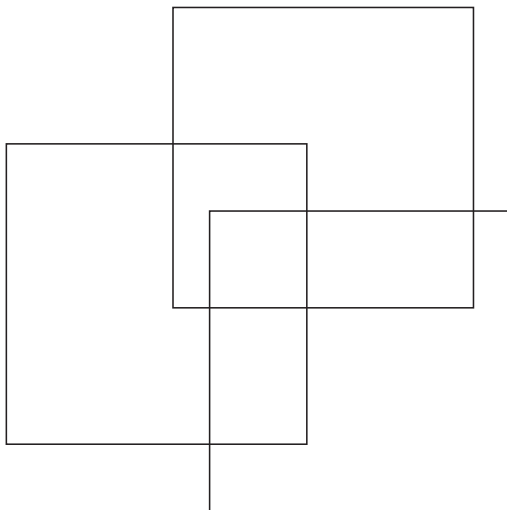




Guidelines for implementing the occupational safety and health provisions of the Maritime Labour Convention, 2006¹



Geneva, 2014

Sectoral
Policies
Department

International
Labour
Standards
Department

¹ These guidelines will be submitted to the March 2015 session of the Governing Body of the ILO for its consideration.

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INTERNATIONAL LABOUR ORGANIZATION

**Sectoral Policies Department
International Labour Standards Department**

**Guidelines for implementing the occupational
safety and health provisions of the Maritime
Labour Convention, 2006**

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INTERNATIONAL LABOUR OFFICE, GENEVA

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1. Introduction

1.1. Purpose of the guidelines

1. The purpose of these guidelines is to assist States to implement the occupational safety and health provisions of the Maritime Labour Convention, 2006 (MLC, 2006) of the International Labour Organization (ILO). They are intended to provide supplementary practical information to flag States to be reflected in their national laws and other measures to implement Regulation 4.3 and the related Code of the MLC, 2006, as well as other relevant provisions under Regulations 3.1 and 1.1. It must be emphasized that the guidelines are intended as a practical resource to be used by any government which finds them helpful. In all cases, the relevant national laws or regulations, collective bargaining agreements or other measures to implement the MLC, 2006, in the flag State should be viewed as the authoritative statement of the requirements in that State.

1.2. The ILO's work in the maritime sector

2. The ILO recognizes the special needs of seafarers whose working life is at sea and has sought to ensure safe and healthy working conditions in the maritime industry ever since its first maritime labour standard was adopted in 1920. The Organization's work in the maritime sector continues to bring together representatives of governments and shipowners' and seafarers' organizations in order to develop international standards and policies to promote decent working conditions for all seafarers and fair competition for shipowners.
3. Over 40 ILO Conventions have been adopted and numerous other instruments, codes of practice and guidelines have been drafted on occupational safety and health (OSH) since the ILO's creation in 1919. Some of these are sector-specific, such as the ILO code of practice on accident prevention on board ship at sea and in port.¹ Further occupational safety and health provisions are set out in instruments adopted by the International Maritime Organization (IMO).
4. The MLC, 2006 was adopted by the 94th (Maritime) Session of the International Labour Conference (ILC) in February 2006. It includes Regulation 4.3 – Health and safety protection and accident prevention – and the related Code (Standard A4.3 and Guideline B4.3), which have the stated purpose: “To ensure that seafarers’ work environment on board ships promotes occupational safety and health”.² In addition, the Convention contains a number of provisions that address safety and health in connection with on-board accommodation (Regulation 3.1) and seafarers under the age of 18 (Standard A1.1 – Minimum age).

¹ ILO: *Accident prevention on board ship at sea and in port*, second edition, 1996, http://www.ilo.org/safework/info/standards-and-instruments/codes/WCMS_107798/lang--en/index.htm or subsequent versions.

² Explanatory note to the Regulations and Code of the Maritime Labour Convention, 2006, is provided in Appendix I, and the full text of Articles III and IV, and Regulations 1.3, 3.1 and 4.3, Standard A4.3 and Guideline B4.3, are provided in Appendix II.

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5. The MLC, 2006, applies to all seafarers. A seafarer is defined as “any person who is employed or engaged or works in any capacity on board a ship to which this Convention applies”.³ This includes those involved in navigating or operating the ship, as well as persons such as hotel and catering staff working on board.⁴ Because seafarers both live and work on board ships, OSH requirements are also linked to other provisions of the MLC, 2006, such as Regulation 3.1 and the related Code with respect to accommodation and recreational facilities, and Regulation 1.1 and the related Code with respect to minimum age.⁵

1.3. Occupational safety and health

6. Occupational safety and health is generally defined as the science of the anticipation, recognition, evaluation and control of hazards arising in, or from, the workplace that could impair the safety, health and well-being of workers.⁶ This includes the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations. It also takes into account the possible impact on the surrounding communities and the general environment. The central focus of OSH is to assess and manage occupational risks through the application of preventive and protective measures. The topic is complex, covering many different areas of activity and concerning standards that frequently need to be adjusted in line with changes in technology and research regarding potential workplace risks for human health.
7. Concerns about occupational hazards have had an impact on contemporary approaches to promoting effective OSH. The 2009 ILO General Survey on the Occupational Safety and Health Convention, 1981 (No. 155), and Recommendation (No. 164),⁷ explains that these instruments underscore that an ideal goal for effective OSH would be total prevention, implying a constant effort to improve worker protection.
8. The maritime working environment comprises the physical, ergonomic, chemical, biological, psychological and social elements which could lead to occupational accidents, injuries and diseases. Seafarers face demanding working conditions, isolation, long hours of work, rigid organizational structures and high levels of stress and fatigue. They must also learn to communicate with others in multinational crews.⁸ Consideration should be given to challenges connected to the structural development of the composition of the

³ MLC, 2006, Article II, para. 1(f).

⁴ See resolution concerning information on occupational groups (No. VII) adopted at the 94th (Maritime) Session of the International Labour Conference.

⁵ See Appendix II.

⁶ ILO: *General Survey concerning the Occupational Safety and Health Convention, 1981 (No. 155), the Occupational Safety and Health Recommendation, 1981 (No. 164), and the Protocol of 2002 to the Occupational Safety and Health Convention, 1981*, Report III (Part 1B), International Labour Conference, 98th Session, Geneva, 2009, (“General Survey on ILO standards on occupational safety and health”), http://www.ilo.org/ilc/ILCSessions/98thSession/ReportsubmittedtotheConference/WCMS_103485/lang--en/index.htm.

⁷ *ibid.*

⁸ Studies on the various issues related to the transnational composition of ship crews are available on the Seafarers’ International Research Centre website, http://www.sirc.cf.ac.uk/SIRC_free_online_reports.aspx.

crew, especially regarding crews with different nationalities and cultural backgrounds. This should be recognized when developing a safety culture on board.

9. Alcohol and drug abuse, violence and harassment, and infectious diseases are further potential problems. International labour standards, national laws, codes of practice and other specialized guidance documents provide information on the types of hazards that may be encountered on ships and the relevant preventive and protective measures to help ensure that the working and living environment for seafarers is as safe and healthy as possible. Certain occupational exposures are diffuse and of low intensity, and may be the origin of certain diseases that may appear years after the end of exposure.
10. Shipping is perceived to be a relatively dangerous industry. However, there is a lack of statistics in the area of Maritime Occupational Safety and Health (MOSH) due to the limited accessibility and reliability of reports of occupational accidents, incidents and diseases in flag States. This is mostly as a result of significant differences in data collection methodologies, poor recording, limited coverage, and limited statistics on the overall seafarer population. Despite the national reporting requirements under ILO occupational safety and health Conventions, comprehensive statistics concerning occupational accidents, injuries and diseases are very difficult to find.

1.4. Economic incentives to implement the OSH provisions of the MLC, 2006

11. Seafarers must be physically and mentally healthy to be able to work safely and productively. Furthermore, in view of the shortage of qualified seafarers in some countries, many shipowners recognize the competitive advantage of improving safety on board ships to retain experienced seafarers and to attract young women and men to work in the maritime sector.
12. The ILO has estimated that, every day, 6,300 people die as a result of occupational accidents or work-related diseases – more than 2.3 million deaths per year.⁹ The human cost can be devastating to workers' families and their communities, while the economic burden of poor OSH practices is estimated at 4 per cent of global gross domestic product each year.¹⁰ There is significant evidence that, in the long term, the most successful and competitive companies are those with the best OSH records, with healthy workers.
13. OSH measures should not be seen as an economic cost but as an investment in continuous improvement to the occupational safety and health of seafarers.

1.5. Understanding the OSH requirements under the MLC, 2006

14. The MLC, 2006 is generally considered to be the “fourth pillar” of the international regulatory regime for shipping, complementing the key instruments of the IMO, namely:

⁹ ILO: *Estimating the economic costs of occupational injuries and illnesses in developing countries: Essential Information for decision-makers*, ILO Programme on Safety and Health at Work and the Environment (SafeWork), 2012, http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_207690.pdf.

¹⁰ Figures taken from: ILO: *Safety and health at work*, <http://www.ilo.org/global/topics/safety-and-health-at-work/lang--en/index.htm>.

the International Convention for the Safety of Life at Sea, 1974, as amended (the “SOLAS Convention”); the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (the “STCW Convention”); and the International Convention for the Prevention of Pollution from Ships, 1973, as amended (the “MARPOL Convention”). When implementing the MLC, 2006, in addition to the existing ILO instruments, all relevant IMO instruments (such as the International Safety Management (ISM) Code¹¹) should be taken into account. Many countries and industry organizations have also developed comprehensive OSH regulatory systems and technical guidance which incorporate provisions of the IMO instruments. These provide useful examples for national approaches to the management of occupational safety and health on ships.¹²

15. The MLC, 2006, reflects the ILO’s long-standing commitment to the right of all workers, including seafarers, to decent, safe and healthy working and living conditions.

Box 1

MLC, 2006, Article IV: Seafarers’ Employment and Social Rights

1. Every seafarer has the right to a safe and secure workplace that complies with safety standards.
2. Every seafarer has a right to fair terms of employment.
3. Every seafarer has a right to decent working and living conditions on board ship.
4. Every seafarer has a right to health protection, medical care, welfare measures and other forms of social protection.
5. Each Member shall ensure, within the limits of its jurisdiction, that the seafarers’ employment and social rights set out in the preceding paragraphs of this Article are fully implemented in accordance with the requirements of this Convention. Unless specified otherwise in the Convention, such implementation may be achieved through national laws or regulations, through applicable collective bargaining agreements or through other measures or in practice.

16. An ILO handbook¹³ provides suggestions regarding provisions which could be used by member States to implement the main legal requirements of the MLC, 2006.¹⁴ However, in line with the requirements in Regulation 4.3, paragraphs 2 and 3, the guidance takes into account the need for governments, after consultation with the representative shipowners’ and seafarers’ organizations, to develop the details in guidelines, laws and regulations or other measures to address the particular issues identified in the Code.¹⁵ Governments may also find it useful to consider the relevant sections of the report form for the MLC, 2006, prepared in accordance with article 22 of the ILO Constitution.¹⁶ Finally, the

¹¹ International Maritime Organization (IMO): International Safety Management Code, 2010, (ISM Code), <http://www.imo.org/OurWork/HumanElement/SafetyManagement/Pages/ISMCode.aspx>.

¹² See the list of selected references in Appendix II and the relevant EU Directives in Appendix III.

¹³ ILO: *Handbook: Guidance on implementing the Maritime Labour Convention, 2006 – Model National Provisions*, http://www.ilo.org/global/standards/maritime-labour-convention/WCMS_170389/lang--en/index.htm.

¹⁴ See Appendix IV, Extracts from the ILO model national legal provisions.

¹⁵ See Appendix V, International instruments and other technical guidance relevant to the implementation of OSH on board ships.

¹⁶ See http://www.ilo.org/dyn/normlex/en/f?p=1000:51:0::NO:51:P51_CONTENT_REPOSITORY_ID:3056252.

ILO guidance on flag and port State inspections for compliance with the Convention may also be useful when implementing Regulation 4.3 and Standard A4.3.¹⁷

1.6. Enforcement provisions

17. Enforcement and compliance requirements are set out in both Article V and Title 5 of the Convention. Health and safety and accident prevention is one of the inspection items listed in Appendix A5-I of the Convention. Ships must be inspected by flag States, either by their government inspectors or authorized recognized organizations. Ships of 500 gross tonnage or over which are engaged in international voyages, or voyages between, or from, foreign ports, are required to carry a Maritime Labour Certificate certifying that the working and living conditions of seafarers on the ship, including measures for ongoing compliance to be included in a Declaration of Maritime Labour Compliance (DMLC) attached to the certificate, have been inspected and meet the requirements of national laws or regulations or other measures implementing the Convention.¹⁸
18. Part I of the DMLC is to be completed by the flag State and contains references to the relevant national requirements, including national provisions on health and safety and accident prevention for seafarers. Part II of the DMLC documents the measures the shipowner has put in place to ensure ongoing compliance with flag State requirements, inspections and continuous improvement on the ship.
19. As noted, the ILO has also developed guidelines for flag State inspections and port State control inspections under the MLC, 2006. Ships visiting foreign ports may be subject to inspection by port State control authorities for compliance with the Convention.
20. Ships from States that have not ratified the MLC, 2006, must not receive more favourable treatment than those from countries that have ratified it.¹⁹

¹⁷ See ILO: *Guidelines for flag State inspections under the Maritime Labour Convention, 2006* (http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---normes/documents/publication/wcms_101788.pdf), in particular Chapter 3, and ILO: *Guidelines for port State control officers carrying out inspections under the Maritime Labour Convention, 2006*. (http://www.ilo.org/wcmsp5/groups/public/@ed_norm/@normes/documents/publication/wcms_101787.pdf), in particular Chapter 4.

¹⁸ See the list of areas in the MLC, 2006, Appendix A5-I, read together with Standard A5.1.3, para. 1.

¹⁹ MLC, 2006, Article V, para. 7.

2. Understanding OSH principles and their application in the maritime sector

2.1. Definition of hazards and risks

21. This chapter focuses on understanding OSH principles to assess and manage occupational risks through the application of preventive and protective measures.
22. In this context, the difference between a “hazard” and a “risk” should be clearly defined:
- (a) A **hazard** is the inherent potential to cause injury, harm or damage to a seafarer’s health. It can come from many sources, for example intrinsic properties, situations, potential energy, the environment or human factors.
 - (b) A **risk** is the likelihood that a seafarer will be harmed or experience adverse health effects or that property will be damaged if exposed to a hazard.
23. The relationship between hazards and risks is dependent on the nature of the exposure, including the length of time and intensity, and the effectiveness of control measures. The basic process of hazard and risk reduction is the core principle governing OSH. For all areas of human activity, a balance has to be struck between the benefits and the costs of risk-taking. In the case of OSH, this complex balance is influenced by many factors, such as scientific and technological progress, changes in the working environment and economic trends.

2.2. Risk assessment

24. The essential purpose of OSH is to prevent occupational accidents, injuries and diseases by managing occupational hazards and risks. Procedures for hazard identification and risk assessment have to be conducted to identify what could cause harm to seafarers and property and the environment, especially the working environment, so that appropriate preventive and protective measures can be developed and implemented. The five-step generic risk assessment method shown below¹ illustrates the risk management process. Gathering and analysing reliable data and statistics play a key role in conducting risk assessment effectively.

Box 2	
Five-step risk management process	
Step 1.	Identify the hazards
Step 2.	Identify who might be harmed and how
Step 3.	Evaluate the risk – identify and decide on the safety and health risk control measures
Step 4.	Record who is responsible for implementing which control measure, and the time frame
Step 5.	Record the findings, monitor and review the risk assessment, and update when necessary

¹ ILO: *A 5 Step Guide: For employers, workers and their representatives on conducting workplace risk assessments*, http://www.ilo.org/safework/info/publications/WCMS_232886/lang-en/index.htm.

25. Generally identified risks may be assessed using a risk methodology, for example a risk matrix, to determine the level of risk on the basis of the probability of occurrence and the seriousness of the consequences. The risk assessment process should be flexible enough to be adapted to the operations of an entire ship, to specific work units and to available resources and skills. Assessment of occupational risks is a crucial element in selecting effective preventive and protective measures to plan and organize work and to reduce exposure to hazards. Risk assessments should be reviewed when working methods, processes or personnel are changed, or when there is a change in shipowner, to ensure that safety procedures are appropriate and are implemented. It is also important to review risk assessments after investigations of accidents and incidents and analyses of hazardous situations, to ensure that systems and procedures are improved to prevent future problems.

Example of a risk matrix

Probability (likelihood) of event happening	Potential severity or consequences of an event		
	Slightly harmful	Moderately harmful	Very harmful
Low probability	Low risk	Low risk	Medium risk
Probable	Low risk	Medium risk	High risk
Highly probable	Medium risk	High risk	High risk

26. “Safety culture” has many definitions but could be perceived as the product of the individual and group values, attitudes, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organization’s health and safety programmes.² Involving all members of the work team in the five-step risk assessment process is an integral part of good safety culture, and makes implementation easier and more effective as everyone takes ownership of their own and each other’s safety and health. All seafarers in the relevant department should have, among them, adequate knowledge, experience or skills to participate in the assessment and follow its recommendations to work safely.

2.3. Principles of prevention

27. The ILC adopted at its 91st Session (2003) a global strategy on occupational safety and health designed to promote the implementation of ILO OSH standards.³ The strategy emphasized the need for tripartite participation and national action to adopt a preventive approach to OSH, which is key to achieving lasting improvements in safety and health at work. Similarly, the MLC, 2006, endorses the implementation of preventive measures, programmes, inspection and reporting systems for the management of OSH on board ships.⁴ Preventive principles involve combating risk at the source, adapting work to the individual – especially in the design of workplaces – and replacing the dangerous by the non-dangerous or the less dangerous. Prevention should take precedence over protective

² United Kingdom Health and Safety Commission: *Third report: Organizing for safety*, ACSNI Study Group on Human Factors (London, HMSO, 1993).

³ ILO: *Global strategy on occupational safety and health*, Conclusions adopted by the International Labour Conference at its 91st Session, Geneva, 2003, http://www.ilo.org/safework/info/policy-documents/WCMS_107535/lang--en/index.htm.

⁴ MLC, 2006, Standard A4.3, para. 1.

equipment for seafarers.⁵ The instruments adopted since 1981 strongly emphasize the principle of preventive measures, while personal protective equipment (PPE) is considered a last resort when exposure to risks cannot be prevented, minimized or eliminated.

- 28.** Prevention principles are based on collective, rather than individual, preventive methods. The preferred sequence or hierarchy of collective risk control measures is:
- (1) elimination;
 - (2) substitution;
 - (3) isolation or combating of risk at the source;
 - (4) technical or engineering controls; and
 - (5) organizational measures.
- 29.** Technical control measures could include automation, closed systems, ventilation, local extraction and encapsulation of the workplace. The choice of working methods and tools also has a major impact on the level of exposure.
- 30.** Organizational measures could include separating a workplace from other workplaces, appropriate maintenance of equipment, provision of special instructions and limiting working time on a job.
- 31.** Use of PPE depends upon human response and should only be used as a sole measure when all other options have been exhausted. It should be:
- properly assessed before use to make sure it is fit for purpose;
 - maintained and stored properly;
 - provided with instructions on how to use it safely; and
 - used correctly by seafarers.

The competent authority should consider establishing clear criteria for considerations to be made for the use of PPE.

2.4. OSH management systems

- 32.** OSH management systems may provide a means for assessing and improving seafarers' safety and health through the management of occupational hazards and risks. They can be

⁵ MLC, 2006, Guideline B4.3.1, para. 3. This hierarchy in the implementation of preventive measures is at the core of OSH principles and is included in many regulations and guidelines, among them the ILO *Guidelines on occupational safety and health management systems* (ILO-OSH 2001). Another good example is the European Union's *Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work*, <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01989L0391-20081211&qid=1403702359336>.

based on the principle of the “plan-do-check-act” (PDCA) approach, designed to continuously monitor performance.⁶

- (1) **Plan** involves the setting of an OSH policy, including the allocation of resources, acquisition of skills and organization of the system, and hazard identification and risk assessment.
 - (2) **Do** refers to the actual implementation and operation of the OSH programme.
 - (3) **Check** means measuring both the active and reactive performance of the programme.
 - (4) **Act** closes the cycle with a review of the system for the purposes of continual improvement and priming of the system for the next cycle.
- 33.** The PDCA approach supports the implementation of OSH management systems in organizations by helping them to adapt to changing circumstances and make continuous safety improvements. PDCA principles can be applied to OSH management, assignment of responsibilities, demonstration of skills and competence, and compliance with safety regulations on board ships. ILO documentation and other industry guidance provide information on detailed risk-assessment procedures.
- 34.** The principles and systems described above apply to all workplaces. Occupational risk-assessment processes are essential to OSH laws, regulations and other guidance whose ultimate objective is to protect the safety and health of workers. To ensure continuous improvement in safety, the competent authority should ensure that shipowners develop OSH management systems and risk-assessment procedures to provide a safe occupational environment for seafarers on ships that fly their flag.⁷
- 35.** The ISM Code provides for safety management on board the ships for which it applies. The safety management system may not in itself cover all aspects of seafarer safety and health as required by the MLC, 2006, for example with respect to disease prevention. However, a shipowner may develop that system to do so. Duplication should be avoided.

2.5. Continuous improvement

- 36.** To facilitate continuous improvement of occupational safety and health policies and programmes for risk assessment and preventive measures the competent authority and shipowner should take into account changes in technology and maritime research. This is necessary to continue to provide a safe occupational environment for seafarers on ships that fly their flag. A risk assessment should be updated whenever changes are made to the job, working methods and processes, etc. that are of importance to occupational safety and health on board ship. Continuous improvement also requires regular reviews to be carried out for risk assessment of jobs on board and when a near incident or accident has occurred.

⁶ Also known as a Deming cycle. ILO: *OSH Management System: A tool for continual improvement*, 2011, http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_153930.pdf.

⁷ MLC, 2006, Standard A4.3, para. 2, inter alia, refers to taking into account relevant international instruments dealing with safety and health protection in general and with specific risks.

3. The responsibilities of the competent authority of the flag State

3.1. Overview

37. This section of these guidelines is intended to assist flag States by providing a summary of their responsibilities primarily in relation to implementing OSH provisions of the MLC, 2006. In all cases, the national legal framework implementing the MLC, 2006, as well as the Convention itself, remain the primary sources of information and guidance as to specific responsibilities of the flag State (or competent authorities).

38. The responsibilities and obligations of each Member under the MOSH provisions of the MLC, 2006, and the related Code, can be summarized as:

- (a) ensuring that seafarers on ships that fly its flag are provided with occupational health protection and live, work and train on board ship in a safe and hygienic environment;¹
- (b) developing and promulgating national guidelines for the management of occupational safety and health on board ships that fly its flag,² after consultation with representative shipowners' and seafarers' organizations, and taking into account applicable codes, guidelines and standards recommended by international organizations, national administrations and maritime industry organizations;
- (c) adopting laws, regulations and other measures and setting standards for occupational safety and health protection and accident prevention on ships that fly its flag³ which cover the subjects listed in Standard A4.3, paragraph 1. The text of Standard A4.3, paragraph 1, is found in Appendix II.

3.2. National guidelines on MOSH

39. In accordance with Regulation 4.3, paragraph 2, "Each Member shall develop and promulgate national guidelines for the management of occupational safety and health on board ships that fly its flag, after consultation with representative shipowners' and seafarers' organizations and taking into account applicable codes, guidelines and standards recommended by international organizations, national administrations and maritime industry organizations."

40. The consultations should allow shipowners and seafarers and their representatives and other appropriate bodies to play an active role.⁴ If such processes or committees are not already in place, the procedure referred to in Article VII of the Convention should be

¹ MLC, 2006, Regulation 4.3, para. 1.

² MLC, 2006, Regulation 4.3, para. 2.

³ MLC, 2006, Regulation 4.3, para. 3.

⁴ MLC, 2006, Guideline B4.3.7, para. 2.

followed. Tripartite review of policies and legislation ensures that the interests and concerns of shipowners and seafarers are reflected in maritime OSH programmes.

41. Representative shipowners' and seafarers' organizations should also promote the implementation of the national guidelines for the management of OSH on board ships, for example by means of:
 - (a) information sessions;
 - (b) on-board safety guidelines;
 - (c) systematic risk assessment processes;
 - (d) national or local joint OSH protection and accident prevention committees or ad hoc working parties; and
 - (e) on-board safety committees which include seafarers' representatives.
42. Guideline B.4.3.1, paragraph 2, provides a list of the matters that should be addressed in national guidelines in the management of occupational safety and health. Information on these issues is contained in Chapter 6.
43. The competent authority could itself develop national guidelines, or delegate the task to other duly recognized organizations, occupational health services or consultancies. The competent authority is in all cases responsible for ensuring that national guidelines are developed.

3.3. MOSH policies and programmes

3.3.1. Implementation

44. The MLC, 2006, provides that each Member shall adopt relevant laws and regulations and other measures to effectively implement and promote occupational safety and health policies and programmes.⁵ These should include risk assessment as well as training and instruction of seafarers.⁶ Accordingly, on-board programmes for the prevention of occupational accidents, injuries and diseases should be established.⁷
45. Existing policies, programmes and laws may need to be supplemented or adapted to satisfy the requirements of the MLC, 2006. Some policies, programmes and legal standards may also overlap with requirements of IMO Conventions.

3.3.2. Content

46. National laws, regulations or other measures on MOSH should cover all seafarers on board ships that fly the State's flag and all aspects of seafarers' safety and health on board. Measures to establish a reporting system for accidents, injuries and diseases should also

⁵ MLC, 2006, Standard A4.3, para. 1(a).

⁶ *ibid.*

⁷ MLC, 2006, Standard A4.3, para. 1(c); Guideline B4.3.7.

specify who should file reports: for example, the shipowner, medical doctors or other medical personnel.

47. National laws, regulations or other measures should ensure that:

- (a) working, living and training environments on ships are safe and hygienic and conform to national laws and other measures for occupational safety and health protection and accident prevention on board ship;⁸
- (b) reasonable precautions are taken on ships to prevent occupational accidents, injuries and diseases, including measures to reduce and prevent the risk of exposure to harmful levels of ambient factors and chemicals and the risk of injury or disease resulting from the use of equipment and machinery on board;⁹
- (c) on-board OSH policies and programmes provide for continuous improvement in prevention, and take particular concern for the safety and health of seafarers under the age of 18;¹⁰
- (d) preventive measures, including engineering and design control, include the substitution of processes and procedures for collective and individual tasks, and use of personal protective equipment;¹¹
- (e) a safety committee is established on board ships with five or more seafarers, and includes seafarer representatives;¹²
- (f) mechanisms for inspecting, reporting and correcting unsafe conditions and for investigating and reporting on-board occupational accidents, injuries and diseases are established and statistics are maintained, analysed and published;¹³
- (g) shipowners conduct risk assessment for OSH management, taking into account relevant statistical data;¹⁴ and
- (h) seafarers are trained and instructed and provided with occupational safety and health information.¹⁵

⁸ MLC, 2006, Regulation 4.3, para. 1.

⁹ MLC, 2006, Standard A4.3, paras 1(b) and 2(a).

¹⁰ MLC, 2006, Standard A4.3, paras 1(c) and 2(b); Guidelines B4.3.7 and B4.3.8.

¹¹ MLC, 2006, Standard A4.3, para. 1(c).

¹² MLC, 2006, Standard A4.3, para. 2(d).

¹³ MLC, 2006, Standard A4.3, para. 5; Guidelines B4.3.5 and B4.3.6.

¹⁴ MLC, 2006, Standard A4.3, paras 1(a) and 8.

¹⁵ MLC, 2006, Standard A4.3, para. 1(a); Guidelines B4.3.9 and B4.3.10.

3.3.3. Promotion

48. Research should be undertaken to identify trends and hazards in order to create a basis for measures to promote OSH protection and prevention of accidents, injuries and diseases.¹⁶ Publishing the results of such research and disseminating knowledge of new trends and hazards are ways of promoting national policies and programmes. A further means of promotion would be to publish statistics on occupational accidents, injuries and diseases, as well as good practices and lessons learned.¹⁷
49. The shipowners' and seafarers' organizations should also actively promote safety and health initiatives.

3.4. International cooperation

50. Members should cooperate internationally for the purposes of harmonizing action to promote OSH protection and accident prevention.¹⁸ In developing programmes to promote MOSH, relevant ILO codes of practice and the standards of other international organizations should also be consulted.
51. The ILO, the IMO and the WHO have developed standards to assist member States in promoting safety and health in the maritime sector. Examples of these joint standards are the *Guidelines on the medical examinations of seafarers* and the *International medical guide for ships*, third edition. Furthermore, the ILO has convened several meetings of experts from member States and international organizations to develop guidance applicable to the maritime sector including the ILO code of practice on *Accident prevention on board ship at sea and in port*. In addition, the ILO has also cooperated with member States in drafting universally applicable technical standards and recommendations. Examples of these are the ILO code of practice on *Ambient factors in the workplace* and *Using the ILO code of practice on HIV/AIDS and the world of work: Guidelines for the transport sector*.

3.5. Periodic review

52. National policies, programmes, legal standards and other measures for the management of OSH should be reviewed regularly, after consultation with shipowners' and seafarers' organizations, in the light of research, development and new technology to facilitate continuous improvement and new means of achieving the goal-based standards¹⁹ of the Convention.²⁰

¹⁶ MLC, 2006, Guideline B4.3.7.

¹⁷ MLC, 2006, Guideline B4.3.5; see Chapter 8 – Reporting and investigation of occupational accidents, injuries and diseases.

¹⁸ MLC, 2006, Guideline B4.3.11.

¹⁹ A similar concept has been adopted by the IMO, see <http://www.imo.org/OurWork/Safety/SafetyTopics/Pages/Goal-BasedStandards.aspx>.

²⁰ MLC, 2006, Standard A4.3, para. 3; Guideline B4.3.7, para. 1.

53. Given the fast pace of technological progress and new work methods, regulatory systems should be reviewed periodically to ensure that MOSH policies and programmes remain relevant.²¹

54. Any problems identified should be addressed in the review of policies, programmes, legal standards and other measures. New developments and technology should be considered when defining goals and methods of achieving them. Continuous improvement of systems and skills should be an integral part of any policy and programme promoting OSH.

3.6. Privacy and protection of seafarers' personal data

55. Under the MLC, 2006, the competent authority must ensure that the reporting and investigation of OSH matters respect the confidentiality of seafarers' personal data – such as medical data – in accordance with national laws, regulations, conditions and practice, and are consistent with the Convention.²² It should also take account of the relevant ILO guidance.²³

3.7. Fair treatment of seafarers

56. The competent authority should ensure that seafarers are entitled to protection against coercion and intimidation from any source during or after any maritime investigation. The maritime investigation should not prejudice a seafarer in terms of repatriation, lodgings, subsistence, payment of wages and other benefits, and medical care; these should be provided at no cost to the seafarer by the shipowner, the detaining flag State or an appropriate flag State.²⁴

57. Where a seafarer makes a complaint under the provisions of Standards A5.1.5 and A5.2.2 in relation to safety and health, the seafarer should not be victimized as a result of that complaint.

58. The competent authority should ensure that seafarers appointed or elected as safety representatives are protected against dismissal or other prejudicial measures for conducting functions assigned to their role.

²¹ MLC, 2006, Guidelines B4.3.7 and B4.3.11.

²² MLC, 2006, Standard A4.3, para. 6.

²³ ILO: *Recording and notification of occupational accidents and diseases*, 2006, http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normative_instrument/wcms_107800.pdf.

²⁴ IMO: Resolution LEG.3(91), *Adoption of guidelines on fair treatment of seafarers in the event of a maritime accident*, <http://www.imo.org/OurWork/Legal/JointIMOILOWorkingGroupsOnSeafarerIssues/Documents/2711.pdf>; and Resolution MSC.255(84), *Adoption of the code of the international standards and recommended practices for a safety investigation into a marine casualty or marine incident* (Casualty Investigation Code), 2008 edition, as amended, Chapters 23 and 24, <http://www.imo.org/OurWork/Safety/Implementation/Casualties/Documents/Res.%20MSC.255%20884%29%20Casualty%20Investigation%20Code.pdf>.

4. The responsibilities of shipowners and seafarers

4.1. Introduction

59. Standard A4.3, paragraph 2(b), of the MLC, 2006, provides that national laws and regulations and other measures implementing the health and safety provisions of the MLC, 2006, must “clearly specify the obligation of shipowners, seafarers and others concerned to comply with the applicable standards and with the ship’s occupational safety and health policy and programme with special attention being paid to the safety and health of seafarers under the age of 18”. The ISM Code also provides that shipowners should establish occupational safety and health policies and programmes and develop good safety management practices.

4.2. Shipowners’ responsibilities and obligations

60. Shipowners should ensure that masters have adequate support to carry out their responsibility for OSH management while on board effectively.

61. Establishing a safety culture with high standards for OSH on board ship requires planning and organization and the cooperation and support of management and seafarers.

62. The competent authority should ensure that shipowners:

- (a) consult with seafarers and, where appropriate, the representative seafarers’ organizations, on the drafting and implementation of OSH policies;
- (b) establish policies and programmes on OSH of seafarers which are consistent with international standards and national laws and regulations, and put in place systems for continuous improvement, taking into account the national guidelines for the management of occupational safety and health on board ships;
- (c) establish safety committees as required by the competent authority;
- (d) establish systems to conduct on-board investigations into occupational accidents, injuries and, where applicable, diseases, and provide reports to the competent authority;¹ and
- (e) provide accommodation and recreational services, at no cost to the seafarer, in accordance with Regulation 3.1 and Standard A3.1, which are safe, promote the seafarers’ health and well-being, and are inspected to ensure initial and ongoing compliance with minimum standards, including Regulation 4.3 and the associated provisions of the Code of the MLC, 2006.

¹ ISM Code, section 9.

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- 63.** Guidance to shipowners on the implementation of OSH policies and programmes may include the following:
- (a) that they ensure the design of the workplace on board takes into account prevention principles and technical progress in the industry, and conforms to relevant international and national laws, regulations, standards or codes of practice;
 - (b) that they ensure the members of the safety committee:
 - (i) receive information and have an opportunity to make proposals for safety and health matters;
 - (ii) have access to the lists and descriptions of occurrences that are required to be reported and the information required to be included in reports of occupational accidents, incidents and diseases on board ship and all relevant ship reports;
 - (iii) have access to the information on hazards or potential hazards which are known to the shipowner and master, and to all relevant publications by the IMO, the ILO and other international organizations;
 - (iv) have reasonable time available to handle their safety duties;
 - (v) are given opportunities during their working hours to acquire the necessary knowledge or training on safety and health issues;
 - (vi) are consulted about the planning and alteration of work on board and the introduction of new technology which may have consequences for safety and health, including the choice of equipment, PPE and technical aids;
 - (vii) are not subjected to dismissal or other prejudicial measures for conducting functions assigned to their role;
 - (viii) obtain the necessary support, resources, skills and competences to conduct on board OSH accident and incident investigations;
 - (c) that they ensure the necessary resources are made available for safe and healthy working conditions on board. The shipowner should pay all expenses related to the assignments of the safety committee, including reimbursing the expenses and lost wages for members' required participation in OSH courses;
 - (d) that they provide adequate communication on OSH matters on ships with fewer than five seafarers, and consider establishing a safety committee in such ships if there are five or more persons working on board;
 - (e) that they share knowledge from the conclusions of the investigation reports across their fleet of ships to avoid recurrences;
 - (f) that they provide adequate information, training and instructions to seafarers regarding OSH hazards and preventive and protective measures related to work processes, which should be presented in an easily understandable form and simple language;
 - (g) that they ensure that masters and all seafarers are fully aware of their responsibilities on board which could affect OSH;

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- (h) that they provide each ship with the necessary equipment, tools, manuals and other information to ensure that all operations are conducted in such a manner as to minimize any adverse effects on seafarers' OSH to the extent necessary, and provide adequate PPE² and other safeguarding equipment to their seafarers,³ and should require seafarers to use it appropriately and comply with accident prevention and OSH protection measures;
 - (i) organize and plan all operations, taking into account the size of the crew, the expected period of work and the prevailing conditions on board, so as to prevent risk of accident or injury to seafarers, and to:
 - (i) prevent dangers likely to arise on board ships;
 - (ii) avoid excessively or unnecessarily strenuous work positions and movements;
 - (iii) ensure that materials, products and working methods are used safely and pose no danger in the short or longer term to the safety or health of seafarers;⁴
 - (iv) guarantee a tolerable workload and reasonable hours of work, including reasonable rest periods during working hours,⁵ recognizing fatigue⁶ as a potential hazard; and
 - (j) ensure that machinery is used only when it is properly guarded.⁷
- 64.** Guidance on the basic elements of a shipboard occupational health and safety programme is contained in IMO MSC/MEPC.2 Circular 3 of 5 June 2006.
- 65.** Shipowners should recognize the link between shipboard safety and decent working and living conditions on board, including good management and communication between ship and shore, rest periods, accommodation and nutrition.
- 66.** Shipowners should establish a system to report on and analyse incidents and hazardous situations and should share the knowledge gained throughout the company as appropriate. Shipowners should also encourage seafarers to report all unsafe and unhealthy conditions or operations.⁸

² UNECE: *Globally harmonized system of classification and labelling of chemicals (GHS)*.

³ MLC, 2006, Guideline B4.3.4.

⁴ See Chapter 6.

⁵ MLC, 2006, Regulation 2.3.

⁶ MLC, 2006, Guideline B4.3.1, paras 2 and 3.

⁷ MLC, 2006, Guideline B4.3.4, para. 2, refers to Articles 7 and 11 of the Guarding of Machinery Convention, 1963 (No. 119), and the corresponding provisions of the Guarding of Machinery Recommendation, 1963 (No. 118).

⁸ ISM Code, section 9; IMO: *Guidance on near-miss reporting*, MSC-MEPC.7/Circ.7, 10 October 2008, <http://www.imo.org/OurWork/Safety/Implementation/Casualties/Documents/MS%20MEPC.7-circ.7.pdf>.

4.3. The master's responsibilities

67. The ship's master should ensure that:

- (a) the shipowner's OSH policy and programme is implemented on board ship and clearly communicated to all crew;⁹
- (b) a positive safety culture exists on the ship, including reasonable precautions and continuous safety improvement to prevent occupational accidents, injuries and diseases on board ship;
- (c) seafarers are encouraged to participate actively and express their views on safe and healthy working conditions and risk assessments, without fear of dismissal or other prejudicial measures;
- (d) work is planned, carried out and supervised so as to minimize the possibility of accidents, injuries or diseases;
- (e) seafarers are assigned only to work to which they are suited by age, state of health and skills,¹⁰ and no seafarer under the age of 18 is assigned inappropriate duties;¹¹
- (f) appropriate notices and instructions are issued in a clear and easily understood manner, in a language or languages verified to be understood by the entire crew;¹²
- (g) safety equipment, including all emergency and protective equipment, is maintained in good order and stowed properly;
- (h) all statutory drills and musters are conducted realistically, effectively and conscientiously at the required intervals and comply with any applicable rules and regulations;
- (i) practice and training is given in emergency procedures and special emergency equipment usage is demonstrated to the crew at regular intervals;
- (j) operating manuals, vessel plans, national laws and regulations, safety procedures and so on are available to seafarers requiring such information to conduct their work safely;
- (k) one or more safety representatives are appointed or elected, and regular meetings of the safety committee are held on board a ship on which there are five or more seafarers. If such a committee is not required, information on safety and health should be communicated in other ways;
- (l) all seafarers on board as well as the shipowner are informed of the membership of the safety committee, and its members are competent to perform their duties;¹³

⁹ ISM Code.

¹⁰ See Chapter 9 – Particular categories of personnel.

¹¹ *ibid.*

¹² MLC, 2006, Standard A4.3, para. 7.

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- (m) the safety committee is informed of notices issued by both the competent authority and the shipowner related to the safety and health of seafarers; and
 - (n) all accidents or near accidents, injuries and diseases are investigated, recorded and reported in compliance with national laws and regulations and the shipowner's procedures.¹⁴

68. The master may designate a person to take specific responsibility for the implementation of, and compliance with, the ship's occupational safety and health policy and programme.¹⁵

4.4. Seafarers' responsibilities

69. Seafarers should:

- (a) actively participate in promoting a safety culture and express their views on safe and healthy working conditions and risk assessments;
- (b) cooperate with the master and the shipowner to implement prescribed OSH policies and other measures;
- (c) participate in OSH meetings and do everything possible to maintain both their own safety and health and those of other persons on board;
- (d) properly use the preventive principles and utilize available PPE and clothing as instructed and otherwise when appropriate;¹⁶
- (e) use only machinery that is properly guarded and not render the guards inoperative;¹⁷
- (f) report immediately to their immediate supervisor any situation which could pose a hazard and which they cannot properly handle themselves;
- (g) have the right to remove themselves from dangerous situations or operations when they have good reason to believe that there is an imminent and serious danger to their safety and health.¹⁸ In such circumstances, initially the seafarer's supervisor should immediately be informed of the danger; and
- (h) communicate effectively regarding safety risks, verify that the instructions have been understood and provide an opportunity for clarification to be sought.

¹³ See Chapter 5.

¹⁴ ILO: *Accident prevention on board ship at sea and in port*, second edition, 1996.

¹⁵ MLC, 2006, Standard A4.3, paragraph 2(c).

¹⁶ MLC, 2006, Guideline B4.3.4, para. 1.

¹⁷ MLC, 2006, Guideline B4.3.4, para. 2, refers to Articles 7 and 11 of the Guarding of Machinery Convention, 1963 (No. 119), and the corresponding provisions of the Guarding of Machinery Recommendation, 1963 (No. 118).

¹⁸ ILO: *Accident prevention on board ship at sea and in port*, second edition, 1996, para. 2.5.2.

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- 70.** Except in an emergency, seafarers, unless duly authorized, should not interfere with, remove or displace any safety device or other equipment and appliances furnished for their protection or the protection of others, or interfere with any method or process adopted to prevent accidents, injuries and diseases.

5. The safety committee

5.1. Introduction

71. Standard A4.3, paragraph 2(d), requires the establishment of a safety committee and the appointment or election of safety representatives on board ships on which there are five or more seafarers.¹

5.2. Purpose and objective

72. The purpose and objective of a safety committee is to ensure that the shipowner and seafarers at all levels and all departments on ships work together to develop and promote safety and health² and to address problems related to the ship's working environment. This collaborative effort between the shipowner and the seafarers should facilitate the implementation of the shipowner's OSH policy and programme.

73. The functions of the safety committee may include, but are not limited to:

- (a) cooperating with the master and the shipowner in the implementation of the OSH policy and programme. The committee should provide seafarers with a forum to influence OSH matters;³
- (b) taking part in the planning, managing and coordinating safe and healthy working conditions on board. The committee should take all preventive measures important to OSH, including the mental well-being, of seafarers, and provide advice to resolve safety and health problems;
- (c) taking part in the investigation, identification and analysis of occupational accidents, injuries and diseases;
- (d) proposing and taking part in the implementation of measures to prevent any recurrence, in consultation with the master;
- (e) keeping up to date on OSH provisions for the protection of seafarers;
- (f) contributing to defining principles for appropriate and necessary training and instructions specific to on-board working conditions;
- (g) continuously inspecting the observance of safety procedures;
- (h) cooperating with any relevant occupational health service;
- (i) making representations and recommendations on behalf of the crew through the master to the shipowner; and

¹ A ship's master is a seafarer.

² "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." (Preamble to the Constitution of the World Health Organization.)

³ ILO: *Accident prevention on board ship at sea and in port*, second edition, 1996.

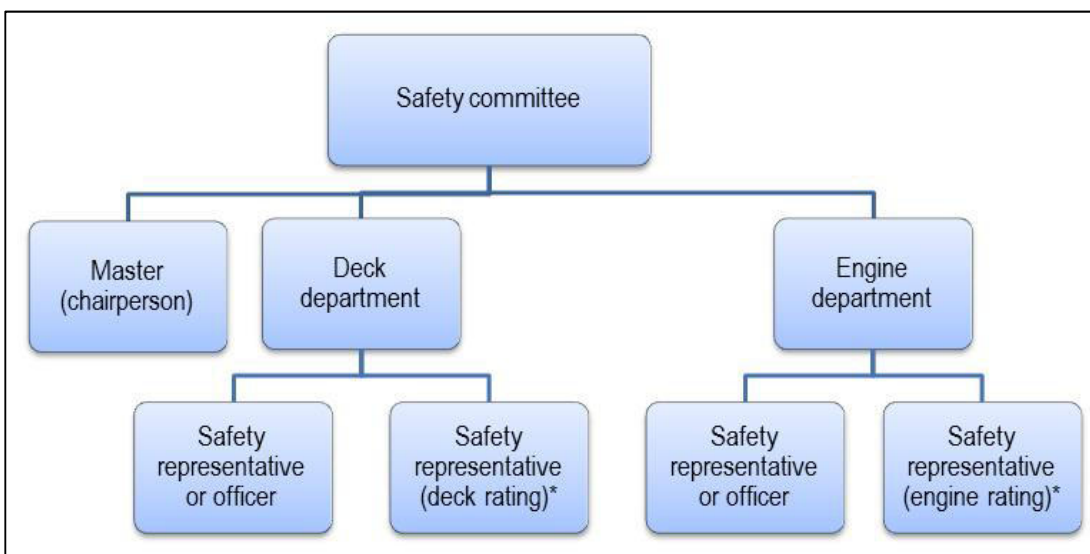
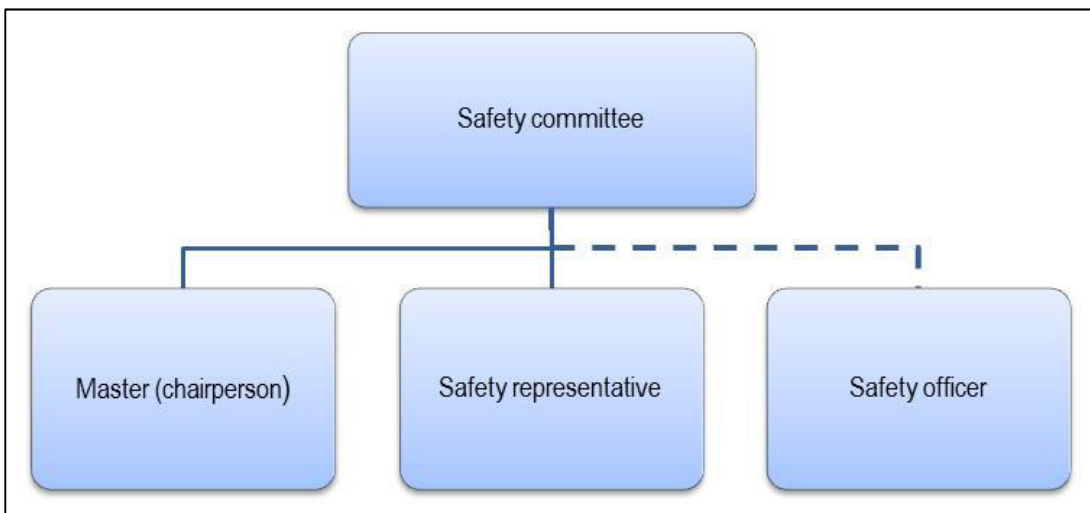
- (j) discussing and taking appropriate action in respect of any OSH matter affecting the crew, and evaluating appropriate protective and safety equipment, including lifesaving equipment.

5.3. Composition and responsibilities

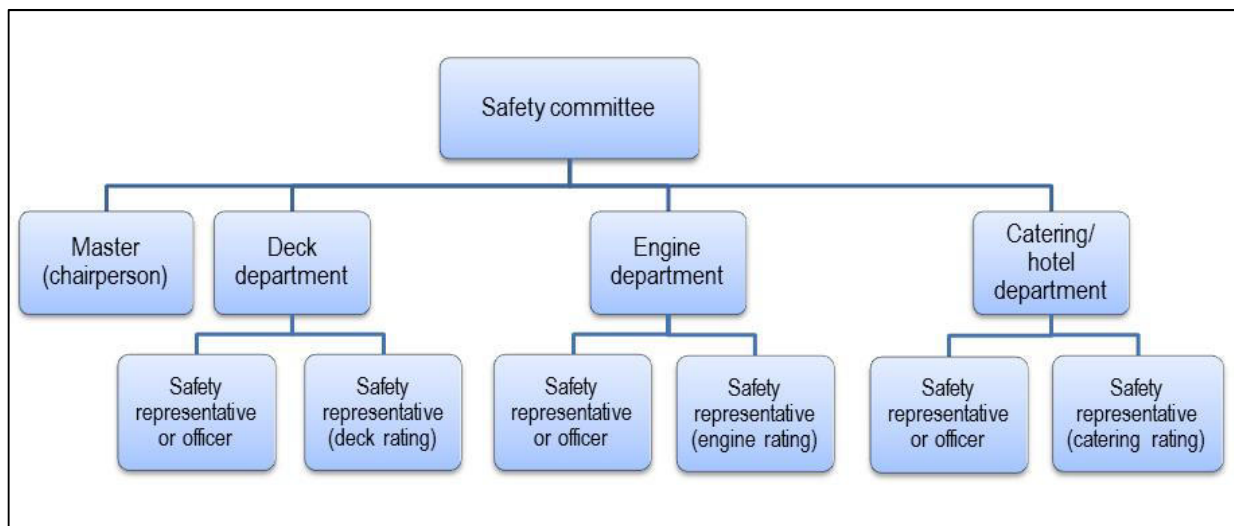
74. The safety committee should include the master, and/or a person designated by the master, to take specific responsibility for the implementation of, and compliance with, the ship's occupational safety and health policy and programme, and safety representatives. The number of safety representatives should reflect the number of seafarers on board and, where appropriate, the number of different departments or working groups. The composition of the safety committee should, as far as possible, be such that the entire crew at all levels has effective representation. There are a number of ways in which a safety committee may be composed. The following diagrams show possible safety committee compositions for different ships. Where appointed, the safety officer should be a member of the committee.

75. For ships with less than five crew members, the master should ensure that cooperative activities are actively promoted by seafarers, like information sharing, training and consultations in the area of occupational safety and health in the maritime sectors.

Examples of safety committee compositions



* One rating from each department or field of work where most ratings are employed.



5.4. Safety committee meetings

76. Meetings should be held in compliance with the requirements of the competent authority. They should take place regularly, taking into account the pattern of operation of the ship and the arrangement for manning and with sufficient frequency to ensure continuous improvement. The chairperson should also convene meetings when two or more committee members request a meeting to address a particular issue. Whenever possible, OSH issues should be dealt with at the shipboard level through the safety committee.
77. Meetings should also be convened after serious accidents or incidents as part of the regular investigation and reporting procedures. It is also recommended that hazardous situations should be treated as opportunities for safety improvement to prevent future accidents or incidents from harming seafarers or causing damage to the ship.
78. To avoid any delays between committee meetings, safety representatives should communicate regularly to identify potential or existing OSH issues and endeavour to resolve them. In so doing, they should cooperate with those responsible for tasks in the respective departments, including catering.
79. Minutes of the meetings should be distributed to the committee members, made available to those working on board and sent to the shipowner. The content of the minutes should be brought to the notice of the competent authority, upon request.
80. None of the guidance in this section should be considered to affect a seafarer's right pursuant to Regulation 5.1.5 and Standard A5.1.5 with respect to on-board complaint procedures.

5.5. Safety representative

81. The competent authority should ensure that shipowners make appropriate arrangements to appoint or elect safety representatives.⁴ The ship's master should record the appointment of safety representatives in the ship's official logbook or in the minutes of the committee meeting. To ensure sufficient on-board experience, it is recommended that the safety representatives should have more than two years of sea service.

⁴ MLC, 2006, Standard A4.3 para. 2(d).

82. Safety representatives should:

- (a) be elected by or appointed from their work groups or departments and should participate in meetings of the safety committee;
- (b) be allowed sufficient time off from their main shipboard duties without loss of pay to be able to fulfil their functions or receive training required to fulfil their functions;
- (c) not be subject to dismissal or other prejudicial measures for conducting functions assigned to the role;
- (d) have access to all relevant information and documentation, including investigation reports, and all parts of the ship;
- (e) take part in the planning of on-board tasks, including applying preventive measures and conducting risk assessments;
- (f) participate in the investigation of accidents and incidents. A safety representative who has been involved in the accident or incident should not be a member of the investigation team;⁵
- (g) have the unrestricted right to communicate directly with the relevant competent authorities and seafarers' organizations; and
- (h) receive appropriate training and instructions.

5.6. Safety officers

83. Where appointed, the safety officers should:

- (a) implement the ship's OSH policies and programmes;
- (b) conduct or supervise regular risk assessments and the appropriate follow-up measures to ensure continuous improvement of the safety and health of the working environment;
- (c) work closely with the safety representatives to promote a safety culture;
- (d) improve the crew's awareness of OSH;
- (e) encourage individual seafarers to behave responsibly to promote proactive safe and healthy working conditions on board, including mental well-being;
- (f) ensure that those working on board handling chemicals are given adequate information on the intrinsic properties of the chemicals and the precautionary measures and to check that chemicals are used only in workspaces and by methods appropriate to the chemical in order to provide effective protection against accidents, injuries and diseases;

⁵ IMO Assembly Resolution A.443(XI) invites governments to take the necessary steps to safeguard the shipmaster in the proper discharge of his responsibilities to maritime safety and the protection of the marine environment.

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- (g) check that machinery, protective equipment and other technical aids are designed and used appropriately to prevent or significantly reduce risk;
 - (h) identify and investigate any OSH problems;
 - (i) report investigations to the safety committee and to the individual involved, where necessary;
 - (j) investigate, together with the safety committee, accidents and incidents and make appropriate recommendations to prevent recurrence of such incidents;
 - (k) conduct OSH inspections;
 - (l) monitor and provide on-board OSH training of seafarers; and
 - (m) should be a member of the safety committee.

84. Where national laws and regulations do not require a safety officer, the master should ensure that these functions are carried out by appropriate competent person(s).

5.7. Training for safety committee members

85. Members of a safety committee should receive sufficient training in OSH.⁶ Committee members should obtain skills or knowledge to promote health and maintain safety, to cooperate with other crew members while taking into account cultural diversity, and to assist in resolving issues related to minimizing occupational hazards found in the working environment on board.

86. All elected and appointed committee members should, as a minimum, be given basic training in the following subjects:

- (a) the occupational safety and health policy and programmes used on board;
- (b) the tasks of the safety committee;
- (c) the rights and roles of members of the safety committee;
- (d) taking part in risk assessment;
- (e) how to ensure that the necessary advice to resolve safety concerns or problems and to encourage adherence to prevention principles is available to seafarers;
- (f) taking part in investigation of incidents and making the appropriate recommendations to prevent the recurrence of such incidents;
- (g) how to obtain relevant information on a safe and healthy working environment from the competent authority and the shipowner;

⁶ There are no specific provisions on training courses for members of the safety committee in the ILO document, *Accident prevention on board ship at sea and port*, or the IMO's STCW Convention. The following sources may provide some guidance: sections of the STCW Code, 2010, Tables A-II/2 and A-III/2; and IMO: Model Course 3.11, *Marine Accident and Incident Investigation*.

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- (h) effective means of communication with a multinational crew;
 - (i) safety tasks assigned to crew and other personnel on board, and passengers where applicable; and
 - (j) commitment required to promote a safe working environment on board.

87. In addition, specific expertise should be available within the safety committee in the following subjects:

- (a) how to carry out risk assessment and management;
- (b) how to provide the necessary advice to resolve safety concerns or problems and to encourage adherence to prevention principles;
- (c) accident and incident investigation, analysis and making appropriate corrective and preventative recommendations to prevent their recurrence; and
- (d) supervision of safety tasks assigned to crew and other personnel on board, and passengers where applicable.

88. Time and resources should be made for training and development for new safety committee members.

6. Risks involved on board ships

6.1. Overall introduction

89. Any occupational health risk may lead to disability, temporary disability or to reduced work capability. Occupational health risks to seafarers arise from exposure to hazards or harmful levels of ambient factors in the working environment. In cases where some risks are unavoidable, appropriate control measures should be implemented to minimize exposure to hazards that may cause injuries, diseases or death.¹ Harmful exposure may have short-term and long-term adverse health effects.

90. This chapter should supplement the ILO code of practice, *Ambient factors in the workplace*, based on the requirements of the MLC, 2006.²

6.2. Exposure to harmful ambient factors

91. The ambient factors covered in this section are exposure to noise, vibration, lighting, ultraviolet (UV) light, non-ionizing radiation and extreme temperatures on board ships, along with the short- and long-term effects on seafarers. The competent authority should ensure that shipowners take reasonable precautions to prevent or minimize the risk of exposure to hazards on board ships, and provide appropriate training and instruction to seafarers on occupational safety and health.³

6.2.1. Noise

92. For the purposes of these guidelines, noise may be defined as all sound which can result in hearing impairment, or which can be harmful to health or be otherwise dangerous.⁴

93. Working in areas with excessive noise may cause accidents, injuries and diseases, and may have the following short- and long-term adverse effects on health:

¹ MLC, 2006, Standard A4.3, para. 1(b).

² ILO: *Ambient factors in the workplace: An ILO code of practice*, Geneva, 2001, http://www.ilo.org/wcmsp5/groups/public/@ed_protect/@protrav/@safework/documents/normative_instrument/wcms_107729.pdf.

³ MLC, 2006, Standard A4.3, para. 1(a).

⁴ IMO: *Code on noise levels on board ships*, 2014 edition, adopted by IMO Resolution MSC.337(91) under the provisions of Regulation II-1/3-12 of the SOLAS Convention, entry into force on 1 July 2014, <http://www.imo.org/KnowledgeCentre/IndexofIMOResolutions/Documents/MS%20-%20Maritime%20Safety/337%2891%29.pdf>.

Table 1. Short- and long-term adverse health effects of exposure to excessive noise

Short-term effects	Long-term effects
<ul style="list-style-type: none">■ Stress, including increased adrenaline■ Reduced quality of sleep■ Rapid heartbeat■ Contraction of blood vessels	<ul style="list-style-type: none">■ Hearing loss■ Tinnitus■ Physical and mental discomfort■ Stress■ Heart disease■ Cognitive effects

94. Excessive noise may also interfere with communication on board ship, which could increase the risk of accidents.
95. The competent authority should ensure that shipowners take measures to manage shipboard noise to protect seafarers, as set out in Guideline B4.3.2, paragraph 2, of the MLC, 2006.⁵
96. The IMO's Code on noise levels on board ships provides international standards for protection against noise.⁶ It recognizes the need to establish mandatory limits on noise levels for machinery spaces, control rooms, workshops, accommodation and other spaces on board ships.

6.2.2. Vibrations

97. Vibrations are oscillating movements transmitted through solid material.
98. They may affect the whole body due to the movement of the ship or when working near vibrating machinery, or may be focused on the hands and arms when using vibrating tools. They may induce the following adverse health effects, either directly, or indirectly through the impact of reflex muscle activity on body structures:

Table 2. Short- and long-term adverse health effects of exposure to excessive vibrations

Short-term effects	Long-term effects
<ul style="list-style-type: none">■ Motion sickness■ Body instability■ Fatigue	<ul style="list-style-type: none">■ Vascular, neurological and/or musculoskeletal damage■ Poor blood circulation and circulatory pain■ Tingling, numbness or loss of dexterity■ Carpal tunnel syndrome■ Whole-body vibration: low back pain, sciatic pain, or degenerative changes in the spinal column

⁵ See Appendix II.

⁶ IMO: *Code on noise levels on board ships*, op. cit.

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- 99.** To reduce exposure to vibrations, principles of prevention should be applied, including but not limited to: ⁷
- (a) taking into account ergonomic design and minimal vibration when purchasing new tools;
 - (b) improving auxiliary equipment, such as using seats which effectively reduce whole-body vibrations and handles which reduce hand–arm vibrations;
 - (c) maintaining equipment correctly;
 - (d) reducing the time spent working at a particular task; and
 - (e) using PPE, such as special gloves, special shoes, etc.
- 100.** The competent authority should ensure that shipowners take measures to manage vibration on ships to protect seafarers, as set out in Guideline B4.3.3, paragraph 2, of the MLC, 2006. ⁸
- 101.** The competent authority, after consultation with the shipowners’ and seafarers’ organizations, should consider standards for controlling exposure, including a daily limit for exposure, for whole-body and hand–arm vibration to protect seafarers from adverse health effects. Further guidance can be found in the relevant ILO and ISO documents. ⁹

6.2.3. Artificial lighting

- 102.** Excessive or insufficient artificial lighting or the incorrect positioning of lighting may lead to inappropriate working conditions that could harm seafarers or damage property.
- 103.** Adverse health effects associated with inadequate lighting include discomfort in the eyes, headaches, neck strains and temporary blurred vision or after-images (such as black spots caused by glare). Such effects may, in turn, contribute to incidents involving injuries to personnel and damage to property.
- 104.** Lighting should be well placed and sufficient for all working areas on board and the type of work conducted. Adequate lighting levels should be determined by the competent authority, after consultations with the shipowners’ and seafarers’ organizations concerned, taking into account national and international standards. ¹⁰ In the absence of such standards, the competent authority should be guided by the respective IMO guidelines as amended. ¹¹

⁷ ILO: *Ambient factors in the workplace*, op. cit.

⁸ See Appendix II.

⁹ ILO: *Ambient factors in the workplace*, op. cit.

¹⁰ MLC, 2006, Regulation 3.1; Standard A3.1, paras 4(e), 6(g) and 8.

¹¹ The IMO has issued guidelines through its Sub-Committee on Ship Design and Equipment, for example: MSC/Circ.834, *Guidelines for engine-room layout, design and arrangement*; and MSC/Circ.982, *Guidelines on ergonomic criteria for bridge equipment and layout*.

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105. The competent authority should ensure that shipowners consider appropriate lighting when planning workspaces and implementing measures to minimize exposure to occupational hazards.

6.2.4. Ultraviolet light

106. The major source of UV light affecting seafarers is the sun. The level of risk to harmful exposure to UV light depends upon the intensity of the light, the duration of the exposure, the use of protective clothing and the sensitivity of the seafarer.¹²
107. Adverse health effects due to such an exposure may include premature ageing symptoms among seafarers under the age of 18, actinic keratosis and cancers such as carcinoma or melanoma. Therefore shipowners should ensure that all seafarers are aware of possible adverse health effects of harmful exposure to natural and UV light. Use of adequate and appropriate skin protection should be encouraged.¹³
108. The competent authority should ensure that shipowners consider appropriate protection from UV light, including the proper use of PPE when planning work schedules and implementing measures to minimize exposure to occupational hazards.

6.2.5. Non-ionizing radiation

109. Seafarers may be exposed to non-ionizing radiation – a form of electromagnetic radiation that includes radio, microwave and infrared radiation – when working with various types of equipment, such as radar systems or welding equipment.¹⁴ The level of exposure varies depending on the strength of the fields generated from such equipment and the proximity of the work station.
110. Short-term exposure to high-intensity non-ionizing radiation causes tissue heating, in particular damage to the lens of the eye. Other possible health effects may include headaches, dizziness and sleep disturbance, which may lead to incidents. There is academic uncertainty about harmful effects of long-term exposure.¹⁵
111. The competent authority should publish appropriate advice on the possible adverse health effects of non-ionizing radiation, taking account of existing research in the field. The competent authority should monitor developments in this field and update its advice as appropriate.¹⁶

¹² *Protecting workers from ultraviolet radiation*, http://www.who.int/uv/publications/Protecting_Workers_UV_pub.pdf?ua=1.

¹³ WHO: *Exposure to artificial UV radiation and skin cancer*, <http://www.iarc.fr/en/publications/pdfs-online/wrk/wrk1/ArtificialUVRad&SkinCancer.pdf>; and *Health effects of UV radiation*, <http://www.who.int/uv/health/en/>.

¹⁴ ILO: *Ambient factors in the workplace*, op. cit.; and *Proceedings of the International Conference on Non-Ionizing Radiation at UNITEN*, <http://www.who.int/peh-emf/meetings/archive/en/keynote3ng.pdf>.

¹⁵ WHO, International Agency for Research on Cancer, *Non-ionizing radiation, Part 2: Radiofrequency electromagnetic fields*, Vol. 102.

¹⁶ ILO: *Occupational hazards from non-ionizing electromagnetic radiation*, OSH No. 53.

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112. The competent authority should ensure that shipowners consider appropriate protection from non-ionizing radiation when implementing measures to minimize exposure to occupational hazards.

6.2.6. Extreme temperatures

113. Hyperthermia occurs when the human body fails to cool down by regulating its own temperature when exposed to high ambient temperatures and humidity for prolonged periods. Such conditions may also be present in engineering spaces on board ships.
114. It is important to note that seafarers suffering from secondary illnesses that involve dehydration are more susceptible to hyperthermia. Adverse health effects from hyperthermia include profuse sweating, headaches, dizziness, fainting, lethargy, nausea, cramps in major muscles, rapid breathing and pulse, and high body temperatures. In extreme cases this condition may lead to death.
115. Hypothermia occurs when the human body's core temperature falls below 35°C, the point at which normal body function is impaired. Loss of life may occur when the deep body temperature falls below 30°C. Seafarers may be exposed to cold water due to immersion in the sea or exposure to cold air while working on cold geographical trading routes.
116. Adverse health effects from hypothermia could include loss of muscle control leading to muscle incoordination; confusion and muddle-headedness; trouble following simple instructions; unconsciousness and, ultimately, death.
117. The competent authority should ensure that shipowners consider exposure to extreme temperatures when planning work schedules and implementing measures to minimize such exposure.

6.3. Inherent hazards to working on board ships

118. Specific inherent hazards have been identified when working on board ships. These are listed in the following sections. In general these hazards pose serious risks to the safety and health of seafarers which may result in fatalities or major injuries.
119. The competent authorities should consider international guidelines and recommendations when implementing the national requirements.

6.3.1. Structural features of the ship, means of access and asbestos-related risks

120. The competent authority should consider the IMO International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, and the ILO code of practice, *Accident prevention on board ship at sea and in port*¹⁷ and any subsequent revision, as they cover a wide range of measures designed to improve the safety of shipping, including alternative designs, materials and arrangements.

¹⁷ ILO: *Accident prevention on board ship at sea and in port*, op. cit.

121. Special attention should be taken to identify and mitigate asbestos-related¹⁸ risks.

6.3.2. Work in enclosed spaces

122. Working in enclosed spaces poses serious risks to the safety of seafarers which may result in sudden fatalities or major injuries.

123. The atmosphere in any enclosed space may be oxygen-deficient or oxygen-enriched and/or contain flammable and/or toxic gases or vapours. Such unsafe atmospheres could also subsequently occur in a space previously found to be safe. Unsafe atmospheres may also be present in spaces adjacent to those spaces where a hazard is known to be present.

124. The competent authority should consider the IMO Resolution A.1050(27),¹⁹ as amended, and the ILO code of practice, *Accident prevention on board ship at sea and in port*, and any subsequent revision, as they cover a wide range of measures designed to improve the safety of shipping, including alternative designs and arrangements.

6.3.3. Use of equipment and machinery

125. There are inherent dangers involved with the use of equipment and machinery on board ships. Therefore specific equipment and machinery should only be operated by competent personnel.

126. When operating machinery and carrying out respective risk assessments it is important that manufacturer's instructions are taken into consideration, including instructions related to equipment maintenance.

127. The competent authority should consider the IMO International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, and the ILO code of practice, *Accident prevention on board ship at sea and in port* and any subsequent revision, as they cover a wide range of measures designed to improve the safety of shipping, including alternative designs, materials and arrangements.

6.3.3.1. Loading and unloading

128. The competent authority should ensure that shipowners consider the relevant IMO Codes²⁰ depending on the type of vessel and cargo and the ILO code of practice, *Accident*

¹⁸ SOLAS Chapter II-1 (Asbestos – Part A-1, Regulation 3-5 and MSC.1/Circ.1374).

¹⁹ IMO Resolution A.1050(27) *Revised recommendations for entering enclosed spaces aboard ships*, [http://www.imo.org/KnowledgeCentre/IndexofIMOResolutions/Documents/A%20-%20Assembly/1050\(27\).pdf](http://www.imo.org/KnowledgeCentre/IndexofIMOResolutions/Documents/A%20-%20Assembly/1050(27).pdf).

²⁰ International Maritime Dangerous Goods Code (IMDG Code) (2012 edition); International Maritime Solid Bulk Cargoes Code (IMSBC Code) and Supplement (2013 edition); Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLU Code) (2011 edition); Code of Safe Practice for Ships Carrying Timber Deck Cargoes (TDC Code) (2011 edition); International Convention For Safe Containers, 1972 (CSC) (2012 edition); Code of Safe Practice for Cargo Stowage and Securing (CSS Code) (2011 edition), International Convention for the Prevention of Pollution from Ships (MARPOL), International Code For The Safe Carriage Of Grain In Bulk (International Grain Code), International Code For The Safe Carriage Of Packaged Irradiated Nuclear Fuel Plutonium And High-Level Radioactive Wastes On Board Ships(INF Code), International Code For The Construction And Equipment Of Ships Carrying Liquefied Gases In

prevention on board ship at sea and in port and any subsequent revision. Shipowners should also ensure that associated risks and hazards are identified and preventative measures are implemented.

6.3.3.2. Anchors, chains and lines (mooring)

129. Anchoring, mooring and docking operations pose serious risks to the safety of the seafarers involved in such operations and may result in fatalities and or major injuries.
130. The competent authority should ensure that shipowners consider the ILO code of practice, *Accident prevention on board ship at sea and in port* and any subsequent revision. Shipowners should also ensure that associated risks and hazards are identified and preventative measures are implemented.

6.3.3.3. PPE for seafarers

131. Failure to use and use of inappropriate PPE may in itself pose a hazard, therefore proper familiarization and training should be provided.
132. The competent authority should ensure that shipowners provide adequate procedures.²¹

6.3.4. **Special safety measures on and below deck**

133. Working on and below deck may pose additional hazards, especially in adverse weather conditions.
134. Work should not commence on open decks in conditions considered adverse by the master, unless it is considered necessary by the master for the safety of the vessel, its crew and cargo, the safety of life at sea and the protection of the marine environment.
135. The competent authority should ensure that shipowners consider the ILO code of practice, *Accident prevention on board ship at sea and in port* and any subsequent revision. Shipowners should also ensure that associated risks and hazards are identified and preventative measures are implemented.

6.3.5. **Dangerous cargo and ballast**

136. The competent authority should ensure that shipowners consider the relevant Conventions, codes and practices, as they are set out in the requirements for the safe transport, stowage, segregation, loading, unloading and securing of cargoes, and regulations in relation to ballast water.²² Shipowners should also ensure that associated risks and hazards are identified and preventative measures are implemented.

Bulk (IGC Code), International Code For The Construction And Equipment Of Ships Carrying Dangerous Chemicals In Bulk (IBC Code), as amended.

²¹ ILO: *Accident prevention on board ship at sea and in port*, op. cit., Chapter 5.4.

²² SOLAS Chapter VII (Carriage of Dangerous Goods), International Convention for the Prevention of Pollution from Ships (MARPOL) and ILO: *Accident prevention on board ship at sea and in port*.

6.4. Mental occupational health

137. Working at sea may have a range of adverse effects on mental health. It has been associated with stress, anxiety, depression, post-traumatic stress disorder (PTSD) and suicide. In the short term, mental distress may have a negative effect on work performance, safety behaviour and well-being. In the longer term it may have a severe impact on a seafarer's life and on their ability to work.
138. Mental distress may also be associated with factors beyond the workplace, such as concerns about events at home. At times a mix of work, non-work and personal issues may all combine and lead to distress. These interactions need to be recognized and competent support may need to be obtained to help with their resolution.
139. A range of work-related factors may contribute to mental distress. These can arise from the inherent physical constraints of living and working at sea; from the way in which a seafarer is treated by those with whom they work; from incidents that lead to mental trauma; or from a lack of personal fulfilment from work.
140. The competent authority, after consultation with shipowners' and seafarers' organizations, should provide shipowners with effective advice on measures to minimize the adverse effects of work-related factors on mental health. These may include steps to identify and reduce workplace stressors; increasing awareness of the signs of early mental distress to enable an early response to be made; access to recreational and welfare facilities (MLC, 2006, Regulations 3.1 and 4.4), and organizational arrangements that enable seafarers to raise issues about mental stressors and to secure remedies for them.

6.5. Violence in the workplace

141. "Workplace violence" constitutes any action, conduct, threat or gesture of a person towards a seafarer in their workplace that can reasonably be expected to cause harm, injury or illness to that seafarer.
142. Shipowners should develop a workplace violence prevention policy; identify factors that contribute to workplace violence; assess the potential for workplace violence; develop procedures to be followed in the event that threats of violence or aggression against a seafarer, and/or others working on board ship, occur; review the effectiveness of the prevention measures; develop emergency notification procedures; and provide information and training on the factors that contribute to workplace violence.

6.6. Emergency and accident response

143. The competent authority should ensure that each shipowner adopts emergency and accident response action plans and conducts the necessary training and drills for ships as part of its overall safety and health policy within the occupational safety and health policies and programmes.²³ Emergency and accident response plans are an efficient and effective means of minimizing the risks to human life.

²³ Shipboard emergency preparedness is required under paragraphs 1.2.2.2 and 8 of the ISM Code, as amended, referred to in Chapter IX of the SOLAS Convention, as amended. See the *Guidelines for a structure of an integrated system of contingency planning for shipboard emergencies*, adopted by the IMO – Resolution A.852(20), as amended.

144. Emergency and accident response plans should, at a minimum, provide information on the procedures, programmes or activities developed to:²⁴

- (a) familiarize seafarers with the emergency and accident response system, provisions and plans;
- (b) provide training for seafarers on the system and plans, which should include the correct use of life-saving appliances²⁵ and firefighting equipment,²⁶ in particular to personnel transferred to new assignments;
- (c) schedule regular drills and exercises to prepare seafarers to handle potential shipboard emergency situations;
- (d) coordinate the seafarers' and the company's actions effectively, and include and take note of the aid which could be provided by external emergency coordinating authorities; and
- (e) prepare a workable feedback system.

6.7. Other forms of risks

145. The competent authority should ensure that shipowners take reasonable precautions, including measures to reduce or prevent the risk of harmful levels of exposure for other forms of hazards not identified in the previous sections.²⁷

6.7.1. Ergonomic hazards

146. Ergonomics is the study and design of workspaces (such as the workstation and ship bridge) and their components, work practices and procedures to benefit workers' productivity, health, comfort and safety.

147. Ship design and layout, including engineering, should provide a work environment that fosters effective procedures, safe work patterns and seafarers' health, and should minimize or prevent occupational accidents, injuries and diseases which may degrade human performance or increase potential for error.²⁸

²⁴ *ibid.*

²⁵ IMO International Life-Saving Appliance Code (LSA Code) (2010 edition), as amended.

²⁶ International Code for Fire Safety Systems (FSS Code) (2007 edition), as amended.

²⁷ MLC, 2006, Standard A4.3, para. 1(b); Guideline B4.3.1, paras 2, 3 and 4.

²⁸ MLC, 2006, Standard A4.3, para. 1(c). The IMO has addressed this matter through its Sub-Committee on Ship Design and Equipment. See, for example: MSC-MEPC.7/Circ.3: *Framework for IMO consideration of ergonomics and work environment*; MSC/Circ.834: *Guidelines for engine room layout, design and arrangement*; MSC/Circ.982: *Guidelines on ergonomic criteria for bridge equipment and layout*; Resolution MSC.252(83): *Adoption of the revised performance standards for Integrated Navigation Systems (INS)*.

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- 148.** A ship as a workplace comprises several specific types of workspaces. On cargo ships, examples include the bridge, engine room, hatches, decks and accommodation. On passenger ships, in addition to the technical workspaces related to the ship's engine operations, there are also workspaces used for the on-board hotel and catering services. To ensure that work is carried out safely, certain basic ergonomic requirements should be adhered to in order to prevent seafarers from working for long periods in awkward positions such as on their knees, with arms and shoulders raised or with back and neck bent, or from repeating these postures and movements frequently.
- 149.** Poor ergonomic layout, design and arrangement of the ship and its equipment may lead to both short- and long-term adverse health effects due to stressful working postures. These effects include, but are not limited to:
- (a) musculoskeletal disorders;
 - (b) soreness, pain, stiffness and fatigue in muscles and joints;
 - (c) tingling in the fingers and changes in sensitivity altering the feeling in fingers, feet and legs;
 - (d) pain, soreness and swelling due to irritation around the tendons; and
 - (e) damage such as tennis elbow and inflammation of the tendons, which may last several weeks and may cause a recurrent chronic condition.
- 150.** The competent authority should ensure that the ship's design incorporates the necessary preventive principles and should ensure that risk assessments are conducted to avoid poor ergonomic design. Testing should include the use of equipment and machinery for long periods of monotonous work, working pace, working in isolation, the design of workspaces, equipment and technical aids, in addition to work methods. Assessments should also evaluate the nature, degree and duration of individual exposure to equipment and machinery used on board. This would include approval of maintenance requirements.
- 151.** The competent authority should ensure that the shipowner performs a risk assessment of working duties, both while work is performed and also during planning. Risk assessments should include an evaluation of the equipment and other technical aids applied. The shipowner may delegate this responsibility to the master, with the active participation of the appropriate safety representative.

6.7.1.1. Manual handling of loads

- 152.** Manual handling of loads comprises work processes where goods (such as stores, spare parts, tools and heavy cooking utensils) are lifted, carried, dragged, pushed or pulled.
- 153.** Work processes involving manual handling of loads may cause injury to joints, muscles and tendons, especially in the back. For instance, lifting goods may lead to injuries if the load is too heavy, unexpected or unaccustomed. To ensure that manual handling can be conducted properly, special requirements for the use of suitable technical equipment to perform work at workplaces on deck, in storerooms, shops, engine room spaces and other working areas on board should be established.²⁹

²⁹ ILO: *Accident prevention on board ship at sea and in port*, second edition, 1996.

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- 154.** Manual handling of heavy loads could lead to accidents, injuries and diseases, including but not limited to:
- (a) sprains;
 - (b) fractures; and
 - (c) musculoskeletal pain in the back and limbs.
- 155.** In the assessment of manual handling of loads, there are many contributory factors, including but not limited to:
- (a) the shape and weight of the load;
 - (b) the distance of the load from the lifter's body;
 - (c) the posture and movements of the lifter and frequency of lifting;
 - (d) the risk of an unexpected load;
 - (e) the available space;
 - (f) the condition of the deck; and
 - (g) the distance over which the load is carried.
- 156.** The competent authority should ensure that the shipowner adopts appropriate procedures including risk assessments for working duties that takes manual handling of loads into account, both while work is performed and during planning.

6.7.2. Biological hazards

- 157.** Work on board ships may lead to seafarers being exposed to biological agents. For the purpose of these guidelines, "biological agents" means micro-organisms which may provoke an infection, allergy or toxicity.³⁰ For example, seafarers may be exposed to biological agents when cleaning and maintaining sewage tanks on board ships, or resulting from poor food hygiene, contaminated food or drinking water, dirty or wet linen, inappropriate personal hygiene, unhygienic treatment in the ship's hospital, and the spread of bacteria and viruses such as influenza.
- 158.** The adverse health effects of exposure to biological agents include infectious diseases, allergies and toxicity.
- 159.** The competent authority should ensure that the shipowner takes biological hazards into account when planning work and implementing measures to minimize exposure to such hazards. Additional precautions should include but are not limited to:
- (a) detection, where possible – for example, by testing drinking water;
 - (b) collection, storage and disposal of waste;

³⁰ WHO: *International health regulations: Guide to ship sanitation*, third edition, and ILO: *Guidelines on the training of ships' cooks*.

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- (c) special treatment of waste prior to disposal;
 - (d) prohibition of eating and drinking in work areas;
 - (e) offering relevant vaccinations;³¹
 - (f) documented inspections; and
 - (g) following the ILO *Guidelines on the training of ships' cooks*.

6.7.2.1. Communicable diseases

- 160.** Due to the nature of their work, seafarers may be required to travel throughout the world and at all times. Accordingly, it is important that advice is provided to seafarers regarding appropriate actions required or being taken where risks of communicable diseases have been identified.
- 161.** The competent authority should ensure that shipowners consider the relevant advice promulgated by the WHO, the IMO, the ILO and other appropriate bodies in this regard and act appropriately by providing necessary information to seafarers and taking precautionary measures.³²
- 162.** Members are reminded of their obligations as port States with regard to the provision of free pratique and in ensuring immediate medical support and advice and, if necessary, evacuation of seafarers.
- 163.** The competent authority should ensure that shipowners consider communicable diseases that may pose a risk to seafarers, and ensure appropriate precautions are considered.³³

6.7.2.1.1. HIV and AIDS

- 164.** The Human Immunodeficiency Virus (HIV) continues to be a major global public health issue.³⁴ It weakens the body's natural defences against illness, leaving an affected individual susceptible to infections and some forms of cancer. The most advanced stage of HIV infection is Acquired Immunodeficiency Syndrome (AIDS).

³¹ ILO–IMO: *Guidelines on the medical examinations of seafarers*.

³² The IMO Convention on Facilitation of International Maritime Traffic (FAL), the WHO International Health Regulations, the WHO Ship Sanitation Guidelines, the IMO Convention for the Safety of Life at Sea, Regulation 4.3 and Standard A4.3.2 of the MLC, 2006, and the WHO–IMO–ILO International Medical Guide for Ships.

³³ WHO: *Biological risk factors and hazards*, http://www.who.int/occupational_health/topics/risks_biological/en/.

³⁴ WHO: *HIV/AIDS*, fact sheet No. 360, <http://www.who.int/mediacentre/factsheets/fs360/en/>.

165. The competent authority should ensure that shipowners:³⁵

- (a) provide and support health promotion and behavioural change programmes on HIV and AIDS;
- (b) eliminate prejudice and discrimination against seafarers living with HIV;
- (c) provide support in confidence for any seafarers known to be living with HIV;
- (d) provide up-to-date information, materials and advice on HIV and AIDS to all employees, both sea- and shore-based, through induction programmes and ongoing training programmes;
- (e) provide a kit for protection against blood-transmitted diseases in accordance with national specifications for carriage on ships;
- (f) make condoms available to seafarers on all ships; and
- (g) maintain confidentiality concerning the status of any seafarer who may be living with HIV.

6.7.3. Chemicals

166. For the purpose of these guidelines, the term “chemicals” refers to chemical substances – elements and their compounds – and chemical materials – compounds of two or more substances. Chemicals may be in solid, liquid or gas/vapour form. They may be absorbed by the skin in liquid or vapour form or through inhalation of vapours from dust or aerosol sprays.

167. Chemicals are regarded as dangerous if they are classified and marked with a hazard symbol or statement,³⁶ if they have a threshold limit value, or on the basis of their physical/chemical or toxicological properties or their use on board.³⁷

168. Work with chemicals should always be planned and carried out on the basis of an individual and an overall assessment of the short-term and long-term occupational health effects. Harmful chemical exposure could occur during handling, storage, transportation, disposal, utilization and other work in close proximity with chemicals such as paints, cleaners or oils. There may also be exposure to chemicals transported either as packaged dangerous goods, or transported in bulk as a gas, liquid or solid (dust).³⁸ In addition,

³⁵ For further guidance refer to: *An ILO code of practice on HIV/AIDS and the world of work* provides invaluable practical guidance, see http://www.ilo.org/aids/Publications/WCMS_113783/lang--en/index.htm, and *Using the ILO code of practice on HIV/AIDS and the world of work: Guidelines for the transport sector*, http://www.ilo.org/public/english/region/eurpro/moscow/areas/aids/hivaidswork_guidelinestransportsector.pdf.

³⁶ UNECE: *Globally harmonized system of classification and labelling of chemicals (GHS)*.

³⁷ ILO: *Ambient factors in the workplace*, op. cit., Annex, *Occupational exposure limits*, para. 2.1.

³⁸ IMO: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code); International Maritime Solid Bulk Cargoes Code (IMSBC Code); International Maritime Dangerous Goods Code (IMDG Code).

chemicals may also be developed during work processes, for example by fumes and particles in welding or from vehicle exhausts on roll-on/roll-off ships.

169. The short- and long-term adverse effects on health of exposure to chemicals may lead to acute chronic and delayed (remote) effects or consequences.

170. The competent authority should:

- (a) define when a chemical is hazardous and where to find safety information about chemicals commonly found on board;
- (b) provide important sources of information on:
 - (i) hazard labelling;³⁹
 - (ii) safety data sheets for all chemicals, which may be obtained from the supplier;⁴⁰
 - (iii) workplace instructions for chemicals to be used on board ships;
 - (iv) threshold limit values; and
 - (v) exposure scenarios advising seafarers on the safe use of chemicals, to be obtained from the supplier. An exposure scenario describes how a substance may be handled to control exposures to both human health and the environment;
- (c) encourage implementation of prevention principles, such as substituting harmful chemicals⁴¹ with less dangerous chemicals where possible. Shipowners should also consider processes which use smaller quantities of materials, fewer chemicals, or safer working practices: for example by using mechanical cleaning instead of degreaser where applicable, or water-based paint instead of oil-based paint. Other prevention principles, such as wholly or partially closed systems (for example, auto-dosing systems, such as chlorine in potable water, biocides in cooling water systems), local extraction, and use of PPE should also be considered;⁴²
- (d) ensure that chemicals are managed safely on board and included in regular risk assessments;
- (e) take into account any special requirements for chemicals containing carcinogenic substances and materials, for example asbestos or benzene; and
- (f) take into account other adverse health effects arising from exposure in the context of fires, spills and waste generated from chemicals.

³⁹ UNECE, op. cit., the International Chemical Safety Cards (ICSC) database.

⁴⁰ *ibid.*

⁴¹ UNECE, op. cit.; European Commission, *REACH – Registration, Evaluation, Authorisation and Restriction of Chemicals*, op. cit.

⁴² *ibid.*

6.7.4. Tobacco smoking

- 171.** The health dangers of smoking have been recognized for many years, and the link between passive smoking and other health disorders has been proven by numerous studies.
- 172.** The competent authority should ensure that shipowners:⁴³
- (a) reduce the risks to non-smokers from tobacco smoke on board ship;
 - (b) inform seafarers of the harmful effects of smoking;
 - (c) provide support and assistance to any seafarers who express a wish to stop smoking; and
 - (d) designate non-smoking and smoking areas, with signs featuring the respective international symbols, which may be displayed at any entrance to the ship and in all common areas as appropriate.

6.7.5. Drug and alcohol abuse and dependence

- 173.** Abuse of and dependency on drugs and alcohol by seafarers while on board can affect work performance, lead to problems of discipline and supervision, and become dangerous to persons and the ship. Alcohol may impair judgement and increase the risk of accidents. In the long term, alcohol abuse may lead to ill health and, in extreme cases, death. Drug abuse by seafarers is extremely dangerous. Individuals who abuse drugs are likely to pose a serious hazard to themselves and other persons on board, and the ship.
- 174.** The competent authority should ensure that shipowners:⁴⁴
- (a) adopts policies and procedures to prevent drug and alcohol abuse on ships;
 - (b) educate seafarers on the harmful effects and consequences of the unauthorized possession and abuse of drugs and of alcohol;
 - (c) provide guidance to seafarers on safe and sensible alcohol consumption;
 - (d) identify at an early stage seafarers who may be abusing drugs or have an alcohol-related problem;
 - (e) eliminate the presence of unauthorized drugs on ships;
 - (f) provide confidential advice, support and assistance to any seafarers known to have drug- or alcohol-related problems; and
 - (g) provide instructions to seafarers and the shore-based employees responsible for implementing the drug and alcohol policy.

⁴³ ILO: *Tobacco-free workplace*, http://www.ilo.org/safework/info/WCMS_117691/lang--en/index.htm.

⁴⁴ ILO: *Drug and alcohol abuse prevention programmes in the maritime industry (a manual for planners)*, http://www.ilo.org/safework/info/publications/WCMS_117734/lang--en/index.htm.

6.7.6. Fatigue

- 175.** There is no universally accepted definition of fatigue. However, common to all the definitions is degradation of human performance. The following definition is found in the IMO's MSC/Circ.813/MEPC/Circ.330, List of Human Element Common Terms: "A reduction in physical and/or mental capability as the result of physical, mental or emotional exertion which may impair nearly all physical abilities including: strength; speed; reaction time; coordination; decision-making; or balance."⁴⁵ The most common causes of fatigue known to seafarers are lack of sleep, poor quality of rest, stress and excessive workload.⁴⁶ Hours of work and/or rest are a key issue when considering the working environment. Lack of rest may have consequences for the overall safety and cooperation on board, as well as individuals' well-being, health and general quality of life. Studies and research carried out by various organizations and administrations have shown the increasing human, financial and environmental impact of maritime accidents and frequently cite fatigue as a contributory cause due to lack of sleep.
- 176.** Lack of sleep may lead to adverse health effects including but not limited to:
- (a) poor concentration;
 - (b) increased risk of error and slower reaction times, which can mean that incidents are not averted in time;
 - (c) reduced ability to handle duties safely and to perform tasks optimally; and
 - (d) damaging health effects over a long period of time.
- 177.** The IMO Guidelines on Fatigue⁴⁷ outline mechanisms that may be used to combat fatigue in order to reduce associated health problems and prevent fatigue-related accidents.
- 178.** The competent authority should assess the risks from fatigue⁴⁸ and take into account the short- and long-term physical and mental health effects on seafarers and provide shipowners with appropriate guidance in relation to the effective management of fatigue.⁴⁹

⁴⁵ IMO: *Guidelines on Fatigue*, op. cit.

⁴⁶ *ibid.*

⁴⁷ IMO: *Guidelines on Fatigue*, annex to *Guidance on Fatigue Mitigation and Management*, MSC/Circ.1014, <http://www.imo.org/OurWork/HumanElement/VisionPrinciplesGoals/Documents/1014.pdf>.

⁴⁸ MLC, 2006, Regulation 2.3; Standard A2.3, para. 4; Regulation 2.7, para. 1; Standard A2.7, para. 2.

⁴⁹ MLC, 2006, Guideline, B4.3.1, paras 2 and 3.

7. Reporting and investigation of occupational accidents, injuries and diseases

7.1. General requirements

179. Standard A4.3, paragraph 5, requires the competent authority to ensure that:

- (a) occupational accidents, injuries and diseases are adequately reported, taking into account the guidance provided by the ILO on the reporting and recording of occupational accidents and diseases;
- (b) comprehensive statistics of such accidents and diseases are kept, analysed and published and, where appropriate, followed up by research into general trends and the hazards identified; and
- (c) occupational accidents are investigated.¹

180. Taken collectively, Regulation 4.3 and the related provisions of the Code, the ILO code of practice on accident prevention on board ship at sea and in port,² and the IMO's Casualty Investigation Code,³ Code for the Implementation of Mandatory IMO Instruments⁴ and ISM Code⁵ require the competent authorities to investigate and report occupational accidents, injuries and diseases.⁶

7.2. Objectives

181. The objectives of reporting, analysis and investigation of occupational accidents, injuries and diseases should be to:⁷

- (a) increase the scope to investigate causal factors of occupational accidents and diseases effectively, and identify and implement preventive measures;

¹ MLC, 2006, Standard A4.3, para. 5.

² ILO: *Accident prevention on board ship at sea and in port*, second edition, 1996.

³ IMO: Casualty Investigation Code, 2008 edition, as amended.

⁴ IMO: *Code for the Implementation of Mandatory IMO Instruments, 2011* (Resolution A.1054).

⁵ IMO: International Safety Management Code, 2010, <http://www.imo.org/OurWork/HumanElement/SafetyManagement/Pages/ISMCode.aspx>.

⁶ It is important to note that the IMO Casualty Investigation Code, IMO Resolution A.1054 and the ISM Code also highlight and support the importance of reporting and investigating accidents, casualties and incidents.

⁷ MLC, 2006, Guideline B4.3.5; ILO: *Recording and notification of occupational accidents and diseases*, 2006.

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- (b) ensure lessons learned become integral to continuous improvement in the OSH policies and programmes;
 - (c) assist in identifying regulatory issues as a contributing factor;
 - (d) provide guidance in setting up and reviewing maritime legal, administrative and practical frameworks to record and report occupational accidents, injuries and diseases;
 - (e) promote the introduction, monitoring and validation of uniform procedures and methods to record occupational accidents, injuries and diseases, and to notify them to the competent authority;
 - (f) improve the collection of reliable, comprehensive and easily comparable information and analysis of statistics on occupational accidents, injuries and diseases to support various national activities and to promote international comparability, through the use of a standard form;
 - (g) foster awareness among seafarers and safety committees and health-care providers of the potential effects of their work upon the health of seafarers to assist the competent authorities in compiling more comprehensive information on occupational accidents, injuries and diseases; and
 - (h) minimize the potential for recurrence of accidents, injuries and diseases.

7.3. Reporting of occupational accidents and injuries

182. The competent authority should ensure that shipowners report occupational accidents and injuries for all seafarers working on board their ships.

183. The competent authority should:

- (a) establish reporting systems which define responsibilities based on the nature of occupational accidents and injuries;
- (b) involve other relevant national authorities, such as national health authorities;
- (c) define timelines for investigations and reporting;
- (d) ensure that shipowners establish policies that include measures to discuss the reports from occupational accidents and injuries at safety committee meetings on board their ships and the steps taken to minimize the possibility of recurrence;⁸
- (e) ensure that statistics and analyses record the number, nature, casual factors and effects of occupational accidents and injuries, and that research into the general trends and the identification of hazards is conducted, where appropriate;⁹

⁸ ILO: *Accident prevention on board ship at sea and in port*, op. cit.

⁹ MLC, 2006, Standard A4.3, para. 5(b).

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- (f) ensure that, where an accident has resulted in injuries to more than one seafarer, separate injury reports are written for each injured seafarer, in order to maintain confidentiality with respect to the seafarer and ensure adequate follow-up with each person injured; and
 - (g) promote the progressive development of procedures and methods of recording and notification of occupational accidents and injuries.

184. The competent authority should specify the information that should be collected and reported. The report should contain the following information, at a minimum:

- (a) name of ship and IMO number, official number, including the flag of the country of registration;
- (b) type of ship;
- (c) date and time of the accident or injury;
- (d) latitude and longitude or geographical position at which the incident occurred;
- (e) name, rank, date of birth, nationality and gender of the seafarer;
- (f) nature of the injuries sustained;
- (g) outcome, where known – such as death, recovery, expected long-term effects;
- (h) the environmental conditions at the time of the incident – such as lighting (if artificial light was used), weather (if applicable), temperature;
- (i) the location on board where the injury occurred;
- (j) the activities in which the seafarer was engaged at the time of the incident;
- (k) the record of the seafarer’s hours of work or rest in the 72 hours prior to the incident;
- (l) details of any other seafarers affected by the incident; and
- (m) a brief description of the events surrounding the incident.

7.4. Investigation of occupational accidents and injuries

185. The competent authority should establish a Marine Investigation Authority in accordance with the IMO’s casualty investigation code,¹⁰ and should define and categorize the nature and severity of the occupational accidents and injuries to be investigated by the Marine Investigation Authority and/or by the shipowner. National laws, regulations or other measures may require the reporting and investigation of certain safety- and health-related incidents by another authority. Shipowner investigations should actively involve the on-board safety committee.

¹⁰ Casualty Investigation Code, op. cit., Part III, Chapter 16.

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- 186.** The facts leading up to the incident should be analysed to identify possible causal factors and should be reflected accurately in the report. The investigation should focus upon:
- (a) what happened;
 - (b) how it happened; and
 - (c) why it happened.
- 187.** Without a full investigation into why an incident occurred, there is a great risk that the causal factors may never be identified for the purposes of preventing similar incidents.
- 188.** There are several reasons behind human, technical and organizational errors. Any error should not be perceived as a causal factor in itself, but rather may be the result of deeper seated problems in the occupational safety and health policies and programmes and safety culture as a whole. The starting point for an investigation should be to discover why an error occurred and the circumstances surrounding the incident.
- 189.** Consideration should be given to including the following in an investigation:¹¹
- (a) working environment, such as work surfaces, layout of machinery, means of access, lighting and work methods;
 - (b) incidence of occupational accidents and injuries in different age groups;
 - (c) special physiological or psychological problems created by the shipboard environment;
 - (d) problems arising from physical stress on board a ship, in particular due to increased workload;
 - (e) problems arising from technical developments and human–machine interfaces and their influence on the composition of crews; and
 - (f) problems arising from any human failures.

7.5. Reporting and investigation of occupational diseases

- 190.** The competent authority should consider the features of occupational disease in seafarers when instituting reporting and investigation arrangements. Many diseases are not specific to a single causal factor, onset may be delayed, and clinical skills may be needed for their recognition. Information on disease should be held in confidence. The following measures should be considered, where not already provided as part of the national health-care system:
- (a) create appropriate arrangements for shipowners to report any recognized occupational diseases that they, or the safety committees on their ships, consider to be related to working conditions on board;

¹¹ MLC, 2006, Guideline B4.3.6, para. 2.

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- (b) develop a schedule of reportable occupational diseases in seafarers and specify notification arrangements. This should be based on the ILO list of occupational diseases¹² or a national list;
 - (c) recommend health surveillance and reporting arrangements when a risk assessment indicates a foreseeable risk of a condition in a defined group of workers;¹³
 - (d) monitor and analyse death, disability and serious ill-health in seafarers in connection with national health authorities;
 - (e) make arrangements for the investigation of suspected new health problems and any unexpected cluster of disease identified in a defined group of seafarers;
 - (f) collect and disseminate reports of any newly identified seafarer health risks, with recommendations on the measures needed for their prevention;
 - (g) support the development of skills in the investigation of health risks in seafarers to facilitate (a)–(f); and
 - (h) raise awareness of the health risks of seafarers among health-care practitioners who are responsible for their examination and care and make arrangement for any findings to be reported and investigated.

7.6. Confidentiality of data

191. Confidentiality of data should be maintained as discussed in Chapter 3.6.

¹² *ILO list of occupational diseases* (revised 2010), http://www.ilo.org/safework/info/publications/WCMS_125137/lang--en/index.htm.

¹³ See the ILO Occupational Health Services Convention, 1985 (No. 161), and the Occupational Health Services Recommendation, 1985 (No. 171).

8. Training and instruction for all seafarers

8.1. General requirements

192. Regulation 1.3 requires that seafarers do not work on a ship unless they are trained or certified as competent or otherwise qualified to perform their duties and have successfully completed training for personal safety on board ship. Standard A4.3, paragraph 1(a), also requires that the occupational and health policies and programmes include training and instruction of seafarers.

193. Standard A3.2, paragraphs 3, 4 and 8 contain the minimum requirements and the competencies for ships' cooks, including information on workplace safety and health. The ILO *Guidelines on the training of ships' cooks* provide further guidance on minimum requirements and the competencies.

194. The IMO's STCW Convention requires that:

- (a) seafarers hold the appropriate certificate and meet the applicable standard of competence;¹
- (b) seafarers are competent to perform their duties and that on being assigned their duties, they are familiarized with their specific duties, and with all ship arrangements, installations, equipment, procedures and ship characteristics that are relevant to their routine or emergency duties;²
- (c) before being assigned to shipboard duties, all persons employed or engaged on the seagoing ship, other than passengers, shall receive approved familiarization training in personal survival techniques or receive sufficient information and instruction;³ and
- (d) seafarers employed or engaged in any capacity on board ship on the business of that ship as part of the ship's complement with designated safety or pollution prevention duties in the operation of the ship shall, before being assigned to any shipboard duties, receive appropriate basic training or instruction in personal survival techniques, fire prevention and firefighting, elementary first aid, and personal safety and social responsibility.⁴

195. Adequate training, information and skill certification mechanisms are important measures to ensure safe and healthy working conditions. Training curricula should be reviewed periodically and updated in the light of developments in types and sizes of ships and in their equipment, and changes in manning practices, nationality, language and the organization of work on board ships.

¹ STCW Convention, Regulation I/14, para. 1(c).

² STCW Convention, Regulation I/14.

³ STCW Convention, Regulation VI/1 and section A/VI/1, para. 1.

⁴ STCW Convention, Regulation VI/1 and section A/VI/1, para. 2.

196. Training for seafarers meeting the training provisions of the STCW Convention includes some occupational health and safety issues. The competent authority and shipowners' and seafarers' organizations should cooperate to provide information and instructions regarding occupational hazards not covered in the STCW Convention, the MLC, 2006 Standard A3.2, paragraph 4, and the *Guidelines on the training of ships' cooks*. This should include activities to raise awareness on occupational hazards and on OSH protection and accident prevention measures, such as:

- (a) use of video, distance learning or classroom training;
- (b) displaying posters on board ships;
- (c) use of periodicals that include articles on the hazards of maritime work, and on OSH protection and accident prevention measures; and
- (d) conducting informational campaigns directed to seafarers using different media.

197. Such training should also take into account the different nationalities, languages and cultures of seafarers.

8.2. Safety familiarization on board

198. Ship safety familiarization is a requirement under the STCW Convention and Code. Ensuring that seafarers understand shipowners' OSH policies is a key aspect of keeping the workplace safe and healthy.

199. The competent authority should ensure that shipowners consider including the topics on health and risks from harmful exposure as described in Chapter 6 as an integral part of ship safety familiarization programmes.

200. In order to reduce the risk of occupational accidents, incidents and diseases, safety familiarization programmes should be ongoing. This keeps all seafarers up to date with the relevant processes, especially when the shipowner has made changes to its operations and systems (such as equipment, materials or processes).

8.2.1. New and returning seafarers

201. Seafarers new to the industry may be at a greater risk of injuring themselves at work than the more experienced staff. It is important to ensure that new seafarers, and also seafarers returning after a long absence or changing duties on board who may be unfamiliar with use of equipment, materials or processes are provided with information on the ship's safety and health policies as soon as practicable. "Toolbox meetings" or safety talks could be a part of safety familiarization programmes.

8.3. Communication of OSH information to seafarers

202. Shipowners should effectively communicate information and documents relating to OSH and particular hazards on board ships.⁵

203. Measures may include:

- (a) internal communication of OSH information between people at the relevant levels and functions of the workplace on board and ashore;
- (b) active communication with the safety committee on issues, ideas and inputs of crew members and their representatives on OSH matters; and
- (c) notice boards, magazines, articles, circulars, films and awareness-raising campaigns.

⁵ MLC, 2006, and the International Transport Workers' Federation (ITF): *ILO, Maritime Labour Convention and ITF guidance about the health and safety on board ships*, <http://www.itfseafarers.org/files/seealsodocs/40264/ILO,%20MLC%20and%20ITF%20Guidance%20on%20Health%20and%20Safety.pdf>.

9. Particular categories of personnel

9.1. Overview

204. The competent authority should ensure that national laws, regulations and other measures are in place to protect particular categories of seafarers. Shipowners should pay special attention to the seafarers' age, experience, fitness for work and other qualifications.¹

9.2. Seafarers under the age of 18

205. The competent authority must ensure special attention is paid to the working environment of seafarers under the age of 18² who are still developing physically and psychologically. They do not have the same maturity or experience and awareness of existing and potential risks. They are more vulnerable than older seafarers to some short- and long-term adverse health effects. Seafarers must meet the minimum age requirements³ and comply with provisions on medical examinations and hours of rest, among others.⁴

206. National regulations should define specific measures to eliminate or minimize under the age of 18 seafarers' exposure to occupational hazards during their duties.

207. Regulations should specify restrictions on seafarers under the age of 18 regarding potentially dangerous work that should not be undertaken without appropriate qualification or supervision and instruction, such as the types of work listed in Guideline B4.3.10, paragraph 2.

208. The safety committee should be involved in the planning, implementation, monitoring and risk assessment of the OSH aspects of seafarers under the age of 18 working on board.

209. Practical measures should also be taken to ensure the safety and health of seafarers under the age of 18, which may include special training courses, official awareness raising of accident prevention targeted at persons under the age of 18, information concerning accident prevention and health protection for specific types of work on board, professional instruction and supervision.

210. Education and training of seafarers under the age of 18 both ashore and on board ships should include guidance on the detrimental effects of alcohol and drugs and other potentially harmful substances, and the risks and concerns relating to HIV/AIDS and other communicable diseases.⁵

¹ MLC, 2006, Standard A4.3, para. 2(b); Guideline B4.3.10, para. 3.

² MLC, 2006, Standard A4.3, para. 2(b); Guideline B4.3.10; Protection of Young Seafarers Recommendation (No. 153), 1976 (which has been incorporated into the MLC, 2006).

³ MLC, 2006, Regulation 1.1, Standard A1.1.

⁴ MLC, 2006, Regulation 2.3, Guideline B2.3.

⁵ See Chapter 6.7.2.1.

9.3. Women seafarers

- 211.** The competent authorities should ensure that shipowners provide special safeguards for women seafarers, including pregnant and breastfeeding seafarers. Special attention should be given to the needs of women seafarers in terms of work arrangements and appropriate welfare facilities should be provided.
- 212.** A shipowner or master who is informed or becomes aware that a seafarer is pregnant or breastfeeding should ensure that risk assessments are revised to include an evaluation of her risks of exposure to hazards or harmful levels of ambient factors and chemicals. Other factors that may be considered include: avoiding or limiting long periods of monotonous work, working pace, working in isolation, work methods, and the design of workspaces, equipment and technical aids. The assessment should evaluate the nature, degree and duration of the individual's exposure and whether the risk will adversely affect her. Where necessary, preventive measures should be taken.
- 213.** Where it is not reasonably practicable to protect a pregnant or breastfeeding seafarer fully, risks should be minimized through measures concerning the planning and organization of the work, including, if necessary and practicable, a change of working hours, limitation of night work or transfer to other jobs that would not involve any danger to her safety and health.

9.4. Temporary service personnel

- 214.** Additional precautions should be taken when temporary personnel such as technicians or cleaning teams live and/or work on board for limited periods of time, as determined by the competent authority after consultation with shipowners' and seafarers' organizations concerned. They may not be familiar with safety requirements on board. The shipowner should ensure that they are familiarized with the safety requirements and risk assessment, and receive information specific to the work and personnel involved. Temporary service work should be planned, organized and performed in such a way as to avoid any risk to safety and health. In the event that such risks exist, precautions should be taken to minimize exposure to occupational hazards.

Appendix I

Explanatory note to the Regulations and Code of the Maritime Labour Convention, 2006

1. This explanatory note, which does not form part of the Maritime Labour Convention, is intended as a general guide to the Convention.
2. The Convention comprises three different but related parts: the Articles, the Regulations and the Code.
3. The Articles and Regulations set out the core rights and principles and the basic obligations of Members ratifying the Convention. The Articles and Regulations can only be changed by the Conference in the framework of article 19 of the Constitution of the International Labour Organisation (see Article XIV of the Convention).
4. The Code contains the details for the implementation of the Regulations. It comprises Part A (mandatory Standards) and Part B (non-mandatory Guidelines). The Code can be amended through the simplified procedure set out in Article XV of the Convention. Since the Code relates to detailed implementation, amendments to it must remain within the general scope of the Articles and Regulations.
5. The Regulations and the Code are organized into general areas under five Titles:
 - Title 1: Minimum requirements for seafarers to work on a ship.
 - Title 2: Conditions of employment.
 - Title 3: Accommodation, recreational facilities, food and catering.
 - Title 4: Health protection, medical care, welfare and social security protection.
 - Title 5: Compliance and enforcement.
6. Each Title contains groups of provisions relating to a particular right or principle (or enforcement measure in Title 5), with connected numbering. The first group in Title 1, for example, consists of Regulation 1.1, Standard A1.1 and Guideline B1.1, relating to minimum age.
7. The Convention has three underlying purposes:
 - (a) to lay down, in its Articles and Regulations, a firm set of rights and principles;
 - (b) to allow, through the Code, a considerable degree of flexibility in the way Members implement those rights and principles; and
 - (c) to ensure, through Title 5, that the rights and principles are properly complied with and enforced.
8. There are two main areas for flexibility in implementation: one is the possibility for a Member, where necessary (see Article VI, paragraph 3), to give effect to the detailed requirements of Part A of the Code through substantial equivalence (as defined in Article VI, paragraph 4).
9. The second area of flexibility in implementation is provided by formulating the mandatory requirements of many provisions in Part A in a more general way, thus leaving a wider scope for discretion as to the precise action to be provided for at the national level. In such cases, guidance on implementation is given in the non-mandatory Part B of the Code. In this way, Members which have ratified this Convention can ascertain the kind of action that might be expected of them under the corresponding general obligation in Part A, as well as action that would not necessarily be required. For example, Standard A4.1 requires all ships to provide prompt access to the necessary medicines for medical care on board ship (paragraph 1(b)) and to “carry a medicine chest” (paragraph 4(a)). The fulfilment in good faith of this latter obligation clearly means something more than simply having a medicine chest on board each ship. A more precise indication of what is involved is provided in the corresponding Guideline B4.1.1 (paragraph 4) so as to ensure that the contents of the chest are properly stored, used and maintained.

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10. Members which have ratified this Convention are not bound by the guidance concerned and, as indicated in the provisions in Title 5 on port State control, inspections would deal only with the relevant requirements of this Convention (Articles, Regulations and the Standards in Part A). However, Members are required under paragraph 2 of Article VI to give due consideration to implementing their responsibilities under Part A of the Code in the manner provided for in Part B. If, having duly considered the relevant Guidelines, a Member decides to provide for different arrangements which ensure the proper storage, use and maintenance of the contents of the medicine chest, to take the example given above, as required by the Standard in Part A, then that is acceptable. On the other hand, by following the guidance provided in Part B, the Member concerned, as well as the ILO bodies responsible for reviewing implementation of international labour Conventions, can be sure without further consideration that the arrangements the Member has provided for are adequate to implement the responsibilities under Part A to which the Guideline relates.

Appendix II

Relevant provisions of the Maritime Labour Convention, 2006

Articles III and IV of the MLC, 2006

FUNDAMENTAL RIGHTS AND PRINCIPLES

Article III

Each Member shall satisfy itself that the provisions of its law and regulations respect, in the context of this Convention, the fundamental rights to:

- (a) freedom of association and the effective recognition of the right to collective bargaining;
- (b) the elimination of all forms of forced or compulsory labour;
- (c) the effective abolition of child labour; and
- (d) the elimination of discrimination in respect of employment and occupation.

SEAFARERS' EMPLOYMENT AND SOCIAL RIGHTS

Article IV

1. Every seafarer has the right to a safe and secure workplace that complies with safety standards.
2. Every seafarer has a right to fair terms of employment.
3. Every seafarer has a right to decent working and living conditions on board ship.
4. Every seafarer has a right to health protection, medical care, welfare measures and other forms of social protection.
5. Each Member shall ensure, within the limits of its jurisdiction, that the seafarers' employment and social rights set out in the preceding paragraphs of this Article are fully implemented in accordance with the requirements of this Convention. Unless specified otherwise in the Convention, such implementation may be achieved through national laws or regulations, through applicable collective bargaining agreements or through other measures or in practice.

Title 1. Regulation 1.1 – Minimum age

Purpose: To ensure that no under-age persons work on a ship

1. No person below the minimum age shall be employed or engaged or work on a ship.
2. The minimum age at the time of the initial entry into force of this Convention is 16 years.
3. A higher minimum age shall be required in the circumstances set out in the Code.

Standard A1.1 – Minimum age

1. The employment, engagement or work on board a ship of any person under the age of 16 shall be prohibited.
2. Night work of seafarers under the age of 18 shall be prohibited. For the purposes of this Standard, "night" shall be defined in accordance with national law and practice. It shall cover a period of at least nine hours starting no later than midnight and ending no earlier than 5 a.m.
3. An exception to strict compliance with the night work restriction may be made by the competent authority when:
 - (a) the effective training of the seafarers concerned, in accordance with established programmes and schedules, would be impaired; or

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- (b) the specific nature of the duty or a recognized training programme requires that the seafarers covered by the exception perform duties at night and the authority determines, after consultation with the shipowners' and seafarers' organizations concerned, that the work will not be detrimental to their health or well-being.
 4. The employment, engagement or work of seafarers under the age of 18 shall be prohibited where the work is likely to jeopardize their health or safety. The types of such work shall be determined by national laws or regulations or by the competent authority, after consultation with the shipowners' and seafarers' organizations concerned, in accordance with relevant international standards.

Regulation 1.3 – Training and qualifications

Purpose: To ensure that seafarers are trained or qualified to carry out their duties on board ship

1. Seafarers shall not work on a ship unless they are trained or certified as competent or otherwise qualified to perform their duties.
2. Seafarers shall not be permitted to work on a ship unless they have successfully completed training for personal safety on board ship.
3. Training and certification in accordance with the mandatory instruments adopted by the International Maritime Organization shall be considered as meeting the requirements of paragraphs 1 and 2 of this Regulation.
4. Any Member which, at the time of its ratification of this Convention, was bound by the Certification of Able Seamen Convention, 1946 (No. 74), shall continue to carry out the obligations under that Convention unless and until mandatory provisions covering its subject matter have been adopted by the International Maritime Organization and entered into force, or until five years have elapsed since the entry into force of this Convention in accordance with paragraph 3 of Article VIII, whichever date is earlier.

Regulation 4.3 – Health and safety protection and accident prevention

Purpose: To ensure that seafarers' work environment on board ships promotes occupational safety and health

1. Each Member shall ensure that seafarers on ships that fly its flag are provided with occupational health protection and live, work and train on board ship in a safe and hygienic environment.
2. Each Member shall develop and promulgate national guidelines for the management of occupational safety and health on board ships that fly its flag, after consultation with representative shipowners' and seafarers' organizations and taking into account applicable codes, guidelines and standards recommended by international organizations, national administrations and maritime industry organizations.
3. Each Member shall adopt laws and regulations and other measures addressing the matters specified in the Code, taking into account relevant international instruments, and set standards for occupational safety and health protection and accident prevention on ships that fly its flag.

Standard A4.3 – Health and safety protection and accident prevention

1. The laws and regulations and other measures to be adopted in accordance with Regulation 4.3, paragraph 3, shall include the following subjects:
 - (a) the adoption and effective implementation and promotion of occupational safety and health policies and programmes on ships that fly the Member's flag, including risk evaluation as well as training and instruction of seafarers;
 - (b) reasonable precautions to prevent occupational accidents, injuries and diseases on board ship, including measures to reduce and prevent the risk of exposure to harmful levels of ambient

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- factors and chemicals as well as the risk of injury or disease that may arise from the use of equipment and machinery on board ships;
- (c) on-board programmes for the prevention of occupational accidents, injuries and diseases and for continuous improvement in occupational safety and health protection, involving seafarers' representatives and all other persons concerned in their implementation, taking account of preventive measures, including engineering and design control, substitution of processes and procedures for collective and individual tasks, and the use of personal protective equipment; and
 - (d) requirements for inspecting, reporting and correcting unsafe conditions and for investigating and reporting on-board occupational accidents.
2. The provisions referred to in paragraph 1 of this Standard shall:
 - (a) take account of relevant international instruments dealing with occupational safety and health protection in general and with specific risks, and address all matters relevant to the prevention of occupational accidents, injuries and diseases that may be applicable to the work of seafarers and particularly those which are specific to maritime employment;
 - (b) clearly specify the obligation of shipowners, seafarers and others concerned to comply with the applicable standards and with the ship's occupational safety and health policy and programme with special attention being paid to the safety and health of seafarers under the age of 18;
 - (c) specify the duties of the master or a person designated by the master, or both, to take specific responsibility for the implementation of and compliance with the ship's occupational safety and health policy and programme; and
 - (d) specify the authority of the ship's seafarers appointed or elected as safety representatives to participate in meetings of the ship's safety committee. Such a committee shall be established on board a ship on which there are five or more seafarers.
 3. The laws and regulations and other measures referred to in Regulation 4.3, paragraph 3, shall be regularly reviewed in consultation with the representatives of the shipowners' and seafarers' organizations and, if necessary, revised to take account of changes in technology and research in order to facilitate continuous improvement in occupational safety and health policies and programmes and to provide a safe occupational environment for seafarers on ships that fly the Member's flag.
 4. Compliance with the requirements of applicable international instruments on the acceptable levels of exposure to workplace hazards on board ships and on the development and implementation of ships' occupational safety and health policies and programmes shall be considered as meeting the requirements of this Convention.
 5. The competent authority shall ensure that:
 - (a) occupational accidents, injuries and diseases are adequately reported, taking into account the guidance provided by the International Labour Organization with respect to the reporting and recording of occupational accidents and diseases;
 - (b) comprehensive statistics of such accidents and diseases are kept, analysed and published and, where appropriate, followed up by research into general trends and into the hazards identified; and
 - (c) occupational accidents are investigated.
 6. Reporting and investigation of occupational safety and health matters shall be designed to ensure the protection of seafarers' personal data, and shall take account of the guidance provided by the International Labour Organization on this matter.
 7. The competent authority shall cooperate with shipowners' and seafarers' organizations to take measures to bring to the attention of all seafarers information concerning particular hazards on board ships, for instance, by posting official notices containing relevant instructions.
 8. The competent authority shall require that shipowners conducting risk evaluation in relation to management of occupational safety and health refer to appropriate statistical information from their ships and from general statistics provided by the competent authority.

Guideline B4.3 – Health and safety protection and accident prevention

Guideline B4.3.1 – Provisions on occupational accidents, injuries and diseases

1. The provisions required under Standard A4.3 should take into account the ILO code of practice entitled *Accident prevention on board ship at sea and in port*, 1996, and subsequent versions and other related ILO and other international standards and guidelines and codes of practice regarding occupational safety and health protection, including any exposure levels that they may identify.
2. The competent authority should ensure that the national guidelines for the management of occupational safety and health address the following matters, in particular:
 - (a) general and basic provisions;
 - (b) structural features of the ship, including means of access and asbestos-related risks;
 - (c) machinery;
 - (d) the effects of the extremely low or high temperature of any surfaces with which seafarers may be in contact;
 - (e) the effects of noise in the workplace and in shipboard accommodation;
 - (f) the effects of vibration in the workplace and in shipboard accommodation;
 - (g) the effects of ambient factors, other than those referred to in subparagraphs (e) and (f), in the workplace and in shipboard accommodation, including tobacco smoke;
 - (h) special safety measures on and below deck;
 - (i) loading and unloading equipment;
 - (j) fire prevention and fire-fighting;
 - (k) anchors, chains and lines;
 - (l) dangerous cargo and ballast;
 - (m) personal protective equipment for seafarers;
 - (n) work in enclosed spaces;
 - (o) physical and mental effects of fatigue;
 - (p) the effects of drug and alcohol dependency;
 - (q) HIV/AIDS protection and prevention; and
 - (r) emergency and accident response.
3. The assessment of risks and reduction of exposure on the matters referred to in paragraph 2 of this Guideline should take account of the physical occupational health effects, including manual handling of loads, noise and vibration, the chemical and biological occupational health effects, the mental occupational health effects, the physical and mental health effects of fatigue, and occupational accidents. The necessary measures should take due account of the preventive principle according to which, among other things, combating risk at the source, adapting work to the individual, especially as regards the design of workplaces, and replacing the dangerous by the non-dangerous or the less dangerous, have precedence over personal protective equipment for seafarers.
4. In addition, the competent authority should ensure that the implications for health and safety are taken into account, particularly in the following areas:
 - (a) emergency and accident response;
 - (b) the effects of drug and alcohol dependency; and
 - (c) HIV/AIDS protection and prevention.

Guideline B4.3.2 – Exposure to noise

1. The competent authority, in conjunction with the competent international bodies and with representatives of shipowners' and seafarers' organizations concerned, should review on an ongoing basis the problem of noise on board ships with the objective of improving the protection of seafarers, in so far as practicable, from the adverse effects of exposure to noise.
2. The review referred to in paragraph 1 of this Guideline should take account of the adverse effects of exposure to excessive noise on the hearing, health and comfort of seafarers and the measures to be prescribed or recommended to reduce shipboard noise to protect seafarers. The measures to be considered should include the following:
 - (a) instruction of seafarers in the dangers to hearing and health of prolonged exposure to high noise levels and in the proper use of noise protection devices and equipment;
 - (b) provision of approved hearing protection equipment to seafarers where necessary; and
 - (c) assessment of risk and reduction of exposure levels to noise in all accommodation and recreational and catering facilities, as well as engine rooms and other machinery spaces.

Guideline B4.3.3 – Exposure to vibration

1. The competent authority, in conjunction with the competent international bodies and with representatives of shipowners' and seafarers' organizations concerned, and taking into account, as appropriate, relevant international standards, should review on an ongoing basis the problem of vibration on board ships with the objective of improving the protection of seafarers, in so far as practicable, from the adverse effects of vibration.
2. The review referred to in paragraph 1 of this Guideline should cover the effect of exposure to excessive vibration on the health and comfort of seafarers and the measures to be prescribed or recommended to reduce shipboard vibration to protect seafarers. The measures to be considered should include the following:
 - (a) instruction of seafarers in the dangers to their health of prolonged exposure to vibration;
 - (b) provision of approved personal protective equipment to seafarers where necessary; and
 - (c) assessment of risks and reduction of exposure to vibration in all accommodation and recreational and catering facilities by adopting measures in accordance with the guidance provided by the ILO code of practice entitled Ambient factors in the workplace, 2001, and any subsequent revisions, taking account of the difference between exposure in those areas and in the workplace.

Guideline B4.3.4 – Obligations of shipowners

1. Any obligation on the shipowner to provide protective equipment or other accident prevention safeguards should, in general, be accompanied by provisions requiring their use by seafarers and by a requirement for seafarers to comply with the relevant accident prevention and health protection measures.
2. Account should also be taken of Articles 7 and 11 of the Guarding of Machinery Convention, 1963 (No. 119), and the corresponding provisions of the Guarding of Machinery Recommendation, 1963 (No. 118), under which the obligation to ensure compliance with the requirement that machinery in use is properly guarded, and its use without appropriate guards prevented, rests on the employer, while there is an obligation on the worker not to use machinery without the guards being in position nor to make inoperative the guards provided.

Guideline B4.3.5 – Reporting and collection of statistics

1. All occupational accidents and occupational injuries and diseases should be reported so that they can be investigated and comprehensive statistics can be kept, analysed and published, taking account of protection of the personal data of the seafarers concerned. Reports should not be limited to fatalities or to accidents involving the ship.

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2. The statistics referred to in paragraph 1 of this Guideline should record the numbers, nature, causes and effects of occupational accidents and occupational injuries and diseases, with a clear indication, as applicable, of the department on board a ship, the type of accident and whether at sea or in port.
 3. Each Member should have due regard to any international system or model for recording accidents to seafarers which may have been established by the International Labour Organization.

Guideline B4.3.6 – Investigations

1. The competent authority should undertake investigations into the causes and circumstances of all occupational accidents and occupational injuries and diseases resulting in loss of life or serious personal injury, and such other cases as may be specified in national laws or regulations.
2. Consideration should be given to including the following as subjects of investigation:
 - (a) working environment, such as working surfaces, layout of machinery, means of access, lighting and methods of work;
 - (b) incidence in different age groups of occupational accidents and occupational injuries and diseases;
 - (c) special physiological or psychological problems created by the shipboard environment;
 - (d) problems arising from physical stress on board a ship, in particular as a consequence of increased workload;
 - (e) problems arising from and effects of technical developments and their influence on the composition of crews; and
 - (f) problems arising from any human failures.

Guideline B4.3.7 – National protection and prevention programmes

1. In order to provide a sound basis for measures to promote occupational safety and health protection and prevention of accidents, injuries and diseases which are due to particular hazards of maritime employment, research should be undertaken into general trends and into such hazards as are revealed by statistics.
2. The implementation of protection and prevention programmes for the promotion of occupational safety and health should be so organized that the competent authority, shipowners and seafarers or their representatives and other appropriate bodies may play an active role, including through such means as information sessions, on-board guidelines on maximum exposure levels to potentially harmful ambient workplace factors and other hazards or outcomes of a systematic risk evaluation process. In particular, national or local joint occupational safety and health protection and accident prevention committees or ad hoc working parties and on-board committees, on which shipowners' and seafarers' organizations concerned are represented, should be established.
3. Where such activity takes place at company level, the representation of seafarers on any safety committee on board that shipowner's ships should be considered.

Guideline B4.3.8 – Content of protection and prevention programmes

1. Consideration should be given to including the following in the functions of the committees and other bodies referred to in Guideline B4.3.7, paragraph 2:
 - (a) the preparation of national guidelines and policies for occupational safety and health management systems and for accident prevention provisions, rules and manuals;
 - (b) the organization of occupational safety and health protection and accident prevention training and programmes;
 - (c) the organization of publicity on occupational safety and health protection and accident prevention, including films, posters, notices and brochures; and

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- (d) the distribution of literature and information on occupational safety and health protection and accident prevention so that it reaches seafarers on board ships.
 2. Relevant provisions or recommendations adopted by the appropriate national authorities or organizations or international organizations should be taken into account by those preparing texts of occupational safety and health protection and accident prevention measures or recommended practices.
 3. In formulating occupational safety and health protection and accident prevention programmes, each Member should have due regard to any code of practice concerning the safety and health of seafarers which may have been published by the International Labour Organization.

Guideline B4.3.9 – Instruction in occupational safety and health protection and the prevention of occupational accidents

1. The curriculum for the training referred to in Standard A4.3, paragraph 1(a), should be reviewed periodically and brought up to date in the light of development in types and sizes of ships and in their equipment, as well as changes in manning practices, nationality, language and the organization of work on board ships.
2. There should be continuous occupational safety and health protection and accident prevention publicity. Such publicity might take the following forms:
 - (a) educational audiovisual material, such as films, for use in vocational training centres for seafarers and where possible shown on board ships;
 - (b) display of posters on board ships;
 - (c) inclusion in periodicals read by seafarers of articles on the hazards of maritime employment and on occupational safety and health protection and accident prevention measures; and
 - (d) special campaigns using various publicity media to instruct seafarers, including campaigns on safe working practices.
3. The publicity referred to in paragraph 2 of this Guideline should take account of the different nationalities, languages and cultures of seafarers on board ships.

Guideline B4.3.10 – Safety and health education of young seafarers

1. Safety and health regulations should refer to any general provisions on medical examinations before and during employment and on the prevention of accidents and the protection of health in employment, which may be applicable to the work of seafarers. Such regulations should specify measures which will minimize occupational dangers to young seafarers in the course of their duties.
2. Except where a young seafarer is recognized as fully qualified in a pertinent skill by the competent authority, the regulations should specify restrictions on young seafarers undertaking, without appropriate supervision and instruction, certain types of work presenting special risk of accident or of detrimental effect on their health or physical development, or requiring a particular degree of maturity, experience or skill. In determining the types of work to be restricted by the regulations, the competent authority might consider in particular work involving:
 - (a) the lifting, moving or carrying of heavy loads or objects;
 - (b) entry into boilers, tanks and cofferdams;
 - (c) exposure to harmful noise and vibration levels;
 - (d) operating hoisting and other power machinery and tools, or acting as signallers to operators of such equipment;
 - (e) handling mooring or tow lines or anchoring equipment;
 - (f) rigging;
 - (g) work aloft or on deck in heavy weather;
 - (h) nightwatch duties;

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- (i) servicing of electrical equipment;
 - (j) exposure to potentially harmful materials, or harmful physical agents such as dangerous or toxic substances and ionizing radiations;
 - (k) the cleaning of catering machinery; and
 - (l) the handling or taking charge of ships' boats.
3. Practical measures should be taken by the competent authority or through the appropriate machinery to bring to the attention of young seafarers information concerning the prevention of accidents and the protection of their health on board ships. Such measures could include adequate instruction in courses, official accident prevention publicity intended for young persons and professional instruction and supervision of young seafarers.
 4. Education and training of young seafarers both ashore and on board ships should include guidance on the detrimental effects on their health and well-being of the abuse of alcohol and drugs and other potentially harmful substances, and the risk and concerns relating to HIV/AIDS and of other health risk related activities.

Guideline B4.3.11 – International cooperation

1. Members, with the assistance as appropriate of intergovernmental and other international organizations, should endeavour, in cooperation with each other, to achieve the greatest possible uniformity of action for the promotion of occupational safety and health protection and prevention of accidents.
2. In developing programmes for promoting occupational safety and health protection and prevention of accidents under Standard A4.3, each Member should have due regard to relevant codes of practice published by the International Labour Organization and the appropriate standards of international organizations.
3. Members should have regard to the need for international cooperation in the continuous promotion of activity related to occupational safety and health protection and prevention of occupational accidents. Such cooperation might take the form of:
 - (a) bilateral or multilateral arrangements for uniformity in occupational safety and health protection and accident prevention standards and safeguards;
 - (b) exchange of information on particular hazards affecting seafarers and on means of promoting occupational safety and health protection and preventing accidents;
 - (c) assistance in testing of equipment and inspection according to the national regulations of the flag State;
 - (d) collaboration in the preparation and dissemination of occupational safety and health protection and accident prevention provisions, rules or manuals;
 - (e) collaboration in the production and use of training aids; and
 - (f) joint facilities for, or mutual assistance in, the training of seafarers in occupational safety and health protection, accident prevention and safe working practices.

Appendix III

Chart summarizing ILO documents related to Standard A4.3

Standard A4.3	Topic	ILO documents
Standard A4.3, paras 1–4 Guideline B4.3.7 Guideline B4.3.8 Guideline B4.3.11	OSH policies and programmes	Occupational Safety and Health Convention, 1981 (No.155), and Recommendation (No. 164) Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187), and Recommendation (No. 197)
Standard A4.3, paras 1, 8 Guideline B4.3.1, para. 3	Risk evaluation	Occupational Safety and Health Convention, 1981 (No. 155), Article 7 ILO code of practice on ambient factors in the workplace, 2001
Standard A4.3, paras 1, 2, 7 Guideline B4.3.1, para. 2(m) Guideline B4.3.9 Guideline B4.3.11	Prevention of occupational accidents, injuries and diseases	Occupational Safety and Health Convention, 1981 (No. 155), Article 4 Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187), Articles 1, 4 ILO code of practice on accident prevention on board ship at sea and in port, 1996
Standard A4.3, paras 1, 5, 6, 8 Guideline B4.3.5 Guideline B4.3.6	Investigating and reporting	ILO code of practice on accident prevention on board ship at sea and in port, 1996 Protocol of 2002 to the Occupational Safety and Health Convention, 1981 (No. 155) ILO list of occupational diseases (revised 2010)
Standard A4.3, para. 1(a) Guideline B4.3.9, para. 2 Guideline B4.3.10	Training and instruction	ILO code of practice on accident prevention on board ship at sea and in port, 1996, Chapter 10
Standard A4.3, para. 1(b) Guideline B4.3.1, para. 3	Ambient factors – Chemicals and biologicals	ILO code of practice on ambient factors in the workplace, 2001, Chapter 4 ILO code of practice on safety in the use of chemicals at work, 1993
Standard A4.3, para. 1(b) Guideline B4.3.1, para. 2(c)	Ambient factors – Machinery	ILO code of practice on accident prevention on board ship at sea and in port, 1996, Chapter 21
Standard A4.3, para. 1(b) Guideline B4.3.1, para. 2(d)	Ambient factors – Heat and cold	ILO code of practice on ambient factors in the workplace, 2001, Chapter 8
Standard A4.3, para. 1(b) Guideline B4.3.1, para. 2(e) Guideline B4.3.1, para. 3 Guideline B4.3.2 Guideline B4.3.10, para. 2(c)	Ambient factors – Noise	ILO code of practice on ambient factors in the workplace, 2001, Chapter 9 ILO code of practice on protection of workers against noise and vibration in the working environment, 1977

Standard A4.3	Topic	ILO documents
Standard A4.3, para. 1(b) Guideline B4.3.1, para. 2(f) Guideline B4.3.1, para. 3 Guideline B4.3.3 Guideline B4.3.10, para. 2(c)	Ambient factors – Vibration	ILO code of practice on ambient factors in the workplace, 2001, Chapter 10 ILO code of practice on protection of workers against noise and vibration in the working environment, 1977
Standard A4.3, para. 2(b) Guideline B4.3.4	Obligations of shipowners, seafarers and others	ILO code of practice on accident prevention on board ship at sea and in port, 1996, Chapter 2
Standard A4.3, para. 2(c)	Duties of master	ILO code of practice on accident prevention on board ship at sea and in port, 1996
Standard A4.3, paras 3, 5, 7, 8	Tripartite consultation	Occupational Safety and Health Convention, 1981 (No.155), Articles 1, 2, 4, 8, 15, 19 Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187), Articles 2–5 ILO code of practice on accident prevention on board ship at sea and in port, 1996, Chapter 1
Standard A4.3, paras 5, 8 Guideline B4.3.5	Statistics	Occupational Safety and Health Convention, 1981 (No.155), Article 11
Guideline B4.3.1, para. 2(b)	Asbestos	ILO code of practice on safety in the use of asbestos, 1984
Guideline B4.3.1, para. 2(j)	Fire prevention and firefighting	ILO code of practice on accident prevention on board ship at sea and in port, 1996, Chapters 5, 6
Guideline B4.3.1, para. 2(n)	Enclosed spaces	ILO code of practice on accident prevention on board ship at sea and in port, 1996, Chapter 10
Guideline B4.3.1, para. 2(p) Guideline B4.3.1, para. 4	Drug and alcohol dependency	ILO code of practice on management of alcohol- and drug-related issues in the workplace, 1996 <i>Drug and Alcohol Abuse Prevention Programmes in the Maritime Industry (A Manual for Planners) (Revised)</i> , ILO, 2001
Guideline B4.3.1, para. 2(q) Guideline B4.3.1, para. 4	HIV/AIDS	HIV and AIDS Recommendation, 2010 (No. 200) ILO code of practice on HIV/AIDS and the world of work, 2001

Note: The International Maritime Organization and the World Health Organization have also adopted many applicable standards, guidance and other publications that address occupational safety and health issues and which may be relevant to implementation of MLC, 2006 Standard A4.3.