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INTERNATIONAL LABOUR ORGANIZATION

Sectoral Activities Department

**Guidelines on the training
of ships' cooks¹**

¹ These Guidelines will be submitted to the March 2014 session of the Governing Body of the ILO for its consideration.

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Acronyms

CCP	critical control point
DMLC	declaration of maritime labour compliance
FAO	Food and Agriculture Organization of the United Nations
FDA	United States Food and Drug Administration
GMPs	good management practices
HACCP	hazard analysis and critical control point
ILC	International Labour Conference
ILO	International Labour Organization
IMO	International Maritime Organization
ISM Code	International Safety Management Code
MARPOL Convention	International Convention for the Prevention of Pollution from Ships
MLC, 2006	Maritime Labour Convention, 2006
SOLAS Convention	International Convention for the Safety of Life at Sea, 1974
STCW Convention	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended
WHO	World Health Organization

1. Introduction

1.1. ILO work in the maritime sector

1. The International Labour Organization (ILO) has always recognized the specificity of maritime employment and the needs of those who make their livelihoods on the world's oceans and seas. The earliest international labour standards concerning work at sea were adopted in 1920. The maritime work of the ILO continues to bring together representatives of governments and shipowners' and seafarers' organizations from the maritime sector to develop international standards and policies to promote decent work for all seafarers and conditions of fair competition for shipowners.
2. The Maritime Labour Convention, 2006 (MLC, 2006), was adopted by the International Labour Conference (ILC) at a special Maritime Session held in February 2006 in Geneva. The basic aims of the MLC, 2006, are to ensure comprehensive worldwide protection of the rights of seafarers and to establish a level playing field for member States and shipowners committed to providing decent working and living conditions for seafarers, thus contributing to the elimination of substandard shipping. As an estimated 90 per cent of world trade is carried on ships, the world's more than 1.5 million seafarers are essential to international trade and the international economic and trade system. The MLC, 2006, recognizes the importance of ensuring that sufficient food and drinking water of appropriate quality is served on board by qualified and trained catering personnel. The Convention strikes a careful balance between firmness with respect to principles and flexibility with regard to implementation.
3. The Guidelines on the training of ships' cooks (hereinafter "the Guidelines") are intended to provide supplementary practical information and guidance to flag States that can be reflected in their national laws and other measures to implement Regulation 3.2 and the Code of the MLC, 2006. It must be emphasized that these Guidelines are intended as a practical resource to be used by any government that 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. The Guidelines may also be useful to labour-supplying States that have specialized training schools for ships' cooks.

1.2. Overview of the MLC, 2006

4. The MLC, 2006, is a global legal instrument generally considered to be the "fourth pillar" of the international regulatory regime for quality shipping, complementing the key instruments of the International Maritime Organization (IMO), namely the International Convention for the Safety of Life at Sea, 1974 (the "SOLAS Convention"), as amended, the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (the "STCW Convention"), as amended, and the International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocol of 1978 (the "MARPOL Convention").
5. The MLC, 2006, contains a comprehensive set of standards, based on maritime labour instruments (Conventions and Recommendations), adopted by the ILC between 1920 and 1996. The Convention consolidates and updates more than 68 international maritime labour standards. It sets out seafarers' rights to decent conditions of work on a wide range of subjects and aims to be globally applicable, easily understandable, readily updatable and uniformly enforced.

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6. Ships' cooks are seafarers whose primary responsibility on board a ship is to prepare food for the crew of the ship. Their role extends beyond the preparation of food to include maintenance of the kitchen and ensuring the cleanliness and hygiene of food and drink preparation areas and the handling and storage of food and stores.
 7. Two of the earlier maritime Conventions revised by the MLC, 2006, are the Food and Catering (Ships' Crews) Convention, 1946 (No. 68), and the Certification of Ships' Cooks Convention, 1946 (No. 69). Convention No. 68 required the provision of food and water supplies which, having regard to the size of the crew and the duration and nature of the voyage, were to be suitable in respect of quantity, nutritive value, quality and variety; and the arrangement and equipment of the catering department in every ship in such a manner as to permit the service of proper meals to the members of the crew. Convention No. 69 required ships' cooks to hold a certificate of qualification based on successful completion of an examination prescribed by the competent authority including both practical and theoretical tests on food preparation and the handling and storage of food on board ship. The Guidelines will also be valuable for those States who have ratified Conventions Nos 68 and 69 but have yet to ratify the MLC, 2006.

1.3. Structure of the MLC, 2006

8. The MLC, 2006, comprises three different but related parts: the Articles, the Regulations and the Code. The Articles and Regulations set out the core rights and principles and the basic obligations of member States ratifying the Convention. The Code contains details for the implementation of the Regulations. It comprises Part A (mandatory Standards) and Part B (non-mandatory Guidelines). The Regulations and the Code are organized into general areas under five "Titles", as set out below.
 - Minimum requirements for seafarers to work on a ship (Title 1).
 - Conditions of employment (Title 2).
 - Accommodation, recreational facilities, food and catering (Title 3).
 - Health protection, medical care, welfare and social security protection (Title 4).
 - Compliance and enforcement (Title 5).
9. When taken as a whole, the MLC, 2006, covers most aspects of the living and working conditions of seafarers. It applies to seafarers as defined in its Article II(1)(f), that is all persons who are employed or engaged or work in any capacity on board a ship to which the Convention applies. This definition thus includes not just the crew involved in navigating or operating the ship but also, for example, hotel personnel working on the ship. Cooks and other catering personnel are therefore protected by the Convention.

1.4 MLC, 2006: Regulation 3.2, Standard A3.2 and Guideline B3.2 – Food and catering

10. While other provisions of the MLC, 2006, apply to ships' cooks, the present Guidelines focus on Regulation 3.2, Standard A3.2 and Guideline B3.2, with respect to ships' cooks, which are reproduced below for ease of reference.

REGULATION 3.2 – FOOD AND CATERING

Purpose: To ensure that seafarers have access to good quality food and drinking water provided under regulated hygienic conditions

1. Each Member shall ensure that ships that fly its flag carry on board and serve food and drinking water of appropriate quality, nutritional value and quantity that adequately covers the requirements of the ship and takes into account the differing cultural and religious backgrounds.
2. Seafarers on board a ship shall be provided with food free of charge during the period of engagement.
3. Seafarers employed as ships' cooks with responsibility for food preparation must be trained and qualified for their position on board ship.

STANDARD A3.2 – FOOD AND CATERING

1. Each Member shall adopt laws and regulations or other measures to provide minimum standards for the quantity and quality of food and drinking water and for the catering standards that apply to meals provided to seafarers on ships that fly its flag, and shall undertake educational activities to promote awareness and implementation of the standards referred to in this paragraph.
2. Each Member shall ensure that ships that fly its flag meet the following minimum standards:
 - (a) food and drinking water supplies, having regard to the number of seafarers on board, their religious requirements and cultural practices as they pertain to food, and the duration and nature of the voyage, shall be suitable in respect of quantity, nutritional value, quality and variety;
 - (b) the organization and equipment of the catering department shall be such as to permit the provision to the seafarers of adequate, varied and nutritious meals prepared and served in hygienic conditions; and
 - (c) catering staff shall be properly trained or instructed for their positions.
3. Shipowners shall ensure that seafarers who are engaged as ships' cooks are trained, qualified and found competent for the position in accordance with requirements set out in the laws and regulations of the Member concerned.
4. The requirements under paragraph 3 of this Standard shall include a completion of a training course approved or recognized by the competent authority, which covers practical cookery, food and personal hygiene, food storage, stock control, and environmental protection and catering health and safety.
5. On ships operating with a prescribed manning of less than ten which, by virtue of the size of the crew or the trading pattern, may not be required by the competent authority to carry a fully qualified cook, anyone processing food in the galley shall be trained or instructed in areas including food and personal hygiene as well as handling and storage of food on board ship.
6. In circumstances of exceptional necessity, the competent authority may issue a dispensation permitting a non-fully qualified cook to serve in a specified ship for a specified limited period, until the next convenient port of call or for a period not exceeding

one month, provided that the person to whom the dispensation is issued is trained or instructed in areas including food and personal hygiene as well as handling and storage of food on board ship.

7. In accordance with the ongoing compliance procedures under Title 5, the competent authority shall require that frequent documented inspections be carried out on board ships, by or under the authority of the master, with respect to:

- (a) supplies of food and drinking water;
- (b) all spaces and equipment used for the storage and handling of food and drinking water; and
- (c) galley and other equipment for the preparation and service of meals.

8. No seafarer under the age of 18 shall be employed or engaged or work as a ship's cook.

GUIDELINE B3.2 – FOOD AND CATERING

GUIDELINE B3.2.1 – INSPECTION, EDUCATION, RESEARCH AND PUBLICATION

1. The competent authority should, in cooperation with other relevant agencies and organizations, collect up-to-date information on nutrition and on methods of purchasing, storing, preserving, cooking and serving food, with special reference to the requirements of catering on board a ship. This information should be made available, free of charge or at reasonable cost, to manufacturers of and traders in ships' food supplies and equipment, masters, stewards and cooks, and to shipowners' and seafarers' organizations concerned. Appropriate forms of publicity, such as manuals, brochures, posters, charts or advertisements in trade journals, should be used for this purpose.

2. The competent authority should issue recommendations to avoid wastage of food, facilitate the maintenance of a proper standard of hygiene, and ensure the maximum practicable convenience in working arrangements.

3. The competent authority should work with relevant agencies and organizations to develop educational materials and on-board information concerning methods of ensuring proper food supply and catering services.

4. The competent authority should work in close cooperation with the shipowners' and seafarers' organizations concerned and with national or local authorities dealing with questions of food and health, and may where necessary utilize the services of such authorities.

GUIDELINE B3.2.2 – SHIPS' COOKS

1. Seafarers should only be qualified as ships' cooks if they have:

- (a) served at sea for a minimum period to be prescribed by the competent authority, which could be varied to take into account existing relevant qualifications or experience;
- (b) passed an examination prescribed by the competent authority or passed an equivalent examination at an approved training course for cooks.

2. The prescribed examination may be conducted and certificates granted either directly by the competent authority or, subject to its control, by an approved school for the training of cooks.

3. The competent authority should provide for the recognition, where appropriate, of certificates of qualification as ships' cooks issued by other Members, which have ratified this Convention or the Certification of Ships' Cooks Convention, 1946 (No. 69), or other approved body.

1.5. Enforcement provisions

- 11.** Enforcement and compliance requirements are set out in the Articles and in Title 5 of the Convention. The flag State must verify, through an effective and coordinated system of regular inspection, monitoring and other control measures, that ships comply with requirements through national laws or regulations, through collective bargaining agreements or through other measures implementing the MLC, 2006. Ships of 500 gross tonnage (gt) or over engaged in international voyages must also be certified for compliance with the requirements of the Convention and are required to carry a maritime labour certificate and a declaration of maritime labour compliance (DMLC).
- 12.** The DMLC has two parts. Part I is to be completed by the flag State and must contain references to the relevant details of the national requirements implementing the MLC, 2006. Part II is prepared by the shipowner and outlines the measures that the shipowner has put in place to ensure ongoing compliance on the ship with these flag State requirements. Standard A5.1.3(10)(b) requires shipowners to document in Part II of the DMLC ongoing compliance with the national requirements between inspections and the measures proposed to ensure that there is continuous improvement.
- 13.** The requirements of Regulation 3.2 and Standard A3.2 concerning food and catering – one of the 14 areas of working and living conditions on a ship that are subject to mandatory certification – must be met upon inspection in order for a maritime labour certificate to be issued.

1.6. Aim of the Guidelines

- 14.** The relevant national laws or regulations, collective bargaining agreements or other measures implementing the MLC, 2006, are the authoritative statement of requirements on the training and qualification of ships' cooks. The MLC, 2006, sets out the requirements that are to be implemented nationally. These Guidelines refer only to the requirements set out in the MLC, 2006, and are to be considered as general guidance only. Thus, although more detailed guidance is provided in sections 3 and 4 below, these Guidelines will not necessarily be wholly applicable in all countries.
- 15.** These Guidelines reflect the requirements set out in the Articles, Regulations and Part A of the Code, including the requirement that the ILO member States shall give due consideration to implementing their responsibilities in the manner provided for in the non-mandatory part of the Code (Part B). This means that there may be differences of detail between provisions of the MLC, 2006, and national provisions that have been adopted to implement Regulation 3.2.
- 16.** The Guidelines are a tool to assist the competent authority in the implementation of the MLC, 2006. Article II(1)(a) of the Convention defines the competent authority as the minister, government department or other authority having power to issue and enforce

regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned.

1.7. Structure of the Guidelines

17. The Guidelines are organized to provide guidance, with increasing detail, on the qualifications and training of ships' cooks. Section 2 covers the minimum requirements set out in Regulation 3.2. Section 3 explains the responsibilities of the different actors involved with food provision and preparation. Section 4 sets out the competencies of trained and qualified ships' cooks. The appendix sets out suggestions of good practices with respect to ships' cooks.

2. Minimum requirements for ships' cooks

18. Access to adequate food and drinking water of appropriate quality and provided free of charge on board ship is vital to the health and well-being of seafarers. The minimum standards for food and catering on board ship, as set out in Regulation 3.2(1) and (2) and Standard A3.2(1) and (2), relate to the quantity, nutritional value, quality and variety of food, based on the duration and nature of the voyage and the number of seafarers on board. The seafarers' religious requirements and cultural practices with regard to food must also be duly taken into account. For flag State inspection requirements, reference should be made to the *Guidelines for flag State Inspections under the Maritime Labour Convention, 2006*.
19. In accordance with Standard A3.2(8), no seafarer under the age of 18 shall be employed or engaged to work as a ship's cook.

2.1. Responsibilities of the competent authority

20. Under Standard A3.2(4), the competent authority shall approve or recognize training courses for ships' cooks. This means evaluating training schools to ensure that the level of instruction in the core competencies required by ships' cooks is adequate to give the seafarers the skills they need to safely prepare nutritious and appropriate food during the voyage.
21. The competent authority should prescribe a minimum period of service at sea as a requisite for working as a ship's cook. It has the discretion to vary the minimum period to take into account qualifications or experience. This implies that the period of service at sea may be completed while working in a different capacity on board ship, and outside the galley.
22. The ship's cook should be provided with a certificate, or other form of documentary evidence, granted either directly by the competent authority or subject to its control, by an approved training school. In the latter case, the competent authority should ensure that training schools use a method of evaluating student ships' cooks that confirms that the students have the necessary skills to prepare food safely on board ships. The competent authority should also: determine the method of evaluating and documenting ships' cooks who are currently working on ships but do not hold documentation of qualification from an approved training school; determine whether to recognize certificates or other documents granted by the competent authorities of other States, and the procedures for granting such recognition; and specify what documentation must be carried on board for the purposes of inspection.
23. The method of evaluation should be through an examination. The ship's cook should pass an examination prescribed by the competent authority or an equivalent examination at an approved training course for cooks. The examination may be conducted either directly by the competent authority or subject to its control, by an approved school for the training of cooks. The examination should have written or oral, as well as practical components. Testing of practical skills can be done by a project-oriented test covering all the competences, from ordering provisions to practical cookery and serving, from an overall point of view. The examination should cover practical cookery, food and personal hygiene, food storage, stock control, and environmental protection and catering health and safety. The ship's cook should receive evidence of successful completion of the examination.
24. The methods of evaluation described above may raise problems of practical application in certain circumstances, especially in the situation of ships' cooks who have successfully

served in that capacity at sea for some time without having undergone approved training. In such situations, the competent authority should establish alternative methods for ships' cooks certification which, in the competent authority's view, meet the requirements of the Convention and the practical needs of the ship's cook concerned.

- 25.** The competent authority should consider maintaining a list of approved schools for the training of ships' cooks to facilitate verification and inspection.
- 26.** In accordance with Standard A3.2(7), the competent authority shall require that frequent documented inspections be carried out on board ships by, or under the authority of, the master with respect to: supplies of food and drinking water; all spaces and equipment used for the storage and handling of food and drinking water; and galley and other equipment used for the preparation and service of meals.
- 27.** The competent authority may also consider publishing information on nutrition and on methods of purchasing, storing, preserving, cooking and serving food on board a ship.

3. Division of responsibilities and obligations

28. The aim of this section is to differentiate between the responsibilities and obligations of the shipowner, the master and the ships' cooks in relation to Regulation 3.2 and the provision and preparation of food for the crew on board ship.

3.1. The shipowner

29. The shipowner is defined in Article II(1)(j) of the MLC, 2006. Under Standard A5.1.3(10)(b), Part II of the DMLC is to be completed by the shipowner and shall identify the measures adopted to ensure ongoing compliance with the national requirements and the measures proposed to ensure that there is continuous improvement. Part II of the DMLC should also provide information on the frequency of inspections, the documentation collected and the procedures to be followed where non-compliance is noted.
30. The shipowner should define the master's specific responsibilities regarding food, catering and hygiene under the MLC, 2006.

3.1.1. Providing food free of charge to seafarers

31. Regulation 3.2 requires shipowners to provide seafarers with food free of charge during the period of engagement.

3.1.2. Sufficient quantities of good quality food

32. Supplies of food and drinking water should be suitable in respect of quantity, nutritional value, quality and variety for the duration and nature of the voyage, having regard to the number of seafarers on board, their religious requirements and their cultural practices. Shipowners should establish minimum standards and procedures for ensuring the quantity and quality of food on board. Many different purchasing and catering systems are used in international shipping. The shipowner should ensure that a system is in place that provides supplies of sufficient quantity and quality to be loaded on board and should take into account quantities when entering into piracy high-risk areas.¹ The ship should have sufficient facilities for frozen and cold stores and dry stores. Appropriate facilities are essential to preserve the quality of the supplies.
33. The shipowner should ensure that there is a systematized and regular review of the quantity and quality of stores to ensure that a proper evaluation and corrective action can be taken in due time, so that it is possible at any time to provide the crew with adequate, varied and nutritious meals that take due account of religious requirements and cultural practices. The shipowner should ensure that the members of the crew know their roles and responsibilities in this regard by way of procedures or training.

¹ Especially in citadels.

3.1.3. Sufficient good quality drinking water

34. The MLC, 2006, requires shipowners to ensure that the quantity and quality of drinking water supplies are suitable considering the number of crew on board and the duration and nature of the voyage.
35. Shipowners should provide a drinking water system that ensures clean drinking water supplies. The quality of the water may be tested to conform to national or regional regulations or World Health Organization (WHO) standards.²
36. The shipowner should establish procedures and minimum standards for the quantity and quality of drinking water on each ship, depending on the nature of the voyage, crew size, and so on. Drinking water systems on board are normally handled by engineers. Shipowners should ensure that the engineers are qualified to operate the drinking water system and to regularly check water quality. There should also be a plan for maintaining the water system, including the documentation of water quality, and an emergency response plan for cases where testing the water indicates that there may be a problem with its quality. Procedures should also outline the various roles and responsibilities of crew members in relation to drinking water.

3.1.4. Minimizing the effects of contaminated seawater

37. The shipowner and master should take measures to minimize the risks associated with contaminated seawater and eating seafood emanating from that water.

3.1.5. Support and resources for the ship's cook

38. The shipowner and the master should consider the necessary support and resources to enable the ship's cook to discharge his or her duties, including ensuring that there are a sufficient number of seafarers in the galley. Consideration should be given to the extra work generated by catering for the religious and cultural requirements of a mixed crew, that there may be additional authorized persons on board, and that the actual number of seafarers on board may exceed the prescribed manning level.

3.1.6. Training in food and personal hygiene

39. The shipowner should ensure that there are adequate health and safety procedures in place for the specific ship type, and that training includes the handling of food and personal hygiene on board to ensure that food is prepared and served in hygienic conditions.

3.1.7. The organization and equipment of the galley and storage rooms

40. The shipowner should ensure that equipment of the galley and storage rooms is appropriate to allow for the adequate storage of sufficient stores for the duration of the voyage, a safe working environment and adequate, varied and nutritious meals to be prepared and served in hygienic conditions, in line with the general principles on sufficient procedures

² WHO: *Guidelines for drinking-water quality*, fourth edition (WHO, 2011); WHO: *Guide to ship sanitation*, third edition, 2011.

regarding the safety and maintenance of equipment and safety of work as required under the MLC, 2006, and the ISM Code.

41. The galley and storage rooms should be designed to ensure good order and hygienic conditions and to ensure that it is easy to access products and keep rooms clean. It should be easy to get around corners and there should be enough space to set food safely aside in the galley. This means there should be enough room for worktops, machinery, equipment and materials to be used without the risk of crew members getting injured. In the galley, it is essential to ensure that there is enough workspace to keep raw ingredients separate and to keep food off the floor.
42. The shipowner and master should ensure that procedures on waste management cover galley waste.
43. The shipowner should provide the necessary protective clothing and equipment in line with the MLC, 2006, Regulation 4.3 – Health and safety protection and accident prevention.

3.1.8. National laws and regulations or other measures

44. The shipowner should ensure that the ship complies with the relevant national laws, regulations, collective bargaining agreements or other measures implementing the MLC, 2006.

3.2. The master

45. The master should be responsible for following the galley procedures set up by the shipowner and for taking appropriate action and informing the shipowner according to procedures if non-conformities are observed.
46. The master should confirm that ships' cooks carry documentation to show that they are qualified and trained for their positions.
47. Standard A3.2 requires the master, or a person designated by the master, to ensure that frequent documented inspections are carried out, on board ship, in order to verify that there are sufficient supplies of good quality food and drinking water on board and that the galley equipment and storage facilities are in good condition, as discussed in parts 3.2.1 and 3.2.2 below.

3.2.1. Supplies

48. Catering and purchasing procedures generally vary from ship to ship. The master's role and responsibilities depend on how much authority is delegated to the ship's cook in the shipowner's policies and collective bargaining agreements. The master is responsible for establishing good working relations with the ship's cook and for making arrangements that support the ship's cook's ability to serve adequate, varied and nutritious meals.
49. It is recommended that the master's inspections should reveal and document whether the supplies of food and drinking water are sufficient. The inspections should be carried out regularly, preferably on a weekly basis, and include information from the ship's cook on the status of provisions, including the quality and the variety of stores. The master should establish a system that monitors over- and under-provisioning for reporting to the shipowner.

3.2.2. Galley equipment and storage facilities inspection

- 50.** Standard A3.2 requires that the master frequently inspect the equipment used for the storage and handling of food and drinking water. The master should establish procedures for systematic inspections and should ensure that deficiencies are handled appropriately. The inspection should include direct visual observation and a walk through the galley and storage areas. The inspection should also confirm whether equipment is safe to use and can be cleaned thoroughly and that relevant parts of an established self-assessment programme are followed as intended. The master should maintain consistent communication with the ship's cook to ensure that information is shared regularly.

4. Competencies for ships' cooks

4.1. Overview

51. This section addresses the skills that ships' cooks should acquire during their education or training. The recommended qualifications and training requirements for ships' cooks reflect the fact that ships' cooks may manage galley operations, including both the procurement of supplies and practical food production.
52. Ships' cooks should have the skills, support and resources to serve proper quantities of quality, nutritious food that takes into account seafarers' various religious and cultural, backgrounds, and fulfils hygiene requirements. Knowing how to ensure hygiene in and around the galley is a crucial skill for ships' cooks and Regulation 3.2 expressly states that food on board must be served under hygienic conditions. Knowing how to store and handle food hygienically plays a crucial role in preventing people from falling ill from the food served on board.
53. The paragraphs on practical cookery emphasize that ships' cooks should have a wide understanding of the processes used in and around the galley, taking into account that it should be possible to keep food on board for some time, and highlight that it is essential for the ships' cook to have access to a varied selection of good quality raw ingredients.
54. The food products with shortest shelf life should be used first on the voyage. Food products should be used in an economical, sensible and varied way. The meals that are served should also meet the different requirements and needs of the crew for a nutritious, varied and good quality diet. The food served daily should also take account of individual needs, for example the needs of diabetics and crew members with food intolerance or allergies. The ships' cook should also understand the significance of the cultural, religious and social aspects of mealtimes on board. Regulation 3.2 specifically mentions the need to take into account the differing cultural and religious backgrounds of the crew.
55. Ships' cooks require competencies in order to meet expectations of the shipowner and master and seafarers with respect to food being made from scratch using raw ingredients. Nutritionally balanced ready meals or semi-processed products should only be used for a short period of time.
56. This section also addresses other competencies that ships' cooks are expected to have, including workplace safety and communication and other basic skills, for example calculation skills to change the number of servings prepared in a set recipe to reflect the number of crew members likely to eat a particular dish at a particular meal.

4.2. Practical cookery – Basic cooking skills

4.2.1. Menus

57. The ship's cook should:
 - be familiar with the various types of menus and their differences;
 - be able to read, understand and follow a recipe, have knowledge regarding nutrition, raw ingredients, preparation techniques and cultural and religious requirements, and be able to apply these skills in menu planning;

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- be familiar with the company menu book, if applicable;
 - be familiar with the rules of menu composition;
 - be able to estimate the amount of leftovers and include their use in menus, reducing food wastage both in the longer term and in day-to-day planning;
 - take into account the role of all the senses, the need for variation and the importance of nutritional value when planning;
 - be able to understand the importance of weekly menus, and to be able to organize and prepare the weekly menus;
 - be able to prepare a meal so that the ingredients retain their nutritional content while still maintaining a tempting appearance;
 - be aware of the social aspect of mealtimes and of the practical consequences of this on menu planning, including with regard to special traditions, celebrations and occasions;
 - have an understanding of the interaction between mealtimes and the daily rhythms of work on board and the importance of such interaction in terms of the practicalities of serving meals and snacks.
 - be familiar with what constitutes a healthy diet.

58. In order to be able to design and serve a varied menu, the ship's cook should have knowledge of and ability to use recipes, various cooking methods and information on how nutrients change during cooking, taking into account nutritional and taste implications.

59. A ship's cook should also be able to prepare:

- a cold table;
- hot and cold dishes;
- egg dishes;
- lunch dishes;
- soup, especially basic stock soups;
- sauces, especially basic sauces;
- rice types, noodles and pasta dishes;
- fish, meat and poultry;
- garnishes and accompaniments;
- vegetables;
- desserts;
- fresh bread and bakery products;
- international cuisine, taking into account cultural and religious requirements;

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- additional meals for persons who may be on board when authorized (excluding passengers).

4.2.2. Fundamentals of cooking

60. The ship's cook should have knowledge of basic food chemistry and of how the storage and preparation of raw ingredients influences the quality and nutritional value of the ingredients.
61. The ship's cook should also have knowledge of how to assess the quality of raw ingredients and processed or semi-processed foods, and be able to select and use seasonal and local foods when purchasing provisions, and understand dairy products and their uses.

4.2.3. Practical cooking skills

62. In order to undertake practical aspects of cooking, the ship's cook should have acquired the necessary theoretical competencies needed for planning, preparing and serving a varied, nutritious menu in a practical way. The ship's cook should:
 - be able to organize good work processes and efficient product flows and have the ability, in practice, to establish safe food handling practices such as filleting, deboning, trimming and portioning meat without wastage during preparation. It is important that the ship's cook has a good overview of stores and has established schedules for the timely thawing of relevant food;
 - be able to combine the principles of variation, reusing leftovers and prevention of food wastage;
 - be able to bake bread and other bakery products and pastries using various bakery methods, including the use of dried yeast;
 - know how to use the utensils and equipment in the galley, for instance know how to use the oven, how to correctly use cutting boards and kitchen knives and the different knife skills;
 - be fully aware of how to use fiddles (storm bars) and pan holders correctly in situations of bad weather;
 - understand the value of hygienic and practical conditions for cooking, in order to facilitate the preparation of food and the improvement of work processes;
 - be familiar with food preservation methods;
 - be able to prepare meals taking account of preparation time and methods that are crucial to final taste.

4.2.4. Methods of preparation

63. The ship's cook should know how to apply different food preparation techniques, be aware of the advantages, disadvantages and typical uses of each technique and have a knowledge of the most common ways of preparing food to meet special cultural and religious

requirements. The ship's cook should recognize different butchery cuts and have knowledge of various cooking methods.¹

64. The ship's cook should also have knowledge of:

- how to handle the practical production of hot and cold food, including different types of meat, fruit and vegetables in combination with different accompaniments, spices and cooking methods, taking into account the different senses (appearance, taste, colour, composition, and so on) and good work processes, allowing the meals to be finished and served at the right time;
- how to retain the nutritional content, including knowledge of the chemical processes in cooking that affect raw ingredients and their nutrients;
- ideal roasting and core temperatures for meat and how to use and sanitize probe thermometers;
- the importance of the cooking method for the consistency, appearance and taste of a meal and good principles for serving food;
- how to plan and prepare snacks and bake bread and cakes.

4.2.5. Presentation and serving

65. A meal can be served and presented in many different ways. Methods of presentation and service generally depend on tradition, culture or religion. While sense of taste is by and large the same across the globe, the taste experience is always individual, as it is fundamentally a reflection of tradition and previous experience.

66. For most people, mealtimes provide an important social meeting opportunity and so it is important for the ship's cook to have some insight into the seafarers' needs.

67. The buffet is the most common way of serving food on board ships. The presentation of a meal in terms of colour, smell and taste has a major impact for those who are to eat it. Hot food should be served hot and likewise cold food should be served cold. Serving temperature and the presentation of the meal can critically influence the perception of a meal. The ship's cook should therefore have knowledge of fundamental principles for presentation and serving.

4.2.6. Practical cookery under unforeseen circumstances

68. The ship's cook should also be able to adapt menu plans during the voyage in the event of unforeseen changes in circumstances.

69. There are special on-board challenges. The weather can be bad and it can be difficult to prepare a menu as planned. Safety always comes first, so it should be possible to depart from the planned menu in, for example, heavy weather or on an extended voyage and to cope with the challenges of long voyages by proper planning and provisioning before departure.

¹ Such as: all types of roasting; spit grilling; using the microwave; using a water bath; pan frying; using a deep fat fryer; blanching; boiling; poaching; steaming; braising; marinating; and baking.

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70. The ship's cook should know the procedures required to increase the level of safety in the galley during bad weather, for example by using fiddles (storm bars), holders, clamps and high-sided pans.

4.3. Galley administration, management and supervision

71. The ship's cook's role varies when it comes to purchasing, depending on corporate policies, catering facilities and competencies. In some cases, the master does most of the purchasing, and in others it involves joint cooperation. A ship's cook should be able to manage the purchasing process.
72. All ships' cooks should be able to have an overview of and should systematically monitor the products in the ship's storage rooms and alert the master if there is any lack of provisions.
73. Ships' cooks should keep informed about: the rotation of stores and meal planning; the size of the crew or authorized persons on, or expected to come on, the ship; the amount of stores held; and the shelf life, price and quality of food.
74. A ship's cook should be able to order supplies.
75. The ship's cook should:
- know how to deal with administrative and financial issues, accounts and menu planning related to their department;
 - be able to understand all the administrative tasks relating to galley operations and day-to-day food production, in some cases in conjunction with the master;
 - be able to plan and undertake managerial tasks, supervise other catering personnel and provide basic instruction or training.

4.4. Prevention of food-borne disease

4.4.1. Food-borne disease

76. Food-borne disease is a general term used to describe any disease or illness caused by eating contaminated food and may also be referred to as "food poisoning".

4.4.2. Food can cause illness

77. The ship's cook should have knowledge of the most common reasons for contamination from physical objects, chemical substances and micro-organisms. The most serious problems in cookery are often caused by micro-organisms and viruses. Ensuring good hygiene requires knowledge about micro-organisms and how they can be transferred to food and understanding the procedures for keeping stores in good order.

4.4.3. High-risk foods

78. The ship's cook should have knowledge of which foods are especially risky. Food could already be contaminated when delivered to the ship because of faults during production or

a breach in the refrigeration chain. Food products can easily be contaminated by bacteria when handled incorrectly. It is easy for micro-organisms to spread to other food by careless work processes. All seafarers in the galley should follow food safety procedures, including when working under pressure to serve food quickly. Furthermore, seafarers should be aware of the factors that cause bacteria to reproduce, that could lead to the contamination of even low-risk foods.

4.4.4. Bacteria and other micro-organisms that can cause illness

79. The ship's cook should have knowledge of why micro-organisms can cause illness, what happens when they get into the body, and how these can be transferred from people to food and from food to people.
80. The ship's cook should have knowledge of the fact that some micro-organisms are useful while others make food rot (which can be smelt and seen). The most dangerous micro-organisms – pathogenic bacteria – give no indications that they are within food and people cannot see or smell them.
81. The ship's cook should also understand: how bacteria reproduce, become dormant and form spores; that the rate of bacterial growth is influenced by the nutritious value of the food, time, humidity and temperature; how to control these factors; and the “hurdle effect”, in other words how food may be processed during production to minimize the risk of contamination prior to delivery to the ship.

4.4.5. Symptoms of food-borne disease

82. The ship's cook should have knowledge of:
- the bacteria that cause food-borne disease and the names of these pathogenic bacteria;
 - the food products most susceptible to bacteria, which can result in food-borne disease if eaten when contaminated;
 - the symptoms of food-related illness;
 - the incubation period between the consumption of contaminated food products and the break-out of a food-related illness;
 - the most common signs of food-borne disease, variations in the illness pathway and the worst case scenarios in which food-borne disease can lead to complications and permanent consequences and ultimately death.

4.4.6. Food-borne disease prevention

83. The ship's cook should know how food-borne disease can be prevented, in other words to have knowledge of:
- actions that can be taken in the workplace;
 - the influence of behaviour and personal hygiene;
 - the significance of keeping good order and carefully planned work processes;
 - the importance of correct handling and protection from cross-contamination;

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- the importance of correct storage and protection from vermin and pests;
 - the importance of chilling and temperature monitoring;
 - the importance of heat in cooking food;
 - the importance of dishwashing, clean cutlery and crockery and maintenance of equipment;
 - the importance of cleaning;
 - the importance of a self-assessment system and of following procedures.

4.4.7. Cross-contamination

84. The ship's cook should understand what cross-contamination is, since it is one of the most significant reasons for food-borne disease. It is important to have knowledge of:

- how good work processes can prevent cross-contamination;
- why structured storage in dry stores, refrigerators and freezers is important;
- whereabouts in the process cross-contamination most commonly occurs;
- the equipment that can help in prevention;
- the need to prevent unauthorized personnel from entering galley.

4.4.8. Food safety self-assessment system

Box 4.1

Note on hygiene systems

There is an internationally recognized system for handling food hygiene, called the HACCP system. It may be used to systematically monitor and control critical control points (CCPs), which are measurable factors or processes in food production. It is a system for documenting and following up on faults and rectifying actions. The HACCP system may be used in general shipping but is especially applicable for passenger ships. Cargo ships without passengers may benefit from being familiar with the principles underlying the HACCP system when drawing up and organizing a self-assessment system.

85. The ship's cook should be familiar with different food safety systems and recognize the importance of GMPs, systematic self-assessment and HACCP principles. Ships should take HACCP principles into account. The following guidelines provide a systematic approach to self-assessment:

- What is a self-assessment programme?
 - A self-assessment programme includes procedures to provide documentation that the master or ship's cook is conducting quality control and quality assurance procedures on all processes that could affect food production and food safety in the galley.
 - A self-assessment programme could be implemented to ensure compliance with food safety legislation.

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- Self-assessment uses CCPs. The CCPs are critical points in the food production and cooking processes that can be checked.
 - Self-assessment may involve both formal written procedures and less formal procedures. For example, this could involve checking temperatures on deliveries, during the preparation of food and when heating and subsequently chilling cooked foods.
 - Who is responsible for a self-assessment programme?
 - Self-assessment procedures should be drawn up by the shipowner.
 - The master should run the self-assessment programme as intended and in accordance with other procedures on board relating to safety and maintenance. The ship's cook should be able to identify CCPs and demonstrate upon official request that food safety procedures have been implemented.

4.5. Food hygiene

4.5.1. How to break the food-borne disease chain

86. The ship's cook should understand: that food products should be protected against contamination; that bacterial growth should be prevented by eliminating ideal conditions for growth, such as humidity and warmth; that the refrigeration chain should be maintained by monitoring temperatures and recording and acting on fluctuations; and that bacteria in food can be destroyed by cooking and reheating at the correct temperatures.

4.5.2. How to clean and sanitize the galley, mess and stores and why it is important to do so

87. The ship's cook should have knowledge of:

- where and how to clean and sanitize and how cleaning and sanitizing can be used against micro-organisms and pests or vermin;
- how to use cleaning equipment and products and how to ensure correct dilution;
- how to store cleaning products and personal protective equipment;
- the most hazardous cleaning products and sanitizers and their impact on people and the environment;
- how to draw up cleaning plans and procedures and detailed workplans;
- how high cleaning standards can act as a good example and influence other people.

4.5.3. How food should be stored and why it is important to keep good order in stores

88. The ship's cook should have knowledge of:

- how to store highly perishable, perishable and long-life foods;
- how to read date labelling;

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- how to store dry foods safely and correctly, especially after opening;
 - how to clean and keep good order in the stores and the galley in general;
 - the best way to maintain the nutritional value of stored vegetables;
 - how to handle food products on delivery and how to stack shelves (first-in, first-out system).

4.5.4. How to handle refrigerated and frozen products

89. The ship's cook should have knowledge of:

- how to organize the cold/freezer rooms and the first-in, first-out system;
- how to store various types of food products;
- ideal refrigeration and freezer temperatures;
- shelf life during refrigeration and how to prevent cross-contamination;
- how to defrost and repack food and how to use containers approved for storing food;
- how to monitor and document refrigerator and freezer temperatures.

4.5.5. How to handle food during preparation

90. The ship's cook should have knowledge of:

- how to organize work processes and ensure correct product flows;
- how to carry out good work processes when cleaning and chilling are in progress;
- how to use equipment, utensils and fiddles correctly, including kitchen knives;
- which product groups should be kept separated to avoid cross-contamination;
- ideal roasting and core temperatures for meat and the use of the ship's probe thermometers.

4.5.6. How to keep and reheat leftovers and how to reuse them in other dishes

91. The ship's cook should have knowledge of:

- how to ensure food safety when refrigerating leftovers;
- the importance of marking dates for reuse;
- how to ensure the ideal core temperature when reheating to 165 degrees Fahrenheit or 74 degrees Celsius;
- how to use the microwave oven and microwave-safe packaging;
- the fact that under no circumstances leftovers should be heated more than once;

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- that reheated served food should not be reused.

4.5.7. How to serve food safely

92. The ship's cook should have knowledge of:

- how to handle food safely when organizing a buffet;
- the general rule that food should be kept on a buffet for a maximum of three hours, in order to maintain food quality;
- how to maintain constant heating and chilling on a buffet;
- how to correctly cool down food prior to chilling;
- the importance of maintaining good hygiene at tables in the mess during meals;
- the importance of using alcohol-based hand rub dispensers for the sanitizing of hands.

4.6. Personal hygiene

4.6.1. Personal hygiene

93. The ship's cook should have knowledge of:

- the importance of taking personal responsibility for good hygiene;
- the importance of hand washing and how to wash hands thoroughly;
- what to wear in the galley;
- the factors that can put other people's health at risk;
- the importance of personal behaviour and of taking the lead in setting a good example.

4.6.2. Skin infections

94. The ship's cook should have knowledge of: the causes of allergies; how to prevent skin infections; how to prevent skin allergy from foods; and allergic symptoms.

4.6.3. Gloves

95. Gloves should be approved for food preparation and should be of a good quality. It is important to have knowledge of:

- the fact that using gloves can never be a replacement for washing hands between work processes;
- when gloves should be worn to protect food, for example when hands have burns, cuts or infections;
- the different types of glove and how to prevent cross contamination by using gloves;

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- sanitizing chainmail gloves after each use.

4.6.4. When to stop working for the sake of the health of others

96. The ship's cook should have knowledge of when to stay out of the galley due to illness, what to do if falling ill and when to return to work without putting the health of others at risk.

4.7. Nutrition and health – Balanced menus

4.7.1. Understanding nutrition

97. Ships' cooks should be:

- aware of the composition of the components of the diet and ensure that such components are nutritionally balanced. This includes awareness of the recommendations of the competent national authorities or the WHO and implies, among other things, knowledge of the content and composition of food in terms of fats, proteins, carbohydrates, vitamins, minerals and trace elements;
- able to provide a diet plan that provides the crew with the correct nutrition in the long term. The diet plan should comply with international (WHO/Food and Agriculture Organization of the United Nations (FAO)) or national requirements for recommended nutrients and drawn up taking account of cultural and religious issues relating to food;
- able to translate the diet plan into specific purchasing plans, menus and dishes or recipes so that the energy content in various types of food, menus and diet plans can be calculated and assessed.

98. The ship's cook should have a basic understanding of:

- nutritional physiology;
- physiological factors;
- the body's metabolism;
- the role of nutrients;
- nutritional recommendations concerning carbohydrates, dietary fibre, fats, proteins, alcohol, water, salts, minerals and vitamins;
- the importance of diet and exercise; and
- the connection between lifestyle disease and diet.

4.7.2. Planning – Purchasing and competencies

99. The ship's cook should:

- be able to draw up a varied diet plan that satisfies current nutritional requirements;

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- be aware of all the food groups and of the composition of a diet plan and know how different foods are used;
 - be aware of special religious and cultural food-related issues;
 - be able to read, understand and follow the instructions in a recipe;
 - be able to draw up a menu plan for a lengthy period;
 - where appropriate, be able to order food products to support a menu plan, taking due account of raw ingredient usage and the financial implications.

4.7.3. Food allergy and food intolerances

100. Ships' cooks should have knowledge of food allergies and intolerances and their potential reactions, including the fact that some allergic reactions and intolerances can be life threatening. It is also important for them to be aware of global differences in common allergic reactions and intolerance reactions. The ship's cook should know how to use suitable foods as substitutes when preparing nutritious meals. All ships' cooks with responsibility for cooking daily meals should have an understanding of:

- the most common food allergies and food intolerances (and what causes them);
- the impact of being exposed to a substance to which you are allergic or intolerant;
- how food allergies and intolerances vary between different parts of the world;
- the alternatives that can be used instead of foods that cause allergy or intolerances;
- how to define diet plans and menus that take account of crew members with allergies or intolerances (this also means being aware of suitable alternative products);
- how to communicate with crew to be aware of their allergies or intolerances.

4.7.4. Awareness of the importance of nutrition for combating lifestyle disease

101. Ships' cooks should be aware of the role of nutrition in combating lifestyle diseases such as diabetes, high blood pressure, breathing difficulties, stroke, cardiovascular disease and cancer. Ships' cooks should ensure that crew members are given healthy dietary options.

102. A nutritionally balanced diet should ensure that all crew members have a reduced risk of developing the lifestyle diseases associated with being overweight. Therefore, the ship's cook should be able to draw up a menu plan in line with international and national recommendations.

4.8. Religious and cultural aspects

103. The ship's cook should have knowledge of:

- the rituals, customs and guidelines associated with food and meals;

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- religious or cultural dietary requirements, including requirements concerning purchasing, segregation, preparation, and cooking of different types of food for cultural and religious reasons.

4.9. Other basic skills

4.9.1. Language skills

- 104.** Oral and written information concerning nutrition should be provided to the crew in the working language of the ship.
- 105.** Ships' cooks should have language skills that enable them to follow directions and cooking recipes in practice.

4.9.2. Calculation skills

- 106.** Ships' cooks should be able to convert units of measurement in recipes and calculate wastage.

4.9.3. General communication skills

- 107.** The ship's cook should:
- understand that it is important for well-being on board to communicate with the crew. It is important for the ship's cook to master the most basic principles of communication;
 - be able to respectfully ask crew members for information about food allergies and other dietary restrictions or needs, so that menu plans can be adapted appropriately. The ship's cook should also be able to discuss the limitations of the catering services and determine what accommodations would meet the needs of the crew;
 - be able to constructively communicate with the master on the ordering of provisions;
 - be able to manage, instruct and train other seafarers working in the galley;
 - have knowledge of various cultural communication behaviours.

4.10. Workplace safety and health

4.10.1. Awareness of potential hazards

- 108.** Ships' cooks should be aware of the potential hazards in the galley, which include: cuts from using knives (the most common injury); scalds; burns; cuts and crush injuries from using machines; injuries from lifting; caustic burns; and injuries resulting from trips and falls.

4.10.2. Safe behaviour in the galley

- 109.** Ships' cooks should know how to behave safely in the galley, including how to:

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- ensure that the body is not put under unnecessary strain and that stores are stowed safely for heavy weather;
 - monitor the galley and keep stores tidy and in good order to prevent trips and falls;
 - secure pans and other equipment in heavy seas;
 - safely handle knives;
 - deal with and operate the machinery in the galley;
 - choose appropriate clothing and personal protective equipment, such as uniforms, aprons, jackets (e.g. reefer jacket), etc.;
 - secure doors and hatches;
 - follow directions for the usage of cleaning products;
 - deal with galley fires.

4.10.3. Risk assessment

110. Education and training should enable the ship's cook to contribute to risk assessment processes, involve the seafarers working in the galley in such processes and make a plan to prevent accidents and wear and tear of equipment.

111. The ship's cook should know how to carry out the most important steps in a risk assessment process, including:

- identifying the potential for accidents or wear and tear associated with work in the galley;
- conducting an assessment of how often the hazard really occurs, how great the consequences are, which hazards are easy to prevent and which are difficult to prevent;
- developing a solution with the involvement of the relevant safety organization and the seafarers working in the galley;
- drawing up a written action plan showing solutions to be implemented, indicating when and who is responsible.

112. Risk assessment is a continuous, dynamic and inclusive process. Preventative actions should be evaluated and reassessed at regular intervals and following accidents or near misses. The process should not be limited to those working in the galley – other seafarers may also have helpful contributions in the identification of potential risks and the development of safer solutions.

4.10.4. Knowledge of the ISM Code and safety management systems

113. The ship's cook should:

- be familiar with the ISM Code;

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- know, follow and give input to procedures adapted for the work they do in the galley and associated areas, maintain the system and provide instruction on it;
 - have knowledge of ships' safety committees.

4.10.5. Reporting occupational injuries

114. The ship's cook should know the responsibilities for reporting of occupational injuries and near misses.
115. The ship's cook should be familiar with post-incident procedures and corrective actions taken to minimize the risk that an injury or exposure could occur in the future.

4.11. First aid in the galley

116. Ships' cooks should, like all seafarers, be able to provide first aid, but they should also know how to provide specific first aid for the particular kinds of accidents that can occur in the galley, such as fires, accidents with machinery, cuts, scalds, caustic burns and crush injuries.
117. It is also important for crew members to be able to assess when medical assistance should be sought. The competent authority and the shipowner have the duty to provide medical care on board ship and ashore as provided in Regulation 4.1 and Standard A4.1 of the MLC, 2006.

4.12. Firefighting in the galley

118. Ships' cooks should know how to extinguish burning oil – absolutely no attempt should be made to put it out with water. Instead, the fire should be extinguished by smothering it. Given the issues involving oil in the galley, it is important that all crew members working in the galley are provided training in accordance with the MLC, 2006, Regulation 1.3, which provides that seafarers shall not be permitted to work on a ship unless they have successfully completed training for personal safety on board ship. This training may be met by completion of STCW Basic Training requirements.

4.13. Waste

4.13.1. Wastage, hygiene and safety

119. Education and training should address the issues of minimizing food wastage, preventing pollution and preventing the spread of food-borne disease.

4.13.2. Waste collection

120. The ship's cook should be trained to use the most appropriate systems of waste collection or to establish a system on board. He or she should also know about the most appropriate containers for collecting waste (bins with lids, preferably with a foot pedal) in the galley and mess rooms and where to position them.
121. The ship's cook should be able to use the system to ensure proper collection of waste and know: how bins and containers should be sanitized; how often waste should be collected

from various bins (for example, waste from the galley should be collected at least at the end of each work day); how waste should be sorted (for example, into plastic, metal and paper or other combustibles); and how to ensure regular checks on the shelf life of food in store.

4.13.3. Waste storage

- 122.** The ship's cook should be trained in the most appropriate waste storage systems. All seafarers working in the galley should know where waste should be stored (in a closed room, not near stores and provisions, not on the floor and in bags that can be closed).

4.13.4. Waste disposal

- 123.** The ship's cook should know how to dispose of waste appropriately, for example when it is appropriate to use a waste grinder and when waste should be compacted.
- 124.** The ship's cook should be familiar with the requirements of MARPOL Annex V concerning Garbage Management Plans and Garbage Record Books, including the recording and documentation requirements.

Appendix

Suggestions of good practices

This appendix sets out suggestions of good practices with respect to ships' cooks that could enhance the implementation of Regulation 3.2.

Stores of food and drink

- (a) The quantity of food supplies should be appropriate, having regard to the size of the crew and the duration and nature of the voyage.
- (b) Food supplies should also be suitable, having regard to the religious and cultural requirements of a diverse crew.
- (c) The quality of food should be ensured through the use of trusted suppliers, the appropriate storage and handling of the raw ingredients in the preparation of food, the use of menu plans and the analysis of regular feedback from the crew.
- (d) Stores of food should be systematized and regularly reviewed, to make it possible to keep track of the quantity and quality of the food.
- (e) To avoid under-provisioning, stores should be sufficient to provide for a minimum number of standard, varied meals.
- (f) Food wastage should be minimized.
- (g) If the usual storage rooms are insufficient for keeping supplies for a long voyage, food should be kept in rooms away from diesel fumes and heat (for example, in rooms that are not close to the engine).
- (h) A quick response plan should be in place for dealing with any outbreaks of pests.
- (i) Waste should be managed on board ship in accordance with the provisions of Annex V of the MARPOL Convention.
- (j) Galley waste should be handled and stored separately from food stores, raw materials and drinking water and should be kept in bins with closed lids to prevent contamination and pests.

Organization and equipment

- (a) Meat slicers, mixing equipment and other similar equipment should be fitted with safety devices to prevent injuries.
- (b) Galley equipment such as cookers and ovens should be fitted with pan and door holders for cooking in heavy weather.
- (c) Fiddles (storm bars) and pan holders should be available for keeping pots and pans on shelves and worktops.
- (d) Chilling, refrigeration and freezing equipment should be available in stores and in the galley and appropriate for the potential crew size and the length of the voyage.
- (e) Equipment should be available for ventilating the galley, with cooker hoods for removing fumes from the cooker or oven.
- (f) Food safety management systems should be well defined and, where appropriate, based on hazard analysis and critical control point (HACCP) principles, written documentation and good management practices (GMPs), or on procedures not requiring documentation, such as those relating to personal hygiene.
- (g) Potable water should be provided in the galley for drinking and food preparation.
- (h) It is important for drinking water equipment to be properly maintained to prevent the growth of bacteria in the system.

Drinking water

- (a) The ship should be fitted with a system to provide fresh water (for example, a bunkering system) or have facilities to produce water on board. The water supply should be of good quality.
- (b) Water safety plans should be established to ensure the safety of a drinking water supply.
- (c) Ships' cooks should be familiar with the ship's procedures for resolving problems with the fresh water supply as soon as possible. For example, it should be clear who specifically to contact if a problem is detected.