

# **Safety Management System Manual Guidebook**

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U.S. Coast Guard

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# Chapter 1

## Introduction

### Overview

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#### Introduction

An analysis of casualty studies concluded that over eighty percent of all high consequence marine casualties may be directly or indirectly attributable to the “human element.” These types of errors play a part in virtually every casualty, including those where structural or equipment failure may be considered the immediate cause.

Consequently, the international maritime community and the U.S. Coast Guard saw the need to emphasize shipboard safety management practices to minimize human errors or omissions.

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#### Purpose of the safety management system

The safety management system (SMS) is required by all responsible persons and their vessels that must comply with the requirements of:

- Chapter IX of the International Convention for the Safety of Life at Sea (SOLAS), 1974; and
  - International Safety Management (ISM) Code for the Safe Operation of Ships and Pollution Prevention, adopted in London on May 24, 1994.
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#### Purpose of this guide

This guide explains the purpose, objectives, and functional elements of the SMS. The accompanying SMS Manual for small passenger vessels is provided to illustrate the information required to fulfill the minimum requirements. The manual samples may be copied and/or modified as necessary to fulfill your company’s individual needs.

An electronic copy of the manual can be obtained on disk in Windows Microsoft Word format from your local U.S. Coast Guard Marine Safety Office as well as the following office:

Vessel and Facility Operating Standards Division, (G-MSO-2)  
U.S. Coast Guard Headquarters  
2100 Second Street, SW  
Washington, DC 20593-0001  
Telephone: 202-267-1181

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**Safety Management Objectives**

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The safety management objectives of the Company should:

- provide for safe practices in ship operation and a safe working environment;
  - establish safeguards against all identified risks; and
  - continue to improve the safety management skills of personnel ashore and aboard ships, including preparing for emergencies related both to safety and environmental protection.
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**Implementation**

The SMS will be implemented by ensuring compliance with:

- mandatory rules and regulations;
  - applicable codes, guidelines, and standards in compliance with Titles 33 and 46 of U.S. Law; and
  - international conventions to which the U.S. is a party (SOLAS, MARPOL, etc.).
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**Responsibility**

The safety management system must document the responsible person's:

- safety and pollution prevention policy,
  - functional safety and operational requirements,
  - recordkeeping responsibilities, and
  - reporting responsibilities.
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**Functional requirements**

The safety management system must also be consistent with the functional standards and performance elements of ISM Code. These include:

- a policy for safety and environmental protection;
  - instructions and procedures to ensure safe operation of ships and protection of the environment in compliance with relevant international and flag state legislation;
  - defined levels of authority and lines of communication between and among shore and shipboard personnel;
  - procedures for reporting accidents and non-conformities within the provisions of the ISM Code;
  - procedures to prepare for and respond to emergency situations; and
  - procedures for internal audits and management reviews.
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## Chapter 2

# Safety and Environmental Protection Policy

### Overview

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#### Introduction

This chapter contains the safety and environmental policy statement that clearly defines the company's responsibility and commitment to the policy's implementation.

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#### The "Policy"

Your company's environmental protection policy should be a concise and clear statement. The company's objectives and standards must be set at the highest level that is reasonable for the company to enforce. At the very least, the company shall comply with all mandatory rules and regulations. The policy should describe:

- the aim of the SMS and
- a strategy to achieve and maintain the aim.

Indicate the policy's interaction with existing company policies and procedures. The policy should describe how the following objectives are to be met:

- safe practices for vessel operation and a safe working environment for the type of vessel the system is developed for;
- safeguards against all identified risks; and
- avoidance of damage to property.

The policy should encourage continuous improvement in safety awareness and safety management skills. It should be signed by the owner or comparable decision-maker and should be reviewed at regular intervals to ensure that it remains relevant and effective.

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#### Implementation

A strategy for implementation should be considered at the time the policy is developed, including the best method to ensure that all employees understand its content and the senior management's commitment to its objectives.

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## Chapter 3

# Company Responsibility and Authority

### Overview

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#### Introduction

To comply with section 33 CFR 96.230 (b), a company must document the responsibility, authority, and interaction of all personnel who manage, perform, and verify work relating to and affecting safety and pollution prevention.

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#### Responsibility

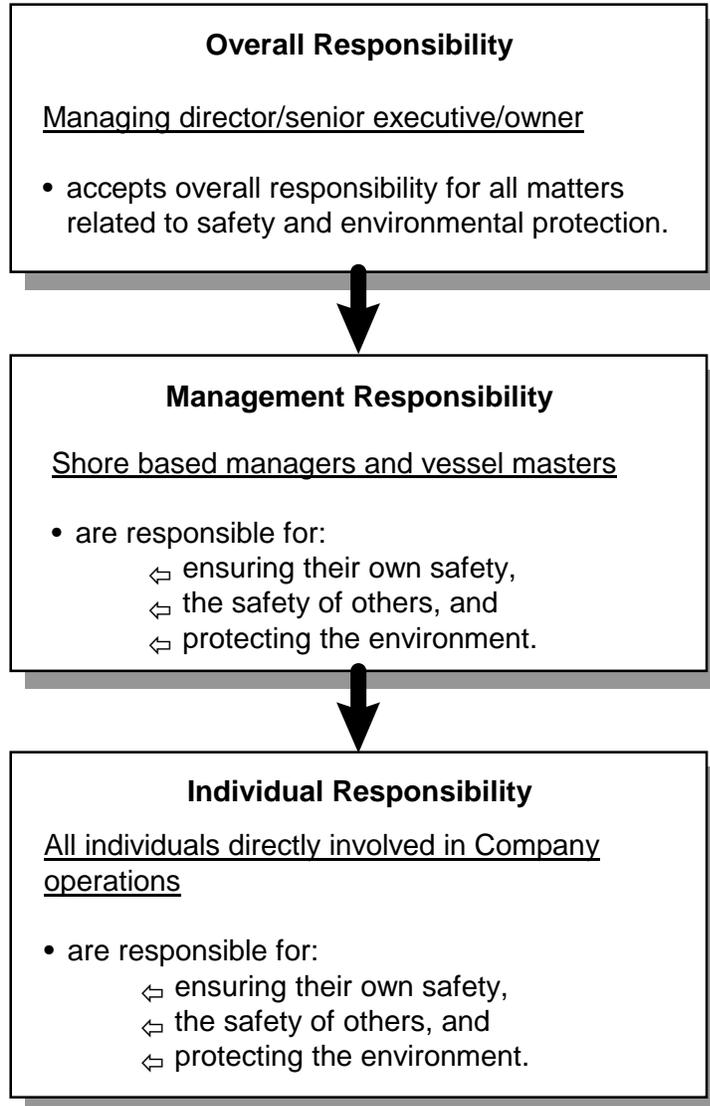
The responsibility and authority for the SMS must be clear. The following items should be included:

- appropriate details of the ship operator(s)
  - the full name and details of the entity responsible for the operation of the ship, if other than the owner, must be reported to the U.S. Coast Guard and included in the SMS manual
  - an organizational chart showing the lines of responsibility and the allocation and interrelation of authority in the SMS (See Figure 1)
    - the person(s) or position(s) with the highest authority in the development, implementation, and maintenance of the SMS and how they can be contacted
    - the person(s) or position(s) with the overall operational responsibility and authority for safety and environmental protection
    - the person(s) with routine responsibility for safety and environmental protection
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#### Note

**Do not worry if one person fills all three positions. It just means you have a simpler organizational chart.**

**Figure 1**  
**Sample Organization Chart**



**Job Descriptions**

Job descriptions for those employees responsible for any portion of the safety and environmental protection policy should be created and kept on file containing the following details:

- position (job title)
- ship, ship type, or office location should be identified, if appropriate
- immediate supervisor
- qualifications required for the position
- general responsibilities for safety and environmental protection
- specific responsibilities
- emergency responsibilities

**Allocation of Resources**

It should be stated in the SMS policy statement that adequate resources and shore-based support will be provided from the highest possible authority in the company.



## Chapter 4

# Designated Persons

### Overview

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#### Introduction

Every company, as appropriate, should designate a person(s) **ashore** with direct access to the highest level of management to:

- ensure the safe operation of each ship and
- provide a link between the company and those on board.

Although there is no stated requirement in the ISM Code to document how the company complies with this requirement, it is advisable to do so.

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#### Feasibility

In many cases, creating a position of designated person(s) could impose additional burdens on the company. The role of the designated person should be considered from the point of view of function(s) and not position. Therefore, duties and responsibilities may be allocated within the existing management structure.

Where it is not reasonably practicable to allocate these responsibilities to shore-based personnel, the company should consider alternative arrangements. For instance, crew members may be allocated the responsibilities of the designated person for their vessel. Or, in the case of a sole owner operating a single vessel, the position of designated person may be the owner.

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#### Responsibility and Authority

The Company should, in writing, state that the designated person(s) has:

- appropriate background knowledge and experience to oversee the safety management system for the company;
  - suitable qualifications and experience in the safety and pollution control aspects of ship operations;
  - competency in the company's safety and pollution control aspects and in the operation of the company and shipboard SMS;
  - access to the highest level of management ashore and aboard the company's vessel(s);
  - the independence and authority to report deficiencies observed to the highest level of management; and
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- 
- responsibility for organizing safety audits, and ensuring that corrective action has been taken.

There should be adequate answers to the designated person(s) role in the following:

- internal audits,
  - treatment of non-conformities,
  - exchange of information between vessel and office,
  - vessel visits, and
  - communication with highest level of management.
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**Qualifications**

The designated person(s) should have all of the necessary qualifications to realize the responsibilities and authorities stated by the company in their SMS.

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**Selection criteria**

Selection criteria for the appointment of designated person(s) includes, but is not limited to the following:

- position held within the company
  - management experience
  - seafaring experience
  - knowledge of the company SMS
  - knowledge of pollution prevention measures
  - academic qualification
  - language and communication skills
  - personal authority
  - commitment to SMS objectives
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## Chapter 5

# Master's Responsibility

### Overview

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#### Introduction

This chapter references the Master's responsibility and authority as specified in section 33 CFR 96.250 (d,e).

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#### Responsibility and Authority

The company should clearly define and document the master's responsibility with regard to:

- implementing the safety and environmental protection policy of the company;
  - motivating the crew in the observation of that policy;
  - issuing appropriate orders and instructions in a clear and simple manner;
  - verifying that specified requirements are observed; and
  - reviewing the SMS and reporting its deficiencies to the shore-based management, as applicable.
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#### Ability to Make Vessel Decisions

The company should prepare a written statement verifying the Master's overriding responsibility and authority to make vessel decisions specifying that the Master has:

- the ability to make decisions about safety and environmental pollution; and
  - the ability to request the company's help when necessary.
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## Chapter 6

# Resources and Personnel

### Overview

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#### Introduction

This chapter references the personnel procedures and resources available ashore and aboard ship as specified in 33 CFR 96.250(f).

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#### Requirements for Masters

The company should only appoint masters who:

- have the required level of training;
  - are medically fit;
  - hold appropriate internationally recognized certificates; and
  - are considered by the company to have the competence to command the type of vessel to which they are to be assigned.
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#### Personnel

The effectiveness of the SMS will depend upon the commitment and motivation of the shipboard personnel. The company should consider the following when addressing personnel in the context of the SMS:

- the trade in which the ship is engaged and the crew's workload;
  - the skills required by the crew for the safe execution of the tasks they are expected to perform in normal operations and during emergencies;
  - the awareness of the crew with respect to their SMS duties; and
  - the availability of appropriate records of qualifications and medical fitness.
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#### Relevant Rules

All personnel involved in ship operation should become familiar with minimum regulations dealing with aspects of safe ship operation and pollution prevention that are incorporated in and published as national legislation (i.e., SOLAS, MARPOL) or 46 CFR Subchapter T.

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#### Training

Safety training drills should be carried out in accordance with the procedures and requirements laid down in the SMS. In order to ensure that crew members meet the company's SMS standard and gain confidence in controlling situations that are likely to arise should an emergency occur, drills should cover a likely emergency.

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**Information on the SMS**

The company should provide employees with copies of the relevant provisions of the SMS including a direct correlation to their responsibilities.

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**Communication**

The company should ensure that all crew members are able to communicate effectively with other crew members and passengers. Effective communication between the crew and their passengers can be crucial in the outcome of an emergency situation.

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## Chapter 7

# Vessel Operating Procedures

### Overview

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#### Introduction

The company should establish procedures that detail the plans and instructions for key vessel operations concerning the safety of the ship and the prevention of pollution. The various tasks involved should be defined and assigned to qualified personnel. This information should be easily understood by all relevant shipboard personnel.

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#### Hints and Suggestions

All written procedures, instructions, or plans should be kept simple and unambiguous. Checklists may help to guarantee that all routines in a particular operational phase are covered. If plans are already developed and being used by the company, the company should verify each plan's completeness and reference to it in the SMS.

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#### Areas to Be Covered

##### Regulatory

Certification of Inspection - 46 CFR 176

Certificates and Documentation - SOLAS

Discharge of Oils and Garbage - 33 CFR 151

Working Hours - 46 CFR 15.710

Personnel Management and Standards - 46 CFR 10

On Board Medical Arrangements - 46 CFR 184.710, 160.041

Checking Stability - 46 CFR 185.315, 185.340

Assessment of Weather Conditions - 46 CFR 185.304

Securing Loading Doors, Hatches, and All Openings - 46 CFR 185.330, 185.335

Pre-Underway Checklist - 46 CFR 185.320

Voyage Plan and Verification of Nautical Charts and Publications - 46 CFR 184.420, 185.503; 33 CFR 62.21

Loading and Discharging Passengers - 46 CFR 185.506, 185.504

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Fueling and Ventilation Requirements for Gas Powered Vessels - 46\_ CFR 182.460

Bridge Watchkeeping Arrangements - Rule 5, Inland Navigational Regulations for Preventing Collisions at Sea, 1972; and Rule 5, Inland Navigational Rules Act of 1980 (33 U.S.C. 2005)

Other Watchkeeping Arrangements - 46 CFR 15.705; Rule 5, Inland Navigational Regulations for Preventing Collisions at Sea, 1972; and Rule 5, Inland Navigational Rules Act of 1980 (33 U.S.C. 2005)

Special Requirements for Bad Weather and Fog - 46 CFR.510, 185.512

Non Regulatory

Master's Standing Instructions\_

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## Chapter 8

# Emergency Preparedness

### Overview

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#### General

The company should establish procedures to prepare for various emergencies involving pollution and the safety of the vessel, crew, and passengers. The various tasks involved should be defined and assigned to qualified personnel.

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#### ISM Code Requirements

Written procedures for emergency preparedness must be made available to all company personnel, both shore and vessel based. The procedures should:

1. Identify, describe, and direct response to potential emergency shipboard situations.
  2. Establish programs for drills and exercises to prepare for emergency actions.
  3. Provide measures to ensure that the company's organization can respond at anytime to hazards, accidents, and emergency situations involving their vessel(s).
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#### Areas to Be Covered

##### Regulatory

Fire Fighting Drills and Training - 46 CFR 185.524

Abandon Ship and Man Overboard Drills and Training - 46 CFR 185.512, 185.520, 180.210

Discharge of Oil, Garbage, and Response to Pollution - MARPOL 73/78 Regulation 26, Protocol I

Fire - 46 CFR 185.524

Flooding and Flood Control - 46 CFR 182.500-530

Man Overboard - 46 CFR 185.510

First Aid - 46 CFR 184.710, 160.041

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## Chapter 9

# Reporting Procedures

### Overview

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#### Introduction

The company should include procedures in the SMS to ensure that hazardous situations, accidents, non-conformities, and discharges of oil and garbage are reported, investigated, and analyzed. The company should also ensure that corrective actions are implemented and verified.

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#### Policy and Schedule

The reporting of accidents, hazardous situations, and discharges of oil and garbage should be done in a timely manner. Corrective measures taken should improve safety and pollution prevention. Procedures and responsibilities for reporting these events will be clearly established.

Non-conformities may be identified by any crew member at any time or during an SMS internal audit. Non-conformity reports should be available for use by any crew member who identifies a non-conformity. This form describes the non-conformity, proposed corrective actions, and corrective actions taken. It lists and has the signatures of the person(s) involved in the detection and correction of the non-conformity. Corrective action procedures should be established within the Operating Procedures of the company's SMS.

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#### Areas to Be Covered

##### Regulatory

Accident, Injury, or Death - 46 CFR 185 Subpart B

Hazardous Condition - 46 CFR 185.304

Discharge of Oils - 33 CFR 151.15

Discharge of Garbage - 33 CFR 151.15

##### Non-Regulatory

Non-Conformity

Injuries (non-Reportable)

Accidents (Non-Reportable)

Near-Miss Casualties

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# Chapter 10

## Maintenance

### Overview

#### Introduction

The Company should ensure that maintenance procedures as well as the procedures for each vessel are implemented according to the requirements of 33 CFR 96.250(j).

#### Implementation

The company ensures that each ship:

- is maintained in accordance with relevant rules and regulations, including additional company requirements;
- holds inspections at appropriate intervals;
- reports non-conformities with possible cause (if known);
- takes corrective actions; and
- maintains records of inspections, non-conformities, and corrective actions.

#### Areas To Be Covered

##### Regulatory

Drydock and internal examinations - 46 CFR 176.600 through 670

Hull inspection - 46 CFR 176.802

Machinery inspection - 46 CFR 176.804

Electrical inspection - 46 CFR 176.806

Lifesaving Equipment inspection and maintenance - 46 CFR 176.808, Part 185 Subpart G

Firefighting Equipment inspection and maintenance - 46 CFR 176.810, 181.120, NFPA 10

Pressure Vessel and Boiler inspections - 46 CFR 176.812

Steering System inspection - 46 CFR 176.814

Miscellaneous Systems and Equipment inspections - 46 CFR 176.816

**Areas To Be Covered**  
**(continued)**

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Sanitary inspections - 46 CFR 176.818

Inspection for Unsafe Practices - 46 CFR 176.830

Repairs and Alterations - 46 CFR 176.700 through 710

ISM

Source of spare parts

Non Regulatory

Equipment maintenance not covered in regulations shall be to the manufacturers recommendations. At a minimum, the following items should be covered:

Propulsion engine(s) lubrication and other preventative maintenance

Steering gear preventative maintenance

Battery maintenance

Navigation equipment maintenance

Ground tackle maintenance

Equipment marking maintenance

Passenger and crew space maintenance

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# Chapter 11

## Documentation

### Overview

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#### Introduction

In accordance with 33 CFR 96.250(k), a company should develop policies to control all documents and data relating to the SMS. All valid documents need to be available in appropriate, designated locations. Changes to documents should be reviewed and approved by authorized personnel, at which time, outdated versions will be promptly destroyed.

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#### Document Maintenance

Control and maintenance of the SMS documentation is important to the effectiveness of the system. SMS documentation includes only what is necessary to cover the application of the system and is organized in a clear and effective way. On board the vessel, the master is responsible for the control of these documents. A designated person ashore should also monitor the SMS documents.

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#### Document Changes

Revisions to existing documents should be readily identifiable, and relevant personnel, including personnel ashore, should be notified of all changes. Personnel affected by each change should be involved in defining and implementing new policies. Obsolete documents should be removed and destroyed. Only the person responsible for the documentation control should retain copies of obsolete documents.

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#### Required Documents

A listing of all required documents can be found in Table 96.250 of 33 CFR (see following page).

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**33 CFR Table 96.250**

Type of Documents and Reports	Specific Requirements
a) Safety and Environmental policy statements	(1) Meet the objectives of 33 CFR 96.230; and (2) Are carried out and kept current at all levels of the company.
b) Company responsibilities and authority statements	(3) The owners name and details of responsibility for operation of the company and vessel(s); (4) Name of the person responsible for operation of the company and vessel(s), if not the owner; (5) Responsibility, authority, and interrelations of all personnel who manage, perform, and verify work relating to and affecting the safety and pollution prevention operations of the company and vessel(s) and; (6) A statement describing the company’s responsibility to ensure adequate resources and shore-based support are provided to enable the designated person or persons to carry out the responsibilities of this subpart.
c) Designation in writing of a person or persons to oversee the safety management system for the company and vessel(s).	(7) Have direct access to communicate with the highest levels of the company and with all management levels ashore and aboard the company’s vessel(s); (8) Have the written responsibility to monitor the safety and environmental aspects of the operation of each vessel; and (9) Have the written responsibility to ensure there are adequate support and shore-based resources for vessel(s) operations.
d) Written statements that define the Master’s responsibilities and authorities.	(10) Carry out the company’s safety and environmental policies; (11) Motivate the vessel’s crew to observe the safety management system policies; (12) Issue orders and instructions in a clear and simple manner; (13) Make sure that specific requirements are carried out by the vessel’s crew and shore-based resources; and (14) Review the safety management system and report non-conformities to shore-based management
e) Written statements that the Master has overriding responsibility and authority to make vessel decisions.	(15) Ability to make decisions about safety and environmental pollution; and (16) Ability to request the company’s help when necessary
f) Personnel procedures are resources which are available ashore and aboard ship.	(17) Masters of vessels are properly qualified for command; (18) Masters of vessels know the company’s safety management system; (19) Owners of companies provide the necessary support so that the Master’s duties can be safely performed; (20) Each vessel is properly crewed with qualified, certificated, and medically fit seafarers complying with national and international requirements; (21) New personnel and personnel transferred to new assignments involving safety and protection of the environment are properly introduced to their duties; (22) Personnel involved with the company’s safety management system know the relevant rules, regulations, codes, and guidelines; (23) Needed training is identified to support the safety management system and ensure that the training is provided for all personnel concerned; (24) Communication of relevant procedures for the vessel’s personnel involved with the safety management system is in the language(s) understood by them; and (25) Personnel are able to communicate effectively when carrying out their duties as related to the safety management system.

Type of Documents and Reports	Specific Requirements
g) Vessel safety and pollution prevention operation plans and instructions for key shipboard operations	(1) Define tasks; and (2) Assign qualified personnel to specific tasks.
h) Emergency preparedness procedures	(3) Identify, describe, and direct response to potential emergency shipboard situations; (4) Set up programs for drills and exercises to prepare for emergency actions; and (5) Make sure that the company's organization can respond at anytime, to hazards, accidents, and emergency situations involving their vessel(s).
i) Reporting procedures on required actions	(6) Report non-conformities of the safety management system; (7) Report accidents; (8) Report hazardous situations to the owner or company; and (9) Make sure reported items are investigated and analyzed with the objective of improving safety and pollution prevention.
j) Vessel maintenance procedures. (These procedures verify that a company's vessel(s) is maintained in conformity with the provisions of relevant rules and regulations, with any additional requirements which may be established by the company.)	(10) Inspect vessel's equipment, hull, and machinery at appropriate intervals; (11) Report any non-conformity with its possible cause, if known; (12) Take appropriate corrective actions; (13) Keep records of these activities; (14) Identify specific equipment and technical systems that may result in a hazardous situation if a sudden operational failure occurs; (15) Identify measures that promote the reliability of the equipment and technical systems identified in paragraph (j)(5), and regularly test standby arrangements and equipment or technical systems not in continuous use; and (16) Include the inspections required by this section into the vessel's operational maintenance routine.
k) Safety management system document and data maintenance.	(17) Procedures which establish and maintain control of all documents and data relevant to the safety management system; (18) Documents are available at all relevant locations; i.e., each vessel carries on board all documents relevant to that vessel's operation; (19) Changes to documents are reviewed and approved by authorized personnel; and (20) Outdated documents are promptly destroyed.
l) Safety management system internal audits which verify the safety and pollution prevention activities.	(21) Periodic evaluation of the safety management system's efficiency and review of the system in accordance with the established procedures of the company, when needed; (22) Types and frequency of internal audits, when they are required, how they are reported, and possible corrective actions, if necessary; (23) Determining factors for the selection of personnel, independent of the area being audited, to complete internal company, and vessel audits; and (24) Communication and reporting of internal audit findings for critical management review and to ensure management personnel of the area audited take timely and corrective action on deficiencies found.

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## Chapter 12

# Company Verification and Review

### Overview

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#### Introduction

A policy should be developed to ensure that procedures developed within the SMS are followed properly and in accordance with regulations.

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#### Policy

Periodic evaluations should be scheduled to examine the efficiency of the SMS and to review the system in accordance with the established procedures of the company. The methods for communicating the findings of the internal audits should be established to enable critical management review and to ensure management personnel of the area audited make and document timely corrections of deficiencies found.

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#### Internal Audit

The internal audit provides the company with a tool to guarantee that the SMS currently implemented is being enforced and maintained throughout the company. A designated person should ensure that scheduled audits are performed and any non-conformities are documented and remedied.

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