system that will be used to communicate with divers.
  - A list of requirements to be met by the vessel (shutdowns, lockouts, lookouts, boats, energy sources, tools, lines, etc.) Refer to the Fleet Safety Manual (FSM) section [7.B.5 - Lockout and Tagout](#)

- Contingency plans to deal with foreseeable emergencies.
  - This plan shall include the location and phone number of the nearest hyperbaric chamber.
- b) A copy of this plan shall be maintained on the Bridge.
- c) The Commanding Officer (or the Designated Officer, having knowledge of the diving operations plan), shall remain at the worksite to assist the Diving Supervisor as required during the diving operation.

### 3.4 CONDUCT OF DIVING OPERATIONS

- a) In accordance with [\*Collision Regulations of the Canada Shipping Act, 2001\*](#), applicable signals and shapes shall be displayed during diving operations. Where required, appropriate warning devices such as buoys, flags, lights, etc. shall be displayed to define the restricted access limits of the diving operations. Where appropriate a Notice to Shipping will be issued.
- b) The Commanding Officer, in consultation with the Chief Engineer and with the approval of the Diving Supervisor, is responsible for ensuring that the propulsion machinery, sea-suction and underwater discharge mechanisms, cathodic protection system or any other mechanisms that could pose a threat to the safety of the divers are secured in such a manner as to render the work site safe for diving operations.
- c) A general announcement is to be made informing all personnel that diving operations are taking place, and a notice to this effect posted in a suitable location in the engine room. The appropriate machinery lockout procedures shall be taken and logged.
- d) Where members of the vessel's complement have been assigned to support diving operations, the Commanding Officer (or the Designated Officer) shall, in conjunction with the Diving Supervisor, be responsible for ensuring that the members of the complement have been adequately briefed on the operations to be conducted and their respective responsibilities.
- e) A Diving Operations Checklist located in Annex D, shall be completed prior to the commencement of the actual dive and the return of divers. The completion of the Diving Operations Checklist shall be logged immediately upon completion.

### 3.5 SEARCH AND RESCUE TASKING

- a) The CCG Station at Sea Island, British Columbia is the only unit trained and equipped to conduct dive operations in response to a search and rescue tasking from Joint Rescue Coordination Centre (JRCC) Victoria. JRCC Victoria and Station procedures are to be followed in these instances.
- b) When divers are to be deployed, the Air Cushioned Vehicle (ACV) Commanding Officer shall, if previously designated, turn over all responsibilities as On Scene Coordinator to another vessel until such time as the dive operations are completed.

## 4 DOCUMENTATION

- Vessel-specific checklist
- Diving Plan
- Log Book Entries
- Departmental Diving Safety Procedures
- For SAR Dives
  - CCG Station Sea Island Diving Procedures
  - CCG Diver Training Program
  - CCG Diver Training Records







# Fleet Safety Manual

## 7.B.2 - FALL PROTECTION

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### 1 PURPOSE

- a) To ensure that work being performed aloft or over the vessel's side is performed safely in accordance with the [Maritime Occupational Health and Safety \(MOHS\) Regulations](#) and the [Canadian Coast Guard Fall Protection Program](#).

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer shall ensure that fall protection safety measures including an inspection program are in place and followed.

#### 2.2 MARINE SUPERINTENDENT

- a) The Marine Superintendent shall ensure that fall protection courses are provided so that Supervisors and others are sufficiently familiar with the principles of fall protection.

#### 2.3 SUPERVISORS

- a) Supervisors are responsible to ensure that proper safety equipment is provided and used correctly and that training has been provided to employees required to:
  - Install or remove fall protection system
  - Climb to heights which exceed 2.4 m
  - Formulate climb plans.

#### 2.4 ALL PERSONNEL

- a) All personnel working aloft shall be suitably trained in fall protection and the use of fall protection equipment and shall follow safety measures and work aloft checklists that have been put in place.

### **3 INSTRUCTION**

#### **3.1 CLIMB PLANS**

- a) A climb plan shall be formulated before beginning any climb or work where heights will exceed 2.4m
- b) Climb plans shall, as a minimum, be in compliance with requirements set out in the MOHS regulations (anchor strength, maximum free fall distance, maximum free fall force etc.). These plans shall also contain a RESCUE PLAN that is agreed upon and ensure that any required rescue equipment is readily available for the planned climb.
- c) Prior to ascent the climber shall verify condition of both the structure and the equipment to be used for the climb and shall perform inspections on fall protection anchors, fall protection systems, equipment lock-outs, and verify rescue plans are in place.

#### **3.2 INSPECTIONS AND RECORDS**

- a) The service life for all for all arrest equipment shall be based upon recommendations or requirements established by the manufacturer of the equipment.
- b) Before use, inspections shall be carried out on newly purchased equipment.
- c) When fall arrest equipment is being used onboard, fall-protection systems that will be used must be inspected prior to use to ensure that the equipment conforms to safety standards contained in the [MOHS Regulations Part 10 \(144\)](#). These standards are to be readily available.
- d) Records shall be maintained on the acquisition, maintenance and tests of all fall protection equipment in accordance with the requirements of the [MOHS Regulations, Part 1 \(4\)](#).
- e) Subsequent to its periodic inspection, equipment may be tagged with information identifying the equipment and providing a “do not use after” date.
- f) These tags should also correspond to a record, or history, for that item of equipment. This record should also include date of purchase, name of manufacturer, details of arresting service and results of subsequent inspection, inspection criteria.

#### **3.3 POST ARREST INSPECTIONS**

- a) Inspections shall be performed on any piece of equipment that was subject to an arresting force. The equipment shall be removed from service until it has been examined by a qualified person to ensure that the system has not been weakened and is still effective.
- b) Results of these inspections shall form part of the equipment record.

#### 4 DOCUMENTATION

- [Canadian Coast Guard Fall Protection Program](#)
  - Part I – Policy and Plan
  - Part II – Land based Fall Protection for Structures and Towers
  - Part III – Ship based Fall Protection
- Work Aloft Checklists
- Rescue Plans
- Log Book Entries
- Records of Inspection for fall arrest equipment





# Fleet Safety Manual

## 7.B.3 – Entry into Confined Spaces

### 1 Purpose

- a) To ensure that entry into confined spaces<sup>1</sup> is undertaken under safe and controlled conditions.

### 2 Responsibilities

#### 2.1 Commanding officer in consultation with chief engineer

The commanding officer is responsible for ensuring that:

- a) spaces that pose a risk must be identified and specific risks associated with those spaces are assessed and documented. This is to be kept with the site specific work instructions (SSWIs) that must be reviewed at least every 3 years<sup>2</sup> by a qualified person<sup>3</sup>, and entered in to the vessel specific risk register
- b) instructions and training on the procedures, as well as use of personal protective equipment (PPE) is provided to any person involved in any aspect of confined space entry
- c) while in operation, Canadian Coast Guard (CCG) vessels, crew members with confined space entry or rescue responsibilities, must practice rescues at least twice<sup>4</sup> a year per crew, or prior to an entry taking place by performing a rescue from a simulated or actual confined space. All rescue practices are to be documented

### 3 Instructions

#### 3.1 Entry supervisor instructions

The entry supervisor is responsible for ensuring that:

- a) any person involved in confined space entry is provided with instructions and training in the procedures and the use of the PPE

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<sup>1</sup> Definition of a confined space – [Canada Occupational Health and Safety Regulations](#) – Part XI

<sup>2</sup> [Maritime Occupational Health and Safety Regulation](#) – Part 7, Section 126

<sup>3</sup> Definition of a qualified person – [Maritime Occupational Health and Safety Regulations](#), Part 1

<sup>4</sup> CSA Z1006-16 Management of Work in Confined Spaces – 7.4.4 Rescue Practice

- b) where identified by the risk assessment, every person entering, exiting, or occupying a confined space must wear an appropriate safety harness with lifeline attached
- c) when a person is about to enter a confined space, the entry supervisor is to appoint a qualified person to verify that the atmosphere in the confined space is safe, that these conditions can be sustained for the duration of the entry into the confined space, and verify that physical hazards have been removed from the confined space
- d) a qualified person is in attendance outside the confined space, and in communication with the person inside the confined space
- e) two or more persons are in the immediate vicinity of the confined space to assist in the event of an accident or other emergency. One of these persons must be trained in the emergency procedures, and be the holder of a basic first aid certificate
- f) ventilation continues for the entire period that the space is occupied as applicable
- g) in the event of an emergency, under no circumstances does the attending person enter the space
- h) the approval and cancelation of the confined space entry permit are met

### 3.2 General

- a) Only qualified and trained personnel are to be assigned the duties of entering a confined space, functioning as attendants, or functioning as members of the rescue team.
- b) Every person involved in any aspect of confined space entry must be familiarized with the risk assessments, SSWIs, PPE and equipment, emergency procedures, and must receive a safety briefing prior to engaging in any work.
- c) Confined spaces must be identified with approved signage and secured as appropriate, to prevent unauthorized entry.
- d) The confined space entry permit must be completed prior to entering a confined space<sup>5</sup>, and made readily available to all personnel, including the Workplace Occupational Health and Safety (OHS) Committee. The permit must be valid for a maximum of 24 hours and kept for at least 2 years<sup>6</sup>.
- e) In the event that conditions change inside the space, resulting in a hazardous occurrence as defined by the [Maritime Occupational Health and Safety Regulations](#), or conditions noted in the permit's checklist change, the permit must be kept for 10 years<sup>7</sup> following the date it was signed.
- f) All equipment used in conjunction with confined space entry must be kept in good working condition, and must be inspected prior to use.
- g) Potentially hazardous systems such as: electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or fixed fire suppression must be de-energized and locked out prior to entering the confined space.
- h) A suitable system of communication between all parties must be established, understood by all, and tested.
- i) An attendant must remain at the entrance to monitor the space while it's occupied.

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<sup>5</sup> [Maritime Occupational Health and Safety Regulations](#) – Part 13, 166

<sup>6</sup> [Maritime Occupational Health and Safety Regulations](#) – Part 13, 168 (2)

<sup>7</sup> [Maritime Occupational Health and Safety Regulations](#) – Part 21, 281

- j) No entry is to take place unless a trained and equipped rescue team is on site, a rescue plan has been agreed upon and rescue team responsibilities have been assigned.
- k) No person is to close off a confined space until a qualified person has verified that no person is inside it.

### 3.3 Hot work

- a) Unless a qualified person has determined that the work can be performed safely, hot work must not be performed in a confined space.

### 3.4 Ventilation equipment

- a) When mechanical ventilation<sup>8</sup> is required to ensure a safe environment, ventilation equipment must:
  - i. be equipped with an alarm that activates automatically, and is audible or visible to any person in the confined space, or
  - ii. be constantly monitored by an attendant who is in communication with any person in the confined space, and in the event of faulty operation, be able to activate an alarm
- b) Before entry is granted, it must be determined that there's sufficient time for every person in the confined space to exit the confined space should the ventilation fail.
- c) The use of mechanical ventilation must be noted on the entry permit.

### 3.5 Testing the atmosphere

- a) Testing of the atmosphere within a confined space must be carried out by a qualified person before a person initially enters the space, and before re-entry after a space has been vacated.
- b) Continuous monitoring must be carried out while persons are in the space until all work is completed.
- c) Prior to entering a confined space, steady readings must be taken to ensure oxygen (O<sub>2</sub>) isn't less than 19.5% or more than 23% by volume<sup>9</sup>, and the concentration of chemical agents aren't more than 10% of the lower explosive limit (LEL)<sup>10</sup>.
- d) Persons must leave the space immediately if conditions deteriorate or if mechanical ventilation in use fails or stops.

### 3.6 Precautions required where atmosphere is known or suspected to be unsafe on board a vessel

- a) If the atmosphere in a confined space is suspected or known to be unsafe, the confined space must only be entered when no practical alternative exists. Entry under these conditions must only be made for further atmospheric testing, an essential operation, safety of life, or safety of the vessel. The number of persons permitted to enter the space is to be the minimum required.

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<sup>8</sup> [Maritime Occupational Health and Safety Regulations](#) – Part 14, 174

<sup>9</sup> [Maritime Occupational Health and Safety Regulations](#) – Part 14, 171 (2) (c)

<sup>10</sup> [Maritime Occupational Health and Safety Regulations](#) – Part 20, 255 (6)

- b) Suitable breathing apparatus (a supply of clean air independent of the atmosphere within the space) must always be worn, and only persons who have been trained in the use of such apparatus are to be allowed to enter the space. All personnel entering the space have been provided with rescue harnesses and lifelines. Appropriated PPE must be worn wherever there is a risk of toxic substances or chemicals coming into contact with the skin or eyes of those entering the confined space.

### **3.7 Emergency**

- a) Under no circumstances is the attendant to enter the space. The attendant is to summon the rescue team, who will evaluate the situation to ensure the safety of those entering the confined space before undertaking rescue operations.

## **4 Training**

- a) Any person who enters a confined space must be trained and qualified in confined space entry and attendant.
- b) Any person participating on a rescue team must be trained and qualified in confined space rescue.
- c) At least one member of the rescue team must be trained in:
  - i. first aid and cardiopulmonary resuscitation (CPR)
  - ii. the use of appropriate emergency response equipment
- d) Confined space rescue teams must exercise confined space rescues at least twice a year per crew, or prior to an entry taking place by performing a rescue from a simulated or actual confined space. All rescue practices must be documented.

## **5 Personal protective equipment**

- a) PPE must, in all cases be appropriate to the associated risks and is to be inspected before each use.
- b) PPE used inside a confined space must not impede the ability of a person to enter or exit the confined space.
- c) Where practical and appropriate, a person must enter a confined space with harness and lifeline.
- d) Members of a rescue team must be provided with PPE appropriate to the identified hazards and risks. This will normally include a self contained breathing apparatus, harness and lifeline, and PPE that will protect the members from risk of toxic substances or chemicals that may come in contact skin or eyes.

## **6 Documentation**

- Risk registers
- List of confined spaces and associated risk assessments
- [Fleet Safety Manual \(FSM\), Annex D](#) – Pre-job Safety Assessment (PJSA)
- [Confined Space Entry Permit](#)
- Training records



- Calibration records
- Lockout/tagout records

## 7 References

- [Canada Occupational Health and Safety Regulations](#)
- [Maritime Occupational Health and Safety Regulations](#)
- [National Joint Council Directives](#), Part XII – Confined Spaces
- Safety of Life at Sea (SOLAS), Supplement December 2014
- [FSM, 7.A.1 – Assessing Risk](#)
- [FSM, 7.B.5 – Lockout and Tagout](#)
- [FSM, 7.B.4 – Hotwork](#)
- CSA Z1006-16 *Management of Work in Confined Spaces*
- [CCG/6108 Personal Protective Equipment Manual](#)
- [CCG/6012 Canadian Coast Guard Respiratory Protection Program](#)
- [DFO/5323 \(CCGC\) OC 13-2016 Compliance to Maritime Occupational Health and Safety Regulations, Part 7 – Hazard Prevention Program: National Vessel Risk Register](#)
- [DFO/5323 \(CCGC\) 02-2017 Further Guidance on Compliance to Maritime Occupational Health and Safety Regulations, Part 7 – Hazard Prevention Program and the Site Specific Risk Register Package Provided by Coast Guard Safety and Security](#)





# Fleet Safety Manual

## 7.B.4 – Hot Work

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### 1 Purpose

- a) To reduce the risk of accident or injury to Canadian Coast Guard (CCG) employees, and those granted access to the workplace or vessels by ensuring hot work is performed in a controlled and safe manner.

### 2 Responsibilities

#### 2.1 Chief engineer

The chief engineer or their designate, is responsible for ensuring:

- a) this procedure is followed when hot work is performed on board the vessel
- b) hot work permits are approved and issued
- c) designated/fitted hot work zones are identified to perform hot work, and these zones are properly equipped to safely carry out the work
- d) any personnel performing hot work is qualified<sup>1</sup> based on certification, experience, and knowledge of the work and the work environment
- e) employees are fully briefed on this procedure prior to performing hot work

**Note:** Where the vessel is in a non-operational period (refit, maintenance, lay-up, etc.) and the chief engineer will not be available for a prolonged period, their designate must be qualified to issue hot work authorization permits when hot work is required in the chief engineer's absence.

#### 2.2 Immediate supervisor

The immediate supervisor of the personnel on board the vessel is responsible for ensuring:

- a) personnel are fully briefed on this procedure prior to performing hot work
- b) a risk assessment is completed in accordance with Fleet Safety Manual (FSM) [7.A.1 Assessing Risk](#), prior to the hot work being performed

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<sup>1</sup> [Maritime Occupational Health and Safety Regulations](#) – Part 1, 1

## 2.3 Personnel performing hot work

- a) Personnel performing hot work must do so in accordance with this procedure, and the terms and conditions of the [Hot Work Authorization Permit FP-0061-E](#)

## 3 Instructions

### 3.1 General

- a) Only a qualified person is to perform hot work.
- b) No hot work is to be performed on any pipe, tank, or in any area where there is a potential for the presence of flammable gas, vapour, or dust, unless the area has been freed of gas, tested by a qualified person, and found to be safe.
- c) Welding on sides of fuel or lube oil tanks is strictly forbidden unless the tanks are gas free or inert.
- d) No hot work is to take place while the vessel is involved in bunkering or transfer operations.
- e) All welding performed on CCG vessels involving the hull, through hull fittings, lifting gear, secure points, or anchor points, must be performed by a qualified person.
- f) All welding must be to the satisfaction of the Classification Society or Recognized Organization and or Transport Canada Marine Safety and Security, as required, before the device or appliance is put into service. Emergency repairs are to be subject to minimum loading, until the repair has been tested and is certified as sound.
- g) In accordance with [CCG Integrated Technical Services \(ITS\) technical bulletin 2020-03 - Paint Containing Lead on CCG Vessels](#), coatings must be tested for lead. If coatings are found to contain lead or if testing in advance is not possible, then appropriate actions and precautions must be taken.

**Note:** Some ports have developed their own regulations in regards to the performance of hot work while in port. A check must be made with the port authority by the officer in charge prior to approving any port hot work.

### 3.2 Hot work and hot work zone

- a) Hot work is defined<sup>2</sup> as work that creates a source of ignition or a temperature sufficiently high to ignite a flammable gas mixture, or to cause combustion of the item(s) involved in the process. This includes any work requiring the use of welding, burning or soldering equipment, drilling, grinding, or any other work where a flame is used or sparks are produced.
- b) A fitted hot work zone is an area designated and equipped as an authorized area in which hot work may be performed without a permit. A designated hot work zone is typically the engineer's workshop.

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<sup>2</sup> [Maritime Occupational Health and Safety Regulations](#) - Part 16, 189

### 3.3 Hot Work Authorization Permit

- a) A valid [Hot Work Authorization Permit FP-0061-E](#) must be in place anytime hot work is performed outside of a designated hot work zone.
- b) To be valid, the [Hot Work Authorization Permit FP-0061-E](#) must be signed by the chief engineer or their designate in conjunction with the risk assessment identified in 2.2 b), of the work being performed.
- c) These permits must be kept for 1 year from the date the work is performed.
- d) A [Hot Work Authorization Permit FP-0061-E](#) is not required for normal maintenance work performed in a designated hot work zone.
- e) When a permit has been issued, both the engineer officer of the watch and the deck officer of the watch must be advised prior to the commencement of the hot work.

### 3.4 Employee safety

- a) Employee(s) who perform hot work must satisfy the chief engineer, or their designate, they are competent in the use of the equipment.
- b) Safety issues to be considered include, but are not limited to:
  - i. burns and extreme temperatures
  - ii. noxious fumes and gases
  - iii. fire and explosions
  - iv. electric shock
  - v. slips, trips, and falls
  - vi. eye injury from debris, light, or heat

### 3.5 Performing hot work – fire watch

- a) When hot work is being performed in accordance with Section 3.3 a), a fire watch must be maintained at all times. A minimum of 1 person with a fire extinguisher must be in close proximity to the work being performed.
- b) In accordance with Section 3.2 b), when hot work is being performed in a designated hot work area a fire watch will be at the discretion of the chief engineer.
- c) The fire watch must be extended to adjacent compartments affected by the hot work.
- d) The work area must be sufficiently ventilated as to allow for air replenishment for employees working in the area.

### 3.6 Post hot work

- a) Hot surfaces must be marked to prevent personnel from being accidentally burned.
- b) When the hot work is complete, the area must be watched for a minimum of 30 minutes to ensure there is no risk of fire.
- c) When there is no longer a risk of fire, the fire watch equipment must be returned to its normal position.

## 4 Training requirements

- a) Familiarization of this procedure and associated site specific work instructions (SSWIs), must be provided to employees carrying out the duties associated with hot work.
- b) This familiarization must be refreshed annually.

## 5 Personal protective equipment

- a) Personal protective equipment (PPE) identified during the risk assessment process and in accordance with [CCG/6108 - Personal Protective Equipment Manual](#), must be worn while performing hot work.

## 6 Documentation

- Training records
- [Hot work Authorization Permit FP-0061-E](#)
- Log book entries
- Site specific work instructions
- Manufacturer's Instruction Manual

## 7 References

- [Welding Health and Safety Technical Program](#)
- [Maritime Occupational Health and Safety Regulations](#)
- [Canadian Centre for Occupational Health and Safety](#) - What is hot work?
- [CCG/5737 - Fleet Safety Manual](#) - 7.A.1 Assessing Risk
- [CCG/5737 - Fleet Safety Manual](#) - 10.A.6 Paint and Other Coatings
- [CCG/5737 - Fleet Safety Manual](#) - 10.A.7 Contractor Safety and Security
- [CCG/6108 - Personal Protective Equipment Manual](#)
- [CCG ITS Technical Bulletins](#) - 2013-08 Caution when Purging Hazardous Combustible Gases
- [CCG ITS Technical Bulletins](#) - 2020-03 Paint Containing Lead on CCG Vessels
- CSA W117.2-12 Safety in welding, cutting, and allied processes<sup>3</sup>
- [NFPA 51B – Standard for Fire Prevention During Welding, Cutting, and Other Hot Work](#)
- [Employment and Social Development Canada](#) - Welding and allied processes: A guide to health hazards and hazard control measures

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<sup>3</sup> View for no charge at [Canadian Centre for Occupational Health and Safety](#) (CCOHS)



# Fleet Safety Manual

## 7.B.5 – Lockout and Tagout

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### 1 Purpose

- a) To ensure Canadian Coast Guard (CCG) personnel are protected from accidental exposure to energized systems such as: electrical, hydraulic, pneumatic, water, gas, steam pressure, vacuum, high temperature, cryogenic temperature, radio-frequency emissions, potentially reactive chemicals, stored mechanical energy, or equipment actuation while working on or near CCG systems and equipment.

### 2 Responsibilities

#### 2.1 Commanding officer

The commanding officer or their delegate, is responsible for ensuring:

- a) this procedure is applied on board the vessel
- b) the program or stakeholders are advised of any lockouts, which affect their operational readiness

#### 2.2 Chief engineer

The chief engineer or their delegate is responsible for ensuring:

- a) they consult with the commanding officer prior to locking out or disabling any energized system or equipment which affects the operational readiness or navigational safety of the vessel
- b) approval of all lockouts and tagouts for energized systems or equipment, each event is recorded using a [lockout/tagout record sheet](#), and all record sheets are logged in a lockout/tagout register
- c) the officer of the watch, in the deck log, records all notifications regarding lockouts and tagouts affecting operational readiness or navigational safety upon reception
- d) any person conducting maintenance work on equipment to be de-energized, has been familiarized with the site specific work instructions (SSWIs), and the SSWIs are available for examination for the duration of the work
- e) the commanding officer is notified when a locked-out system affecting operational readiness or the navigational safety of the vessel is re-energized

## 3 Instructions

### 3.1 Department heads instructions

- a) The department heads are responsible for ensuring maintenance routines used on board the vessel for energized systems or equipment to be isolated includes all relevant information.

### 3.2 General

- a) Prior to performing work, a risk assessment must be completed in accordance with Section 3 of [Fleet Safety Manual \(FSM\) 7.A.1 – Assessing Risk](#).
- b) SSWIs must be followed for the lockout/tagout of specific equipment, when in place. Where possible, consider using pictures of the equipment and their energy sources. The instructions must include:
  - i. identification of the machinery, equipment, or processes
  - ii. a listing of all energy isolating devices and their locations
  - iii. steps for shutting down, isolating, block, securing, and relieving stored or residual energy
  - iv. steps for placing and removing lockout devices
  - v. steps for confirming isolation and de-energization have been accomplished
  - vi. steps for verifying every person has cleared the work site, and the equipment has been inspected to ensure it is ready to return to service
- c) No person is to remove a lockout, tagout, re-energize a system, or piece of equipment that has been locked or tagged out, without receiving the approval of the chief engineer or their delegate.
- d) The energy-isolating device (circuit breaker, disconnect switch, flow control valve, blank flange, a block, or some similar device used to block or isolate energy), should provide the capability of being locked, or lock wired, in the de-energized or isolated position.
- e) Where the energy-isolating device cannot be securely locked, the system should be blanked with a physical break.
- f) An inspection must be performed by the chief engineer, or their delegate, to ensure isolation will be achieved by the planned lockout/tagout. Verifying depressurization by breaking a flanged connection, loosening valve bonnets, removing instrument tubing, or other similar actions must be avoided unless no other means for identifying depressurization exists.
- g) When a piece of equipment or device is isolated, checks must be made at the commencement of each work period to ensure that the components remain in the isolated position.

### 3.3 Locks and tags

- a) A lockout device is a device that uses a positive means to hold an energy-isolating device in the safe position, and prevents the re-energizing of systems or equipment. Hasps, chains, and other devices may be treated as lockout devices when used in combination with locks.



- b) An individual key is required for each specific lock and the person responsible for the maintenance of the system or equipment being locked out, is to be the only person in possession of the key. Master key locks must not be used as a lockout device. When equipment is locked out over a crew change, the incoming chief engineer must be informed and be responsible for the lock and key.
- c) A tagout is a prominent warning device that can be securely fastened to an energy-isolating device to indicate the energy-isolating device and the system or equipment being controlled must not be operated. When systems or equipment are being locked out, a tagout must be placed next to the lockout to indicate the date of the lockout, and the name of the individual who placed the lock and has the key. The tagout is not to be removed by anyone other than the person who placed the tagout, or another person who has physically relieved the person who placed the tagout.

### 3.4 Record keeping

- a) Individual lockout/tagout record sheets must be created, which meet the needs of the site. At a minimum, the information identified on the [Lockout/Tagout Record Sheet - FP-5196-E](#) must be collected.
- b) Lockout/tagout records must be retained on board for a period of 12 months.
- c) The chief engineer must maintain a lockout/tagout register, which must provide ready reference to the status of energized systems or equipment locked or tagged out. This register must include the following information:
  - i. unique identifier number corresponding to the number on the lockout/tagout record sheet
  - ii. energized system or equipment affected
  - iii. date lockout/tagout opened
  - iv. person in charge of the work
  - v. date lockout/tagout closed
  - vi. person responsible for closing the lockout/tagout
- d) This register, accompanied by all remaining open lockout/tagout record sheets must form part of the chief engineer's changeover notes.

### 3.5 Removing lockouts and tagouts

- a) The person who is removing the lockout/tagout must ensure the re-energized system or equipment is operationally intact, and components within the lockout area are repositioned, if required, to permit safe operations.
- b) Components that could cause automatic operation of a circuit breaker, or a motor, or an air-operated valve when control power or pressure is restored must be in a position where automatic operation will not occur when the lockout/tagout is removed.

## 4 Training

- a) The chief engineer or their delegate, must provide familiarization or training to all persons involved in the lockout and tagout of equipment on:
  - i. this procedure and SSWIs
  - ii. equipment energy control systems

- iii. equipment energy source(s)
  - iv. how to isolate them and verify the equipment is de-energized
  - v. the personal protective equipment (PPE) to be used while performing work on de-energized systems
- b) In accordance with CSA Z460-13 - Control of hazardous energy - Lockout and other methods<sup>1</sup>, section 7.5.2, the training will occur every 3 years, or as soon as there are changes to equipment or procedures.

## 5 Personal protective equipment

- a) Persons performing work on de-energized systems must wear PPE appropriated to the risks of the task as determined by the [CCG/6108 - Personal Protective Equipment Manual](#).

## 6 Documentation

- Deck log entries
- [Lockout/Tagout Record Sheet - FP-5196-E](#)
- Lockout/tagout register
- SSWIs
- Work orders

## 7 References

- [Maritime Occupational Health and Safety Regulations](#) – Part 15 – Electrical Safety
- CSA Z460-13 - Control of hazardous energy - Lockout and other methods
- [Canadian Centre for Occupational Health and Safety](#) – Lockout / Tag out
- [CCG/5737 – Fleet Safety Manual](#) – 7.B.6 Electrical Safety – Working on Energized Electrical Conductors or Circuit Parts
- [CCG Intranet – Integrated Technical Services – Publications](#) – CCG Marine Electrical Safety Manual

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<sup>1</sup> The standard can be viewed for free, from a government computer at the [Canadian Centre for Occupational Health and Safety - CCOHS](#)



# Fleet Safety Manual

## 7.B.6 - ELECTRICAL SAFETY WORKING ON ENERGIZED ELECTRICAL CONDUCTORS OR CIRCUIT PARTS

### 1 PURPOSE

- a) To ensure that all persons working on board Canadian Coast Guard (CCG) vessels or stations are protected from accidental exposure to electrical currents and flash burns.
- b) It is important to be aware that working on any energized electrical conductors or circuit parts is not recommended and should not be a routine practice. When necessary, because of operational requirements or for troubleshooting circuits, energized work must be performed by the person in charge or qualified persons under the terms of the [\*Maritime Occupational Health and Safety \(MOHS\) Regulations\*](#)<sup>1</sup>.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible for ensuring that this procedure is applied onboard the vessel.

#### 2.2 CHIEF ENGINEER, OR DELEGATE

- a) The Chief Engineer, or delegate, shall approve work on any energized electrical conductors or circuit parts. These operations shall be logged in a controlled register.
- b) The Chief Engineer shall be responsible for assigning the work to a person who is qualified to work with energized electrical conductors or circuit parts.
- c) The Chief Engineer shall consult with the Commanding Officer prior to locking out or disabling any energized electrical conductors or circuit parts which affects the operational readiness or navigational safety of the vessel. The Commanding Officer shall also be notified when the circuit is re-energized. Special consideration shall be given prior to disabling any energized system or equipment that affects the operational readiness of the vessel. The Chief Engineer shall produce a list of critical systems / equipment in compliance with section 3.3 (d) of this procedure.
- d) Prior to performing any work on energized electrical conductors or circuit parts, the Chief Engineer is responsible for ensuring that one employee at the worksite has been trained in CPR and is able to fulfill that requirement. The employee shall remain on site for the duration of the work being performed.

#### 2.3 EMPLOYEE

- a) No employee shall commence work on any electrical conductor or circuit part that must remain energized without the prior approval of the Chief Engineer or delegate.

<sup>1</sup> Part 15 – Electrical Safety

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) When performing energized work, a risk assessment shall be completed in accordance with Section 7.A.1 of this manual.
- b) Energized Electrical Work Permit (EEWP) shall be completed. Energized work shall never be taken lightly. Implementation of best practices, judgment and knowledge of individual systems and use of Personal Protective Equipment (PPE) is necessary to prevent or reduce the potential for injury.

#### 3.2 CATEGORIES OF HAZARDOUS SITUATIONS

- a) Electrification and Electrocution.
  - These are situations where a worker's body comes into direct contact with or exposed to a live electrical device. These hazards are controlled by wearing PPE and by maintaining a safe distance according to the voltage present.
- b) Arc Flash Burns.
  - An equipment malfunction can create an arc flash with consequences that can cause injury to an employee. The amount of energy released by the arc event is directly related to the voltage of the circuit, the short circuit capacity at the point of malfunction, and the amount of time needed for circuit protection to deploy.
- c) Arc Blast.
  - When copper changes instantly from a solid to a gas, it causes increased pressure, hazardous noise levels, and a shower of hazardous debris. The sound pressure can be as strong as 160 dB, and projectiles can reach a velocity of 1100 km/h.

#### 3.3 APPLICATION

- a) Personal Protective Equipment and Appropriate Measuring Instruments
  - For the Chief Engineers or their delegates, Electrical Officers assigned to the vessels and the Electricians in the Fleet, the PPE should be “arc rated coveralls” minimum 12 calories/cm<sup>2</sup> or better with a face shield and protective gloves, which meet electrical standards.
  - The engine room crew shall be supplied with “flame resistant” coveralls.  
Note 1: Arc rated cloth won't maintain its rate over time if it's not properly treated.  
Note 2: Wearing synthetic fibres or metal accessories is prohibited while performing any work on live circuits, for all classes of vessels.
  - The *CSA (Canadian Standards Association) Standard Z462-15* serves as a best practice standard to accurately determine what PPE is appropriate for a given task. It also defines minimum approach distances and arc rated and flame resistant clothing protection systems.
  - The tools used to perform live electrical work must be fitted with an insulating material. Insulating mats must be inspected regularly to ensure that they are completely intact and have a certificate of conformity with the standard in effect. Electrical equipment solely used in the testing of live circuits shall be tested as per manufacturer's instructions. Where no instructions exist, the equipment shall be tested at a minimum annually.

## b) Vessel / Vessel Class Specific Practices

- Work instructions shall be developed specific to each vessel for energized electrical work. These instructions shall provide employees with guidelines for the categories of tasks to be performed in accordance with the *CSA Standard Z462-15*.
- c) A Risk Assessment attached to the EEWP must be located on site and include a rescue plan which identifies the circuit to be shut down in the event on an emergency.
- An EEWP for energized circuit work is mandatory and shall be completed if the equipment operates at a voltage of **240 V or above** and is powered by a transformer **greater than 125 kVA**, or if prior to the closest upstream protection device, the equipment feeder cables are in a shared enclosure with a voltage present that is above 240V.
  - The Chief Engineer shall maintain a register of EEWPs, which once completed, shall be kept onboard for 2 years.
- d) The Chief Engineer shall produce a list of critical systems or equipment that due to their nature, are required for operational readiness for the vessel and remain in a constant energized state. This list shall remain in the permit register for reference. The EEWP shall be issued when any electrical troubleshooting work is being performed on this equipment.

**3.4 SYSTEM UNDER TESTING, TROUBLESHOOTING AND RETURN TO SERVICE**

- a) If at any time, an unforeseen situation should occur during the troubleshooting situation of energized circuits, for example, the detection of a short circuit, the troubleshooting work shall be stopped immediately and necessary repairs conducted. During the troubleshooting, no unexpected loads shall be introduced into the system.
- b) When the electrical equipment is put back into operational status, it must be proven ready for safe operation.

**4 DOCUMENTATION**

- CSA(Canadian Standards Association)Standard Z462-15
- [Maritime Occupational Health and Safety \(MOHS\) Regulations - Parts 13 - Work Permit and 15 - Electrical Safety](#)
- Site Specific Work Instructions
- [Energized Electrical Work Permit \(EEWP\) FP-5197-E](#)
- Register of Energized Electrical Work Permits (EEWPs)
- Log Book Entries





# Fleet Safety Manual

## 7.C.1 – Air Cushion Vehicle Operations

### 1 Purpose

- a) To ensure the safe and effective operation and maintenance of Canadian Coast Guard (CCG) air cushion vehicles (ACVs).

Definitions specific to the ACV operations:

|                                  |   |
|----------------------------------|---|
| Air cushion vehicle (ACV)        | A craft which is operable on or above water. The weight of such craft or a significant part thereof is balanced in one mode of operation by other than hydrostatic forces. For purposes of this procedure, dynamically supported craft (DSC), hovercraft and ACV are to be considered synonymous. |
| ACV officer                      | A person holding the required certificate who is employed by the CCG for piloting, navigating and maintaining an ACV.   |
| ACV commanding officer           | An ACV officer holding the required certificate who is employed to command an ACV in the CCG.   |
| Annual currency                  | A minimum annual number of hours of pilot-in-command and radar guidance time required by ACV officers.  |
| Certificated                     | Personnel that have acquired all the necessary professional qualifications enabling them to legally fulfill the requirements of a particular position.  |
| Circuit                          | A departure and arrival at a safe landing site.   |
| Competency check ride            | Mission where an ACV officer demonstrates knowledge of craft limitations, emergency procedures, piloting and navigating skills by carrying out 5 circuits: 2 circuits in direct control, one under radar guidance and 2 more as a navigator providing radar guidance.                             |
| Craft specific work instructions | Comprehensive operational guidelines designed to assist individuals and crews in meeting and maintaining their operational proficiency.   |

|                           |   |
|---------------------------|---|
| High-speed bridge team    | A team of 4 persons suitably trained and qualified to conduct high-speed ACV operations at night and in periods of reduced visibility.  |
| In-year currency          | Period of time during which professional operating skills are considered to remain acceptable. Periods of pilot inactivity exceeding 120 days are subject to a competency check ride.   |
| Inspection                | Conduct routine testing, examining, adjusting and checking of the structure machinery and systems of an ACV in accordance with the requirements of an approved inspection schedule.   |
| Maintenance               | Any action necessary for restoring or maintaining a craft or part thereof, including instruments and equipment, in a safe operational condition.  |
| Mission duty time         | Time necessary to prepare and execute a mission and the associated administrative and operational functions undertaken before and after a sortie (for example: stability calculations, cargo loading, pre-flight inspection, unloading, fuelling, log keeping and wash down). |
| Piloting                  | Control of the direction and speed of a craft with the direct use of lift engines, propeller pitch, bow thrusters and rudder controls.  |
| Radar guidance            | The active use of collision avoidance and positioning information obtained from onboard radar for the safe navigation of a craft.   |
| Radar guidance conditions | Exist during all hours of darkness and when visibility conditions are 2 miles or less during daylight hours.  |
| Rest period               | A period of time during which a crew member is relieved of all operational duties.  |
| Servicing                 | The replenishment of fuel, engine oil and other lubricants, hydraulic fluid, engine coolant and windshield washer.  |
| ACV type operating manual | The operating manual for a specific ACV provided by the manufacturer.   |

## 2 Responsibilities

### 2.1 Senior Director, Fleet

The senior director, Fleet is responsible for ensuring:

- a) this procedure is observed for all ACV operations



## 2.2 Officer in charge of the ACV base

The officer in charge of the ACV base is responsible for ensuring:

- a) the safety management system, including the development and maintenance of operational procedures, and competency and currency standards for ACV pilots, engineers and deck crews, which meet the approved [crewing profiles](#), are current and controlled
- b) the CCG directives and guidelines are adhered to
- c) the following documents and publications are updated as required:
  - i. site specific work instructions (SSWIs), procedures or checklists
  - ii. craft specific work instructions
  - iii. manufacturer's ACV type operating manual
- d) the following logbooks are kept up to date:
  - i. personal logbooks of all ACV certificated crew members
  - ii. ACV technical logbook
  - iii. ACV maintenance logbook
- e) the ACV technical logbook is completed correctly and that the required information is entered correctly in the ACV maintenance logbook upon completion of a mission

## 2.3 ACV commanding officer

The ACV commanding officer is responsible for ensuring:

- a) that the ACV is operated in compliance within the operating and environmental limits as stated in the manufacturer's ACV type operating manual. These limits may be exceeded at the discretion of the commanding officer and only when responding to distress situations
- b) that the duty crew meets all competencies and medical clearances as outlined in the [crewing profiles](#) established for the craft by verifying the documentation, certification and training records provided by the duty crew
- c) the adaptation and development of new methods, procedures and work instructions for the safe delivery of the Fleet operational plan

## 2.4 ACV chief engineer

The ACV chief engineer is responsible for ensuring:

- a) compliance with craft maintenance guidelines
- b) compliance with the manufacturer's maintenance procedures and inspection and servicing schedules
- c) that all engineering personnel under their supervision are properly trained and certificated
- d) that the manufacturer's maintenance manuals and inspection and servicing schedules are current and that logs are updated on a regular basis
- e) that all maintenance and repairs are captured in the Asset Management System

## 3 Instructions

### 3.1 General

- a) ACV personnel must carry out operations according to the relevant procedures manuals including:
  - i. AP1-88/400 Type Operating Manual
  - ii. AP1-88/400 Service Manual
- b) All SSWIs are to be periodically reviewed and updated as required. Any amendment to the SSWIs must be forwarded to the regional manager, Coast Guard Safety Management (CGSM) for review<sup>1</sup>.

### 3.2 Competency check

- a) The ACV officer who has been away from the operation for a more than 120 days must undergo a competency check ride supervised by the officer in charge or their delegate.
- b) The officer in charge of the ACV base, who has been away for more than 120 days must undergo a competency check ride supervised by an ACV commanding officer who is considered to be current.

### 3.3 Currency

- a) Annual currency for ACV officers is to consist of a minimum of 100 hours of pilot-in-command time and 25 hours of radar guidance time. These activities are to be recorded in an approved personal logbook, and attested to with the signature of the ACV base officer in charge.
- b) In-year currency:
  - i. ACV pilots are not current unless they have completed a minimum of 5 circuits in both pilot and navigator positions, or the equivalent number of hours during the preceding 120-day period
  - ii. active radar guidance is to be used to complete at least 2 of the 5 circuits
  - iii. failure to maintain currency in piloting and radar guidance leads to the need of a competency check ride monitored and validated by a current ACV commanding officer; if the check ride is unsuccessful, 10 hours of on-the-job training must be attested in the ACV pilot's personal logbook before the ACV pilot is permitted to resume operational duties

### 3.4 Craft crew

- a) The ACV must be crewed in accordance with the established [crewing profiles](#).
- b) High-speed bridge team:
  - i. the team is to consist of 4 persons trained and qualified to conduct high-speed ACV operations at night and in periods of reduced visibility

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<sup>1</sup> [CCG/5737 Fleet Safety Manual](#) - 11.B.1 Procedure Approval and Change Process - section 3.4

- ii. the team is to include a certified ACV officer as a pilot and a navigator with 2 watches/lookouts positioned according to the configuration of each craft, and at the discretion of the ACV commanding officer.

### **3.5 Craft time limitations**

- a) The ACV commanding officer must carefully monitor crew fatigue under all circumstances and recognize that some situations are more stressful than others.
- b) The time since the last rest period and its duration is to be considered in assessing when crew fatigue has reached the level where further operations without rest would pose a risk to the safety of the crew and the craft.

### **3.6 Mission duty time**

- a) The maximum mission duty time for a crew member is 16 consecutive hours in any 24-hour period.
- b) Daily mission duty time may be extended when a craft commanding officer considers it safe to do so:
  - i. during search and rescue activity
  - ii. to complete any mission duty that has been extended as a result of unforeseen circumstances

### **3.7 Rest periods**

- a) A crew member must be allowed a rest period of a minimum of 6 consecutive hours in any 24-hour period and at least 16 hours of rest in every 48-hour period.
- b) This may only be modified for the reasons stated in section 3.6 b).

### **3.8 Maintenance**

- a) Any modification which constitutes a change to the craft and affects the structural integrity, functioning of systems and/or safety must be recorded and approved as per the configuration change request (CCR) process prior to implementation.
- b) A CCR for all modifications must be submitted and include the following:
  - i. the justification for the modification or repair
  - ii. a written description
  - iii. diagrams and/or photographs
  - iv. the estimated total cost
  - v. the probable impact on operations, craft stability and safety
- c) In the event emergency modifications must be made that could affect the structural integrity, function of systems and/or safety of the craft, they may be undertaken on the authority of the ACV chief engineer when approval can't be obtained from the CCR process.
- d) The superintendent, Marine Engineering is to be notified of the emergency modifications no later than the next working day.
- e) Records of all repairs must be kept in the Asset Management System.

## 4 Documentation

- Craft logbooks (deck log, technical log)
- Personnel competency records
- Craft maintenance records
- Craft specific work instructions
- Site specific work instructions (SSWIs)

## 5 References

- [\*Air Cushion Vehicle Regulations\*](#)
- [\*Canadian Aviation Regulations\*](#)
- [\*CCG/7081 Fatigue Management – A Guide for Canadian Coast Guard Managers, Officers and Crew\*](#)

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## Annex I Air cushion vehicle operating limits

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### 1.1 Environmental limits

- a) Over land or water, mean winds up to 30 knots or with gust not exceeding 40 knots.
- b) Wave height should not exceed 2.4 m (8 ft) for steep isolated waves or for wave length less than 1.5 times the length of the ACV. This is equivalent to 1.5 m (5 ft) significant wave height.
- c) **Note 1:** Significant wave height ( $H_{sig}$  or  $H_{1/3}$ ) is defined as the average height – from trough to crest – of the one-third of the highest wave during a given time period. The individual maximum wave height during the same period may be 1.5 to 2 times greater than the significant wave height.
- d) Temperature has to be between -20 °C (-4 °F) and 35 °C (95 °F).

### 1.2 Responding to distress or emergency calls

- a) At the discretion of the ACV commanding officer and only when responding to distress or emergency calls, the environmental limits in section 1.1 on craft operation may be exceeded.
- b) Should the situation require to exceed the published environmental limits, the ACV commanding officer must exercise due regard to the safety of the crew and craft and consider the following practical conditions as indicators of increasing risk to safety:
  - i. wave height and direction sufficient to strike propellers
  - ii. wave height sufficient to strike the ACV superstructure (pounding, plowing in) or cause spray to obscure the operator's vision
  - iii. freezing spray or icing conditions
  - iv. wave height and shape sufficient to cause a dangerous loss of cushion integrity
  - v. wave height or combined speed and direction sufficient to slow ACV below hump speed, or to reduce maneuverability
  - vi. wave steepness sufficient to slow ACV below hump speed





# Fleet Safety Manual

## 7.C.2 – Small Craft Operations

### 1 Purpose

- a) To ensure that small craft operated by Fisheries and Oceans (DFO) shore-based units, or supported by Canadian Coast Guard (CCG) vessels or shore sites, are operated safely.

Definitions specific to small craft operations:

CCG fast rescue  
craft dry suit

A piece of personal protective equipment (PPE) worn to provide maximum thermal protection against the elements, usually worn during extended missions in severe weather. The dry suit is required to be worn, and where risk of hypothermic conditions exist, or can be reasonably anticipated, the thermal liner must be worn to achieve maximum thermal protection. As a dry suit does not provide the required buoyancy, a flotation device described in section 3.8 is also required to be worn.

Fast rescue craft

A boat that complies with [Resolution A.656\(16\)](#) (French website, English content) of the International Maritime Organization entitled “Fast Rescue Boats”. The term also applies to certain boats fitted on vessels to meet the requirements of Schedule VII of the [Life Saving Equipment Regulations](#), Regulation 31.2 of Chapter III of the International Convention for the Safety of Life at Sea, and section 5.1 of the International Life-Saving Appliance Code. The majority of large-sized rigid hull inflatables used in the CCG meet these requirements.

Marine anti-  
exposure work suit

An insulated buoyant coverall meeting the requirements of [CAN/CGSB-65.21-95 - Marine Anti-Exposure Work Suit Systems](#) that has certified thermal performance.

Rescue boat

A vessel designed to be used for rescuing persons in distress and marshalling survival craft, as defined by the [Life Saving Equipment Regulations](#).

- Small craft
- Are deemed by this procedure to be unregistered vessels below 15 gross registered ton (GRT). The [Small Vessel Regulations](#) of the [Canada Shipping Act, 2001](#) provide that for unmeasured vessels, the length overall will determine the tonnage. The key tonnage and length relationships are:
- 8.5 m (27.8') is equivalent to 5 GRT
  - 12 m (39.4') is equivalent to 15 GRT
- Categories of small craft include:
- emergency (lifesaving) boats
  - fast rescue craft (rigid hull inflatables and other types)
  - patrol boats (rigid hull inflatables and hard-shell)
  - workboats (surfboats, auxiliary workboats)
  - barges (landing craft, mechanized landing craft barges, self-propelled barges, dumb barges, environmental response barges and sea trucks)
  - scientific craft (survey launches, barges and power boats)
  - special craft (catamarans, Cape Island/inshore boats, personal water craft, airboats, small air cushion vehicles)
  - others (yawls, dories, punts, skiffs, canoes, sailboats, training craft)

## 2 Responsibilities

### 2.1 Director General, Operations

The Director General, Operations is responsible for ensuring that:

- a) standards are in place to support the provisions of this procedure

### 2.2 Senior director, Fleet

The senior director, Fleet or their delegate are responsible for ensuring that:

- a) potential training candidates are assessed to confirm they meet the prerequisites for the course they are applying for before they are accepted

### 2.3 Superintendent, Marine Engineering

The superintendent, Marine Engineering is responsible for ensuring:

- a) that sufficient resources are available through the [Life Cycle Management System](#) vessel support management charter
- b) the facilitation of maintenance of small craft within the CCG and Fleet readiness during operational periods. The small craft fleet must be maintained in accordance with regulatory requirements



## **2.4 Superintendent, Electronics and Informatics**

The superintendent, Electronics and Informatics is responsible for ensuring that:

- a) technical solution centres and electronics workshops maintain a level of readiness in order to respond to electrical failures, and required repairs for small craft

## **2.5 DFO/CCG program managers and supervisors responsible for small craft, or commanding officers**

The DFO/CCG program managers, supervisors, or commanding officers are responsible for ensuring that:

- a) personnel within their responsibility receive the requisite training and craft specific familiarization
- b) all small craft are operated and maintained according to this procedure

## **2.6 Small craft operators, coxswain and other personnel involved with small craft operations**

The small craft operator, coxswain, and other personnel involved with small craft operations are responsible for ensuring:

- a) the safe operation of all small craft by DFO/CCG program managers, supervisors, or commanding officers
- b) that they have read, understood, and comply with this procedure
- c) that the small craft they are operating, and that all persons engaged in small craft operations are competent to safely perform the required task
- d) the operating of small craft at a safe speed with due regard to the prevailing circumstances, observance of good seamanship, and ongoing assessment of risks
- e) they immediately alert their manager/supervisor/commanding officer of any accidents, injuries, substandard acts, defects, unsafe conditions, or improper practices

# **3 Instructions**

## **3.1 Training**

- a) All holders of a Transport Canada (TC) marine certificate with nautical marine certificates of competency, excluding ratings, are permitted to operate a small craft capable of navigating up to 25 knots, while being operated in less than 30 knots of wind in any condition of visibility.

- b) Limited operations:
  - i. for small craft capable of navigating at a speed of up to 25 knots and operated in less than 30 knots of wind, and where the visibility exceeds 2 miles
  - ii. prior to operating any small craft in these conditions on behalf of the DFO/CCG, every person, regardless of the organization they are associated with, must have successfully passed any combination of (1+2) for DFO employees, or (1+3) for CCG employees in the following list:
    - 1. Marine Emergency Duties - A3
    - 2. Small Vessel Operator Proficiency Training (SVOP)
    - 3. CCG Basic Small Craft Training Course, which includes accreditation for the required TC certification Marine Emergency Duties - A3
- c) Unlimited operations:
  - i. for small craft capable of navigation at a speed greater than 25 knots, or when operating in conditions where the wind exceeds 30 knots, or in conditions of restricted visibility
  - ii. prior to operating any small craft in these conditions on behalf of the DFO/CCG, every person, regardless of the organization they are associated with, must have successfully passed the following:
    - 1. the courses listed in subsection 3.1(b)
    - 2. CCG Advanced Rigid Hull Inflatable Operator Training (RHIOT) course

## 3.2 Certifications

- a) For the purposes of the RHIOT course, equivalent levels of verification for the prerequisites may be accepted by DFO/CCG on a case by case basis.
- b) Operations of small craft larger than 5 GRT require formal marine certification issued by TC, in addition to the courses listed in subsection 3.1(b).
- c) All small craft operators must familiarize themselves with each craft they are to operate. Operators must maintain a copy of all craft specific familiarization records that they have completed.
- d) For small craft fitted with radio equipment<sup>1</sup>, radio operators must hold a Restricted Operator Certificate - Maritime (ROC-M), or a Restricted Operator Certificate - Maritime Commercial (ROC-MC), or a General Operator Certificate (GOC).
- e) For the purposes of the RHIOT training only, unskilled operators may be permitted to operate the small craft without an instructor in the craft, provided they do so within the following limitations:
  - i. speed of the craft must be less than 25 knots
  - ii. wind speeds must be less than 30 knots
  - iii. operation of the craft must be conducted within an area designated by the instructor, under their authority and direction
- f) For the purposes of the RHIOT training, if any of the limitations listed in subsection 3.2(e) are exceeded, a risk assessment must be completed as per [Fleet Safety Manual \(FSM\) - 7.A.1 Assessing Risk](#).

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<sup>1</sup> [Marine Personnel Regulations](#) - Part 2, Division 7, 266 (2)

### 3.3 Small craft stability

- a) A copy of the operational stability envelope must be available to the operator and the TC ship safety and security marine inspector during inspections, as appropriate.
- b) All loading, environmental, and safety limitations are to be posted on the unit for the operator's guidance.
- c) All small craft operators must have an awareness and understanding of the stability limitations for the small craft they operate.

### 3.4 Operational planning and preparation

- a) Prior to conducting small craft operations, a risk assessment, in accordance with [FSM - 7.A.1 Assessing Risk](#), must be completed and review by the supervisor or commanding officer before proceeding.
- b) The result of the risk assessment should be communicated to the small craft crew during the pre-operational briefing.
- c) The degree of planning will depend on the complexity of the operation, and may require a full scale risk assessment. The type of small craft, the training and experience of the crew, and the degree of the risks identified must be taken into consideration.
- d) The following are minimum requirements that must be met to reduce identified risks:
  - i. small craft must have sufficient crew to carry out their operation and/or task safely, securely, and effectively
  - ii. crew size must be a minimum of 2, with 1 individual being qualified as an operator, unless specific program or site tasks dictate otherwise
  - iii. a sail plan must be prepared for each operation or daily operations, and filed with a responsible person who will take action in the event of an accident, or if the craft is overdue according to the plan
  - iv. a communications schedule must be established between the vessel/station and the small craft, based on prevailing conditions, type of operation, and type of craft. Procedures must be identified for loss of communication or failing to meet the communications schedule. Standard communications schedules may be established in the site specific work instructions (SSWIs)
  - v. the commanding officer or small craft operator must, prior to departing the vessel or docking, provide to the crew and passengers an appropriate safety briefing based on the operation. This briefing must include the method of communication to be used between the crew while the small craft is underway. Whatever method is used, it must be clear and easily understood

- e) All operations of small craft must be logged and, at a minimum, log book entries must contain the following information:
  - i. name of persons on board
  - ii. time of departure from vessel/base/site
  - iii. time of arrival on scene / at location including latitude and longitude
  - iv. time departing scene/location or:
    - 1. time towing commences
    - 2. time towing ceases
  - v. time returning to vessel/base/site
  - vi. time of arrival to vessel/base/site
  - vii. any notable occurrences

### **3.5 Pre-departure checklist**

- a) A craft specific check must be carried out prior to departure that will include:
  - i. critical equipment checks
  - ii. visual inspection
  - iii. a successful communications check
- b) Checklists are to form part of the vessel/SSWIs for small craft operation.
- c) All small craft, including vessel's lifeboat(s) upon launching and prior to departing the area, must verify that bilge pumps are not discharging, indicating an apparent ingress of water.
- d) Any small craft deemed unsafe/unseaworthy must be removed from service until repair.

### **3.6 Launch, recovery and trailering**

- a) Launch and recovery operations must be carried out as per the SSWIs. The instructions must be specific for the type of small craft and trailering arrangements.
- b) The commanding officer, supervisor, or manager is responsible for ensuring that trailers have valid inspections, insurance, and are of sufficient gross trailer weight to carry the craft, including safe distribution of the weight of the load between the wheels and the hitch.
- c) The tongue weight of the trailer must be between 8 and 12 percent of the total gross weight of the boat/trailer combination.
- d) Small craft operators must ensure that trailers are flushed well with fresh water after use to reduce the effects of salt water corrosion.

### **3.7 Underway operations**

- a) Small craft must not be operated more than 25 nautical miles from the shore or a "parent vessel", unless a proper risk assessment has been done and approved by the commanding officer or the program manager.

- b) The small craft operator must pay particular attention to:
  - i. limitations of crew and the craft, visibility, darkness, sea conditions, availability of rescue, urgency of the task, traffic density, and navigation hazards
  - ii. operating in high risk areas of limited depth and/or high current, where there is a possibility of the small craft being overturned in the fast current or breaking seas
  - iii. operating in areas where there is a greater risk of impact with a submerged object (for example, near a booming grounds, surf lines, river mouths, and during seasons where the tide is higher than usual refloating grounded debris)
- c) Where kill switches are installed, the kill switch lanyard must be attached to the operator at all times when the engine(s) is(are) operating.

### **3.8 Personal protective equipment**

- a) Equipment and clothing must be issued, used, maintained, and inspected in accordance with [CCG/6108 - Personal Protective Equipment Manual](#) sections:
  - i. 4 Personal Protective Equipment Selection Guide
  - ii. 5.1 Head Protection
  - iii. 5.2 Eye and Face Protection
  - iv. 5.3 Hearing Protection
  - v. 5.4 Thermal Protection
  - vi. 5.5 Emergency-Use Flotation Protection
  - vii. 5.6 Personal Flotation Protection
  - viii. 5.7 Helicopter Dry Type Immersion Suits
  - ix. 5.8 Soft Body Armor
  - x. 5.12 Foot Protection
  - xi. 5.13 Hand Protection
  - xii. Annex A – Personal Protective Equipment (PPE) Assessment and Analysis
- b) Enforcement personnel must wear all PPE as prescribed by their home departmental regulations and guidelines.

### **3.9 Post operational checks**

- a) Upon completion of each operation, a post operation check must be completed. This must include a visual inspection, closing the sail plan, debriefing the crew, identifying defects, completing log entries, and preparing for subsequent operations.

### **3.10 Exchange of small craft**

- a) When small craft are exchanged, all of the required safety equipment to be carried on board, in accordance with the TC [Small Vessel Regulations](#), must be verified and replaced as required. When a small craft is sent ashore for repairs and an exchange craft is provided, the regional procedure/SSWI must be followed regarding the equipment to be maintained on board each of the small craft.

### 3.11 Maintenance

- a) Maintenance and repairs must be carried out as soon as possible. A defect list must be maintained for each craft, with a record of repairs made.
- b) All repairs must be recorded in the asset management system.
- c) Any proposed modification or alteration to a small craft must be submitted as a [Configuration Change Request \(CCR\)](#), and be approved prior to implementation.

## 4 Documentation

- Small craft specific checklists
- Site specific checklist lists
- Training records
- Familiarization records
- Log book entries
- Barge stability envelope documentation
- Sail plans
- Pre-departure checklists
- [CCR](#)

## 5 References

- [Transport Canada - Small Commercial Vessel Safety Guide - TP 14070 E \(2010\)](#)
- [CCG/5737 - Fleet Safety Manual](#) – 7.A.1 Assessing Risk
- [CCG/6108 – Personal Protective Equipment Manual](#)
- [Small Vessel Regulations](#)
- [Marine Personnel Regulations](#)
- [Life Saving Equipment Regulations](#)
- [International Maritime Organization](#) - Resolution A.656(16) (French website, English content)
- [Standards Council of Canada - CAN/CGSB-65.21-95](#) - Marine Anti-Exposure Work Suit Systems



# Fleet Safety Manual

## 7.C.3 - COMBINED OPERATIONS WITH HELICOPTERS

### 1 PURPOSE

- a) To provide for safe and effective joint operations between Canadian Coast Guard (CCG) vessels and helicopters.

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTOR, FLEET

- a) The Regional Director, Fleet shall ensure that at any time CCG personnel are being transported on a chartered helicopter involved in a joint operation with a vessel, the pilot and flight crew are familiar with [Shipboard Helicopter Information and Procedures Manual \(DFO/5282\)](#) regarding helicopter operations.

#### 2.2 COMMANDING OFFICER

- a) The Commanding Officer is responsible for ensuring that all crewmembers and supernumeraries follow the established procedures when operating jointly with helicopters.
- b) The Commanding Officer is responsible for ensuring that any operators of chartered helicopters involved in joint operations with the vessel have received prior approval from the Senior Director, Operational Support before landing on board a CCG Vessel.
- c) The Commanding Officer shall ensure that when helicopter operations are required, a helicopter facility inspection is performed. The results of this inspection are to be entered on the Aviation Facility Checklist and forwarded to the Regional Aviation Officer.
- d) The Commanding Officer shall ensure the Watchkeeping Officer has completed familiarization training on the Flight Following System (FFS). The completion of the crewmember's familiarization training on the FFS will be tracked as part of the Shipboard Familiarization process identified in the Fleet Safety Manual (FSM) [6.B.1 Familiarization](#).

#### 2.3 PERSONNEL

- a) The responsibilities of personnel are further detailed in the [Shipboard Helicopter Information and Procedures Manual \(DFO/5282\)](#)

**2.4 NATIONAL DESIGNATED, HELICOPTER FACILITY INSPECTOR**

- a) The National Designated Helicopter Facility Inspector shall follow up on any defects or deficiencies noted on the "Aviation Facility Checklist" or any non-conformity documented during an inspection.

**2.5 REGIONAL OPERATIONS CENTRE (ROC), REGIONAL AVIATION OFFICER IN CHARGE OF HELICOPTER OPERATIONS**

- a) The Regional Operations Centre (ROC) Regional Aviation Officer, as the person responsible for coordinating and supporting daily helicopter program activities, shall ensure that all flight passengers have access to familiarization, including training DVDs prior to any flight and will verify with the pilot that familiarizations have been completed.
- b) The Regional Aviation Officer shall forward annual helicopter facility inspection reports to the Senior Director, Operational Support.

**2.6 SENIOR DIRECTOR, OPERATIONAL SUPPORT**

- a) In support of the helicopter facility inspection process, the Senior Director, Operational Support is responsible for assigning a Designated Helicopter Facility Inspector to conduct triennial inspections. The results of these inspections are to be entered on the Aviation Facility Checklist and forwarded to the Senior Director, Operational Support.
- b) The Senior Director, Operational Support will approve helicopter operations onboard ship upon successful inspection of the helicopter hanger, safety equipment, communications and fueling system where fitted.

**3 INSTRUCTION****3.1 GENERAL**

- a) All vessels shall have access to a copy of the [Shipboard Helicopter Information and Procedures Manual \(DFO/5282\)](#) regardless of whether or not they are fitted with a helicopter landing platform.
- b) All helicopter operations shall be carried out in accordance with the [Shipboard Helicopter Information and Procedures Manual \(DFO/5282\)](#). Site specific work instructions shall be prepared by vessels that may be involved in both shipboard and shore flight operations.
- c) Vessels that are not fitted with a helicopter landing platform and consequently may have had minimal interactions with helicopter operations shall thoroughly review the manual prior to any planned helicopter operation involving their vessel.
- d) When crew are assigned to flight operations,
  - i. a helicopter familiarization shall be conducted prior to the flight, unless completed within the previous six months, and
  - ii. crew shall also receive a safety briefing on the work that is to be completed. This safety briefing shall be given to all personnel by a qualified helicopter crew member prior to the commencement of the operation.
- e) Helicopter facility inspections shall be conducted as per Sec 2.6 of this procedure, once every 3 years, as agreed to with Transport Canada Aircraft Services Directorate. These inspections will include the condition of the helicopter hanger, safety equipment, working arrangements, communications, and when fitted, the fuelling system. The Flight Deck Officer or qualified



- |    |   |
|----|---|
|    | <p>delegate onboard shall ensure all safety related equipment is checked and recorded in the helicopter facility inspection report a minimum once per month. Vessels that are certified for helicopter operations shall maintain their flight decks and be ready for operations at all times. If the vessel is unable to maintain readiness for helicopter operations, the ROC shall be advised immediately.</p>                            |
| f) | At any time defects or deficiencies are noted with the helicopter flight deck, these are to be repaired or replaced as soon as possible. Where the identified item is of a safety related matter and cannot be repaired or replaced immediately, the flight deck shall be taken out of service and the ROC shall be notified. The ROC shall inform the Regional Aviation Officer, who will notify the Senior Director, Operational Support. |
| g) | Defects shall be documented within the Vessel's Maintenance Management (VMM) system. Defects are to be analyzed through a risk assessment process and associated repair timelines must be determined.   |

#### 4 DOCUMENTATION

[DFO/5349 CGFO 123.00 Chartering Helicopters \("Chartering In"\)](#)

[DFO/5349 CGFO 218.00 Helicopter Safety Equipment Requirements](#)

[DFO/5349 CGFO 454.00 Passenger Aboard Ships](#)

[DFO/5349 CGFO 455.00 – Passenger Aboard Aircraft](#)

[DFO/5349 CGFO 536.00 – Helicopter Emergency Training Procedures](#)

[DFO/5282 - Shipboard Helicopters Information and Procedures Manual](#)

Site-specific familiarization checklists

Bridge Helicopter Log Book

Aviation Facility Checklist and Inspection Report

Transport Canada Helicopter Company Operations Manual

[Passenger Briefing Video](#)

[Training Videos](#)





# Fleet Safety Manual

## 7.C.4 - TOWING OPERATIONS

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### 1 PURPOSE

- a) To ensure the safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment, in particular to the marine environment and to property while engaged in towing operations whether that is when towing other vessels or when Canadian Coast Guard (CCG) vessels themselves are being towed.
- b) This procedure includes the requirement for vessels over 500 GRT to have a written Site Specific Emergency Towing Booklet which covers procedures and equipment for a CCG vessel to be towed in emergency situations.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is to ensure that when commercial towing services are contracted, that such operations are conducted in compliance with the principles and guidelines contained in this procedure and recognised seamanship practices.
- b) The Commanding Officer is to ensure that towing operations are conducted in compliance with towing policies and procedures outlined within the CCG.

#### 2.2 ALL PERSONNEL

- a) All personnel aboard a CCG vessel involved in towing operations shall ensure that their actions promote the safety of the vessel and crew as the primary objective.

#### 2.3 TUG OPERATOR

- a) The Tug Operator is responsible to provide the tug(s), services, towing equipment and crew in order to safely tow the CCG vessel from a preset site to another preset site.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) Towing a disabled vessel can be one of the most demanding and risk-intensive missions undertaken. Following established pre-tow and towing procedures will contribute greatly towards ensuring a safe and successful towing operation. Each situation will also present its own unique challenges that will require the ability to adapt procedures to the circumstances.
- b) Vessels shall develop a Ship-Specific Procedure for Towing Other Vessels that takes into account the capabilities and limitations of the vessel and crew. The *CCG Towing Guide* and the [Policy on Assistance to Disabled Vessels](#) shall be referenced to develop the Ship-Specific Procedure for Towing Other Vessels.
- c) There are times when a CCG vessel requires to be towed either to or from a shipyard or in emergency cases where the vessel has become disabled. Advanced planning is necessary to ensure a well thought out plan allowing for a prepared operation. CCG vessels shall develop a Ship-Specific Procedure for Being Towed that also takes into account the capabilities and limitations of the vessel and crew.

#### 3.2 PLANNING

- a) The competencies and capabilities of the crew to carry out a towing operation safely and effectively including crew complement, level of training, experience and familiarity with the applicable circumstances and any limiting factors shall be taken into consideration when planning any towing operation.
- b) When towing another vessel a communications plan shall be developed. All necessary information for the safety of the tow including rigging, getting underway and the tow shall be communicated. The [Policy on Assistance to Disabled Vessels](#) shall be referenced prior to engaging in any towing operation for a disabled vessel.
- c) When a CCG vessel is being towed, proper planning and assessment of departure/arrival activities from/into facilities should be considered. A meeting shall be organized with this sole purpose. All parties related to work /operation of the vessel shall be present at this meeting.
- d) The use of a Pilot when available should be considered based on their knowledge and experience with commercial tugs in this type of operation.
- e) When CCG vessels are crewed while under tow, watches shall be kept on the bridge and in the engine room for the duration of the operation.

#### 3.3 SHIP-SPECIFIC PROCEDURES

- a) A Ship-Specific Procedure for Towing Other Vessels or for Being Towed shall include, but not be limited to, the following elements:
  - The vessel's configuration and suitability to rig for towing
  - The vessel's size, power and manoeuvrability
  - The equipment available on board (both fixed and portable)

- b) As prescribed by SOLAS MSC.256 (84), vessels over 500 GRT shall establish a Ship Specific Emergency Towing Booklet which describes the process for the vessel to be towed. This booklet shall include the following;
- description of procedures to be followed before and during the towing operations,
  - drawings of the fore and aft deck showing possible towing arrangements,
  - inventory of equipment on board that can be used for emergency towing,
  - means and methods of communication.

### **3.4 PRIOR TO ALL TOWING OPERATIONS**

- a) A Towing Operational Plan shall be defined and made available to all personnel involved in the towing operation. This plan may include the booklet describe in 3.3 (b) but should also include, but not be limited to, the following additional requirements:
- Adequacy of the tug (Capacity, size, power, etc.);
  - Roles and responsibilities of all parties involved shall be clearly defined/ identified: CCG Commanding Officer and crew, ITS, PWGSC, Shipyard representative, Pilot (if applicable) and tug personnel;
  - Date and time of departure to be selected by considering the weather forecast (wind, visibility etc) and forecasted density of traffic;
  - Currents and tides to be considered and time of departure/arrival to be determined accordingly;
  - Briefing on risks and hazards of the route (waters to be transited; currents, tides, shoals etc.);
  - Vessel design and specification (vessel's manoeuvring data);
  - Status of vessel's equipment and machinery to be considered;
  - Structural condition and stability;
  - Adequacy of towing gear;
  - Adequacy of connections to the CCG Vessel;
  - Chafing gear;
  - Emergency towing gear;
  - Establish communication with the tug (VHF work channel, back up communication, etc.);
  - Weather conditions at time of the operation (wind speed and direction, sea state);
  - A contingency plan must be established and follow accepted seamanship practices (emergency wharfs and/or anchorages);
  - Possibility of assisting the tug if partial or full propulsion is available

#### **4 DOCUMENTATION**

- CCG Towing Guide
- Ship-Specific Procedures for Towing Other Vessels
- Ship-Specific Procedures for Being Towed
- Ship-Specific Emergency Towing Booklet (Vessels over 500 GRT)
- Towing Operational Plan
- Inventory of Towing Equipment
- Policy on Assistance to Disabled Vessels
- National SAR Manual



# Fleet Safety Manual

## 7.C.5 - CARRIAGE AND USE OF FIREARMS ABOARD VESSELS AND HELICOPTERS

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### 1 PURPOSE

- a) To ensure that firearms and ammunition carried onboard are controlled in such a manner as to safeguard all personnel.
- b) The Commanding Officer or the Pilot-in-Command, as the senior management representative of the Department aboard the vessel / helicopter, are aware of what firearms are aboard, where they are located, and under what circumstances those firearms may be used.

### 2 RESPONSIBILITIES

#### 2.1 DIRECTOR GENERAL, FLEET OR THEIR DELEGATE

- a) The Director General, Fleet or their delegate shall be responsible for ensuring shipboard firearms practices comply with the [CCG National Firearms Policy](#).

#### 2.2 REGIONAL DIRECTOR, FLEET OR THEIR DELEGATE

- a) The Regional Director, Fleet shall designate specific vessels that are permitted to carry and store onboard agency firearms. This designation does not include vessels which carry law enforcement officers with their firearm in the performance of their duties while using a CCG vessel as a platform.
- b) The Regional Director, Fleet shall ensure that all personnel that handle, store or use firearms as part of their duties receive the training required.
- c) The Regional Director, Fleet, or their delegate, is to make arrangements for a secure facility ashore for the reception and stowage of vessel's firearms on those occasions when the vessel has been removed from service or is temporarily laid-up with no security rounds being maintained.

#### 2.3 COMMANDING OFFICER

- a) The Commanding Officer shall ensure that if their vessel has been designated to carry a firearm that they comply with the storage and unloading requirements set out in the [CCG National Firearms Policy](#).

**2.4 COMMANDING OFFICER, OR PILOT-IN-COMMAND OF A CCG HELICOPTER**

- a) The Commanding Officer, or Pilot-in-Command of a CCG helicopter, is responsible to ensure that the [CCG National Firearms Policy](#) is explained to crewmembers who have a responsibility to deal with a firearm or ammunition as well as to passengers and officers of law enforcement agencies that have brought onboard a firearm or ammunition as part of their supernumerary capacity and that this procedure is followed as explained.

**2.5 COMMANDING OFFICER, PILOT-IN-COMMAND OF A CCG HELICOPTER, OR AGENCY FIREARMS CUSTODIAN**

- a) The Commanding Officer, Pilot-in-Command of a CCG helicopter, or Agency Firearms Custodian is responsible to ensure that the Director General, Fleet or their delegate is notified as soon as practicable following any transaction involving an Agency firearm specified in the [Public Agents Firearms Regulations of the Firearms Act](#), or following a change of the Agency firearm's custodian.

**2.6 COMMANDING OFFICER, OR PILOT-IN-COMMAND OF A CCG HELICOPTER**

- a) The Commanding Officer, or Pilot-in-Command of a CCG helicopter, has the absolute authority to deny boarding to any person who indicates by action or word that they do not intend to comply with the requirements of this procedure.

**2.7 PILOTS-IN-COMMAND**

- a) Pilots-in-Command of CCG helicopters, as part of the Flight Plan or Flight Notification prior to the flight, shall notify the Regional Operations Centre (ROC) or vessel of the number of firearms that are aboard the helicopter.

**3 INSTRUCTION****3.1 VESSEL FIREARMS**

- a) CCG vessels / helicopters may be supplied with firearms for the protection of shore and ice parties from attack by wild animals.
  - The vessel shall normally be issued with two firearms for this purpose. The Regional Director, Fleet may authorize additional firearms at their discretion provided that the authorization is in writing.
- b) The firearms supplied to vessels for protection of remote parties will normally consist of a large calibre rifle and a shotgun.
- c) An appropriate supply of ammunition shall be carried aboard. Normal stock rotation practices shall apply. Consideration shall be given for practice and proper operational maintenance firing of the weapon.
- d) Only trained employees as described in section 3.6 of this procedure shall normally handle firearms, store or remove firearms from stowage except in cases of extreme emergency where danger is imminent and lives are directly threatened.



- e) Signal flare pistols and line-throwing guns are not defined as firearms for the purpose of this procedure.

**Note 1:** while a line throwing accessory that is powered by an attached shotgun is not considered a firearm, when detached the shotgun becomes a firearm and must be handled in accordance with the requirements of this procedure.

### **3.2 SCIENTIFIC PARTY FIREARMS**

- a) Science parties may bring firearms aboard for use as protection when ranging far from the vessel or during the conduct of gathering scientific samples of marine fauna. The holder of the firearm must present a valid Canadian [Possession and Acquisition Licence](#) or a [Non-Resident Firearm Declaration / Continuation sheet \(CAFC 909/910\)](#) at the time of boarding.
- b) The Commanding Officer / Pilot-in Command have absolute discretion in determining whether scientific party firearms shall be allowed aboard the vessel or helicopter either in whole or in part.

### **3.3 LAW ENFORCEMENT AGENCY FIREARMS**

- a) Law enforcement agencies include the Royal Canadian Mounted Police, Fishery Officers of the Department of Fisheries and Oceans, provincial police officers, municipal police officers, and in special circumstances, officers or members of the Canadian Armed Forces. CCG crewmembers who have secondary duties as Marine Fishery Officers are not considered to be a member of a law enforcement agency for the purposes of this procedure.
- b) The Commanding Officer / Pilot-in-Command shall be advised on all occasions where it can be reasonably foreseen that firearms will be used in making an arrest or stopping an illegal activity. The law enforcement officers will take into consideration the Commanding Officer's or Pilot-in-Command's observations and suggestions in their planning for the operation. All participants in the operation must be briefed prior to the operation.
- c) Taking into account the plans that have been formulated for an operation where the use of firearms may be required, the Commanding Officer / Pilot-in-Command have the absolute authority to manoeuvre the vessel / helicopter and control the movements of the crew so as to expose the vessel or helicopter and the crew to the least possible danger.

### **3.4 MARINE FISHERY OFFICERS' FIREARMS (CCG EMPLOYEES)**

- a) Marine Fishery Officers are CCG crewmembers who have completed training in Marine Fishery Officer Enforcement activities and who have been authorized to carry firearms while employed in the execution of this particular duty.
- b) When required to fulfill their secondary duties as Marine Fishery Officers and only for those periods when they are deployed from the vessel by the Commanding Officer to execute those duties, firearms will be released from secure storage. Upon return to the vessel, the firearms shall be returned to the vessel's secure firearms stowage.

### 3.5 FIREARMS STOWAGE

- a) Firearms carried aboard CCG vessels / helicopters when not in use shall be stored in the following manner:
  - kept in the vessel's secure firearms stowage locker, the access to which is strictly controlled by the Commanding Officer / Pilot-in-Command or when authorized, the Chief Officer; or
  - maintained by law enforcement officers upon their persons at all times; or
  - maintained by law enforcement officers in an approved personal firearm storage container under the officer's direct care and control and in strict adherence to the officer's controlling agency's policy. (These arrangements are subject to inspection and approval by the Commanding Officer or his or her delegate.)
- b) All CCG Agency firearms stored on CCG vessels / helicopters shall be stored in an unloaded state and the trigger locked when not in use.
- c) A log book shall be maintained that records: the serial number of firearms stored in, or removed from, the vessel's secure firearms stowage; the times of storage or removal; the quantity of ammunition stored or removed; and, the signature of the individual receiving or removing the firearm. (This section does not apply to helicopters.)
- d) When a vessel is placed in lay-up and security rounds are not maintained, no firearms are to be stored aboard. Firearms are to be transferred to a secure shore facility. At no time shall a firearm remain in a helicopter when unoccupied.

### 3.6 TRAINING

- a) CCG employees required to handle, store or use firearms under the provision of this procedure shall at a minimum have training equivalent to the Canadian Firearms Safety Course. This training shall be provided by a recognised organization.

## 4 DOCUMENTATION

- [Criminal Code Section 117.08](#)
- DFO Firearms Policy and Procedures
- [CCG National Firearms Policy](#)
- Firearms Stowage Log Book
- Training Records



# Fleet Safety Manual

## 7.C.6 – CARGO HANDLING

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### 1 PURPOSE

- a) To ensure safe and efficient cargo handling operations, the safety of personnel, the vessel, and cargo during loading operations, the voyage, and cargo discharge at the destination.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible for the safety of the cargo handling operations, the creation of Site Specific Work Instructions for the vessel, and if necessary, the issuance of additional orders to ensure the safety of personnel, the vessel, and cargo.

#### 2.2 CHIEF OFFICER OR DESIGNATED CARGO OFFICER

- a) The Chief Officer or designated Cargo Officer is responsible for all of the vessel's cargo handling operations. This includes but is not limited to the following:
  - Preparation of the cargo stowage plan;
  - Preparation of the vessel's stowage and cargo handling facilities;
  - Overseeing all cargo handling and securing operations;
  - Compliance with laws, regulations and safety standards for transporting goods at sea;
  - Coordination and collaboration with Port Authorities and stevedore teams as required; and
  - Calculating the vessel's stability conditions and recording as applicable.
  - Conducting cargo handling operations in a safe manner.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) Cargo stowage plan shall be prepared taking into account:
  - Cargo type, including correct stowage of all hazardous and dangerous cargoes, complying with the [International Maritime Dangerous Goods Code \(IMDG\)](#);
  - Cargo destination, to include order of discharge;
  - Vessel's storage compartments capabilities;
  - Vessel's lifting appliances capabilities;

- Vessel's stability.
- b) Personal protective equipment shall be identified by using the processes set out in the [CCG/6108 Personal Protective Equipment Manual](#), and used by all personnel involved in the operation.
- c) Inspections of all the vessel's designated storage compartments shall be conducted prior to commencing loading operations to ensure they are safe and ready to receive cargo.
- d) All applicable equipment used in cargo handling operations, such as cranes, derricks, wires, ropes, chains, and any additional equipment, shall be inspected, certified, and comply with the [Cargo, Fumigation and Tackle Regulations](#). All inspections shall be recorded.
- e) All equipment shall be inspected prior to use and the inspection recorded as determined by Fleet Safety Manual (FSM) [10.B.1 Maintenance of Lifting Appliances and Cargo Handling Gear](#).
- f) Cargo loading operations shall be conducted in a safe manner and according to the cargo stowage plan. Any changes in cargo location shall be recorded immediately and the cargo stowage plan and stability calculations adjusted accordingly.
- g) All loaded cargo shall be associated with proper documentation, including but not limited to Safety Data Sheets for hazardous and dangerous cargo according to the IMDG Code. Any cargo without proper documentation shall be rejected from loading.
- h) Vessel's draught and stability calculations shall be taken into consideration. Final ballast transfers and stability calculations shall be completed to achieve safe draught, trim, and stability conditions in accordance with FSM [7.A.8 Stability](#).
- i) All cargo shall be safely secured following guidance from International Maritime Organization (IMO) [Code of Safe Practices for Cargo Stowage and Securing \(CSS Code\)](#), taking into account the planned voyage and potential weather conditions the vessel may encounter throughout the voyage. All the securing arrangements shall be inspected daily during the vessel's voyage or more frequent if circumstances dictate.
- j) At the completion of loading operations, all cargo hatches shall be properly secured in accordance with FSM [7.A.7 Maintenance of Watertight Integrity](#).

### 3.2 COMMUNICATION

- a) Effective communication, including hand signals for lifting appliances operator and relevant crew, shall be established, and in place before commencing any cargo handling operations.

## 4 DOCUMENTATION

- Site Specific Work Instruction
- Vessel's Logbook
- Vessel's Stability Book
- Cargo Storage Plan
- Canadian Coast Guard Tackle Register

- [Cargo, Fumigation and Tackle Regulations](#)
- [International Maritime Dangerous Goods Code \(IMDG\)](#)
- [Transportation of Dangerous Goods Act, 1992](#)
- Safety Data Sheets
- IMO [Code of Safe Practices for Cargo Stowage and Securing \(CSS Code\)](#)
- FSM [10.B.1 Maintenance of Lifting Appliances and Cargo Handling Gear](#)
- [CCG/6108 Personal Protective Equipment Manual](#)
- FSM [7.E.5 Handling, Storage, and Disposal of Hazardous Materials](#)
- FSM [7.A.8 Stability](#)
- FSM [7.A.7 Maintenance of Watertight Integrity](#)





# Fleet Safety Manual

## 7.C.7 – Periodically Unattended Machinery Spaces

---

### 1 Purpose

- a) To ensure the safety and security of Canadian Coast Guard (CCG) personnel, assets, and the environment when transferring to unattended machinery space (UMS) conditions.

### 2 Roles and responsibilities

#### 2.1 Commanding officer

The commanding officer or their delegate is responsible for ensuring:

- a) a dead man alarm is installed
- b) authorization of UMS operations, which is to be included in the vessel standing orders
- c) in accordance with Fleet Safety Manual (FSM) [6.B.1 Familiarization](#), UMS is included in the familiarization checklist as appropriate
- d) personnel entering or leaving the engine room during UMS operations are tracked in the ship's log by the deck officer of the watch
- e) alarms are monitored and the on-call engineer will be notified when necessary

#### 2.2 Chief engineer

The chief engineer or their delegate is responsible for ensuring:

- a) the UMS alarm system is tested prior to use to ensure function
- b) UMS compartments are clearly identified and placarded
- c) the creation of relevant site specific work instructions (SSWIs), and include UMS conditions within their standing orders
- d) they determine a complete round schedule in the event of UMS conditions, and include this within the vessel SSWIs
- e) they identify a designated duty engineer authorized to enter the engine room when under UMS conditions

## **3 Instructions**

### **3.1 General**

- a) The dead man alarm is tested on a regular basis to ensure operability.
- b) The propulsion machinery must be operated within its power limits.
- c) Deficiencies, faults, or alarms must be reported to the chief engineer immediately.
- d) UMS must not be accessed without advising/approval of the bridge.
- e) All alarms must be cleared prior to going to UMS mode.
- f) Auto-standby machinery must be ready to start and all fire and watertight doors must be in the closed position.

### **3.2 Authorization**

- a) Only vessels with an active UMS notation from a Transport Canada recognized classification society are to operate in UMS mode.

### **3.3 Duty engineer**

- a) The duty engineer officer must clearly understand instructions and orders to report to the bridge.
- b) The duty engineer must carry out a full set of rounds before switching to UMS.
- c) The duty engineer must follow standing orders and SSWIs on entering and leaving the machinery spaces and completing rounds.

### **3.4 Unattended control room and machinery space conditions**

- a) No vessel is to operate with the control room and/or machinery spaces unattended in the following circumstances:
  - i. during departure or arrival
  - ii. in confined waters
  - iii. at sea or at anchor during periods of adverse weather or heavy traffic or in accordance with standing orders
  - iv. when port regulations prohibit the operation of the machinery spaces in UMS mode
  - v. with any fire, general alarm, or safety system inoperative, including any fire detection system zones isolated
  - vi. when any propulsion backup equipment is inoperative
  - vii. when navigation or vessel control or communication system is inoperative
  - viii. when the bridge console is inoperative

## **4 Training**

- a) Personnel with UMS responsibilities must be trained and/or familiarized:
  - i. annually in accordance with FSM [6.B.1 Familiarization](#), including a review of the commanding officer and chief engineer standing orders



## 5 Personal protective equipment

- a) Personal protective equipment (PPE) appropriate to the inherent risks of the planned activities must be determined and used in accordance with the procedures outlined in the [CCG/6108 - Personal Protective Equipment Manual](#).

## 6 Documentation

- Commanding officer standing orders
- Chief engineer standing orders
- SSWIs
- Log book entries
- Familiarization checklists
- Placarded UMS compartments

## 7 References

- [Marine Machinery Regulations](#)
- International Convention for the Safety of Life at Sea (SOLAS), Chapter II-1, Part E, Additional requirements for periodically unattended machinery spaces
- [CCG/5737 - Fleet Safety Manual](#) - 6.B.1 Familiarization
- [CCG/5737 - Fleet Safety Manual](#) - 11.A.1 Document Control - Internal
- [CCG/6108 - Personal Protective Equipment Manual](#)
- [Vessel Certificate Regulations](#)
- [Marine Personnel Regulations](#) - Section 216





# Fleet Safety Manual

## 7.D.1 - SEARCH AND RESCUE OPERATIONS

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### 1 PURPOSE

- a) To ensure the safety of Canadian Coast Guard (CCG) vessels and crews when engaged in Search and Rescue Operations (SAR).

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer shall ensure that SAR Operations are conducted in compliance with the policies and procedures contained in the *National Search and Rescue Manual (DFO/5449)* and *IAMSAR Vol. III*.

#### 2.2 ALL PERSONNEL

- a) All personnel aboard a CCG vessel involved in SAR Operations are to be aware that their paramount responsibility is to ensure the safety of their own vessel and their shipmates.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) SAR Coordination - Joint Rescue Coordination Centres (JRCC) are authorized to task CCG vessels and helicopters for SAR incidents only. The directions of JRCC do not override the responsibility of the Commanding Officers for the safety of their vessel or their crew. Commanding Officers should advise JRCC immediately when a situation would exceed the capabilities of the vessel or their crew.
- b) The Commanding Officer shall notify the ROC as soon as possible when their vessel is tasked to respond to a SAR incident and the response will have an impact on other previously issued Regional Operations Centre (ROC) taskings.

### 3.2 NAVIGATION BRIDGE AND RESOURCES

- a) Officers standing navigational and engineering watches, and ratings assigned for navigational lookout duties, are not to be assigned tasks related to the conduct of the search and rescue operation that would interfere with the safe navigation of the vessel.
- b) When assigned On Scene Commander (OSC) duties, if the Commanding Officer of a CCG vessel judges that the workload associated with the OSC duties may interfere with the safe navigation of the vessel, anchoring or removing the vessel from active SAR operations are to be considered after consultation with JRCC.

### 3.3 SEARCH AND RESCUE DEDICATED EQUIPMENT

- a) All CCG vessels shall have at the ready specialized dedicated equipment for responding to SAR incidents. This equipment shall be well maintained and in a ready use state at all times. Refer to [CGFO 207 - SAR Equipment On Board Coast Guard Ships](#) for the SAR equipment required to be carried aboard CCG vessels.
- b) All SAR equipment shall be inspected once at crew change to ensure its location and state of readiness. The inspection shall be recorded and any deficiencies corrected.

### 3.4 MEDICAL EVACUATION

- a) When advised by the attending medical care provider that a medical evacuation may be the best course of action to deal with survivors, Commanding Officers shall coordinate the evacuation with the appropriate authorities.

### 3.5 SAR OPERATIONS

- a) Firefighting and Damage Control

CCG has no obligation or authority to engage in firefighting or damage control on board other vessels for the sole purpose of the protection of property. Firefighting or damage control is not SAR and therefore not part of the CCG mandate.

Unless the fire is onboard the CCG vessel, CCG personnel shall not engage in firefighting operations for the sole purpose of protection of property.

The CCG SAR level of service includes the retrieval of persons in distress, providing or their initial medical or other needs and delivering them to a place of safety.

In such cases, the role of the CCG is to assist the crew of the stricken vessel to evacuate and get to a place of safety. Sometimes this means that CCG personnel may need to proceed to an area that may contain fire, smoke, etc. in order to effect a rescue.

In order to ensure that these humanitarian assistance related activities are conducted safely, all CCG vessels must, under the *Canada Labour Code*, carry Personal Protective Equipment (PPE) required to protect our employees.

The majority of CCG's clients, such as fishermen and crews of commercial vessels, have the same level of training as our own crews; therefore, if they have been unable to contain a fire or perform the necessary damage control measures, it is unlikely that our own crews will be able to provide any additional assistance.

After applying the Risk Assessment procedures, CCG personnel may attempt to assist survivors from a vessel on fire, including getting close enough to the vessel on fire to be exposed to heat, smoke and/or an oxygen-deprived atmosphere or where there is a risk of explosion when all of the following hazards and controls are present:

- if the decision to attempt such a response is agreed upon by all members of the response team
- employees are fully briefed as to their roles and responsibilities prior to the mission so that they have a clear understanding of the levels and limitations of assistance they can provide
- the equipment and training of the CCG crew is sufficiently high as to do so safely (the level of CCG involvement is dependent upon available leadership, experience, training, and equipment)
- communications protocols have been discussed and are understood by all personnel taking part in the response
- the crew of the stricken vessel requests or agrees to it
- all other conditions of CCG personnel safety are present and can be maintained throughout the operation.

When all of the above-mentioned hazards and controls have been evaluated, and when the chance of success is high, then CCG personnel may proceed to assist the crew of the stricken vessel to evacuate.

Coast Guard crews must remember that they have very little information about the stricken vessel, and the little information they may have has been provided by someone who is in a state of distress at the time. The entire team's safety is paramount throughout the entire response.

b) Towing Assistance to Disabled Vessels

Specific separate policies exist for the towing of another vessel. These policies are to be referred to prior to engaging in any towing operation. At a minimum the following should be referenced;

- *CCG Towing Guide*
- *Policy on Assistance to Disabled Vessels*
- *National SAR Manual*
- Procedure 7.C.4

## c) Search and Rescue Training Exercises

Prior to the commencement of SAR exercises with DND resources, a tasking order is to come from the ROC. The ROC will advise the vessel of the location, date and time of the exercise. The ROC to advise JRCC of the commencement and completion times of the DND training exercises.

Prior to commencement of the exercise, the vessel Commanding Officer is to have a briefing on the mission with the Helicopter / Vessel Captain. This briefing shall include emergency procedures.

During training exercises, CCG fleet vessels are not to be used as datum for air dropped rescue equipment.

For Cape Class vessels, all hoist training exercises with the Cormorant helicopter will be restricted to the bow only.

**4 DOCUMENTATION**

National Search and Rescue Manual

IAMSAR Manual Volume III

Personnel Training Records

CGFO 207 - SAR Equipment on board Canadian Coast Guard Ships

Policy on Assistance to Disabled Vessels

Procedure 7.C.4 - Towing Operations



# Fleet Safety Manual

## 7.D.2 - MARINE AIDS TO NAVIGATION OPERATIONS

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### 1 PURPOSE

- a) To ensure the safe and efficient completion of floating and fixed aids operations by Canadian Coast Guard (CCG) Fleet personnel.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible for ensuring the safe completion of both floating and fixed aid operations by their vessel or work crew.

#### 2.2 MARITIME SERVICES DIRECTORATE

- a) The Maritime Services Directorate is responsible for setting the service standards for marine aids to navigation. These standards are published as *Marine Aids Directive 2.2400*.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) All equipment, including any provided by the program, such as cranes, derricks, wires, ropes, chains, chain nippers, pulleys, falls, and fittings involved in the processes (or involved with the fixed aid) shall comply with *Marine Safety Standards* or suitable equivalent such as the *Canadian Standards Association (CSA)*. Such equipment shall be inspected according to the [Canada Shipping Act \(CSA\) 2001- Cargo, Fumigation and Tackle Regulations](#) and shall be recorded. Other equipment shall be inspected periodically, at least prior to use, and the inspection recorded.
- b) An assessment of the inherent risks associated with the task is to be performed and steps shall be taken to mitigate those risks as per procedure 7.A.1.
- c) Personal safety equipment is to be identified and used by all personnel involved in the processes.
- d) Effective communications shall be established and agreed upon before any work takes place.

**3.2 RISKS INHERENT IN THE SERVICING OF FLOATING AIDS INCLUDE, BUT ARE NOT LIMITED TO:**

- a) The area on deck where the work is carried out shall be kept free from debris and other dangers such as snow, ice, seaweed, mussels, etc. (as much as is reasonably possible).
- b) Buoys to be de-iced to the furthest extent possible before being lifted.
- c) Persons not involved in the processes shall remain clear of the deck area as far as possible during the operation.
- d) Where necessary, lines shall be used to maintain control of buoy/stone.
- e) Where chain nippers are used in the process, they shall have a T4 Certificate of approval rating. The nipper shall have a number marked on it that clearly identifies the appropriate certificate.
- f) The buoy chain shall be checked for degradation as the buoy is being lifted. Where degradation has been identified and the chain replaced, the old chain shall be tagged indicating the location where it was lifted.
- g) All persons shall stay well clear of the flaked chain when buoy is being deployed.
- h) Buoy lugs visually inspected before deployment.
- i) Except in abnormal conditions, the buoy shall not be lifted by the cage.
- j) Most of the small plastic buoys now in service have no internal strength and the lifting lug on the buoy can handle the weight of the buoy and the slack in the chain only.
- k) Buoys when placed on deck or ashore shall be temporarily secured as soon as possible.
- l) Buoys to be lashed for weather.

**3.3 IN ADDITION FOR FIXED AIDS SUCH RISKS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING;**

- a) To ensure general safety and work procedures are followed, a supervisor shall be assigned to a shore party, where the shore party is greater than two people.
- b) The site shall be inspected prior to commencement of work, to identify any safety concerns.
- c) No person shall operate a chain saw without having been provided with training on this piece of equipment. (i.e. chain saw course).

**3.4 SHORE PARTIES**

- a) In many areas of Canada there is a possibility that shore parties may be attacked or threatened by wild animals. In areas where wild animal encounters can be reasonably anticipated, the Commanding Officer should consider equipping one member of the shore party with a firearm that is appropriate to the perceived threat.
  - No other duty shall be assigned to an armed lookout while ashore.



### **3.5 COMMUNICATIONS**

- a) In accordance with section 3.4, the shore party shall be equipped with a radio transceiver and regular communications checks shall be carried out between the vessel and the shore party.

## **4 DOCUMENTATION**

- Marine Aids Directives
- Equipment Installation Instructions
- Tackle Inspection Records
- Training Records





# Fleet Safety Manual

## 7.D.3 - SCIENCE OPERATIONS

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### 1 PURPOSE

- a) To ensure the safe and efficient completion of science programs by Canadian Coast Guard (CCG) Fleet and Scientific personnel.

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTOR, FLEET

- a) The Regional Director, Fleet shall ensure that contracts or agreements for the use of a CCG vessel include a requirement for the science party to comply with the Fleet Safety Manual (FSM).

#### 2.2 COMMANDING OFFICER

- a) The Commanding Officer is responsible for and shall ensure the safety considerations identified in this procedure are carried out.

#### 2.3 SENIOR SCIENTIST

- a) The Senior Scientist shall ensure compliance with the requirements of the FSM, the *DFO Radiation Safety Program Manual* and the *DFO Laboratory Safety Manual* and shall ensure that appropriate Personal Protective Equipment (PPE) shall be worn by scientific personnel while working aboard CCG vessels.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) All safety risks that are inherent in the program shall be identified and every precaution shall be taken to mitigate these risks. The crew of the vessel shall be advised of the precautions to be taken, the need for protective equipment or practices, and the nature of contingency plans before operations are commenced.

- b) The work program, together with the plan/itinerary provided by the Senior Scientist shall provide detailed instructions regarding the work to be performed including equipment provided, possible difficulties or hazards which could be expected; and copies of necessary documentation such as equipment installation instructions, Material Safety Data Sheets (MSDS), firearm permits, etc.
  - A cargo manifest including all pertinent MSDS information shall be provided to the vessel prior to loading by the senior scientist.

### 3.2 ADDITIONAL RISKS

- a) There are specific areas of concern related to scientific operations aboard CCG vessels that go beyond the risks normally associated to vessel's operations. As some science involves experimentation it is not possible to provide an all-encompassing list of hazards but some of the more common areas for attention are:
  - All wires, hooks, chains, and accessory gear used in any part of the processes shall have the appropriate certificate as required under the [Cargo, Fumigation and Tackle Regulations](#).
  - All equipment brought onboard shall be secured to the satisfaction of the Commanding Officer or their delegate.
  - All hazardous materials are to be identified prior to being loaded aboard. A list of the hazardous materials aboard, including the MSDS shall be maintained onboard.
  - Communications shall be set up and agreed upon before any work takes place. Communications includes radio procedure, hand signals, voice commands, etc.
  - Persons not immediately involved in the processes being performed shall remain clear of the scientific work area.
  - Lifting points on heavy scientific gear shall be inspected prior to deployment.
  - Where hazardous materials have been used, stored or retrieved, (especially noting toxic chemicals, biological waste, and or radioactive materials) an appropriate authority shall ensure testing, by qualified persons, and ensure the area is clear of any residual or trace elements upon completion of the scientific program or voyage.
  - Contingency Plans shall be developed and in place, addressing all health, safety and environmental risks relating to the project.

### 3.3 GUIDANCE OF LABORATORY OPERATIONS

- a) For the guidance of laboratory operations conducted aboard vessels, the *DFO Laboratory Safety Manual (DFO/5790)* shall be carried aboard vessels equipped with permanent laboratory facilities. Where operations are being established temporarily, the onboard Scientist-in-Charge shall provide a copy of the manual to the vessel upon boarding.
  - Fume Hoods – shall meet the minimum requirements, be properly maintained and are subject to annual inspections by the National Radiation Safety Officer (NRSO), delegated Regional Radiation Safety Officer (RRSO) or an accredited lab facility.
- b) Appropriate site-specific work instructions shall be developed for the safe completion of Science operations.

### 3.4 PROTECTION OF SHORE PARTIES

- a) In many areas of Canada there is a possibility that shore parties may be attacked or threatened by wild animals. In areas where wild animal encounters can be reasonably anticipated, the Commanding Officer shall consider equipping one member of the shore party with a firearm that is appropriate to the perceived threat. Where the Commanding Officer believes that an armed lookout is not appropriate to the level of risk, given: the location; the field of view; and, that the shore party is equipped with proven repellents and that all members of the shore party have been provided with awareness training on the additional risks involved from wildlife threats or attacks. The Commanding Officer may elect, in consultation with the shore party, not to provide an armed lookout.
- b) All firearms shall be handled in accordance with Procedure 7.C.5.
- c) No other duty shall be assigned to an armed lookout while ashore.
- d) In accordance with section 3.2, the shore party shall be equipped with a radio transceiver and regular communications checks shall be carried out between the vessel and the shore party.

### 3.5 USE OF RADIOISOTOPES ONBOARD CCG VESSELS

- a) The use of radioisotopes on board CCG vessels is under the responsibility and authority of DFO and its Consolidated Licence issued by the Canadian Nuclear Safety Commission (CNSC). The use of radioisotopes is governed by DFO's National Radiation Safety Committee. Any and all transportation, usage, and disposal of radioisotopes shall be carried out in accordance with the policies and procedures contained in the *Departmental Radiation Safety Policy* and the *DFO Radiation Safety Manual*, including the standards and regulations of the CNSC.
- b) One person shall oversee the safe use of radioisotopes for a Mission. The Designated Mission Radiation Safety Officer is named by the RRSO in consultation with the Chief Scientist, and is responsible for ensuring that all radioisotopes used during the mission, including loading, offloading and packaging for transport complies with all relevant regulations and that the vessel is effectively decontaminated at the end of the mission.
- c) For radioactive materials, the appropriate authority is the Designated Mission Radiation Safety Officer.
- d) Any person using radioisotopes (open and sealed sources) shall operate under either a valid Internal Permit issued by DFO or, by special arrangement; a licence issued by the CNSC and have an appropriate level of training. The person in charge of the activity shall obtain the written approval of the RRSO by completing *Form # 15A Notice of Intent to Use Radioisotopes Onboard Ship* at least 6 weeks prior to departure. All non-DFO users shall complete *Form 15B Users Working with Radioisotopes Acknowledgement*
- e) Wipe tests shall be conducted by the designated Mission Radiation Safety Officer at least twice during each mission (once at the start of the experimental program and once at the end of the program) and at least weekly for the duration of the experimental program. Areas found to have contamination, shall be quarantined until such time as they have been cleared for use. The Commanding Officer, Senior Scientist, CCG ROC shall be informed immediately, and steps taken, to ensure the

health and safety of all crew is protected. The Chief Scientist and, if radioactive materials related, the RRSO shall be notified as soon as practicable and in any instance within 24 hours of the discovery of the contamination.

- f) The wipe tests results, as recorded on *Form # 11 of the DFO Radiation Safety Manual* shall be forwarded as per the requirements noted on *Form # 11*.
- g) Refer to: (attached Annex A) items 3, 4, 5, and 7 for a detailed list of the requirements for the Scientific Plan/Itinerary pertaining to the use of radioisotopes on board CCG vessels.

## **4 DOCUMENTATION**

- CCG Tackle Register
- Manufacturer's Test Certificates
- Material Safety Data Sheets
- Scientific Plan / Itinerary
- The following forms referenced below, are located in the DFO Radiation Safety Manual.
  - Form # 11 Wipe tests results
  - Form # 15A Notice of Intent to Use Radioisotopes Onboard Ship
  - Form # 15B Users Working with Radioisotopes Acknowledgement
- Radiation Safety Program Manual
- DFO Laboratory Safety Manual

## ANNEX A – SCIENTIFIC PLAN / ITINERARY

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### Scientific Plan/Itinerary

A detailed plan/itinerary shall be provided by the Senior Scientist outlining, as a minimum, the following elements:

1. The nature of the work to be performed;
2. Equipment that will be required; equipment shall be pre-maintained (overhauled, inspected, and trialed to ensure that it is in satisfactory condition). Documentation, manuals, certificates, calibration record, testing requirements, Safe Working Loads are available to the vessel upon arrival;
3. Where radioactive materials are to be carried the name and contact numbers of the Regional Radiation Safety Officer and the Site Radiation Safety Officer (RRSO) shall be provided
4. Where radioactive materials are to be carried the Designated Mission Radiation Safety Officer shall be named by the RRSO in consultation with the Chief Scientist;
5. Radioactive materials to be used or stored onboard the vessel including, but not restricted to radioactive isotopes, shall be identified;
6. Providing the name of the person who will be responsible for ensuring that hazardous materials brought aboard, or created during the scientific program, are cleared from the vessel upon completion of the voyage;
7. For any mission(s) where radioisotopes will be used the Designated Mission Radiation Safety Officer, prior to departure, shall ensure they have;
  - a. Obtained written approval of the RRSO by completing *Form #15A Notice of Intent to Use Radioisotopes On Board Ship*;
  - b. Obtained a copy of the applicable CNSC licence or Internal Permit(s);
  - c. Ensured that the users identified on *Form #15A* have received adequate training, and;
  - d. Ensured that all non-DFO personnel have completed *Form #15B*;
8. Equipment producing sound levels requiring hearing protection shall be identified;
9. Specialized navigation, sounding or communication equipment requirements shall be identified;
10. Other equipment that may contain or present a risk to the operator or handler shall be identified;
11. Dangerous or toxic chemicals to be used or stored onboard the vessel shall be identified and WHIMS/MSDS information shall be supplied;
12. Small boat requirements shall be shown;
13. Any and all explosives shall be identified;

14. The level of expected support from vessel personnel including, but not restricted to, actual use or proximity to items shall be identified;
15. The amount of hours of vessel's personnel time to support Scientific Staff shall be estimated;
16. Special protective equipment/clothing required for vessels personnel in specific scientific operations shall be identified;
17. Loading and storage problems shall be forecast;
18. Specialized skills required of vessel personnel shall be listed;
19. Any mission follow-up reporting requirements shall be identified.



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**ANNEX B – LIST OF REGIONAL RADIATION SAFETY OFFICERS**

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| Contact             | Position  | Telephone                             | Fax            |
|---------------------|---|---------------------------------------|----------------|
| Melanie Quenneville | National Radiation Safety Officer                                     | (250)363-6449<br>(613)978-1436 (cell) | (250)363-6746  |
| Gary Maillet        | Regional Radiation Safety Officer<br>Newfoundland and Labrador Region | (709) 772-7675                        | (709) 772-4105 |
| Richard Nelson      | Regional Radiation Safety Officer<br>Maritimes & Gulf Regions         | (902) 426-4332                        | (902) 426-6695 |
| Eric Parent         | Regional Radiation Safety Officer<br>Quebec Region                    | (418) 775-0643                        | (418) 775-0740 |
| Kerry Wautier       | Regional Radiation Safety Officer<br>Central & Arctic Region          | (204) 984-6606                        | (204) 984-6587 |
| Kelly Malange       | Regional Radiation Safety Officer<br>Pacific Region                   | (604) 824-4706                        | 604) 858-3757  |

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# Fleet Safety Manual

## 7.D.4 - MARINE ENVIRONMENTAL EMERGENCY RESPONSE OPERATIONS

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### 1 PURPOSE

- a) To ensure the safety of Canadian Coast Guard (CCG) vessels and crews when engaged in Marine Environmental Emergency Response Operations.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is to ensure that Marine Environmental Emergency Response Operations are conducted in compliance with policies and procedures contained in the [\*National Contingency Chapter of the Marine Spills Contingency Plan\*](#) and pertinent Regional Contingency Chapters, if in place.

#### 2.2 ALL PERSONNEL ABOARD

- a) All personnel aboard a CCG vessel involved in Marine Environmental Emergency Response Operations are to be aware that their paramount responsibility is to ensure the safety of their own vessel and their shipmates.

#### 2.3 ALL EQUIPMENT INVOLVED IN LIFTING

- a) All equipment involved in lifting shall be inspected according to the [\*Canada Shipping Act \(CSA\) 2001 Cargo, Fumigation and Tackle Regulations\*](#) and shall be recorded. Other equipment shall be inspected periodically, at least prior to use, and the inspection recorded.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) National Environmental Response Objective:
  - In the event of a marine pollution incident, the CCG shall ensure that all efforts are made to protect people, property and the environment.

## b) Environmental Response Coordination:

- CCG vessels may be tasked to engage in a Marine Environmental Response Operation in the following situations:
  - Where Environmental Response (ER) is responding to a spill or potential spill from a vessel in the capacity as either the On-Scene Commander (OSC) or Federal Monitoring Officer (FMO).
  - Where Environmental Response is responding to a mystery spill as OSC or when the polluter is unknown, unwilling or unable to conduct an effective response.
- Any utilization of CCG vessels shall be coordinated through the Regional Operation Centres (ROC).
- Upon being tasked to a response operation, the Commanding Officers/OICs should immediately contact the ROC to clarify administrative arrangements and operational expectations with the ER duty officer. Vessels may be required to provide the following, depending on the limitations or constraints of the vessels:
  - Investigation of spill reports for the purpose of confirmation
  - Commanding Officers/OICs to act as interim OSC
  - Commanding Officer/OIC will be the principle point of contact aboard for the CCG OSC or FMO.
  - Evidence gathering including sampling taking, photography, videography and documentation.
  - Transportation of response material and personnel
  - Communication platform
  - Surveillance and monitoring
  - Spill response; deployment of equipment, oil recovery storage, transport and/or transfer.
  - Initial cleanup and recovery
  - Hotel services
  - Platform for emergency evacuation
  - Site safety, i.e. first aid, crowd control
  - Recovery and/or towage of the polluting vessel.

### 3.2 SAFETY CONSIDERATIONS

- a) Protection of human health and safety are fundamental objectives in any pollution incident response operation. The use of safe work procedures and practices help to reduce health and safety risks to response personnel, the surrounding community and the environment.
- b) Health and safety is the overall responsibility and first priority of the incident OSC. The health and safety of the personnel aboard a CCG vessel engaged in an environmental response operation shall remain with the Commanding Officer.

- c) Prior to participation in a response operation or exercise, Officers and crew should meet and review the [Health and Safety Plan - Annex A of the CCG Marine Spills Contingency Plan](#) and consider the specific elements that relate to the imminent operation or exercise. Where this meeting is not practical, a Senior Officer shall be made available to address any concerns brought up by the crew.
- d) Key shipboard operations contributing to the completion of the response operation shall be carried out in accordance with the Fleet Safety Management System (SMS). Site specific work instructions shall be available to prevent oil contamination of the accommodation sections.

### **3.3 TRAINING**

- a) The abilities of the crew are the most important factor to consider during the process of planning Environmental Emergency Response Operations. The Site Safety Awareness, Basics of Oil Spill Response (BOSRC), Marine Spill Response Operations (MSROC), Hazmat Awareness and the On Scene Command Course (OSC) are training courses specifically designed for Environmental Emergency Response Operations. Marine Environmental Emergency Response Competency profiles for a vessel are posted aboard the vessel in accordance with Procedure 6.A.1.
- b) CCG vessels and crews are to participate, when possible, in environmental response exercises so as to meet the competency profiles of their particular vessels. Commanding Officers shall ensure that these exercises meet the specific missions their vessels are capable of completing in an actual incident.

### **3.4 ENVIRONMENTAL RESPONSE DEDICATED EQUIPMENT**

- a) CCG vessels generally carry environmental response equipment to suit the requirement of their Shipboard Oil Pollution Emergency Plans.
- b) When involved in an oil pollution incident, the Commanding Officer may request one or more Environmental Response personnel (or equivalently trained personnel) to be carried aboard to supervise and/or assist the deployment, recovery and operation of pollution countermeasures equipment.

### **3.5 FIREFIGHTING**

- a) Where fires are to be fought in attempting to contain pollution, crews shall follow *procedure 7.D.1 - 3.5 (a)*.

### **3.6 DAMAGE CONTROL**

- a) Where damage control activity is required to attempt to contain pollution, crews shall follow *procedure 7.D.1- 3.5 (a)*.

### **3.7 TOWING**

- a) Where towing becomes part of the response in attempting to contain pollution, crews shall follow *procedure 7.C.4*. The authority for Environmental Response to engage in a towing operation resides under *Part 8 – Section 180 of CSA 2001*.

#### **4 DOCUMENTATION**

- CCG Marine Spills Contingency Plan
- Ship Competency Profile
- Personnel Training Records
- Vessel's exercise program
- Site Specific Work Instruction



# Fleet Safety Manual

## 7.D.5 - Icebreaking Operations

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### 1 Purpose

- a) The purpose of this procedure is to ensure the safety of Canadian Coast Guard (CCG) vessels and crews, as well as the safety of persons being assisted, when engaged in icebreaking operations.
- b) This procedure does not attempt to provide detailed instructions on icebreaking operations. It is intended to set a broad policy on safety matters of particular consideration during icebreaking operations.

### 2 Responsibilities

#### 2.1 Regional director, Fleet

The regional director, Fleet is responsible for ensuring:

- a) that the commanding officer assigned to icebreaking vessels will have a well-founded knowledge of icebreaking operations and have the appropriate skills and experience necessary to perform that task
- b) that when conditions warrant, they must add an experienced chief officer or supernumerary commanding officer, when icebreaking operations require extended navigation in confined waters or difficult conditions

#### 2.2 Commanding officer

The commanding officer is responsible for ensuring:

- a) that icebreaking operations are conducted in compliance with written procedures and best practices
- b) that they have a full understanding of the limitations of the vessel in its design, features and interaction with the ice

#### 2.3 Chief engineer

The chief engineer is responsible for ensuring:

- a) that the vessel has been prepared for icebreaking operations, and cold weather precautions implemented. This includes the closing of selected water tight doors, and recirculation of sea water when necessary
- b) that regular rounds of the engineering spaces are conducted

## **2.4 Superintendent, Regional Operations Centre**

The superintendent, Regional Operations Centre (ROC) is responsible for ensuring:

- a) the tasking of vessels for icebreaking services
- b) in consultation with commanding officer(s), provide notification to the regional director, Fleet when sailing orders or ice tasking requires extended navigation in confined waters or difficult conditions
- c) that as part of vessel Sailing Orders for icebreaking operations, that copies of the annual publications for icebreaking operations and services be provided to vessels tasked with such a duty

## **2.5 Superintendent, Icebreaking Services**

The superintendent, Icebreaking Services is responsible for ensuring:

- a) the delivery of regional ice breaking services
- b) in collaboration with the superintendent, ROC, the cooperation of the regions in the positioning of icebreakers or aerial reconnaissance as appropriate
- c) the development and delivery of recommended ice routes and warnings to marine shipping
- d) that requests for icebreaking services from clients are responded to and prioritized
- e) the interaction between the Ice Operations Centre, Marine Communications and Traffic Services (MCTS), and the ROCs in support of icebreaking operations
- f) that advertised levels of service are met by monitoring ice levels to reduce the risk of ice jams and flooding
- g) that notifications to the public are generated when icebreaking operations may impact the public, indigenous people, and the marine industry
- h) if necessary; the drafting of recommendations for the placement of an ice specialist on board a CCG vessel, and the timely forwarding of the recommendations to the National Manager, Icebreaking and Arctic Operations for approval by the Senior Director, Operational Support

# **3 Instructions**

## **3.1 General**

- a) The knowledge and ability required by mariners for the conduct of safe icebreaking operations can be gained through on the job training. However, it is primarily gained through experience.
- b) Unique risks associated with icebreaking operations include potential vessel damage to the hull, propellers, rudders, and the machinery of the icebreaker and any vessels being escorted.
- c) Risks to personnel include injury due to violent and unexpected vessel motion, potential hearing loss due to noise, and fatigue. Fatigue is a major concern and is addressed separately.



- d) In certain areas, ice may be used as a transportation link or for recreational purposes. There are numerous instances of public and private ice management operations such as booms protecting power dams, ferry track clearing, and dock bubbler systems. It is important that icebreaking operations take into account all users of the ice, including indigenous people, and that these users are notified of icebreaking operations.

### 3.2 Vessel capability

- a) The commanding officer must ensure that a site specific work instruction (SSWI) is available that provides details of the designed ice capability of their vessel. This instruction must include any specific considerations that have been determined for that particular vessel<sup>1</sup>, which may include a restriction from entering ice of any type.
- b) The commanding officer must ensure that the vessel is only operated in ice in accordance with the SSWI. Exceptions to this must only be made in emergency situations or after direct consultation with the regional director, Fleet. Such consultation must be documented in the vessel's log.
- c) The commanding officer must pay particular attention to controlling the speed at which they operate in ice, particularly when moving astern. Due consideration must be given to the risk of vessel damage due to excessive speed while in ice.

### 3.3 Training and experience of deck officers

- a) On the job training in icebreaking operations is essential for the CCG so that experienced officers are available for the purposes of fatigue management, career development, and for succession planning.
- b) The commanding officer must provide on the job training to deck officers, particularly chief officers, regarding all aspects of icebreaking operations. This must include providing opportunities for chief officers to manoeuvre the vessel in ice, alongside wharfs and alongside other vessels. If the commanding officer has reasons for not conducting this training, the issue must be discussed with the regional director, Fleet.
- c) Experience in the ice is a key factor. CCG vessels engaged in icebreaking operations must carry the [Ice Navigation in Canadian Waters](#). This reference must be made available to all deck officers on board the vessel. Additional reference publications are available and should be carried at the discretion of the commanding officer. Some of those additional publications/reference material are listed in section 4 of this procedure.
- d) Regional training plans should take into consideration, where available, ice navigation courses for identified officers.

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<sup>1</sup> International Maritime Organization (IMO) MSC.1/Circ.1519 – Guidance on methodologies for assessing operational capabilities and limitations in ice

### 3.4 Fatigue

- a) The fatigue levels of all personnel on the vessel are a significant consideration during icebreaking operations due to the high levels of noise, the erratic motion of the vessel, and extended icebreaking operations. The fatigue level of the commanding officer and deck officers is particularly significant due to the high level of mental concentration required during icebreaking operations, especially night operations.
  - **Note:** A particular problem exists during extended operations in confined waters, such as the St. Lawrence River and the Great Lakes Basin. In these areas, navigation continues around the clock. Sometimes, it is unsafe to stop and the operation must continue until the vessels are secured in port. In order to provide for the required rest periods, the commanding officer must ensure that a sufficiently experienced officer provides relief on the Navigation Bridge to the commanding officer so that hours of work regulation are met.
- b) Where appropriate the regional director, Fleet must ensure that a suitable relief for the commanding officer is available on board the vessel during continuous icebreaking operations so that the provisions of the hours of rest regulations can be met.
- c) The commanding officer must consult with the master or pilot of vessels under ice escort to ensure that their fatigue levels are considered. The commanding officer must consider suspending ice escorts for a rest period overnight, if the operation allows.
- d) The superintendent, ROC must take into consideration fatigue management and hours of rest regulation when tasking of vessels for continuous ice escorts.

### 3.5 Ice escort operations

- a) The escort of other vessels through ice is a particularly hazardous aspect of icebreaking operations. Risk of collision is high and damage to the escorted vessel, which usually has a lower Ice Class than the icebreaker, is possible, especially if speeds are excessive.
- b) Where multi-vessel convoy escorts are required, where necessary, the commanding officer should contact the Ice Office to discuss the details of the tasking.
- c) The commanding officer must ensure that the Bridge Team consists of an officer directly responsible for conning the icebreaker and watching the escort, and another officer responsible for normal bridge and navigational duties. This requirement may be suspended during periods of simple navigation and a safe following distance and when the officer on watch can safely attend to all of the duties.
- d) The commanding officer is to consult the escorted vessel's master or pilot regarding safe speed and escort distance. This consultation must be recorded in the Deck Log.

### 3.6 Other users of ice

- a) The commanding officer must be alert for other users of ice, such as recreational users, indigenous people, vehicle transportation links, and ice management operations. Icebreaking operations may be suspended until the commanding officer has confirmed that the Ice Office has notified other users of the icebreaking operation, and it is safe to continue the icebreaking operation.

### 3.7 Emergencies

- a) The commanding officer must take ice conditions into account when planning shipboard contingency plans and exercises. This includes:
  - i. recovering a person overboard
  - ii. ice/water rescue
  - iii. abandoning vessel in ice
  - iv. cold weather survival equipment
  - v. protection from wild life
  - vi. unauthorized access to the vessel via the ice

### 3.8 Site specific work instructions

- a) Vessels, where appropriate, must create SSWIs that cover off mission sets, and those elements which are critical for the safe conduct of that task. Consideration should be given to include vessel capability, handling characteristics, safe speed, and other factors relevant to the task. Additional consideration must be given to the complexity of the mission set due to environmental conditions and vessel limitations and risks associated with the task. The instructions need not be in a checklist but rather items to consider when planning the conduct of the mission set.
- b) Mission sets include the following:
  - i. flood control
  - ii. harbour breakout
  - iii. track maintenance
  - iv. single vessel escort and multi-vessel convoy
  - v. transit
  - vi. science mission

### 3.9 Vessel taskings

- a) All requests for icebreaking services from the public must be forwarded to MCTS, or directly to the Ice Operations Centre. Operations taskings are then generated and sent to the commanding officer for action.

## 4 Documentation

- Site specific work instructions
- Polar Water Operational Manual

## 5 References

- [Fatigue Management - A Guide for Canadian Coast Guard Managers, Officers, and Crew](#)
- [Marine Personnel Regulations](#) – Part 3, Division 3 Hours of Work and Hours of Rest
- Central and Arctic - Arctic Operations Order (Annual edition)
- Arctic Operational Guidance (Annual edition)
- Operational Guide, Winter Icebreaking Program Eastern Canada (Annual edition)
- International Code of Safety for Ships Operating in Polar Waters (Polar Code)

- [How to Meet STCW Requirements for Masters, Deck Officers and Other Crew Members of Certain Canadian Ships Operating in Polar Waters - SSB No.: 01/2018](#)
- International Maritime Organization (IMO) MSC.1/Circ.1519 - Guidance on methodologies for assessing operational capabilities and limitations in ice
- [Ice Navigation in Canadian Waters](#)
- [Manual of Ice - MANICE](#)
- [Icebreaking operations services](#)



# Fleet Safety Manual

## 7.D.6 - ENFORCEMENT BOARDING OPERATIONS

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### 1 PURPOSE

- a) To ensure that enforcement boarding operations supported by Canadian Coast Guard (CCG) vessels are conducted in a controlled and safe manner. Enforcement boarding includes all times where armed law enforcement personnel attempt to board another vessel for the purpose of enforcing the laws of Canada.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer of a CCG vessel has the ultimate authority and responsibility for taking all necessary actions for the health, safety and security of the vessel and crew (including all Enforcement Agency personnel on board the vessel or CCG-operated boarding craft). The Commanding Officer shall ensure that only trained CCG personnel are involved in the boarding process. The Commanding Officer has the final determination as to whether a CCG supported boarding operation will occur.

#### 2.2 ENFORCEMENT AGENCY LEAD

- a) The Enforcement Agency Lead is responsible for all enforcement activities conducted by the vessel and the crew. The Enforcement Agency Lead shall liaise and plan all boarding operations with the Commanding Officer. They shall ensure that notes and other documentation required for enforcement purposes are recorded by a designated Enforcement Officer. This documentation may draw on, but remains independent of the required CCG documentation.

#### 2.3 COXSWAINS/BOARDING CRAFT OPERATORS

- a) Coxswains/Boarding Craft Operators are to ensure that the boarding craft is disembarked, embarked and operated in a safe manner, as per Procedure 7.C.2. There may be occasions where, due to the physical capacity of the Rigid Hull Inflatable (RHIB), it will not be possible to have two persons in the RHIB while it stands by the boarded vessel. In such situations, the Commanding Officer and the Coxswain shall ensure, by taking all prudent measures, that the operation is conducted safely. The Coxswain has the same authority over the boarding craft as a Commanding Officer.

### 3 INSTRUCTION

#### 3.1 NAVIGATION SAFETY

- a) To ensure the safety of the CCG vessel the Officer-of-the-Watch shall not be required to monitor the operations of the boarding party or the remote party. The Commanding Officer or a lookout shall be employed for this purpose.
- b) All personnel not directly involved in the operations shall remain well clear from the field of view from the Bridge. The gun mounting and the boat recovery area must be clear and unobstructed at all times.
- c) As the [Navigation Safety Regulations](#) do not require CCG vessels to maintain the Automatic Identification System (AIS) in operation at all times, Commanding Officers shall use their discretion and disable the transmission mode of their AIS as follows:
  - When they feel it is safe to do so and the nature of the operation warrants it;
  - Or upon instruction from Regional Operations Centre (ROC).
- d) When CCG vessels employ stealth mode of operation the Commanding Officer shall notify the Marine Communications and Traffic Services (MCTS) Centre in the area that they have done so.
- e) Due to operational requirements, it is imperative that all vessels supporting Conservation and Protection, Northwest Atlantic Fisheries Organization (NAFO) and security related programs; apply the stealth mode to the Automatic Voluntary Observing Ships system (AVOS) to prevent their position from being disclosed.

#### 3.2 BOARDING OPERATIONS

- a) All Boarding Operations shall be conducted in accordance with the *Assistance to Law Enforcement Operations Manual*, Rigid Hull Inflatable (RHIB) Operators Training and under the guidance of the Commanding office under recommendations from Law Enforcement personnel.
- b) CCG Fleet vessels and crews that are conducting Enforcement Boarding Operations may be involved in a number of potentially high-risk activities. Risks inherent with these operations are to be identified and then are to be mitigated through the development and application of site-specific work instructions.
- c) Only CCG officers or crew who have been specifically trained shall be permitted to engage in boarding operations. At a minimum, only CCG personnel that received the DFO armed boarding training can take part in known risk boardings.
- d) Boardings shall be conducted under the direct observation of the CCG vessel and an order by the Commanding Officer to abandon attempts to board or to recover the boarding team shall take precedence over any instructions made by the boarding party leader.
- e) Boarding will be attempted only where it has been determined by Enforcement Officers, in consultation with the Commanding Officer and the Coxswain of the boarding RHIB, that the boarding can be achieved without undue risk to the safety of the boarding officers or the CCG crew assisting in the operation.

- f) The boarding RHIB shall standoff the boarded fishing vessel in the closest safe position until signalled by the boarding team leader that all is safe aboard the boarded vessel. At this time the boarding RHIB can return to the CCG vessel until signalled to return to pickup the boarding team.

### **3.3 OPERATION PLANNING AND PREPARATION**

- a) All personnel involved shall be briefed on the plan for the operation with regards to their role, limitations to their participation and conduct, the identification and communication of potential hazards and the command and control of any Boarding Parties.
- b) Communications frequencies, alternate frequencies, alternate signalling methods, and contact times must be established and confirmed before the operations commence. Communications equipment must be tested before use.
- c) In addition to the Personal Protective Equipment (PPE) outlined in Procedure 7.C.2, all CCG personnel taking part in the boarding operation shall wear the equivalent level of PPE as the Enforcement Officer(s).
- d) Where firearms are used in the conduct of domestic boardings, their use shall be controlled in accordance with Procedure 7.C.5.

### **3.4 UNKNOWN RISK BOARDINGS SHALL BE CONDUCTED IN THE FOLLOWING MANNER**

- a) CCG personnel involved as a boarding craft operator in an Unknown Risk boarding shall deliver Enforcement Agency personnel to, and retrieve them from the vessel being boarded.
- b) If at any time prior to the boarding the target vessel exhibits outward resistance, the RHIB shall return to the vessel and the operation shall be reviewed.
- c) CCG personnel may, upon request by the Enforcement Agency Lead with the concurrence of the Commanding Officer of the CCG vessel support Enforcement Agency personnel, but will not directly engage in Policing duties.

### **3.5 TRAINING AND QUALIFICATIONS**

- a) The training required before CCG personnel may be engaged in any Unknown Risk boarding's is the CCG Rigid Hull Inflatable Operator Training (RHOT) Pacing and Boarding Module.
- b) Only the CCG personnel that received the DFO armed boarding training can take part in known risk boardings.

## **4 DOCUMENTATION**

- Assistance to Law Enforcement Operations Manual
- Site-Specific Work Instructions.
- Checklists for Boarding Craft.
- Log Book entries
- Training Records







# Fleet Safety Manual

## 7.E.1 – Handling Petroleum Products

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### 1 Purpose

- a) To ensure that the bunkering, storage, or transfer of petroleum products is performed safely and without harm to the environment.

### 2 Responsibilities

#### 2.1 Commanding officer

The commanding officer is responsible for ensuring that:

- a) all persons involved in bunkering or transfer operations are competent and familiar with the Shipboard Oil Pollution Emergency Plan (when carried)
- b) all reasonable precautions are taken to avoid pollution during the operations taking into consideration weather, tidal, current, and wind conditions
- c) local or port state (including checklists and extra drill requirements) harbour regulations for the prevention of pollution are complied with during bunkering operations
- d) the vessel is fully secured for the bunkering operation

#### 2.2 Commanding officer and chief engineer

- a) The commanding officer and chief engineer on board must have site specific work instructions (SSWI) for handling petroleum products.

#### 2.3 Chief engineer

The chief engineer is responsible for ensuring that:

- a) the transfer and bunkering operations, including tanks for aviation fuel, are carried out in a safe manner
- b) all hoses used in external transfer operations are inspected and certified annually, this includes fuel hoses located at shore stations
- c) they are fully aware of the quantity and types of fuel products loaded on board by completing the checklist for all bunkering operations; and if necessary, request proof of certification from the appropriate contractor
- d) all bunker received meets the original equipment manufacturers fuel specifications

## 2.4 Chief engineer and chief officer

- a) The chief engineer in coordination with the chief officer are responsible to determine the personnel involved with the bunkering operations, including a schedule (meal relief/job rotation), and for ensuring that all equipment and supplies for the operation are made available to the persons involved.

## 3 Instruction

### 3.1 General

- a) All Canadian Coast Guard (Coast Guard) vessels must utilize SSWIs and checklists for transferring or bunkering operations. All transfer operations must be conducted using a checklist identifying the capacities of the tanks and quantity of liquid to be filled in the specific tank. Tanks must not be filled past 95% capacity.

**Note 1:** Vessels designed with a cascading fueling system may be required to fuel the tank past 95%.

- b) SSWIs must be developed in accordance with applicable regulations and any additional local port or harbour requirements. The bunkering instructions/checklists are to be broken down into 4 categories:
  - prior to operations
  - during operations
  - topping-up tanks
  - post operations

### 3.2 Bunker delivery notes – Fuel samples

- a) In accordance with [Regulations for Vessel Air Emissions: 2015 Sulphur Emissions Standards - Ship Safety Bulletin \(SSB\) No.: 08/2014](#), vessels over 400 gross tonnage are required to carry bunker delivery notes (BDNs), which stipulate the sulphur content of fuel delivered to the vessel. This requirement is pursuant to the [Vessel Pollution and Dangerous Chemicals Regulations](#)<sup>1</sup> and Annex VI of the 1973 International Convention on the Prevention of Pollution from Ships (MARPOL). The BDN is a signed declaration by the fuel oil supplier's representative certifying that the fuel oil supplied is in conformity with these regulations.
- b) When bunkering vessel tanks or shore-based tanks, the BDNs must be kept up to date and readily available for inspection at all times. The BDNs must be retained for a period of 3 years from the date of delivery.
- c) The BDN must contain the following information:
  - name and International Maritime Organization's (IMO) number of receiving vessel
  - port
  - date of commencement of delivery
  - name, address, and telephone number of marine fuel oil supplier

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<sup>1</sup> Section 124(1)

- product name(s)
  - quantity in metric tons
  - density at 15 °C, kg/m<sup>3</sup> and the standard test method used to obtain this value
  - sulphur content (% m/m) and the standard test method used to obtain this value
  - closed cup flashpoint and the standard test method used to obtain this value
  - cetane index or cetane number and the standard test method used to obtain this value
- d) Fuel samples must be taken at the time of delivery, sealed and signed by both the supplier and officer in charge of bunkering. The sample is to be cross referenced with the BDN and retained under the vessel's control for a period of not less than 12 months.

**Note 2:** Smaller vessels that bunker at retail facilities such as marinas are not required to follow 3.2 (a) of this procedure but may choose to do so if there is a question regarding the quality of the fuel being bunkered.

**Note 3:** Vessels that fuel from shore-based tanks where fuel samples have been retained as part of 3.2 (b) do not need to take additional fuel samples.

**Note 4:** If the BDN indicates that the fuel's cetane index or cetane number is below the acceptable limits according to the original equipment manufacturer's minimum fuel specification, vessel crew must inform Marine engineering, Hull, Mechanical and Electrical (HME) by sending an email to their generic account:

[ccgmedoccontrol.xnat@dfo-mpo.gc.ca](mailto:ccgmedoccontrol.xnat@dfo-mpo.gc.ca).

### 3.3 Security of fuel and oil supplies

- a) Vessels must provide for the security of all fuel and oil supplies on board to ensure they are safeguarded and do not pose a risk or threat to the health, safety, security of personnel, the vessel, or the environment.
- b) All fuelling stations must be secured and locked to deny unauthorized access. Vessels that regularly carry gasoline, aviation fuel, lubrication oil, etc., and do not have dedicated internal storage tanks for those products must utilize appropriately designed, sized, and dedicated on-deck storage tanks (such as jettison tanks).
- c) The use of portable storage containers (such as jerry cans and drums) are to be kept to a minimum. Small portable fuel containers and drums used on deck must be secured appropriately (for example, secured in flammable storage lockers that are properly vented and grounded, or secured and lashed to the inboard bulwark) to minimize risks involved with their use.
- d) In instances where open deck storage of portable petroleum product storage containers is unavoidable (such as re-supply or infrequent operational requirements), they must be secured utilizing tamper tags, tamper tape, paint drops at threaded cap joints or locks and regularly monitored.

## 4 Documentation

- Shipboard oil pollution emergency plan (when carried)
- Site specific checklists
- Site specific work instructions (SSWIs)

- Oil record books
- Chief engineer's logbook
- Deck logbook
- Waste oil disposal records
- Helicopter logbook
- Bunker delivery notes
- Original equipment manufacturers fuel specifications

## 5 References

- [Marine Machinery Regulations](#)
- [Vessel Pollution and Dangerous Chemicals Regulations](#)
- [Arctic Shipping Safety and Pollution Prevention Regulations](#)
- [Transport Canada - Regulations for Vessel Air Emissions: 2015 Sulphur Emissions Standards - Ship Safety Bulletin SSB No.: 08/2014](#)
- [Transport Canada - Arctic Waters Oil Transfer Guidelines - TP 10783](#)
- [International Maritime Organization - International Convention on the Prevention of Pollution from Ships \(MARPOL\)](#)
- [Public Services and Procurement Canada - National Fuel Procurement Program](#)



# Fleet Safety Manual

## 7.E.2 - HANDLING AND DISCHARGE OF OILY WATER

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### 1 PURPOSE

- a) To ensure, that all Canadian Coast Guard (CCG) vessels do not violate environmental regulations and standards through the disposal of their oily mixtures.

### 2 RESPONSIBILITIES

#### 2.1 CHIEF ENGINEER

- a) The Chief Engineer shall ensure that the equipment used for handling oily water meets the requirements and is properly maintained.
- b) The Chief Engineer is responsible to ensure that all oily water is disposed of in a safe and environmentally friendly manner.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) Personnel involved must be familiar with the regulations for the prevention of pollution and with the operation and maintenance of the oily water separator systems before being allowed to operate the oily water separator systems.
  - Site Specific Work Instructions are required covering familiarization with the governing regulations, operation and maintenance of the bilge system and the oily water separator.
- b) Alternatives for handling the oily water produced in vessels consist of containment for shore facility discharge or treatment to purify to regulated levels and subsequent discharge.
- c) Vessels not required to be equipped with an oily water separator shall store their oily water in holding tanks or proper containers and dispose of it to a shore facility in accordance with the environmental regulations in effect within the region. In such cases Site Specific Work Instructions or checklists are to be used.
- d) Where oily water holding tanks are fitted, oily water may be pumped into the tank and allowed to settle before being pumped overboard via the oily water separator.

- e) No oily water shall be pumped directly overboard; without having been processed through an approved and properly functioning oily water separator equipped with an approved monitoring device that will prevent discharge overboard if the oil content exceeds the limit prescribed by the regulations that are in effect for the location of the vessel at the time of the proposed discharge.
- f) The Bridge must be notified prior to pumping and the start/stop times shall be recorded in the deck log.
- g) The vessel must be underway when overboard discharge is taking place and all oily water pumping operations must be recorded as per the requirements of the Oil Record Book. Each entry shall be signed by the Officer in Charge of the operation, and each page shall be signed by the Commanding Officer.
- h) Disposal of oily water from CCG vessels shall be contracted only with those who have been licensed or registered by provincial authorities for the disposal of petroleum products.
- i) Knowledge of the effects of cleaning agents, chemicals and dirt on the effectiveness of the equipment shall be understood.
- j) The containment of petroleum product leaks and the prevention of contamination of the bilge by cooling water treatment and other chemicals will greatly improve the operation of the oily water separator.
- k) Calibration of the Oil Content Meter shall be done at least every five years or more frequently if required.

#### **4 DOCUMENTATION**

- Calibration Records of the oily water separator
- Log Book Entries
- Oil Record Book Entries
- Site Specific Work Instructions.
- Contracted Oily Water Disposal - Receipts



# Fleet Safety Manual

## 7.E.3 - HANDLING AND DISCHARGE OF BLACK AND GREY WATER

### 1 PURPOSE

- a) To ensure that Canadian Coast Guard (CCG) vessels dispose of their black water (sewage) and grey water (waste) in accordance with applicable regulations and in an environmentally sound manner paying particular attention to local restrictions.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer shall be aware, in their area of operation, where sewage and waste water discharge is restricted or prohibited. At any time that the vessel is operating in one of these areas they shall ensure that the Engine Room is notified and that the automatic discharge is disabled or that discharges are controlled.

#### 2.2 CHIEF ENGINEER

- a) The Chief Engineer shall ensure that fitted treatment equipment meets discharge requirements and is properly maintained.

#### 2.3 COMMANDING OFFICER, CHIEF ENGINEER AND THE SUPERINTENDENT MARINE ENGINEERING

- a) The Commanding Officer, Chief Engineer and the Superintendent Marine Engineering shall ensure that, where appropriate, the vessel is fitted with sewage equipment to control discharge. Where vessels are assigned to areas where discharge is prohibited, fittings shall be installed to allow for discharge to designated facilities ashore.

### 3 INSTRUCTION

#### 3.1 OVERSEE / OPERATE SYSTEM

- a) Maintenance of the Black and Grey Water systems is to be integrated into the vessel's operational maintenance routine. Where manufactures specific instructions are lacking, Site Specific Work Instructions shall be developed for the operation and maintenance of the system.

- b) Vessel familiarization or the use of placards or signage at fixtures shall be utilized to ensure that personnel do not introduce oily waste or other pollutants into the grey or black water system. This may include warnings about the use of excessive soap which limits the operation of the treatment portion of the plant.

### **3.2 TREATING BLACK AND GREY WATER**

- a) Where approved marine sewage treatment plants are installed, ensure that certified environmentally friendly products are used both for treatment and cleaning (according to manufacturer's instructions). Where installed, run the system on automatic and ensure that the machinery is operating properly through regular checks and in accordance with the maintenance plan prescribed by the manufacturer. When performing maintenance ensure that there are no local regulations prohibiting cleaning / de-sludging operations.

### **3.3 HOLDING TANKS**

- a) Where holding tanks are used in place of treatment plants or when discharges are restricted from vessels with approved treatment plants due to geographical areas, the tank level shall be monitored as required.
- b) On vessels not equipped with an approved marine sewage treatment plant or a lack of a treatment plant altogether, holding tanks shall be fitted with valves which may prevent overboard discharge.

### **3.4 DISPOSAL OF BLACK AND GREY WATER**

- a) Dispose of black and grey water shall be in accordance with municipal, national and international standards, equipment manufacturers' instructions and site specific work instructions.
- b) At no time shall sewage be discharged into waters where sewage discharge prohibitions are in effect.
- c) When chlorine is used as a disinfectant in the treatment process of sewage the discharge of a residual of the chlorine shall not be greater than 0.5 mg/L
- d) For vessels operating in the Great Lakes, unless a vessel is equipped with approved equipment that complies with the regulations, sewage shall not be discharged into the Great Lakes or St. Lawrence River;
  - until past the downstream gates to Montreal's St-Lambert Lock
  - within 4 miles of shore
  - between 4 and 12 miles off shore unless the sewage has been macerated and disinfected.

## **4 DOCUMENTATION**

- Site-specific work instructions – as appropriate
- Manufacturer's operating and maintenance instructions
- Placards or signage at sinks and drains and lavatories





# Fleet Safety Manual

## 7.E.4 - DISCHARGE OF BALLAST WATER

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### 1 PURPOSE

- a) To ensure that all waters are protected from non-native fish, other aquatic organisms, and harmful substances that could be discharged in ballast water.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer shall ensure that the vessel complies with the Transport Canada publication [\*A Guide to Canada's Ballast Water Control and Management Regulations TP 13617 E\*](#) – when operating in those waters. There may be other regulations respecting discharges that apply within the vessel's operational zone and where these regulations require control of ballast water they must be followed.
- b) The [\*Canada Shipping Act, 2001 – Vessel Pollution and Dangerous Chemicals Regulations\*](#) must also be observed with reference to the sections on oily water discharge to prevent oil contaminated ballast water discharge.

### 3 INSTRUCTION

#### 3.1 Ballast discharges

- a) Ballast discharges are to be logged.
- b) To ensure that Commanding Officers receive the most up-to-date advice regarding regulations or standards applicable to the discharge of ballast water, they shall contact the Marine Communications and Traffic Services (MCTS) for the latest directions received from the local authorities within the Region.

### 4 DOCUMENTATION

Log Book Entries  
Oil Record Book





# Fleet Safety Manual

## 7.E.5 - HANDLING, STORAGE, AND DISPOSAL OF HAZARDOUS MATERIALS

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### 1 PURPOSE

- a) To ensure that all Canadian Coast Guard (CCG) employees are familiar with the procedures for the safe handling, storage, and disposal of hazardous materials, and that the materials are disposed of in an environmentally responsible manner.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible for ensuring that all products containing hazardous materials are identified to the standard required by the applicable [Hazardous Products Regulations](#) and or [Transportation of Dangerous Goods Regulations](#), and in the case of international voyages, to the *International Maritime Dangerous Goods Code (IMDG)*. Hazardous materials shall be clearly labelled, handled, maintained, and stowed according to these standards.

#### 2.2 ALL PERSONS WHO ARE HANDLING HAZARDOUS MATERIALS

- a) All persons who are handling hazardous materials shall be trained to meet the requirements of these procedures, to ensure their safety and the safety of others, as well as the protection of the environment.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) All known hazards at a work site shall be identified, and this information shall be included in the sailing orders. This applies, for example, to structure demolition and site clean-up.
- b) [Workplace Hazardous Materials Information System \(WHMIS\)](#) practices and procedures shall be followed.
- c) The following are examples of hazardous materials or special waste, that may be encountered on board the vessel, and should be handled, stored, and disposed of in accordance with these procedures:
  - Asbestos waste
  - Polychlorinated biphenyls (PCB)
  - Radioactive isotopes (e.g. smoke detectors, specific gauges)
  - Waste oil and filters
  - Anti-freeze
  - Oily bilge sludge, oily water

- Fuel, oil, solvent, paint
- Gas cylinders
- Other used liquid or solid chemicals
- Battery acids, caustic liquids
- Used batteries
- Oily rags
- Biomedical waste such as items contaminated with blood or bodily fluids. Examples include: bloody gauze, feminine hygiene products, incontinence products, and gloves.
- Biomedical waste such as contaminated sharps (e.g. syringes, lancets), and materials that can puncture, penetrate or cut the skin (e.g. broken laboratory glass), and have come into contact with a bodily fluid or micro-organisms.
- Contaminated or uncontaminated marine specimens from vessel laboratories

### 3.2 HANDLING AND STORAGE

- a) For guidance and advice on the handling and storage of hazardous materials, the Department of Fisheries and Oceans (DFO) Regional Occupational Health and Safety Advisor is the point of contact.
- b) Procedures provided in the Safety Data Sheets (SDSs), under the [Transportation of Dangerous Goods Regulations](#) and the *International Maritime Dangerous Goods Code (IMDG)* will be followed.
- c) A list indicating the storage area, shall be maintained for all hazardous substances that are used, produced, handled or stored in the workplace.
- d) Where a hazardous substance is stored, handled or used in a workplace, signs shall be posted in conspicuous places warning every person granted access to the workplace of the presence of the hazardous substance, and of any precautions to be taken to prevent or reduce any hazard of injury to health.
- e) Every employee shall receive training with respect to hazard prevention and control at the workplace, including all hazard information disclosed by the supplier of the hazardous substance or by the employer on a SDS or label. This training shall be reviewed once a year and records shall be maintained.
- f) CCG employees, who must use sharps regularly for medical reasons (diabetes, allergies, etc.), are responsible to carry or use sharps containers. This container should be stored at a location where the use of the sharps occurs most often.
- g) In circumstances where a dedicated sharps container is not available, it is permitted to use, as an interim measure, a suitable receptacle to safely store, transport and dispose of sharps. A suitable receptacle is hard-sided, has a lid that can be closed, and has been labelled: biomedical waste.
- h) Personnel who accidentally come in contact with blood or bodily fluids shall immediately notify a supervisor and first aid attendant. Details of the accident shall be documented using an Incident Investigation Report (IIR) as per Fleet Safety Manual (FSM) 9.B.1. All exposed personnel shall seek medical advice regarding the need for any follow-up.

### 3.3 DISPOSAL

- a) For guidance and advice on the disposal of hazardous materials, the Regional Environmental Coordinator is the point of contact.

- b) Where a CCG or DFO base has a site specific disposal plan, this plan shall be adhered to when landing hazardous material ashore at the base or site.
- c) General biomedical waste that does not contain contaminated sharps and does not pose a threat to the public health, once contained in double thickness (double-bagged) impervious plastic bags, can be disposed of in accordance with FSM section 7.E.6.
- d) CCG vessels will carry an approved sharps disposal container as per *Annex A* of [DFO/5758 Canadian Coast Guard Fleet Logistics Standard 400.00.07](#) and [DFO/5349 Coast Guard Fleet Orders \(CGFO\) 207.00](#). Contaminated sharps shall be placed into the approved container. It shall be located in a secure and convenient location on board.
- e) It is not necessary to include disinfecting solutions or chemicals in sharps containers.
- f) CCG vessels are not permitted to treat biomedical waste or contaminated sharps on board the vessel by means of either disinfection or incineration. Contaminated sharps shall be disposed of according to provincial standards at a shore-based facility.
- g) Disposal of waste oil from CCG vessels shall be contracted only with contractors who have been licensed or registered by provincial authorities for the disposal of petroleum products.

### 3.4 SAFETY DATA SHEETS (SDS)

- a) As per the [Canada Occupational Health and Safety Regulations](#), a SDS shall be obtained for every hazardous substance stored, handled or used at the workplace.
- b) SDSs shall be:
  - Obtained for every hazardous product received on board unless there is already a SDS on board for that product and that sheet is less than three years old;
  - Updated as soon as possible, but not more than 90 days after new hazard information concerning that product becomes known;
  - Renewed every three years ensuring that the product held on board matches exactly the information contained in the new SDS. If there is any doubt that the new sheet contains information that pertains only to a new formulation of the product which is not the version of the product presently stored on board then the existing SDS should be annotated that: no update for this product version or formulation is available;
  - Held for every hazardous product that is on board. If a manufacturer's SDS is not available to the vessel, a sheet shall be prepared showing the product name and the words: not available.
- c) SDS can be maintained in physical or electronic formats provided that, whichever format is chosen, the information is readily available to employees.

## 4 DOCUMENTATION

- Safety Data Sheets (SDSs)
- Oil Record Book
- Requisitions with Disposal Contractors
- Site-specific Checklists
- Training records





# Fleet Safety Manual

## 7.E.6 – Handling and Discharge – Solid Waste

### 1 Purpose

- a) To protect employees from health risks related to waste handling and storage. To ensure that all solid waste is collected, processed, stored, recycled, and disposed of in accordance with applicable regulations and in an environmentally responsible manner.

### 2 Responsibilities

#### 2.1 Commanding officer

- a) The Commanding officer is the environmental officer for the vessel/station and is responsible for ensuring that this procedure is implemented, and that site specific work instructions (SSWIs) are developed and implemented for the handling of solid waste.

### 3 Instruction

#### 3.1 General

- a) The handling and discharge of solid waste shall be in accordance with the [Vessel Pollution and Dangerous Chemicals Regulations](#) and Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL).
- b) Where local recycling programs exist, solid waste shall be recycled in accordance with local regulations and the policies of the Department of Fisheries and Oceans [Office of Environmental Coordination](#). In areas where no local recycling programs exist, recyclable solid waste shall be sorted, stored appropriately, and transported to the nearest recycling facility.
- c) Station mode vessels shall meet, in addition to 3.1(a), all federal, provincial and municipal laws, including any local restrictions, for waste management ashore.
- d) Under no circumstances shall solid waste be discharged into any waters or released into the environment.
- e) Cautionary notices posted in storage areas and personal protective equipment (PPE) shall be used to reduce the risk of injury or disease from the handling of waste.
- f) Any waste disposal equipment fitted on board the vessel (incinerators, compactors, shredders), shall be operated in accordance with the manufacturer's instructions and a SSWI shall be posted at the equipment location.

- g) The operation of the incinerator shall be recorded in the Garbage Record Book.

### 3.2 Station mode vessels

- a) Station mode vessels shall develop a SSWI to manage solid waste disposal at their site.
- b) Any interface that occurs between a vessel/station and a shore-based facility for the disposal of solid waste (for example, CCG base, vessel, yard, mobile unit, marina, or municipal service, etc.), shall be in accordance with applicable local regulations, and in an environmentally responsible manner.

### 3.3 Garbage management plan and placards

- a) All vessels shall have a SSWI for the management of solid waste that serves as a garbage management plan<sup>1</sup>.
- b) Waste management areas shall be clearly placarded<sup>2</sup>.

### 3.4 Garbage record book

- a) All vessels of 400 gross tonnage or more or that are certified to carry 15 persons or more<sup>3</sup>, shall establish and maintain a Garbage Record Book using [Transport Canada Form F 85-0492](#)<sup>4</sup>, which shall be ordered directly from Transport Canada.
- b) Each discharge operation or completed incineration, shall be recorded in the Garbage Record Book, and signed for on the date of the incineration or discharge by the officer in charge. Each completed page of the Garbage Record Book shall be signed by the commanding officer of the vessel.
- c) The entry for each incineration or discharge shall include date and time, location of port facility, description of the garbage, and the estimated amount incinerated or discharged.
- d) The Garbage Record Book shall be kept on board the vessel, and in such a place as to be available for inspection in a reasonable time. The Garbage Record Book shall be retained on board for a period of 2 years after the last entry is made in the book. After 2 years, the book can be destroyed.

**Note:** The Garbage Record Book is the legal document, which shall be used by regulatory authorities to determine whether a vessel is in compliance. A calculated waste burden is assigned to each person on board for each day at sea, and the book is used to calculate whether the amounts of waste disposed and reported were appropriate.

- e) In the event of discharge or accidental loss of solid wastes, an entry shall be made in the Garbage Record Book of the circumstances and the reasons, for the loss.

### 3.5 Processing

- a) Depending on factors such as: the type of vessel, area of operation, and the size of crew, vessels may be equipped with incinerators, compactors, food waste disposal

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<sup>1</sup> Canadian Coast Guard requirement

<sup>2</sup> [Vessel Pollution and Dangerous Chemicals Regulations](#), section 103

<sup>3</sup> [Vessel Pollution and Dangerous Chemicals Regulations](#), section 105

<sup>4</sup> Canadian Coast Guard requirement



units, or other devices for shipboard garbage processing. Members of the crew shall be assigned to operate the equipment, on a schedule commensurate with vessel needs.

### **3.6 Food waste**

- a) When a vessel/station is equipped with a waste disposal unit, shred all food waste for discharge in the grey or black water systems. Disposal through the grey water system should be used only where there is no contravention of applicable federal, provincial or municipal regulations. At no time shall shredded food waste be discharged from a vessel within 3 nautical miles from shore. This instruction shall be posted in a readily visible location at or near the galley sink waste disposal unit and shall be included in the SSWI for this equipment.

### **3.7 Compact glass and light metals**

- a) Wet and dry waste, including glass, light metals, and plastics may be compacted. Do not compact explosive items such as pressurized containers, for example, aerosol cans. The SSWI shall include any warnings in handling and discharging of these materials.

### **3.8 Incinerate**

- a) When a vessel is equipped with an incinerator, non-recyclable paper and paper products, plastic, etc. shall be incinerated.
- b) Marine incinerators are predominantly designed for intermittent operation, hand-fired and fed by hand.
- c) The ash or vapour may be hazardous. The ash from the combustion of some plastic products containing heavy metal or other residues can be toxic, and should not be discharged into the sea. Ashes shall be retained on board, where possible, and discharged at port reception facilities.
- d) Due to the potential environmental and health effects from combustion of by-products from such items as: scraped paint, impregnated wood, PVC-based plastics, etc., special precautions should be taken in the disposal of these items and should be detailed in the SSWI.

### **3.9 Stored waste**

- a) Waste shall be stored in a designated area on the deck or ashore (container, mesh cage, or other storage). Care shall be taken to identify and separate recyclable from non-recyclable waste where local programs exist.
- b) Clean and disinfect waste storage area after each use.

### **3.10 Dispose with proper authorities**

- a) Contact the proper authorities (port, municipality or other) upon arrival in port, so that waste may be appropriately disposed of (possible recycling, etc.). Endeavour to ensure that waste removal contractors engaged by the vessel/station are reputable licensed firms.

## 4 Documentation

- Manufacturer's instructions
- Garbage Record Book - [Transport Canada Form F 85-0492](#)
- Log book entries
- Site specific work instructions

## 5 References

- International Convention for the Prevention of Pollution from Ships (MARPOL)
- [CCG/6108 – Personal Protective Equipment Manual](#)
- [Vessel Pollution and Dangerous Chemicals Regulations](#)
- [Department of Fisheries and Oceans – Office of Environmental Coordination](#)



# Fleet Safety Manual

## 7.E.7 - ENVIRONMENTAL STEWARDSHIP

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### 1 PURPOSE

- a) The Canadian Coast Guard (CCG) has established an Environmental Policy which meets or exceeds all applicable environmental legislation and where possible applies best practices to reduce our environmental footprint. The CCG is committed to protecting the environment while remaining operational and to ensure that all operations conducted within the CCG are done so in consideration of the environment.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer shall ensure that, where possible, steps to reduce environmental impacts from the vessel and its equipment are considered and implemented. Equipment shall be used and maintained in a way that the airborne emissions are kept to a minimum.

#### 2.2 ALL EMPLOYEES

- a) All employees shall be aware of the *CCG Environmental Policy* and apply best practices whenever possible to reduce our environmental footprint.

#### 2.3 OPERATORS OF EQUIPMENT

- a) The operators of equipment shall be familiar with this procedure and Site Specific Work Instructions, to ensure that equipment is operated in a safe, economical, efficient and environmentally sound manner.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) Machinery is to be used in accordance with the manufacturer's specifications. Fuel quality is to be controlled through the application of [Canadian General Standards Board standards](#) in all fuel procurement activity. Unnecessary idling and low loading is to be avoided.

- b) All vessels shall meet or exceed *MARPOL 73/78 Annex VI – Regulations for the Prevention of Air Pollution from Ships* as applicable within the regulations. All vessels 400 GRT and above on International Voyages, are required to have an International Air Pollution Prevention Certificate (IAPP).
- c) Where vessels are fitted with incinerators for the burning of waste, these incinerators are to be maintained and operated in accordance with the manufacturer's instructions.
- d) Every precaution should be taken to reduce the release of volatile organic compounds (VOCs) by avoiding or reducing the use of environmentally unfriendly solvents and coatings onboard the vessel.
- e) Green products: all vessels and stations where appropriate, shall consider and convert to green products to reduce our environmental footprint.

### **3.2 FUEL CONSUMPTION GUIDES**

- a) The overall objective of a fuel consumption guide is the minimization of fuel consumption and as a consequence a reduction in airborne emissions. All CCG vessels capable of producing 1000kW for propulsion are to develop a fuel consumption guide. The optimum condition indicated by the guide should be followed in normal operating circumstances insofar as the conditions and the activity in which the vessel is engaged permit.
- b) Vessels under 125 GRT shall have tables indicating the speed and fuel consumption at various RPM. This table shall be referenced when planning taskings near the capable range for the vessel.

## **4 DOCUMENTATION**

- Site Specific Work Instructions
- Engine log book entries
- Maintenance Records
- Fuel Consumption Guide



# Fleet Safety Manual

## 7.E.8 – Use of Halocarbons

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### 1 Purpose

- a) To ensure the safety and security of Canadian Coast Guard (CCG) personnel, assets and the environment from releases of halocarbon on board vessels/stations. Systems containing halocarbon<sup>1</sup> are maintained in accordance with the [Federal Halocarbon Regulations, 2003](#) (FHR 2003) and the Fisheries and Oceans Canada (DFO) [National Halocarbon Environmental Management Plan \(EMP\)](#).

### 2 Responsibilities

#### 2.1 Commanding Officer

The commanding officer is responsible for ensuring:

- a) this procedure is followed on board the vessel/station and that halocarbon releases are properly reported using the [Halocarbon Release Report](#) (FP-0054-E) form.

#### 2.2 Chief engineer

The chief engineer is the delegated authority for granting permission to work on a system containing halocarbon on board the vessel/station. The chief engineer is responsible for ensuring:

- a) the maintenance of systems, equipment, service logs and inventory of halocarbon on board the vessel/stations
- b) when engaging the services of a contractor to maintain systems containing halocarbon, the contractor fully complies with the requirements of this procedure, including Annex II

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<sup>1</sup> Section 3.1 b)

## 2.3 Regional Office of Environmental Coordination - Fisheries and Oceans Canada

The [Regional Office of Environmental Coordination](#) (ROEC) is responsible for ensuring:

- a) the coordination of activities required to maintain the regional inventory of halocarbon, and assists Fisheries and Oceans Canada (DFO) and CCG to comply with the [FHR 2003](#).

## 2.4 Manager, Coast Guard Safety Management

In the region, the manager, Coast Guard Safety Management (CGSM) is responsible for ensuring:

- a) liaison activities between the vessel/station and the [ROEC](#).
- b) copies of every [Halocarbon Release Report](#) (FP-0054-E) form are sent to the [ROEC](#).

# 3 Instructions

## 3.1 General

- a) This procedure covers systems containing halocarbon on board a vessel/station. In the event of a discrepancy between the [FHR 2003](#) and this procedure, the regulation prevails.
- b) Under the vessel maintenance program, Integrated Technical Services at headquarters supports the development of management plans and/or procedures related to systems containing halocarbon, in order to identify the actions required to maintain compliance with the [FHR 2003](#).
- c) For the purpose of this procedure, the term “system containing halocarbon” includes any system, equipment, container or device used in refrigeration (for example, refrigerator, freezer, water cooler, water fountain, etc.), air conditioning, or fire extinguishing that utilizes halocarbon.
- d) All halocarbon containing equipment must be installed, serviced, leak tested and charged in accordance with the [FHR 2003](#).
- e) Failure to comply with the [FHR 2003](#) could result in an enforcement action by an [Environment and Climate Change Canada \(ECCC\)](#) Enforcement Officer.
- f) To meet the requirements of the [FHR 2003](#) and ensure adequate halocarbon monitoring, 5 forms must be filled out:
  - i. [Adding a system containing halocarbons to the regional inventory](#) (FP-0051-E)
  - ii. [Service Log](#) (FP-0052-E)
  - iii. [Leak test notice](#) (FP-0053-E)
  - iv. [Halocarbon Release Report](#) (FP-0054-E)
  - v. [Dismantling, decommissioning, or destruction notice](#) (FP-0055-E)
- g) The information on these forms is required by ECCC, as outlined in Schedule 2 of the [FHR 2003](#). No box should be left blank. Failure to enter the information may constitute an offence, depending on the circumstances.

## 3.2 Certified person

- a) Under the [FHR 2003](#), only a certified person<sup>2</sup> is to install, service, leak test, charge a refrigeration, an air conditioning system, or do any other work on the system that may result in the release of a halocarbon.
- b) A certified person is a service technician who holds a certificate<sup>3</sup>. This certificate is not a certificate of competency or a qualification, and does not involve a professional title. In addition to having a certificate, all persons must be technically competent<sup>4</sup> to work on a refrigeration or air-conditioning system.
- c) The [Heating, Refrigerating and Air Conditioning Institute of Canada](#) (HRAI) certificate is the preferred option for CCG employees to be allowed to work on a refrigeration or air-conditioning systems.
- d) The [FHR 2003](#) does not require fire extinguishing system servicing technicians to be Underwriters' Laboratories of Canada (ULC) certified, unlike refrigeration and air conditioning system technicians. Nonetheless, the work must be done in accordance with ULC standard: The Servicing of Halon and Clean Agent Extinguishing Systems (ULC/ORD-C1058.18-2004)<sup>5</sup>, as applicable.

## 3.3 Tagging and inventory

### 3.3.1 Regional inventory

- a) The [ROEC](#) maintains a regional inventory of all the small and large installed halocarbon containing systems that the department owns or leases.
- b) The [ROEC](#) provides the inventory list annually for verification. The vessel/station and the [ROEC](#) coordinate updates of the list.

### 3.3.2 Inventory on board the vessel

- a) All large (>19kW) and small installed halocarbon equipment (<19kw) are required to be installed by a certified person, must be tagged and inventoried in accordance with guidance from the [ROEC](#). The inventory of these systems must be maintained on board the vessel/station. Tags and inventory forms are available from the [ROEC](#).
- b) For stations, 2 separate inventories, as described in section 3.3.2 a), must be maintained: one for the vessel and another for the station. The vessel inventory is kept on board at all times and must follow the vessel in the event of a move to another station/base.
- c) The vessel inventory must be sent to the [ROEC](#) to have the system added to the regional inventory of small and large installed halocarbon containing systems. A halocarbon tag will be sent to the vessel/station from the [ROEC](#), and must be affixed to the system that has been added to the inventory.

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<sup>2</sup> [Federal Halocarbon Regulations, 2003](#), Interpretation

<sup>3</sup> [Federal Halocarbon Regulations, 2003](#), Interpretation

<sup>4</sup> [Canadian Centre for Occupation Health and Safety \(CCOHS\)](#) - OHS Legislation in Canada - Competent

<sup>5</sup> Available for purchase at [Underwriters' Laboratories of Canada \(ULC\)](#) - available in English only

- d) To enter a new system in the regional inventory, the vessel/station must:
  - i. fill in each box of form [Adding a system containing halocarbons to the regional inventory](#) (FP-0051-E)
  - ii. send a copy of the form to the [ROEC](#)
  - iii. keep a copy of the form in the halocarbon file on board the vessel for 5 years
  - iv. notify the [ROEC](#) within 30 days of acquisitions or disposal of equipment
- e) Small packaged halocarbon systems are refrigeration or air conditioning systems that have a refrigeration capacity of <19kW and do not require installation services by a qualified contractor. In practice, these systems are typically those plugged in to normal 120V outlets. Examples include:
  - i. domestic refrigerators and freezers
  - ii. free-standing water coolers
  - iii. window or portable air conditioners
- f) As a best practice, small packaged halocarbon systems should be inventoried separately. They do not form part of the regional inventory and halocarbon tags are not required.

### 3.4 System maintenance

- a) Maintenance and inspection of all installed systems containing halocarbon must be recorded in the asset management system.
- b) Any work done that could cause the release of halocarbons must be performed by a certified person.
- c) When maintenance of a system containing halocarbon is awarded to a contractor, refer to Annex II for the procedure to be followed.
- d) Any work on air conditioning and refrigeration systems must comply with the [FHR 2003](#) and ECCC [Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems](#)
- e) To comply with [FHR 2003](#), any work on fire extinguishing systems must be done according to the following ULC standard: The Servicing of Halon and Clean Agent Extinguishing Systems (ULC/ORD-C1058.18-2004)<sup>6</sup>, as applicable.
- f) Before servicing a fire extinguishing system, it is mandatory to post a notice on the control panel that it is out of service during the maintenance period, except for portable extinguishers.
- g) [Service Log](#) (FP-0052-E) form:
  - i. The vessel/station must maintain a service log for all installed systems containing halocarbon on which maintenance work is required
  - ii. The service logs must be made available to ECCC upon request
  - iii. Fill in each box of form [Service Log](#) (FP-0052-E). Use one form per system and record all maintenance performed on the system
  - iv. Keep an updated copy of the service log adjacent to the system in question (it is recommended the service log be directly affixed to the system). If there is

<sup>6</sup> Available for purchase at [Underwriters' Laboratories of Canada \(ULC\)](#) - available in English only



not enough room, keep copies of all service logs in the same location, on board the vessel/station

- h) Once service is complete, the [Service Log](#) (FP-0052-E) form must be kept on board the vessel for 5 years in a halocarbon file.

### 3.5 Leak test

- a) All refrigeration, air conditioning systems larger than 19 kW and fire extinguishing systems with a charging capacity greater than 10 kg must be leak tested at least once every 12 months.
- b) Prior to charging an installed system it must be leak tested.
- c) Any leak must be repaired immediately. No later than 7 days following the detection of the leak, either:
  - i. the leak must be repaired
  - ii. the leaking portion of the system must be isolated and the halocarbon recovered from that portion, or
  - iii. the halocarbon must be recovered from the system
- d) No person is to charge a refrigeration system or an air conditioning system with a halocarbon for the purpose of leak testing the system, except when recommended in the [Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems](#)<sup>7</sup>.
- e) To recharge a prohibited halocarbon, such as halon or chlorofluorocarbon (CFC) (see complete list in Schedule 1 of the [FHR 2003](#), items 1) to 9), a special permit must be obtained from [ECCC](#). It is important to refer to Section 34 of the [FHR 2003](#) for all details.
- f) The certified person who performs a leak test must:
  - i. fill in each box of form [Leak test notice](#) (FP-0053-E). Use one form per system. The form must include the date of this leak test and those of the previous 2 tests
  - ii. affix the [Leak test notice](#) (FP-0053-E) form directly to the system containing halocarbons
  - iii. keep a copy of the form in the halocarbon file on board the vessel/station for 5 years

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<sup>7</sup> [Federal Halocarbons Regulations, 2003](#) – Section 9 (3)

### 3.6 Release reporting

- a) Reporting requirements and timelines for reporting are dependent on the amount of halocarbon released. The reporting requirements shown in Table 1 are the minimum requirements in accordance with the FHR 2003 and departmental procedures.
- b) The CCG [Halocarbon Release Report](#) (FP-0054-E) must be used to report releases of halocarbon.
- c) All halocarbon releases must be documented and reported as outlined in Table 1.

**Table 1: Reporting Requirements**

| Reporting Requirements  | Release of less than 10 kg<br>Not required to be reported to the ECCC | Release of more than 10 kg but less than 100 kg | Release of 100 kg or more               |
|---|---|---|---|
| Fill in each section of the Halocarbon Release Report (FP-0054-E) form  | Yes   | Yes   | Yes                                     |
| Keep a copy of the form in the halocarbon file on board the vessel for 5 years  | Yes   | Yes   | Yes                                     |
| Through the manager, CGSM, send the Halocarbon Release Report (FP-0054-E) form to the ROEC  | Yes   | Yes   | Yes within 14 days and include the ECCC |
| Notify ECCC, verbally or in writing, within 24 hours of detection of the release, and provide the following information: name of owner, type and quantity of halocarbon released, and type of system involved | N/A   | N/A   | Yes                                     |

- d) Twice a year, for the periods of January to June and for July to December, all completed [Halocarbon Release Report](#) (FP-0054-E) forms, for those over 10 kg releases, must be coordinated through the [ROEC](#) and the system owners. Reports must be submitted no later than 30 days after January 1 and July 1.
- e) A copy of all Halocarbon Release Report forms must be kept on the vessel/station for no less than 5 years.

### 3.7 Dismantling, decommissioning or destruction

- a) All cases where an installed system containing halocarbon is dismantled, decommissioned or destroyed must be documented. Before dismantling, decommissioning or destroying a installed system containing halocarbon, all halocarbon must first be recovered and disposed of in a reusable container designed specifically for holding this type of halocarbon. Any decommissioned system that contains any quantity of halocarbon, and is stored on board the vessel/station, must be maintained and leak tested, as if it were still operational.
- b) The person responsible for dismantling, decommissioning or destroying must:
  - i. fill in each section of the [Dismantling, decommissioning, or destruction notice](#) (FP-0055-E) form

**Note 1:** Small packaged systems do not require a decommissioning notice, but they must have a disposal receipt. The receipt should come from the province or municipality.

- ii. affix the [Dismantling, decommissioning, or destruction notice](#) (FP-0055-E) form to the system before disposing of it
- iii. send a copy of [Dismantling, decommissioning, or destruction notice](#) (FP-0055-E) to the [ROEC](#)
- iv. keep a copy of the [Dismantling, decommissioning, or destruction notice](#) (FP-0055-E) form in the halocarbon file on board the vessel/station for 5 years
- v. enter the system disposal date in the service log and the inventory after the system has been disposed of. The halocarbon tag is to be sent to the ROEC.

### 3.8 Maintenance of records

- a) All records, reports, and leak tests required by this procedure must be kept on board the vessel/station, for a period of 5 years beginning on the date of their issuance. All records, reports, and leak tests must be made available to ECCC upon request.
- b) Human health exposure records, if appropriate, must be kept permanently.

### 3.9 Contact information

- a) Annex I lists the contact information for ECCC.
- b) Click on the following link for up-to-date contact information for [DFO's Headquarters and Regional Offices of Environmental Coordination](#).

## 4 Personal protective equipment

- a) In accordance with [CCG/6108 - Personal Protective Equipment Manual](#), personal protective equipment must be appropriate to inherent risks of the activity and as specified in applicable procedures, safety data sheets, and site specific work instructions.

## 5 Documentation

- Service log book entries
- Disposal receipts
- Site specific work instructions
- Halocarbon inventory log
- Halocarbon system inventory tag
- Contractor awareness document
- Training records
- Human health exposure records, if appropriate
- [Adding a system containing halocarbons to the regional inventory](#) (FP-0051-E)
- [Service Log](#) (FP-0052-E)
- [Leak test notice](#) (FP-0053-E)
- [Halocarbon Release Report](#) (FP-0054-E)
- [Dismantling, decommissioning, or destruction notice](#) (FP-0055-E)

## 6 References

- [Federal Halocarbon Regulations, 2003](#)
- [Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems](#)
- ULC - The Servicing of Halon and Clean Agent Extinguishing Systems (ULC/ORD-C1058.18-2004)
- [CCG/5737 - Fleet Safety Manual](#) 7.B.5 Lock out Tag Out
- [Fisheries and Oceans Canada](#) - Environmental Awareness Training

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## **Annex I    Federal Halocarbon Regulations Information - Contact information and addresses for reporting releases of halocarbons**

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### **New Brunswick, Prince Edward Island, Nova Scotia, and Newfoundland and Labrador**

Emergency Number (verbal reporting):

1-800-565-1633\* or 902-426-6030 for New Brunswick, Prince Edward Island and Nova Scotia

1-800-563-9089\* or 709-772-2083 for Newfoundland and Labrador

\* Telephone number accessible only within the respective province

Mailing Address (written reporting):

Regional Director

Environmental Enforcement Division

Environment and Climate Change Canada

16th floor, Queen Square

45 Alderney Drive

Dartmouth NS B2Y 2N6

Fax: 902-426-7924

email: [ec.rfh-2003-atl-fhr-2003-atl.ec@canada.ca](mailto:ec.rfh-2003-atl-fhr-2003-atl.ec@canada.ca)

Use link for up-to-date information for regional contacts: [New Brunswick, Prince Edward Island, Nova Scotia, and Newfoundland and Labrador](#)

### **Québec**

Emergency Number (verbal reporting): 1-866-283-2333\* or 514-282-2333

\* Telephone number accessible only within the respective province

Mailing Address (written reporting):

Regional Director

Environmental Enforcement Division

Environment and Climate Change Canada

105 McGill Street (3rd floor)

Montreal QC H2Y 2E7

Fax: 514-496-2087

email : [ec.installationsfederalesqc-federalfacilitiesqc.ec@canada.ca](mailto:ec.installationsfederalesqc-federalfacilitiesqc.ec@canada.ca)

Use link for up-to-date information for regional contacts: [Québec](#)

## **Ontario**

Emergency Number (verbal reporting): 1-800-268-6060\* or 416-325-3000

\* Telephone number accessible only within the respective province

Mailing Address (written reporting):

Regional Director

Environmental Enforcement Division

Environment and Climate Change Canada

Canadian Center for Inland Waters

867 Lakeshore Rd.

Burlington ON L7S 1A1

Fax: 905-333-3952

email: [ec.fhr.ontario.ec@canada.ca](mailto:ec.fhr.ontario.ec@canada.ca)

Use link for up-to-date information for regional contacts: [Ontario](#)

## **Alberta, Saskatchewan, Manitoba, Northwest Territories and Nunavut**

Emergency Number (verbal reporting):

204-944-4888 for Manitoba

1-800-667-7525 for Saskatchewan

780-422-4505 or 1-800-222-6514\* for Alberta

867-920-8130 for Northwest Territories and Nunavut

\* Telephone number accessible only within the respective province

Mailing Address (written reporting):

Regional Director

Environmental Enforcement Division

Environment and Climate Change Canada

Eastgate Offices

9250 - 49 Street

Edmonton AB T6B 1K5

Fax: 780-495-2444

email: [ec.dale-rpn-enforcement-pnr.ec@canada.ca](mailto:ec.dale-rpn-enforcement-pnr.ec@canada.ca)

Use link for up-to-date information for regional contacts: [Alberta, Saskatchewan, Manitoba, Northwest Territories and Nunavut](#)

### **British Columbia and Yukon Territory**

Emergency Number (verbal reporting):  
1-800-663-3456 for British Columbia  
867-667-7244 for Yukon

Mailing Address (written reporting):  
Regional Director  
Environmental Enforcement Division  
Environment and Climate Change Canada

201-401 Burrard Street, 4th floor  
Vancouver BC V6C 3S5  
Fax: 604-666-9059  
email: [ec.pydalerfh-pyeedfhr.ec@canada.ca](mailto:ec.pydalerfh-pyeedfhr.ec@canada.ca)

Use link for up-to-date information for regional contacts: [British Columbia and Yukon Territory](#)

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## **Annex II      Work Performed by a Contractor on a System Containing Halocarbons**

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### **When system servicing is subcontracted:**

- a) Ensure Fleet Safety Manual (FSM) [10.A.7 – Contractor Safety and Security](#) is followed and FSM [7.A.1 – Assessing Risk](#) is completed as specified.

### **For refrigeration and air conditioning system servicing:**

- a) Specify all work must comply with the [FHR 2003](#), the Environment Canada [Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems](#), and any other applicable federal or provincial/territorial regulations.
- b) The contractor must supply a copy of the competency certificate – apprentice, the competency certificate – journeyman, or the certificate of qualification, or an apprenticeship card for each person who will work on the system.
- c) Ensure that each person who will service the system has an environmental awareness course certificate.

### **For fire extinguishing system servicing:**

- a) Unlike refrigeration and air conditioning system technicians, the [FHR 2003](#) does not require fire extinguishing system servicing technicians to be ULC-certified.
- b) Inform the Contractor any work on a fire extinguishing system that may result in the release of a halocarbon must be done according to the [FHR 2003](#) and the ULC standard: The Servicing of Halon and Clean Agent Extinguishing Systems (ULC/ORD-C1058.18-2004)<sup>8</sup>, as applicable.
- c) Before a fire extinguishing system is serviced, a notice must be affixed to the control panel to indicate that it is out of operation during the service period, with the exception of portable fire extinguishers.

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<sup>8</sup> Available for purchase at [Underwriters' Laboratories of Canada \(ULC\)](#) - available in English only





# Fleet Safety Manual

## 8.0 - EMERGENCY PREPAREDNESS

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### 1 EMERGENCY PREPAREDNESS

The Canadian Coast Guard (CCG) Fleet has prepared specific contingency plans to deal with potential shipboard emergencies. These plans have been developed to cover both vessel and shore response to any incident and to ensure that the CCG Fleet responds to an emergency in a coordinated, prompt, and effective manner.

### 2 SHIP AND SHORE BASED CONTINGENCY PLANS AND EXERCISES

CCG Fleet has established contingency plans for dealing with a variety of shipboard emergencies. These contingency plans include those defined by SOLAS and emergency situations which effect the normal operation of the vessel.

Contingency plans are to be exercised at regular intervals and select exercises shall include the participation of the shore support offices. Following an exercise, a debriefing shall be held to review the actions taken in response to the situation and to review the contingency plan to ensure that it remains effective.

### 3 VESSEL PREPAREDNESS FOR DEALING WITH EMERGENCIES

CCG Vessels shall have procedures in place to increase the self-help capabilities of the vessel through early detection and prevention of incidents. Security routines shall be established in compliance with the Policy on Government Security. Fire detection and prevention procedures shall be established.

Employees shall be trained in the provision of assistance for dealing with medical emergencies. Ships shall carry medical supplies and equipment to assist in the care and treatment of the injured.





# Fleet Safety Manual

## 8.A.1 - VESSEL AND SHORE-BASED CONTINGENCY PLANS

### 1 PURPOSE

- a) To ensure that both vessel and shore-based personnel are prepared to respond to emergency situations.
- b) To ensure Commanding Officers and crew are prepared to deal with emergency situations and that any request for assistance will result in a timely, appropriate, and structured response by the shore-based management team to alleviate or resolve the emergency as required.

### 2 RESPONSIBILITIES

#### 2.1 DIRECTOR GENERAL, OPERATIONS

- a) The Director General, Operations or alternate senior person, in accordance to the list indicated in 3.1.1 of the [Headquarters Operations Emergency Management Plan \(OEMP\)](#), is the National Incident Management Team (NIMT) Leader who is responsible for determining when it is necessary to invoke the [Headquarters Operations Emergency Management Plan \(OEMP\)](#).

#### 2.2 SENIOR DIRECTOR, OPERATIONAL SUPPORT

- a) The Senior Director, Operational Support is designated as the Deputy NIMT Leader and is responsible for ensuring that the National Command Centre (NCC) will be staffed by qualified personnel to appropriately disseminate information on a 24-hour a day basis, should the need arise.

#### 2.3 ASSISTANT COMMISSIONER

- a) The Assistant Commissioner, or their delegate, shall lead the Regional Incident Management Team (RIMT) and determine, in consultation with the RIMT members and, where practical, the Commanding Officer, what level of support is needed.
- b) When the Assistant Commissioner is unavailable to lead the RIMT, their responsibilities shall be clearly delegated to another responsible person and documented.

#### 2.4 REGIONAL DIRECTOR, FLEET

- a) The Regional Director, Fleet is responsible for ensuring that adequate support is provided to the Commanding Officers during emergency situations for vessels within their Region.
- b) The Regional Director, Fleet is responsible for approving changes to contingency plans and/or checklists.

- c) The Regional Director, Fleet shall monitor the activities and support provided on an ongoing basis during the emergency situation. The Regional Director, Fleet is responsible for:
- Ensuring that relief personnel replacing any response team members are made aware of their responsibilities under the regional Fleet Emergency Management Plan (FEMP), and that the contact information for the acting replacement is made readily available;
  - Ensuring that all statements to media queries are authorized;
  - Authorizing all announcements to Next of Kin (NOK) and organizing personal visits, if necessary (e.g. fatalities or serious injuries); and
  - Liaising with departmental legal services, if required.

## **2.5 COMMANDING OFFICER**

- a) The Commanding Officer is responsible for ensuring that the crew and the vessel are prepared to deal with emergencies by having developed, maintained, and exercised contingency plans specific to their vessel.
- b) The Commanding Officer has the responsibility and the ultimate authority to take whatever action they deem appropriate and necessary for ensuring the safety of life, safety of the vessel and equipment, and protection of the environment.
- c) In the event of an emergency, the Commanding Officer shall, as soon as practical, inform the Marine Communications and Traffic Services (MCTS) centre and use the appropriate communications method, as identified in 3.3 (b). MCTS will notify the Regional Operations Centre (ROC) and/or any other support services, as required, to address the emergency situation.
- d) As per section 3.1 (b) of 7.A.2, the Commanding Officer shall provide updated People on Board (POB) and NOK lists to the ROC as soon as possible, prior to departure. In the event of a personnel change while the vessel is under operations, the updated POB and NOK lists shall be provided to the ROC by the most appropriate means available at the time. In any case, the updated POB and NOK lists shall be sent to the ROC at the earliest opportunity.
- e) The Commanding Officer is responsible for ensuring that the [Fire and Boat Drill Regulations](#) are followed as set out in the Fleet Safety Manual (FSM) [8.B.2 - Fire Prevention and Detection](#).

## **2.6 SUPERINTENDENT, REGIONAL OPERATIONS CENTRE**

- a) The Superintendent, ROC is responsible for ensuring that the ROC is maintained in a state of readiness to be able to provide support to vessels for all identified emergencies.
- b) The Superintendent, ROC shall be the communications link between the vessels and the RIMT, and also a supporting link between the Canadian Coast Guard (CCG) Fleet and Program Officers with regard to affected operations or program personnel.

## **2.7 MARINE SUPERINTENDENT**

- a) The Marine Superintendent shall co-ordinate the provision of relief and/or support personnel for extended or large-scale emergency operations.

## **2.8 SUPERINTENDENT, MARINE ENGINEERING**

- a) The Superintendent, Marine Engineering is responsible for providing the technical information in the form of plans, drawings etc. and for the provision of technical, engineering and support services.

## 2.9 DIRECTOR, COAST GUARD SAFETY AND SECURITY

- a) The Director, Coast Guard Safety and Security (CGSS) or alternate senior person, in accordance to the list indicated in 3.1.1 of the [Headquarters Operations Emergency Management Plan \(OEMP\)](#), is responsible for verifying that each member of the NIMT has been familiarized with their responsibilities.
- b) The Director, CGSS, shall monitor national emergency situations to observe whether these emergency situations are reported, investigated, documented, followed-up on in a timely manner, and offer suggestions for continuous improvement.
- c) The Director, CGSS, is responsible for having the activities related to the [Headquarters Operations Emergency Management Plan \(OEMP\)](#) audited to verify that this Plan is appropriate to the circumstances.

## 2.10 MANAGER, COAST GUARD SAFETY AND SECURITY

- a) The Manager, CGSS is responsible for ensuring that each member of the RIMT has access to an up-to-date online version of the regional FEMP and is to verify that each member has been familiarized with their responsibilities.
- b) The Manager, CGSS shall monitor regional emergency situations to observe whether they are reported, investigated, documented and followed-up on in a timely manner.
- c) The Manager, CGSS shall also monitor regional emergency response operations and offer suggestions for continuous improvement.

# 3 INSTRUCTIONS

## 3.1 GENERAL

- a) The CCG has established the following hierarchy of emergency plans to provide an appropriate framework for response to incidents and emergencies:
  - Vessel-specific Emergency Management Plans and Checklists;
  - Regional FEMPs; and
  - if the emergency requires additional resources outside the Region, the Director General, Operations may invoke the [Headquarters Operations Emergency Management Plan \(OEMP\)](#).
- b) These plans are to be reviewed following emergency or exercise situations to ensure that they remain effective and are appropriate for the emergency situation.
- c) The NCC shall be used as the Headquarters' Operations Emergency Management Centre. The NCC shall be the national focal point for all communications relating to the emergency and shall ensure that regular Situation Reports and briefings are prepared for presentation to the Director General, Operations.
- d) When the [Headquarters Operations Emergency Management Plan \(OEMP\)](#) is invoked, the NCC staff shall liaise with the appropriate ROC.

## 3.2 GENERAL DIRECTIONS TO COMMANDING OFFICERS

- a) If tug assistance is required when the vessel is in no immediate danger, the Commanding Officer should contact the ROC, who will arrange a tow of the vessel. The Commanding Officer must keep the situation under review and if it deteriorates, he/she must take any action necessary to maintain the safety of life and of the vessel, and notify the MCTS centre, if an emergency situation occurs.
- b) If immediate tug assistance is required, the Commanding Officer has the authority to make their own terms with whoever is able to assist them. The fact that an agreement has been made, and with whom, shall be recorded in the Deck Log Book. The MCTS centre shall notify the ROC and Joint Rescue Coordination Centre (JRCC).

- c) During any incident or emergency situation, it is probable that the vessel will be contacted by the media to answer questions or make statements. Commanding Officers and all crew shall refer all such questions and requests for statements to the ROC, unless authorized otherwise.

### 3.3 REPORTING

- a) If there is an emergency situation, the Commanding Officer shall report it, as soon as is practical, to an MCTS centre and should be aware of security precautions for communication, as set out in 3.3 (b). MCTS will notify the ROC and/or any other support services, as required. The rapid response to maritime distress and emergency calls, the collection and timely dissemination of information and the regulation of vessel traffic are the primary responsibilities of the MCTS program.
- b) Commanding Officers should be aware that certain security precautions are required when sending reports containing sensitive information (reports containing a name, a date of birth, a Social Insurance Number [SIN], etc.). Refer to the [Policy on Departmental Safety, Security, and Emergency Management \(PDSSEM\)](#) and the [Information Security Guide](#) quick reference sheet. Wherever possible, all communications shall be conducted via a secure method. When unavoidable, messages passed via open and unsecured means, all information on injuries shall be described using the casualty code numbers contained in Appendix C in [Volume III of the Canadian Aeronautical and Maritime Search and Rescue Manual \(CAMSAR\)](#).

### 3.4 VESSEL ALONGSIDE

- a) A specific plan shall be developed for emergencies that occur when the vessel is alongside and is not crewed with the full complement, as identified in the muster list. In all cases where emergencies occur when the vessel is alongside with reduced crew, the ROC shall be advised as soon as possible so the appropriate support can be provided. These plans are to be located in a conspicuous place, be readily identifiable, and at a minimum, shall include the following information:
  - a list of all persons currently on board;
  - the location and means of available shore communication (i.e. land line, cell phone, radio, etc.); and
  - an emergency contact list containing at least the following:
    - MCTS
    - ROC
    - departmental, provincial and municipal shore support contacts
    - local fire department
    - procedures for releasing the fixed firefighting system
    - procedures and locations of equipment to provide emergency oil spill response
- b) The specific reduced crew plan shall also be detailed in the lay-up, dry dock or refit plan, required by FSM procedures [10.A.2 - Maintenance and Refits](#), [10.A.3 - Lay-up and Return to Service](#), and [10.A.4 - Dry-docking](#). This plan shall be exercised at least once during the alongside period to ensure currency.

### 3.5 FIRE RESPONSE PLAN

- a) Vessels of 125 Gross Registered Tonnage (GRT) or greater will have a Fire Response Plan on board. The content of the plan shall clearly identify the responsibilities of the person in charge of the firefighting team and the following information for each space:
  - Specific actions to be taken by each team for the particular space;

- Firefighting equipment for initial and extended attack of the fire, both fixed and portable;
- Vents and space closures for the space;
- Electrical circuits, which are to be isolated as required;
- Compartment boundaries;
- Points of entry, primary and secondary;
- Any special notes, such as hazardous or explosive material stored in the compartment;
- This information should be supplemented by general arrangement plans that indicate the location of vents and firefighting equipment; and
- The fire plan should also include a copy of the ship's muster list.

### 3.6 RECORD KEEPING

- a) Complete and detailed records shall be maintained on all emergencies, including all actions taken. These will normally be recorded in the Deck Log Book.

### 3.7 ACTIONS TO BE TAKEN

- a) Each vessel shall have a developed contingency plan and/or checklist in the event of a [Report of a Marine Occurrence/Hazardous Occurrence Report](#). CCG shore-based management should have access to these contingency plans in the event communications are compromised with a vessel during an emergency situation.
- b) In accordance with the [Transportation Safety Board Regulations Section 3\(1\)](#), a [Report of a Marine Occurrence/Hazardous Occurrence Report](#) is one that:
  - i. Results directly from the operation of a ship, other than a pleasure craft, where a person is killed or sustains a disabling injury as a result of:
    - boarding, being on board or falling overboard from the ship **(Injury or Illness and Person Overboard)**; or
    - coming into direct contact with any part of the ship or its contents **(Injury or Illness)**.
  - ii. A person falls overboard from the ship **(Person Overboard)**;
  - iii. A crew member whose duties are directly related to the safe operation of the ship is unable to perform their duties as a result of a physical incapacitation, which poses a threat to the safety of persons, property or the environment **(Injury or Illness)**;
  - iv. The ship:
    - sinks, founders or capsizes **(Flooding and Abandon Ship)**;
    - is involved in a collision or a risk of a collision **(Collision with another Vessel and Collision with a Fixed Object)**;
    - sustains a fire or an explosion **(Shipboard Fires)**;
    - goes aground **(Grounding, Stranding, Striking)**;
    - makes unforeseen contact with the bottom, without going aground **(Grounding, Stranding, Striking)**;
    - sustains damage that affects its seaworthiness or renders it unfit for its purpose **(Structural Failure)**;
    - is anchored, grounded or beached to avoid an occurrence **(Grounding, Stranding, Striking)**;
    - is missing or abandoned **(Abandon Ship)**;



- fouls a utility cable or pipe, or an underwater pipeline **(Fouling Underwater Permanent Structure)**; and
- sustains a total failure of:
  - the navigation equipment, if the failure poses a threat to the safety of any person, property or the environment **(Loss of Bridge Control)**;
  - the main or auxiliary machinery **(Electrical Power Failure )**; or
  - the propulsion, steering, or deck machinery if the failure poses a threat to the safety of any person, property or the environment **(Steering Loss and Loss of Propulsion)**.
- v. All or part of the ship's cargo shifts or falls overboard **(Cargo Shifting, Spilling, Jettison)**;
- vi. There is an accidental release on board or from the ship consisting of a quantity of dangerous goods or an emission of radiation that is greater than the quantity or emission levels specified in Part 8 of the [Transportation of Dangerous Goods Regulations](#) **(Pollution)**;
- vii. Contingency plans/checklists shall also be developed in the event of:
  - a helicopter accident
  - Breach of Security
  - an emergency towing procedure

Note1: The bolded, underlined, bracketed text in section 3.7 constitutes Contingency Plan names which are already developed or should be developed on board.

Note 2: Emergency towing procedures became a International Convention of Safety of Life at Sea (SOLAS) requirement for all vessels above 500 GRT effective January 1, 2012. Due to the nature of CCG operations, the requirement for towing is captured as part of FSM procedure [7.C.4. - Towing Operations](#).

## 4 DOCUMENTATION

- [Headquarters Operations Emergency Management Plan \(OEMP\)](#)
- FEMP - Regional
- Regional Contingency Plans and Checklists
- Vessel Specific Contingency Plans and Checklists
- [Canadian Aeronautical and Maritime Search and Rescue Manual \(CAMSAR\) - Combined Edition - Volumes I, II, and III](#)
- Log Book Entries





# Fleet Safety Manual

## 8.A.2 - VESSEL AND SHORE EMERGENCY EXERCISES

### 1 PURPOSE

#### 1.1 GENERAL

- a) To test the effectiveness of both the vessel and shore-based contingency plans at regular spaced intervals. Drills and Exercises provide for continuous improvement of the system and increased proficiency of personnel for dealing with incidents and emergency situations.

#### DEFINITIONS:

A **Drill** is a test of an individual element of a contingency plan.

An **Exercise** is a test of the entire plan and includes an interface between the vessel and shore-based resources.

A **Communications Check** occurs when the Regional Operations Centre (ROC) or National Command Centre (NCC) initiates communication with all players during a drill or exercise, so as to determine the availability and response time of the players.

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTOR, FLEET

- a) The Regional Director, Fleet is responsible for ensuring emergency exercises are conducted and that all Fleet personnel, as required, participate fully.

#### 2.2 REGIONAL DIRECTOR, INTEGRATED TECHNICAL SERVICES

- a) The Regional Director, Integrated Technical Services (ITS) is responsible for ensuring personnel under their direction fully participate in emergency exercises and scenarios as required.

#### 2.3 SUPERINTENDENT, REGIONAL OPERATIONS CENTRE

- a) The Superintendent, ROC is responsible for scheduling and coordinating the emergency exercises, and the training of members of the ROC in their duties regarding emergency situations. They shall prepare written reports of each exercise.

#### 2.4 COMMANDING OFFICER

- a) The Commanding Officer has the responsibility for ensuring that contingency plans specific to their vessel are in place, maintained, and are exercised at regular spaced intervals to maintain crew proficiency in dealing with emergency situations.

### **3 INSTRUCTION**

#### **3.1 GENERAL**

- a) Exercises may be different for each vessel or shore-based office and should be in accordance with the various types of emergencies likely to arise.

#### **3.2 EXERCISES**

- a) All messages related to the conduct of an exercise shall be identified by a header and footer that prominently indicate that: THIS IS AN EXERCISE.
- b) When a real incident occurs during an exercise that requires message notification, the real time message shall be identified prominently in the header and footer that: THIS IS NOT AN EXERCISE. Voice messages shall be prefixed with the appropriate marine communications prefix indicating an emergency condition (PAN or MAYDAY) and ended with the statement: THIS IS NOT AN EXERCISE.
- c) A debriefing shall be held as soon as possible after each exercise is completed. The debriefing shall include a representative from each section and as many of the participants as possible.

#### **3.3 OTHER EMERGENCY EXERCISES**

- a) Actual incidents where the majority of the items identified in the contingency plan were utilized may be considered an exercise for the purpose of this section. The particulars and lessons learned shall be maintained with the Record of Drills and Exercises.

#### **3.4 SCHEDULE**

- a) For the purposes of this section, exercises are not required to be scheduled during non-operational periods.
- b) Contingency drills and exercises shall be conducted at regular spaced intervals. A schedule of emergency exercises shall be developed and maintained by each vessel and shore-based office. Where appropriate, the vessel emergency exercises will be coordinated with shore-based emergency exercises.

#### **3.5 NATIONAL HEADQUARTERS**

- a) The NCC shall schedule and conduct one exercise with one Region each year so that every three (3) years, each Region shall have participated in an exercise with the NCC. These National Exercises should be matched to the Regions according to the planned external Regional Office schedule.

#### **3.6 REGIONS**

- a) The ROC shall develop an exercise schedule that ensures each element of the contingency plan is regularly exercised within a consecutive three (3) year period. The ROC schedule shall also ensure that all vessels are exercised for all contingencies within a three (3) year period.
  - Annually, two exercises shall be conducted with at least two (2) vessels and shall include a Communications Check with Headquarters (NCC).
  - Annually, three (3) regional exercises shall be a Communication Check with vessels, as they carry out their exercises.
  - Where the Region is scheduled to participate in an exercise with the NCC, the Regional Director, Fleet shall ensure that regional vessel(s) are also scheduled to participate, thereby exercising all three (3) levels simultaneously.

### 3.7 SHIPBOARD

- a) All statutory exercises are in addition to any required by this procedure.
- b) In addition to requirements of the [Fire and Boat Regulations](#), the following shall be carried out:
  - Crew boarding and manoeuvring of boats away from the vessel shall be carried out once every three months.
  - Radio communication systems shall be tested prior to any operation and after any repairs have been conducted to these systems. Additionally, radio communication systems shall have an annual Ship Radio Inspection.
  - Donning of immersion suits shall be carried out, at a minimum, semi-annually.
- c) The developed exercise schedule shall ensure that each element of the vessels contingency plan is exercised at regular intervals and, by each crew, within a consecutive two (2) year period.
- d) Security drills shall be scheduled and combined with contingency plan drills at least once per year - per crew.
- e) The ROC will coordinate with the vessels (as above) when exercises are carried out to verify communications.

### 3.8 COMMUNICATION CHECKS

- a) The NCC shall conduct two (2) Communications Checks annually with each of the three (3) regions.
- b) Regions shall develop a schedule for periodic testing of secure communications with all operational vessels within the Region and the results shall be logged.
- c) Any vessel departing for the Arctic shall ensure the functionality of all communication equipment on board prior to departure. This verification check shall be entered in the log.

### 3.9 REPORTING

- a) A report shall be generated giving full particulars of the exercise and debriefing conducted noting the results, deficiencies, corrective actions taken etc. Reports shall be held at the site where the exercise was conducted.

**Note 1:** Certain information may be sensitive, especially if the exercise is integrated with a security component. Sensitive information shall be protected to the appropriate classification level. Refer to the [Policy on Departmental Safety, Security, and Emergency Management \(PDSSEM\)](#) and the [Information Security Guide](#) quick reference sheet.

- b) Vessels shall record exercises in both the Deck Log and the Commanding Officer's change-over notes in addition to the requirement described in section 3.8 (c).

## 4 DOCUMENTATION

- Vessel and Shore-based Exercise Schedules
- Exercises Reports
- Log Book Entries
- Change-Over Notes





# Fleet Safety Manual

## 8.B.1 – Security of the Vessel

---

### 1 Purpose

- a) To ensure the safety and security of Canadian Coast Guard (CCG) personnel and assets while operating under increased levels of security posture and to ensure compliance with departmental and federal policies.

### 2 Responsibilities

#### 2.1 Director General, Fleet and Maritime Services

The Director General, Fleet and Maritime Services is responsible for ensuring:

- a) the overall requirements of this procedure are applied on board CCG vessels and stations
- b) they approve vessel and station security plans
- c) the appropriate resources are supplied to the vessels to enable the implementation of the vessels' security plans
- d) all CCG personnel are familiar with the [Policy on Government Security](#), and the Fisheries and Oceans Canada (DFO) [Policy on Departmental Safety, Security, and Emergency Management \(PD-SSEM\)](#)

#### 2.2 Senior director, Fleet

The senior director, Fleet, is responsible for ensuring:

- a) they advise the appropriate commanding officer and the senior director, Fleet, of other regions which may be impacted, of any intelligence received that indicates that the security of a CCG vessel or other asset may be compromised or threatened
- b) in consultation with the Director General, Fleet and Maritime Services, or the CCG commissioner, can order an increased security posture for all affected vessels or stations within their region when responding to an increase in the Maritime Security (MARSEC) level by Transport Canada (TC), information from federal security agencies, local law enforcement, or commanding officer(s) of a CCG vessel

## 2.3 Commanding officer

The commanding officer is responsible for ensuring:

- a) site specific work instructions are developed to maintain the security of the vessel or station
- b) vessel and station personnel are provided with familiarization of these instructions
- c) vessel or station personnel maintain the security of the vessel or station in accordance with the instructions

## 3 Instructions

### 3.1 General

- a) The Policy on Government Security applies to all assets of the Government of Canada.
- b) All vessels and stations of the CCG are required to follow the Policy on Government Security.
- c) Vessels greater than 100 GRT must develop vessel-specific ship security plans that meet the requirements of the Policy on Government Security.
- d) Vessels of less than 100 GRT and all shore stations, must have a contingency plan for security preparedness. The plan must include procedures for ensuring the vessel can be locked at all times while unattended.

### 3.2 Securing an asset

- a) In the event of an increase in security posture, the asset should be secured at a CCG site or airport facility where security is in place. Should the asset be within the area of concern, if feasible, consideration should be given to relocating the asset.
- b) Should the securing of an asset at a CCG or airport facility not be operationally feasible, the asset must be secured and made temporarily inoperative. Based on the security posture, supplementing the security of the asset by other means should be considered.
- c) When returning to an asset that had been unmanned, a thorough walk-around and on board inspection must be performed prior to starting any machinery.
- d) Any attempt or actual breach of the asset's security must immediately be reported to the appropriate:
  - i. port, facility, or airport security
  - ii. local law enforcement authorities
  - iii. Regional Operations Centre (ROC)
  - iv. manager, Coast Guard Safety and Security
- e) In accordance with Fleet Safety Manual [9.B.1 Reports of Hazardous Occurrences, Marine Occurrences and Other Reportable Incidents](#), an [Incident Investigation Report \(IIR\)](#) (FP\_5234\_E) and a [Security Incident Report](#) (10-0442) must be submitted to the appropriate manager, Coast Guard Safety and Security.

## 4 Documentation

- Site specific security plans, work instructions, and contingencies
- [Incident Investigation Report \(IIR\)](#) (FP\_5234\_E)
- [Security Incident Report](#) (10-0442)

## 5 References

- [Treasury Board - Policy on Government Security](#)
- [Policy on Departmental Safety, Security, and Emergency Management \(PD-SSEM\)](#)
- [CCG/5737 - Fleet Safety Manual](#) – 9.B.1 Reports of Hazardous Occurrences, Marine Occurrences and Other Reportable Incidents







# Fleet Safety Manual

## 8.B.2. - FIRE PREVENTION AND DETECTION

---

### 1 PURPOSE

- a) To ensure that there is a systematic approach employed aboard operational vessels to detect and prevent fire.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is to ensure the relevant regulations respecting fire prevention preparedness applying to the vessel are respected.

#### 2.2 CHIEF ENGINEER

- a) The Chief Engineer is to ensure that the fire detection and control equipment is maintained and ready for immediate use.

### 3 INSTRUCTION

#### 3.1 FIRE PATROLS

- a) Fire patrols shall comply with the following:
  - the vessel's organisation shall be such that patrolling is efficient, having regard to size and type of vessel; the maintenance of the patrol at all times while crew is on board shall be the responsibility of the Commanding Officer.
  - arrangements shall be made whereby the patrol shall report periodically to the Officer in Charge;
  - the patrol system shall be maintained when vessels are in port with crew on board;
  - every part of the vessel accessible to the fire patrol shall be visited regularly.
- b) Log entries or punch clock entries shall be maintained of patrols conducted

### 3.2 FIRE DETECTION SYSTEMS

- a) The fire detection and control station shall be set to alert the crew in the event of detection or the change in the monitoring condition onboard the vessel. This system shall be monitored when crew is on board.
- b) When a fire is discovered by a Crewmember, they shall activate the manual fire alarm, try to contain the fire and contact the bridge to give specific information. The ship board emergency plan should then be used.
- c) Log entries to be maintained for all alarms and maintenance performed on the fire detection system.

### 3.3 FIRE PREVENTION

- a) In order to prevent fire, the following should be kept in mind:
  - Keep spaces clean to prevent accumulation of flammable material and allow for detection of leakage.
  - Control welding, burning, and grinding activities
  - Limit quantities of flammable materials stored on board to reduce risk and store in a safe location when not in use.
  - Limit the use of low flashpoint solvents in maintenance and cleaning activities.
  - Maintain electrical protective devices and circuits in good order.
  - Trace and correct ground faults as they appear.
  - Equipment to be maintained in accordance with manufacturers' specifications
  - Keep electrical air heaters free from dirt and obstructions.
  - Limit leakage of combustible liquids from equipment and collect leakage in drip trays which are emptied often.
  - Ensure adequate ventilation is provided to prevent the accumulation of heat or flammable vapours.
  - Ensure shields are in place to prevent combustible materials coming in contact with hot surfaces of 220 degrees Celsius or above.
  - Maintain exhaust lagging and seals in good condition.
  - Do not store flammable materials near possible sources of heat even if found cold.
  - Pay particular attention to the condition of hydraulic hoses and high pressure fuel lines.
  - Leak test oxy-acetylene equipment before use.
  - Dispose of oily rags using an approved container.
  - Appliances shall not be left on when unattended
  - Grease screens and exhaust fan trunking should be cleaned regularly

- Grease accumulations to be removed wherever found
- High lip pans are to be used to avoid grease spills and fires
- Keep laundry dryer(s) lint traps and exhaust trunking free from lint build-up.

### **3.4 MUSTER LISTS AND BUNK CARDS**

- a) Muster Lists for emergency stations shall be prepared and approved by the Commanding Officer in compliance with the [Fire and Boat Drill Regulations. On two-crewed vessels](#) both Commanding Officers shall sign the Muster List.
- b) Each cabin shall have a placard that indicates the primary and secondary escape routes and each bunk shall have a bunk card that shows the emergency stations and designated duties for the occupant.

### **3.5 PUBLIC ADDRESS SYSTEM**

- a) The public address system shall be maintained in good order.
- b) The vessel's complement shall be trained in the use of the public address system.

## **4 DOCUMENTATION**

- Site Specific Contingency Plan
- Log Book Entries





# Fleet Safety Manual

## 8.B.3 - FIRST AID AND MEDICAL SERVICES ABOARD VESSELS

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### 1 PURPOSE

- a) To ensure Canadian Coast Guard (CCG) vessels provide personnel trained to a reasonable level of medical care when responding to the injury or illness of employees.

### 2 RESPONSIBILITIES

#### 2.1 DIRECTOR GENERAL, FLEET

- a) The Director General, Fleet shall provide, through consultation with the Treasury Board and Health Canada, a comprehensive list of medications and equipment to be carried aboard CCG vessels. The area of operation, the size of the crew, and the length of voyage are to be considered in the production of this list.
- b) Regional Directors, Fleet shall ensure that first aid certificate training courses are conducted at frequent and regular intervals within the Region to maintain or improve the self-help capabilities of the Fleet in regard to emergency first aid response.

#### 2.2 COMMANDING OFFICERS

- a) Commanding Officers shall ensure that:
  - The medical supplies and equipment required by this procedure are carried aboard and that they are secured from unauthorized use.
  - The first aid trained personnel required by this procedure are carried aboard at all times.
  - Signs are placed, and the vessel's complement is instructed, to report all injuries immediately to their respective supervisor.

#### 2.3 PERSONNEL TRAINED IN THE PRINCIPLES OF FIRST AID

- a) Personnel trained in the principles of First Aid shall diligently apply themselves to exercises and refresher training to maintain their skills at an optimum level.

### **3 INSTRUCTION**

#### **3.1 REFERENCE**

- a) The common source of reference to be carried aboard CCG vessels for emergency medical response is the [International Medical Guide for Ships](#) published by the World Health Organization. This publication has been adopted and endorsed by the International Maritime Organization and the International Labour Organization for seafarers.

#### **3.2 FIRST AID ATTENDANTS**

- a) As per the [Maritime Occupational Health and Safety Regulations \(MOHS\) Part 6 \(106\)](#), each vessel shall carry aboard, within their normal complement, at least one person who holds a marine advanced first aid certificate. In any question as to the equivalency of a tendered certificate, the Marine Superintendent shall be consulted.
- b) CCG vessels shall comply with the requirements of [CGFO 535 – Rescue Specialists Aboard CCG Ships](#). This meets or exceeds the requirement of section 3.2 (a).
- c) The names of the first aid certificate holders are to be posted in conspicuous locations easily accessible to the vessel's complement.

#### **3.3 FIRST AID SUPPLIES AND EQUIPMENT**

- a) Vessels are to maintain records of medical supplies held aboard to ensure that the quantities held are appropriate to the scale issued by the Director General, Fleet as per [Canadian Coast Guard Fleet Logistics Standard 400.00.07 - Pharmaceuticals, Medical Supplies, and Related Items](#) and that medication has not time-expired or will not time-expire during the planned voyage.
- b) In addition to any stock of medical supplies held aboard the vessel, there shall be a sufficient number of approved First Aid Kits to meet the [Maritime Occupational Health and Safety Regulations \(MOHS\)](#), placed in conspicuous locations and identified by prominent signs.
- c) First Aid Kits shall also be provided to all parties working remotely from the vessel.
- d) First Aid Kits are not to be locked or held in locked inaccessible spaces. The use of tamper seals is permitted to ensure that the inventory is accurate.
- e) The First Aid Kits are to be inspected monthly during the vessel's operational periods and are to be replenished as required.

#### **3.4 PHYSICIAN SERVICES**

- a) Physician oversight and authorization is required to administer many items already available in medical kits and pharmacies onboard CCG vessels. This oversight shall be obtained prior to the use of CCG supplied pharmaceutical or to obtain medical support or advice regarding the assessment of a patient's medical condition.
- b) Contact information shall be provided in a Fleet Circular published as required when the contact information changes. This information shall be readily available to the First Aid attendant.

**3.5 RECORDS**

- a) Vessels shall maintain registers of all first aid treatment provided aboard the vessel.
- b) The register is not to be removed from the vessel.
- c) Each entry in the first aid record shall be signed by the person who provided the first aid

**4 DOCUMENTATION**

List of Marine Advanced First Aid Certificate Holders

Copy of Approved Scale of Pharmaceuticals, Medical Supplies, and Related Items  
(Annex A to CGFLS 400.00.07)

First Aid Treatment Register

Stock Records of Pharmaceuticals and Medical Supplies with Time Expiry Dates

Inspection Record of First Aid Kits







# Fleet Safety Manual

## 9.0 - REPORTS AND ANALYSIS OF NON-CONFORMITIES, ACCIDENTS, SECURITY INCIDENTS AND HAZARDOUS OCCURRENCES

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### 1 REPORTS OF NON-CONFORMITIES AND OBSERVATIONS

- a) Reports of non-conformities or observations can be raised by any individual. These are raised to highlight a health, safety, security or environmental deficiency. Whenever possible, the Commanding Officer or Site Manager shall take immediate corrective action.
- b) Any non-conformity or observation report generated shall be closed out at the site level within the timeframe established unless a written request for an extension is submitted to and granted by the Manager, Safety and Security.
- c) The Commanding Officer shall report all non-conformities and observations to the Manager, Safety and Security including any action taken to date.
- d) All reports are reviewed by the Director / Manager, Safety and Security and relevant senior management.

### 2 INCIDENT REPORTS AND INVESTIGATIONS

- a) All incidents are to be thoroughly investigated with the aim of determining the root cause and applying the appropriate corrective action.
- b) Any plans for corrective action will be aimed at ensuring that recurrences of incidents or deficiencies in the Safety Management System are avoided.
- c) Investigation reports are analysed with the objective of improving health, safety, security and pollution prevention activities aboard vessels.

### 3 SHIPBOARD OCCUPATIONAL HEALTH AND SAFETY COMMITTEES

- a) Representatives from CCG vessels shall engage in Occupational Health and Safety Committee activities. Meetings shall be regularly scheduled and the minutes of the meeting shall be posted for review by the crew.
- b) Incident, non-conformities and observation reports shall be reviewed by the respective Occupational Safety and Health Committee where they were raised. These reports shall be analyzed with the aim of improving health, safety, security and pollution prevention activities aboard vessels.





# Fleet Safety Manual

## 9.A.1 - SAFETY MANAGEMENT SYSTEM REPORTS OF NON-CONFORMITIES AND OBSERVATIONS

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### 1 PURPOSE

- a) To ensure that all non-conformities (NCR) and observations are reported, investigated (corrective actions applied and closed out) and analyzed in order to reduce the possibility of reoccurrence.

### 2 RESPONSIBILITIES

#### 2.1 PERSONNEL

- a) Personnel are responsible to identify and report all non-conformities/observations to their supervisor.

#### 2.2 COMMANDING OFFICER / SHORE SITE MANAGER

- a) The Commanding Officer / Shore Site Manager are responsible to:
  - analyze all non-conformities within their area of responsibility;
  - Non-audit NCR's: The Commanding Officer and Superintendent, Fleet Safety and Security (SFSS) shall determine the appropriate type of NCR issued (Major, Minor, Observation).
  - determine and implement appropriate corrective action;
  - transmit Non-Conformity / Observation reports to the SFSS.

#### 2.3 DIRECTOR/SUPERINTENDENT, FLEET SAFETY AND SECURITY

- a) The Director/Superintendent, Fleet Safety and Security is responsible to
  - ensure that all Non-conformity / Observation Reports have been analyzed and that appropriate corrective action has been taken.
  - ensures that this procedure is understood by vessel personnel and shore staff
  - ensure that the response to the reporting is prompt, effective and appropriate to the circumstances.

### 3 INSTRUCTION

#### 3.1 REPORTING

- a) All Employees shall identify and report in writing all non-conformities / observations to their supervisor. The Commanding Officer / shore site manager must report the non-conformity/observation to the SFSS and jointly determine the type of NCR (Major, Minor, Observation) and assign a sequentially numbered Non-Conformity / Observation Report.
- b) When a non-conformity has been identified, the Commanding Officer / Shore Site Manager, in consultation with the SFSS (where appropriate), shall develop and implement appropriate corrective action. If the non-conformity is corrected immediately, the report is still required.

**Note 1:** For regions utilising the Optional Modified Certification Process for Station Mode Vessels, all findings that are raised during Station Audits are to be issued to the station, referencing the vessel located at the Station at the time.

- c) Not all reported observations may require corrective action but a report indicating what action was taken, if any, must be filed with the SFSS nevertheless.
- d) The SFSS shall maintain a register of all Non-Conformities / Observations and is responsible to ensure that corrective action is completed in the specified time frame. The SFSS shall ensure that the person who identified and reported the non-conformity or observation receives a copy of the completed report.

#### 3.2 CORRECTIVE ACTION

- a) The responsibility for developing a corrective action plan rests with the position signing the non-conformity report as the Vessel/Department Representative.
- b) A major non-conformity filed against a vessel must be addressed immediately, at least to the point where it can be down-graded to a minor non-conformity, before the vessel can be released for operations.
- c) In cases where the Commanding Officer or shore site manager does not have the necessary resources or authority to implement the corrective action plan, they shall forward a copy of the non-conformity to the appropriate senior officer ashore. In these circumstances, the Commanding Officer or shore site manager is to notify the SFSS of the particulars of the situation so that the SFSS can consult with senior management and ensure that assistance is provided to address the non-conformity situation within the time limit set.
- d) While corrective action remains outstanding, personnel shall be briefed and cautioned concerning the use of the procedure or the equipment affected by the report of non-conformity.

- e) There may be cases during follow-up on a reported non-conformity whereby the review determines that the corrective action has not been implemented or is not effective. If this follow up occurs prior to the next planned internal audit then this shall be noted in the follow-up section and the NCR will remain open. At the next scheduled internal audit when NCR follow-up takes place and it is found that the corrective action has not been implemented or is not effective; the original non-conformity report should be annotated and closed and the original non-conformity should be re-issued on the next available sequential non-conformity number, with an appropriate cross-reference of numbers shown.

### **3.3 TIMELINES FOR CORRECTIVE ACTION**

- a) A corrective action plan (CAP) shall be forwarded within the time prescribed by the Classification Society. For those cases where immediate correction is not possible, the plan shall contain the title of the individual(s) who is/are being assigned responsibility for completion and milestone dates to assess progress towards full completion of the plan. If the CAP as originally developed cannot be met then a note has to be attached justifying the delay.
- b) The majority of reported minor non-conformities will be within the capacity of the Commanding Officer or shore site manager to effect immediate corrective action and where this is the case, a corrective action plan must be developed and recorded no later than seven (7) days following receipt of the NCR. Vessels on a dual system (lay-day or 46.6) shall provide the CAP no later than forty-five (45) days in order to ensure that both crews have a chance to review the plan.
- c) The time required to fully implement a corrective action should not be more than ninety (90) days (not including lay-up time) from the date on which the non-conformity is reported. If this time is exceeded, the responsible Commanding Officer / Shore Site Manager should provide to the SFSS the estimated date for completion and a new follow-up date should be established.
- d) All reported non-conformities/observations can be closed out either when confirmation is received by the SFSS that the CAP has been implemented or upon review at a future audit.

### **3.4 REVIEWING NCR/OBSERVATIONS**

- a) All reported non-conformities/observations shall be included on the agenda of the shipboard OHS Committee. All vessels shall retain copies of all non-conformities/observations for a period of five (5) years from the date they were closed out.
- b) In order to provide for continuous improvement of the SMS, copies of all Non-Conformities and Observations must be forwarded to the Director, Fleet Safety and Security for review and to identify any national areas of improvement. These reports are to be reviewed on a regular basis with annual reports being prepared by the Director, Fleet Safety and Security for presentation to the National SMS Review Committee for discussion and decision.

## **4 DOCUMENTATION**

- Sequential Register of NCR's
- Minutes for Shipboard Occupational Health and Safety Committee Meetings
- Superintendent, Fleet Safety and Security File of NCR's



# Fleet Safety Manual

## 9.B.1 – Reports of Hazardous Occurrences, Marine Occurrences and Other Reportable Incidents

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### 1 Purpose

- a) To ensure that all hazardous occurrences, marine occurrences and other reportable incidents are reported, properly investigated, and analyzed with the objective of improving health, safety, security, and protection of the environment.
- b) Proper investigation and reporting also provides the necessary information to identify unsafe acts, unsafe conditions, or areas of high risk. It identifies direct cause, root cause, and corrective actions required to reduce or prevent similar occurrences in the future. This information is also important for statistical analysis, to determine the effectiveness, direction and continuous improvement of the Safety Management System (SMS).
- c) This procedure provides guidance on complying with the following regulatory authorities:
  - i. [Canada Labour Code, Part II](#)
  - ii. [Shipping Casualties Reporting Regulations](#)
  - iii. [Transportation Safety Board Regulations](#)
  - iv. [Federal Halocarbon Regulations, 2003](#)
  - v. [Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants - TP9834E](#)

### 2 Responsibilities

#### 2.1 Commanding Officer

The commanding officer is responsible for ensuring:

- a) all those involved in conducting investigations are qualified and trained as per departmental standards
- b) all hazardous occurrences, marine occurrences and other reportable incidents including near misses, involving seagoing personnel, supernumeraries, students, and contractors, either on board the vessel or ashore, are reported and investigated
- c) all investigation reports are reviewed for completeness, signed by the Commanding Officer with additional comments as needed, and transmitted, as required, to the Regional Operations Centre (ROC):

- i. Preliminary Report (A-K)
- ii. Amplifying Report
- iii. [Incident Investigation Report \(IIR\)](#)
- iv. [Transportation Safety Board \(TSB\) Report a Marine Occurrence](#)
- v. [Employment and Social Development Canada \(ESDC\) - LAB1070 - Hazardous Occurrence Investigation Report](#)

**Note 1:** The Canadian Coast Guard College (CCGC) will forward their IIRs to the National Command Centre (NCC).

- a) the completion, as required, for personal injury related incidents, of the provincial Workers' Compensation Board (WCB) form (only), and routing them ashore to the office of the Marine Superintendent
- b) the appropriate corrective and preventative measures are identified and implemented for all hazardous occurrences, marine occurrences, and other reportable incidents, including near misses, and that these measures are timely, effective, and appropriate to the circumstances
- c) a review of the related task(s) in the Site Specific Risk Register (SSRR) is conducted after each incident, to determine if any changes are required, and communicating those changes to all those affected, and
- d) a copy of the completed IIR is provided to the Workplace Occupational Health and Safety (OHS) Committee Member and/or Health and Safety Representative

## 2.2 Supervisor

The supervisor is responsible for ensuring:

- a) a qualified person is appointed to conduct the investigation
- b) the Workplace OHS Committee or Health and Safety Representative is notified of all hazardous occurrences, marine occurrences, and other reportable incidents, including near misses, and providing the name of the qualified person appointed to investigate it, within 24 hours of the incident being reported
- c) all disabling hazardous occurrences are investigated with the appointed Workplace OHS Committee members or a workplace Health and Safety Representative
- d) all hazardous occurrences, marine occurrences, and other reportable incidents, including near misses, occurring within their area of responsibility are reported to the Commanding Officer, and prompt action is taken to initiate corrective action to prevent a recurrence
- e) employees have access to professional medical treatment, when required
- f) the Workplace OHS Committee Member and/or the Health and Safety Representative is engaged to participate in the investigation, when appropriate
- g) completed IIRs are forwarded to the Commanding Officer for their review and signature, and
- h) the appropriate completed provincial WCB forms are forwarded to the Commanding Officer for their review and signature



## **2.3 Seagoing personnel**

Seagoing personnel are responsible for ensuring:

- a) all hazardous occurrences, marine occurrences, and other reportable incidents, including near misses, are reported to their immediate supervisor as soon as possible

## **2.4 Supernumerary**

The supernumerary is responsible for ensuring:

- a) all hazardous occurrences, marine occurrences, and other reportable incidents, including near misses, are reported to their immediate supervisor

## **2.5 Workplace Occupational Health and Safety Committee Member and/or Health and Safety Representative**

The Workplace Committee Member or the Health and Safety Representative is responsible for ensuring:

- a) they participate in all investigations to the extent considered necessary, and
- b) all IIRs are monitored and followed up on, to ensure that all recommended corrective actions have been implemented

## **2.6 Marine Superintendent**

The marine superintendent or their delegate is responsible for ensuring:

- a) the WCB forms are reviewed, completed properly, analyzed, and forwarded to the Department of Fisheries and Oceans (DFO), Regional Occupational Health and Safety Office

## **2.7 Manager, Coast Guard Safety and Security**

The manager, Coast Guard Safety and Security (CGSS) is responsible for ensuring:

- a) all IIRs and Reports of Marine Occurrence are distributed to the DFO Corporate OHS Office, and other stakeholders as required
- b) all reports are reviewed, analyzed, and contain the necessary information to determine whether the corrective action is appropriate
- c) if information is missing from the reports, the manager, CGSS, or their delegate, must contact the vessel/site, and request the necessary information
- d) the distribution of investigation reports, where appropriate, to CCG sections or other federal departments, and
- e) the follow-up and review information from investigations is distributed back to the originator of the IIR

## **2.8 Regional Operations Centre**

- a) The ROC is to be the distribution centre for all vessel reports of hazardous occurrences, marine occurrences, and other reportable incidents, including near misses.

- b) The ROC must forward all IIRs and [Transportation Safety Board Report a Marine Occurrence](#) forms to the Manager, Coast Guard Safety and Security.
- c) The ROC must forward Preliminary Reports Section 3.3 a) 1) to 10), to the Transport Canada Duty Officer, as soon as possible, but not later than 24 hours after the incident.
- d) In accordance with the Transport Canada Delegated Statutory Inspection Program (DSIP)<sup>1</sup> work instruction, the ROC must forward all Preliminary Reports to the Recognized Organization (RO).
- e) The ROC must forward Preliminary Reports Section 3.3 a) 11) to 12), to the [Transportation Safety Board](#) (TSB).
- f) The ROC are responsible to establish and maintain a list for the distribution of the Preliminary Reports.

## 2.9 National Designated Helicopter Facility Inspector

The National Designated Helicopter Facility Inspector is responsible for ensuring:

- a) there is a review and investigation, when required, of hazardous occurrence reports related to helicopter operations.

## 3 Instructions

### 3.1 General

For vessels temporarily transferred between regions, the host region must provide all reports to the vessel's home region. The vessel's home region is responsible for entering the information from the IIR into the Fleet Safety and Security database.

### 3.2 Reporting

- a) Preliminary Report (A-K)
- b) Amplifying Report (as required)
- c) IIR
- d) [ESDC LAB1070 form](#)
- e) WCB form (as required)
- f) [TSB - Report a Marine Occurrence](#) (as required)

### 3.3 The Preliminary Report (A-K)

- a) A preliminary report is used to notify management and the appropriate regulatory authority of the date, time, location, and nature of any hazardous occurrence that has one of the following results:
  - i. the death of an employee
  - ii. a missing employee at sea
  - iii. a disabling injury to 2 or more employees

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<sup>1</sup> [Enrolment in the Delegated Statutory Inspection Program](#) – Section 7.10.2

- iv. an employee's loss of consciousness as a result of an electric shock, a toxic atmosphere or an oxygen-deficient atmosphere
  - v. an employee's loss of a body member or a part of one or the complete loss of the usefulness of a body member or a part of one<sup>2</sup>
  - vi. the permanent impairment of an employee's body function
  - vii. a fire or an explosion
  - viii. damage to a boiler or pressure vessel that results in fire or the rupture of the boiler or pressure vessel
  - ix. damage to a person's transfer apparatus<sup>3</sup> (such as a landing boom, basket, ladder or gangway) that renders it unserviceable, or a free fall of a person's transfer apparatus
  - x. an incident of work place violence<sup>4</sup>
  - xi. a Marine Occurrence (as defined by section 3.8), and
  - xii. a shipboard helicopter hazardous occurrence<sup>5</sup> resulting in:
    - 1. a person sustaining serious injury or is killed as a result of:
      - being on board the helicopter
      - coming into contact with any part of the helicopter
      - being directly exposed to jet blast or rotor downwash
  - xiii. when the helicopter:
    - 1. sustains damage or failure that has an adverse effect on strength, performance, or flight characteristics and requires major repair or replacement of any part
    - 2. is missing or inaccessible
- b) The Preliminary Report is to be sent to the ROC as soon as possible, but within 24 hours of the incident. The ROC must distribute the report, at minimum, to the following offices:
- i. National Command Centre (NCC)
  - ii. Director, Coast Guard Safety and Security
  - iii. Regional Director, Fleet
  - iv. Manager, Coast Guard Safety and Security
  - v. external regulatory bodies as required
  - vi. the RO in accordance with the Transport Canada Delegated Statutory Inspection Program (DSIP) work instruction
  - vii. if the Hazardous Occurrence is the result of 1) to 10), it must be distributed to the Health and Safety Officer, and
  - viii. if the Hazardous Occurrence is the result of 11) to 12), it must be distributed to the TSB

**Note 2:** Commanding officers must be aware that security precautions are required when sending reports containing sensitive information. i.e. reports containing a name, date of

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<sup>2</sup> [Canada Occupational Health and Safety Regulations](#) Part 15.1 (b)

<sup>3</sup> [Maritime Occupational Health and Safety Regulations](#) Part 9, Section 129

<sup>4</sup> [Maritime Occupational Health and Safety Regulations](#) Part 5, Section 101

<sup>5</sup> [Transportation Safety Board Regulations](#) Part 1, 2(1)

birth, Social Insurance Number, etc. (Refer to [CGOO \(CGFO\) 130.00 Use of Electronic Networks Aboard Vessels](#) and [Department of Fisheries and Oceans Departmental Standard on Information Security](#)).

### 3.4 Preliminary Report Message Outline – A to K

The Preliminary Report must be completed using the format outlined below:

|   |   |
|---|---|
| A | the identity of the Fleet Unit from which the report is being made  |
| B | the nature of the accident/incident   |
| C | the identity of the vessel(s) and/or helicopter involved in the accident /incident  |
| D | the date, time (local) and location of the accident /incident   |
| E | the present state of seaworthiness or airworthiness of the vessel or helicopter involved and a brief assessment of damage, if applicable  |
| F | the intended action of the damaged or affected vessel or helicopter   |
| G | assistance required, if any, and services already summoned  |
| H | a statement of persons killed, missing, or injured  |
| I | whether or not the accident/incident has caused or is likely to cause an obstruction to navigation or any other serious hazard  |
| J | whether or not the accident/incident has caused or is likely to cause pollution of any waters, including details as per <a href="#">Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants (TP9834E)</a> , as applicable |
| K | miscellaneous information, not included above, of significance to addressees such as state of weather and sea, present and forecast   |

In the event of a spillage of cargo or bunkers, the following items should be added:

|   |
|---|
| Type of oil or cargo spilled                                    |
| Cause of the incident (overflow, burst hose, hull damage, etc.) |
| Quantity spilled  |
| Rate of spillage  |
| Cleanup attempted by vessel or third party                      |

### 3.5 The Amplifying Report (When Required)

- a) An Amplifying Report provides additional updates to the Preliminary Report, and may be sent following the Preliminary Report. It is used to inform authorities when significant changes in the situation have occurred, pertinent additional information has become available, or confirmation of assistance is required.
- b) The identity of persons injured and an update on their condition, as well as the identity of persons whose lives have been lost, must be included in this report. The Amplifying Report must follow the same format and distribution as the Preliminary Report.

### 3.6 Incident Investigation Report

- a) An IIR must be submitted for the following:
  - i. activation of emergency procedure
  - ii. disabling injury (visit to a medical professional and time lost)
  - iii. first aid
  - iv. loss of consciousness due to electric shock, or a toxic or oxygen-deficient atmosphere
  - v. minor injury (visit to a medical professional and no time lost)
  - vi. near miss
  - vii. pollution
  - viii. property damage
  - ix. unsatisfactory conditions
- b) Near miss reporting:
  - i. A near miss is an undesired event, which in different circumstances could have resulted in harm to people or damage to property or environment.
  - ii. Reporting of near misses provides opportunities to prevent an actual injury, illness, or damage by raising awareness. Reporting also provides opportunities to capture sufficient data for statistical analysis, trending and performance measurement, thereby improving employee safety and enhancing our safety culture.
- c) An IIR must be transmitted to the ROC within 72 hours of the incident taking place.
- d) With all requisite fields completed, this report is to represent the findings of the investigation, and provide a comprehensive record of the incident description, determinations as to the causes, and the assigned corrective and preventative measures.

### 3.7 LAB1070 – Employment and Social Development Canada

- a) Any CCG employee, supernumerary, or non-CCG employee working ashore who experience a disabling injury that results in lost time, and/or visit to a medical professional, both the CCG IIR and the Employment and Social Development Canada (ESDC) [LAB1070 form](#)<sup>6</sup> must be completed.

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<sup>6</sup> [ESDC - Hazardous occurrence investigation recording and reporting](#)

- b) The CCG IIR should be completed first. The information captured in the IIR can then be used to complete the LAB1070.
- c) Upon completion, these forms must be forwarded to the ROC/Marine Superintendent who is to immediately forward them to the office of the DFO Regional OHS. The Marine Superintendent must maintain copies of the LAB1070.

### 3.8 Workers Compensation Board Forms

- a) When a member of the vessel's complement has been injured and receives medical treatment, the appropriate WCB documentation must be completed in accordance with the appropriate provincial rules and regulations.
- b) Upon completion, these forms must be forwarded to the ROC/Marine Superintendent who is to immediately forward them to the office of the DFO Regional OHS. The Marine Superintendent must maintain copies of the WCB forms.

### 3.9 Transport Safety Board - Report of a Marine Occurrence

- a) As described in the [Transportation Safety Board Regulations, Part 1, 3.\(1\)](#), a [TSB - Report a Marine Occurrence](#) form must be completed by the vessel when<sup>7</sup>:
  - i. a person is killed or sustains a serious injury (hospitalized) as a result of:
    - 1. boarding, being on board or falling overboard from the ship, or
    - 2. coming into direct contact with any part of the ship or its contents
  - ii. a person falls overboard from the ship
  - iii. a crew member whose duties are directly related to the safe operation of the ship is unable to perform their duties as a result of a physical incapacitation which poses a threat to the safety of persons, property or the environment
  - iv. the ship:
    - 1. sinks, founders or capsizes
    - 2. is involved in a collision or a risk of a collision
    - 3. sustains a fire or an explosion
    - 4. goes aground
    - 5. makes unforeseen contact with the bottom without going aground
    - 6. sustains damage that affects its seaworthiness or renders it unfit for its purpose
    - 7. is anchored, grounded or beached to avoid an occurrence
    - 8. is missing or abandoned
    - 9. fouls a utility cable or pipe, or an underwater pipeline
    - 10. sustains a total failure of:
      - the navigation equipment if the failure poses a threat to the safety of any person, property or the environment
      - the main or auxiliary machinery, or
      - the propulsion, steering, or deck machinery if the failure poses a threat to the safety of any person, property or the environment

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<sup>7</sup> [Transportation Safety Board Regulations](#), Part 1, 3. (1) – direct extract from the Regulation.

- v. all or part of the ship's cargo shifts or falls overboard, or
  - vi. there is an accidental release on board or from the ship consisting of a quantity of dangerous goods or an emission of radiation that is greater than the quantity or emission levels specified in Part 8 of the [Transportation of Dangerous Goods Regulations](#)
- b) A [TSB - Report a Marine Occurrence](#) form may be deemed necessary, for reasons not previously listed in section 3.8, through consultation between the TSB and CCG. The vessel will be informed of this requirement.

### 3.10 Security Incident

- a) Refer to the [Policy on Departmental Safety, Security, and Emergency Management \(PD-SSEM\)](#) and the [Security Incident Report](#).

### 3.11 Motorized Vehicle Incident

- a) Refer to the IIR and the Shore-Based Safety Manual (SBSM), Procedure [7.C.6 Motor Vehicle Driving Safety](#).

### 3.12 Reporting Matrix

**Note 3:** The Canadian Coast Guard College (CCGC) will forward their investigation reports to the National Command Centre (NCC).

#### 3.12.1 Reporting requirements

| Report Type                         | Logbook Entry    | Distribution                        | Timeframe   |
|-------------------------------------|------------------|-------------------------------------|---|
| Preliminary Report (A-K)            | Deck - Mandatory | ROC                                 | As soon as possible, no later than 24 hours   |
| Amplifying Report                   | Deck - Mandatory | ROC - (as required)                 | As required   |
| Incident Investigation Report (IIR) | Deck - Mandatory | ROC                                 | Within 72 hours   |
| ESDC LAB1070                        | Deck - Mandatory | ROC/Office of Marine Superintendent | 14 Days   |
| WCB Forms                           | N/A              | ROC/Office of Marine Superintendent | WCB documentation must be completed in accordance with the appropriate provincial rules and regulations |

| Report Type                                | Logbook Entry             | Distribution  | Timeframe   |
|--|---------------------------|---------------|---|
| Report a Marine Occurrence (formerly 1808) | Deck - Mandatory          | ROC           | As soon as possible, no later than 30 days after the reportable marine occurrence |
| First Aid Record Book                      | First Aid Log - Mandatory | Kept on board | Immediately following the rendering of First Aid                                  |
| ALL SIGNATURE BLOCKS MUST BE COMPLETED     |                           |               |   |
| Copies to be kept on board.                |                           |               |   |

### 3.13 Definitions of an Incident

- a) Activation of an emergency procedure: a procedure adopted to meet a serious, unexpected, often dangerous emergency situation (especially a medical emergency) that requires immediate action.
- b) Disabling injury: injury or work related illness sustained where the employee seeks medical attention (from a Medical Professional or on board Health Officer), and prevents an employee from reporting to work, or from effectively performing all the duties connected with the employee's regular work on any day following the day on which the injury or disease occurred, whether or not the day following is a working day for the employee.
- c) Fire or explosion (shore-only): a rapid increase in volume and release of energy in an extreme manner, usually with the generation of high temperatures and the release of gases.
- d) First aid injury: injury or illness that causes employee to receive a single first aid treatment that would not ordinarily require professional medical treatment (for example: minor cuts, burns, scratches, etc.) and for which the employee would typically return to their normal work activities.
- e) Loss of consciousness: the loss of the ability to perceive and respond to the surrounding environment as a result of an electric shock, a toxic or oxygen-deficient atmosphere.
- f) Minor injury: injury or work related illness sustained where the employee seeks medical attention (from a Medical Professional or onboard Health Officer) but does not lose time from the subsequent scheduled work period.
- g) Near miss: an undesired event, which in different circumstances could have resulted in harm to people or damage to property or environment.
- h) Pollution: spills or releases of quantities less than specified in Part 8 of the [Transportation of Dangerous Goods Regulations](#) or as outlined by the [DFO Office of Environmental Coordination](#).
- i) Property damage: any loss or damage to assets, equipment, or resources.
- j) Unsatisfactory conditions: technical problems, breakdown, or deficiencies with systems or equipment that do not meet the definition of a Hazardous Occurrence but may affect the safe operation of the machinery or the safe/efficient delivery of the



program and where the sharing of the information related to the condition may improve the overall safety/efficiency of the operation.

## 4 Documentation

- DFO [Security Incident Report Form \(10-0442\)](#)
- First Aid Log Book Entries
- [Incident Investigation Report \(FP 5234 E\)](#)
- [ESDC - LAB1070 - Hazardous Occurrence Investigation Report](#)
- [Motor Vehicle Accident Report PWGSC GC 46](#)
- Preliminary Report (A-K)
- Provincial WCB Forms
- Training records
- [Transportation Safety Board - Report a Marine Occurrence](#)

## 5 References

- [Canadian Occupational Health and Safety Regulations – Part XV](#)
- [CGOO \(CGFO\) 130.00 Use of Electronic Networks Aboard Vessels](#)
- [DFO - Departmental Standard on Information Security](#)
- [DFO - Occupational Health and Safety Manual](#)
- [Directive on Motor Vehicle Fleet Management](#)
- [Enrolment in the Delegated Statutory Inspection Program](#)
- [ESDC - Hazardous occurrence investigation recording and reporting](#)
- [Federal Halocarbon Regulations 2003](#)
- [Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants \(TP9834E\)](#)
- [Maritime Occupational Health and Safety Regulations](#)
- [National Joint Council, Occupational Health and Safety Directive - Part XVII](#)
- [SBSM 7.C.6 Motor Vehicle Driving Safety](#)
- [Shipping Casualties Reporting Regulations](#)
- [Transportation Safety Board Regulations - Part 1, 2 \(1\) and 3.\(1\)](#)





# Fleet Safety Manual

## 9.B.2 - MAJOR HAZARDOUS OCCURRENCE – FORMAL INVESTIGATION

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### 1 PURPOSE

- a) To ensure that all major hazardous occurrences and significant near misses are investigated under formal Terms of Reference (TOR) are adequately investigated to fully establish causes, to prevent any possible recurrences, to improve the safety understanding of crews and shore managers, and to make necessary changes and improvements to the Safety Management System (SMS).
- b) To ensure that recommendations made pursuant to an investigation of a major incident receive full attention of senior management, are acted upon and that lessons learned are communicated.

**Note 1:** Investigations by regulatory agencies, police agencies, or coroners and other officers of the Courts, are separate and apart from the Canadian Coast Guard's (CCG) internal responsibility to self investigate, correct, and improve the CCG's SMS.

### 2 RESPONSIBILITIES

#### 2.1 COMMISSIONER OF THE CCG

- a) The Commissioner of the CCG shall convene a formal investigation into any major hazardous occurrence that:
  - involves the death or a serious threat to the life of any person aboard a CCG vessel or helicopter;
  - produces serious injuries requiring hospitalization or medical evacuation to more than one person as a result of the same incident at the worksite;
  - is a collision, grounding, striking, fire or explosion that occurs aboard a CCG vessel, small craft or helicopter where the estimated costs of the loss are expected to exceed one million dollars (\$1,000,000) or is a total constructive loss of the vessel or small craft.
- b) The Commissioner of the CCG may convene an investigation into any hazardous occurrence or near miss that involves the operation of a CCG vessel or helicopter when there is potential for the investigation to advance safety.

## **2.2 ASSISTANT COMMISSIONER**

- a) The Assistant Commissioner may convene an investigation into any hazardous occurrence or near miss involving a CCG vessel or helicopter operating in their area of responsibility, other than in circumstances listed in section 2.1 of this procedure. The Assistant Commissioner shall not commence an investigation into a hazardous occurrence or near miss where the Commissioner has already indicated that an investigation shall be convened.

## **2.3 SUPERINTENDENT FLEET SAFETY AND SECURITY (SFSS)**

- a) The SFSS is responsible for receiving reports from vessels and investigation teams, ensuring that investigation teams are suitable for the task at hand, and verifying that recommendations to correct hazardous occurrences have been effectively implemented.

## **2.4 LEAD INVESTIGATOR**

- a) The Lead Investigator is responsible for confidentiality of information received, submitting progress reports as required, reporting to convening authority and ensuring timelines are met as specified in the Terms of Reference, making any recommendations as per section 1.1 (b) of this procedure and assist the SFSS in assembling a suitable investigative team. Lead Investigator shall also ensure the investigation team adheres to the terms of reference as submitted by the convening authority.

## **2.5 EMPLOYEES**

- a) Employees have a responsibility to cooperate with an investigation.

# **3 INSTRUCTION**

## **3.1 INVOKING AN INVESTIGATION AND FILLING OF THE REPORT**

- a) Only the Commissioner or Assistant Commissioner may convene a formal investigation into an incident regarding a CCG asset. Any other incident where an internal investigation would have the potential to advance safety would still require approval from the Assistant Commissioner and terms of reference.
- b) Following the initial report of a hazardous occurrence or near miss, the investigation convening authority shall notify both the Director Fleet Safety and Security and the SFSS, the Commissioner or the Assistant Commissioner, the Director General; Fleet, Integrated Technical Services and Maritime Services that they intend to cause an investigation to be conducted into the circumstances of the hazardous occurrence or near miss. They, in turn, shall notify the convening authority within twenty-four (24) hours of their concurrence with the proposed investigation and submit any proposed changes to the action plan including their directorate participation in the investigation.

- c) The intention of the convening authority to investigate shall be expressed in the form of written Terms of Reference (TOR) issued to the lead investigator. The TOR shall state any specific requirement for involvement of any other Directorate in the investigation and be signed and dated by the originator. Copies of the TOR shall be issued to the appropriate offices subordinate to the convening authority and to the Commanding Officer of the vessel or Pilot-in-Command of the helicopter involved. An example is shown as Annex A of this procedure.
- d) The convening authority shall provide the necessary resources and authority (time, equipment, people, and finances) to the investigative team to properly carry out the investigation function.

### 3.2 THE INVESTIGATION TEAM

- a) The investigation team should be kept as small as possible but appropriately sized to meet the objectives of the investigation and the magnitude of the loss.
- b) This team must include, the Superintendent, Fleet Safety and Security, a representative of each directorate that the convening authority has indicated wants to be involved in the investigation and, a representative from the Shipboard Occupational Health and Safety Committee or the appointed Safety and Health Representative

**Note 1:** The [Canada Labour Code, Section 135\(6\)\(e\)](#) requires the participation of the OHS Committee in all inquiries and investigations pertaining to occupational health and safety. This requirement is further reinforced in the *Treasury Board Standard – Committees and Representatives Directive*.

- c) In the case of a helicopter accident, the Manager, Helicopter Support from CCG Fleet Headquarters shall be assigned to the investigation team in addition to any other members selected by the lead investigator. Pilots and engineers of CCG helicopters are employees of Transport Canada, Aviation Services; therefore, Transport Canada may request their presence on a CCG internal investigation team. The Manager, Helicopter Support shall be responsible for inviting and directing representatives of Transport Canada under the general direction of the lead investigator.
- d) The lead investigator, or at least one member of the investigation team, shall have received formal training in investigation methodology.

### 3.3 CONDUCT OF THE INVESTIGATION

- a) The investigation team shall conduct on-site inspections and interviews of all involved persons having any connection with the hazardous occurrence or near miss.
- b) Normally, two (2) members of the investigation team shall be present at all interviews of persons connected with the hazardous occurrence or near miss and notes shall be taken. These notes shall be included in the background material to the investigation report. The lead investigator may use various means to make a verbatim record of interviews.

- c) Interviewees are to be advised, before they are interviewed and in sufficient time to make any necessary arrangements, that they have the right to be accompanied, represented, or advised by an attorney or counsel of their choice. The person accompanying the employee cannot be a person who has been identified as a potential interviewee in the investigation at hand. Any costs associated to having such assistance remain the responsibility of the employee.
- d) Original documents shall remain aboard the vessel and photocopies of the originals should be entered in the investigation report.
- e) All materials gathered, statements recorded, or notes made during an investigation may be called into evidence in a court of law or may be subject to release under the provisions of the [Access to Information and Privacy Acts](#). Interviewees are to be made aware of this fact.

### 3.4 INVESTIGATION REPORT

- a) The investigation report shall contain the following elements:
  - Factual information relevant to the investigation
    - information related to certification, training, experience, and duty hours of personnel directly involved in the incident
    - Description of damage or injuries incurred
    - Location of the incident both geographically and site oriented
    - Date and time of the incident
    - Other related factors such as state of tide, weather, sea condition, visibility, traffic, etc at the time of the incident
    - The sequence of events that led to the hazardous occurrence or near miss highlighting the potential safety significant events (Any event that played a role or could have played a role in causing an occurrence or an event that is deemed worthy of further analysis).
  - Analysis
    - How the incident occurred (The existence of unsafe acts / conditions that led to the event.)
    - Why the incident occurred (The identification of underlying acts or conditions.)
    - Direct causes and contributing factors
  - Conclusions
    - Findings (The lack or inadequacy of Control systems that led to the event)
    - Recommendations
- b) The investigation team is to identify any system failure(s), make recommendations to reduce the risk of a recurrence and to improve the SMS. The investigation team shall not make recommendations for disciplinary action to be taken as result of the hazardous occurrence.
- c) The report shall always refer to position titles as opposed to name of individuals.

- d) Prior to completion of the report nothing should prohibit the investigation team in making recommendations for temporary measures to address substandard acts or conditions, such as a fleet bulletin or stop work order.
- e) Before presenting the final report, the lead investigator shall, on a confidential basis, send a copy of the draft investigation report to the SFSS, the lead investigator should verify/recommend that pertinent sections of the draft are to be sent to each person who in their opinion, has a direct interest in the findings. These persons shall be given a reasonable opportunity to make representations to the investigation team with respect to the draft report before the final report is prepared.
- f) The lead investigator shall consider representations made pursuant to section 3.4 (e) of this procedure before the final report is prepared. The lead investigator may reconvene the investigation team to consider representations at his or her discretion.

### **3.5 DISTRIBUTION AND COMMUNICATION OF INVESTIGATION REPORT**

- a) Upon completion of the investigation, the convening authority receiving the report shall call a special meeting of the interested parties (Director / Superintendent, Fleet Safety and Security, lead investigator, etc) to discuss the report and its recommendations in order to develop an action plan.
- b) The action plan shall include a communication plan. The distribution of the report and action plan shall be as broad as possible and, at a minimum, be the Commissioner or the Assistant Commissioner, the Director General; Fleet, Integrated Technical Services, Marine Programs and the Director / Superintendent, Fleet Safety and Security as appropriate.
- c) The appropriate (regional and national) SMS review committee shall review the action plan on the recommendations and proposals contained in the report and these actions are to be recorded in the minutes of the meeting.
- d) The actions to be taken to address the recommendations of the investigation report shall be tracked by the appropriate Director / Superintendent Fleet Safety and Security and Convening Authority until such time as they feel that all deficiencies have been addressed to close out the Formal Investigation Report. Recommendations that have been rejected shall be annotated to that effect with justification documented.

## **4 DOCUMENTATION**

- Investigation Team's Terms of Reference
- Investigation Report

**ANNEX A – TERMS OF REFERENCE**

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**To:** XXXX XXX**Date:** July 3, XXXX**SAMPLE TERMS OF REFERENCE – INCIDENT INVESTIGATION  
ENGINEER ROOM FIRE ABOARD CCGS XYZ ON JULY 1, XXXX**

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In accordance with the authority and procedures contained in the Fleet Safety Manual in section 9.B.2, you are directed to investigate the circumstances surrounding a fire in the engineroom of CCGS XYZ on July 1, XXXX, while at anchor at Iqaluit, Nunavut Territory.

A preliminary report was made by the vessel on July 1, XXXX, and was received by me on July 2, XXXX. A copy is attached.

You are to assemble an investigation team that shall include at least one other person who holds a Transport Canada Marine Safety, or CCG, certificate of competency. The team shall also include a representative member of the vessel's Occupational Safety and Health Committee in the investigation.

All reasonable costs for travel to and from the vessel and to meet with any witnesses who may not be aboard the vessel at the time of the investigation may be charged against my office. My administrative assistant will co-ordinate the necessary documentation.

All Departmental personnel are required to assist the investigation by responding to the teams questions and providing any requested documentation. Any failure to co-operate is to be reported immediately to me.

The investigation team is to determine:

- What occurred, including the sequence of events.
- The immediate contacts that led to the incident.
- The existence of any substandard acts or conditions that led to the event.
- The identification of the basic or underlying causes of the event.
- Any lack of management systems control that led to the event.
- The response of the emergency management team.
- The estimated immediate financial costs of the incident.
- Where it can be reasonably determined, the estimated associated costs of the incident such as vessel delay time, training of replacements, equipment substitution, etc.

The team is to identify any system failure(s), make recommendations to reduce the risk of a recurrence, to improve the Safety Management System. The investigation team shall not make recommendations for disciplinary action to be taken as result of the incident.

The team is to provide any assistance or information that may be requested by officials of the Marine Safety Directorate of Transport Canada, the Transportation Safety Board of Canada, or other official body that may be investigating this incident. You are authorized to act as the owner's representative in assisting investigative agencies or requesting information that they may have already gathered.

The report is to be made to me no later than August 2, XXXX.

*Signature of Convening*





# Fleet Safety Manual

## 9.C.1 - Shipboard Occupational Health and Safety

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### 1 Purpose

- a) To ensure that the Canadian Coast Guard (CCG) complies with the requirements of the [Canada Labour Code](#), Part II regarding section 127.1 Internal Complaint Resolution Process, section 128 Refusal to work if danger, and section 135 Work Place Health and Safety Committees.

### 2 Responsibilities

#### 2.1 Commanding officer

The commanding officer is responsible for ensuring that:

- a) shipboard occupational health and safety (OHS) committee meetings are held at regular intervals and shipboard OHS inspections are carried out monthly
- b) minutes of OHS committee meetings and OHS inspection checklists are distributed in accordance with this procedure
- c) occupational health and safety complaints are managed as per the [Canada Labour Code](#), Part II with respect to the section 127.1 Internal Complaint Resolution Process and section 128 Refusal to work if danger

#### 2.2 The workplace health and safety committee

The workplace health and safety committee must:

- a) develop and submit recommendations for the improvement of health and safety practices and programs at the worksite
- b) correct hazards or minimize exposure to hazards to permissible exposure limits
- c) review policy, standards, and regulations pertaining to health and safety
- d) initiate or recommend suitable corrective action to the commanding officer
- e) as part of section 127.1 Internal Complaint Resolution Process and section 128 Refusal to work if danger, participate in all inquiries and investigations pertaining to occupational health and safety on board the vessel

## 2.3 Seagoing personnel

Seagoing personnel are responsible for ensuring that:

- a) they immediately report to their supervisor any occupational health and safety concerns on board the vessel or at the worksite
- b) when requested, participate in OHS activities, meetings, inspections, and on occasion, be part of a workplace investigation

## 3 Instruction

- a) All CCG vessels above 15 GRT (gross registered ton), as well as all CCG stations are required to have OHS committees. However, where a vessel with a crew of less than 19 chooses not to form a committee, 1 person from that crew, not in a managerial position, can act as the safety representative for the vessel.
- b) Committees must include both an employer co-chair and an employee co-chair who must jointly chair all meetings. The committee must include an officer and a crew representative from each department, and a member of program staff on board.
- c) The minutes must include the committee members' names and the group they represent. If no program representative attends, this must be noted in the minutes.
- d) Where committees have been established, OHS meetings must be held at regular intervals so that in a 1-year period, a minimum of 9 meetings have been held at the worksite:
  - i. regular intervals means equal spacing between meetings and held over a 1-year period
  - ii. on vessels and stations operating with 2 crews, meetings and inspections must be conducted monthly; and meetings and inspections must be evenly distributed between both crews
  - iii. on seasonal vessels and stations, inspections are to be done each month of the operational season; and meetings are to be held at regular intervals and must not exceed a period of 6 weeks.
- e) Shipboard OHS inspections are to be conducted on a monthly basis so that every part of the vessel is inspected at least once each year; or in the case of a seasonal vessel, once each season. Records of inspections are to be maintained, and if necessary, follow-up inspections conducted to correct deficiencies and ensure that corrective or preventative actions are taken.
- f) Individual regions may require meetings on a differing frequency than stated above, and such frequency is permitted provided that the minimum stated in this procedure is observed.
- g) A meeting must be held following any hazardous occurrence.
- h) The agenda for a regular safety meeting must include the following items:
  - i. a review of the minutes of the previous meeting and a determination of what action is required to address any outstanding items
  - ii. a review of the pertinent hazardous occurrence investigation reports and other related accident and/or safety and health reports

- iii. as part of the CCG Hazard Prevention Program, the vessel risk register must be reviewed to ensure that:
  - 1. all hazards and risks have been identified and assessed and that suitable control measures are in place to address the hazards; these controls consist of administrative procedures, personal protective equipment, and engineering configurations of the vessel
  - 2. if hazards are missing, the OHS committee is to consider these and add them to the risk register
  - 3. the vessel is to address any missing controls
  - 4. the vessel risk register must be reviewed and updated at each vessel level Safety Management System (SMS) review

Note: Where a vessel within a class makes updates to their vessel register, it will be shared with the other vessels in the same class. Best practices will also be shared amongst all vessels.

  - 5. all seagoing personnel must read, understand and sign-off on all control measures (personal protective equipment, standard operating procedures, etc.)
- iv. a review of findings from shipboard OHS inspections conducted since last meeting
- v. a review of any SMS related issues such as non-conformity reports
- vi. a review of safety policies, standards, regulations, or bulletins received since the last meeting, including amendments to the Fleet Safety Manual
- vii. a review of the availability of training courses and recommendations regarding attendance
- viii. formal identification of the need for additional shipboard work instructions or the need for amendments to existing instructions
- i) All meeting minutes and inspection checklists must be posted for at least 3 months. A copy of these minutes must be forwarded to the Manager, Coast Guard Safety and Security. All reports must be signed by both co-chairs.

### 3.1 Internal complaint resolution process

- a) If the employee has reasonable cause to believe there has been a contravention of the [Canada Labour Code](#), Part II, the employee is responsible to inform the supervisor and both the employee and the supervisor must try and resolve the complaint.
- b) If the complaint is unresolved, the employee or supervisor may refer it to one of the co-chairs of the OHS committee or the Manager, Coast Guard Safety and Security who will discuss the complaint with regional management.
- c) If further investigation is needed, the [Internal Complaint Resolution Report](#) form and/or the [Refusal to Work Investigation Report](#) form must be used and the investigators of the complaint must inform the employee and the employer in writing of the results of the investigation.

- d) If investigators conclude that the complaint is justified, the employer must immediately inform the employee in writing how and when the matter will be resolved:
  - i. in this case, the employer must ensure that no employee works in the place, uses the equipment/materials, or performs the activity that constituted the danger, until the situation is rectified
- e) The employer or employee can refer a complaint of a contravention of the [Canada Labour Code](#), Part II by contacting a Labour Program health and safety officer in [regional offices](#) if:
  - i. the employer/employee does not agree with the findings of the investigating team; or
  - ii. the employer has failed to inform the investigating team of how and when the matter will be resolved, or the employer fails to take the necessary action; or
  - iii. the investigating team cannot agree whether or not the complaint is justified
- f) The Labour Program health and safety officer will verify whether the internal complaint resolution process has been followed before commencing a further investigation. On completion of the investigation, the Labour Program health and safety officer:
  - i. may issue directions to the employer or employee if a contravention is identified
  - ii. may, if the Labour Program health and safety officer considers it appropriate, ask the employer and employee to resolve the matter between themselves
  - iii. will issue directions if the Labour Program health and safety officer concludes that a danger exists

### 3.2 Refusal to work if danger

- a) The internal complaint resolution process is intended to establish a collaborative approach to investigating potential workplace hazards while maintaining an employee's right to refuse dangerous work.
- b) As part of an employee's 3 basic rights under the [Canada Labour Code](#), Part II, an employee may refuse to work in a place, use equipment/materials, or perform an activity if the employee has reasonable cause to believe that:
  - i. the use or operation of equipment/materials constitutes a danger to the employee or another employee
  - ii. a condition exists in the workplace that constitutes a danger to the employee; or
  - iii. the performance of an activity constitutes a danger to the employee or another employee
- c) An employee may not refuse to work if:
  - i. the refusal to work will put the life, health, or safety of another person directly in danger
  - ii. the danger is a normal condition of employment, taken into consideration the employee's level of training, knowledge, and experience; or
  - iii. the employee is on board a vessel while it is in operation, the employee must bring the issue to the supervisor, and the safe operation of the vessel must be considered to ensure the safety of all crew

- d) An employee who exercises the right to refuse dangerous work may leave the immediate area where the danger is perceived, but must remain at work. The employee may be assigned reasonable alternate work, or the supervisor may require the employee to remain at a safe location.

### **3.3 Training**

- a) All employees serving as members of a shipboard workplace health and safety committee must receive the prescribed training in health and safety and be informed of their responsibilities under the [Canada Labour Code](#), Part II.

## **4 Documentation**

- [Internal Complaint Resolution Report](#) (form)
- [Refusal to Work Investigation Report](#) (form)
- Minutes of meetings
- Shipboard OHS inspection checklists
- Reports of hazardous occurrences and subsequent review

## **5 References**

- [Canada Labour Code](#), Part II
- [CCG/6108 Personal Protective Equipment Manual](#)





# Fleet Safety Manual

## 10.0 - MAINTENANCE OF VESSELS AND EQUIPMENT

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### 1 MAINTENANCE OF THE VESSEL

- a) The Canadian Coast Guard (CCG) Fleet ensures that an integrated national framework for the management and maintenance of the vessel, machinery and equipment is in place through its Vessel Maintenance Management Manual. The manual incorporates the best practices essential to the ongoing operational readiness of the CCG Fleet and meeting our mandated responsibilities.
- b) Systems critical to the operation of the vessel are to be identified and any necessary spare parts are to be carried to assist with the self help capabilities for the vessel
- c) Any operational or maintenance work performed in the workplace either routine or non-routine in nature will have inherent hazards. It is crucial that before any work is started that employees; as a group or individually, take a few minutes to safely review the work to be performed. This review covers the various key steps of a Safety Self-Check.
  - This Safety Self-Check at a minimum shall cover these key points:
    - Identify the hazards
    - Assess the risks associated with each hazard
    - Plan a safe way to carry out the work.
- d) The Safety Self-Check is to be applied equally for site operations or maintenance routines. The hazards and their associated risks and exposures are to be assessed, a safe work plan to carry out the task is to be considered, identifying the Personal Protective Equipment (PPE) needed as necessary and identify responsibilities. It is not intended to have these Safety Self-Checks logged or recorded, the intent is to promote safety awareness so that employees are aware of the hazards, and have considered the risks and safeguards. If questioned an employee working on the site shall be aware of this safety requirement.
- e) Machinery and equipment are maintained on a routine basis and in accordance with manufacturer's recommendations. Where a manufacturer's data for maintenance is considered deficient, the CCG has developed procedures to ensure that the machinery or equipment is maintained to higher standards.

- f) The CCG Fleet ensures that impact analysis and evaluation of changes are undertaken prior to their implementation. CCG Fleet is managed through a formal system of configuration management that generates sufficient, accurate, and valid documentation reflecting the current configuration of as-fitted assets.
- g) Changes to vessels and equipment are approved through a specified Change Configuration Management process. No changes shall be made to vessels without approval through this process.
- h) Reports of hazardous occurrences affecting any system or sub-system are brought to the attention of vessels equipped in a similar manner to allow for changes in operating practice or maintenance practice. When a modification is allowed, the effect is then implemented into the applicable operating procedure.
- i) Policies, processes, procedures and guidelines have been developed for the management of vessel maintenance and the reporting of any non-conformities as a result of routine inspections.

## **2 MAINTENANCE OF THE VESSELS EQUIPMENT**

- a) Where lifting gear is fitted onboard the vessel a procedure shall be established to ensure that the gear remains ready for use and that all associated lifting appliances are inspected.
- b) Every vessel shall ensure that fitted safety equipment is maintained in accordance to manufacturers requirements, CCG Policy or best practices and remains in a ready state at all times while the vessel is in operation.





# Fleet Safety Manual

## 10.A.1 - IDENTIFICATION OF CRITICAL SYSTEMS

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### 1 PURPOSE

- a) To identify shipboard equipment and technical systems, the sudden operational failure of which, may result in a hazardous situation to the vessel, to the crew, to another vessel, or to the environment.
- b) To ensure that the inspection, testing, and maintenance of these systems and equipment are integrated into the vessels operational maintenance routine thus ensuring critical system reliability.

**Note 1:** A Critical System is defined as equipment or technical systems, the sudden operational failure of which (when in use) may result in hazardous situations. The equipment referred to in this procedure would be limited to the operation of the vessel itself and not for equipment related to a program tasking.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER IN CONSULTATION WITH THE CHIEF ENGINEER

- a) The Commanding Officer in consultation with the Chief Engineer is to identify, list, record and maintain the critical systems and shall ensure that familiarization for the operation of critical systems aboard their vessel are in place.
- b) The Commanding Officer in consultation with the Chief Engineer shall ensure that the Superintendent, Marine Engineering receives a copy of the critical systems list as well as any revisions made to the list.

#### 2.2 SUPERINTENDENT, MARINE ENGINEERING

- a) The Superintendent, Marine Engineering is to ensure, through an ongoing review of vessel reports, that the critical systems are contained in the preventative maintenance program and that the required maintenance is being performed.

### **3 INSTRUCTION**

#### **3.1 GENERAL**

- a) Each vessel shall maintain a complete listing of critical systems and associated equipment particular to that vessel. The list shall include a brief description of the equipment, function of equipment, location on vessel, power source (if applicable), and reference to inspection, testing, maintenance records and to applicable manuals and/or drawings.
- b) The type and number of critical systems varies depending on vessel type, operation, and redundancy of fitted equipment. Though some systems will be common to all vessels, the list shall include, at minimum, the following:
  - Propulsion – including:
    - Propulsion system and controls
    - Emergency shut-down systems
    - Fuel oil supply system
    - Alarm and monitoring systems
  - Power Generation – including:
    - Emergency generating systems
    - Generating systems and control
    - Emergency shut-down systems
    - Fuel oil supply system
    - Alarm and monitoring systems
  - Steering – including:
    - Steering systems and control
    - Emergency steering system
    - Alarm Systems
  - Navigation Systems – including:
    - Magnetic Compass
    - Gyro Compass
    - Navigation Radar
    - Electronic Navigation Receivers
    - Depth Sounding Equipment
    - Communication Transceivers
    - Alarm and monitoring Systems

- Emergency Equipment – including:
  - Fire pumps
  - Fire detection and alarm systems
  - Fixed Firefighting System
  - Watertight integrity systems
  - Launching davits
  - Lifeboats
  - Internal communication systems
  - Emergency Transmitter (GMDSS)
  - Alarm and monitoring systems
  - Emergency lighting
- Anchoring and mooring systems and associated control
- Pollution prevention equipment.
- Bilge and ballast systems
- Lifting gear
- Security equipment

#### **4 DOCUMENTATION**

- Critical Systems List
- Inspection and Testing Records
- Preventative Maintenance Records
- Asset Management System (AMS)





# Fleet Safety Manual

## 10.A.2 - MAINTENANCE AND REFITS

---

### 1 PURPOSE

- a) To ensure that all vessels are properly maintained thus ensuring safe, reliable, efficient operation and the prevention of environmental damage.
- b) The Canadian Coast Guard (CCG) Fleet ensures that through its [Vessel Maintenance Management Manual \(VMMM\)](#); that an integrated national framework is in place which identifies the responsibilities of individuals and requirements associated with maintenance of CCG vessels and their associated equipment.

### 2 RESPONSIBILITIES

#### 2.1 DIRECTOR, INTEGRATED TECHNICAL SERVICES AND THE REGIONAL DIRECTOR, FLEET

- a) The Director, Integrated Technical Services and the Regional Director, Fleet are to provide adequate resources and support to maintain the vessels.

#### 2.2 CHIEF ENGINEER

- a) The Chief Engineer is responsible to the Commanding Officer for ensuring that the vessel's hull, machinery, and equipment are maintained in conformity with the relevant rules, and regulations.
- b) The Chief Engineer is responsible for carrying out routine maintenance and inspections as well as providing the Asset Management System (AMS) End of Shift report, outlining maintenance completed and highlighting nonconformities or deficiencies that have been found. These End of Shift reports are to be submitted to the Superintendent, Marine Engineering, or delegate.
- c) The Chief Engineer is responsible for regularly communicating maintenance activities carried out on board the vessel.
- d) The Chief Engineer is responsible for ensuring that appropriate instructions are issued and followed for all maintenance tasks included in the vessel's maintenance system.
- e) The Chief Engineer coordinates the preparation of the vessel's defect list incorporating defects reported by the other departments including electronic navigation and communication equipment. This list is to be maintained up to date and be suitable for review at regular intervals, as required.

#### 2.3 TECHNOLOGISTS

- a) Technologists performing maintenance on electronic navigation and communication equipment are responsible for ensuring that shipboard maintenance records are current.

**2.4 SUPERINTENDENT, MARINE ENGINEERING**

- a) The Superintendent, Marine Engineering, is to review the vessel's AMS End of Shift reports and take such action as necessary.

**2.5 CLASS MANAGER, VESSELS**

- a) The Class Manager, Vessels, shall obtain resources to assist regions in implementing corrective actions or recommendations that require modification to fitted systems or the replacement of equipment or systems. This will necessitate informing the Regional Director, Fleet to obtain the necessary approvals and funding required.

**3 INSTRUCTION****3.1 GENERAL**

- a) Maintenance onboard vessels shall be performed in accordance to manufacturer's instructions, CCG policies and procedures and where no procedures exist, best practices.
- b) All tools used in the maintenance process shall be accurate to the extent of the preciseness required for the specific task at hand. Test and torque equipment used on any critical system shall be calibrated and confirmed accurate. Equipment that cannot be field calibrated shall be sent to a certified test facility in accordance with manufacturer's recommended schedule for calibration. Shipboard calibration of mounted instrumentation should be carried out periodically using calibrated test equipment for comparison.
- c) The Commanding Officer, Chief Engineer, including any vessel Department Heads, are responsible for ensuring that maintenance instructions are available to staff in their area of responsibility. These instructions, and all relevant references, shall be integrated into the vessel's maintenance system.
- d) Maintenance is to be carried out on a continuous basis in consideration of operational requirements.
- e) Changes to vessel configurations shall follow the established procedure for Change Configuration Request Management process.
- f) The Chief Engineer shall use the defect list, continuous survey report and established maintenance system items, in the preparation of the vessel's refit and or the self-maintenance lists.

**3.2 ELECTRONIC DEFECTS**

- a) In the case of the electronic navigational equipment, telecommunications equipment, and the electronic equipment room, the Chief Engineer shall send the complete defect list to the Superintendent, Electronics and Informatics, and their designate, with a copy to the Superintendent, Marine Engineering. Defects shall be given the priority status required and a technologist will be dispatched from the nearest available service location.
- b) Maintenance of electronic navigation and communication equipment shall not be conducted without the knowledge the Chief Engineer.

- c) Electronic items shall be divided as follows to ensure that priority items are addressed promptly.
- Priority One Safety and Regulatory
  - Priority Two Operational
  - Priority Three Recreational

### **3.3 CONTRACTING**

- a) When contracting work on CCG vessels, the person issuing the contract, work order or work instructions is responsible to ensure that the contractor fully meets the requirements of the Safety Management System.

## **4 DOCUMENTATION**

- [CCG Vessels Refit Management Procedures Manual](#)
- Continuous Survey Report
- Defect Lists
- Maintenance Records
- Maintenance Records for Electronic, Navigation and Communication Equipment.
- Site Specific Work Instructions and Checklists
- [Vessel Maintenance Management Manual \(VMMM\)](#)







# Fleet Safety Manual

## 10.A.3 - LAY-UP AND RETURN TO SERVICE

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### 1 PURPOSE

- a) To ensure that Canadian Coast Guard (CCG) vessels are laid up in such a manner as to prevent injuries to the crew, damage to the vessel, pollution of the environment and that sufficient security measures are in place for timely notification to the appropriate responsible person in the event of a breach of security or a system malfunction.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible to ensure that the vessel is properly prepared for lay-up and where practicable, return to service.
- b) The lay-up-plan shall be prepared and submitted for approval prior to the vessel entering the lay-up period. Suitable instruction/direction shall be given to the onboard lay-up crew and for the reactivation of the vessel after lay-up as per the approved lay-up plan.
- c) At least one month prior to the scheduled lay-up, a pre-lay-up meeting shall be scheduled and include all personnel involved in the lay-up planning process. At a minimum, the following personnel shall attend: Commanding Officer, all Shipboard Department Heads, the Marine Superintendent and the Superintendent, Marine Engineering or delegate.

#### 2.2 REGIONAL DIRECTOR, FLEET

- a) The Regional Director, Fleet is responsible to ensure that contingency and reactivation plans are developed and distributed and that adequate security arrangements are in place for the vessel during lay-up.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) A specific plan shall be created for each occasion where the vessel is to be laid-up. This plan shall include extracts from the developed contingency plans identified under Procedure 8.A.1 and be applicable to the vessel for the location and period of lay-up.

- Small vessels shall develop a vessel specific checklist, taking into account, various equipment and items onboard to ensure proper lay-up and return to service precautions are applied.
- b) Security arrangements shall be organized bearing in mind the type and length of lay-up. Arrangements shall be made in consultation between the Commanding Officer and Regional Director, Fleet, as appropriate. Note also the requirement to safeguard security communications equipment (Sectera I) located aboard the vessel.
- c) The Commanding Officer shall be advised in writing of the scheduled lay-up date, and type of lay-up (hot, warm, cold) in sufficient time to allow for proper procedures to be carried out.
- d) An inspection of the vessel, its machinery and equipment shall be completed and any defects noted. A copy of this listing shall be provided and all personnel shall be made aware of any changes that have been made to the vessel in preparation for or during the lay-up period.

### **3.2 VESSEL COLD LAY-UP**

- a) Where a vessel enters a cold lay-up period, all cold weather precautions shall be adhered to including draining of the domestic water supply and any wet sprinkler systems shall also be drained.
- b) Before a vessel enters into cold lay-up, where practicable, Hazardous Material onboard shall be removed and disposed of.
- c) A specific list shall be created identifying type and location of all Hazardous Material remaining onboard during the lay-up period. This list shall be maintained of the bridge of the vessel and a copy sent to the NHQ Vessel Disposal Officer.

### **3.3 SITE SPECIFIC WORK INSTRUCTIONS**

- a) Vessels shall create Site Specific Work Instructions on the lay-up and return to service processes. These shall include at a minimum the following:
  - Vessel Lay-Up - Hot, Warm or Cold
  - Return to service
  - Equipment, Weapons and Secure Communications

## **4 DOCUMENTATION**

- Regional Contingency and Reactivation Plan
- Vessel Maintenance Management Manual
- Operation-specific checklist
- Lay-up Inspection and Defect Report
- Report of Maintenance Completed During the Lay-up



# Fleet Safety Manual

## 10.A.4 - DRY-DOCKING

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### 1 PURPOSE

- a) To ensure that Canadian Coast Guard (CCG) vessels are consistently and systematically dry-docked in a manner that ensures the health and safety of individuals and the security of the vessel and that steps are taken to prevent damage to the vessel and assets and prevention of pollution to the environment.

### 2 RESPONSIBILITIES

#### 2.1 SUPERINTENDENT, MARINE ENGINEERING/PROJECT OFFICER/CHIEF ENGINEER

- a) The Superintendent, Marine Engineering/Project Officer/Chief Engineer shall ensure that the entity responsible for the work to be conducted and for the safety and security of the vessel and its equipment while at the shipyard is clearly identified and documented.

#### 2.2 SUPERINTENDENT, MARINE ENGINEERING

- a) The Superintendent, Marine Engineering shall produce a specification and ensure that the dry-docking plans are prepared as per the [Vessel Maintenance Management Manual](#).

#### 2.3 PROJECT ENGINEER/CHIEF ENGINEER

- a) The Project Engineer/Chief Engineer shall ensure that the vessel is properly prepared for dry-docking and its return to service.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) Site-specific work instructions shall be developed to identify the points to be taken into consideration when proceeding to, while in dry dock, floating the vessel and departing the dry dock.
- b) Ensure that Basic Safety Briefings are provided and all check lists are completed when proceeding to dry dock, while in dry dock, and upon leaving the dry-dock.

#### **4      DOCUMENTATION**

- Docking Plan
- Dock Certificate
- Dock Master Certificate
- Vessel Maintenance Management Manual
- Vessel-specific checklists – entering / departing
- Stability calculations



# Fleet Safety Manual

## 10.A.5 - COLD WEATHER PRECAUTIONS

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### 1 PURPOSE

- a) To ensure precautionary measures are taken to prevent injury to the crew, damage to the vessel, systems or equipment due to cold weather.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER AND CHIEF ENGINEER

- a) The Commanding Officer and Chief Engineer are responsible to ensure that precautionary measures are taken to prevent damage to vessel, systems or equipment during cold weather.

#### 2.2 COMMANDING OFFICER

- a) The Commanding Officer is to ensure that personnel are provided with appropriate Personnel Protective Equipment (PPE) when working outside in cold weather.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) Vessel's shall create Site Specific Work Instructions detailing the methods and procedures to be used to winterize vessel's boats and barges, the vessel's fire-fighting system, and the recirculation methods to be used for the sea water cooling system or other equipment as necessary.
- b) All cold weather precautions taken with respect to the vessel's machinery are to be documented.
- c) Particular attention should be paid to all air vents and especially, to those connected to seawater cooling systems, fuel or ballast tanks or any tanks in use to ensure there is no ice built up around them which prevents air exchange when the tank level is adjusted.

### 4 DOCUMENTATION

- Site Specific Work Instructions
- Log Book Entries / Records of Winterization





# Fleet Safety Manual

## 10.A.6 - PAINT AND OTHER COATINGS

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### 1 PURPOSE

- a) To ensure that the Canadian Coast Guard (CCG) Fleet will use products that comply with Health Canada; Pest Management Regulatory Agency and other standards developed by the Canadian General Standards Board for the application of paint and primers, including hull coatings.
- b) To ensure that steps are taken to mitigate the risk to the health of individuals and protection of the marine environment during surface preparation and the application of paint on CCG vessels.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible to ensure that the application of paint and coatings on the vessel is conducted in accordance with the instructions provided by the manufacturer and only such products and applications are to be used which will have the least possible effect on the environment.
- b) The Commanding Officer shall ensure that all paint removal operations are assessed for possible polluting acts and that responsible steps are taken to contain the by-products of the paint removal and properly dispose of the waste.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) Appropriate Personal Protection Equipment (PPE) shall be worn for all paint removal and application operations. When paint stripping or application operations are being conducted in close proximity to ventilation intakes, consideration shall be given to restrict air flow from these intakes to prevent the spreading of fumes and dust to other parts of the vessel.
- b) Removal of paint and rust will result in the creation of waste material that may be both hazardous to the worker and would be considered a polluting material if allowed to enter the water. Steps shall be taken to mitigate paint and debris from entering the environment.

- c) In large scale paint operations, the vessel may be boomed if appropriate. Where feasible a containing structure shall be used in the area where paint is being removed to contain dust and debris. Paint removal operations should be halted in high wind conditions when it becomes apparent that dust is appearing on the water or is readily apparent outside the containing structure.
- d) Waste generated through paint removal shall be collected frequently. Waste must be collected and the area cleaned at the end of each working period. Waste is to be stored in solid drums and is to be handled and disposed of as a hazardous material.
- e) Paint should be applied using the tools and methods recommended by the paint manufacturer with a view to minimizing the possibility of spills and drips that could enter the water.
- f) Absorbent material is to be kept readily at hand to immediately deal with any spill.

#### **4 DOCUMENTATION**

- Paint and Coating Standards
- Manufacturers' specific instructions for application and surface preparation
- Site Specific Work Instructions



# Fleet Safety Manual

## 10.A.7 - CONTRACTOR SAFETY AND SECURITY

### 1 PURPOSE

- a) To ensure that when maintenance or repair work performed by contractors aboard a Canadian Coast Guard (CCG) vessel or at a CCG Station and the workplace is under the control of CCG that these guidelines shall be followed to maintain the health and safety of all persons onboard, protection of the environment and to ensure the security of the vessel.
- b) To guide CCG employees in regard to their responsibilities in the workplace during the performance of work by contractors.
- c) To ensure that contractors follow Occupational Health and Safety (OHS) procedures in accordance with applicable Federal and Provincial OHS regulations as appropriate
- d) To ensure that maintenance and repair work contracts follow, where applicable, the [Guide on the Safety Responsibilities of DFO in Relation to Contractual Agreements, Partnering & Volunteers.](#)

### DEFINITIONS

The definitions and terms that follow are to be used exclusively in the context of this procedure.

|  |  |
|--|--|
| <b>Employee</b>                                    | A person employed by an employer.  |
| <b>Employer</b>                                    | A person who employs one or more employees and includes an employers' organization and any person who acts on behalf of an employer.   |
| <b>Competent Person<br/>Designated Responsible</b> | A competent person is an individual with specialized knowledge for the task at hand with publicly recognized accreditation in the relevant field, who has been designated by the owner or its worksite representative to accomplish certain tasks. |
| <b>Due Diligence</b>                               | Ensuring that all reasonable precautions are taken, under the particular circumstances, to prevent injuries or accidents in the workplace.   |

|  |   |
|--|---|
| <b><i>Escort</i></b>                                     | <p>A crew member or other appropriate personnel, approved by the Commanding Officer, who is accompanying another person(s) without the appropriate level of security clearance onboard the vessel for tours or for the purpose of maintenance to equipment onboard. in order to ensure the escorted person is engaged only in activities for which they were granted access.</p> <p>An escort shall remain with the person(s) at all times while onboard.</p> |
| <b><i>Major Safety or Security Infraction</i></b>        | Failure to conform to acceptable standards that could jeopardize the safety or security of all persons and or the vessel/CCG station.   |
| <b><i>Minor Safety or Security Infraction</i></b>        | Failure to conform to acceptable standards that could jeopardize the safety or security of a person aboard a vessel or at a CCG station.  |
| <b><i>Qualified Person</i></b>                           | A qualified person is in respect of a specific duty, a person who, because of their knowledge, training and experience, is qualified to perform that duty safely and properly.  |
| <b><i>Quality Assurance</i></b>                          | Program for the systemic monitoring and evaluation of the various aspects of a project, service, or facility to ensure that standards of quality are being met.   |
| <b><i>Workplace</i></b>                                  | Any place where an employee is engaged in work for the employer.  |
| <b><i>Workplace under the control of the CCG</i></b>     | When CCG employees are actively working on the site, the workplace is then considered to be the CCG's responsibility under <a href="#">Part II of the Canada Labour Code</a> . The CCG's obligations in relation to the safety of the workplace under its control still apply when work is being performed by contractors and subcontractors.   |
| <b><i>Workplace NOT under the control of the CCG</i></b> | When the contractor has custody and control of the vessel and CCG employees are only doing quality assurance (QA) work related to the contract, the worksite (vessel) is NOT considered a workplace under the control of the CCG for the purpose of the <a href="#">Canada Labour Code, Part II</a>   |

## 2 RESPONSIBILITIES

### 2.1 COMMANDING OFFICER

- a) The Commanding Officer shall ensure that the vessel's crew are aware of CCG's responsibility to safeguard the safety and health of all personnel, including contractors, present at the worksite onboard CCG vessels or at CCG stations as applicable.

- b) The Commanding Officer shall ensure that contractors receive the CCG basic shipboard or shore facilities safety familiarization which shall cover, but is not limited to, knowledge of the following items:
  - all contractors follow applicable OHS regulations, in accordance with CCG safety/security/environmental requirements
  - Fire alarm and conduct to follow in case of fire or other emergency situations,
  - Restricted areas spaces,
  - Known risks and hazards encountered at the worksite (asbestos, fire fighting systems, hazardous materials, flammables etc).
  - Shall ensure that daily toolbox safety briefings are conducted with the contractor and that proper communications and work coordination is established with contractor/shipboard personnel.
  - Shall ensure that all infractions are corrected or addressed in a timely manner.

## **2.2 COMMANDING OFFICER OR THEIR DELEGAT)**

- a) The Commanding Officer or their delegate shall stop any unsafe work performed by any individual including a Contractor or their representative; when the activity puts any person, asset or the environment at risk.

## **2.3 COMMANDING OFFICER AND CONTRACTOR**

- a) The Commanding Officer and Contractor are responsible to ensure that Risk Assessments are completed before any work commences aboard any CCG vessel/station - Procedure 7.A.1.
- b) Any crew member who is knowledgeable and possesses the appropriate skill sets is considered qualified to assist in completing the required Risk Assessments.
- c) Contractors or their representative engaged in work associated with real properties; such as buildings, structures and accommodations shall be given a Basic Safety Familiarization. They are not required to complete a risk assessment unless they choose to do so.

## **2.4 SHIPBOARD OFFICER OR SHORE SIDE MANAGER**

- a) The Shipboard Officer or Shore Side Manager: who arranges the services of a contractor to perform work on a CCG vessel shall ensure the contractor is provided with clear definitions of work and appropriate instructions for all shipboard maintenance tasks. They are also to ensure that the contractor follows Occupational Health and Safety (OHS) procedures in accordance with the applicable Federal and Provincial OHS regulations.

## **2.5 ALL EMPLOYEES INCLUDING CONTRACTOR EMPLOYEES**

- a) All employees including contractor employees shall report immediately to their supervisor any circumstance in the workplace that is likely to be hazardous to the health, safety and security of employees or other persons granted access to the workplace by the employer.

- b) All employees including contractor employees witnessing an infraction that could jeopardize the safety and security of the crew and/or vessel shall take all reasonable and necessary precautions including stopping the action immediately to ensure the health and safety of employees and any person likely to be affected by any person's acts or omissions and report immediately to their supervisor.

### **3 INSTRUCTION**

#### **3.1 CONTRACTOR REQUIREMENTS**

- a) Before any work is started the contractor shall become familiar with this procedure and others as appropriate to the work being performed. The contractor and their employees shall comply with these procedures or have procedures with the same intent in place which, at the discretion of the Shipboard Officer or Shore Side Manager, meet or exceed those established for the CCG.

#### **3.2 SECURITY**

- a) A valid minimum security screening at the Reliability Status level is required for any contractor to be granted unescorted access to a workplace controlled by the CCG regardless of the work they are performing. Prior to letting a contract it is a requirement of the [Policy on Government Security \(PGS\)](#) and *DFO Departmental Policy* that a Security Requirement Check List (SRCL) be completed.

**Note 1:** It is strongly suggested that the appropriate level of security screening, for all contractors, be indicated on the SRCL. Ensuring that all contractors have the appropriate level of security screening will reduce the necessity for providing escorts for un-cleared contractors.

#### **3.3 ANY PERSON**

- a) Any person including contractors that does not have, at minimum, a valid Reliability Status shall be escorted and briefed on the areas they have been granted access and the restricted areas of the vessel or station as applicable.
- b) Under no circumstance shall a person be given access to classified assets or information unless they have a valid SECURITY CLEARANCE (Level 1 Confidential, Level 2 Secret, and Level 3 Top Secret) commensurate to the level of the asset or information being accessed and a clearly demonstrated need to know requirement.

#### **3.4 ANY CONTRACTOR**

- a) Any contractor who sails with the vessel is considered to be a supernumerary and as such shall meet the requirements as stipulated in Procedure 6.D.1, i.e. security clearance and medical fitness.

#### **3.5 LIABILITY**

- a) When the vessel or station is under the custody and control of the CCG, the CCG is responsible for the safety of the workplace in relation to all persons aboard including contractors and subcontractors. In those circumstances, the CCG shall ensure that the activities of every contractor and subcontractor do not endanger the health and safety of CCG employees or the security of the vessel, or stations as applicable.

- b) When the vessel or station is NOT under the custody and control of the CCG, in order to reduce the risks of liability, the CCG, as vessel owner, should be satisfied that the Contractor has acceptable processes in place to prevent accidents and to reduce the risk of damage to the vessel. If applicable, prior to contract start, the Contractor shall provide the CCG with documentation indicating processes for care and custody of the vessel, the protection of equipment, and the conduct of hazardous activities (e.g., burning and welding, confined space entry, etc).

**Note 1:** These examples are not limitative and are subject to the specific conditions under which the work is undertaken.

### **3.6 MINOR SAFETY OR SECURITY INFRACTION**

- a) Any CCG employee observing a minor Safety or Security infraction shall report it to their supervisor. The CCG supervisor shall in turn advise the contractor's supervisor.
- b) The Contracting Authority Representative, if applicable, shall be informed of the infraction.
- c) All minor infractions shall be logged in the Deck log book.

### **3.7 MAJOR SAFETY OR SECURITY INFRACTION**

- a) Work shall be stopped immediately.
- b) Any CCG employee observing a major Safety or Security infraction shall report it to their supervisor. The CCG supervisor shall in turn advise the contractor's supervisor.
- c) The Contracting Authority Representative, if applicable, shall be informed of the infraction.
- d) Corrective actions shall be taken before work resumes.
- e) All major infractions shall be logged in the Deck log book.
- f) For any major infraction related to health, safety or security, the responsible CCG supervisor shall report the incident to the Superintendent, Fleet Safety and Security and provide copies of all documentation, (i.e. the investigation report, immediate corrective action taken, measures to prevent reoccurrence etc). in a timely fashion
- g) *CCG Fleet Safety, Security, Quality, and Environmental Requirements and Expectations for Contractors* is an information document intended as a handout to familiarise contractors with the expectations of the CCG.
- h) The Contractors Basic Safety Familiarization is a record which will verify that a basic safety briefing has been given, understood and acknowledged by the contractor. This record shall be completed for all contractors working on CCG vessels or at a CCG site, This record shall be retained at the worksite for a period of two (2) years.

## **4 DOCUMENTATION**

Log Book entries

Pre-Job Safety Assessment

Site-Specific Work Procedure and Checklists

Records of Safety Briefings





# Fleet Safety Manual

## 10.B.1 - MAINTENANCE OF LIFTING APPLIANCES AND CARGO HANDLING GEAR

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### 1 PURPOSE

- a) To ensure the continued functionality, safety, and reliability of the vessel's cargo gear<sup>1</sup> by regular testing and inspection.
- b) To ensure the entire vessel's lifting appliances<sup>2</sup> and cargo gear is identified, inspected, tested, and maintained in accordance with the [Canada Shipping Act, 2001- Cargo, Fumigation and Tackle Regulations](#).
- c) To ensure that all devices not defined as cargo gear in the [Cargo, Fumigation and Tackle Regulations](#) that are on board the vessel, and are capable of lifting (such as lifeboat davits and engine room chain falls), or devices brought on board the vessel by external parties for the purpose of lifting, are subject to regular inspection.

### 2 RESPONSIBILITIES

#### 2.1 SENIOR DECK OFFICER

The Senior Deck Officer is responsible for ensuring that all cargo gear, lifting appliances, etc. are identified, certified, and properly maintained on board the vessel. The Senior Deck Officer shall maintain the proper records in the Canadian Coast Guard (CCG) Register of Lifting Appliances and Cargo Handling Gear.

### 3 INSTRUCTION

#### 3.1 CARGO GEAR

- a) Each vessel shall maintain a register listing each piece of cargo gear showing the date of the last test and the safe working load. This register shall include all hoist, chain blocks, rope blocks, straps, eyebolts, shackles, etc. The cargo gear shall all be marked or tagged with their safe working load.
- b) All cargo gear shall have written instructions for the inspections, testing, and maintenance of the gear.
- c) Any person operating a lifting appliance or power mobile equipment in a working area shall comply with every notice and sign applicable to the operation of the appliance, or equipment placed in the working area.
- d) No cargo gear shall be used or operated with a load in excess of its safe working load.

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<sup>1</sup> [Cargo, Fumigation and Tackle Regulations](#) – Part 300

<sup>2</sup> [Cargo, Fumigation and Tackle Regulations](#) – Part 300

### 3.2 LIFTING APPLIANCES

- a) All lifting appliances shall be examined<sup>3</sup> annually by a competent<sup>4</sup> person.
- b) They shall be given a load test and a thorough examination once every five<sup>5</sup> (5) years.
- c) Chains made of malleable cast iron, and chains, rings, hooks, shackles, and swivels made of mild steel, and all pulley blocks shall be thoroughly examined, at a minimum, once every twelve<sup>6</sup> (12) months.
- d) All wire ropes shall have a test certificate<sup>7</sup> prior to being put into service. Every wire rope in service shall be thoroughly examined annually<sup>8</sup> by a competent person, or every six<sup>9</sup> (6) months if the rope passes over a drum or sheave. A competent person, who thoroughly examines a wire rope, shall annotate the register<sup>10</sup> accordingly. If there is a broken wire, the wire rope shall be inspected by an expert<sup>11</sup> person on the day of its intended use to determine if it is safe for use.
- e) Before being used, and or any time damage is suspected, the lifting appliances and cargo gear shall be visually inspected by the Supervisor of the operations who is responsible for ensuring:
  - that there is free rotation of sheaves;
  - that wires are free of excessive wear and damage;
  - that hooks, shackles, pennants, and swivels are free of excessive wear and damage; and
  - that a lubrication routine shall be put in place, and any recorded defects or deficiencies are brought to the relevant Supervisor's attention.
- f) Equipment not subject to the [Cargo, Fumigation and Tackle Regulations](#), but used on board for lifting and maintenance where the load can exceed 455 kg, shall be inspected in the same manner as equipment subject to the [Cargo, Fumigation and Tackle Regulations](#), and shall be entered in the *Canadian Coast Guard (CCG) Register of Lifting Appliances and Cargo Handling Gear*.
- g) Lifeboat and Rescue Boat davits are subject to inspection and testing under the [Life Saving Equipment Regulations](#) in the Fleet Safety Manual (FSM) procedure [10.B.2 Maintenance and Inspection of Lifesaving Equipment](#).
- h) All workboat and barge davits not covered in 3.2 (f) above shall be tested by a competent person to 125% of safe working load (SWL) or tested to the manufacturer's specification, whichever is more stringent, before the davit is used for the first time and after replacement, modification, or repair of any stress-bearing part, unless the part is mechanically detachable and has been tested and certified separately from the davit and at least once every five (5) years or in

<sup>3</sup> [Cargo, Fumigation and Tackle Regulations](#) – Part 304

<sup>4</sup> FSM 10.B.1 Maintenance of Lifting Appliances and Cargo Handling Gear - section 3.2 j

<sup>5</sup> [Cargo, Fumigation and Tackle Regulations](#) – Part 303 – See Part 300 (2) for definition of a competent person with respect to the five (5) year examination.

<sup>6</sup> [Cargo, Fumigation and Tackle Regulations](#) – Part 306

<sup>7</sup> [Cargo, Fumigation and Tackle Regulations](#) – Part 310

<sup>8</sup> [Cargo, Fumigation and Tackle Regulations](#) – Part 308

<sup>9</sup> [Cargo, Fumigation and Tackle Regulations](#) – Part 308

<sup>10</sup> [Cargo, Fumigation and Tackle Regulations](#) – Part 311

<sup>11</sup> [Cargo, Fumigation and Tackle Regulations](#) – Part 300



accordance with manufacturers specifications. The davit passes the test when the following conditions have all been met:

- the means provided on all winches to stop and hold the load in position are effective;
  - the mechanical brakes are in good condition, emergency stopping devices fitted on winches are effective; and
  - no defects or signs of permanent deformation are detected.
- i) All workboat and barge davits not covered in 3.2 (f) above shall be thoroughly examined by a competent person at least once every year after it is tested. The davit passes examination when the following conditions have all been met:
- certificates have been issued for the loose gear used with the davit;
  - the parts that align and swivel under load are free;
  - the mechanical, electrical, gearing, hydraulic and pneumatic systems are in good working order;
  - parts are not affected by corrosion to the extent that they cannot be opened; and
  - no defects or signs of permanent deformation are detected.
- j) Inspections on board CCG vessels are to be performed by a competent person. For the purposes of this procedure, a competent person is any person holding a certificate of competency as master, a chief mate, first class engineer, second class engineer, or any responsible person having the required experience and/or training to allow them to carry out the inspections.

### 3.3 ACCOMMODATION LADDERS

- a) Inspection intervals are defined by regulations under the [Canada Shipping Act, 2001](#). Vessels may have different inspection intervals, for example vessels operating under the International Convention for the Safety of Life at Sea (SOLAS) or vessels that have adopted classification society requirements with approval from Transport Canada Marine Safety and CCG management. Each vessel is responsible to determine their minimum respective inspection schedule.
- b) Inspections and routine maintenance as defined by the manufacturer and/or the inspection authority (Transport Canada Marine Safety or Delegated Statutory Inspection Program Recognized Organization) shall be conducted under the supervision of a competent person.
- c) Dye penetrant testing may be used for inspection. Dye testing shall be carried out and results recorded by a competent person with a minimum certification of CAN/CGSB 48-9712 Dye Penetrant Level 2.
- d) Record of all inspections shall be maintained on board the vessel, and recorded in the appropriate section of the *CCG Register of Lifting Appliances and Cargo Handling Gear*. Special regard for areas passing through the sheaves and renewal when necessary due to any deterioration of the falls, corrosion, deformation, significant wear in structural or moving parts, or at intervals of not more than five years, whichever is earlier.

### 3.4 RECORDS

- a) The *Canadian Coast Guard Register of Lifting Appliances and Cargo Handling Gear* shall be kept and maintained under the Senior Deck Officer's responsibility as per instructions inside the front cover.

- b) T2 or T3 certificates are to be attached to the register under the applicable equipment headings.
- c) T4 certificates for all attached equipment currently in use are to be attached to the register under their respective headings and marked with their location.
- d) T4 certificates for gear taken out of use are to be removed from the register or clearly marked REMOVED FROM SERVICE if certificate applies to more than one item
- e) T4 certificates for loose equipment are to be attached to the register and marked, e.g., spare 15t hook
- f) T5 certificates for wires are to be marked with the date they were put in service and location.
- g) T5 certificates that apply to more than one wire are to be copied, marked and attached to the register under the applicable heading. Certificates for wires taken out of service are to be removed from the register.
- h) This register shall be retained on board for five (5) years after the most recent entry.

### **3.5 GENERAL**

- a) When a spool or roll of wire rope is received on board, a T5 certificate shall accompany it. The spool or roll is to be marked with the certificate number.
- b) All cargo gear sent for testing shall be clearly marked before being shipped. When cargo gear is returned from testing, or new cargo gear is received on board, the T4 certificate shall be checked to ensure the cargo gear can be clearly identified with appropriate certificate.
- c) If cargo gear is transferred to another vessel, a copy of the original T4 shall be sent with the shipping notice.
- d) The Commanding Officer shall report any alteration in vessel's cargo gear upon production of the register to an inspector.
- e) Any defective or suspect equipment shall be removed from use and tagged as such. If this equipment is beyond repair, it shall be disposed of in the proper manner.

## **4 DOCUMENTATION**

- Safe Working Load Markings
- Site Specific Work Instructions and Checklists
- Records of Inspections
- CCG Register of Lifting Appliances and Cargo Gear
- T2, T3, T4, T5 Certificates
- CCG Fleet Guide - Tackle
- CAN/CGSB 48-9712 Dye Penetrant Level 2



# Fleet Safety Manual

## 10.B.2 – Maintenance and Inspection of Lifesaving Equipment

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### 1 Purpose

- a) To provide information to ensure that the maintenance and inspection of lifesaving equipment will meet the requirements of the [Life Saving Equipment Regulations](#) of the [Canada Shipping Act](#), and where applicable, the *International Convention for the Safety of Life at Sea (SOLAS)*.

### 2 Responsibilities

#### 2.1 Commanding officer

- a) The commanding officer is responsible for ensuring that site specific work instructions (SSWIs), and the manufacturer's instructions, cover the inspection and maintenance of the lifesaving equipment supplied to the vessel, and that a responsible officer is assigned to the task of completing inspections and recording results.

### 3 Instruction

#### 3.1 Regular inspections

- a) The following inspections and tests shall be carried out every week on a safety convention vessel, and every 2 weeks on every other vessel:
  - i. all survival craft, rescue boats, and launching appliances shall be inspected visually to ensure that they are ready for use
  - ii. engines in lifeboats and rescue boats shall be run in the ahead and astern drive modes for a total period of not less than 3 minutes; outboard motors should be run for only as long as the manufacturer indicates is appropriate to run without cooling water
  - iii. the general alarm shall be tested at various locations during each inspection.
- b) The inspection and tests shall be logged.

## 3.2 Monthly inspections

- a) All lifesaving appliances, including lifeboat equipment and emergency communication equipment, shall be inspected monthly using a checklist. The use of a checklist is mandated by SOLAS Chapter III, Regulation 36.1.
- b) Speciality-sized immersion suits issued to individuals shall be inspected upon joining the vessel, and regularly thereafter in accordance with this procedure.
- c) Depending on how the vessel is equipped, immersion suits shall be stored in a vented compartment or locker, with tamper proof seals intact, and not in an exterior locker or compartment exposed to marine weather. When they are stored in an unheated compartment or locker, the compartment or locker shall be inspected for signs of moisture, mold, mildew, and other contaminants.
- d) Further instructions on the stowage and maintenance of immersion suits can be found in the [CCG/6108 - Personal Protective Equipment Manual](#).
- e) Immersion suits used for other purposes such as training and fit testing, which are carried on board Canadian Coast Guard (CCG) vessels, and/or are maintained at a CCG facility, shall not be included in the Life Saving Equipment Plan or the regulatory Abandon Ship Immersion Suit Inventory. They shall be tagged and/or clearly marked (for example: "For the purpose of training and fit testing only"). The suits shall be stowed in a distinctly separate location away from other certified immersion suits to avoid any confusion during an abandon ship situation.
- f) Completed monthly checklists shall be maintained in a file (electronic or hard copy) for a period of at least 1 year.

## 3.3 Annual inspections

- a) Life rafts shall be serviced annually, by accredited service technicians, at an accredited service facility. All of the tests, procedures, and other recommendations made by the manufacturer of the life raft shall be carried out each time the equipment is serviced.
  - i. The life raft service interval may be extended to 2 years if:
    - 1. the vessel on which the life raft is carried is not a safety convention vessel and operates less than 7 months per year
    - 2. fewer than 15 years have elapsed since the inflatable survival equipment was manufactured
    - 3. the validity period of the most recent hydrostatic test of the gas cylinders of the inflatable survival equipment shall not expire before the next servicing
    - 4. the inflatable survival equipment is stored in a dry location during the months in which the vessel is not in operation.
  - ii. The life raft service interval may be extended up to 30 months if:
    - 1. the vessel on which the life raft is carried is not a safety convention vessel
    - 2. the manufacturer of the life raft recommends an extended interval between servicing of up to, but not more than, 30 months
    - 3. the extended interval between servicing provides a level of safety at least equivalent to that provided by annual servicing.
- b) All immersion suits shall be thoroughly inspected annually in accordance with manufacturers' instructions. Thorough inspections should not be performed more often as doing so may cause undue wear.

### 3.4 Lifeboat fall inspections

- a) Lifeboat falls shall be inspected periodically and turned end-for-end every 30 months<sup>1</sup> or may be replaced.
- b) Lifeboat falls used in launching shall be inspected periodically with special regards for areas passing through the sheaves, and renewed when necessary due to deterioration of the falls or at intervals of not more than 5 years, whichever is earlier.
- c) These inspections shall be logged and/or noted in the vessel's CCG Register of Lifting Appliances and Cargo Handling Gear.

### 3.5 Periodic inspections

- a) Immersion suits shall be sent to a servicing depot for inspection of leaks by air pressure testing as per manufacturers' recommendations. For suits with a manufacturing date of over 5 years, more frequent testing may be warranted and frequency must be confirmed with the manufacturer.
- b) The manufacturing date of the immersion suit can be determined by providing the serial number to the manufacturer.

### 3.6 Five-year inspections

- a) Lifeboat falls shall be replaced<sup>1</sup>.
- b) This inspection shall be logged and/or noted in the vessel's CCG Register of Lifting Appliances and Cargo Handling Gear.

## 4 Documentation

- Deck log
- Monthly checklists
- CCG Register of Lifting Appliances and Cargo Handling Gear
- Life raft certificates
- Immersion suit tags
- [CCG/6108, Personal Protective Equipment Manual](#)

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<sup>1</sup> [Life Saving Equipment Regulations](#), Section 116





# Fleet Safety Manual

## 11.0 - DOCUMENTATION

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### 1 DOCUMENTATION RELATED TO THE SAFETY MANAGEMENT SYSTEM

- a) The Canadian Coast Guard (CCG) Fleet has established procedures to issue documents and data that relate to the Safety Management Systems (SMS) both ashore and afloat. Any changes to controlled documentation shall be identified in the document. Records of all SMS activities shall be kept on vessels or ashore as defined in the procedures.
- b) The CCG Fleet shall have immediate access to the statutory rules, regulations, and guidelines that are relevant to Canadian Coast Guard ship operations.

### 2 DOCUMENT CONTROL

#### 2.1 SUPERINTENDENT FLEET SAFETY AND SECURITY (SFSS)

- a) The SFSS shall be made aware of the issue of controlled documentation to vessels and relevant departments ashore. Obsolete documents shall be promptly removed.
- b) The SFSS shall review all amendments to the SMS prior to approval and issue.

#### 2.2 COMMANDING OFFICER/SITE MANAGER

- a) The Commanding Officer/Site Manager supervises the issue of controlled documentation on board/ashore and coordinates the removal of obsolete documentation with the Superintendent Fleet Safety and Security (SFSS).

### 3 VESSEL DATA

- a) The CCG Fleet has developed procedures to safeguard the maintenance of certain essential shipboard data. These procedures are:
  - 7.A.6 Vessel Manoeuvring Data
  - 7.A.8 Stability
  - 11.A.3 Vessel Certificates
  - 11.A.4 Maintenance of Vessel Logs







# Fleet Safety Manual

## 11.A.1 - DOCUMENT CONTROL – INTERNAL

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### 1 PURPOSE

- a) To ensure that internal documents generated by the Safety Management System (SMS) for the maintenance of the SMS are available at all relevant locations, changes to documents are reviewed and approved by authorized personnel, are assigned a document control number and that obsolete documents are promptly removed.

### 2 RESPONSIBILITIES

#### 2.1 REGIONAL DIRECTOR, FLEET OR INTEGRATED TECHNICAL SERVICES

- a) Regional Director, Fleet or Integrated Technical Services, as appropriate, are responsible to ensure that all sites reporting to them maintain controlled internal SMS documents in accordance with this procedure.

#### 2.2 COMMANDING OFFICER/SITE MANAGER

- a) Commanding Officer/Site Manager is responsible to ensure that all controlled documents relating to the ships or shore site SMS is current, that all revisions are completed and revisions are noted in the changeover notes.
- b) The Commanding Officer/Site Manager or their delegate shall ensure that all personnel affected by any changes to the SMS are made aware of them.

#### 2.3 SUPERINTENDENT FLEET SAFETY AND SECURITY (SFSS)

- a) The SFSS is responsible for:
  - ensuring that relevant controlled documents are available on vessels and shore sites and that document revisions are distributed promptly
  - control, issue and assignment of document control numbers for all regional controlled documents.
  - maintain the Regional master SMS library.

## 2.4 DIRECTOR, FLEET SAFETY AND SECURITY (DFSS)

- a) The DFSS is responsible to:
- ensure that relevant controlled documents are available at Headquarters and distributed to SFSS and that documented revisions are distributed promptly.
  - control, issue and for assignment of document control numbers for all national controlled documentation;
  - maintain the National master SMS library;.

## 3 INSTRUCTION

### 3.1 SMS CONTROLLED DOCUMENTS

- a) SMS controlled documents are listed in the list of Controlled Publications.
- b) The Fleet Safety Manual (FSM) shall be available on all vessels and at shore sites in either hardcopy or electronic format.
- c) All SMS controlled documents, with the exception of the Ship Security Plan, shall be held in a location accessible to all personnel. In addition, the Contingency Plan Manual(s) shall be kept in the best location(s) for intended usage.

### 3.2 DOCUMENT APPROVALS

- a) **All National Procedures based on Policy** – shall be approved by the Commissioner. These procedures end in .0 and are the first procedure within each section of the FSM.
- b) **All other National Procedures** – shall be approved by the Director General, Fleet.
- c) **Regional Procedures** – shall be approved by the Assistant Commissioner. Regional specific procedures should only be promulgated where the National Procedure does not adequately and specifically address the unique regional requirement.
- d) **Site Specific Work Instructions / Checklist** – shall be approved by the Regional Director, Fleet / Integrated Services, as applicable.

### 3.3 ISSUE AND DISTRIBUTION

- a) Prior to SMS controlled document distribution, the DFSS or SFSS as applicable, shall ensure that each document has received approval, has been assigned a document control number, including revision number, and is logged into the applicable document control register.
- b) SFSS shall forward controlled copies of any regionally issued procedure to the DFSS for incorporation in the master copy of the FSM.

### **3.4 DOCUMENT IDENTIFICATION**

- a) All CONTROLLED copies of National and Regional Procedures shall be printed on coloured non-white paper. Only controlled copies of documents shall be considered accurate at the work-site
- b) Printouts or photocopies of procedures shall be made on white paper only, clearly labelled, stamped or marked in a contrasting colour UNCONTROLLED COPY.
- c) If printed from the CCG Fleet Intranet site, the documents will already bear the watermark UNCONTROLLED COPY WHEN PRINTED.

### **3.5 DOCUMENT INVENTORY/CONTROL REGISTERS**

- a) Control registers shall be maintained by all Vessel/Shore sites to identify the inventory of SMS controlled documents and their locations. Control registers shall include:
  - the document control number
  - the name of the publication
  - the edition number and last revision date
  - the location and or holder of the document
- b) The DFSS shall maintain a Control Register identifying holders of the FSM.
- c) Each vessel shall maintain an inventory of internally controlled Site Specific procedures, work instructions and checklists.
  - The inventory shall include the location of each controlled satellite binder and any procedures, work instructions or checklists in use around the work site. This inventory shall be verified annually.

### **3.6 CHECKLISTS**

- a) Where the SMS makes use of paper checklists as a formal record of compliance with procedures, all boxes on the checklist must be completed with either a checkmark, the required information, or marked NOT APPLICABLE.

### **3.7 RETENTION & DISPOSAL OF CONTROLLED DOCUMENTATION**

- a) The DFSS shall maintain a copy of the past versions and revisions of the Safety Management System Policy, National Procedures and Headquarter's Work Instructions.
- b) The SFSS shall maintain a copy of the past versions and revisions of regionally-issued procedures and work instructions.

## **4 DOCUMENTATION**

- Register of Manual Holders
- Register of Amendments and Acknowledgments
- Records and Copies of Obsolete Documents
- Controlled Document Register





# Fleet Safety Manual

## 11.A.2 - DOCUMENT CONTROL – EXTERNAL

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### 1 PURPOSE

- a) To identify and ensure documentation of an external origin that is relevant to the Safety Management System (SMS) is available at all relevant locations, that a current list of these documents is maintained and that the documents are controlled and current.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible to ensure that documentation relating to the vessel's SMS received from external sources is identified, controlled, distributed and current.

#### 2.2 NAVIGATING OFFICER

- a) The Navigating Officer shall be responsible to the Commanding Officer for the maintenance and custody of the Navigational outfits as documented in a Site Specific Work Instruction. In smaller vessels, the Commanding Officer or Coxswain, as applicable, will assume these duties.

#### 2.3 SUPERINTENDENT MARINE ENGINEERING

- a) The Superintendent Marine Engineering is responsible for the maintenance of the set of duplicate ship drawings required in section 3.3 (d) of this procedure.

#### 2.4 DIRECTOR, FLEET SAFETY AND SECURITY (DFSS)

- a) The DFSS is responsible for maintaining a register of external SMS documents located at Headquarters.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) Each vessel and shore site shall be responsible for maintaining an inventory of external SMS documentation. Subject to operational status, this inventory shall be verified annually and any discrepancies noted on the inventory list and action taken to correct the discrepancy.
- b) Each publication that is subject to regular update and revision shall have updates logged in the document control register. Obsolete documents shall be promptly removed and destroyed.
- c) The external document control register shall be headed with the Name of vessel or shore site, and the date that the list was compiled or revised. Each controlled document shall be listed and described by the following information (as applicable):
  - Name or title of publication,
  - Date of publication,
  - Version number or model number,
  - Publication number,
  - Physical location of document,
  - Date of revisions or modifications.
  - Media type (hard copy, electronic, CD/DVD, microfiche, etc)
- d) Annex C - List of Controlled Publications lists the publications and documents that should be carried on board fleet vessels and shore sites as appropriate. The List is not all inclusive.

#### 3.2 CHARTS AND NAVIGATION PUBLICATIONS

- a) Vessels shall carry relevant charts and publications for the area of operation. The Regional Operations Center (ROC) shall give adequate notice of operations outside the operational areas to allow the vessel time to obtain all newly required charts and publications.
- b) The guidelines and instructions contained in the *Hydrographic Supplies Handbook* shall be followed for:
  - Reporting hydrographic information
  - Ordering hydrographic supplies & action on receipt
  - Publication of new charts and editions
  - Correction of charts
  - Correction of publications
  - Notice to Mariners

- c) Vessels are cautioned that the Hydrographic Services Office (HSO) does not guarantee that CCG Vessels will be supplied with corrected charts. Charts may be supplied in the condition that they are received from the supplier.
- d) Upon receipt of new charts or charts returned after validation from HSO, adequate time shall be given by the applicable Marine Superintendent to ensure that a responsible person is assigned to bring all folios and publications up to date including all temporary and preliminary corrections for the charts.
- e) The charts must be corrected in compliance with instructions given in the *Hydrographic Supplies Handbook*.
- f) Corrected charts shall be available in the navigation area of the vessel. On vessels or shore sites where charts are kept for reference or for use in small craft but are not corrected and maintained in accordance with this procedure, these charts will be clearly labelled as CAUTION – CHART NOT CORRECTED TO NOTICE TO MARINERS.
- g) A file shall be maintained on the Bridge for Notices to Shipping. The Navigating Officer or Coxswain, as applicable, upon receipt of each Notice to Shipping, shall determine which chart is affected and shall write on the chart the notice number and a brief description of the notice.
- h) All Electronic Charting System (ECS) displays shall be labelled NOT TO BE USED AS SOLE MEANS OF NAVIGATION in a manner easily seen by all personnel using them.

### **3.3 KEY SHIP DRAWINGS**

- a) The vessels drawings shall be maintained so as to reflect the current as-fitted condition of the vessel. Where sketch changes are made to existing drawings to reflect changes made to the constructed or previous condition, these changes shall be dated and initialled and should be replaced by a properly drafted representation as soon as possible thereafter.
- b) The list of required drawings located in Annex C – Guidance Documents, represents the drawings to be maintained for each vessel to satisfy Convention, Code or regulation.
- c) Copies of these drawings may be held ashore but should be marked UNCONTROLLED unless a system of issue, receipt, and acknowledgement is in place
- d) For all vessels, duplicate CONTROLLED copies of some of these drawings must be maintained ashore. These drawings are:
  - Main Plans
    - General Arrangement
    - Capacity Plan
    - Hydrostatic Curves

- Construction Detail
  - Midship Section
  - Scantling Plan
  - Decks
  - Shell Expansion
  - Transverse Bulkheads
  - Rudder and Rudder Stock
  - Cargo Hatch Covers, when applicable
- Bilge, Ballast and Cargo Piping Diagrams

### **3.4 AWARENESS VIDEOS**

- a) Annex C – Guidance Documents contains a list of awareness videos that are provided by the CCG for the purposes of familiarization. These are controlled documents and shall be maintained on each vessel and station.
- b) When new videos that are not on the list are received, they shall be entered into this list by hand in the blank spaces provided until the next amendment of the FSM arrives.
- c) Each video shall arrive with an accompanying letter stating which familiarizations it shall be added to.

## **4 DOCUMENTATION**

- National and Regional Registers of External Documentation
- Site-Specific Inventory of External Documentation
- Site Specific Work Instructions
- Notice to Shipping Register
- Familiarization Records
- Awareness Videos





# Fleet Safety Manual

## 11.A.3 - VESSEL CERTIFICATES

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### 1 PURPOSE

- a) To ensure that regulatory certificates that must be held aboard vessels are properly recorded and maintained.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible for ensuring that regulatory certificates required aboard their vessel are valid for the class of voyage and are posted as required.
- b) Shall coordinate with the Regional Director, Fleet and the Director, Integrated Technical Services, to ensure that expiring certificates are renewed in a timely manner.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) Vessels shall maintain a register of vessel certificates held, showing the date of issue, the expiry date and when applicable, the endorsements date. All regulatory certificates for the vessel are to be entered into the register.
- b) Upon initial issue of a certificate, or a renewal notice to a certificate, a copy of the certificate or the notice is to be sent to the Regional Director, Fleet or their delegate. Only REGULATORY/STATUTORY CERTIFICATES listed in the register need to be sent ashore.
  - Vessels shall inform the Regional Director, Fleet of any changes of the status or validity of regulatory certificates (extension, new expiration date, SI-7, etc.). Any issues regarding vessels certificates shall be indicated on the Certificate Register cover which accompanies the Change of Command Document. This register shall indicate any impacts or decisions which could impact vessel readiness. A sample is provided in Annex D – Forms and may be modified for actual certificates carried.

### 4 DOCUMENTATION

- Register of Vessel Certificates
- Posted Certificates in Accordance with Regulation





# Fleet Safety Manual

## 11.A.4 - MAINTENANCE OF VESSEL LOGS

---

### 1 PURPOSE

- a) To ensure that all vessel logbooks are completed and maintained according to a common standard and that records are maintained to meet all regulatory requirements.

### 2 RESPONSIBILITIES

#### 2.1 COMMANDING OFFICER

- a) The Commanding Officer is responsible for ensuring that the Ship's Book and the Deck and Radio Logs are completed as per this procedure.

#### 2.2 CHIEF ENGINEER

- a) The Chief Engineer is responsible for ensuring that Engine/Machinery Logs and Oil Record Books are completed as per this procedure.

#### 2.3 MARINE SUPERINTENDENT

- a) The Marine Superintendent is responsible for ensuring preservation of logs forwarded to them in compliance with this procedure.

### 3 INSTRUCTION

#### 3.1 GENERAL

- a) All entries shall be neat, legible and made in ink. Under no circumstances shall entries be erased. Any mistakes shall be crossed out with a single line and initialled by the person who made the original entry.
- b) All vessel logs shall be maintained in accordance to its specific instructions.

#### 3.2 DECK LOG

- a) Normally vessels will use the Canadian Coast Guard (CCG) *Deck Log DFO/2009 - 1594*. However, where this is not practical due to the vessel's size/or operation, another suitable format may be used. Alternate formats will be approved by the Marine Superintendent and indicated in Regional Procedures.
- b) Sufficient entries shall be made in the log ensuring that the vessel's voyage can be recreated. The person in charge of the watch shall initial the entries. The Commanding Officer shall inspect and sign for each day of entries.
- c) The Marine Superintendent will issue direction for completion of logbooks in special circumstances such as prolonged lay-up.

**3.3 ENTRIES – GENERAL**

- a) Where the vessel uses checklists to perform recurring activities, an entry to the effect that the checklist was completed, can replace the detailed information referred to in this procedure.
- b) The checklists shall be approved as Site Specific Work Instructions and the checklist templates are to be maintained on board for presentation if required to support the log entry.

**3.4 ENTRIES IN THE LOG SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:**

- a) Employment of the vessel's company.
- b) Closing and opening of watertight doors.
- c) Times and details of accidents, births and deaths on board.
- d) Notation of damage to or loss of any important articles or fixtures.
- e) Any occasion of touching ground, colliding with another vessel or any other fixed or floating object, including the time of accident, the names of deck and engineering officers and other bridge personnel on watch. The name and port of registry of all other vessels involved shall also be recorded.
- f) Any information regarding damage to fishing gear.
- g) Description of the weather, wind, sea, and corrected barometer and any unusual phenomena as follows:
  - For watchkeeping vessels where practical, every two (2) hours then, always at the completion of each watch and when there is any unusual occurrence or circumstance.
  - For non watchkeeping vessels where practical, every two (2) hours then, upon departure and arrival and when there is any unusual occurrence or circumstance.
- h) Any change or suspected change in the advertised position or characteristics of an aid to navigation.
- i) Full particulars of any contravention or suspected contravention of the [Canada Shipping Act, 2001 – Vessel Pollution and Dangerous Chemicals Regulations](#) and any actions taken.
- j) Names and descriptions of any vessels, lighters, barges or small craft alongside including time of arrival and departure.
- k) Any damage caused by vessels alongside.
- l) Times of commencing and ceasing to load or discharge.
- m) Times a vessel or object is taken in tow and the time when towing ceases.
- n) Times of departure and return of vessels, boats and/or helicopters.
- o) Details of the number and type of vessels boarded for Fisheries Enforcement and/or Management and, in addition, where charges are laid, the Commercial Fishing Vessel (CFV) number (or other identifying information in the case of vessels other than CFVs), type of violation and the name of the issuing officer. Where the violation involves the location of the violating vessel (in regards to boundaries etc.), the position as well as the method of deriving the position shall be recorded.
- p) Record of checks on position finding equipment and any errors found.
- q) Any work carried out on board by non-crew members, including the company name.
- r) Confirmation of time checks between bridge and engine room.
- s) Any other entry that is required by regulation.

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### **3.5 ENTRIES - WHEN PROCEEDING TO OR ON ARRIVAL FROM SEA**

- a) Times of weighing or slipping and proceeding.
- b) Times of anchoring or mooring the vessel, giving the depth of water, amount of cable veered and position, including the method used for fixing.
- c) Times of securing alongside any wharf.
- d) The drafts of vessel fore and aft prior to sailing and upon arrival.
- e) Times of embarking and disembarking pilots.
- f) Details of any tugs or other vessels used for assisting the vessel, for any reason, including the times of securing to and letting go.
- g) Times of completion of checks to bridge equipment.
- h) Times related to the use of engines including: transfer of control, notification and cancellation of standby, and finished with engines. Where detailed information on engine manoeuvres is required they may be entered in a separate Bridge Notebook.

### **3.6 ENTRIES – WHEN AT SEA**

- a) Meeting or finding at anchor any vessel whose presence or movement is of concern or interest.
- b) Every occurrence connected with the navigation or pilotage of the vessel, including approaching and/or entering restricted visibility and actions taken.
- c) All discovered or suspected dangers that if unreported, could pose a hazard to own or other unsuspecting vessels.
- d) Results of observations made to determine the vessel's position.
- e) The behaviour of the vessel in heavy weather.
- f) Times of commencing and completing search and rescue work, including the names of vessels assisted.
- g) Particulars of any cargo lost overboard or jettisoned.
- h) Times of commencement of icing and amount.

### **3.7 NOTE BOOKS**

- a) In circumstances where there is insufficient space available in the deck log to record details of an event, a separate notebook shall be maintained. Examples of types of notebooks are: search and rescue work, enforcement activities, engine manoeuvres, helicopter log etc. Reference to the notebooks shall be made in the deck log.

### **3.8 ENGINE ROOM LOG BOOK**

- a) Due to the differences in machinery on each vessel, a vessel type specific log may be used provided that the Log is approved by the Superintendent of Marine Engineering.
- b) Entries in the log shall include but not be limited to the following:
  - Request for and transfer of machinery control between the engine room and bridge.
  - Bridge requests for standby status or additional machinery.
  - Start and stop times for propulsion and auxiliary machinery.
  - Machinery out of service for maintenance or repair and reasons.
  - Defects noted which may affect vessels safety or limit performance.
  - Details of transfers of fuel, ballast, bilge water or oil.

- Vessel fuelling.
  - Incidents involving collision, grounding, drills, fire, injury to personnel, or damage to equipment.
  - Confirmation of time checks between bridge and engine room.
  - Work carried out on equipment such as maintenance or adjustment which may affect operational performance.
  - Periodic records of machinery operating data such as temperatures, pressures, hours.
- c) The End of Shift reports shall be managed according to the instructions set out in [4.7.1.2 – General Description](#) of the [Vessel Maintenance Management Manual \(VMMM\)](#).

**NOTE:** Where there is an ongoing investigation covering a period identified in the ER Log books, those logs shall be retained until such time as the investigation has been completed and there is no further use for the logs.

### 3.9 OIL RECORD BOOK

- a) All vessels over 400 GRT shall maintain Oil Record Books in the format approved by Transport Canada. Entries shall be made in compliance with [Arctic Waters Pollution Prevention Regulations](#) and [Vessel Pollution and Dangerous Chemicals Regulations](#) and the instructions included with the record book. Each entry in the Oil Record Book is to be clearly written for the operation, properly coded and is to be signed by the officer in charge of the particular operation. One transfer operation can cover more than one line. Each page of the book is to be signed by the Commanding Officer. No blank lines are to be left between entries.

### 3.10 RADIO LOGS

- a) In accordance with [Canada Shipping Act, 2001](#) and the provision of Section 41 of the [Ship Station \(Radio\) Technical Regulations, 1999](#), a Radio Log shall be carried on board vessels with compulsory fitted marine radio installations. Instructions for keeping the radio log found in the [Radio Log Book for Canadian Vessels \(TP 13926 E\)](#) shall be followed.

Entries in the Radio Log shall include but not be limited to the following:

- A summary of distress, urgency and safety radio communications.
- Important incidents relating to radio service.
- Where appropriate, the position of the vessel once a day.
- A summary of the condition of the radio equipment including back-up power condition.
- Daily, weekly, and monthly tests are to be recorded in the Radio Log as detailed in Annex A of the Radio Log.

### 3.11 COAST GUARD SHIP'S BOOK

- a) The CCG Ship's Book is used to record engagements, discharges, promotions, and appointments aboard CCG vessels.
- b) The Ship's Book provides a valuable record of sea-time served and the capacity in which the seafarer was employed. The Ship's Book shall be completed according to the detailed instructions contained inside the Book.

### 3.12 MAINTENANCE AND RETENTION OF LOGS

- a) Logs shall be carefully preserved and maintained so that they are presentable at all times for inspection or for legal purposes. Books transferred from the vessel to shore offices for archiving or retention shall be sent under signed receipt cover. The receipts are to be held in the vessel's files for production as required. The retention schedule established for the preservation of information recorded as part of this procedure is set out in [Annex C – Guidance Documents](#).

## 4 DOCUMENTATION

- Coast Guard Ship's Book
- Deck Log Book
- Engine Room Log Book
- Oil Record Book
- Radio Log Book
- [Radio Log Book for Canadian Flag Vessels \(TP 13926 E\)](#)
- Record of Receipts for Transferred Books
- [Vessel Maintenance Management Manual \(VMMM\)](#)







# Fleet Safety Manual

## 11.B.1 - PROCEDURE APPROVAL AND CHANGE PROCESS

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### 1 PURPOSE

- a) To ensure that there is a systematic process to effect change to national and regional procedures contained in the Fleet Safety Manual (FSM) and to ensure that there is a similar process to effect change to Site Specific Work Instructions.
- b) To ensure that there is a documented method of submitting suggestions for change to the Safety Management System (SMS) and a method by which these suggested changes are reviewed and evaluated.

### 2 RESPONSIBILITIES

#### 2.1 COMMISSIONER OF THE CANADIAN COAST GUARD (CCG)

- a) The Commissioner of the Canadian Coast Guard (CCG) is responsible for the approval of all FSM National Policies (identified in this manual by the numbering convention #.0).

#### 2.2 ASSISTANT COMMISSIONER, CCG

- a) The Assistant Commissioner, CCG is responsible for the approval of Regional Procedures written to augment the national procedures within the FSM.

#### 2.3 DIRECTOR GENERAL, FLEET

- a) The Director General, Fleet is responsible for the approval of all National FSM Procedures.

#### 2.4 REGIONAL DIRECTOR, FLEET, AND REGIONAL DIRECTOR, INTEGRATED TECHNICAL SERVICES

- a) The Regional Director, Fleet, and Regional Director, Integrated Technical Services are responsible for the approval of site specific work instructions and checklists that fall under their authority.

#### 2.5 ALL CCG PERSONNEL

- a) All CCG personnel are invited to make suggestions for the improvement of the SMS used within the CCG.

## **2.6 COMMANDING OFFICERS**

- a) Commanding Officers are to receive suggestions made by their crews and are to submit these suggestions to the Designated Person Ashore. Commanding Officers may provide written comments to the Superintendent Fleet Safety and Security (SFSS) on the viability of the suggestion but shall provide a copy of any such comments made to the individual who initiated the suggestion.

## **2.7 SHORE SUPERINTENDENTS**

- a) Shore Superintendents are to receive suggestions from their employees and are to submit these suggestions to the SFSS. Shore Superintendents may provide written comments to the SFSS on the viability of the suggestion and shall provide a copy of any such comments made to the individual who initiated the suggestion.

## **2.8 COMMANDING OFFICERS OR SHORE SUPERINTENDENTS**

- a) Commanding Officers or Shore Superintendents, as appropriate, are to maintain contact with the SFSS to track the evaluation of the suggestion and to report on progress to the person submitting the suggestion.

## **2.9 DIRECTOR/SUPERINTENDENT FLEET SAFETY AND SECURITY**

- a) The Director/Superintendent Fleet Safety and Security shall maintain a register of suggestions for change received for procedures under their custody. The register shall indicate what actions have been taken to review the suggestions.

# **3 INSTRUCTION**

## **3.1 CHANGE**

- a) Changes to the FSM can originate from:
  - Suggestions made by any person
  - Non-Conformance Reports
  - Recommendations from Occupational Safety and Health Committees
  - Recommendations from Union Management Committees
  - Recommendations from regional management reviews
  - Recommendations from the National Safety Management System Review Committee
  - Recommendations following a review of the FSM as directed through a Functional Review.
  - Unilateral action by the Director General, Fleet with respect to national procedures
  - Unilateral action by the Assistant Commissioner, CCG with respect to regional procedures
  - Unilateral action by the Regional Director, Fleet or the Regional Director, Integrated Technical Services with respect to Site Specific Work Instructions or checklists

- b) Nothing in this procedure constrains those with approval responsibilities from making any immediate change to Policies/Procedures under their responsibility that they deem necessary to address any unsafe or undesired situation that may exist or could be created through lack of management direction. They have the authority to veto any change presented to them for approval following a national/regional review process.
- c) Where a change will be made unilaterally by the Director General, Fleet; an Assistant Commissioner, CCG; a Regional Director, Fleet or Regional Director, Integrated Technical Services, the rationale for the change must be communicated when the change is implemented.

### **3.2 SUGGESTIONS**

- a) The SMS relies on a process of Continuous Improvement; all personnel may identify the need or potential to create a new procedure, work instruction, checklist, or make a suggestion to change to an existing one.
- b) Suggestions for improvement of the SMS shall be made in writing. The use of the Suggestion for Change form (Annex D – Forms) ensures that suggestions are tracked and shall serve as a record of action taken.
- c) Upon receipt of a suggestion, the SFSS shall determine if the suggestion has national or regional implications. Suggestions that are regional shall be tracked using a sequential numbering system generated within the regions while suggestions that are national in scope shall be given a tracking number (Regions request HQ number). Suggestions which are national in scope are transmitted to the Director Fleet Safety and Security. All suggestions for change shall be acknowledged and the appropriate Director/Superintendent Fleet Safety and Security shall notify for verification of receipt.
- d) Suggestions for change that impact only the immediate worksite, Site Specific Work Instructions, do not need to be received on a formal Suggestion for Change form. Verbal communication followed by some form of supporting documentation/email outlining site management approval/recommendation for change would be accepted.

### **3.3 FLEET SAFETY MANUAL POLICY/PROCEDURE APPROVAL**

- a) The approval for FSM Policies/Procedures will be undertaken in three hierarchical levels.
  - SMS Policies (Identified in the Manual as #.0) must be given or refused by the Commissioner.
  - FSM National Procedures must be given or refused by the Director General, Fleet.
  - Regional Procedures must be given or refused by the Assistant Commissioner, CCG.
- b) All suggestions for change to any Policy/Procedure shall be reviewed by the senior management and operational managers under the area of responsibility. Procedures under review shall carry a tracking sheet which captures comments and the approvals by the various individuals prior to being presented for formal approval.
- c) Approval for a SMS Policy/Procedure must be given or refused within two (2) months following the review process. When procedures are approved they are to appear in the next cyclical revision of the FSM.

### **3.4 SITE SPECIFIC WORK INSTRUCTIONS APPROVAL**

- a) Changes to Site Specific Work Instructions (SSWI) are to be internally approved by the on site management team prior to sending to the SFSS for routing to the appropriate Regional Director for approval signature. On Layday vessels SSWI's are to be approved by both crews before being sent ashore.
- b) When a new SSWI is created or that there is a change as a result of an NCR, Incident investigation, as a direct result to a change to a piece of equipment or to correct any unsafe or undesired situation that may exist, the instruction shall be created, modified, updated or corrected as necessary and be implemented immediately as a draft pending formal approval providing that it has been approved by the on site management team.
  - Draft procedures used at the worksite are to be printed on a unique coloured paper identifying them as an internally approved draft pending approval.
  - Draft SSWI's shall not remain in place for periods greater than ninety (90) days while the various levels of approval are sought.
  - Draft SSWI's shall be prepared in the same format as regular SSWI's.
- c) Suggested changes to SSWI's submitted by the Commanding Officer or the site Occupational Safety and Health Committee to the Regional Director, Fleet or the Regional Director, Integrated Technical Services for approval; shall be accepted or declined within sixty (60) days of receipt.
- d) Commanding Officer Standing Orders become part of the SSWI's. These instructions are approved for use by the C/O ('s) onboard the vessel. The Regional Director, Fleet, as the vessel owners representative, approves these orders in an administrative capacity ensuring continuity with CCG policies and procedures.
- e) Where any officer with authority refuses to implement a change recommended by an appropriate committee, body, or Commanding Officer, the decision must be communicated in writing and must be supported by a written explanation. The veto decision must then be attached to the applicable minutes of the committee or body where the proposal was tabled, discussed, and transmitted for approval.

## **4 DOCUMENTATION**

- Completed Suggestion Forms
- Director/Superintendent Fleet Safety and Security Register of Suggestions
- Agenda of the regional management review
- Copies of documentation supporting veto's



# Fleet Safety Manual

## 11.C.1 - Sailing Orders

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### 1 Purpose

- a) To ensure that orders for the dispatch of Canadian Coast Guard (CCG) vessels are issued clearly and consistently with due regard for the health and safety of the crew, the safety and security of the vessel, and the protection of the environment.

### 2 Responsibilities

#### 2.1 Superintendent, Regional Operations Centre

- a) The superintendent, Regional Operations Centre (ROC) is to issue sailing orders to vessels that are consistent with this procedure and the iFleet program.
- b) The superintendent, ROC or designate, is responsible for ensuring that all regional vessels and helicopters are accounted for following the rollup of position reports. Where a vessel or helicopter is considered overdue, they must take appropriate actions to ascertain the status of the vessel or helicopter. Vessels transferred from one region to the control of another are the responsibility of the host region.
- c) The superintendent, ROC or designate, is responsible for providing such assistance to a commanding officer as may be requested to ensure the safety and security of the vessel.

#### 2.2 Commanding officer

- a) The commanding officer has the responsibility in matters of safety, security and pollution prevention. The commanding officer has the overriding authority to take whatever action they consider to be in the best interests of the health, safety and security of the crew, the supernumeraries, the vessel, and for the protection of the marine environment.

### 3 Instruction

#### 3.1 General

- a) The superintendent, ROC is responsible for ensuring the development and implementation of site-specific work instructions (SSWIs) detailing the promulgation of sailing orders through iFleet.

- b) The sailing order must give general direction to the commanding officer of the work to be performed by the vessel. The work must be described in such terms to leave no doubt in the mind of the recipient as to what work must be done in a given area and time.
- c) The sailing order may recommend but not specify sailing dates and times. This must be at the discretion of the commanding officer.

### **3.2 Mandatory statements**

- a) Sailing orders must always contain the commanding officer's responsibility statement:

The commanding officer has the overriding authority to take whatever action they consider to be in the best interests of the safety of the supernumeraries, the crew and the vessel, and the protection of the marine environment.

- b) Sailing orders must always contain the following statement:

With the exception of activities performed to fulfill the vessel's sailing/tasking orders, the commanding officer must take steps to ensure that all sites, whether heritage sites, public sites or private sites, visited during the vessel's operations are left in the same or improved condition that they were found.

- c) Sailing orders may include other mandatory statements to meet operational requirements.

### **3.3 Issue of sailing orders**

- a) iFleet is the approved CCG program for issuing and accepting sailing orders.
- b) Sailing orders must always be delivered to the vessel through iFleet. If connectivity with iFleet is not possible, sailing orders must be sent via e-mail, voice transmission, or facsimile. In all instances, at the earliest opportunity, the vessels must interface with iFleet to update the system.
- c) The ROC, Joint Rescue Coordination Centers (JRCCs) and Marine Rescue Sub-Center (MRSC) are the only centres with the authority to task a vessel. Search And Rescue taskings must take precedence over a sailing order. Any tasking requested by parties other than the ROC, JRCC and MRSC, must be confirmed by the commanding officer with the ROC, before complying.

### **3.4 Receipt of sailing orders**

- a) The commanding officer must acknowledge receipt of sailing orders through the iFleet program, and must resolve all questions arising from the sailing orders with the ROC.
- b) The information contained in the sailing order may be posted throughout the vessel for the information of the vessel's complement. Any areas of the sailing order that are classified as PROTECTED must be removed or masked before posting.

### 3.5 Position reporting

- a) The superintendent ROC is to develop and implement SSWIs that detail vessel reporting requirements. Such instructions must specify reports at the start and end of each day. The instruction must detail action to be taken in the event that a vessel fails to report at the required time.
- b) All operational vessels must send a morning and evening position report to the ROC. Regions must establish the appropriate time lines for receiving the morning and evening reports. Where more frequent or specific information reports are required, they must be included in the sailing order.
- c) Morning and evening position reports must contain, at a minimum, the following information:
  - i. CCGS Vessel name
  - ii. Date/Time/Position/Course/Speed (Vessel status)
  - iii. Any defects affecting availability or capability of vessel
  - iv. Operation/Tasking - Present and intended movements
  - v. Weather conditions
  - vi. Any impacts to program/tasking delivery

### 3.6 Failure to report

- a) Where any vessel that fails to report and cannot be contacted within a 2 hour period of the expected reporting time, the superintendent, ROC must activate the CCG vessel response section of the Regional Fleet Emergency Management Plan.
- b) Where any helicopter that fails to report based on the reporting criteria described in Section 5.4 "Lost Communications Procedures" of the [Shipboard Helicopter Information and Procedures Manual](#), the superintendent, ROC must activate the CCG aircraft response section of the Regional Fleet Emergency Management Plan.

### 3.7 Completion of sailing orders

- a) The commanding officer is to upon completion of the assignment, report through iFleet, as detailed in the sailing order, all completed work, outstanding work remaining, plus any concerns or areas of improvement that may be beneficial to the Program Superintendent.

### 3.8 Cross regional control

- a) The [Handover Procedures for Canadian Coast Guard Operations](#) document establishes protocols which must be referenced and followed whenever there is a vessel transferred between regions.
- b) When a vessel is transferred to another region, the vessel's home region (ROC) must issue a sailing order advising that they have transferred operational control to the assignment region. All technical, administrative, and personnel control must be retained by the home region. The host region must issue all subsequent sailing orders to the vessel until such time as the vessel returns to its home region. Upon the vessel's return to its home region, the host region must issue a sailing order returning operational control to the home region.

## 4 Documentation

- Sailing orders
- Site-specific work instructions (SSWIs)

## 5 References

- [Handover Procedures for Canadian Coast Guard Operations](#)
- [Shipboard Helicopter Information and Procedures Manual](#)
- [FSM 5.0 Commanding Officer's Responsibility and Authority](#)





# Fleet Safety Manual

## 12.0 - FLEET VERIFICATION, REVIEW, AND EVALUATION

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### 1 AUDITS

- a) The Canadian Coast Guard (CCG) Fleet carries out a program of comprehensive audits, both ashore and aboard vessels, to verify that health, safety, security and pollution prevention activities comply with the Safety Management System (SMS).
- b) Audits by external auditors are carried out for initial issue, periodic examination and renewal of Documents of Compliance and Safety Management Certificates on a five year schedule. External audits do not relieve the CCG of the responsibility of conducting annual internal audits.
- c) Internal audits of areas involved in the SMS are programmed at intervals not exceeding twelve (12) months from the certification date. The audits are performed against the Fleet Safety Manual (FSM) procedures and are conducted by trained auditors.
- d) Auditors are independent of areas audited and results of audits are brought to the attention of personnel having responsibility for a department or vessel.
- e) All non-conformities and observations arising from the audits are reviewed and followed to verify that effective corrective action has been employed.

### 2 SAFETY MANAGEMENT SYSTEM REVIEW

#### 2.1 GENERAL

- a) The CCG Fleet carries out, as a minimum on an annual basis, review meetings to evaluate the efficiency of the SMS and to ensure that the optimal level of management resources are brought to bear to address previously unresolved deficiencies.
- b) The review meeting shall address at a minimum:
  - Analysis of accidents, hazardous occurrences, and non-conformities.
  - Certification and competency requirements, exemptions requested and/or granted.
  - Internal and External audit findings.
  - Overall efficiency of the SMS and to make recommendations for changes to procedures.

- Organizational changes.
- Identification of new plans, instructions, or procedures.
- Effectiveness of training methods.
- Changes in relevant legislation, conventions, etc.
- Ship Security Plans.

## **2.2 INCIDENT INVESTIGATION REPORTS**

- a) All Incident Investigation Reports (IIR) and non-conformities are reviewed by the Superintendent Fleet Safety and Security and senior management. The results of such reviews may be used to:
  - Initiate general corrective action to other fleet units.
  - Initiate amendments to the SMS to prevent recurrence.

## **2.3 FORMAL FUNCTIONAL REVIEW OF THE SMS**

- a) Formal functional reviews of the SMS are to be held at regular intervals. These reviews may be held in conjunction with other meetings but at a minimum are to be held once every two (2) years. The review should ensure that over a five (5) year period the entire FSM has been thoroughly reviewed.



# Fleet Safety Manual

## 12.A.1 - AUDITS

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### 1 PURPOSE

#### 1.1 GENERAL

- a) To ensure that audits are scheduled and conducted as a means to measure the performance of the Canadian Coast Guard (CCG) Safety Management System (SMS) and that audit results are effectively described and communicated which result in corrective action being taken in order to continually improve the system.

#### 1.2 SCOPE

- a) Audits may cover any of the subject areas contained in the within the CCG SMS; CCG has a broad program related to health, safety, maintenance, security, and pollution prevention.
- b) Internal audits must review the corrective action taken to address any non-conformities or incident occurrences that were reported since the previous audit. Where corrective action is discovered not to have been fully completed in accordance with the terms upon which the non-conformity or hazardous occurrence was closed, a non-conformity will be raised against *Section 9.2 of the ISM Code - The Company shall establish procedures for the implementation of corrective action*. In addition, the original non-conformity shall be re-issued under a new number cross-referenced to the previous item. In the case of a incident occurrence, where applicable, a non-conformity shall be created related to the system fault that had been established as a root cause in the incident investigation.
- c) The International Maritime Organization (IMO) has recommended that to reduce impact on vessel operations and to reduce audit fatigue, other audits or inspections of vessels should be coordinated with the internal and external audits that are required to satisfy the ISM Code. Persons from other agencies, sectors, branches, or groups may be included in the audit team assembled for internal audits conducted under this procedure to satisfy their need for vessel information. Where an audit will employ multi-tasking, this information will be communicated in the audit announcement letter.

### **1.3 TARGETS**

- a) To address issues arising from non-conformances, Incident investigations, or trend analysis, audits may be targeted to gather a specific body of information. Targets may also be put in place to satisfy the needs of other agencies while attempting to comply with 1.2 (b) above. Targets shall be communicated to the Commanding Officer of the vessel, or the person responsible for the shore site, in advance of the audit in the audit announcement letter. The results from the target questions shall be reported on in the Audit Report following the audit.

## **2 RESPONSIBILITIES**

### **2.1 COMMISSIONER, ASSISTANT COMMISSIONER AND COMMANDING OFFICER**

- a) The Commissioner, Assistant Commissioner and the Commanding Officer are responsible to ensure that annual audits are conducted as scheduled both aboard and ashore and that SMS certificates are endorsed when necessary.

### **2.2 MANAGERS**

- a) All Managers are responsible to ensure that they are aware of audit results and take corrective action.

### **2.3 SUPERINTENDENT FLEET SAFETY AND SECURITY (SFSS)**

- a) The SFSS is responsible to schedule Regional audits, both internal and external, and to follow-up on audit results to ensure that all non-conformities are corrected.

### **2.4 SFSS, OR THE DIRECTOR FLEET SAFETY AND SECURITY (DFSS)**

- a) The SFSS, or the DFSS for headquarters-based employees, shall maintain qualification records of employees permitted to lead internal audits.

## **3 INSTRUCTION**

### **3.1 GENERAL**

- a) A schedule of all safety audits, both internal and external, shall be established for a period of not less than one year, and circulated to all areas where an audit is to occur. This schedule shall indicate the type of audit to be conducted, initial, periodic or renewal and also whether internal or external party is involved.
  - As part of the schedule, each region shall provide the DFSS with the periodic range and the expiry date for the Safety Management Certificates held by the vessels for the region. This schedule shall be updated as required.
  - SMS audits on vessels over 125 GRT shall be audited annually with an internal CCG audit. Additional audits shall be performed by a classification society twice in every five (5) year period. Once as an initial audit followed by a periodic verification audit between years two (2) and three (3) of the certificate period.

- SMS audits on vessels under 125 GRT and those vessels based out of Hay River, NWT shall be audited on an annual basis. During the years where an external or classification society audit is required, this audit shall be considered to meet the requirements of the internal audit. Additional audits may be performed at the regions discretion during the years where an external or classification society audit is required.
- b) Only unbiased persons, having received formal training in SMS auditing, and having observed or participated in at least three audits in the previous three years shall Lead Internal Audits.
  - The CCG Internal Lead Auditors Course is accepted as formal training for auditors. This course shall only be taught by qualified auditors with a combination of at least 10 large vessels, small vessel, office internal and external audits.
- c) An auditor from a classification society shall conduct external audits on vessels larger than 125 GRT. A lead auditor independent of the region to be audited shall be selected by Headquarters Fleet Safety branch to conduct certification audits on vessels smaller than 125 GRT on behalf of the Commissioner of the CCG. When practical, External audits and Internal Certification audits shall be accompanied by a regional Fleet Safety representative.
- d) The area to be audited shall receive written notice at least ten working days in advance outlining the scope, time frame, and resources required to complete the audit.
- e) The following steps must be taken to complete the audit:
  - A pre-audit meeting shall be held at the beginning of the audit. Attendees, at a minimum, shall include the audit team and audit area representatives. The Lead Auditor shall chair the meeting and review the scope, approach, anticipated time frame as well as scheduling a post audit meeting;
  - A post audit meeting with, at minimum, the departmental representatives' attendees from the pre-audit meeting. At this meeting the Lead Auditor shall review the findings and negotiate the timelines for corrective actions that may be required, taking into account the guidelines contained in sections 3.3 (a) to 3.3 (c) of Procedure 9.A.1.
  - Within fourteen (14) working days of the completion of the audit an audit report is to be completed and forwarded to the vessel or department representative with a copy to the Regional Director, Fleet and the SFSS.
  - As soon as possible following an audit of a vessel or site there shall be a meeting of all personnel at the facility to provide information related to the audit findings and any corrective action being undertaken or planned. A copy of the audit report shall be filed with the Occupational Safety and Health Committee for the vessel or the worksite.
- f) The SFSS shall maintain audit documentation and records by vessel, by site, and by audit number.

#### **4      DOCUMENTATION**

- Audit Schedule
- Lead Auditor Qualification/Certification Records
- Audit Reports
- Audit Records
- Records of Corrective Action



# Fleet Safety Manual

## 12.A.2 – Safety Management System Review

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### 1 Purpose

- a) To ensure that periodic reviews of the Canadian Coast Guard (CCG) safety management system (SMS) are conducted to assess and improve system efficiency, and timeliness of corrective action.

### 2 Responsibilities

#### 2.1 Commissioner, Canadian Coast Guard

The Commissioner, CCG or their delegate is responsible for ensuring:

- a) they lead annual reviews of the SMS that assess the overall compliance and efficiency of the SMS as a whole
- b) the annual review includes items referred through the regional review
- c) the review is held within 7 months following the end of the period under review

#### 2.2 Assistant commissioner

The assistant commissioner, CCG or their delegate is responsible for ensuring:

- a) they lead annual reviews of the SMS concerning issues of importance to the region and/or items specifically referred to the region by a vessel/station
- b) the review is held within 5 months following the end of the period under review

#### 2.3 Director general

Within their area of authority<sup>1</sup>, the director general or their delegate is responsible for ensuring:

- a) policies and procedures in the Fleet Safety Manual (FSM) are periodically reviewed, ensuring they are current and relevant to the operational needs of the CCG

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<sup>1</sup> Determined by the governance structure of the Canadian Coast Guard.

## 2.4 Commanding officer

The commanding officer or their delegate is responsible for ensuring:

- a) they lead annual reviews of the SMS concerning issues of relevance to their vessel/station
- b) that, on single and dual crewed vessels, the reviews are held annually
- c) the review is held within 6 months following the end of the period under review

## 3 Instructions

### 3.1 General

- a) Reviews of the SMS must be conducted annually.
- b) The period under review is the previous calendar year: January 1 to December 31.
- c) At the discretion of the Commissioner and assistant commissioner, reviews could be held more frequently within the review period providing they meet the frequency stated in section 3.1 a).
- d) Annual reviews on board a vessel/station should include:
  - i. site specific work instructions (SSWIs)
  - ii. security procedures
  - iii. emergency response plans
- e) When amended and/or new policies and procedures are release, they must be immediately reviewed against vessel/station procedures to ensure compliance.

## 4 Review membership

- a) Membership of the reviews, at a minimum, require the attendance and participation of the positions named in the following sections.
- b) At the discretion of the chairperson, additional positions may be invited as permanent members or as participants.

### 4.1 Vessel review

- a) Commanding officer – chairperson
- b) Department head for each vessel department
- c) Senior crew member in each vessel department

### 4.2 Regional review

- a) Assistant commissioner – chairperson
- b) Senior director, Fleet
- c) Regional director(s)
- d) A serving commanding officer selected from vessels assigned to the region
- e) A serving chief engineer selected from vessels assigned to the region
- f) A serving senior crew member selected from vessels assigned to the region
- g) Manager, Coast Guard Safety Management (CGSM)
- h) Compliance officer, CGSM

**Note 1:** To ensure equal participation from all CCG vessels, at least 1 of the members from section 4.2 d), e), or f) must be serving on board a small vessel (less



than 125 GRT). On the occasion where the mandated regional rotation does not provide a member from the small vessel fleet, a small vessel member from a regional review committee not in the current rotation selection, is to be requested.

### **4.3 National review**

- a) Membership of the review, at a minimum, requires the attendance and participation of the positions identified below.
- b) At the discretion of the chairperson, additional positions may be invited as permanent members or as participants.

#### **4.3.1 Core members**

- a) Commissioner, CCG - chairperson
- b) Deputy Commissioner, Operations
- c) Deputy Commissioner, Shipbuilding & Materiel
- d) Assistant commissioners from all regions
- e) Director General, Coast Guard Personnel
- f) Director General, Fleet and Maritime Services
- g) Director General, Integrated Technical Services
- h) Director General, Response
- i) Executive Director, Canadian Coast Guard College

#### **4.3.2 Associate members**

- a) Associate members do not possess decision-making authority. However, their attendance and participation in the committee meetings in the role of National (NDPA) or Regional Designated Persons Ashore (RDPA) is vital. They directly support and contribute to the oversight and monitoring of the effectiveness of the SMS.
  - i. Director, CGSM (NDPA)
  - ii. Managers, CGSM (RDPA)

#### **4.3.3 Discretionary participants**

- a) The following positions may be invited at the discretion of the chairperson:
  - i. national director general(s)
  - ii. national director(s)
  - iii. senior director(s) – national and regional
  - iv. regional director(s)
  - v. managers, Safety Compliance, CGSM
  - vi. invited guests such as Fisheries and Oceans Canada Real Property Safety & Security, Transport Canada, Aircraft Services Directorate, etc.

## **5 Reviews - general**

- a) A review must cover the following items at a level of detail appropriate to the scope of the review – vessel, regional, or national:
  - i. report on the number and type of incidents. Trends are to be highlighted where relevant
  - ii. formal investigations and noteworthy occurrences linked to procedures

- iii. certification and competency requirements, exemptions requested and/or granted
- iv. internal and external audit findings
- v. non-conformity reports (NCR) related to audit focus areas, SMS reviews conducted and a review of vessel security guidelines
- vi. organizational changes
- vii. identification of new plans, instructions or procedures
- viii. report on safety and security training delivered
- ix. changes in relevant legislation, conventions, etc.
- x. suggestions for change
- xi. evaluation of the site-specific risk register (SSRR) to ensure compliance with the regulatory requirements of the [Hazard Prevention Program](#) in accordance with the [Maritime Occupational Health and Safety Regulations](#)
- b) The SMS review must ensure that identified corrective actions are appropriate and effective. When a review deems that corrective action taken has not fully addressed the root cause of the accident, hazardous occurrence, or non-conformity, additional action or additional investigation may be directed.
- c) Special SMS review meetings must be held as required to address serious failures of the SMS as soon as they occur.
- d) The SMS review at the senior level must include trends of accidents, hazardous occurrences, and non-conformities over a 5 year period. These trends will be considered when reviewing or proposing a policy or procedural change to the SMS.
- e) The SMS review committee must analyze trends of accidents, hazardous occurrences, and non-conformities over a 5 year period. These trends are to be considered when reviewing or proposing a policy or procedural change to the SMS.

## **5.1 Minutes or records of decisions**

### **5.1.1 Vessel/Station**

- a) Minutes / Records of decision (ROD) of the vessel/station SMS review must be marked with the date of posting, and posted in a prominent place in the language of the vessel/station for 3 months following the date of posting.
- b) Copies of the review are to be sent to the manager, CGSM in the region, for circulation to the assistant commissioner and translation<sup>2</sup> as appropriate.
- c) Copies of the minutes/ROD from the regional/national SMS review are to be marked with the date of receipt and posting, and posted in a prominent place in the language of the vessel/station for 3 months following the date of posting.

### **5.1.2 Regional**

- a) Minutes/ROD of the regional SMS review must be translated<sup>2</sup> in the region by the manager, CGSM, as appropriate, and circulated to the following:
  - i. Commissioner, CCG
  - ii. the membership of the national review committee listed in Section 4.3
  - iii. Director, CGSM

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<sup>2</sup> [Directive on Official Languages for Communications and Services](#)

- iv. all vessel/stations in the region

### 5.1.3 National

- a) The ROD from the national SMS review must be translated<sup>3</sup> by the Director, CGSM and circulated to the following:
  - i. Commissioner, CCG
  - ii. the membership of the national review committee listed in Section 4.3
  - iii. in the region the managers, CGSM for distribution to the vessels/stations in the region

### 5.1.4 General

- a) Posted copies are to be destroyed at the end of the posting period.
- b) The owner of the controlled version of the minutes/ROD must make them available upon request until the date stated in section 5.1.4 c)
- c) Controlled versions of the minutes/ROD are to be retained, hardcopy or electronic, for 5 years, then they can be destroyed.
- d) The ROD from the national SMS review must be posted to the CGSM [Safety Management Review](#) web page.

## 6 Functional review of the safety management system

- a) A functional review examines a block of interrelated policies/procedures in the manual ensuring they meet the operational requirements of the CCG.
- b) The scheduling of a functional review will be at the discretion of the Director, CGSM.
- c) The review must coincide with other national meetings as appropriate.
- d) The review committee participants are determined based on the subject matter determined in section 6 a) and must include:
  - i. Senior Policy Analyst, CGSM responsible for the FSM and SBSM – facilitator
  - ii. managers, CGSM
  - iii. managers, Safety Compliance
  - iv. seagoing management personnel
  - v. shore management representatives
  - vi. subject matter experts

## 7 Documentation

- Review committee agenda(s)
- Review committee minutes/RODs
- Review committee terms of reference
- Suggestions for change

## 8 References

- [Canada Labour Code](#) – Part II
- [Maritime Occupational Health and Safety Regulations](#) – Part 7

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<sup>3</sup> [Directive on Official Languages for Communications and Services](#)

- [Hazard Prevention Program](#)



# Fleet Safety Manual

## 13.0 - CERTIFICATION AND VERIFICATION

### 1 SAFETY

#### 1.1 GENERAL

- a) A Statement of Compliance, issued to the Canadian Coast Guard (CCG) for the operation of its fleet, shall be held at the Headquarters (HQ) of the CCG. Accompanying the Statement of Compliance shall be the record of Endorsements for Annual Verification.
- A copy of the Statement of Compliance and a copy of the Endorsements for Annual Verification shall be available in each CCG Region and on board each CCG vessel above 125 Gross Registered Ton (GRT).

**Note:** Upon the certificate being endorsed, the HQ office of Coast Guard Safety and Security (CGSS) is responsible for ensuring the certificate is sent to the regional CGSS Office.

The Statement of Compliance is renewed following satisfactory findings as a result of the annual audit process. HQ shall be audited on an annual basis and regional offices shall be audited in rotation, ensuring that all three (3) regional offices have been audited every five (5) years (Safety Management System [SMS] cycle).

- b) A Safety Management Certificate (SMC) shall be held on board the vessel to which the Certificate was issued. Accompanying the Certificate shall be the Endorsement for Periodical and Additional Verifications. Copies of this certificate shall be held with the Manager, CGSS;
- c) SMCs shall be endorsed during an intermediate or periodic verification, between the second and third anniversary date of the Certificate issue date, and shall be fully renewed at the fifth anniversary date of the Certificate issue date;
- d) All vessels of the CCG, in excess of 125 GRT, are required to meet the requirements of the [Safety Management Regulations](#) of the [Canada Shipping Act, 2001](#) and the [International Safety Management Code \(ISM Code\)](#), and display the appropriate certification attesting to compliance; and
- e) All vessels of the CCG, between 15 GRT and 125 GRT, are required to meet the requirements of the CCG SMS. The Commissioner of the CCG shall issue certification attesting compliance.

**Note 1:** For clarity, the [Small Vessel Regulations](#) of the [Canada Shipping Act, 2001](#) define only those vessels below 15 GRT to be small vessels. For vessels that have not been measured for tonnage, the [Small Vessel Regulations](#) provides for a determination of tonnage according to length overall. A vessel in excess of twelve (12) meters in length (39 feet 4½ inches) is deemed to be in excess of 15 GRT.

**Note 2:** Transport Canada has advised that a boat or a barge carried on board a vessel as part of the vessel's equipment operating under the parent vessel's registration, does not require a unique registration. Therefore, vessel boats over 15 GRT shall not require SMS compliance certification.

## 1.2 INTERIM SAFETY MANAGEMENT CERTIFICATE

- a) Interim Certificates shall be issued to new vessels upon delivery, or when the company takes on the responsibility for the operation of a vessel that is new to the company. An Interim SMC shall be issued for a period not to exceed six (6) months, provided that provisions of [Section 14.4 of the ISM Code](#) have been met as follows:
- The vessel has a valid statutory status;
  - The Statement of Compliance is relevant to the vessel concerned;
  - The SMS, provided by the company for the vessel, includes key elements of this code, and has been assessed during the audit for issuance of the Statement of Compliance;
  - The company has planned the internal audit of the vessel within three (3) months;
  - The Master and Officers are familiar with the SMS and planned arrangements for its implementation;
  - Instructions, which have been identified as being essential, are provided prior to sailing;
  - Relevant information on the SMS has been given in a working language or languages understood by the vessel's personnel; and
  - The vessel's maintenance, housekeeping, etc. is at an acceptable standard by a complete visit of the vessel.
- b) Certification process for new vessels of 125 GRT or above:
- An interim certification audit to ascertain the compliance of the vessel with the provisions mentioned above, shall be conducted by the Classification Society under contract to the CCG before the vessel is issued an operational sailing order;
  - Within three (3) months of operation, a full internal audit is to be conducted regionally by CCG; and
  - Prior to the expiration of the Interim Certificate, an additional External Certification Audit shall be carried out in order to issue a SMC to the vessel.
- c) Certification process for new vessels below 125 GRT:
- An interim certification audit to ascertain the compliance of the vessel with the provisions mentioned above, shall be conducted by the regional CGSS office before the vessel is issued an operational sailing order;
  - Within three (3) months of operation, a full internal audit is to be conducted by CCG regionally; and
  - Prior to the expiration of the Interim Certificate, an Internal Certification Audit shall be carried out in order to issue a SMC to the vessel.

### 1.3 OPTIONAL MODIFIED CERTIFICATION PROCESS FOR SIMILAR CLASS STATION MODE VESSELS

- a) For those instances when the rotation of station mode vessels could result in some vessels not being present during station audits, and therefore unable to maintain vessel certification, the Regional Director, Fleet can identify station mode vessels of similar class (not exceeding 125 GRT) to be part of a Modified Certification Process:
- All vessels shall have current SMS certification prior to the request for creating a modified certificate, or the addition of any vessel to an existing modified certificate list;
  - All audit reports for station mode sites shall bear the name of any vessels audited during the site audit. These audit reports shall be filed under the applicable station within the Safety and Security database;
  - The Manager, CGSS, shall supply all related SMS documentation to station mode vessels identified under a modified certificate. The vessel can then be audited during the annual regional office audit conducted by representatives selected by national HQ CGSS office;
  - The following small vessel certification, as a minimum, shall be sampled during the Regional Office Audit:
    - Transport Canada Maritime Safety (TCMS) Inspection Certificate
    - Record of Safety Equipment Certificate
    - Radio Inspection Certificate
    - Maintenance records
  - Lead Auditors of Regional Office Audits shall validate that the vessels listed on modified certificates are being class managed by reviewing related SMS documentation and maintenance records pertaining to station mode vessels identified under modified certificate;
  - The original SMS certificate shall be endorsed annually by the Lead Auditor during Regional Office Audits and a copy of the endorsed certificate given to the Regional Document Control Officer. In this process, the fifth successful audit shall be considered as a re-certification audit and a new SMS certificate shall be generated;
  - A copy of the Endorsed Modified Certificate shall be available in each CCG Region and on board each CCG vessel not exceeding 125 GRT;
- Note:** Regional Office - CGSS is to ensure endorsed certificates are sent to the stations in their Region.
- A HQ issued SMS Certificate (five (5) year validity) will be issued to the Region with the identity of the similar classed small vessels endorsed by this modified process.
  - All vessels under a Region's modified certificate shall be present for at least one audit every three years. Therefore, not one vessel will go more than three years without an audit; and
  - Manager, CGSS will have the opportunity, at their discretion, to conduct an audit (or a spot check) of any vessel under the modified system, when returning to service from layup or refit.

## **2 SECURITY**

### **2.1 GENERAL**

- a) All vessels of the CCG are required to follow the [\*Policy on Government Security \(PGS\)\*](#). Security elements shall be audited as part of the internal audit program established for the vessel;
- b) Any superseded secured media that is removed, shall be destroyed in compliance with the Department of Fisheries and Oceans (DFO) [\*Policy on Departmental Safety, Security, and Emergency Management \(PD-SSEM\)\*](#).

## **3 DOCUMENTATION**

- [\*Canada Shipping Act, 2001\*](#)
- Gangway Logs
- [\*International Safety Management Code \(ISM Code\)\*](#)
- [\*Policy on Departmental Safety, Security, and Emergency Management \(PD-SSEM\)\*](#)
- [\*Policy on Government Security \(PGS\)\*](#)
- Record of Ship Marine Security (MARSEC) Level Changes
- [\*Safety Management Regulations\*](#)
- [\*Small Vessel Regulations\*](#)





# Fleet Safety Manual

## ANNEX A - ABBREVIATIONS, GLOSSARY AND BIBLIOGRAPHY

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### 1 ABBREVIATIONS

|              |   |
|--------------|---|
| <b>ACV</b>   | Air Cushioned Vessels                             |
| <b>AMS</b>   | Asset Management System                           |
| <b>BOSRC</b> | Basics of Oil Spill Response Course               |
| <b>CCG</b>   | Canadian Coast Guard                              |
| <b>CFV</b>   | Commercial Fishing vessel                         |
| <b>CGFB</b>  | Coast Guard Fleet Bulletin                        |
| <b>CGFC</b>  | Coast Guard Fleet Circular                        |
| <b>CGFO</b>  | Coast Guard Fleet Orders                          |
| <b>CGTB</b>  | Coast Guard Technical Bulletin                    |
| <b>CO</b>    | Commanding Officer                                |
| <b>COHS</b>  | Canada Occupational Health and Safety Regulations |
| <b>CSA</b>   | Canada Shipping Act                               |
| <b>CSO</b>   | Company Security Officer                          |
| <b>DFO</b>   | Department of Fisheries and Oceans                |
| <b>DFSS</b>  | Director Fleet Safety and Security                |
| <b>DND</b>   | Department of National Defence                    |

|                  |  |
|------------------|--|
| <b>DPA</b>       | Designated Person Ashore   |
| <b>DSC</b>       | Digital Selective Calling  |
| <b>ER</b>        | Environmental Response   |
| <b>FHR</b>       | Federal Halocarbon Regulations   |
| <b>FMO</b>       | Federal Monitoring Officer   |
| <b>FRC</b>       | Fast Rescue Craft  |
| <b>FSSM</b>      | Fleet Safety and Security Manual   |
| <b>GMDSS</b>     | Global Maritime Distress and Safety System   |
| <b>GRT</b>       | gross registered ton   |
| <b>HSO</b>       | Hydrographic Service Office  |
| <b>HVAC</b>      | Heat, Ventilation, Air Conditioning  |
| <b>IAMSAR</b>    | International Aeronautical and Maritime Search and Rescue Manual                           |
| <b>IMO</b>       | International Maritime Organization  |
| <b>ISM Code</b>  | International Management Code for the Safe Operation of Ships and for Pollution Prevention |
| <b>ISPS Code</b> | International Ship and Port Facility Security Code   |
| <b>JRCC</b>      | Joint Rescue Coordination Centre   |
| <b>LCM</b>       | landing craft, mechanized  |
| <b>MARSEC</b>    | Maritime Security  |
| <b>MED</b>       | Marine Emergency Duties  |
| <b>MEDEVAC</b>   | medical evacuation   |

|                |   |
|----------------|---|
| <b>MOHS</b>    | Maritime Occupational Health and Safety Regulations   |
| <b>MRSC</b>    | Maritime Rescue Sub-Centre  |
| <b>MSDS</b>    | Material Safety Data Sheets   |
| <b>MSROC</b>   | Marine Spill Response Operations Course   |
| <b>NCC</b>     | National Co-ordination Centre   |
| <b>NCR</b>     | Non-conformity report   |
| <b>NOTSHIP</b> | Notice to Shipping  |
| <b>NDPA</b>    | National Designated Person Ashore   |
| <b>OIC</b>     | Officer in Charge   |
| <b>OJT</b>     | On the Job Training   |
| <b>OSC</b>     | On-Scene Commander (Environmental Response)<br>On-Scene Coordinator (Search and Rescue)   |
| <b>OHS</b>     | Occupational Health and Safety  |
| <b>PFD</b>     | Personal Floatation Device  |
| <b>PPE</b>     | Personal Protective Equipment   |
| <b>R1</b>      | The entire vessel is designated a restricted area requiring appropriate security measures   |
| <b>R2</b>      | Specific areas of the vessel, due to their criticality, the nature of the equipment, resources and /or the presence of protected or controlled materials have more stringent access requirements, controls and are secured and/or monitored at levels higher than R1 areas to prevent unauthorized access. Such areas will be appropriately signed to notify they are further restricted. |
| <b>RDPA</b>    | Regional Designated Person Ashore   |

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| <b><i>RHIB</i></b>                          | Rigid Hull Inflatable Boat                               |
| <b><i>RHIOT</i></b>                         | Rigid Hull Inflatable Operator Training                  |
| <b><i>ROC</i></b>                           | Regional Operations Centre                               |
| <b><i>SAR</i></b>                           | Search and Rescue  |
| <b><i>SCBA</i></b>                          | Self Contained Breathing Apparatus                       |
| <b><i>SCUBA</i></b>                         | Self Contained Underwater Breathing Apparatus            |
| <b><i>SFSS</i></b>                          | Superintendent Fleet Safety and Security                 |
| <b><i>SIC-##</i></b>                        | Ship Inspection Certificate                              |
| <b><i>SOLAS</i><br/><i>(CONVENTION)</i></b> | Safety of Life at Sea Convention                         |
| <b><i>SOPEP</i></b>                         | Ship Oil Pollution Emergency Plan                        |
| <b><i>SSMS</i></b>                          | Safety and Security Management System                    |
| <b><i>SSO</i></b>                           | Ship Security Officer                                    |
| <b><i>SSP</i></b>                           | Ship Security Plan                                       |
| <b><i>STCW</i></b>                          | Seafarers' Training, Certification and Watchkeeping Code |
| <b><i>SVOP</i></b>                          | Small Vessel Operator Proficiency Training               |
| <b><i>SWL</i></b>                           | Safe Working Load  |
| <b><i>TB</i></b>                            | Treasury Board   |
| <b><i>VOC</i></b>                           | volatile organic compounds                               |
| <b><i>WCB</i></b>                           | Workers Compensation Board                               |
| <b><i>WHMIS</i></b>                         | Workplace Hazardous Materials Information System         |

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## 2 GLOSSARY – DEFINITIONS

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| <b><i>Accommodation Ladder</i></b>                  | <p>a means of access to and egress from a vessel that includes platforms on different levels with ladders between the platforms and that</p> <p>(a) is suspended by a supporting structure of chains or steel wire ropes from its lowest suspension point;</p> <p>(b) is hinged at its top; and</p> <p>(c) can be moved so that the lowest platform is accessible from shore. (<i>échelle de coupée</i>)</p> |
| <b><i>Activity Logs</i></b>                         | <p>Electronic or hard copy records that may be completed and maintained to note or to log unusual non-routine activities or any other thing that the person feels would be beneficial to the relief person.</p>  |
| <b><i>Administration</i></b>                        | <p>The Marine Safety Directorate of the Department of Transport of the Government of Canada</p>  |
| <b><i>Airborne emissions</i></b>                    | <p>Are result of combustion and may contain Nitrogen Oxides (NO<sub>x</sub>), Sulphur oxides (SO<sub>x</sub>), Carbon Dioxide (CO<sub>2</sub>) and Volatile Organic Compounds (VOC) that are the most harmful as they contribute to smog, acid rain and the green house effect.</p>  |
| <b><i>Aircraft</i></b>                              | <p>Includes any craft operated or chartered by the CCG that is licensed under the Aeronautics Act.</p>   |
| <b><i>Appropriate Authority – Certification</i></b> | <p>Transport Canada Marine Safety and Inspection Directorate when dealing with certificates issued by that office.<br/>CCG Technical &amp; Operational Services Training Section when dealing with certificates issued by the CCG.</p>   |
| <b><i>Asbestos</i></b>                              | <p>Is comprised of fibrous magnesium silicate minerals of which minute particles can be inhaled by persons coming in contact with the material. Exposure to asbestos particles may cause damage to the human respiratory system and it is classified as a carcinogenic substance.</p>  |
| <b><i>Audit</i></b>                                 | <p>A comprehensive, systematic assessment of performance to established criteria.</p>  |
| <b><i>Bilge Water</i></b>                           | <p>Includes all water in machinery spaces and other water containing an oil mixture.</p>   |

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| <b>Biomedical Waste General</b>             | Biomedical waste - general – items contaminated with blood or body fluids such as bloody gauze, tampons and gloves from the ship's clinic or from the application of First Aid.  |
| <b>Biomedical Waste Contaminated Sharps</b> | Materials that can puncture, penetrate or cut the skin and have come into contact with a body fluid or micro-organism such as syringes, lancets and broken laboratory glass.   |
| <b>Biomedical Waste Sharps Container</b>    | All sharps containers shall have a lid, which cannot be removed once permanently closed. Containers shall be located in a secure and convenient location onboard. The container must be colour-coded and marked as per Annex A of FSM 7.E.6.   |
| <b>Bunkering</b>                            | Means:<br>the loading of oil or an oily mixture onto a vessel from a loading facility or from another ship, or<br>the unloading of oil or an oily mixture from a vessel onto an unloading facility or onto another ship.   |
| <b>Canadian Maritime Documents</b>          | For the purposes of the Fleet Safety Manual, Canadian Maritime Documents are licences, permits, certificates or other documents issued by Transport Canada or the CCG Guard to verify that the person to which it was issued has met the requirements of the document. These include a Certificate of Competency and/or a Continued Proficiency Endorsement issued by Transport Canada (TC) or the CCG, a Marine Emergency Duties Certificate issued by TC, a Public Service Health Assessment Certificate issued by Health Canada, and / or a Seafarer's Medical Certificate issued by TC |
| <b>Cargo</b>                                | Freight, goods, materials or supplies carried on board for the operation of the vessel or for the carrying out of an operational assignment.   |
| <b>Cargo Gear</b>                           | Means any gear or appliance used in the all or any part of the work of loading, unloading, moving or handling cargo, vessel's stores, vessel and cargo fittings, etc.  |
| <b>Cargo Handling</b>                       | Refers to the Loading / Unloading, Stowage and Securing of material.   |
| <b>Changeover Notes</b>                     | Refers to the written information that is compiled and left behind which aids in the exchange of pertinent operational information between changing crewmembers.   |

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| <b>Checklist</b>                  | A term, synonymous with “work instruction”, which provides for a systematic guide to completing a task.  |
| <b>Chief Engineer</b>             | Refers to any individual appointed in charge of the machinery spaces on a CCG vessel. The term “Chief Engineer” is synonymous with “Engineer” of small units that do not carry more than one engineer.   |
| <b>Chief Officer</b>              | Refers to any individual appointed in charge of the deck department on a CCG vessel. The term “Chief Officer” is synonymous with “senior deck officer” on smaller units.   |
| <b>Coast Guard Fleet</b>          | The Owner of the vessel, or the managing owner designated in law, who has assumed responsibility for the operation of the vessel.  |
| <b>Coast Guard Fleet Bulletin</b> | CCG Fleet Bulletins (CGFB's) are utilized to distribute <i>guidance information</i> in an expeditious manner with respect to health and safety related issues. They are issued as a follow-up, to increase awareness, of matters brought forward by the marine industry, new regulations, incidents, TSB recommendations, internal investigation, etc.   |
| <b>Coast Guard Fleet Circular</b> | CCG Fleet Circulars (CGFC) are authority documents that <i>direct specific action, conduct or procedures</i> relevant to the safety, security, operations and/or management of the Fleet. They may be issued pending modifications to the FSM or CGFO's; to indicate the mandatory features of a policy (i.e. TBS guidelines), how a policy ought to be interpreted and applied or provide guidelines that apply in exceptional circumstances. |
| <b>Coast Guard Fleet Orders</b>   | CCG Fleet Orders (CGFO's) are authority documents that govern operations and management of the fleet other than safety and security.   |
| <b>Coast Guard Ship</b>           | Includes any vessel, boat, or hovercraft operated by the CCG.  |

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| <b><i>Coast Guard Technical Bulletin</i></b>          | CCG Technical Bulletins (CGTB's) are used to communicate urgent, time sensitive technical information regarding health, safety and/or the environment which are related to systems and/or equipment. They include updated information and/or requirements for the physical operation, maintenance and repair of the related system(s) and/or equipment. They also provide necessary technical direction to achieve implementation of the new requirement(s), repair(s), maintenance, alteration(s), inspection(s), etc. CGTB's have a limited lifetime and if necessary the other related "long standing" technical documentation will be amended, within a reasonable time, to include the necessary information and/or direction. CGTB take precedence over other related technical documentation until CGTB expires or is cancelled. |
| <b><i>Cold Layup</i></b>                              | Vessel and its systems are in a non-operational status. Systems have been winterized or suspended. Vessel is unmanned and is fitted with remote alarm systems.  |
| <b><i>Commanding Officer</i></b>                      | Refers to any individual appointed to exercise command of a CCG vessel. The term "Commanding Officer" is synonymous with "Officers-in-Charge" of small vessels.   |
| <b><i>Commanding Officers Delegate</i></b>            | The person designated by the Commanding Officer to supervise cargo operations, oversee diving operations and safety.  |
| <b><i>Competent Person Designated Responsible</i></b> | A competent person is an individual with specialized knowledge for the task at hand with publicly recognized accreditation in the relevant field, whom has been designated by the owner or its worksite representative to accomplish certain tasks.   |
| <b><i>Competency Profile</i></b>                      | Refers to the human capacity of the vessel in terms of numbers, education, and experience. The profile forms part of the operational readiness status of the vessel and has equal importance with power potential, hull state, fuel state, or equipment defect state.   |
| <b><i>Confined Space</i></b>                          | Means a storage tank, ballast tank, pump room, coffer dam or other enclosure, other than a hold, not designed or intended for human occupancy, except for the purpose of performing work, that has poor ventilation, in which there may be an oxygen deficient atmosphere, or in which there may be an airborne hazardous substance.  |
| <b><i>Controls</i></b>                                | Means main engine and thruster controls (telegraphs).   |



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| <b><i>Core Competency</i></b>                | The minimum amount of skills, certification or license required relating to a specified job or function.  |
| <b><i>Coxswain</i></b>                       | A person appointed with the responsibility for the operation of a small craft, safe navigation, safety and security of the vessel, crew and passengers.   |
| <b><i>Critical Systems</i></b>               | Are defined as equipment or technical systems, the sudden operational failure of which (when in use) may result in hazardous situations. (Refer to the list in the procedure's section).  |
| <b><i>Deck Watch</i></b>                     | Means that part of the vessel's crew that is required for the purpose of attending to the navigation and/or security of a vessel.   |
| <b><i>Defect</i></b>                         | The inability of piece of equipment to provide the type of service or result for which it was procured due to inefficient design, sub-standard manufacture, or improper installation.   |
| <b><i>Designated Person Ashore (DPA)</i></b> | A person, or persons, ashore with direct access to the highest level of management and who has the written responsibility to administer and monitor the Safety Management System (SMS).   |
| <b><i>Disabling Injury</i></b>               | <p>An employment injury or illness that:</p> <ul style="list-style-type: none"><li>prevents an employee from reporting to work or from effectively performing all the duties connected with the employees regular work on any day following the day on which the injury or disease occurred, whether or not the day following is a working day for the employee.</li><li>results in a loss by an employee of a body member or part of a member or in the complete loss of the usefulness of a body member.</li><li>results in the permanent impairment of a body function of an employee.</li></ul> |
| <b><i>Diving Regulatory Authority</i></b>    | The authority responsible for the enforcement of regulations for the safety and protection of divers  |
| <b><i>Diving Supervisor</i></b>              | The person having overall responsibility for the diving aspects of the operation including the health and safety of all diving personnel.   |
| <b><i>Document of Compliance (DOC)</i></b>   | The document issued to the CCG Fleet by, or on behalf of, the Administration that certifies conformity with the Code.   |

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| <b><i>Emergency Drills</i></b>           | Drills which are developed and conducted to cover potential shipboard emergencies.  |
| <b><i>Emergency Repair</i></b>           | Are the actions taken to correct damage or deficiency as a result of an unplanned event such as collision, grounding and/or major equipment failure resulting in the vessel's being removed from service to effect repairs.   |
| <b><i>Experience</i></b>                 | Means a defined period of satisfactory service in a particular position as reported in an official document such as the Continuous Certificate of Discharge for Seamen and supported by reference checks, letters of reference or performance appraisals  |
| <b><i>Expert Person</i></b>              | In respect of a specified function, means a person who has the knowledge, training and experience to perform the function safely and properly.  |
| <b><i>External Documentation</i></b>     | Includes but is not limited to hard copy or electronic versions of the following:<br>Government acts and regulations (Canadian and International)<br>Navigation charts and tables<br>Key structural, mechanical and electrical drawings<br>Ship safety bulletins<br>International code of signals<br>Sanitation code for Canada's Food Service Industry<br>Manufacturer's operational & maintenance manuals for critical equipment.<br>Statutory, classification and CCG certificates<br>Stability Data |
| <b><i>Familiarization</i></b>            | Essential instructions to passengers, new personnel and personnel in new assignments concerning their duties and responsibilities as related to safety, security and protection of the environment.   |
| <b><i>Federal Monitoring Officer</i></b> | CCG representative who assumes responsibility for monitoring a response to a marine environmental emergency response managed by the polluter.   |

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| <b><i>First Aid</i></b>                | <p>Emergency medical care rendered to injured or ill employees by trained personnel.</p> <p>First Aid may include medical treatment provided onboard the vessel which does not result in subsequent medical attention ashore or the initial treatment of an injured or ill employee prior to being seen by a higher level of medical care.</p> <p>First Aid does not include instances where medical care has been provided onboard a vessel where the treatment includes; suturing, use of specialized equipment and or the use of prescription medicines. This type of care would be provided by the nurse when carried and would be considered a minor injury or greater.</p> |
| <b><i>Fixed Aids</i></b>               | <p>Work performed on shore based aids and beacons including; maintenance (includes painting), repairing, brushing, construction/demolition of structures, construction of wharves, helicopter pads etc.</p>  |
| <b><i>Floating Aids Operations</i></b> | <p>Work performed on floating aids to navigational including but not limited to; lifting, placing, repairing, inspection, replacing, position verification, change-over and repositioning.</p>   |
| <b><i>Friable Asbestos</i></b>         | <p>A friable material is one which, when dry, can be crumbled, pulverized or powdered by hand pressure, in the process releasing microscopic particles into the atmosphere.</p>  |
| <b><i>Foreign National</i></b>         | <p>A person who is not a Canadian citizen nor a permanent resident of Canada</p>   |
| <b><i>Grey Water</i></b>               | <p>Is associated with housekeeping activities: it is usually made up of wastewater from kitchens, sinks, showers and laundry. It must not contain sewage or non-biodegradable chemicals.</p>   |

**Halocarbons**

Halocarbons include the following substances:  
Tetrachloromethane (carbon tetrachloride)  
1,1,1-trichloromethane (methyl chloroform), not including 1,1,2-trichloromethane  
Chlorofluorocarbons (CFC), also known as Freons  
Bromochlorodifluoromethane (Halon 1211)  
Bromotrifluoromethane (Halon 1301)  
Dibromotetrafluoroethane (Halon 2402)  
Bromofluorocarbons other than those set out above  
Hydrobromofluorocarbons (HBFC)  
Hydrochlorofluorocarbons (HCFC)  
Hydrofluorocarbons (HFC)  
Perfluorocarbons (PFC)  
Bromochloromethane (Halon 1011)

**Hazard**

Any source of potential damage, harm or adverse health effects on someone, something or the environment.

**Hazardous Occurrence**

An accident /illness or a near-miss arising out of, linked with, or occurring in the course of employment that results or has the potential to result in personal injury or damage to property, equipment or pollution to the marine environment.

A breakage or malfunction of any rigging, structure or machinery on a Fleet Unit or belonging to a Fleet Unit or any human error that could have caused serious injury or loss of life, or a serious situation which could have resulted in an accident. Some examples are:

Collision - An impact between two or more vessels under way.

Contact - A lateral/light impact with another object or vessel; touching bottom.

Grounding – To touch bottom and remain stranded.

Ice Damage – Damage to a vessel resulting from contact with ice.

Shipping Accident - An accident to a vessel such as a collision, contact, capsizing, fire, grounding, ice damage, and striking but not including disabling injuries.

Striking- A hard impact with a stationary object or a vessel not under way.

**Hotel Services**

The storage, preparation, and serving of foodstuffs and the sanitation of food preparation areas, food storage areas, messing areas and the cleanliness and sanitation of living accommodation aboard CCG vessels or at CCG stations.

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| <b><i>Hot Layup</i></b>                      | Vessel is non-operational, but systems remain in operation (i.e. heat, sanitary, refrigeration). Security functions and system checks are carried out. There is a very short time frame for commissioning to operational status.   |
| <b><i>Hotwork</i></b>                        | Means work that creates a source of ignition or a temperature sufficiently high to ignite a flammable gas mixture or to cause combustion of the item(s) involved in the process. This includes any work requiring the use of welding, burning or soldering equipment, drilling, grinding, chipping or any other work where flame is used or sparks are produced. |
| <b><i>Hyperbaric Chamber</i></b>             | A pressure vessel and associated equipment designed for the purpose of subjecting humans to greater than atmospheric pressures for the treatment of decompression sickness.  |
| <b><i>Illegal Psychoactive Substance</i></b> | Means psychoactive substances where the unauthorized possession of such substances is contrary to the laws of Canada.  |
| <b><i>Impairment</i></b>                     | Means any condition caused by the consumption or ingestion of any psychoactive substance that interferes with normal motor skills or the conduct of a person.  |
| <b><i>License</i></b>                        | Means an official document issued by a competent authority that indicates that the holder has achieved a minimum level of knowledge and ability to perform the duties of the position named in the document.   |
| <b><i>Lifting Machinery and Gear</i></b>     | Any machinery or cargo gear used in hoisting or lowering.  |
| <b><i>Logistics Officer</i></b>              | Refers to any individual appointed in charge of the Logistics Department on a CCG vessel.<br>The Logistics Officer is responsible to the Commanding Officer for "Hotel Services".  |
| <b><i>Maintenance</i></b>                    | Is the daily work arising from the vessel's maintenance system; which is undertaken and accomplished by the vessel's crew, while the vessel remains operational.   |
| <b><i>Maintenance System</i></b>             | Is, regardless of format, the collection of all the maintenance procedures and records for the vessel, its machinery and equipment.  |

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| <b><i>Major Non-Conformity</i></b>              | Means an identifiable deviation which poses a serious threat to personnel, safety of the vessel, or a serious risk to the environment and requires immediate correction. In addition, the lack of effective and systematic implementation of a requirement of the ISM Code is considered a major non-conformity.  |
| <b><i>Manager</i></b>                           | A person who has charge of a workplace.   |
| <b><i>Manoeuvring data</i></b>                  | Is information, gained through trials, about various characteristics of the vessel's' reaction to changing helm and engine load conditions. They will generally include information about stopping distance, rate of turn, diameter of turning circles, times to change speeds, squat under varying load conditions and may include information gained through experience such as, amount of wake created at various speeds, amount of bank suction, etc. |
| <b><i>Marine Environmental Emergency</i></b>    | An incident, accident or hazardous occurrence that has adversely affected or has the potential to adversely affect the marine environment.  |
| <b><i>Marine Pilot</i></b>                      | A licensed, or certificated, person who is not normally part of the vessels crew, and who acts in an advisory capacity to guide them into and out of harbours, berthing, or through straits and potential accident areas, using their knowledge of local winds, tides, currents, and hazards to navigation.   |
| <b><i>Marine Sewage Treatment Equipment</i></b> | Includes all shipboard equipment designed to collect and treat sewage.  |
| <b><i>Material Handling Equipment</i></b>       | Means all or any part of the work of moving or handling material that is performed on board a vessel or loading and unloading a vessel.   |
| <b><i>Measuring and Test Equipment</i></b>      | Includes (but is not limited to):<br>electrical measuring equipment<br>pressure testing equipment<br>gas analyzers<br>sextants<br>liquid level measuring equipment<br>torque measuring tools<br>dimensional measuring equipment   |

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| <b><i>Mechanical Failure or Deficiency</i></b> | The failure of any mechanical system due to:<br>failure to follow prescribed maintenance routines;<br>a lack of timely maintenance when indicated by analysis;<br>improper care; or<br>improper use.  |
| <b><i>Medical Evacuation (MEDEVAC)</i></b>     | A medical evacuation (MEDEVAC) is an emergency extraction arranged through a Joint Rescue Coordination Centre or an extraction following a diversion of the vessel from its planned voyage to obtain immediate medical assistance. Attendance at an emergency clinic to obtain treatment for cuts, sprains, fevers or aches while the vessel is in port does not constitute a medical evacuation. |
| <b><i>Minor Injury</i></b>                     | An employment injury or an occupational disease for which first aid or medical treatment at a hospital, medical clinic, ships nurse or Physician's office is provided other than a disabling injury.<br><i>Canada Marine Occupational Safety and Health Regulations, Part 21, Paragraph 274.</i>  |
| <b><i>Minor Non-conformity</i></b>             | An isolated incident of non-conformance with the Safety Management System or documented procedure which will not have a direct consequential effect upon the system.  |
| <b><i>Navigational Aids Processes</i></b>      | Means all or any part of the work of loading, unloading, moving or handling of; cargo (includes buoys and related equipment), oil pollution clean up equipment, vessel's stores, vessel and cargo fittings, performed.  |
| <b><i>New Assignment</i></b>                   | Includes transfer to another vessel, a change of job, or a promotion.   |
| <b><i>New Personnel</i></b>                    | Includes employees new to the vessel, or worksite, supernumerary personnel and employees recently appointed.  |
| <b><i>Non-Conformity</i></b>                   | Means an observed situation where objective evidence indicates the non-fulfillment of a specified requirement. A deviation from the requirements specified in the Safety Management System (SMS), or an error, or any identified lack of a plan or instruction for a key shipboard operation which could endanger the safety of people, the vessel, its cargo, or the environment.                |
| <b><i>Observation</i></b>                      | Comments or observations of the SMS that are generated by internal or external audits with a view to the continuous improvement of the system. They are not to be considered as non-conformities.   |

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| <b><i>Officer-in-Charge</i></b>                 | For the purpose of the Fleet Safety Manual, this term is synonymous with “Commanding Officer” (the person who is delegated the responsibility for safe navigation, safety and security of the vessel, crew and passengers).  |
| <b><i>Oil</i></b>                               | Means oil of any kind or in any form and includes petroleum, fuel oil, sludge, oil refuse and oil mixed with waste.  |
| <b><i>Organization</i></b>                      | International Maritime Organization  |
| <b><i>Overriding Operational Conditions</i></b> | Should be construed to mean only essential shipboard work which cannot be delayed for environmental or safety reasons or which could not reasonably have been anticipated at the commencement of the voyage.   |
| <b><i>Ozone Depletion</i></b>                   | Is the term applied to the diminishing of the Earth’s protective ozone layer due to chemicals containing either chlorine or bromine (Freon, Halon). These industrial chemicals, called Ozone Depleting Substances are used in refrigerators, air conditioners, foams, cleaning solvents, fire extinguishing equipment.   |
| <b><i>Passenger</i></b>                         | Applies to all persons carried on board the vessel other than the Commanding Officer, Officers, Crew, Supernumeraries and Pilots.  |
| <b><i>Psychoactive Substances</i></b>           | Any substances that affect the way a person acts, feels, or thinks through the substance acting on the central nervous system when swallowed, inhaled, ingested, injected, or permitted by any other means to enter the body. They include, but are not limited to: stimulants (e.g. cocaine); depressants (e.g. alcohol); hallucinogens (e.g. marijuana); narcotics and analgesics (e.g. codeine); sedative-hypnotics (e.g. alcohol); and inhalants and solvents. These can include both prescription and non-prescription drugs. |
| <b><i>Qualified Person</i></b>                  | A qualified person is in respect of a special duty, a person who, because of their knowledge, training and experience, is qualified to perform that duty safely and properly.  |
| <b><i>Refit</i></b>                             | Is a period where the vessel is taken out of service so that planned work based on those items from the defect list can be carried out.  |



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| <b><i>Risk</i></b>   | The probability or threat of: damage, injury, liability, loss or other negative occurrence that is caused by an external or internal vulnerability that may be neutralized through preemptive action. A risk has a cause and, if it is realized, a consequence.  |
| <b><i>Safety Management Certificate (SMC)</i></b>            | The certificate issue by, or on behalf of, the Administration to a vessel to certify conformity with the ISM Code.   |
| <b><i>Safety &amp; Security Management System (SSMS)</i></b> | The written and documented policy, procedures and instructions, responsibilities and authorities, lines of communication between vessel and shore, and audit systems that have been created to ensure the CCG Fleet's conformity with the Code.  |
| <b><i>Sailing Order</i></b>                                  | An official communication to the Commanding Officer of a vessel from the Superintendent of the Operations Centre which directs the movement and employment of the vessel in a specific geographic area, for a specific employment, within a specific time.   |
| <b><i>Scientific Processes</i></b>                           | Means all or any part of the work of:<br>loading, unloading, moving or handling of scientific equipment;<br>the setting and recovery of sampling nets, rosettes, or sediment grabs;<br>the obtaining or handling of biologic material; or<br>the conduct of laboratory experiments.  |
| <b><i>Scientific Program Operations</i></b>                  | This may be loosely defined as Fleet's involvement in a wide range of scientific operations. The list includes, but is not limited to; Research of Fish Stocks, Fish Habitat, Climatic Water conditions, Conductivity, Density, Bottom and Core sampling, Remote sensing, Hydrographic Research, Geology, Sea Lamprey Control. |
| <b><i>Sea-Bay</i></b>  | Tank installed within the hull that can be isolated from the sea. The sea-bay is normally protected by a strainer and is used to supply various sea-water pumps.   |
| <b><i>Sea Chest</i></b>                                      | Underwater compartment within the shell plating through which sea water is drawn in for the sea-bay and/ or various sea-water pumps. This compartment can't be isolated from the sea. The intake between the vessel's side and a sea valve.  |
| <b><i>Secure</i></b>   | to make fast, to tie up;<br>to stop work, to go off duty;<br>to make safe against adverse contingencies.   |

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| <b>Security Sweep</b>        | <p>Groups of two or more trained persons moving throughout the vessel in a pre-planned route visually verifying:</p> <ul style="list-style-type: none"><li>That no suspicious packages are onboard</li><li>That no security equipment has been tampered with</li><li>That all doors that are required to be locked or otherwise secured are in fact still locked or otherwise secure</li><li>That no signs of forced entry exist on any locked space</li><li>That all persons encountered have been cleared to be onboard.</li></ul> |
| <b>SECTERA I</b>             | Secured Communication Equipment.   |
| <b>Senior Management</b>     | That group of management personnel who establish policy governing the operation of the entire organization or its major segments.  |
| <b>Sewage</b>                | Encompasses human excreta, water and waste from toilets and other receptacles where such waste is collected or stored. It includes the sludge and residue from marine sewage treatment equipment, but does not include the effluent from an approved system if it complies with CSA Regulations #26 Great Lakes Sewage Pollution Prevention Regulations.   |
| <b>Sewage Holding Tank</b>   | A tank used to collect and store sewage before its ultimate disposal.  |
| <b>Ship Security Officer</b> | Person responsible for security aboard a vessel (SSO).   |
| <b>Significant Near Miss</b> | An undesired event, which in different circumstances could have resulted in harm to people, has or could have had an impact on the operational status of the vessel, damage to property and/or loss to a process.  |
| <b>Small Craft</b>           | Includes all craft not requiring certified operators and which are operated from a CCG Fleet vessel, station or base and includes but is not limited to: Fast Rescue Craft (FRC), Workboats, Self Propelled Barges, Hydrographic Launches and Utility Craft.   |

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| <b><i>Solid Waste</i></b>               | Wood – debris, sawdust, crates, boxes,<br>Metal – scrap metal, filings, steel wool, cable conduits, razor blades, food and drink containers, aerosol and paint cans,<br>Glass – fibreglass, electric light bulbs, food and drink bottles,<br>Plastics – sheeting, bags, bottles, packaging and lost or discarded lines,<br>Textiles – fabric, rope, clothing, rags and mops,<br>Paper – cardboard, stationery, paper towels, wrapping, waxed paper, packing paper, and<br>Other – food scraps (animal and vegetable), cigarette butts, paint chips,<br>Incinerator ash (sludge and hydrocarbons). |
| <b><i>Steering</i></b>                  | Includes automatic steering equipment where fitted, manual steering, and emergency steering systems.  |
| <b><i>Supernumerary</i></b>             | All persons aboard a Coast Guard Ship, who are not part of the ship's complement and who are aboard on the business of the ship fulfilling the mandate of the CCG.  |
| <b><i>Supervisor, Small Vessels</i></b> | Title is synonymous with different titles used in various regions for individuals who fulfill the same duties as stated in the National Model Work Description for this position.   |
| <b><i>Tank Transfer</i></b>             | Means transferring from one tank to another within the vessel.  |
| <b><i>Tasking</i></b>                   | A specific piece of work to be done within the parameters provided by a Sailing Order.  |
| <b><i>Technical Training</i></b>        | A structured transfer of knowledge relating to a particular art, science or trade having to do with the mechanical part of an art or science.   |
| <b><i>Training</i></b>                  | Transfer of knowledge through drill(s), practice or On the Job experience(s).   |
| <b><i>Training Course</i></b>           | A structured, formalized program of learning usually consisting of classroom and or developed skill set resulting in a certificate, diploma or degree upon successful completion.   |
| <b><i>Unbiased Person</i></b>           | A person, by lack of vested interest or external pressure, who can render an objective observation or decision usually outside the direct line of authority or chain of command.  |

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| <b><i>Unsatisfactory Condition</i></b> | Is defined as technical problems, breakdown or deficiencies with systems or equipment that do not meet the definition of a Hazardous Occurrences but may affect the safe operation of the machinery or the safe / efficient delivery of the program and where the sharing of the information related to the condition may improve the overall safety / efficiency of the operation.  |
| <b><i>Warm Layup</i></b>               | Vessel is non-operational, but some systems may remain in operation (i.e. heat, sanitary, refrigeration, ventilation). Security functions and system checks are carried out.   |
| <b><i>Work Aloft</i></b>               | Means any work or activity performed: from an unguarded structure more than 2.4m above the nearest permanent safe level; above any moving parts of machinery that could cause injury to a person upon contact; above an open hold; from a temporary structure more than 6m above a permanent safe level; or, from a ladder at a height of more than 2.4m above the nearest permanent safe level where, because of the nature of the work or activity, the person cannot use one hand to hold on to the ladder. |
| <b><i>Work Instruction</i></b>         | A term, synonymous with “checklist”, which provides for a systematic guide to completing a task.   |

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# Fleet Safety Manual

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## ANNEX C – GUIDANCE DOCUMENTS

Created to ensure the guidance documents are tracked and amended as required.

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| 2 | 11.A.2      | Key Ship Drawings               |
| 3 | 11.A.2      | List of Controlled Publications |
| 4 | 11.A.4      | Log and Document Retention      |

## 1 AWARENESS VIDEOS (11.A.2)

These videos are to be added to the crew familiarizations.

| Video Title  | Version #/Date |
|--|----------------|
| Helicopter Risk Management (TP13632)   | Winter 2008    |
| Keep Your Eyes on the Hook! (TP 14334)   | Winter 2008    |
| Radio Frequency Safety Awareness   | August 2009    |
| MBB BO 105, Passenger Briefing Video (applicable to all models of helicopters) | TC 2011        |

| Video Series on Potable Water and Accompanying Documents |  |           |
|--|--|-----------|
| Video #  | Video Title / Hyperlink  | Version # |
| 1  | <a href="#">Safe Drinking Water - Your Responsibility</a>                              | Current   |
| 2  | <a href="#">Water Sampling in Federal Facilities</a>                                   | Current   |
| 3  | <a href="#">Ultraviolet &amp; Reverse Osmosis for Micro-Systems</a>                    | Current   |
| 4  | <a href="#">Drinking Water Storage Tanks</a>   | Current   |
| 5  | <a href="#">Bottled Water Selection &amp; Application in Federal Facilities</a>        | Current   |
| 6  | <a href="#">Water Wells for Micro-Systems</a>  | Current   |
| 7  | <a href="#">Water Filtration &amp; Ion Exchange for Micro-Systems</a>                  | Current   |
| 8  | <a href="#">Disinfection for Micro-Systems</a>   | Current   |
| 9  | <a href="#">Advice for the Operation of Potable Water Field Test Equipment</a>         | Current   |
| N/A  | <a href="#">Drinking Water Awareness Program</a>                                       | Current   |
| N/A  | <a href="#">Water Quality 101 – Introduction to Potable Water Supply Micro-systems</a> | Current   |

## **2 KEY SHIP DRAWINGS (11.A.2)**

### **2.1 BILGE AND BALLAST**

Drawings indicate the general arrangement and location of the bilge, ballast, and heeling; trimming and passive roll stabilizing systems which includes venting and overflow and sounding arrangements. Drawings indicate all connected piping, valves, pumps and equipment, emergency systems, and cross-connections to other fluid systems.

### **2.2 CONTROL AND ALARM SYSTEMS**

Drawings indicate the general arrangement of remote control and monitoring systems showing all connected machinery. They provide details of: electric, pneumatic or hydraulic operational control and monitoring systems, and emergency operation arrangements for all machinery required for the operational safety of the ship and safety of personnel on board.

Drawings indicate the details of remotely controlled fire detection, alarm, and extinguishing systems. They show a list of monitor and audio and visual alarms, including locations, type, and the manufacturer of the equipment being used.

Drawings indicate the general arrangement of intercommunication systems linking the bridge, accommodation spaces, service spaces, the central control room and machinery spaces, including the emergency situation alarm for engineers

### **2.3 DOCKING PLAN**

Drawings indicate the location of the supporting blocks when ship is docked to conform to the structural members so that the ship is not damaged when its weight is supported by the blocks.

### **2.4 DOMESTIC BOILERS**

Drawings indicate the arrangement and location of permanently installed fuel oil systems including: connections to boilers, engines, heat exchangers, incinerators, cooking ranges, cabin hot-air heaters, pumps, purifiers, filters, valves, pressure gauges, piping, filling stations, tanks, tank sounding devices, flame-screened venting, overflow arrangements, drip trays and sludge facilities, and oil pollution prevention components.

### **2.5 ENGINE**

Drawings indicate the general arrangement of the ship's engine installation and all connected systems. The drawings include: sectional elevation of the engine, crankcase doors and means of engine support. There are further details on: the fuel injection system; lubricating-oil, cooling-water, other attached pumping systems; starting arrangements, controls including reversing arrangements, speed-regulating governors, other safety devices; temperature-monitoring devices, crankcase venting, crankcase explosion relief valves, other protection devices and engine turning gear.

### **2.6 FIRE CONTROL PLAN**

Drawings indicate for each deck the sections of the ship enclosed by "A" Class divisions and the sections of the ship enclosed by "B" Class divisions. They include the particulars of the fire alarm and fire detecting systems, sprinkler installations and fire extinguishing appliances provided in the ship. They also indicate the means of entry and exit of the various compartments and decks, including the location of fire dampers.

## **2.7 FIXED FIREFIGHTING SYSTEMS**

Drawings indicate the types and capacities of the pumps, the methods for bringing the pumps automatically into action, connections to the pressure tank and dry valve; sea cocks, control valves, pressure gauges, alarm switches, connections to ship's fire pump, piping systems and location of the sprinkler heads.

## **2.8 FUEL TRANSFER**

A line drawing showing fuel tank to draw from and where fuel is to be transferred to, transfer lines and pumps

## **2.9 GEARBOX**

Drawings indicate the installation of the gearing in the ship showing all connected systems. They include the general arrangement and sectional elevation of the gearing unit, including methods of gear case support. They provide details of the gear case, including access openings and venting arrangements; shafting systems, couplings, clutches, reversing gear where fitted and balancing and vibration analyses.

## **2.10 GENERAL ARRANGEMENT**

The General Arrangement consists of plan view of each major deck of the vessel, shows all of the watertight and structural bulkheads, as well as joiner bulkheads. All of the furniture is typically shown. Passageways, stairwells and all equipment vital to the ships operation are shown. The ship spaces (head, mess, etc.) are shown.

## **2.11 LIFE SAVING EQUIPMENT PLAN**

The drawings are to scale and show the location, type and accommodation capacity of the survival craft carried on the ship. The drawings include the type of launching devices, their location, type, and quantity of emergency equipment; the location of muster and embarkation stations, their dimensions in square metres and the approach routes to the areas.

## **2.12 MANOEUVERING DATA**

Drawings indicate the characteristics of ship handling and steering.

## **2.13 PNEUMATICS**

Drawings indicate the arrangement of unfired pressure vessels, compressors, air-driven machinery, valves, piping, moisture traps, reducing valves, safety valves, pressure gauges and drainage arrangements; particularly where susceptible to frost damage.

## **2.14 PROPELLER**

Drawings indicate the arrangement of the propeller. They include details of the fastening arrangement to the shafting systems, hub, hub mechanisms, seals, blade connections, control devices and locations; blade form and degree of controllability of pitch.

### **2.15 PROPULSION SHAFTING**

Drawings indicate the arrangement of the propulsion shafting, electrical generator shafting, and motor shafting in the ship including all connected systems; sectional elevation of the shafting systems, detailing attachments to driving and driven members and means of support. The drawings include the arrangement of the ship propulsion shafting systems, details of intermediate, thrust and screw shafts including liners, in particular protective coating for carbon steel screw shafts with non-continuous liners; intermediate, thrust, stern and "A" bracket bearings; stern bushes and stern glands including their attachments to the ship; shaft lubrication arrangements; and critical speed of rotating assembly including vibration analysis.

### **2.16 REFRIGERATION**

The drawings indicate the arrangement and location of compressors, valves, driers, strainers, oil separators, safety devices, sight glasses, piping, temperature and pressure gauges, alarms, condensers, liquid receivers, evaporation arrangements, refrigerated and air conditioned spaces.

### **2.17 SHELL EXPANSION**

A drawing showing the shell plating of a ship and giving the size, shape, and weight of the plates and their connections

### **2.18 SOUNDING AND VENTING PIPES**

Sounding is usually the common way to physically measure the volume of liquid in a tank with a pipe fitted from top to bottom.

Tank vents are required to maintain tanks at atmospheric pressure. Air flows into the tank as the fuel level is lowered, and it flows out of the tank when the tank is filled. Tanks also have air movement through the vent as temperature changes day to night and the fuel expands and contracts.

### **2.19 STABILITY BOOK**

A document created by naval architects to help mariners calculate the vessels stability and attitude in varying conditions of load.

### **2.20 STEERING SYSTEMS\*\*\***

Drawings indicated the arrangement of the main and duplicate or auxiliary steering systems in the ship. They include sectional elevation of the steering gear and holding-down arrangements. They provide specifications indicating maximum designed torque at rudder stock, timing and angle of rudder movements for main and auxiliary steering gears, materials, and physical properties of the principal components. They include details of pumps, piping and valves subjected to pressure, securing arrangements, safety and shock-prevention devices, control and monitoring mechanisms including connections to all steering locations.

### **2.21 TANKS AND PIPING CAPACITY PLAN**

Drawings indicate capacities and vertical and longitudinal centres of gravity of cargo spaces, tanks, etc. They included the general arrangement of the tank installation and the system to which it is connected. They provide details of nature of the fluid to be contained in the tank; tank volume and design fluid head, tank materials, sizes, plate seams and supports, tank openings, vents, and other connections.

## **2.22 THROUGH HULL VALVES AND GLANDS**

Drawings indicate details of shipside penetrating shafting and glands, fin stabilizing components including their locking mechanisms, and other connections. They include details of sea inlet and discharge valves, strainers and their connections; including those for side thrusters and deck wash systems. For ships required to operate in ice covered waters, drawings detail arrangements to prevent slush ice choking sea-water inlets.

## **2.23 WATERTIGHT BOUNDARIES**

Drawings indicate the general arrangements of door-operating mechanisms showing all connected machinery and their locations in the ship. They include details of all components which include pumps, piping, and valves subjected to pressure and securing arrangements.

## **2.24 GMDSS RADIO INSTALLATION**

An as-installed wiring diagram, radio arrangement as well as antenna drawings should be kept available on board for presentation during radio survey, etc.

Antenna drawings should show all antennas seen from fore or aft position, the port or starboard position, and from above. This applies to the following antennas; all transmitting antennas including location of antenna tuner; all receiving antennas including GPS antenna; radar antennas; satellite communication antennas; and location of the float-free Emergency Position Indicating Radio beacon (EPIRB).

Drawings should indicate the lay-out of the bridge and communication room showing the location of the following equipment: controllers for transmitting distress alarm, VHF radio installations, including any control units; IMF or MF/HF installation, including and control units, telex printers, etc.; satellite communications equipment, including terminals, printers, etc.; watchkeeping receivers for VHF Channel 70, 2178.5kHz, and HF distress channels 4, 6, 8, 12, and 16MHz bands; NAVTEX and EGC receivers; radar transponders and EPIRBs (if located on the navigating bridge); hand-held (two-way) GMDSS VHF transceivers and their chargers; emergency light powered from a reserve source of energy to illuminate mandatory radio equipment; battery charger (for the reserve source of energy) and, fuse box.

The wiring diagram should show the following connections: antenna connections; connections to telephone exchange (PABX), fax machine, etc.; connections to the ship's mains, emergency source of energy, and switching systems for all radio and radio navigation equipment; which radio equipment (including emergency light) being connected to each power unit/source; fuses for all radio equipment; uninterruptible power supply (UPS) with all connections and fuses, if installed as power for mandatory radio equipment (Block diagram showing how the UPS operates, showing the fuses and switch-over connections to alternative power supplies, by-pass switch, etc.); any connections (interface connections) between satellite navigator/GPS/GNSS and GMDSS radio equipment; battery chargers for the reserve source of energy; connections to gyro (if applicable); and, types of cables used in the installation.

## **2.25 ONE-LINE ELECTRICAL**

Drawings include the general layout of the electrical distribution systems on board the vessel.



### 3 LIST OF CONTROLLED PUBLICATIONS (11.A.2)

Vessels or sites are to maintain copies of or must be aware of where these documents can be accessed. Some publications are only available by purchase and can be either E or HC format.

Updates to this Annex will be made annually

\*(Media Type) – E = Electronic Format, HC = Hard Copy

\*\*Indicates that the document is required to be onboard/onsite in hardcopy

\*\*\*Latest Edition Dates are as of March 2015

#### 3.1 CANADIAN COAST GUARD DOCUMENTS

|  | Document Title   | Available Media Type* | Latest Edition***              |
|--|--|-----------------------|--------------------------------|
| <b>All</b>                                 |  |                       |                                |
| 1  | <a href="#">CCG Communiqué</a>   | E, HC **              | Current                        |
| <b>Operations</b>                          |  |                       |                                |
| 2  | <a href="#">Coast Guard Fleet Orders (CGFO's) DFO/5349 - TP5070</a>  | E, HC                 | Current                        |
| 3  | <a href="#">Coast Guard Fleet Logistics Standards (CGFLS) DFO/5758</a>   | E, HC                 | Current                        |
| 4  | <a href="#">CCG Operations Safety Bulletins DFO/5404 - T P11391</a>  | E, HC **              | Current                        |
| 5  | <a href="#">CCG Operations Circulars DFO/5323 - TP9028</a>   | E, HC **              | Current                        |
| 6  | <a href="#">CCG Fleet Tackle Guide DFO-0005</a>  | E, HC                 | 1 <sup>st</sup> Ed / May 2008  |
| 7  | <a href="#">CCG Technical Bulletins CT-013-000-EB-TE-001</a>   | E, HC **              | Current                        |
| 8  | <a href="#">Coast Guard Fleet Safety Manual DFO/5737</a>   | E, HC **              | Current                        |
| 9  | <a href="#">CCG Ship's Crew On the Job Training Manual DFO/5559</a>  | E, HC                 | 1 <sup>st</sup> Ed / Sept 1998 |
| 10   | <a href="#">CCG Training Standard for Ship's Officers and Crew DFO/5730</a>  | E, HC                 | 4 <sup>th</sup> Ed / Jul 2008  |
| 11   | <a href="#">Canadian Aeronautical and Maritime Search and Rescue Manual (CAMSAR) DFO/5449</a>                                    | E, HC                 | Current                        |
| 12   | <a href="#">Ice Navigation in Canadian Waters - (as applicable) DFO/5054 - TP5064</a>  | E, HC                 | Aug 2012                       |
| <b>Integrated Technical Services (ITS)</b> |  |                       |                                |
| 13   | <a href="#">CCG – Integrated Technical Services Publications – Colour-Coding Standard for Piping System 30-000-000-ES-TE-001</a> | E, HC                 | 3 <sup>rd</sup> Ed / Jul 2010  |
| 14   | <a href="#">CCG Paint and Coating Standards 18-080-000-SG-003 DFO/5847</a>   | E, HC                 | 2 <sup>nd</sup> Ed / Jun 2002  |
| 15   | <a href="#">Canadian Marine Differential Global Positioning System (DGPS) Broadcast Standard</a>                                 | E                     | Oct 2007                       |
| 16   | <a href="#">Shipboard Helicopter Information and Procedures Manual DFO/5282 - TP11475</a>  | E, HC **              | 3rd Ed / Mar 2007              |

|    |   |       |                               |
|----|---|-------|-------------------------------|
| 17 | Ship Specific Data for Ships over 100 GRT, Ship Security Plan, Risk Assessment Table, Questionnaire, and gap analysis |       | Current                       |
| 18 | <a href="#">Welding of Aluminum and Aluminum Alloys 18-080-000-SG-002</a>   | E, HC | 3 <sup>rd</sup> Ed / Jun 2002 |
| 19 | <a href="#">Welding of Ferrous Materials 18-080-000-SG-001 DFO/5781</a>   | E     | 3 <sup>rd</sup> Ed / Jun 2002 |
| 20 | <a href="#">Welding Health and Safety Technical Program DFO/5672</a>  | E, HC | 2 <sup>nd</sup> Ed / Sep 1999 |
| 21 | <a href="#">Vessel Maintenance Management Manual (30-013-000-MA-MP-001)</a>   | E     | 2 <sup>nd</sup> Ed / Jun 2012 |

### 3.2 DFO & OTHER GOV'T. DEPT. REFERENCE DOCUMENTS

|    | Document Title   | Available Media Type* | Latest Edition*** |
|----|--|-----------------------|-------------------|
| 1  | <a href="#">Arctic Waters Oil Transfer Guidelines - (as applicable) TP10783</a>  | E                     | 1997              |
| 2  | <a href="#">Canada Labour Code, - Part II ISBN 0-660-61574-6</a>   | E, HC **              | Current           |
| 3  | <a href="#">Canada Shipping Act, 2001</a>  | E                     | Current           |
| 4  | <a href="#">DFO Occupational Health and Safety Manual</a>  | E                     | March 2015        |
| 5  | <a href="#">DFO Occupational Safety and Health Awareness Supervisors Guide</a>   | E                     | Mar 2007          |
| 6  | <a href="#">Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants TP9834</a> | E, HC                 | 2009              |
| 7  | International Code of Signals TP2323 / IMO994  | E, HC **              | 2005              |
| 8  | International Maritime Organization – Standard Marine Communication Phrases IMO IA987E   | E, HC                 | 2005              |
| 9  | <a href="#">International Regulations for Preventing Collisions at Sea</a>   | E, HC **              | Current           |
| 10 | <a href="#">Maritime Occupational Health and Safety Regulations (SOR/2010-120)</a>   | E, HC **              | Current           |
| 11 | <a href="#">Ships Electrical Standards TP127</a>   | E, HC **              | 2008              |
| 12 | <a href="#">TC Ship Safety Bulletins TP3231</a>  | E, HC                 | Current           |

**3.3 EXTERNAL DOCUMENTS**

|    | <b>Document Title</b>   | <b>Available Media Type*</b> | <b>Latest Edition***</b>  |
|----|---|------------------------------|---------------------------|
| 1  | Admiralty List of Radio Signals, Maritime Radio Stations, Oceania, the Americas and the Far East - NP281(2)   | HC **                        | 2014/2015                 |
| 2  | Admiralty List of Radio Signals, Maritime Safety Information Services, Oceania, the Americas and the Far East - NP283(2)  | E, HC **                     | 2014/2015                 |
| 3  | Code of Safe Practice for Cargo Stowage and Securing (as applicable) IMO 292  | E, HC                        | 2011                      |
| 4  | Food Safety Code of Practice for Canada's Foodservice Industry (Canadian Restaurant and Foodservices Association)<br>Note that version 2007 is still acceptable as the 2011 has undergone a few minor administrative updates. | HC **                        | 2011                      |
| 5  | Global Maritime Distress and Safety System - GMDSS (as applicable) IMO-970  | HC **                        | 2013                      |
| 6  | IAMSAR MANUAL – VOLUME III (MOBILE FACILITY) VOL 3 2013   | HC **                        | 2013                      |
| 7  | International Convention for the Prevention of Pollution from Ships 1973/78 MARPOL IMO-520 – Consolidated   | E, HC                        | 2011                      |
| 8  | International Convention for the Safety of Life at Sea - SOLAS IMO-110  | E, HC                        | 2014                      |
| 9  | International Lifesaving Appliance Code - LSA Code IMO-982  | E, HC                        | 2010 A/May 2014           |
| 10 | International Medical Guide for Ships ISBN (10) 92 4 154231 4   | HC **                        | 3 <sup>rd</sup> Ed / 2007 |
| 11 | ITU List of Ship Stations (as applicable) List V  | E**                          | Current Compilation       |
| 12 | ITU Manual for use by the Maritime Mobile and Maritime Mobile Satellite Service (as applicable)   | E, HC **                     | 2013                      |
| 13 | STCW 2010 (Seafarers' Training, Certification and Watchkeeping) IMO-938   | E, HC                        | 2011                      |

### 3.4 CHARTS AND PUBLICATIONS

|    | Document Title   | Available Media Type* | Latest Edition*** |
|----|--|-----------------------|-------------------|
| 1  | Charts - for area of operations and program requirements | HC **                 |                   |
| 2  | <a href="#">Notice to Mariners</a>                       | E, HC                 | Current           |
| 3  | <a href="#">Notice to Mariners - Annual Edition.</a>     | E, HC                 | Current           |
| 4  | Sailing Directions                                       | E, HC                 |                   |
| 5  | <a href="#">Tides and Current Tables</a>                 | E, HC                 | Current           |
| 6  | <a href="#">List of Lights, Buoys and Fog Signals</a>    | E, HC                 | Current           |
| 7  | <a href="#">Radio Aids to Marine Navigation</a>          | E, HC                 | Current           |
| 8  | Nautical Almanac   | E, HC                 |                   |
| 9  | Norries Tables   | E, HC                 |                   |
| 10 | Canal and Lock procedures - (as applicable)              | E, HC                 |                   |
| 11 | Any local and regional requirements - (as applicable)    |                       |                   |

### 3.5 REGIONAL SPECIFIC DATA

|   | Document Title   | Available Media Type* | Latest Edition*** |
|---|--|-----------------------|-------------------|
| 1 | Specific Regional Procedures - (as applicable)               | HC **                 |                   |
| 2 | Familiarization Manual for Supernumeraries – (as applicable) | E, HC                 |                   |
| 3 | Regional Emergency Plans – (as applicable)                   | E, HC                 |                   |

### 3.6 SHIP SPECIFIC DATA

|   | Document Title   | Available Media Type* | Latest Edition*** |
|---|--|-----------------------|-------------------|
| 1 | Key Ship Drawings - (as per section 2 of this Annex)   |                       |                   |
| 2 | Operation and Maintenance Manuals for Radio Equipment and Critical Equipment - (as applicable) |                       |                   |
| 3 | Ship Manoeuvring Data  | HC **                 |                   |
| 4 | Ship Stability Data Book   | HC **                 |                   |
| 5 | SOPEP Manual - (as applicable)   | HC **                 |                   |

**4 LOG AND DOCUMENT RETENTION (11.A.4)**

| <b>Log/Document Title</b>                       | <b>Retention Period</b>   |
|---|---|
| <b>Audit Reports</b>                            | Retain onboard for 5 years then can be destroyed.   |
| <b>Annual Asbestos Surveys</b>                  | Retain onboard for 5 years then can be destroyed.   |
| <b>Bunker Delivery Notices</b>                  | Retained onboard for 3 years then can be destroyed.   |
| <b>Change Over Notes</b>                        | Retain onboard for a minimum of 1 year then can be destroyed unless required for historical information/reference.  |
| <b>Change of Command</b>                        | Fax or scanned copy sent to Marine Superintendent, original retained onboard for 1 year then can be destroyed.  |
| <b>Confined Space Entry Permits</b>             | The Maritime Occupational Health and Safety Regulations require that these permits be retained aboard for at least two years following the date that they were signed. In the event that conditions changed inside the space or conditions could not be complied with, the Permit must be kept for 10 years.  |
| <b>Crew Lists</b>                               | Retain onboard for 1 year from patrol date then can be destroyed.   |
| <b>Contractors Basic Safety Familiarization</b> | This record shall be kept for a period of two years then can be destroyed.  |
| <b>Deck Logs</b>                                | Retain onboard for a minimum period of 1 year from the last entry date. Logs may be retained for reference purposes to a maximum period of 5 years. The logs shall then be sent ashore to the Marine Superintendent for archiving until 10 years from the last entry date. The Marine Superintendent shall then transfer the Deck Logs to the Government Records Branch of Library and National Archives of Canada (LAC) 395 Wellington Street Ottawa, ON K1A 0N4 CANADA. |
| <b>Dive Checklist</b>                           | Retain onboard for 1 year then can be destroyed.  |
| <b>Dive Record</b>                              | Retain for 5 years after the diver ceases to be employed by the employer then can be destroyed.   |

| <b>Log/Document Title</b>   | <b>Retention Period</b>  |
|---|--|
| <b>Dive Air Quality Test</b>  | Retain for 5 years after the date of the test then can be destroyed.   |
| <b>Drills</b><br>(contingency, security and debriefs)                       | Retain onboard for 3 years then can be destroyed.  |
| <b>Engine Logs</b>  | Retain onboard for 2 years after the last entry. Logs shall then be sent ashore to the Superintendent, Marine Engineering for archiving. |
| <b>Fall Protection Records</b>  | Retain for 2 years after the equipment ceases to be used then can be destroyed.  |
| <b>Familiarization Checklists</b>   | Retain onboard for 6 months after the employee departs the vessel then can be destroyed.   |
| <b>Financial/Budgetary Documents</b><br>(invoices, MRS reports, logs, etc.) | Retain onboard for 1 year then can be sent to records for archiving for an additional 6 years.   |
| <b>First Aid Books and Patient Care Records</b>                             | Retain onboard for 5 years then can be destroyed.  |
| <b>Garbage Record Book</b>  | Retain onboard for 2 years from last entry then can be destroyed.  |
| <b>Incident Investigation Report (IIR)</b>                                  | Retain onboard for 10 years then can be destroyed.   |
| <b>Halocarbon Records, Reports and Notices</b>                              | Retain onboard for 5 years from issuance.  |
| <b>Hot Work Permits</b>   | Retain onboard for 1 year from date of work performed then can be destroyed.   |
| <b>Hotel Services Weekly Inspection Log Entries</b>                         | Retain onboard for 2 years then can be destroyed.  |
| <b>Lifesaving Equipment Checklists</b><br>(Monthly)                         | Retain onboard for 1 year then can be destroyed.   |
| <b>Lock Out / Tag Out Logs</b>  | Retain onboard for 1 year then can be destroyed.   |
| <b>Log Abstracts</b>  | Retain onboard for a minimum of 7 years.   |
| <b>Maintenance and Survey Records</b>                                       | Retain onboard for 7 years or archive ashore.  |
| <b>Next of Kin Information</b><br><b><u>PROTECTED</u></b>                   | Retain onboard for 6 months after the employee has departed the vessel then can be destroyed.  |
| <b>Non-Conformity Reports and Observations</b>                              | Retain onboard for 5 years then can be destroyed.  |
| <b>Occupational Safety &amp; Health (OSH) Meeting Minutes</b>               | Retain onboard for 2 years then can be destroyed.  |

| Log/Document Title   | Retention Period  |
|--|---|
| <b>Oil Record Books</b>  | Retain onboard for 3 years from the date of the last entry then can be destroyed.   |
| <b>Out of Service (OOS) / Lay-Up Documents</b>                         | Retain onboard for 5 years after completed then can be destroyed.   |
| <b>Potable Water Tests</b><br>(quarterly, annual and weekly)           | Retain onboard for 5 years then can be destroyed.   |
| <b>Pre-Job Safety Assessment and Pre-Operation Risk Assessment</b>     | Retain onboard for 6 years then can be destroyed.   |
| <b>Radio Logs</b>  | Retain for 1 year from the date of last entry then can be destroyed.  |
| <b>Safety Equipment Inspection Records</b>                             | Retain onboard for 2 years then can be destroyed.   |
| <b>Safety Management Reviews</b><br>(shipboard, regional and national) | Retain onboard for 2 years then can be destroyed.   |
| <b>Sailing Orders</b>  | Retain onboard for 2 years then can be destroyed.   |
| <b>Sanitary Inspection Certificates</b>                                | Retain onboard for 2 years then can be destroyed.   |
| <b>Search &amp; Rescue (SAR) Incident Reports</b>                      | Retain signed copy onboard for 2 years then send ashore for archiving.  |
| <b>Security of Vessel Records, Assessments, Review of Plans</b>        | Retain onboard for 6 years then can be destroyed.   |
| <b>Security Assessment and Approved Vessel Security Plan</b>           | Copy to be maintained by Company Security Officer for 2 years after the expiry of the plan then can be destroyed.   |
| <b>Ship's Books</b>  | Within 28 days of the end of the calendar year or end of season the book shall be sent to the Marine Superintendent for archival purposes.  |
| <b>Supernumerary Information</b>                                       | Retain for 6 months following the voyage then can be destroyed.   |
| <b>Tackle Register</b>   | Records pertaining to cargo handling gear in use must be kept for 10 years older records can be destroyed. Records pertaining to the vessels lifting appliances should be kept aboard for the life of the vessel. |
| <b>Worker's Compensation Forms</b><br><b><u>PROTECTED</u></b>          | To be filled on the individual personal file and retained onboard for 5 years then sent ashore for archiving.   |







# Fleet Safety Manual

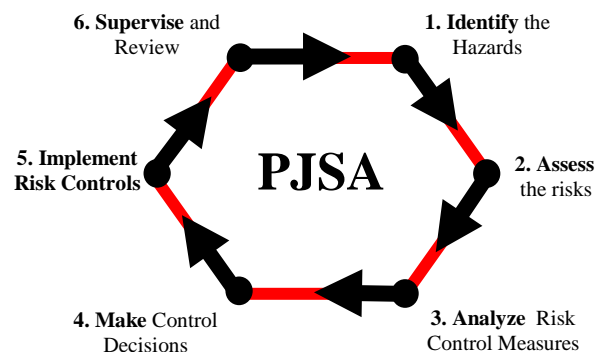
## ANNEX D - FORMS

Many of the forms mentioned in the Fleet Safety Manual are available on the DFO Forms intranet site and can be accessed by following the hyperlink in the form title. The online forms are subject to change without notice. Paper-based copies of the online DFO forms have been included in this Annex for reference only. If the form is not available online, a copy can be found in this Annex as a non-fillable PDF.

| Procedure # | Form Title and Hyperlink  | Form #           | Current Version Date |
|-------------|---|------------------|----------------------|
| 6.A.1       | <a href="#">Marine Certification Exemption Risk Assessment</a>                    | FP_5295_E        | 12/06/17             |
| 6.D.1       | <a href="#">General Statement of Risk - Fleet Safety Manual 6.d.1 (Part A)</a>    | FP-5278-Part-A-E | 03-2015              |
| 6.D.1       | <a href="#">Statement of Medical Fitness - Fleet System Manual 6.d.1 (Part B)</a> | FP-5278-Part-B-E | 03-2015              |
| 7.A.1       | Pre-Job Safety Assessment (PJSA)  |                  | 2012/09/01           |
| 7.A.2       | Change of Command Document  |                  | 2012/09/01           |
| 7.A.2       | Change of Command Document (Station Mode)   |                  | 2012/09/01           |
| 7.B.1       | Diving Operations Checklist   |                  | 2012/09/01           |
| 7.B.3       | <a href="#">Confined Space Entry Permit</a>                                       | FP-5208          | 2020-04-02           |
| 7.B.4       | Hotwork Authorization Permit  |                  | 2012/09/01           |
| 7.B.5       | <a href="#">Sample - Lockout / Tagout Record Sheet</a>                            | FP-5196-E        | 2013-02              |
| 7.B.6       | <a href="#">Energized Electrical Work Permit</a>                                  | FP-5197-E        | 2018-04              |
| 7.E.6       | Garbage Record Book<br><a href="#">Available to order from Transport Canada</a>   | 85-0492          | Current              |
| 7.E.8       | <a href="#">Adding a system containing halocarbons to the regional inventory</a>  | FP-0051-E        | 12/06/17             |
| 7.E.8       | <a href="#">Service Log</a>   | FP-0052-E        | 12/06/17             |
| 7.E.8       | <a href="#">Leak test notice</a>  | FP-0053-E        | 12/06/17             |

ANNEX D  
FORMS

| Procedure # | Form Title and Hyperlink  | Form #      | Current Version Date |
|-------------|---|-------------|----------------------|
| 7.E.8       | <a href="#">Halocarbon release report</a>   | FP-0054-E   | 12/06/17             |
| 7.E.8       | <a href="#">Dismantling, decommissioning, or destruction notice</a>   | FP-0055-E   | 12/06/17             |
| 9.A.1       | <a href="#">Safety Management System Report</a>   | FP-5249-E   | 2014-03              |
| 9.B.1       | <a href="#">Incident Investigation Report</a> (IIR)   | FP-5234-E   | 2017-11              |
| 9.B.1       | <a href="#">Incident Investigation Report (IIR) Instructions</a>  | FP_5234_A_E | 2017-11              |
| 9.B.1       | <a href="#">Motor Vehicle Accident Report</a>   | PSPC        | 2000-03              |
| 9.B.1       | <a href="#">Report of a Marine Occurrence / Hazardous Occurrence Report</a>   | TSB         | 2014-09              |
| 9.B.1       | <a href="#">Hazardous Occurrence Investigation Report (Canada Occupational Safety and Health Regulations, Section 15.8)</a> | LAB1070     | 2020-11              |
| 10.A.7      | Contractor Safety and Security  |             | 2012/09/01           |
| 11.A.3      | Certificates  |             | 2017-06-01           |
| 11.B.1      | <a href="#">Safety Management System Suggestion</a>   | FP-5251-E   | 2017-03              |



## PRE-JOB SAFETY ASSESSMENT (PJSA)

### JOB DESCRIPTION:



Date :

Ship/Station:

Number of workers :

Worker/Contractor :

Location:

Immediate Supervisor's Name:

Review the following at the work site and **ONLY** check the items which apply to the task.  
List all the hazards you have checked on the back of the card. In the third column detail your methods of **CONTROL**.

| Shutdowns/Permits-signed / posted |                              | Respiratory Hazard |                                    | Working at Heights Hazards |                                       |
|-----------------------------------|------------------------------|--------------------|------------------------------------|----------------------------|---------------------------------------|
|                                   | Hot Work                     |                    | Silica / Concrete                  |                            | Barricades / flagging and signs       |
|                                   | HVAC                         |                    | Asbestos                           |                            | Dangerous openings                    |
|                                   | Sprinkler                    |                    | Mould                              |                            | Protect from falling items            |
|                                   | Fire Suppression Systems     |                    | Fibreglass/insulation              |                            | Powered platforms (man lift)          |
|                                   | Electrical                   |                    | Smoke                              |                            | Others working above or below         |
|                                   | Water (valves)               |                    | Airborne particles- chipping       |                            | Fall arrest                           |
|                                   | Hydraulic (valves)           |                    | Spray Painting                     |                            | Ladders                               |
|                                   | Compressed Gasses            |                    | MSDS Reviewed                      |                            | Other:                                |
|                                   | Lockout procedure in place   |                    | Other                              |                            | <b>Ergonomics Hazards</b>             |
|                                   | Confined Space               |                    | <b>Activity Hazards</b>            |                            | Working in tight area                 |
|                                   | Asbestos                     |                    | Sensitive equipment in area        |                            | Part of body in line-of-fire          |
|                                   | Other:                       |                    | Burn / Heat sources                |                            | Working above your head               |
|                                   | <b>Environmental Hazards</b> |                    | Energized Equipment in area        |                            | Pinch points identified               |
|                                   | Spill potential              |                    | Welding / Grinding                 |                            | Repetitive motion                     |
|                                   | Weather Conditions           |                    | Electrical cords / tools-condition |                            | Repetitive work in awkward position   |
|                                   | Ventilation Required         |                    | Equipment / tools – inspected      |                            | Other:                                |
|                                   | Heat stress / cold exposure  |                    | Housekeeping                       |                            | <b>Personal Limitations / Hazards</b> |
|                                   | Other workers in area        |                    | Other:                             |                            | Trained to use tool / perform work    |
|                                   | Inadequate lighting          |                    | <b>Access / Egress Hazards</b>     |                            | Clear instructions                    |
|                                   | Noise levels.                |                    | Partially obstructed               |                            | Insufficient number of workers        |
|                                   | Biohazards                   |                    | Slip / trip potential identified   |                            | Physical limitations                  |
|                                   | Other:                       |                    | Other:                             |                            | Other:                                |

| TASKS   | HAZARDS                      | CONTROLS                                      |
|---|------------------------------|---|
|   |                              |   |
|   |                              |   |
|   |                              |   |
|   |                              |   |
|   |                              |   |
|   |                              |   |
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|   |                              |   |
|   |                              |   |
|   |                              |   |
|   |                              |   |
|   |                              |   |
|   |                              |   |
| All waste cleaned up and removed (y/n)_____All tools/equipment removed (y/n)_____ Task area cleaned at shifts end (y/n) _____ |                              |   |
| All member(s) of the work team <b>MUST BE briefed about the information identified on the PJSA.</b>                           |                              |   |
|   |                              |   |
| <b>Special Instructions:</b>  | <b>Communications</b>        | <b>Personal Protective Equipment</b>          |
|   | Radio (type and channel)     | Head protection.                              |
|   | Contact Person (Emergencies) | Safety footwear                               |
|   | Other                        | Eye protection (safety glasses, face shields) |
|   | Other                        | Respirator / SCBA                             |
|   | <b>Supervisor: (print)</b>   | Hearing protection                            |
|   |                              | High Voltage protective equipment             |
|   | <b>Supervisor: (sign)</b>    | Gloves  |
|   |                              | Tyvek coveralls and shoe covers               |
|   | <b>Comments:</b>             | Life Jacket                                   |
|   |                              | Welding Apron and face shield                 |
|   |                              | Cold Weather Face Mask                        |
|   |                              | Other:  |

### Change of Command Document

To: Regional Director, Fleet  
Attn: Marine Superintendent

From: Commanding Officer  
Vessel: CCGS \_\_\_\_\_

This document serves as a record of the exchange between Commanding Officers at crew change. To ensure information on all matters pertaining to the ships' operation and on the condition of the vessel's hull, machinery and equipment for familiarization, reporting and acceptance of command have taken place.

(A) Date: \_\_\_\_\_ Time: \_\_\_\_\_ Location: \_\_\_\_\_

|             |  |           |  |
|-------------|--|-----------|--|
|             |  |           |  |
| Fuel        |  | Lube Oil  |  |
| Propulsion  |  | M/E       |  |
| Small Craft |  | Generator |  |
| Aviation    |  | Dirty Oil |  |
| Water       |  |           |  |
| Potable     |  | Ballast   |  |

(B) Current Operational Assignment: \_\_\_\_\_  
(As per attached Sailing Orders)

(C) Status of Certificates: (as per attached list from Certificate Register)  
Certificate(s) requiring attention during the upcoming patrol (please identify):

.....

.....

.....

.....

(D) MARSEC LEVEL: MARSEC 1 ☐ MARSEC 2 ☐ MARSEC 3 ☐

(E) Secure Communications Equipment:

I have verified that the SECTERA device is onboard ☐ Check

I have relayed the PIN to the relieving Commanding Officer (SECTERA type 1 unit only) ☐ Check

(F) Departmental Readiness:

**SIGNIFICANT DEFECTS/DEFICIENCIES**


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(G) Document Status: (any deficiencies to be identified and be recorded in Notation where applicable)

| <b>Attention Required:</b>                            | <b>YES</b> | <b>NO</b> | <b>Attention Required:</b>                                   | <b>YES</b> | <b>NO</b> |
|---|------------|-----------|--|------------|-----------|
| Drug Substance Register                               |            |           | Credit Cards   |            |           |
| Significant Operational Administrative Correspondence |            |           | Monthly Outside Canadian Territorial Fuel Consumption Report |            |           |
| Ships Safe Combination transmitted                    |            |           | Department Heads Changeover Notes                            |            |           |
| Ship Security Plan                                    |            |           | Stability Information  |            |           |
| Tackle Register                                       |            |           | Gun/Ammunition Register                                      |            |           |
| Oil Record Book                                       |            |           | Crew List  |            |           |
| Garbage Log   |            |           | Deck Log Book  |            |           |
|   |            |           |  |            |           |

(H) Safety Management System reviewed since last Change of Command:

|   |  |
|---|--|
| New NCR's / Observation   |  |
| Significant Incident Investigation Reports  |  |
| <b>Publication Amendments:</b> (identify only changes since the last change of command) |  |
| Fleet Safety Manual:  |  |
| CG Fleet Orders:  |  |
| Fleet Bulletin:   |  |
| CCG Technical Bulletin:   |  |
| Safety Bulletin (TC):   |  |
| Others (specify):   |  |

**(I) Notations: Additional Information for completion by either Commanding officer (if insufficient space, please attach supplemental page)**

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I, Captain, \_\_\_\_\_ have fully briefed and hereby relinquish command of  
CCGS \_\_\_\_\_ to Captain \_\_\_\_\_.

Having received the aforementioned briefing and information from the departing Captain, I hereby  
acknowledge receipt of and assume full control and command of:  
CCGS \_\_\_\_\_

Captain \_\_\_\_\_  
Commanding Officer (relieved)

Captain \_\_\_\_\_  
Commanding Officer (relieving)

Date: \_\_\_\_\_

Date: \_\_\_\_\_





### Change of Command Document (Station Mode)

**To: Regional Director, Fleet**  
**Attn: Marine Superintendent**

**From: Commanding Officer**  
**Vessel: CCGS \_\_\_\_\_**

This document serves as a record of the exchange between Commanding Officers at crew change. To ensure information on all matters pertaining to the ships' operation and on the condition of the vessel's hull, machinery and equipment for familiarization, reporting and acceptance of command have taken place.

**(A) Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_ **Location:** \_\_\_\_\_

|                    |  |                  |  |
|--------------------|--|------------------|--|
| <b>Fuel</b>        |  | <b>Lube Oil</b>  |  |
| <b>Propulsion</b>  |  | <b>M/E</b>       |  |
| <b>Small Craft</b> |  | <b>Generator</b> |  |
| <b>Other</b>       |  | <b>Dirty Oil</b> |  |

**(C) Status of Certificates:** (as per attached list from Certificate Register)  
**Certificate(s) requiring attention during the upcoming patrol (please identify):**

.....

.....

.....

**(F) Departmental Readiness:**

#### **SIGNIFICANT DEFECTS/DEFICIENCIES**

.....

.....

.....

**(G) Document Status:** (any deficiencies to be identified and be recorded in Notation where applicable)

| <b>Attention Required:</b>                                   | <b>YES</b> | <b>NO</b> | <b>Attention Required:</b>               | <b>YES</b> | <b>NO</b> |
|--|------------|-----------|--|------------|-----------|
| <b>Drug Control Register</b>                                 |            |           | <b>Credit Cards</b>                      |            |           |
| <b>Significant Operational Administrative Correspondence</b> |            |           | <b>Department Heads Changeover Notes</b> |            |           |
| <b>Safe Combination transmitted</b>                          |            |           | <b>Gun/Ammunition Register</b>           |            |           |
| <b>Deck/Station Log Book</b>                                 |            |           | <b>Stability Information</b>             |            |           |
| <b>Tackle Register</b>                                       |            |           | <b>Garbage Log</b>                       |            |           |
| <b>Oil Record Book</b>                                       |            |           | <b>Crew List</b>                         |            |           |
| <b>GAC/XCS entered</b>                                       |            |           | <b>Keys/ Pager / Cell transferred</b>    |            |           |
| <b>Vehicle license renewal Date</b>                          |            |           | <b>Trailer License renewal date</b>      |            |           |

|                   |  |              |  |
|-------------------|--|--------------|--|
| Vehicle license # |  | Vehicle KM's |  |
|-------------------|--|--------------|--|

(H) Safety Management System reviewed since last Change of Command:

|  |  |
|--|--|
| New NCR's / Observation  |  |
| Significant Incident Investigation Reports                                       |  |
| Publication Amendments: (identify only changes since the last change of command) |  |
| Fleet Safety Manual:   |  |
| CG Fleet Orders:   |  |
| Fleet Bulletin:  |  |
| CCG Technical Bulletin:  |  |
| Safety Bulletin (TC):  |  |
| Others (specify):  |  |

(I) Notations: Additional Information for completion by either Commanding officer (if insufficient space, please attach supplemental page)

.....

.....

.....

.....

.....

I, Captain, \_\_\_\_\_ have fully briefed and hereby relinquish command of CCGS \_\_\_\_\_ to Captain \_\_\_\_\_.

Having received the aforementioned briefing and information from the departing Captain, I hereby acknowledge receipt of and assume full control and command of:  
CCGS \_\_\_\_\_

Captain \_\_\_\_\_  
Commanding Officer (relieved)

Captain \_\_\_\_\_  
Commanding Officer (relieving)

Date: \_\_\_\_\_

Date: \_\_\_\_\_

## DIVING OPERATIONS CHECKLIST

CCGS \_\_\_\_\_

Date of Operation: \_\_\_\_\_

- ☐ Designated Officer selected - Name \_\_\_\_\_  
Signature \_\_\_\_\_
- ☐ Diving Supervisor – Name \_\_\_\_\_  
Signature \_\_\_\_\_
- ☐ Divers certification and logbook reviewed
- ☐ CO/Designated Officer aboard
- ☐ Collision Regs - Warning devices deployed (shapes, buoys, flags, lights)
- ☐ MCTS advised (Traffic Control / Sécurité Call)
- ☐ Engineroom notified - diving notices posted in E/R
- ☐ Engineroom systems secured & logged in E/R log – Lockouts and Tagouts
- ☐ Diving plan and contingency plans reviewed
- ☐ General announcement made
- ☐ Commencement of diving operations logged
- ☐ Completion of diving operations logged



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**HOTWORK AUTHORIZATION PERMIT**

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|   |   |
|---|---|
| HOTWORK REQUESTED BY:   | LOCATION:                               |
| PROCESSES TO BE USED:   | EXPECTED DURATION:                      |
| FIRE WATCH ASSIGNED / COMPARTMENT:  | COMPARTMENTS / TANKS / SPACES AFFECTED: |
| SECTION 1 PRE-WORK CHECKLIST COMPLETED AND ATTACHED <input type="checkbox"/>            |   |
| SECTION 2 (A OR B) EQUIPMENT INSPECTION COMPLETED AND ATTACHED <input type="checkbox"/> |   |
| <b>THIS PERMIT IS VALID FROM:</b> _____<br>Date Time                                    |   |
| <b>THIS PERMIT EXPIRES AT:</b> _____<br>Date Time                                       |   |
| AUTHORIZED BY: DATE:<br><br>Chief Engineer or delegate                                  | WORK TO BE PERFORMED BY:                |
| COOL DOWN & POST WORK CHECKS COMPLETED  |   |
| WORK COMPLETED BY: DATE:  |   |

## HOTWORK AUTHORIZATION PERMIT, CONTINUED

|   |   |
|---|---|
| <b>Section 1 - Pre-Work Checklist</b><br>(To be completed by person doing the hotwork)  |   |
| <b>GENERAL REQUIREMENTS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Protect Machinery In General Vicinity From Hotwork Operations.</li> <li><input type="checkbox"/> Remove all Combustibles in General Vicinity.</li> <li><input type="checkbox"/> Ensure Hotwork Area Is Free Of Flammable Gases And / Or Vapours.</li> <li><input type="checkbox"/> Post Warnings In Order That Personnel May Protect Themselves.</li> <li><input type="checkbox"/> Remove Access Covers And Ventilate Any Heat-Affected Compartments. Ensure Compartments Are Free Of Flammable Gases And / Or Vapours.</li> <li><input type="checkbox"/> Ensure Bearings, Armatures And Other Machinery Are Not Subjected To Welding Currents Through Improper Grounding.</li> <li><input type="checkbox"/> Advise EOW and OOW of hot work area and commencement</li> </ul> |   |
| <b>PIPE REPAIRS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Isolating Valves Closed, Drains Opened To Vent System.</li> <li><input type="checkbox"/> Pipe Source Identified To Ensure Pipe Is Oil, Vapour And / Or Gas Free.</li> <li><input type="checkbox"/> Can Pipe Work Be Removed To A Pre-Authorized Hotwork Zone?</li> </ul>   |   |
| <b>PROTECTIVE CLOTHING</b>  | <b>INSPECT JACKETS, APRONS, GLOVES, ETC. FOR:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Holes / Tears</li> <li><input type="checkbox"/> Damaged or Missing Fasteners</li> <li><input type="checkbox"/> Oil or Grease</li> </ul>   |
| <b>HEADGEAR</b>   | <b>INSPECT HELMETS AND GOGGLES FOR:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Proper Lens Shade Number</li> <li><input type="checkbox"/> Cover Plates</li> <li><input type="checkbox"/> Spatter Buildup</li> <li><input type="checkbox"/> Damage (Cracks, Burns, etc.)</li> <li><input type="checkbox"/> Cleanliness</li> </ul> |
| <b>VENTILATION EQUIPMENT</b><br>(Where Fitted in Workshops)   | <b>INSPECT VENTILATION &amp; FUME EXTRACTION EQUIPMENT FOR:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Is It Operational</li> <li><input type="checkbox"/> Damage</li> <li><input type="checkbox"/> Filters</li> </ul>   |
| <b>QUALIFIED FIRE WATCH</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> First Aid</li> <li><input type="checkbox"/> Fire Fighting</li> <li><input type="checkbox"/> Evacuation Procedures</li> <li><input type="checkbox"/> Hotwork Safety Procedures</li> </ul>  | <b>ADJACENT COMPARTMENTS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Fire Watch Required</li> <li><input type="checkbox"/> Flammables Removed</li> <li><input type="checkbox"/> Equipment Protected</li> </ul>   |
| <input type="checkbox"/> Have All Safety And Technical Aspects Been Discussed And Understood By All Personnel Involved?   |   |
| <input type="checkbox"/> Are You Confident This Operation Can Be Performed Safely?  |   |
| DATE: _____ SIGNATURE: _____  |   |

## HOTWORK AUTHORIZATION PERMIT, CONTINUED

| <b><u>Section 2A - Oxyfuel Equipment Maintenance Checklist</u></b>   |  |
|--|--|
| CYLINDERS  | INSPECT FUEL GAS AND OXYGEN CYLINDERS FOR: <ul style="list-style-type: none"> <li><input type="checkbox"/> Loose or Missing Valve Handles or Keys</li> <li><input type="checkbox"/> Valve Protection Caps</li> <li><input type="checkbox"/> Damaged or Dirty Threads</li> <li><input type="checkbox"/> Disabled Pressure Relief Devices</li> <li><input type="checkbox"/> Corrosion or Damage</li> <li><input type="checkbox"/> Legible Labelling</li> <li><input type="checkbox"/> Oil or Grease</li> </ul> |
| REGULATORS   | INSPECT FUEL GAS AND OXYGEN REGULATORS FOR: <ul style="list-style-type: none"> <li><input type="checkbox"/> Overly Tight / Loose Adjusting Screws</li> <li><input type="checkbox"/> Worn Inlet / Outlet Connections</li> <li><input type="checkbox"/> Reverse Flow Check Valves</li> <li><input type="checkbox"/> Damaged or dirty Threads</li> <li><input type="checkbox"/> Oil or Grease</li> </ul>  |
| HOSES  | INSPECT FUEL GAS AND OXYGEN HOSES FOR: <ul style="list-style-type: none"> <li><input type="checkbox"/> Proper Identification (Color)</li> <li><input type="checkbox"/> Damaged or Dirty Threads</li> <li><input type="checkbox"/> Proper Splices where Present</li> <li><input type="checkbox"/> Cuts, Nicks, Burns, or other Damage</li> <li><input type="checkbox"/> Oil or Grease</li> </ul>  |
| TORCH HANDLE   | INSPECT TORCH HANDLE FOR: <ul style="list-style-type: none"> <li><input type="checkbox"/> Reverse Flow Check Valves</li> <li><input type="checkbox"/> Overly Tight / Loose Torch Valves</li> <li><input type="checkbox"/> Damaged or dirty Threads</li> <li><input type="checkbox"/> Oil or Grease</li> </ul>  |
| ATTACHMENTS  | INSPECT WELDING AND HEATING TIPS AND CUTTING ATTACHMENTS FOR: <ul style="list-style-type: none"> <li><input type="checkbox"/> Dirty or Damaged Threads</li> <li><input type="checkbox"/> Damaged "O" Rings</li> <li><input type="checkbox"/> Overly Tight / Loose Oxygen Valves</li> <li><input type="checkbox"/> Overly Tight / Loose Cutting Handle</li> <li><input type="checkbox"/> Oil or Grease</li> </ul>   |
| LEAK TEST<br><input type="checkbox"/> Completely Assemble System, Pressurize, and Inspect for Leaks with Soapy Water |  |
| DATE:  | SIGNATURE:   |

## HOTWORK AUTHORIZATION PERMIT, CONTINUED

| <b><u>Section 2B - Electric Welding Equipment Maintenance Checklist</u></b> |  |
|---|--|
| PRIMARY POWER   | INSPECT PRIMARY POWER SUPPLY FOR: <ul style="list-style-type: none"> <li><input type="checkbox"/> Correctly Sized Breaker</li> <li><input type="checkbox"/> Correctly Sized Supply Cable</li> <li><input type="checkbox"/> Properly Wired / Insulated Receptacle or Hard Wired Installation</li> <li><input type="checkbox"/> Supply Cable Condition</li> </ul>  |
| POWER SOURCE  | INSPECT POWER SOURCE / WELDING MACHINE FOR: <ul style="list-style-type: none"> <li><input type="checkbox"/> Excessive Corrosion or Dirt</li> <li><input type="checkbox"/> Securely Fastened Cases and Panel Covers</li> <li><input type="checkbox"/> Exposed Terminals</li> <li><input type="checkbox"/> Worn / Damaged / Poorly Insulated Controls</li> </ul>   |
| CABLES  | INSPECT WELDING CABLES FOR: <ul style="list-style-type: none"> <li><input type="checkbox"/> Cuts</li> <li><input type="checkbox"/> Oil or Grease Accumulation</li> <li><input type="checkbox"/> Damaged Insulation</li> <li><input type="checkbox"/> Correct Sizing</li> <li><input type="checkbox"/> Safe Splicing where Present</li> <li><input type="checkbox"/> Frayed or Loose Connections</li> </ul> |
| GROUND CLAMP  | INSPECT GROUND CLAMP FOR: <ul style="list-style-type: none"> <li><input type="checkbox"/> Correct Sizing (Duty Cycle Rating)</li> <li><input type="checkbox"/> Oil or Grease Accumulation</li> <li><input type="checkbox"/> Damaged or Corroded Contact Pads</li> <li><input type="checkbox"/> Worn Spring or Threads</li> </ul>   |
| ELECTRODE HOLDER  | INSPECT ELECTRODE HOLDER FOR: <ul style="list-style-type: none"> <li><input type="checkbox"/> Correct Sizing (Duty Cycle Rating)</li> <li><input type="checkbox"/> Oil or Grease Accumulation</li> <li><input type="checkbox"/> Worn Parts</li> <li><input type="checkbox"/> Damaged Insulation</li> <li><input type="checkbox"/> Exposed Live Components</li> </ul>                                       |
| DATE:   | SIGNATURE:   |



## Contractor Safety and Security

### Canadian Coast Guard Fleet Safety, Security, Quality, and Environmental Requirements and Expectations for Contractors.

#### 1. Application:

This document is provided to outline the general requirements and expectations of contractors working onboard Canadian Coast Guard (CCG) ships and stations that are under the care, custody and control of the CCG.

These arrangements shall be formalized and documented in writing to impart knowledge, comprehension, acknowledgement and compliance with the requirements stated in the **Guide on the Safety Responsibilities of DFO in Relation to Contractual Agreements, Partnering & Volunteers** and **CCG Fleet Safety Manual (FSM)**.

#### 2. Objective:

To ensure compliance with all applicable federal and provincial laws concerning health and safety of employees; in particular *Part II of the Canada Labour Code*, and relevant regulations, *Maritime Occupational Health and Safety (MOHS)* and *(Canadian Occupational Health and Safety (COHS))*.

The Fleet Safety Manual (FSM) provides guidance and takes every measure possible; to reduce risks, prevent accidents, near misses, and any incident that would potentially result in injury, loss of life, damage to property or the environmental, thereby ensuring CCG due diligence and compliance with these requirements.

#### 3. Definitions:

##### **Workplace under the control of the CCG:**

When CCG employees are actively working on the site, the entire workplace is then considered to be the CCG's responsibility under *Part II of the Canada Labour Code*. The CCG's obligations in relation to the safety of the workplace under its control still apply when work is being performed by contractors and/or subcontractors. As a result, the activities of every contractor and subcontractor must not endanger the health and safety of CCG employees or the security of the vessel.

When the site is under the control of CCG, the CCG must ensure that contractors and subcontractors follow procedures that are at a minimum equivalent to those found in the FSM.

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## **Contractor Safety and Security Continued**

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### **Workplace NOT under the control of CCG:**

When the Contractor has care and custody of the site and CCG employees are only doing quality assurance (QA) work related to the contract, the worksite (vessel) is NOT considered a workplace under the control of the CCG for the purpose of the *Canada Labour Code Part II*.

#### **4. Responsibilities:**

##### **Commanding Officer or the Competent Person Designated Responsible:**

- is responsible, when the workplace is under the control of CCG, to disclose all pertinent information regarding known or foreseeable hazards at the worksite, to ensure all persons are aware of the CCG's responsibilities and to safeguard the health, safety and security, of all persons and the environment in accordance with applicable laws; and
- When the workplace is NOT of the control of the CCG, the Commanding Officer or the Competent Person Designated Responsible should be satisfied that the contractor has acceptable processes in place to prevent accidents and to reduce the risk of damage to the ship. If applicable, prior to contract start, the Contractor shall provide the CCG with documentation indicating processes for care and custody of the vessel or station, the protection of equipment, and the conduct of hazardous activities (e.g. burning and welding, confined space entry etc).

##### **Contractors:**

##### **When work is carried out aboard a CCG vessel under CCG control:**

- shall ensure that they disclose any pertinent information, agree to follow all applicable laws, and comply with the requirements of the FSM; and in particular
- that Contractor's employees and/or subcontractors engaged in general housekeeping, maintenance and/or repair activities must not commence work until they have received the contractors basic safety familiarization contained in Annex B and completed a pre-job safety assessment (PJSA).

##### **When work is carried out at a station under CCG control:**

- Contractor's employees and/or subcontractors engaged in general housekeeping, maintenance and/or repair activities must not commence work until they have received the contractors basic safety familiarization contained in Annex B.

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**All persons including Contractors:**

- have the responsibility to take all reasonable and necessary precautions including stopping the action immediately to ensure the health, safety, security of any person or damage to vessel or the environment.
- must report any injury or infraction immediately to their supervisor. Note: the CCG and the Contractor must disclose immediately to each other any such report or infraction; and
- have a responsibility to communicate any potential hazards to their own safety, the safety of others and to the safety of the vessel as they arise.

## FSM 10.A.7

## CONTRACTORS BASIC SAFETY FAMILIARIZATION

(This record shall be kept for a period of two years)

**The Commanding Officer or any Qualified Person delegated responsible**, shall ensure that contractors receive a basic shipboard or shore facilities safety familiarization and should including, but is not limited to, knowledge of the following items:

- a) Fire alarm and conduct to follow in case of fire or other emergency situations, and
- b) Off limit spaces, and
- c) Hazards encountered at the worksite (asbestos, fire fighting systems, hazardous material etc).

Date Basic Safety Familiarization completed

\_\_\_\_\_  
mm dd yyyy**Brief description of contract or work to be completed:**

From:

\_\_\_\_\_  
mm dd yyyy

To:

\_\_\_\_\_  
mm dd yyyyName  
(Print)\_\_\_\_\_  
Contractor Representative

(Print)

\_\_\_\_\_  
Competent Person, Designated Responsible

Signature:

\_\_\_\_\_  
Contractor Representative

Signature:

\_\_\_\_\_  
Competent Person, Designated Responsible

## 11.A.3

| <b><u>CERTIFICATES</u></b> |  | <b><u>Date of Issue</u></b> | <b><u>Expiry Date</u></b> | <b><u>Inter' Survey* Due</u></b> | <b><u>Action Being Taken (As appropriate)</u></b> |
|----------------------------|--|-----------------------------|---------------------------|----------------------------------|---|
| 1                          | CERTIFICATE OF REGISTRY  |                             |                           |                                  |   |
| 2                          | CARGO SHIP SAFETY CONSTRUCTION (SIC 3)   |                             |                           |                                  |   |
| 3                          | CARGO SHIP SAFETY EQUIPMENT (SIC 4)  |                             |                           |                                  |   |
| 4                          | INSPECTION CERTIFICATE (SIC 17)  |                             |                           |                                  |   |
| 5                          | INSPECTION CERTIFICATE NON-PASS'R,<150 GRT (SIC 22)                              |                             |                           |                                  |   |
| 6                          | CARGO SHIP RADIO SAFETY CERTIFICATE  |                             |                           |                                  |   |
| 7                          | RADIO INSPECTION CERTIFICATE   |                             |                           |                                  |   |
| 8                          | DECLARATION OF SHORE BASED MAINTENANCE FOR GMDSS FITTED EQUIPMENT                |                             |                           |                                  |   |
| 9                          | RADIO STATION LICENSE  |                             |                           |                                  |   |
| 10                         | CANADIAN/INTERNATIONAL OIL POLLUTION PREVENTION CERTIFICATE(Vessel over 400 GRT) |                             |                           |                                  |   |
| 11                         | ARCTIC WATERS POLLUTION PREVENTION CERTIFICATE                                   |                             |                           |                                  |   |
| 12                         | INTERNATIONAL/LOCAL LOADLINE CERTIFICATE   |                             |                           |                                  |   |
| 13                         | INTERNATIONAL TONNAGE CERTIFICATE (ITC 69)                                       |                             |                           |                                  |   |
| 14                         | LIFERAFT INSPECTION CERTIFICATES   |                             |                           |                                  |   |
| 15                         | FIRE DETECTION AND EXTINGUISHING INSPECTION CERTIFICATES                         |                             |                           |                                  |   |
| 16                         | CREWING PROFILE – MINIMUM MANNING DOCUMENT                                       |                             |                           |                                  |   |
| 17                         | SHIPS SANITATION CERTIFICATE   |                             |                           |                                  |   |
| 18                         | CALIBRATION OF OILY WATER SEPARATOR CERTIFICATE                                  |                             |                           |                                  |   |
| 19                         | SAFETY MANAGEMENT CERTIFICATE  |                             |                           |                                  |   |
|                            |  |                             |                           |                                  |   |
|                            |  |                             |                           |                                  |   |

