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Document for Guidance on

Training and Certification of Fishing Vessel Personnel

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Foreword

The first international maritime training guide for fishermen, the Document for Guidance on Fishermen's Training and Certification, was prepared by a joint Food and Agriculture Organization of the United Nations (FAO)/ International Labour Organization (ILO)/International Maritime Organization (IMO) Working Group and approved by the governing bodies of FAO and ILO and the Maritime Safety Committee (MSC) of IMO in 1985. IMO published the Document for Guidance on behalf of the three Organizations.

The Document for Guidance took account of the conventions and recommendations adopted by ILO and IMO and the wide practical experience of FAO in the field of fishermen's training and covered training and certification of small-scale and industrial fishermen.

The MSC at its 66th session (1995), noting the outcome of the International Conference on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (STCW-F), 1995, took essential action with respect to specific requests in Conference resolutions 3, 4, 6 and 7. It instructed the Sub-Committee on Standards of Training and Watchkeeping to convene a joint working group, in co-operation with FAO and ILO, to review the Document for Guidance with particular reference to the 1995 STCW-F Conference resolutions above.

At its 270th (November 1997) and 273rd (November 1998) sessions, respectively, the Governing Body of ILO agreed to the convening of the first and second sessions of the joint FAO/ILO/IMO Working Group and authorized the participation of four (two employer and two worker) ILO representatives.

FAO prepared a draft revised document for guidance on fishermen's training and certification based upon the functional competence approach used in the Seafarers' Training, Certification and Watchkeeping (STCW) Code with regard to safety aspects and the FAO Code of Conduct for Responsible Fisheries with regard to the fishing aspects.

The outcome of the joint FAO/ILO/IMO Working Group was a revised document entitled *Document for Guidance on Training and Certification of Fishing Vessel Personnel*. The Secretariat of FAO and the Governing Body of ILO at its 277th session (March 2000) and the MSC at its 72nd session (May 2000) approved it.

The *Document for Guidance on Training and Certification of Fishing Vessel Personnel* takes account of the conventions and recommendations adopted

by ILO and IMO and the wide practical experience of FAO in the field of training of fishing vessel personnel. It covers training and certification of fishing vessel personnel on small and large fishing vessels and fishing on an industrial scale catching fish, whales, seals, walruses and other living resources of the sea. It is intended to provide guidance for those developing, establishing or reviewing national training schemes for training and certification programmes for fishing vessel personnel.

The Secretariat of FAO, the Governing Body of ILO and IMO's MSC recommended the publication of the *Document for Guidance on Training and Certification of Fishing Vessel Personnel* by IMO on behalf of all three Organizations.

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Introduction

1 A Diplomatic Conference held at the International Maritime Organization (IMO) from 26 June to 7 July 1995 adopted instruments, resolutions and recommendations for the International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel, 1995 (1995 STCW-F Convention). The Convention applies to personnel serving on board seagoing fishing vessels entitled to fly the flag of a Party.

2 Resolution 3 of the 1995 STCW-F Convention, Guidelines and recommendations for fishing vessel personnel, invited the Maritime Safety Committee (MSC) to:

2.1 review, in co-operation with the International Labour Organization (ILO) and the Food and Agriculture Organization of the United Nations (FAO), the Document for Guidance on Fishermen's Training and Certification, and to prepare guidelines and recommendations for the training and certification of personnel on board fishing vessels of 12 metres in length and over; and

2.2 review the requirements and recommendations on the prevention of fatigue, and to prepare guidelines for the prevention of fatigue of fishing vessel personnel.

3 During the 28th session of its Conference, FAO adopted the Code of Conduct for Responsible Fisheries and Resolution 4/95. The resolution "Calls on States, International Organizations, whether Governmental or Non-Governmental, and all those involved in fisheries to collaborate in the fulfilment and implementation of the objectives and principles contained in this Code." It also requests "FAO, in collaboration with members and interested relevant organizations, to elaborate, as appropriate, technical guidelines in support of the implementation of the Code." The provisions of the Code include recommendations to enhance the sustainability of the world's fisheries and to prevent damage to ecosystems resulting from the over-exploitation of important fish stocks. The development of the Code was treated as a matter of urgency following the 1992 International Conference on Responsible Fishing held in Cancun (Mexico) and the 1992 United Nations Conference on the Environment and Development. The Code incorporates principles and standards for the conservation, management and development of fisheries and places considerable emphasis on the training of fishers in the implementation of its provisions. Article 8, Fishing Operations, indicates that:

8.1.7 States should enhance through education and training programmes, the education and skills of fishers and, where appropriate, their professional qualifications. Such programmes should take into account agreed international standards and guidelines.

8.1.8 States should, as appropriate, maintain records of fishers which should, whenever possible, contain information on their service and qualifications, including certificates of competency, in accordance with their national laws.

8.1.9 States should ensure that measures applicable in respect of masters and other officers charged with an offence relating to the operation of fishing vessels should include provisions which may permit, inter alia, refusal, withdrawal or suspension of authorizations to serve as masters or officers or a fishing vessel.

8.1.10 States, with the assistance of relevant international organizations, should endeavour to ensure through education and training that all those engaged in fishing operations be given information on the most important provisions of this Code, as well as provisions of relevant international Conventions and applicable environmental and other standards that are essential to ensure responsible fishing operations.

4 IMO's Sub-Committee on Standards of Training and Watchkeeping at its 28th session agreed that documentation for the revision of the FAO/ILO/IMO Document for Guidance on Fishermen's Training and Certification reflect the functional competence approach used in the STCW Code and take account of the 1995 FAO Code of Conduct for Responsible Fisheries.

5 The FAO/ILO/IMO Document for Guidance on Fishermen's Training and Certification was first published by IMO in 1988 as the culmination of consultations of a Joint FAO/ILO/IMO Working Group which emanated from the following set of events and circumstances:

5.1 The General Conference of ILO adopted the Fishermen's Competency Certificate Convention, 1966 (No.125), in order to establish standards of qualification for certificates of competency entitling persons to perform the duties of skipper, mate or engineer on board a fishing vessel. The ILO Conference also adopted the Vocational Training (Fishermen) Recommendation, 1966 (No.126), which is intended to ensure the vocational training of fishermen and is of a standard equivalent to that provided for other trades, occupations and industries.

5.2 The International Convention for the Safety of Life at Sea (SOLAS), 1974 (regulation 13, chapter V), which applies to all fishing vessels, requires Contracting Governments, each for its national ships, to maintain or, if it is necessary, to adopt measures for the purpose of ensuring that, from the

point of view of safety of life at sea, all ships are sufficiently and efficiently manned.

5.3 The International Conference on Safety of Fishing Vessels, 1977, noted regulation V/13 of the 1974 SOLAS Convention and adopted resolution 8, which invites IMO to extend its consideration of the problem of training and certification of fishing vessel personnel, as defined in the Torremolinos International Convention for the Safety of Fishing Vessels, 1977, in co-operation with ILO and FAO.

5.4 As a consequence of resolution 8 of the 1977 Torremolinos Conference, IMO prepared and adopted a number of recommendations on watchkeeping and certification of fishermen (resolutions A.484(XII), A.539(13), A576(14), A.622(15) and A.623(15)).

5.5 In 1981 the sixth session of the Joint IMO/ILO Committee on Training considered a proposal by the Seafarers Member to prepare a document for guidance on fishermen's training and certification. Following consultations between the executive heads of FAO, ILO and IMO, it was agreed that the document for guidance should be prepared by a joint FAO/ILO/IMO Working Group and approved by the three Organizations. The Document for Guidance was approved by the governing bodies of FAO and ILO and the Maritime Safety Committee of IMO for publication.

6 The revised Document for Guidance, while reflecting the 1995 STCW-F Convention and the 1995 FAO Code of Conduct for Responsible Fisheries, also takes account of the conventions and recommendations adopted by ILO and IMO and the wide practical experience of FAO in the field of training of fishing vessel personnel. It is intended to provide guidance when national training schemes and courses are instituted, amended or developed for the vocational training of any category of fishing vessel personnel. It is stressed that the additional guidance given on training is complementary to, and not intended to supersede, the knowledge requirements specified in these ILO and IMO conventions and recommendations.

7 In keeping with the intent of the review a chapter of this Document for Guidance has been devoted to the optional functional skills approach to training and certification. However, it is emphasized that the inclusion of this chapter is to provide guidance to national Administrations in the use of skills-based training and assessment arrangements, either as an alternative to or in conjunction with the established systems of determining the competence of fishing vessel personnel. It is not intended that it be incumbent upon national Administrations to adopt this training and assessment option.

8 In establishing training standards, particularly those related to the smallest fishing vessels, the sociological and educational backgrounds of the fishing community concerned should be considered to ensure that the

standards are realistic and can be attained. Practical evidence of attainment of the desirable skills could be adequate, whereas insistence on academic achievement may restrict the development of the fishing industry.

9 Further, taking into consideration provisions of resolution 3 of the 1995 STCW-F Convention regarding the preparation of guidelines and recommendations for the training and certification of personnel on board fishing vessels of 12 metres in length and over, this Document for Guidance incorporates text relating to the training and certification of both small-scale and industrial fishers catching fish, whales, seals, walruses and other living resources of the sea. However, in the case of fishing vessels of less than 45 metres in length, operating exclusively from ports and fishing within the limited waters of a Party, the Convention allows for the Administration of that Party to determine which of the regulations of the 1995 STCW-F Convention should be applied to their certification requirements.

10 Training programmes for fishing vessel personnel should be based on an analysis of the prevailing needs and conditions in each particular area to ensure that in addition to safe operation, the skills to be developed will reflect the need for commercial success and the occupational requirements of fishing vessel personnel. It follows that training programmes should be prepared by competent authorities in co-operation with organizations involved in the fishing industry and the overall welfare and development of the fishing community.

PART A
General matters

Chapter 1
Definitions

For the purpose of this Document the following definitions apply:

1 *Regulations* means regulations contained in the annex to the 1995 STCW-F Convention.

2 *Approved* means approved by the Party in accordance with the regulations.

3 *Skipper* means the person having command of a fishing vessel.

4 *Officer* means a member of the fishing vessel personnel, other than the skipper, designated as such by national law or regulations, or in the absence of such designation, by collective agreement or custom.

5 *Officer in charge of a navigational watch* means an officer qualified in accordance with regulation 2 or II/4 of the 1995 STCW-F Convention or according to the provisions contained in this Document for service on board fishing vessels not covered by the STCW-F Convention.

6 *Engineer officer* means an officer qualified in accordance with regulation II/5 of the 1995 STCW-F Convention or according to the provisions contained in this Document for service on board fishing vessels not covered by the STCW-F Convention.

7 *Chief engineer officer* means the senior engineer officer responsible for the mechanical propulsion and operation and maintenance of mechanical and electrical installations of the vessel.

8 *Second engineer officer* means the engineer officer next in rank to the chief engineer officer and upon whom the responsibility for the mechanical propulsion and the operation and maintenance of the mechanical and electrical installations of the vessel will fall in the event of the incapacity of the chief engineer officer.

9 *Radio operator* means a person holding an appropriate certificate issued or recognised by an Administration under the provisions of the Radio regulations.

10 *Radio Regulations* means the Radio Regulations annexed to, or regarded as being annexed to, the most recent International Telecommunications Convention which may be in force at any time.

11 *Skilled fisher* means any member of a fishing vessel personnel recognised by the competent authority or fishing industry as being capable

being capable of participating in the safe operation of the fishing vessel, preparation for and carrying out fishing operations, handling, safe stowage and, where appropriate, processing the catch and repairing fishing gear.

12 *1978 STCW Convention* means the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended.

13 *1995 STCW-F Convention* means the International Convention on the Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel, 1995.

14 *1993 Torremolinos Protocol* means the Torremolinos Protocol of 1993 relating to the Torremolinos International Convention for the Safety of Fishing Vessels, 1977.

15 *Code of Conduct for Responsible Fisheries* means the 1995 FAO Code of Conduct for Responsible Fisheries.

16 *Extension training* means the extending and enlarging of the scope of fisheries training institutions by using itinerant teachers.

17 *Propulsion power* means the total maximum continuous rated power in kilowatts of all the vessel's main propulsion machinery which appears on the vessel's certificate of registry or other official document.

18 *Limited waters* means those waters in the vicinity of a Party as defined by its Administration within which a degree of safety is considered to exist which enables the standards of qualification and certification of skippers and officers of fishing vessels to be set at a lower level than for service outside the defined limits. In determining the extent of limited waters the Administration shall take into consideration the guidelines developed by the Organization.

19 *Unlimited waters* means waters beyond limited waters.

20 *Length (L)* shall be taken as 96% of the total length on the waterline at 85% of the least moulded depth measured from the keel line, or as the length from the foreside of the stem to the axis of the rudder stock on that waterline, if that be greater. In vessels designed with rake of the keel the waterline on which is measured shall be parallel to the designed waterline.

21 *Moulded depth* is the vertical distance measured from the keel line to the top of the working deck beam at the side.

22 *Fisher* means an individual who takes part in fishing conducted from a fishing vessel.

23 *Fishing vessel personnel* means any person on board a fishing vessel other than passengers.

24 *Fishing vessel* means any vessel used commercially for catching fish or other living resources of the sea.

25 *Engine-room personnel* means any fishing vessel personnel, other than engineer officers qualified by the Administration or fishing industry as being capable of participating in the operation of the mechanical propulsion and the operation and maintenance of the mechanical and electrical installations of the fishing vessel.

Chapter 2
General principles

2.1 National planning and administration

2.1.1 *Planning a national education and training policy for fishing vessel personnel*

2.1.1.1 Noting the similar objectives of the ILO Fishermen's Competency Certificates Convention and Vocational Training (Fishermen) Recommendations, the FAO Code for Responsible Fisheries and the STCW-F Convention in encouraging the training of fishing vessel personnel in the interest of promoting the safety of life and property at sea and the protection of the marine environment, national Administrations are urged to establish appropriate education and training policies for fishing vessel personnel.

2.1.1.2 In planning a national education and training policy, the competent authorities in the countries possessing or intending to develop a fishing industry should ensure that adequate provision is made for the training of fishing vessel personnel in the general network of training facilities or through alternative on-board training and assessment arrangements. Where this is not possible training should be provided through special approved facilities. Where national circumstances do not permit the development of facilities for the training of fishers at all levels of required skill, collaboration with other countries, as well as with international organizations, in the development of common fishery training schemes for such skills and fishing occupations as cannot be covered by national programmes should be considered.

2.1.1.3 Training programmes should provide for instruction in fishing techniques appropriate for local fish species, management strategies and environmental protection, so as to ensure sustainable yields and the proper utilization of the resources of the sea.

2.1.1.4 Fishing vessel safety, including occupational safety, is of paramount importance, in small-scale as well as in large-scale fisheries. National education and training policies should take account of the safety provisions of the STCW-F Convention indicated in paragraph 5.9.1.

2.1.1.5 Education and training should be recognized as an essential part of small-scale fisheries development. However, particular care should be taken to ensure that fisheries training programmes do not discriminate against the educationally disadvantaged groups normally employed in small-scale fisheries.

2.1.2 *Co-operation between the competent authorities, fishing vessel owners' and fishermen's organizations, education and fishery research institutions and others interested in the training of fishing vessel personnel.*

2.1.2.1 The activities of all public and private institutions in each country engaged in the training of fishers should be co-ordinated and developed as the basis of a national programme.

2.1.2.2 Such a training programme for fishing vessel personnel should be drawn up by the competent authorities in co-operation with fishing vessel owners' and fishermen's organizations, with educational and fishery research institutions and with other bodies or individuals having an intimate knowledge of vocational training of fishing vessel personnel. In developing countries, in which specialized fishery research or development institutes are established in co-operation with other countries or international organizations, such institutes should play a leading part in the establishment of the national programme.

2.1.2.3 To facilitate the planning, development, co-ordination and administration of fishers' training schemes, joint advisory policy and administrative bodies should, whenever possible, be set up at the national level and, where appropriate, also at the regional and local levels.

2.1.3 *Fishing vessel personnel pre-vocational, vocational, extension and advanced training schemes*

2.1.3.1 The Administration should ensure that the various agencies and institutions responsible for the dissemination of information on training and employment opportunities, such as primary and secondary schools, vocational guidance and employment counselling services, public employment services, vocational and technical training institutions and fishing vessel owners' and fishermen's organizations, are supplied with complete information on public and private fishers training schemes and on conditions of entry into fishing employment.

2.1.3.2 The Administration should ensure that adequate pathways are established between pre-vocational, vocational, extension and advanced training structures for fishing vessel personnel and that they are fully co-ordinated with any other programmes and activities, public or private, related to the fishing industry. In particular, they should make certain that fishery research institutions make information on their latest discoveries of practical interest to fishing readily available to training centres and other interested bodies, and through these to working fishers; where possible, the research institutions should contribute to the advanced training of fishers, and training centres should, as appropriate, assist these institutions in their work.

2.1.3.3 Particular attention should be paid to extension training programmes for selected fishing communities. Attention should be given to the training

of fishing vessel personnel in basic resource management, in environmental protection, in sustainable development, in the operation and management of fishers' organizations and in activities associated with social improvement.

2.1.4 *Assimilation of technical and vocational training*

2.1.4.1 The competent authorities should ensure that measures are taken through the provision of general education prior to, or simultaneously with, pre-vocational, vocational and advanced training to advance the general level of education in fishing communities, promote greater satisfaction among fishers and facilitate the assimilation of the knowledge provided through technical and vocational training.

2.1.5 *Financing of training*

2.1.5.1 Fishers training schemes should be systematically organized. Financing should be on a regular and adequate basis and should have regard to the present and planned requirements for development of the national fishing industry. Where required, the Government should make financial contributions to training schemes carried on by local Government or private bodies. Training in publicly operated training centres for fishers should be given without charge to the trainees.

2.1.5.2 Where an institutional infrastructure is not available, the application of structured on-board training may be cost effective. The subsidizing of on-board training arrangements may contribute substantially to the raising of vocational level skills.

2.1.5.3 While the major responsibility for basic training remains at the national level, external financial and technical assistance may be required to strengthen national training capacities and to provide supplementary training, particularly for higher-level personnel and in specialized skills.

2.1.6 *Review of training programmes*

2.1.6.1 Training programmes should be regularly reviewed to ensure their effectiveness and relevance to the needs of fishing vessel personnel.

2.1.6.2 Training should be adjusted to the renewal of the fishing fleet and to the characteristics of the new types of vessels and fishing gear so as to improve both yields and safety and ensure a rational utilization of every resource of the sea.

2.1.6.3 Where the functional skills training and assessment option is utilized, structured on board training arrangements should incorporate requirements relating to the vessel's equipment and operational procedures. This has the effect of keeping skill requirements relevant and current.

2.2 Training standards

2.2.1 National Administrations, taking into consideration the articles, regulations and recommendations of the STCW-F Convention, should, in co-operation with fishing vessel owners' and fishers' organizations, educational and fishery research institutions, and with other bodies or individuals concerned with the pre-vocational, vocational and extension training of fishers, define and establish general standards of training for fishing vessel personnel.

2.2.2 Standards for the training of fishing vessel personnel should, as appropriate, reflect the specifications indicated in chapters 5, 7 and 8 of this Document.

2.3 Training programmes

2.3.1 Training programmes for fishing vessel personnel should be based on an analysis of the work required in fishing and should be established in co-operation with the bodies mentioned in 2.2.1 above.

2.3.2 Training programmes for fishing vessel personnel should be periodically reviewed and kept up to date with technical developments and other changes affecting the fishing industry.

2.3.3 In developing training programmes, the national Administration should take into account that small-scale fishers live in widely dispersed communities and that in many countries small-scale fishers and industrial fishers are fishing in the same areas using different fishing techniques and different sizes and types of fishing vessels.

2.3.4 Training programmes should be organized in relation to the technical standards of the fishing industry, taking into account the FAO Code of Conduct for Responsible Fisheries, the different training needs of small-scale and industrial fishers and the available national resources. Technical developments in countries where fish stocks are in danger of over-exploitation or which may lead to unemployment among fishers should be carefully considered, and be mainly aimed at reducing the cost of catching fish and increasing the quality of fish production in general.

2.4 Duration of training programmes for fishing vessel personnel

2.4.1 The duration of programmes for the training of fishing vessel personnel should reflect the needs of trainees to assimilate the instruction given, and depend upon:

.1 the amount of training required to reach a satisfactory level of knowledge of the duties concerned;

.2 the trainee's age and educational ability;

.3 previous practical experience; and

.4 the needs of the national fishing industry.

2.4.2 The attainment of competency units and associated functional skill components utilized in structured on-board training should not be time-based but should be concluded when the trainee is deemed operationally competent in the unit concerned or competent to move to the next higher functional skill level, whichever is appropriate.

2.5 Teaching staff

2.5.1 Training programmes for fishing vessel personnel should specify the experience and qualifications of the teaching staff who will undertake training schemes for fishing vessel personnel.

2.5.2 Teaching staff should consist of persons possessing a broad general education, theoretical technical education and suitable practical fishing experience.

2.5.3 Where integrated on-board/onshore training and assessment arrangements are implemented, suitably qualified fishing vessel personnel should be responsible for skill acquisition arrangements and activities.

2.5.4 Teaching staff should have been given appropriate teacher training by the competent educational authorities. Where it is not possible to recruit trained teachers, persons with practical experience in fishing and holding appropriate fishing certificates or qualifications should be employed.

2.5.5 Where it is not possible to recruit full-time teaching staff, part-time teachers should be employed.

2.5.6 Where the functional skill training and assessment option is utilized a competency unit relating to on-board training and assessment should be incorporated into the certification arrangements.

2.6 Special considerations

2.6.1 Minimal certification requirements and training programmes for small-scale fishers in developing countries would not be realistic if based on the same principles as those of developed industrialized nations. Training programmes and examinations for certification should be based on the demonstration of acquired practical skills rather than on written examination of the trainees.

2.6.2 The minimum age of entry into fishers' training schemes should be related to general educational standards in the country or region concerned, but as a general rule the minimum age of entry should be the age at which trainee fishers are capable of assimilating the knowledge which the training programme is intended to provide.

2.7 Medical examination

2.7.1 Trainee fishers should be required, before entering training schemes, to undergo a general examination as to their medical fitness, including eyesight and hearing, relevant to the duties they will have to perform.

2.8 General education

2.8.1 The level of general education required for admission to training schemes for fishing vessel personnel should be flexible and dependent on the general educational standards in each country or region. It should always be borne in mind that trainees who cannot read or write can be trained by use of visual aids, posters and practical guidance.

2.9 Pre-vocational training

2.9.1 Measures, including widespread publicity within the general education system as well as at employment offices, should be taken to provide pre-vocational training for persons wishing to enter the fishing industry.

2.9.2 Pre-vocational training should be appropriate to the national fishing industry and include the elementary aspects of:

.1 practical navigation and seamanship;

.2 fishing gear construction and repair, general maintenance of fishing vessels and their propulsion and other machinery;

.3 basic fishing, fish handling and fish preservation techniques;

.4 personal survival techniques, occupational safety and health on board and basic immediate action on encountering an accident or other medical emergency; and

.5 the Code of Conduct for Responsible Fisheries.

2.10 Vocational training for fishing vessel personnel

2.10.1 Basic safety training shall be provided for all fishing vessel personnel before being assigned to any shipboard duties, taking into account, as appropriate, paragraph 5.9.1.

2.10.2 Vocational level training arrangements should be established as appropriate for national circumstances. These should lead to certificates of competency qualifying trainees to act as skipper, officer in charge of a navigational watch, engineer officer or skilled fisher as appropriate. In addition, qualifications for on-board trainers and assessors or other specialized positions in the various categories and grades should be established.

2.10.3 *Short-term courses*

2.10.3.1 Short-term training courses and technical workshops should be available for fishing vessel personnel to enable them to increase their technical skills and knowledge, to keep abreast of improved fishing and navigation techniques and to qualify for promotion.

2.10.3.2 Short-term training courses and technical workshops should be specifically designed for the purpose of:

.1 providing opportunity for exchanges of technical information between industry practitioners;

.2 complementing the basic long-term courses by providing advanced specialized training;

.3 providing training in fishing techniques and in operating, maintaining and repairing machinery, gear and equipment;

.4 providing all levels of training for fishers who are unable to participate in basic long-term training courses;

.5 updating knowledge; and

.6 providing training in the use of life-saving appliances and survival at sea.

2.10.3.3 Wherever possible, short-term courses should not be substituted for basic long-term training courses but should complement them.

2.10.3.4 Short-term courses, which may take the form of mobile extension courses, should in particular be provided as:

.1 evening courses;

.2 seasonal courses offered during stormy months or slack fishing periods; or

.3 daytime courses for which fishers leave their work for short periods.

2.10.3.5 Where long-term courses and short-term courses cannot be provided for fishing vessel personnel in isolated areas, alternative training may be provided by:

.1 multimedia arrangements; and

.2 distance learning arrangements specially adapted to the needs of working fishing vessel personnel and arranged for use by study groups with occasional lectures or attendance at training schools.

2.10.3.6 Every effort should be made to encourage and enable fishers to attend short-term training courses ashore. Encouragement should, where necessary, include financial compensation.

2.11 Advanced training for fishing vessel personnel

2.11.1 *Long-term courses*

2.11.1.2 Where practical and appropriate, long-term training courses leading to an advanced certificate, diploma or degree should be established.

2.12 Methods of training

2.12.1 The methods adopted for training of fishing vessel personnel should be the most effective possible having regard to national circumstances, costs, benefits and financial support, the nature of training provided, the type of equipment utilized in local fisheries and the trainees' experience, age and general education. Training methods may include:

.1 structured on-board functional skills training and assessment arrangements, in which trainees develop functional skills under supervised operational conditions;

.2 integrated on-board functional skills and institutional training arrangements;

.3 institutional training arrangements;

.4 where available, simulator training; and

.5 theoretical training, including general education, given as part of a training course should be directly related to the knowledge and skills required by fishing vessel personnel and should, whenever possible, be integrated with the practical training provided.

2.13 Training aids

2.13.1 Whenever possible, training vessels should be used for persons entering the fishing industry to provide instruction in fishing techniques, navigation and seamanship, engine and machinery operation, use of safety equipment and other related matters. Training vessels should conduct actual fishing operations.

2.13.2 Where dedicated training vessels are not available, the functional skill acquisition training option may be utilized, using structured training arrangements on board operational fishing vessels. This training can be undertaken using the vessel's own equipment during normal fishing operations and during the trainees' period of qualifying sea service.

2.13.3 When applying institutional training arrangements, demonstration equipment such as engines and machinery, fishing gear, fishing vessel models, navigational and fish-finding equipment should be used in training programmes. Such equipment should be selected according to the needs of the trainees and the types of vessels on which they will serve.

2.13.4 Where available, multimedia training aids should be used but should not be substituted for demonstration equipment, in the use of which trainees may themselves take an active part.

2.13.5 Visits should be organized for trainees to fishing vessels equipped with modern or special installations and to fishery research institutions or other fishing centres.

2.13.6 Computer-based learning facilities may be used to complement remedial teaching programmes.

2.13.7 Simulators should be used to develop proficiency in the proper use of radar and other electronic equipment commonly used on fishing vessels.

2.14 Examinations and training of, and the issue of certificates to, fishing vessel personnel

2.14.1 Candidates for the issue of certificates of competency as skipper, officer in charge of a navigational watch on a fishing vessel of 24 m in length and over, as engineer officer in a fishing vessel of 750 kW propulsion power and over and as a radio operator should, as appropriate, be examined to ensure their proficiency in accordance with the provisions of the 1995 STCW-F Convention. These are reflected in paragraphs 8.1.1.2.3, 8.1.1.3.3, 8.1.2.1.2, 8.1.2.2.3, 8.1.2.6.4, 8.2.2.6 and 8.4.1.3.3.

2.14.2 There are no minimum knowledge requirements specified in the 1995 STCW-F Convention for fishing vessels less than 24 m operating in limited waters. However, article 1 of the Convention requires Parties to ensure that, from the point of view of safety of life at sea and for the protection of the marine environment, seagoing fishing vessel personnel are qualified and fit for their duties.

2.14.3 Resolution 3 of the STCW-F C. ıvention requested that guidelines and recommendations be prepared for the training of fishing vessel personnel serving on fishing vessels 12 m in length and over but less than 24 m (for guidance refer to chapters 4 and 7).

2.14.4 Regulation III/1 of the STCW-F Convention, as reflected in paragraphs 5.9.1 and 5.9.2, requires that basic training be given to all fishing vessel personnel before being assigned to any shipboard duties.

2.15 Minimum age, health and service requirements for the certification of fishing vessel personnel

2.15.1 Mandatory minimum age requirements are specified by the 1995 STCW-F Convention for the certification of fishing vessel personnel. These are indicated in paragraphs 8.1.1.4.1, 8.1.2.6.1, 8.2.2.1, and 8.3.3.1.

2.15.2 New entrants to seagoing in the fishing industry should satisfy the competent authorities as to their general standard of health. Candidates for

examinations leading to the issue of certificates of competency for fishing vessels are required to satisfy the competent authorities as to medical fitness, particularly regarding eyesight, hearing and speech. Seagoing personnel should have their medical fitness verified periodically, to the satisfaction of the competent authority.

2.15.3 Minimum periods of approved seagoing service, served in an appropriate capacity, are required for candidates for examinations leading to qualifications as skipper, officer, officer in charge of a navigational watch, engineer officer. These are indicated in paragraphs 8.1.1.2.2, 8.1.1.4.3, 8.1.2.2.2, 8.1.2.6.3, 8.2.2.1 and 8.3.3.1.

2.16 Familiarization training

2.16.1 *Personal survival*

2.16.1.1 All fishing vessel personnel, before being assigned to duties on board a fishing vessel, shall receive approved familiarization training in personal survival techniques to be able to:

.1 communicate with other persons on board on elementary safety matters and understand safety information symbols, signs and alarm signals;

.2 know what to do if:

.2.1 a person falls overboard,

.2.2 fire or smoke is detected, or

.2.3 the fire or abandon-ship alarm is sounded;

.3 identify muster and embarkation stations and emergency escape routes;

.4 locate and don lifejackets;

.5 raise the alarm and have basic knowledge of the use of portable fire extinguishers;

.6 take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board; and

.7 close and open the fire, weathertight and watertight doors fitted in the particular ship other than those for hull openings.

2.16.2 *Duties*

2.16.2.1 All fishing vessel personnel, before being assigned to their duties on board a fishing vessel, should:

.1 be familiarized with their specific duties and with all vessel arrangements, installations, equipment, procedures and vessel

characteristics that are relevant to their routine or emergency duties;

.2 be allocated a reasonable period of time to become acquainted with the specific equipment they will be using and vessel-specific watchkeeping, safety, environmental protection and emergency procedures and arrangements which they need to know in order to perform their assigned duties properly; and

.3 be provided with the essential information in a language they understand.

2.16.3 The skipper should take all necessary steps to provide newly arrived fishing vessel personnel with the opportunity to:

.1 visit the spaces in which their primary duties will be performed;

.2 get acquainted with the location, controls and display features of the equipment they will be operating or using;

.3 activate the equipment, when possible, and perform functions using the controls on the equipment; and

.4 observe and ask questions of someone who is already familiar with the equipment, procedures and other arrangements and who can communicate information in a language which the fisher understands.

2.16.4 The skipper should also provide for a suitable period of supervision when there is any doubt that a newly arrived person is unfamiliar with the equipment, operating procedures and other arrangements needed for the proper performance of his other duties.

2.17 Fatigue

2.17.1 The STCW-F Convention requires that watchkeeping personnel should not be impaired by fatigue. However, as fatigue results in the degradation of human performance and the impairment of rational decision-making, this has implications for the overall safety of the vessel and for all personnel. Appendix 41 contains some information on fatigue and the classification of factors. All concerned in the operation of the vessel should be aware of the fatigue factors and how the effects of fatigue can prejudice the safe operation of the vessel.

2.17.1 The skipper, senior officers and other personnel having a supervisory role should, in addition to being aware of the fatigue factors, be able to recognize its development among the fishing vessel's personnel.

PART B
Small fishing vessels

Chapter 3
Training

3.1 General

3.1.1 Open fishing vessels and decked fishing vessels of less than 12 m in length, hereafter referred to as small fishing vessels, provide the majority of the world's fishing fleet which are distributed widely in small fishing communities. The training needs of the fishing vessel personnel concerned differ considerably from those applicable to larger vessels and a wider range of skills common to all fishing vessel personnel is necessary (account should be taken of paragraphs 2.14.4, 5.9.1 and 5.9.2).

3.1.2 When considering possible training programmes, national authorities should take into consideration prevailing educational standards of the fishing communities and recognize that adopting unrealistic standards may be self-defeating. Furthermore, the competent authorities should also take into account the size of vessel, its hull configuration, method of propulsion, area of operation and the equipment and gear carried for the intended fishing activity.

3.1.3 The recommendations on training referred to in the following paragraphs are only applicable when the equipment mentioned below is fitted on the fishing vessel.

3.2 Use of radar for navigation and fishing

3.2.1 It should be ensured that training in the use of radar is available for fishing vessel personnel.

3.2.2 The training provided should give the fishing vessel personnel concerned a practical knowledge of the use of radar as an aid to collision avoidance and navigation in small fishing vessels.

3.2.3 When training is given it should include:

.1 correct operation of the radar equipment;

.2 limitations of radar;

.3 effects of rain and clutter on the detection of targets;

.4 use of the radar as an aid to coastal navigation;

.5 use of the radar for collision avoidance; and

.6 use of the radar in fishing operations.

3.2.4 Where practicable and available, radar simulator training is recommended.

3.2.5 Training courses should be concluded with a practical assessment to ensure that an adequate standard has been reached.

3.3 International Regulations for Preventing Collisions at Sea

3.3.1 All fishing vessel personnel responsible for the operation of a fishing vessel should be trained to ensure that they have adequate knowledge of the International Regulations for Preventing Collisions at Sea, 1972, as amended, to enable them to safely carry out their duties in their area of operation.

3.4 Practice of navigation

3.4.1 Training in the practice of navigation should be appropriate to the size of the vessel, navigational equipment carried and the waters in which it operates.

3.5 Electronic systems for fishing and navigation

3.5.1 It should be ensured that training in the use of electronic systems for fishing and navigation, appropriate to the equipment fitted on the fishing vessels concerned, is available for fishing vessel personnel. Appendix 5 indicates the level of training for personnel of fishing vessels of 24 m in length and over. For small fishing vessels national authorities may refer to this appendix when preparing training courses.

3.6 Aids to navigation (buoys, navigational marks, light vessels, etc.)

3.6.1 The knowledge required should be such that fishing vessel personnel are able to ascertain, on sighting a navigational mark, what action, if any, needs to be taken. Appendix 6 indicates the level of training for personnel of fishing vessels of 12 m in length and over. For small fishing vessels national authorities may refer to this appendix when preparing training courses.

3.7 Meteorology and oceanography

3.7.1 The knowledge required of meteorology and oceanography should be that necessary for the safe operation of the fishing vessel concerned, taking account of local conditions.

3.8 Magnetic and gyro-compasses

3.8.1 Training should include practical methods of determining the compass error. Practical instructions should be given in helm orders and

steering and in the care and use of compasses and associated equipment. All persons who may use an automatic pilot should be aware of its limitations, and receive practical instructions in the change-over procedure from automatic to manual steering.

3.9 Communications

3.9.1 Fishing vessel personnel in charge of or performing radiocommunication duties shall have knowledge of procedures used in radiotelephone communications, particularly with respect to distress, urgency, safety and navigational messages and of the adverse effect of misuse of communications equipment (attention is drawn to paragraphs 5.8.3 and 5.8.4).

3.10 Fire prevention and fire fighting

3.10.1 All fishing vessel personnel should be instructed in the dangers of fire on fishing vessels and the ways in which fires are caused. Basic training in the prevention and extinction of fires should be given as soon as possible in their career, preferably at a shore-based training establishment.

3.10.2 More guidance on the content of fire-fighting training programmes is set out in appendix 8, which should be modified to take into account the size of vessel, equipment carried, and method of propulsion.

3.11 Personal survival and life saving

3.11.1 Basic training in personal survival, first aid and the use of survival equipment should be given to all fishing vessel personnel, preferably before they first go to sea. Appendices 9 and 10 can be used by national authorities for guidance and in preparing suitable training courses for fishing vessel personnel in small fishing vessels.

3.12 Emergency procedures

3.12.1 It is not possible to give an exhaustive list of measures which could be taken in an emergency. Actual requirements to meet emergency situations will be dependent on the individual vessel. Appendices 11 and 12 indicate emergency procedures for skippers and fishing vessel personnel in vessels of 24 m in length and over, and may be used by national authorities for guidance in preparing appropriate training programmes.

3.13 Fishing vessel manoeuvring and handling

3.13.1 Practical training should be given in vessel manoeuvring and handling, including fishing operations.

3.14 Fishing vessel construction and stability

3.14.1 Training should be organized so as to give knowledge of the main parts of a fishing vessel's construction and its stability which will ensure the safe operation of the fishing vessel both during fishing operations and when proceeding to and from the fishing grounds. More detailed guidance on courses in fishing vessel construction and stability is set out in appendix 16.

3.15 First aid

3.15.1 All fishing vessel personnel should be given practical instruction on the immediate action to be taken on encountering an accident or other emergency on board. More detailed guidance is set out in appendix 17.

3.15.2 Those responsible for the operation of a fishing vessel should be given more comprehensive practical first aid training enabling them to provide the sick or injured with a satisfactory standard of care for the period during which they are likely to remain on board. This training should include knowledge of the subjects set out in appendix 18 and also:

.1 be based on the contents of the vessel's medicine chest and the use of the medicines and equipment it contains; and

.2 include, where appropriate, knowledge of obtaining medical advice by radio and use of the medical section of the International Code of Signals.

3.15.3 Guidance on a suitable first aid course is set out in appendix 18.

3.16 Search and rescue

3.16.1 Skippers should be aware of search and rescue procedures and responsibilities.

3.17 Prevention of marine pollution

3.17.1 Those responsible should have a knowledge of the factors contributing to and precautions to be observed to prevent marine pollution when pumping out bilges and particularly when changing lubricating oil. They should also be aware that the disposal into the sea of all plastics, including but not limited to synthetic ropes, synthetic fishing nets, plastic sheeting and garbage bags, etc., is prohibited; disposal of other garbage is also prohibited or subject to restrictions and should be avoided.*

* Refer to regulation 3, annex V, of MARPOL 73/78 and paragraph 4, annex I, of the 1972 London Convention.

3.18 Main and auxiliary engines

3.18.1 Fishing vessel personnel responsible for the operation of main and auxiliary engines should have sufficient knowledge of them to ensure their continual usage and be capable of such remedial action as may be necessary to return to port. An example of the knowledge required is given in appendix 21. In tropical countries the effects of high temperatures, humidity and corrosive effects of seawater should be particularly understood.

3.19 Pressure vessels

3.19.1 Where appropriate, fishing vessel personnel in charge of mechanized equipment should have a knowledge of the pressure systems in use and in particular, if fitted, compressed air tanks.

3.20 Transmission units

3.20.1 Fishing vessel personnel should have a practical knowledge of the function and repair of gearboxes, clutches, couplings, stern tubes, tailshafts and propellers and the importance of correct alignment of engine and shafting and checking alignment.

3.21 Pumping and piping systems

3.21.1 Those responsible should be trained to understand the various pumping systems which are fitted in their fishing vessel.

3.22 Automatic and remote control systems

3.22.1 Those concerned with the operation of motor fishing vessels fitted with automatic and remote control systems should understand their operation and routine maintenance.

3.23 Electrical equipment and installations

3.23.1 Training should be available for those concerned with the operation of fishing vessels fitted with electrical equipment so as to provide them with adequate practical knowledge of the safe operation and maintenance of such electrical equipment. The training should cover the use and care of batteries and the precautions to be taken in their use and storage, electric motors, generators and starting systems.

3.24 Refrigeration systems

3.24.1 Where appropriate, those concerned should have a practical knowledge of ammonia and Freon gas systems, their operation and maintenance, safe gas storage and leak detection and charging.

3.25 Fishing methods and fishing gear

3.25.1 All fishing vessel personnel should be familiar with the fishing gear they are likely to use. Training should include instruction on deck layout and the machinery to be used. More detailed guidance is set out in appendix 34.

3.26 Handling, stowage and care of the catch

3.26.1 All fishing vessel personnel should be aware of the importance of ensuring that the catch, whether it is finfish or crustacean, is maintained in its optimum condition from capture to the consumer, and particularly while it is in their care. More detailed guidance is set out in appendix 35.

3.27 Fishing gear construction and maintenance

3.27.1 All fishing vessel personnel should have practical knowledge of all aspects of fishing gear construction and its maintenance. More detailed guidance is set out in appendix 36.

3.28 Fishing vessel operations in port

3.28.1 Training should give skippers an understanding of the relevant procedures related to clearance inwards on arrival in port and clearance outwards for departure, particular rules for certain ports, manoeuvring, berthing and unberthing, unloading catch, bunkering and provisioning, appropriate to the size of their fishing vessel and its area of operation.

3.29 Fishing vessel management

3.29.1 Training should be given to achieve a standard of knowledge appropriate to the respective duties of the persons on board fishing vessels in personnel management, organization, welfare and training, the basic costs of operations and the importance of allocating a certain proportion of income for maintenance of the fishing vessel and its gear.

3.30 Maritime law, fisheries regulations, marine insurance and liability

3.30.1 Fishing vessel personnel responsible for the navigation and operation of fishing vessels should possess sufficient knowledge of the rules and regulations or agreements affecting fishing in the fishing vessel's area of operation. Particular attention should be paid to the FAO Code of Conduct for Responsible Fisheries.

3.30.2 Guidance should be given to skippers so that they understand their responsibilities in regard to third party liability and injuries to or loss of fishing vessel personnel.

3.30.3 Skippers should have been instructed in various ways to insure against their legal liabilities and how to cover their vessels, equipment and fishing gear for total or partial loss or damage. Such instruction should include national and international practices as applicable. Instruction should cover the practical application of insurance, in particular the underwriting system, insurance brokerage, salvage associations, and protection and indemnity associations (clubs).

3.30.4 The relationships between insurance underwriters and fishing vessel classification societies should be explained to illustrate the importance to underwriters of maintenance and standards in construction and periodic vessel survey programmes.

3.30.5 Skippers should have sufficient knowledge of how to conduct themselves in the event of an incident in which their fishing vessel may be involved.

3.31 Human relationships and social responsibilities

3.31.1 Fishing vessel personnel training should include an understanding of human relationships and social responsibilities.

3.31.2 Training should include guidance as to the particular social aspects of seagoing employment and indicate the need for good human relationships on board fishing vessels.

3.31.3 Training of skippers should cover applicable national laws and regulations concerning the living and working conditions of fishing vessel personnel.

3.32 Fishing vessel personnel/Fishermen's organizations

3.32.1 Fishing vessel personnel should be aware of the scope and activities of local fishermen's organizations and, where appropriate, national training courses should be provided to give guidance.

3.33 Sail training

3.33.1 Where appropriate, fishing vessel personnel should be given training in the use of sails as aids to fishing or general propulsion. More detailed guidance is set out in appendix 39.

3.34 FAO Code of Conduct for Responsible Fisheries

3.34.1 Where appropriate, fishing vessel personnel should be given training in the principles and guidelines of the Code of Conduct for Responsible Fisheries. More detailed guidance is given in chapter 9 and appendix 40.

PART C

Decked fishing vessels of 12 metres in length and over but less than 24 metres or fishing vessels powered by main propulsion machinery of less than 750 kW propulsion power*

* For engine department training on fishing vessels with main propulsion machinery more than 750 kW, guidance is set out in section 5.7 and sections 6.17 to 6.23.

Chapter 4
Training

4.1 General

4.1.1 This chapter is intended to apply primarily to fishing vessel personnel serving on fishing vessels operating in limited waters. In the case of fishing vessel personnel serving on fishing vessels operating in unlimited waters, it is desirable that training conforms as closely as practicable with the guidelines in part D of this Document.

4.1.2 The articles and regulations of the 1995 STCW-F Convention suggest probable certification requirements for the majority of fishing vessel personnel. Articles 1 and 3 define the application of the Convention as being to all seagoing fishing vessels. However, regulation I/2 makes provision for the Administration of a Party to determine which of the requirements should apply to fishing vessels of less than 45 m in length operating exclusively from its ports and fishing within its limited waters. It should also be noted that resolution 3 of the STCW-F Conference invited the preparation of guidelines and recommendations for the training of fishing vessel personnel serving on board fishing vessels 12 m in length and over but less than 24 m.

4.1.3 It had previously been determined that, given the extent of fishery and regional operational variations, national examinations for skippers, officers in charge of a navigational watch, engineer officers and personnel of such fishing vessels should only include, examination for safety factors inherent in their operation and not in fishing technology. However, attention is drawn to the adoption of the 1995 FAO Code of Conduct for Responsible Fisheries, which places considerable emphasis upon the training of fishing vessel personnel, particularly in the areas of fisheries management and resource conservation.

4.2 Use of radar for navigation and fishing

4.2.1 *Radar observation and plotting*

4.2.1.1 It should be ensured that training for fishers in the use of radar is available. Such training is usually given by special courses or is included in the curriculum of basic courses in nautical education. In all cases such training should conclude with an examination or a demonstration of practical ability, as appropriate, to ensure that an adequate standard is reached.

4.2.1.2 Whilst these courses are principally intended for candidates for certification as skipper or officer in charge of a navigational watch on fishing vessels of 24 m in length and over, they should also be available to all fishing vessel personnel requiring such training. It is considered that, before entering such courses, candidates should have completed a minimum period of sea service in order to fully appreciate some of the problems involved. Where certificates are issued confirming that radar training has been satisfactorily completed, the competent authorities should keep records and arrangements should be made to enter the particulars of radar training certificates in the holder's service record. More detailed guidance on radar training is set out in appendix 1.

4.3 Radar simulator training

4.3.1 As far as is practicable, training courses on a marine radar simulator, where appropriate, should be available for all skippers and officers in charge of a navigational watch. The syllabus should be approved by the Administration concerned. Skippers or officers in charge of a navigational watch who complete the course should be issued with a certificate or an endorsement on their certificates of competence. More detailed guidance on radar simulator training is provided in appendix 4.

4.4 International Regulations for Preventing Collisions at Sea

4.4.1 All skippers and officers in charge of a navigational watch should be trained to ensure they have a thorough knowledge of the International Regulations for Preventing Collisions at Sea, 1972, as amended, and their practical application to enable them to be in charge of a navigational watch.

4.4.2 Skilled fishers should be trained to make sure they have sufficient knowledge of the International Regulations for Preventing Collisions at Sea, 1972, as amended, to enable them to make proper reports to the skipper or officers in charge of a navigational watch.

4.5 Practice of navigation at sea

4.5.1 The syllabus for the training of skippers and officers in charge of a navigational watch in the practice of navigation should be appropriate to the size of the vessel and the waters in which it operates.

4.6 Electronic systems for fishing and navigation

4.6.1 Training in the operating of electronic systems for fishing and navigation should be provided for skippers and officers in charge of a navigational watch in the types of electronic equipment fitted, or likely to be fitted, on the fishing vessels on which they are expected to serve. Such training should be included in any initial and subsequent training or

certification courses. Appendix 5 indicates the level of training for personnel of fishing vessels of 24 m in length and over. National authorities should refer to this appendix when preparing training courses.

4.7 Aids to navigation (buoys, navigational marks, light vessels, etc.)

4.7.1 The knowledge required of a skipper or officer in charge of a navigational watch should be such that they are able to ascertain, on sighting a navigational mark, what action, if any, needs to be taken. More detailed guidance on the course of instruction for skippers and officers in charge of a navigational watch is set out in appendix 6.

4.7.2 Skilled fishers should be trained to ensure they have sufficient knowledge of navigational marks to enable them to make proper reports to the skipper or officers in charge of a navigational watch.

4.8 Basic meteorology and oceanography

4.8.1 In order to provide skippers and officers in charge of a navigational watch with a basic knowledge of meteorology and oceanography sufficient for the safe operation of their fishing vessels, training courses should cover, but not necessarily be limited to, the subjects listed in appendix 7.

4.9 Magnetic and gyro-compasses

4.9.1 Training of skippers and officers in charge of a navigational watch should include practical methods of determining the magnetic compass error and, where fitted, the gyro-compass error using terrestrial means. Training should also be given in the care and use of compasses and associated equipment.

4.9.2 Skilled fishers should receive practical instruction to enable them to steer by magnetic compass and, where fitted, by gyro-compass and to understand and carry out helm orders.

4.9.3 Where an automatic pilot is fitted all persons who may use this equipment should receive practical training in the change-over procedures from automatic to manual steering and vice versa.

4.10 Communications

4.10.1 Skippers and officers in charge of a navigational watch should be trained in the use of Morse code and should be able to recognize and know the meaning of the more important single-letter flags of the International Code of Signals. They should also have a working knowledge of signalling procedures as set out in the International Code of Signals and should know how to use the Code.

4.10.2 Fishing vessel personnel, if they use radiocommunication equipment, should be trained so that they have knowledge of the procedures to be used in radiotelephone communications, particularly with respect to distress, urgency, safety and navigational messages, and of the adverse effect of the misuse of radiotelephone equipment.

4.11 Fire prevention and fire fighting

4.11.1 All fishing vessel personnel should be instructed in the dangers of fire on fishing vessels and the ways in which fires are caused. Basic training in the prevention and extinction of fires should be given as soon as possible in their career, preferably in pre-vocational training at a shore-based training establishment.

4.11.2 More guidance on the content of fire-fighting training programmes is set out in appendix 8, which should be modified to take into account the size of vessel, equipment carried, and method of propulsion.

4.12 Personal survival and life saving

4.12.1 Basic training in personal survival and the use of survival equipment should be given to all fishing vessel personnel, before being assigned to any shipboard duties.

4.12.2 Training in the use (and maintenance where applicable) of survival equipment and other life-saving appliances should be included, as appropriate, in pre-vocational training courses or other relevant shore-based training courses. Multimedia can be a valuable aid in training.

4.12.3 Training courses for certification of skippers and officers in charge of a navigational watch as proficient in survival craft should include the subjects set out in appendix 9. Pre-sea training of fishing vessel personnel in personal survival techniques should include instruction in accordance with the guidance set out in appendix 10.

4.13 Emergency procedures

4.13.1 It is not possible to give an exhaustive list of measures which should be taken in an emergency. Proficiency in this subject can only be properly obtained on board fishing vessels, as it is dependent on the individual vessel and the organization on board.

4.13.2 Basic training should be designed to enable a skipper, officer in charge of a navigational watch or an engineer officer to identify the factors which should affect his decisions, including the planning of emergency procedures.

4.13.3 The recommended curricula for the training of skippers, officers in charge of a navigational watch and engineer officers and other fishing vessel personnel in emergency procedures are set out in appendices 11, 12 and 13.

4.14 Fishing vessel manoeuvring and handling

4.14.1 The training and theoretical knowledge required of skippers and officers in charge of a navigational watch and engineer officers should, as appropriate, include the subjects set out in appendices 14 and 15.

4.15 Fishing vessel construction and stability

4.15.1 The training of skippers, officers in charge of a navigational watch and, where applicable, engineers should be designed to give them a knowledge of fishing vessel construction and stability to ensure the safe operation of the vessels during fishing operations, when proceeding to and from the fishing grounds and when in port. The training should include knowledge of the subjects set out in appendix 16.

4.16 Medical and first aid

4.16.1 All fishing vessel personnel should successfully complete formal practical instruction on the immediate action that should be taken on encountering an accident or other emergency on board, including the use of a recommended method of artificial respiration. More detailed guidance is set out in appendix 17.

4.16.2 Persons in charge of medical care on board should successfully complete more comprehensive practical training in first aid and medical care enabling them to provide the sick or injured with a satisfactory standard of medical care for the period during which they are likely to remain on board. This training should include knowledge of the subjects set out in appendix 18 and also:

.1 be based on the contents of the fishing vessel's medicine chest and the use of the medicines and equipment it contains; and

.2 include, where appropriate, knowledge of obtaining medical advice by radio and use of the medical section of the International Code of Signals.

4.17 Search and rescue

4.17.1 A knowledge of the content and use of the *IMO Merchant Ship Search and Rescue Manual (MERSAR)**, as amended, should be included in the curricula for the training of skippers, and officers in charge of a navigational watch and radio operators.

* See also *International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual)*.

4.18 Prevention of marine pollution

4.18.1 The curricula for training skippers and engineers officers should include knowledge of the requirements of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).

4.19 Main and auxiliary prime movers

4.19.1 Fishing vessel personnel in charge of machinery should have practical knowledge of the preparation, operation and maintenance of the main and auxiliary engines and associated ancillary equipment. More detailed guidance is set out in appendix 20.

4.20 Boilers and other pressure vessels

4.20.1 It is essential that all personnel involved in the operation of boilers and other pressure vessels are made aware of the potential hazards associated with this type of equipment if not properly maintained, particularly with regard to the importance of ensuring that safety devices are operative and are correctly set relative to the safe working pressure of the boiler or pressure vessel. It should be understood that the setting of safety valves and relief valves is the responsibility of the competent authority or the organization or persons recognized for that purpose.

4.20.2 Fishing vessel personnel in charge of machinery should have practical knowledge of the preparation, operation and maintenance of boilers and other pressure vessels. More detailed guidance is set out in appendix 22.

4.21 Pumping and piping systems

4.21.1 Fishing vessel personnel in charge of machinery should have sufficient knowledge to carry out routine pumping operations and to maintain pumping and piping installations. More detailed guidance is set out in appendix 24.

4.22 Automatic and remote control systems

4.22.1 Fishing vessel personnel in charge of machinery should have knowledge relating to the characteristics and operation of automatic and remote control systems. Instruction manuals should be understood and closely followed, both for the operation and maintenance of the system. More detailed guidance is set out in appendix 26.

4.23 Electrical equipment and installations

4.23.1 Fishing vessel personnel responsible for electrical equipment and installations should have an adequate level of knowledge to be able to interpret and control their operation. They should be capable of detecting failures, effecting repairs and performing routine maintenance. More detailed guidance is set out in appendix 28.

4.24 Fish processing equipment and freezing systems

4.24.1 Fishing vessel personnel responsible for fish-processing equipment and freezing systems should have an adequate level of knowledge to be able to monitor and control their operation. They should be capable of detecting failures, effecting repairs and performing routine maintenance. More detailed guidance is set out in appendix 29.

4.25 Use of tools

4.25.1 Fishing vessel personnel in charge of machinery should be proficient in the use of tools and equipment provided for the maintenance and repair of machinery on board the fishing vessel. More detailed guidance is set out in appendix 30.

4.26 Skilled fishers

4.26.1 Skilled fishers should receive practical training in accordance with the detailed guidance set out in appendix 32.

4.27 Maritime law and fisheries regulations

4.27.1 Skippers, officers in charge of a navigational watch and engineer officers should possess a knowledge of appropriate international maritime law embodied in international agreements and conventions, as they affect their specific obligations and responsibilities, particularly those concerning fishing safety and the protection of the marine environment. In addition, skippers should possess sufficient knowledge of regional regulations and agreements affecting fishing in the area of operation of the fishing vessels on which they serve. Particular attention should be paid to the FAO Code of Conduct for Responsible Fisheries.

4.27.2 The extent of knowledge of national maritime legislation is left to the discretion of the national Administrations but should include national arrangements for implementing international agreements and conventions.

4.28 Marine insurance

4.28.1 Skippers should possess a knowledge of marine insurance sufficient to protect themselves and owners of fishing vessels from financial loss. More detailed guidance is set out in appendix 33.

4.29 Fishing vessel management

4.29.1 Skippers should be given training to achieve a standard of knowledge appropriate to their respective duties in personnel and financial management, organization, welfare and training aboard vessels.

4.30 Human relationships and social responsibilities

4.30.1 Fishing vessel personnel training programmes should include the basic principles of human relationships and social responsibilities.

4.30.2 Such training should include guidance as to the particular social aspects of seagoing employment and point out the need for good human relationships on board fishing vessels. Please refer to resolution 9 of the STCW-F Convention.

4.30.3 Training of skippers should cover applicable national laws and regulations concerning the living and working conditions of fishing vessel personnel.

4.31 Working arrangements

4.31.1 All fishing vessel personnel should be aware of relevant national laws and regulations on working practices and where applicable, accommodation and employment conditions on fishing vessels.

4.32 Fishing methods and fishing gear

4.32.1 Subject to needs, training in fishing methods should be readily available for skippers, officers in charge of a navigational watch and skilled fishers engaged in all classes of fishing vessels. However, in determining the necessary training, due consideration should be given to the difficulties associated with prescribing a level of training applicable to all classes of fishing operations.

4.32.2 Fishing is subject to widely different methods. These methods are related to the fish species being taken, the geographical area of operations and the size of fishing vessel being used. It should be noted that considerable variations in the operational methods used often exist within a fishery.

4.32.3 The extent of training required can be determined by whether a new fishery is being developed or whether the fishery has a long history of exploitation. Competition in the long-established fisheries usually ensures

that the level of overall skill of skippers and officers in charge of a navigational watch engaged in these fisheries is well developed.

4.32.4 Training in fishing methods not usually associated with local fishing operations should not be a requirement.

4.32.5 Examinations for certificates of competency should primarily include factors associated with ensuring that the fishing operation in which the candidate is engaged is safe.

4.32.6 Training for particular fishing methods and fishing gear should include the applicable methods referred to in the detailed guidance set out in appendix 34.

4.33 Handling, stowage and care of the catch

4.33.1 All fishing vessel personnel associated with fishing operations should be trained so as to ensure they have a sound knowledge of the proper handling, stowage and care of the catch, particularly where the catch is ultimately intended for human consumption. Knowledge required includes:

- **.1** deck hygiene;
- **.2** preparation of fish holds;
- **.3** preparation of the catch for stowage;
- **.4** catch stowage systems including ship stability considerations;
- **.5** maintenance of the quality of the catch (icing, freezing, boxing).

4.33.2 More detailed guidance is set out in appendix 35.

4.34 Maintenance of fishing equipment

4.34.1 Training should be given to all fishing vessel personnel in the understanding and knowledge of all fishing equipment they are likely to use, including how to make it and how to maintain it. More detailed guidance is set out in appendix 36.

4.35 Fishing vessel operations in port

4.35.1 Skippers and officers in charge of a navigational watch of fishing vessels should have adequate knowledge of:

- **.1** the essential actions that need to be taken before arriving and sailing from port;
- **.2** when operating in unlimited waters, the sources from which information can be obtained regarding port rules and regulations as well as customs and immigration procedures

and the sources from which essential services for repairs, maintenance and supplies can be obtained;

.3 when operating in national or limited waters, the rules and regulations of the ports at which they call;

.4 factors affecting satisfactory discharge of the catch.

4.35.2 More detailed guidance is set out in appendix 37.

4.36 Sail training

4.36.1 Where appropriate, fishing vessel personnel should be given training in the use of sails as aids to fishing or general propulsion. More detailed guidance is set out in appendix 39.

4.37 FAO Code of Conduct for Responsible Fisheries

4.37.1 Where appropriate, fishing vessel personnel should be given training in the principles and guidelines of the Code of Conduct for Responsible Fisheries. More detailed guidance is given in chapter 9 and appendix 40.

PART D

Fishing vessels of 24 metres in length and over or powered by main propulsion machinery of 750 kW propulsion power or more

Chapter 5
Description of required skills and knowledge

5.1 General

5.1.1 As there are varying fishing technologies associated with the harvesting of different fish species, the required skills and knowledge of the fishing vessel personnel concerned should be related to the type of fishing vessel on which they will serve and the method or methods of fishing used.

5.2 Minimum knowledge required for certification of skippers operating in unlimited waters*

5.2.1 The syllabus given below is compiled for examination of candidates for certification as skippers on fishing vessels of 24 m in length and over operating in unlimited waters. Bearing in mind that the skipper has ultimate responsibility for the safety of the vessel and its fishing vessel personnel at all times including during fishing operations, examination should be designed to test the candidate's ability to assimilate all available information that affects the safety of the vessel and its fishing vessel personnel in accordance with the syllabus.

5.2.2 *Navigation and position determination*

5.2.2.1 Voyage planning and navigation for all conditions:

- **.1** by acceptable methods of determining ocean tracks;
- **.2** within restricted waters;
- **.3** where applicable, in ice;
- **.4** in restricted visibility;
- **.5** where applicable, in traffic separation schemes; and
- **.6** in areas affected by tides and currents.

5.2.2.2 Position determination:

- **.1** by celestial observations;
- **.2** by terrestrial observations, including the ability to use bearings from landmarks and aids to navigation such as lighthouses,

* The text of this section should be aligned with any future amendments to the appendix of regulation 1, chapter II of the 1995 STCW-F Convention.

beacons and buoys in conjunction with appropriate charts, notices to mariners and other publications to assess the accuracy of the resulting position fix; and

.3 by using, to the satisfaction of the Administration, modern ship electronic navigational aids as provided in fishing vessels, with specific reference to knowledge of their operating principles, limitations, sources of error, detection of misrepresentation of information and methods of correction to obtain accurate position fixing.

5.2.3 *Watchkeeping*

5.2.3.1 Demonstrate thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972, especially annexes II and IV concerned with safe navigation.

5.2.3.2 Demonstrate knowledge of the recommended basic principles to be observed in keeping a navigational watch on board fishing vessels as prescribed in paragraphs 5.10.1 to 5.10.8 of this chapter.

5.2.4 *Radar navigation*

5.2.4.1 Demonstrate, using a radar simulator or, when not available, a manoeuvring board, knowledge of the fundamentals of radar and ability in the operation and use of radar, and in the interpretation and analysis of information obtained from the equipment,* including the following:

.1 factors affecting performance and accuracy;

.2 setting up and maintaining displays;

.3 detection of misrepresentation of information, false echoes, sea return, etc.;

.4 range and bearing;

.5 identification of critical echoes;

.6 course and speed of other ships;

.7 time and distance of closest approach of crossing, meeting or overtaking ships;

.8 detecting course and speed changes of other ships;

.9 effect of changes in own vessel's course or speed or both; and

.10 application of the International Regulations for Preventing Collisions at Sea, 1972.

* Attention is drawn to resolution 2 of the 1995 STCW-F Conference.

5.2.5 *Magnetic and gyro-compasses*

5.2.5.1 Ability, using terrestrial and celestial means, to determine and apply the errors of the magnetic and gyro-compasses.

5.2.6 *Meteorology and oceanography*

5.2.6.1 Knowledge of meteorological instruments and their application;

5.2.6.2 ability to apply meteorological information available;

5.2.6.3 knowledge of characteristics of various weather systems, including, at the discretion of the Administration, tropical revolving storms and avoidance of storm centres and the dangerous quadrants;

5.2.6.4 knowledge of weather conditions liable to endanger the vessel including, at the discretion of the Administration, fog, icebergs and ice accretion;

5.2.6.5 ability to use appropriate navigational publications on tides and currents;

5.2.6.6 ability to calculate times and heights of high and low water and estimate the direction and rate of tidal streams.

5.2.7 *Fishing vessel manoeuvring and handling*

5.2.7.1 Manoeuvring and handling of a fishing vessel in all conditions including the following:

.1 berthing, unberthing and anchor work under various conditions of wind and tide;

.2 manoeuvring in shallow water;

.3 management and handling of fishing vessels in heavy weather, including appropriate speed, particularly in following and quartering seas, assisting a ship or aircraft in distress, means of keeping an unmanageable vessel out of a sea trough, lessening drift;

.4 manoeuvring the vessel during fishing operations with special regard to factors which could adversely affect the vessel's safety during such operations;

.5 precautions in manoeuvring for launching boats or liferafts in bad weather;

.6 methods of taking on board survivors from lifeboats or liferafts;

.7 where applicable, practical measures to be taken when navigating in ice or conditions of ice accretion on board the vessel;

.8 the use of, and manoeuvring in, traffic separation schemes;

.9 the importance of navigating at reduced speed to avoid damage caused by own vessel's bow or stern wave;

.10 transferring fish at sea to factory ships or other vessels; and

.11 refuelling at sea.

5.2.8 *Fishing vessel construction and stability*

5.2.8.1 General knowledge of the principal structural members of a vessel and the proper names of the various parts;

5.2.8.2 knowledge of the theories and factors affecting trim and stability and measures necessary to preserve safe trim and stability;

5.2.8.3 demonstrate ability to use stability data, stability and trim tables and pre-calculated operating conditions;

5.2.8.4 knowledge of effects of free surface and ice accretion, where applicable;

5.2.8.5 knowledge of effects of water on deck;

5.2.8.6 knowledge of the significance of weathertight and watertight integrity.

5.2.9 *Catch handling and stowage*

5.2.9.1 The stowage and securing of catch on board vessels, including fishing gear;

5.2.9.2 loading and discharging operations, with special regard to heeling moments from gear and catch.

5.2.10 *Fishing vessel power plants*

5.2.10.1 Operating principles of marine power plants in fishing vessels;

5.2.10.2 vessel's auxiliary machinery;

5.2.10.3 general knowledge of marine engineering terms.

5.2.11 *Fire prevention and fire-fighting appliances*

5.2.11.1 Organization of fire drills;

5.2.11.2 classes and chemistry of fire;

5.2.11.3 fire-fighting systems;

5.2.11.4 participating in an approved fire-fighting course;

5.2.11.5 knowledge of provisions concerning fire-fighting equipment.

5.2.12 *Emergency procedures*

5.2.12.1 Precautions when beaching a vessel;

5.2.12.2 action to be taken prior to, and after, grounding;

5.2.12.3 action to be taken when the gear becomes fast to the ground or other obstruction;

5.2.12.4 floating a grounded vessel, with and without assistance;

5.2.12.5 action to be taken following a collision;

5.2.12.6 temporary plugging of leaks;

5.2.12.7 measures for the protection and safety of fishing vessel personnel in emergencies;

5.2.12.8 limiting damage and salving the vessel following a fire or explosion;

5.2.12.9 abandoning ship;

5.2.12.10 emergency steering, rigging and use of jury steering and the means of rigging a jury rudder, where practicable;

5.2.12.11 rescuing persons from a ship in distress or from a wreck.

5.2.12.12 man-overboard procedures;

5.2.12.13 towing and being towed.

5.2.13 *Medical care*

5.2.13.1 Knowledge of first aid procedures;

5.2.13.2 knowledge of procedures for obtaining medical advice by radio;

5.2.13.3 a thorough knowledge of the use of the following publications:

.1 International Medical Guide for Ships or equivalent national publication;

.2 medical section of the International Code of Signals.

5.2.14 *Maritime law*

5.2.14.1 A knowledge of international maritime law as embodied in the international agreements and conventions as they affect the specific obligations and responsibilities of the skipper, particularly those concerning safety and the protection of the marine environment. Particular regard should be paid to the following subjects:

.1 certificates and other documents required to be carried on board fishing vessels by international conventions, how they may be obtained and the period of their legal validity;

.2 responsibilities under the relevant requirements of the 1993 Torremolinos Protocol;

.3 responsibilities under the relevant requirements of chapter V of the International Convention for the Safety of Life at Sea, 1974;

.4 responsibilities under Annex I and Annex V of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 thereto;

.5 maritime declarations of health; the requirements of the international health regulations;

.6 responsibilities under the Convention on the International Regulations for Preventing Collisions at Sea, 1972; and

.7 responsibilities under other international instruments affecting the safety of the ship and fishing vessel personnel.

5.2.14.2 The extent of knowledge of national maritime legislation is left to the discretion of the Administration but should include national arrangements for implementing applicable international agreements and conventions.

5.2.15 *English language*

5.2.15.1 Adequate knowledge of the English language enabling the skipper to use charts and other nautical publications, to understand meteorological information and messages concerning the vessel's safety and operation and to communicate with other ships or coast stations. Ability to understand and use the relevant sections of IMO standard marine communication phrases, as appropriate.

5.2.16 *Communications*

5.2.16.1 General knowledge of the principles and basic factors necessary for the safe and efficient use of all subsystems and equipment required by the global maritime distress and safety system (GMDSS). Refer to resolution 1 of the STCW-F Convention;

5.2.16.2 knowledge of navigational and meteorological warning systems and the selection of the appropriate communication services;

5.2.16.3 knowledge of the adverse effect of misuse of such communication equipment;

5.2.16.4 where the Administration has examined candidates in these subjects at lower levels of certification, they may have the option of not re-examining in these subjects;

5.2.16.5 ability to transmit and receive signals by Morse light and use the International Code of Signals.

5.2.17 *Life saving*

5.2.17.1 A thorough knowledge of life-saving appliances and arrangements;

5.2.17.2 a thorough knowledge of emergency procedures, musters and drills.

5.2.18 *Search and rescue*

5.2.18.1 A thorough knowledge of the *Merchant Ship Search and Rescue Manual (MERSAR)* and the *International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual).*

5.2.19 *The FAO/ILO/IMO Code of Safety for Fishermen and Fishing Vessels*

5.2.19.1 Knowledge of part A of the FAO/ILO/IMO Code of Safety for Fishermen and Fishing Vessels.

5.2.20 *FAO Code of Conduct for Responsible Fisheries*

5.2.20.1 Fishing vessel personnel should have an adequate knowledge on the FAO Code of Conduct for Responsible Fisheries, which should include:

.1 responsible harvesting practices;

.2 responsible fishing gear/selectivity;

.3 energy optimization;

.4 the management partnership;

.5 duties of all States;

.6 duties of flag States;

.7 port State duties.

5.2.21 *Methods for demonstration of proficiency*

5.2.21.1 Navigation:

.1 demonstrate the use of sextant, pelorus, azimuth mirror, ability to plot position, course and bearings;

.2 demonstrate thorough knowledge of the content, application and intent of the Convention on the International Regulations for Preventing Collisions at Sea, 1972.

5.2.21.2 Use of small models displaying proper signals or lights, or navigation light simulator.

5.2.21.3 Radar:

.1 observations of radar simulators or manoeuvring boards.

5.2.21.4 Fire fighting:

.1 by participation in an approved fire-fighting course.

5.2.21.5 Communications:

.1 by practical test.

5.2.21.6 Life saving:

.1 by handling of life-saving appliances, including the donning of lifejackets and, as appropriate, immersion suit.

5.3 Minimum knowledge required for certification of officers in charge of a navigational watch on fishing vessels of 24 m in length and over operating in unlimited waters

5.3.1 The syllabus given below is compiled for examination of candidates for certification as officers in charge of a navigational watch on fishing vessels of 24 m in length and over operating in unlimited waters.

5.3.2 *Celestial navigation*

5.3.2.1 Ability to use a celestial body to determine compass errors.

5.3.3 *Terrestrial and coastal navigation*

5.3.3.1 Ability to determine the vessel's position by the use of:

.1 landmarks;

.2 aids to navigation, including lighthouses, beacons and buoys; and

.3 dead reckoning, taking into account winds, tides, currents and speed by propeller revolutions per minute and by log.

5.3.3.2 Thorough knowledge of and ability to use navigational charts and publications such as sailing directions, tide tables, notices to mariners and radio navigational warnings.

5.3.4 *Radar navigation*

5.3.4.1 Demonstrate using a radar simulator or, when not available a manoeuvring board, knowledge of the fundamentals of radar and ability in the operation and use of radar, and in the interpretation and analysis of information obtained from the equipment including the following:

.1 factors affecting performance and accuracy;

.2 setting up and maintaining displays;

.3 detection of misrepresentation of information, false echoes, sea return.;

.4 range and bearing;

.5 identification of critical echoes;

.6 course and speed of other ships;

.7 time and distance of closest approach of crossing, meeting or overtaking ships;

.8 detecting course and speed changes of other ships;

.9 effect of changes in own vessel's course or speed or both; and

.10 application of the International Regulations for Preventing Collisions at Sea, 1972.

5.3.5 *Watchkeeping*

5.3.5.1 Demonstrate thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972 (specially annexes II and IV) concerned with safe navigation.

5.3.5.2 Demonstrate knowledge of the content of the basic principles to be observed in keeping a navigational watch on board fishing vessels as prescribed in paragraphs 5.10.1 to 5.10.8 of this chapter.

5.3.6 *Electronic systems of position fixing and navigation*

5.3.6.1 Ability to determine the vessel's position by the use of electronic navigational aids to the satisfaction of the Administration.

5.3.7 *Meteorology*

5.3.7.1 Knowledge of shipborne meteorological instruments and their application;

5.3.7.2 knowledge of the characteristics of the various weather systems.

5.3.8 *Magnetic and gyro-compasses*

5.3.8.1 Care and use of compasses and associated equipment.

5.3.9 *Communications*

5.3.9.1 General knowledge of the principles and basic factors necessary for the safe and efficient use of all subsystems and equipment required by the global maritime distress and safety system (GMDSS);

5.3.9.2 knowledge of navigational and meteorological warning systems and the selection of the appropriate communication services;

5.3.9.3 knowledge of the adverse effect of misuse of such communication equipment.

5.3.10 *Fire prevention and fire-fighting appliances*

5.3.10.1 Knowledge of classes and chemistry of fire;

5.3.10.2 knowledge of fire-fighting systems and procedures;

5.3.10.3 participation in an approved fire-fighting course.

5.3.11 *Life saving*

5.3.11.1 Ability to direct abandon-vessel drills and knowledge of the operation of life-saving appliances and their equipment, including two-way radiotelephone apparatus. Survival at sea techniques including participation in an approved survival at sea course.

5.3.12 *Emergency procedures and safe working practices for fishermen*

5.3.12.1 Knowledge of the items listed in the appropriate sections of the FAO/ILO/IMO Code of Safety for Fishermen and Fishing Vessels, part A, and in chapter VIII of the annex to the 1993 Torremolinos Protocol.

5.3.13 *Fishing vessel manoeuvring and handling*

5.3.13.1 Basic knowledge of manoeuvring and handling a fishing vessel, including the following:

.1 berthing, unberthing, anchoring and manoeuvring alongside other vessels at sea;

.2 manoeuvring during fishing operations with special regard to factors which could adversely affect the vessel's safety during such operations;

.3 effects of wind and tide/current on ship handling;

.4 manoeuvring in shallow water;

.5 management of fishing vessels in heavy weather;

.6 rescuing persons and assisting a ship or aircraft in distress;

.7 towing and being towed;

.8 man-overboard procedure; and

.9 where applicable, practical measures to be taken when navigating in ice or in conditions of ice accretion on board the vessel.

5.3.14 *Fishing vessel construction*

5.3.14.1 General knowledge of the principal structural members of a vessel.

5.3.15 *Vessel stability*

5.3.15.1 Demonstrate ability to use stability data, stability and trim tables and pre-calculated operating conditions.

5.3.16 *Catch handling and stowage*

5.3.16.1 Knowledge of safe handling and stowage of catch and the effect of these factors on the safety of the vessel.

5.3.17 *English language*

5.3.17.1 Adequate knowledge of the English language enabling the officer to use charts and other nautical publications, to understand meteorological information and messages concerning the vessel's safety and operation. Ability to understand and use the IMO Standard Marine Communication Phrases.

5.3.18 *Medical aid*

5.3.18.1 Knowledge of first-aid procedures. Practical application of medical guides and advice by radio.

5.3.19 *Search and rescue*

5.3.19.1 Adequate knowledge of search and rescue procedures based on the *Merchant Ship Search and Rescue Manual (MERSAR)* and the *International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual)*.

5.3.20 *Prevention of pollution of the marine environment*

5.3.20.1 Knowledge of the precautions to be observed to prevent pollution of the marine environment.

5.3.21 *FAO Code of Conduct for Responsible Fisheries*

5.3.21.1 Fishing vessel personnel should have an adequate knowledge of the FAO Code of Conduct for Responsible Fisheries, which should include:

.1 responsible harvesting practices;
.2 responsible fishing gear/selectivity;
.3 energy optimisation;
.4 the management partnership;
.5 duties of all States;
.6 duties of flag States;
.7 port State duties.

5.3.22 *Methods to demonstrate proficiency*

5.3.22.1 The Administration should prescribe methods for the demonstration of proficiency in relevant requirements.

5.4 Minimum knowledge requirements for certification of skippers on fishing vessels of 24 m in length and over operating in limited waters

5.4.1 The syllabus given below is compiled for examination of candidates for certification as skippers on fishing vessels of 24 m in length and over operating in limited waters. Bearing in mind that the skipper has ultimate responsibility for the safety of the vessel and its personnel at all times including during fishing operations, examination should be designed to test the candidate's ability to assimilate all available information that affects the safety of the vessel and its personnel in accordance with the syllabus.

5.4.1 *Navigation and position determination*

5.4.1.1 Voyage planning and navigation for all conditions:

.1 by acceptable methods of determining tracks;

.2 within restricted waters;

.3 where applicable, in ice;

.4 in restricted visibility;

.5 where applicable, in traffic separation schemes; and

.6 in areas affected by tides or currents.

5.4.1.2 Position determination:

.1 by terrestrial observations, including the ability to use bearings from landmarks and aids to navigation such as lighthouses, beacons and buoys in conjunction with appropriate charts, notices to mariners and other publications and assessment of the accuracy of the resulting position fix; and

.2 by using, to the satisfaction of the Administration, modern ship electronic navigational aids as provided in the fishing vessels concerned.

5.4.2 *Watchkeeping*

5.4.2.1 Demonstrate thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972 (specially annexes II and IV) concerned with safe navigation.

5.4.2.2 Demonstrate knowledge of basic principles to be observed in keeping a navigational watch as prescribed in paragraphs 5.10.1 to 5.10.8 of this chapter.

5.4.3 Radar equipment

5.4.3.1 The Administration should decide whether or not to incorporate the radar syllabus below in the general requirements for certification of skippers.

If the Administration decides not to include the syllabus in the general requirements, it should ensure that the syllabus is taken into account for purposes of certification of skippers serving on vessels fitted with radar equipment and plying within limited waters.

5.4.3.2 Demonstrate using a radar simulator or, when not available a manoeuvring board, knowledge of the fundamentals of radar and ability in the operation and use of radar, and in the interpretation and analysis of information obtained from the equipment, including:

.1 factors affecting performance and accuracy;

.2 setting up and maintaining displays;

.3 detection of misrepresentation of information, false echoes, sea return.;

.4 range and bearing;

.5 identification of critical echoes;

.6 course and speed of other ships;

.7 time and distance of closest approach of crossing, meeting or overtaking ships;

.8 detecting course and speed changes of other ships;

.9 effect of changes in own vessel's course or speed or both; and

.10 application of the International Regulations for Preventing Collisions at Sea, 1972.

5.4.4 *Compasses*

5.4.4.1 Ability to determine and apply compass errors.

5.4.5 *Meteorology and oceanography*

5.4.5.1 Knowledge of meteorological instruments and their application;

5.4.5.2 ability to apply meteorological information available;

5.4.5.3 knowledge of characteristics of various weather systems affecting the limited waters concerned, at the discretion of the Administration;

5.4.5.4 knowledge of weather conditions affecting the limited waters concerned liable to endanger the vessel, at the discretion of the Administration;

5.4.5.5 where applicable, ability to use appropriate navigational publications on tides and currents.

5.4.6 *Fishing vessel manoeuvring and handling*

5.4.6.1 Manoeuvring and handling of a fishing vessel in all conditions including the following:

.1 berthing, unberthing and anchor work under various conditions of wind and tide;

.2 manoeuvring in shallow water;

.3 management and handling of fishing vessels in heavy weather, including appropriate speed, particularly in following and quartering seas, assisting a ship or aircraft in distress, means of keeping an unmanageable vessel out of a sea trough, lessening drift;

.4 manoeuvring the vessel during fishing operations with special regard to factors which could adversely affect the vessel's safety during such operations;

.5 precautions in manoeuvring for launching boats or liferafts in bad weather;

.6 methods of taking on board survivors from rescue boats or survival craft;

.7 where applicable, practical measures to be taken when navigating in ice or conditions of ice accretion on board the vessel;

.8 where applicable, the use of, and manoeuvring in, traffic separation schemes;

.9 the importance of navigating at reduced speed to avoid damage caused by own vessel's bow or stern wave; and

.10 transferring fish at sea to factory ships or other vessels.

5.4.7 *Fishing vessel construction and stability*

5.4.7.1 General knowledge of the principal structural members of a vessel and the proper names of the various parts;

5.4.7.2 knowledge of the theories and factors affecting trim and stability and measures necessary to preserve safe trim and stability;

5.4.7.3 demonstrate use of stability data, stability and trim tables and pre calculated operating conditions;

5.4.7.4 where applicable, knowledge of effects of free surfaces and ice accretion;

5.4.7.5 knowledge of effects of water on deck;

5.4.7.6 knowledge of the significance of weathertight and watertight integrity.

5.4.8 *Catch handling and stowage*

5.4.8.1 The stowage and securing of catch on board vessels, including fishing gear;

5.4.8.2 loading and discharging operations, with special regard to heeling moments from gear and catch.

5.4.9 *Fishing vessel power plants*

5.4.9.1 Operating principles of marine power plants in fishing vessels;

5.4.9.2 vessel's auxiliary machinery;

5.4.9.3 general knowledge of marine engineering terms.

5.4.10 *Fire prevention and fire-fighting appliances*

5.4.10.1 Organization of fire drills;

5.4.10.2 classes and chemistry of fire;

5.4.10.3 fire-fighting systems;

5.4.10.4 participation in an approved fire-fighting course;

5.4.10.5 knowledge of provisions concerning fire-fighting equipment.

5.4.11 *Emergency procedures*

5.4.11.1 Precautions when beaching a vessel;

5.4.11.2 action to be taken prior to, and after, grounding;

5.4.11.3 action to be taken when the gear becomes fast to the ground or other obstruction;

5.4.11.4 floating a grounded vessel, with and without assistance;

5.4.11.5 action to be taken following collision;

5.4.11.6 temporary plugging of leaks;

5.4.11.7 measures for the protection and safety of fishing vessel personnel in emergencies;

5.4.11.8 limiting damage and salving the vessel following a fire or explosion;

5.4.11.9 abandoning ship;

5.4.11.10 emergency steering, rigging and use of jury steering and the means of rigging a jury rudder, where practicable;

5.4.11.10 rescuing persons from a ship in distress or from a wreck;

5.4.11.12 man-overboard procedures;

5.4.11.13 towing and being towed.

5.4.12 *Medical care*

5.4.12.1 Knowledge of first aid procedures;

5.4.12.2 practical application of medical guides and advice by radio, including ability to take effective action based on such knowledge in the case of accidents or illnesses that are likely to occur on board the vessel.

5.4.13 *Maritime law*

5.4.13.1 Taking into account the limited waters as defined by the Administration, a knowledge of international maritime law as embodied in the international agreements and conventions as they affect the specific obligations and responsibilities of the skipper in the waters concerned, particularly those related to safety and the protection of the marine environment.

5.4.13.2 The extent of knowledge of national maritime legislation is left to the discretion of the Administration but should include national arrangements for implementing applicable international agreements and conventions.

5.4.14 *Life saving*

5.4.14.1 Knowledge of life-saving appliances provided on fishing vessels. Organization of abandon ship drills and the use of the equipment.

5.4.15 *Search and rescue*

5.4.15.1 Knowledge of search and rescue procedures.

5.4.16 *The FAO/ILO/IMO Code of Safety for Fishermen and Fishing Vessels, part A*

5.4.16.1 Knowledge of such sections as may be required by the Administration.

5.4.17 *The FAO Code of Conduct for Responsible Fisheries*

5.4.17.1 Fishing vessel personnel should have an adequate knowledge of the FAO Code of Conduct for Responsible Fisheries, which should include:

.1 responsible harvesting practices;

.2 responsible fishing gear/selectivity;

.3 energy optimisation;

.4 the management partnership;

.5 duties of all States;

.6 duties of flag States;

.7 port State duties.

5.4.18 *Methods for demonstration of proficiency*

5.4.18.1 The Administration should prescribe appropriate methods for demonstration of proficiency in relevant requirements of the appendix of regulation 4 of the 1995 STCW-F Convention.

5.4.18.2 The Administration should prescribe methods for the demonstration of proficiency of personnel in this operational category.

5.5 Minimum knowledge required for certification of officers in charge of a navigational watch on fishing vessels of 24 m in length and over operating in limited waters

5.5.1 The syllabus given below is compiled for examination of candidates for certification as officers in charge of a navigational watch on fishing vessels of 24 m in length and over operating in limited waters.

5.5.1 *Terrestrial and coastal navigation*

5.5.1.1 Ability to determine the vessel's position by the use of:

.1 landmarks;

.2 aids to navigation, including lighthouses, beacons and buoys;

.3 dead reckoning, taking into account winds, tides, currents and speed by propeller revolutions per minute and by log.

5.5.1.2 Thorough knowledge of and ability to use navigational charts and publications such as sailing directions, tide tables, notice's to mariners and radio navigational warnings.

5.5.2 *Radar navigation*

5.5.2.1 The Administration should decide whether or not to incorporate the radar syllabus below in the general requirements for certification of officers in charge of a navigational watch. If the Party decides not to include the syllabus in the general requirements, it should ensure that the syllabus is taken into account for purposes of certification of officers in charge of a navigational watch serving on vessels fitted with radar equipment and plying within limited waters.

5.5.2.2 Demonstrate, using a radar simulator or, when not available, a manoeuvring board, knowledge of the fundamentals of radar and ability in

the operation and use of radar and in the interpretation and analysis of information obtained from the above equipment including the following:

- **.1** factors affecting performance and accuracy;
- **.2** setting up and maintaining displays;
- **.3** detection of misrepresentation of information, false echoes, sea returns,
- **.4** range and bearing;
- **.5** identification of critical echoes;
- **.6** course and speed of other ships;
- **.7** time and distance of closest approach of crossing, meeting or overtaking ships;
- **.8** detecting course and speed changes of other ships;
- **.9** effect of changes in own vessel's course or speed or both; and
- **.10** application of the International Regulations for Preventing Collisions at Sea, 1972.

5.5.3 *Watchkeeping*

5.5.3.1 Demonstrate thorough knowledge of content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972, specially annexes II and IV concerned with safe navigation.

5.5.3.2 Demonstrate knowledge of the content of the recommended basic principles to be observed in keeping a navigational watch as prescribed in paragraphs 5.10.1 to 5.10.8 of this chapter.

5.5.4 *Electronic systems of position fixing and navigation*

5.5.4.1 Ability to determine the ship's position by the use of electronic navigational aids, where applicable, to the satisfaction of the Administration.

5.5.5 *Meteorology*

5.5.5.1 Knowledge of shipborne meteorological instruments and their application;

5.5.5.2 knowledge of the characteristics of the various weather systems affecting the limited waters concerned.

5.5.6 *Compasses*

5.5.6.1 Ability to determine and apply compass errors.

5.5.7 *Fire fighting*

5.5.7.1 Knowledge of fire prevention and use of fire-fighting appliances;

5.5.7.2 participation in an approved fire-fighting course.

5.5.8 *Life saving*

5.5.8.1 Knowledge of life-saving appliances provided on fishing vessels. Organization of abandon vessel drills and the use of the equipment.

5.5.8.2 Attendance at an approved survival at sea course.

5.5.9 *Emergency procedures and safe working practices for fishermen*

5.5.9.1 Knowledge of the items listed in the appropriate sections of the FAO/ILO/IMO Code of Safety for Fishermen and Fishing Vessels, part A, and in chapter III of the annex to the 1993 Torremolinos Protocol.

5.5.10 *Fishing vessel manoeuvring and handling*

5.5.10.1 Basic knowledge of manoeuvring and handling a fishing vessel, including the following:

- **.1** berthing, unberthing, anchoring and manoeuvring alongside other vessels at sea;
- **.2** manoeuvring during fishing operations with special regard to factors which could adversely affect the vessel's safety during such operations;
- **.3** effects of wind and tide/current on ship handling;
- **.4** manoeuvring in shallow water;
- **.5** management of fishing vessels in heavy weather;
- **.6** rescuing persons and assisting a ship or aircraft in distress;
- **.7** towing and being towed;
- **.8** man-overboard procedure; and
- **.9** where applicable, practical measures to be taken when navigating in ice or in conditions of ice accretion on board the vessel.

5.5.11 *Vessel stability*

5.5.11.1 Demonstrate ability to use stability data, stability and trim tables and pre-calculated operating conditions.

5.5.12 *Catch handling*

5.5.12.1 Knowledge of safe handling and stowage of catch and the effect of these factors on the safety of the vessel.

5.5.13 *Fishing vessel construction*

5.5.13.1 General knowledge of the principal structural members of a vessel.

5.5.14 *Medical aid*

5.5.14.1 Knowledge of first aid procedures. Practical application of medical guides and advice by radio.

5.5.15 *Search and rescue*

5.5.15.1 Knowledge of search and rescue procedures.

5.5.16 *Prevention of pollution of the marine environment*

5.5.16.1 Knowledge of the precautions to be observed to prevent pollution of the marine environment.

5.5.17 *The FAO Code of Conduct for Responsible Fisheries*

5.5.17.1 Fishing vessel personnel should have an adequate knowledge of the FAO Code of Conduct for Responsible Fisheries, which should include:

- **.1** responsible harvesting practices;
- **.2** responsible fishing gear/selectivity;
- **.3** energy optimisation;
- **.4** the management partnership;
- **.5** duties of all States;
- **.6** duties of flag States;
- **.7** port State duties.

5.5.18 *Methods to demonstrate proficiency*

5.5.18.1 The Administration should prescribe methods for the demonstration of proficiency of personnel in this operational category.

5.6 Skilled fishers

5.6.1 The training and experience of a skilled fisher should ensure adequate practical:

- **.1** knowledge of personal survival techniques;
- **.2** knowledge of emergency procedures;
- **.3** proficiency in survival craft;
- **.4** knowledge and ability in fire fighting;
- **.5** ability in emergency use of the radiotelephone;
- **.6** knowledge of bridge equipment and ability to steer, understand helm orders, keep a look-out and carry out other bridge duties;

- **.7** skill in ropework and net-mending;
- **.8** ability in the vessel's fishing methods;
- **.9** ability in handling and stowage of catch;
- **.10** knowledge of fishing equipment used and how to maintain it;
- **.11** knowledge of health, safety and personal hygiene; and
- **.12** knowledge of immediate effective action in the case of accidents or illnesses likely to occur on board the vessel.

5.7 Minimum knowledge required for certification of chief engineer officers and second engineer officers of fishing vessels powered by main propulsion machinery of 750 kW propulsion power or more

5.7.1 The syllabus given below is compiled for examination of candidates or certification as chief engineer officer or second engineer officer of fishing vessels powered by main propulsion machinery of 750 kW propulsion power or more. Bearing in mind that a second engineer officer should be in a position to assume the responsibilities of the chief engineer officer at any time, examination in these subjects should be designed to test the candidate's ability to assimilate all available information that affects the safe operation of the fishing vessel's machinery.

5.7.2 With respect to paragraphs 5.7.3.4 and 5.7.4.1 below, the Administration may omit knowledge requirements for types of propulsion machinery other than machinery installations for which the certificate to be awarded is to be valid. A certificate awarded on such a basis should not be valid for any category of machinery installation which has been omitted until the engineer officer proves to be competent in these items to the satisfaction of the Administration. Any such limitation should be stated in the certificate.

5.7.3 Every candidate should possess sufficient elementary theoretical knowledge to understand the basic principles involved in the following subjects:

- **.1** combustion processes;
- **.2** heat transmission;
- **.3** mechanics and hydromechanics;
- **.4** as appropriate:
  - **.1** marine diesel engines;
  - **.2** marine steam propulsion plant;
  - **.3** marine gas turbines;
- **.5** steering gear systems;

.6 properties of fuels and lubricants;

.7 properties of materials;

.8 fire-extinguishing agents;

.9 marine electrical equipment;

.10 automation, instrumentation and control systems;

.11 fishing vessel construction, including stability and damage control;

.12 auxiliary systems; and

.13 refrigeration systems.

5.7.4 Every candidate should possess adequate practical knowledge in, at least, the following subjects:

.1 operation and maintenance of, as appropriate:

.1 marine diesel engines;

.2 marine steam propulsion plant;

.3 marine gas turbines;

.2 operation and maintenance of auxiliary machinery systems, including steering gear systems;

.3 operation, testing and maintenance of electrical and control equipment;

.4 maintenance of catch handling equipment and deck machinery;

.5 detection of machinery malfunction, location of faults and action to prevent damage;

.6 organization of safe maintenance and repair procedures;

.7 methods of, and aids for, fire prevention, detection and extinction;

.8 regulations to be observed regarding operational or accidental pollution of the marine environment and methods and aids to prevent such pollution;

.9 first aid related to injuries which might be expected in machinery spaces and use of first aid equipment;

.10 functions and use of life-saving appliances;

.11 methods of damage control with specific reference to action to be taken in the event of flooding of seawater into the engine room; and

.12 safe working practices.

5.7.5 Every candidate should possess a knowledge of international maritime law as embodied in international agreements and conventions as they affect the specific obligations and responsibilities of the engine department, particularly those concerning safety and the protection of the marine environment. The extent of knowledge of national maritime legislation is left to the discretion of the Administration but should include national arrangements for implementing international agreements and conventions.

5.7.6 Every candidate should possess a knowledge of personnel management, organization and training aboard vessels.

5.7.7 Basic principles to be observed in keeping an engineering watch on fishing vessels:

5.7.7.1 Basic principles to be observed in keeping an engineering watch on fishing vessels are not specified. However, attention is drawn to recommend basic principles for keeping an engineering watch, which are included in appendix 42 of this Document.

5.7.7.2 Competency units in 7.2.8 Fishing vessel power plants, are mandatory for chief and second engineers of fishing vessels of propulsion power 750 kW or more. These requirements are recommended for the person/s in charge of the main propulsion machinery and operation and maintenance of the mechanical and electrical installations of fishing vessels with propulsion power less than 750 kW.

5.8 Communications

5.8.1 *General*

5.8.1.1 Mandatory provisions relating to certification of personnel responsible for communications on fishing vessels and general and safety radio watchkeeping are set forth in the Radio Regulations as amended and in force. Safety radio watchkeeping and the maintenance provisions are also set forth in the 1993 Torremolinos Protocol and the guidelines adopted by the Organization.

5.8.2 *Communications personnel*

5.8.2.1 The provision of regulation II/6 of the 1995 STCW-F Convention should apply to personnel in charge of or performing communication duties on a vessel required by international agreement or national law to carry radio equipment using the frequencies and techniques of the global maritime distress and safety system (GMDSS).

5.8.2.2 Personnel on vessels for which carriage of radio equipment is not compulsory under international agreements are not required to meet the provision of regulation 11/6, but are nevertheless required to comply with the Radio Regulations. The Administration should ensure that the

appropriate certificates as prescribed by the Radio Regulations are issued or recognised in respect of such personnel.

5.8.3 *Minimum knowledge requirements for certification of communications personnel*

5.8.3.1 Every person in charge of, or performing radiocommunication duties in a fishing vessel should hold an appropriate certificate or certificates issued or recognized by the Administration under the provisions of the Radio Regulations.

5.8.3.2 The minimum knowledge, understanding and proficiency required for certification under regulation II/6 of the 1995 STCW-F Convention should be sufficient for radio personnel to carry out their radio duties safely and efficiently.

5.8.3.3 For endorsement of all types of certificate defined in the Radio Regulations as meeting the requirements of the STCW-F Convention, the required knowledge, understanding and proficiency should be demonstrated. In determining the appropriate level of knowledge and training the Administration should also take into account the relevant recommendations of the Organization.

5.8.4 *Minimum additional knowledge and training requirements for GMDSS radio personnel*

5.8.4.1 In addition to satisfying the requirements for the issue of a certificate in compliance with the Radio Regulations, every candidate should have knowledge and training, including practical training, on the following:

5.8.4.2 provision of radio services in emergencies;

5.8.4.3 search and rescue radiocommunications, including procedures in the *Merchant Ship Search and Rescue Manual (MERSAR)* and the *International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual);*

5.8.4.4 the means to prevent the transmission of false distress alerts and the procedures to mitigate the effects of false distress alerts;

5.8.4.5 ship reporting systems;

5.8.4.6 radio medical services;

5.8.4.7 use of the International Code of Signals and the Standard Marine Communication Phrases; and

5.8.4.8 preventive measures for the safety of the fishing vessel and personnel in connection with hazards related to radio equipment, including electrical and non-ionizing hazards.

5.9 Basic safety training for all fishing vessel personnel

5.9.1 Fishing vessel personnel should, before being assigned to any shipboard duties, receive basic training approved by the Administration in the following areas:

.1 personal survival techniques including donning of lifejackets and, as appropriate, immersion suits;

.2 fire prevention and fire fighting;

.3 emergency procedures;

.4 elementary first aid;

.5 prevention of marine pollution; and

.6 prevention of shipboard accidents.

5.9.2 In implementing the provisions of paragraph 1, the Administration shall determine whether and, if so to what extent, these provisions should apply to personnel of small fishing vessels or personnel already employed on fishing vessels.

5.10 Basic principles to be observed in keeping a navigational watch on fishing vessels

5.10.1 Administrations should direct the attention of owners and operators of fishing vessel, skippers and watchkeeping personnel to the following principles, which shall be observed to ensure that a safe navigational watch is maintained at all times.

5.10.2 The skipper of every fishing vessel should ensure that watchkeeping arrangements are adequate for maintaining a safe navigational watch. Under the skipper's general direction, the officers of the watch are responsible for navigating the fishing vessel safely during their periods of duty, when they will be particularly concerned with avoiding collision and stranding.

5.10.3 The basic principles, including but not limited to the following, shall be taken into account on all fishing vessels. However, an Administration may exclude very small fishing vessels operating in limited waters from fully observing the basic principles.

5.10.4 *En route to or from fishing grounds*

5.10.4.1 Arrangements of the navigational watch

.1 The composition of the watch should at all times be adequate and appropriate to the prevailing circumstances and conditions, and should take into account the need for maintaining a proper lookout.

5.10.4.2 When deciding the composition of the watch the following factors, *inter alia*, should be taken into account:

.1 at no time should the wheelhouse be left unattended;

.2 weather conditions, visibility and whether there is daylight or darkness;

.3 proximity of navigational hazards which may make it necessary for the officer in charge of the watch to carry out additional navigational duties;

.4 use and operational condition of navigational aids such as radar or electronic position indicating devices and of any other equipment affecting the safe navigation of the vessel;

.5 whether the vessel is fitted with automatic steering; and

.6 any unusual demands on the navigational watch that may arise as a result of special operational circumstances.

5.10.5 *Fitness for duty*

5.10.5.1 The watch system should be such that the efficiency of watch-keeping personnel is not impaired by fatigue. Duties should be so organized that the first watch at the commencement of a voyage and the subsequent relieving watches are sufficiently rested and otherwise fit for duty.

5.10.6 *Navigation*

5.10.6.1 The intended voyage should, as far as practicable, be planned in advance taking into consideration all pertinent information, and any course laid down should be checked before the voyage commences.

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

5.10.6.3 The officer in charge of the watch should have full knowledge of the location and operation of all safety equipment on board the vessel, and shall be aware and take account of the operating limitations of such equipment.

5.10.6.4 The officer in charge of a navigational watch should not be assigned or undertake any duties which would interfere with the safe navigation of the vessel.

5.10.7 *Navigational equipment*

5.10.7.1 The officers in charge of the watch should make the most effective use of all navigational equipment at their disposal.

5.10.7.2 When using radar the officer in charge of the watch should bear in mind the necessity to comply at all times with the provisions on the use of radar contained in the applicable regulations for preventing collisions at sea.

5.10.7.3 In case of need, the officer of the watch should not hesitate to use the helm, engines, sound and light signalling apparatus.

5.10.8 *Navigational duties and responsibilities*

5.10.8.1 The officer in charge of the watch should:

.1 keep watch in the wheelhouse;

.2 in no circumstances leave the wheelhouse until properly relieved;

.3 continue to be responsible for the safe navigation of the vessel despite the presence of the skipper in the wheelhouse until informed specifically that the skipper has assumed that responsibility and this is mutually understood;

.4 notify the skipper when in doubt as to what action to take in the interests of safety; and

.5 not hand over the watch to a relieving officer if there is reason to believe that the latter is not capable of carrying out the watchkeeping duties effectively, in which case the skipper should be notified.

5.10.8.2 On taking over the watch the relieving officer should confirm and be satisfied as to the vessel's estimated or true position and confirm its intended track, course and speed, and should note any dangers to navigation expected to be encountered during the watch.

5.10.8.3 Whenever practicable a proper record should be kept of the movements and activities during the watch relating to the navigation of the vessel.

5.10.9 *Look-out*

5.10.9.1 A proper look-out should be maintained in compliance with rule 5 of the International Regulations for Preventing Collisions at Sea, 1972. It should serve the purpose of:

.1 maintaining a continuous state of vigilance by sight and hearing as well as by all other available means, with regard to any significant changes in the operating environment;

.2 fully appraising the situation and the risk of collision, stranding and other dangers to navigation; and

.3 detecting ships or aircraft in distress, shipwrecked persons, wrecks and debris.

5.10.9.2 In determining that the composition of the navigational watch is adequate to ensure that a proper look-out can continuously be maintained, the skipper should take into account all relevant factors, including those described under paragraph 5.10.4.1, as well as the following factors:

.1 visibility, state of weather and sea;

.2 traffic density, and other activities occurring in the area in which the vessel is navigating;

.3 the attention necessary when navigating in or near traffic separation schemes and other routeing measures;

.4 the additional workload caused by the nature of the vessel's functions, immediate operating requirements and anticipated manoeuvres;

.5 rudder and propeller control and vessel manoeuvring characteristics;

.6 the fitness for duty of any personnel on call who may be assigned as members of the watch;

.7 knowledge of and confidence in the professional competence of the vessel's officers and personnel;

.8 the experience of the officer of the navigational watch and the familiarity of that officer with the vessel's equipment, procedures, and manoeuvring capability;

.9 activities taking place on board at any particular time, and the availability of assistance to be summoned immediately to the wheelhouse when necessary;

.10 the operational status of instrumentation in the wheelhouse and controls, including alarm systems;

.11 the size of the vessel and the field of vision available from the conning position;

.12 the configuration of the wheelhouse, to the extent such configuration might inhibit a member of the watch from detecting by sight or hearing any external developments; and

.13 any relevant standards, procedures and guidelines relating to watchkeeping arrangements and fitness for duty which have been adopted by the Organization.

5.10.10 *Protection of the marine environment*

5.10.10.1 The skipper and the officer in charge of the watch should be aware of the serious effects of operational or accidental pollution of the marine environment, and should take all possible precautions to prevent such pollution of the marine environment

5.10.11 *Weather conditions*

5.10.11.1 The officer in charge of the watch should take relevant measures and notify the skipper when adverse changes in the weather could affect the safety of the vessel, including conditions leading to ice accretion.

5.10.12 *Navigation with pilot embarked*

5.10.12.1 The presence of a pilot on board does not relieve the skipper or officer in charge of the watch from their duties and obligations for the safety of the vessel. The skipper and the pilot should exchange information regarding navigation procedures, local conditions and the vessel's characteristics. The skipper and officer in charge of the watch should co-operate closely with the pilot and maintain an accurate check of the vessel's position and movement.

5.10.13 *Vessels engaged in fishing or searching for fish*

5.10.13.1 In addition to the principles enumerated in paragraph 5.10.4, the following factors should be considered and properly acted upon by the officer in charge of the watch:

.1 other vessels engaged in fishing and their gear, own vessel's manoeuvring characteristics, particularly its stopping distance and the diameter of turning circle at sailing speed and with gear overboard;

.2 safety of the personnel on deck;

.3 adverse effects on the safety of the vessel and its personnel through reduction of stability and freeboard caused by exceptional forces resulting from fishing operations, catch handling and stowage, and unusual sea and weather conditions;

.4 the proximity of offshore structures, with special regard to safety zones; and

.5 wrecks and other underwater obstacles which could be hazardous for fishing gear.

5.10.13.2 When stowing the catch, attention should be given to the essential requirements for adequate freeboard, adequate stability and watertight integrity at all times during the voyage to the landing port, taking into consideration consumption of fuel and stores, risk of adverse weather conditions and, especially in winter, risk of ice accretion on or above exposed decks in areas where ice accretion is likely to occur.

5.10.14 *Anchor watch*

5.10.14.1 The skipper should ensure, with a view to the safety of the vessel and personnel, that a proper watch is maintained at all times from the wheelhouse or deck on fishing vessels at anchor.

5.10.15 *Radio watchkeeping*

5.10.15.1 The skipper should ensure that an adequate radio watch is maintained while the vessel is at sea, on appropriate frequencies, taking into account the requirements of the Radio Regulations.

Chapter 6
Training

6.1 Use of radar for navigation and fishing

6.1.1 *Radar observation and plotting*

6.1.1.1 It should be ensured that training for fishing vessel personnel in the use of radar is available. Such training is usually given by special courses or is included in the curriculum of basic courses in nautical education. In all cases such training should conclude with an examination to ensure that an adequate standard is reached.

6.1.1.2 These courses are principally intended for candidates for certification as officer in charge of a navigational watch on fishing vessels. The courses should be designed to enable officers to obtain a fall and proper training in all aspects of the operation and the use of marine radar including the use of radar information for navigation, collision avoidance and fishing. It is considered that before entering such courses candidates should have completed a minimum period of service in the deck department on board fishing vessels in order fully to appreciate some of the problems involved. In order to qualify for the issue of a certificate of competency as an officer in charge of a navigational watch on fishing vessels, a candidate should have attended an officially approved or organized radar course and be able to produce a certificate recognized by the appropriate Administration to that effect. More detailed guidance is set out in appendix 1.

6.1.2 *Automatic radar plotting aids (ARPA)*

6.1.2.1 Skippers and officers in charge of a navigational watch who serve in fishing vessels fitted with ARPA should be trained in the proper use of this equipment, to ensure they understand the basic principles of the operation of ARPA, including its capabilities, limitations and possible errors. This training should be additional to training in radar observation and plotting as outlined in section 6.1.1 and appendix 1 which should be a prerequisite to such ARPA training. More detailed guidance is set out in appendix 2.

6.1.3 *Radar and ARPA simulator training*

6.1.3.1 As far as is practicable, training courses on marine radar, where appropriate, and ARPA simulators should be available for all skippers and officers in charge of a navigational watch. The syllabus should be approved by the Administration concerned. Officers who complete the course should

be issued with a certificate or an endorsement on their certificates of competency. More detailed guidance is provided on combined radar and ARPA simulator training in appendix 3, and on radar simulator training only in appendix 4.

6.1.4 *Elementary radar and ARPA maintenance*

6.1.4.1 Adequate training in the simple maintenance of shipborne radar and ARPA when fitted on board fishing vessels should be provided.

6.2 International Regulations for Preventing Collisions at Sea

6.2.1 All skippers and officers in charge of a navigational watch should be trained to ensure they have a thorough knowledge of the International Regulations for Preventing Collisions at Sea, 1972, as amended, and their practical application to enable them to be in charge of a navigational watch.

6.2.2 Skilled fishers should be trained to make sure they have sufficient knowledge of the International Regulations for Preventing Collisions at Sea, 1972, as amended, to enable them to make proper reports to the officer in charge of a navigational watch.

6.3 Practice of navigation at sea

6.3.1 The syllabus for the training of skippers and officers in charge of a navigational watch in the practice of navigation should be appropriate to the size of the vessel in which the officer may be employed and the waters in which it operates and include, as appropriate, the subjects set out in paragraphs 5.2.2, 5.2.3, 5.4.2 and 5.5.2.

6.4 Electronic systems for fishing and navigation

6.4.1 Training in operating electronic systems for fishing and navigation should be provided for skippers and officer in charge of a navigational watch in the types of electronic equipment fitted or likely to be fitted on the fishing vessels on which trainees are expected to serve. The training should be included in courses for first or subsequent certificates or training courses. More detailed guidance is set out in appendix 5.

6.5 Aids to navigation (buoys, navigational marks, light vessels, etc.)

6.5.1 The knowledge required of a skipper or officer in charge of a navigational watch for certification should be such that the officer is able to ascertain, on sighting a navigational mark, what action, if any, needs to be taken. More detailed guidance on the course of instruction for skippers and officers in charge of a navigational watch is set out in appendix 6.

6.5.2 Skilled fishers should be trained to ensure they have sufficient knowledge of navigational marks to enable them to make proper reports to the officer in charge of the navigational watch.

6.6 Meteorology and oceanography

6.6.1 In order to provide skippers and officers in charge of a navigational watch with the knowledge of meteorology and oceanography necessary for the safe operation of the fishing vessels and fishing operations, the training course and syllabi for certification should include, but not necessarily be limited to, the subjects set out in appendix 7.

6.7 Magnetic and gyro-compasses

6.7.1 Training of skippers and officers in charge of a navigational watch should include practical methods of determining the magnetic and gyro-compasses error using terrestrial and, where appropriate, celestial means.

6.7.2 Officers in charge of a navigational watch and skilled fishers should receive practical instruction in helm orders, steering by magnetic and gyro-compasses and in the care and use of compasses and associated equipment.

6.7.3 Where an automatic pilot is fitted on fishing vessels, all persons who may use this equipment should receive practical training in the change-over procedure from automatic to manual steering and vice versa.

6.8 Communications

6.8.1 Skippers and officers in charge of a navigational watch should be trained so that they have sufficient knowledge of the Morse code to enable them to transmit and receive messages by Morse light.

6.8.2 They should also know the flags of the International Code of Signals and the significance of the more important single-letter signals. They should have knowledge of the signalling procedures set out in the International Code of Signals and how to make use of that publication.

6.8.3 Fishing vessel personnel, if they use radiocommunication equipment, should also be trained so that they have knowledge of procedures used in radiotelephone communications, particularly with respect to distress, urgency, safety and navigational messages, as well as the adverse effect of misuse of radiotelephone equipment.

6.9 Fire prevention and fire fighting

6.9.1 It is essential that all fishing vessel personnel should be instructed in the dangers of fire on fishing vessels and the ways in which fires are caused. Basic training in the prevention and extinction of fires should be given as

soon as possible in their career, preferably in pre-vocational training at a shore-based training establishment.

6.9.2 On board fishing vessels subject to the 1977 Torremolinos Convention there will be compulsory fire drills. Governments should give guidance to skippers as to the nature of the fire drills to be carried out, taking into consideration the experience gained from official inquiries into actual casualties.

6.9.3 Causes of fires in fishing vessels should be carefully examined by the competent authorities and any lessons to be learned passed on to training establishments and to fishing vessels. More guidance on the content of fire-fighting training programmes is set out in appendix 8, which should be modified to take into account the size of vessel, equipment carried, and method of propulsion.

6.10 Personal survival and life saving

6.10.1 Basic training in personal survival and the use of survival equipment should be given to all fishing vessel personnel.

6.10.2 Training in the use (and maintenance where applicable) of survival equipment and other life-saving appliances should be included, as appropriate, in pre-vocational courses or other relevant shore-based training courses. Multimedia can be a valuable aid in training.

6.10.3 On board fishing vessels subject to the 1977 Torremolinos Convention there will be compulsory abandon-ship training and drills. The competent authorities should give guidance to skippers as to the nature of the drills and musters to be carried out, taking into consideration the experience gained from official inquiries into actual casualties.

6.10.4 The use and maintenance of life-saving appliances should form part of the examination syllabus for all skippers and officer in charge of a navigational watch.

6.10.5 Training courses for certification of skippers and officers in charge of a navigational watch as proficient in survival craft should include the subjects set out in appendix 9. Pre-sea training of fishing vessel personnel in personal survival techniques should include instruction in accordance with the guidance set out in appendix 10.

6.11 Emergency procedures

6.11.1 It is not possible to give an exhaustive list of measures which should be taken in an emergency. Proficiency in this subject can only be properly obtained on board fishing vessels, as it is dependent on the individual vessel and the organization on board.

6.11.2 Basic training should be designed to enable a skipper, officer in charge of a navigational watch or engineer officer to identify the factors which should affect his decisions, including the planning of emergency procedures.

6.11.3 The recommended curricula for the training of skippers, officers in charge of a navigational watch and engineer officers, and other fishing vessel personnel in emergency procedures are set out in appendices 11, 12 and 13.

6.12 Fishing vessel manoeuvring and handling

6.12.1 The training and theoretical knowledge required of skippers and officer in charge of a navigational watch and engineer officers should, as appropriate, include the subjects set out in appendices 14 and 15.

6.13 Fishing vessel construction and stability

6.13.1 The training of skippers, officers in charge of a navigational watch and, where applicable, engineer officers should be designed to give them a knowledge of fishing vessel construction and stability to ensure the safe operation of their vessels during fishing operations, when proceeding to and from the fishing grounds and when in port. The training should include knowledge of the subjects set out in appendix 16.

6.14 Medical and first aid

6.14.1 All fishing vessel personnel should be trained to take immediate action at the scene of an accident pending the arrival of a person with first aid skills or the person in charge of medical care on board. Such training should ensure that all fishing vessel personnel are able, in accident situations, to assess both the needs of any casualties and the hazards to themselves. More detailed guidance for training in basic immediate action on encountering an accident or other medical emergency on board fishing vessels is set out in appendix 17. Training should also include basic instruction in healthy living and personal hygiene.

6.14.2 All officers in charge of a navigational watch and engineer officers should be trained in first aid skills. Such training should also be given to specified skilled fishing vessel personnel. More detailed guidance for immediate effective action on encountering an accident or other medical emergency on board fishing vessels is set out in appendix 18.

6.14.3 Skippers and any other persons required to be in charge of medical care aboard fishing vessels on unlimited voyages, especially on fishing vessels processing fish, should be given more advanced medical training in the use of the International Medical Guide for Ships (IMGS) or similar national medical guides. The training should enable them to participate effectively in co-ordinated schemes for medical assistance to fishing vessels at sea,

including medical advice by radio, and to provide the sick or injured with a satisfactory standard of medical care for the period during which they are likely to remain on board. More detailed guidance on more advanced medical training in the use of the IMGS or similar national guides is set out in appendix 19.

6.14.4 This more advanced training may be omitted or suitably modified when the skippers concerned serve on fishing vessels on unlimited voyages which never operate in sea areas beyond the range at which evacuation for medical treatment ashore is readily available or serve on fishing vessels operating in limited waters.

6.14.5 Whenever possible, this more advanced training course should include practical training in a hospital so as to provide casualty, diagnostic and nursing experience under the medical staff of the hospital.

6.14.6 As trained persons may not regularly use the full extent of their acquired medical knowledge on board the fishing vessels on which they serve, it is desirable for persons in charge of medical care on board fishing vessels to periodically attend short courses designed to update and refresh their medical knowledge.

6.14.7 It is recommended that fishing vessel personnel who have completed the more advanced medical training and such other fishing vessel personnel as may be required by a national Administration should undergo refresher courses to maintain and update their knowledge at approximately five-year intervals.

6.14.8 Such refresher training should cover the principal elements of medical first aid, including life-saving measures, and should also encompass relevant recent developments in medical care and diagnosis.

6.15 Search and rescue

6.15.1 A knowledge of the content and use of the IMO *Merchant Ship Search and Rescue Manual (MERSAR)* and the *International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual)*, as amended, should be included in the curricula for the training of skippers and officer in charge of a navigational watch and radio operators.

6.16 Prevention of marine pollution

6.16.1 The curricula for training skippers and officers should include knowledge of the requirements of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).

6.17 Main and auxiliary prime movers

6.17.1 Engineer officers should have practical knowledge of the preparation, operation and maintenance of the main and auxiliary engines and associated ancillary equipment. More detailed guidance is set out in appendix 20

6.17.2 Fishing vessel personnel whose duties may require it should have a sufficient practical knowledge of the preparation, operation and service of the main and auxiliary engines and associated equipment so as to be able to assist engineer officers in their duties. More detailed guidance is set out in appendix 21.

6.18 Boilers and pressure vessels

6.18.1 It is imperative that all personnel involved in the operation of boilers and pressure vessels are made aware of the potential hazards associated with this type of equipment if not properly maintained, particularly with regard to the importance of ensuring the safety devices are operative and are correctly set relative to the safe working pressure of the boiler or pressure vessel; it should be understood that the setting of safety valves and relief valves is the responsibility of the competent authority or the organization or persons recognized for that purpose.

6.18.2 Engineer officers should have practical knowledge of the preparation, operation and maintenance of boilers and other pressure vessels. More detailed guidance is set out in appendix 22.

6.18.3 Fishing vessel personnel whose duties may require it should have a sufficient practical knowledge of the preparation and operation of boilers and other pressure vessels so as to assist the engineer officers in their duties. More detailed guidance is set out in appendix 23.

6.19 Pumping and piping systems

6.19.1 Engineer officers should have sufficient knowledge to carry out routine pumping operations and to maintain pumping and piping installations. More detailed guidance is set out in appendix 24.

6.19.2 Fishing vessel personnel whose duties may require it should have a sufficient practical knowledge to assist the engineer officer to carry out pumping operations and to maintain pumping and piping installations. More detailed guidance is set out in appendix 25.

6.20 Automatic and remote control systems

6.20.1 Engineer officers should have knowledge relating to the characteristics and operation of automatic and remote control systems. Instruction manuals should be understood and closely followed both for the operation

and maintenance of the system. More detailed guidance is set out in appendix 26.

6.20.2 Fishing vessel personnel whose duties may require it should have a general knowledge of the characteristics of the operation of automatic and remote control systems. More detailed guidance is set out in appendix 27.

6.21 Electrical equipment and installations

6.21.1 Fishing vessel personnel responsible for electrical equipment and installations should have an adequate level of knowledge to be able to interpret and control their operation. They should be capable of detecting failures, effecting repairs and performing routine maintenance. More detailed guidance is set out in appendix 28.

6.21.2 Fishing vessel personnel should be made aware of the dangers associated with electrical installations and equipment.

6.22 Fish-processing equipment and freezing systems

6.22.1 Fishing vessel personnel responsible for fish-processing equipment and freezing systems should have an adequate level of knowledge to be able to interpret and control their operation. They should be capable of detecting failures, effecting repairs and performing routine maintenance. More detailed guidance is set out in appendix 29.

6.23 Use of tools

6.23.1 Engineer officers should be proficient in the use of tools and equipment provided for the maintenance and repair of machinery on board the vessel. More detailed guidance is set out in appendix 30.

6.23.2 Fishing vessel personnel should be aware of the types of tools provided for the maintenance and repair of machinery on board the vessel, and those whose duties may require it should be proficient in their use. More detailed guidance is set out in appendix 31.

6.24 Skilled fishers

6.24.1 Skilled fishers should receive practical training in accordance with the detailed guidance set out in appendix 32. In general, such training is applicable to skilled fishers irrespective of the size of the fishing vessel on which they serve. The type of fishing undertaken by the fishing vessels concerned will dictate the training that should be given in the use of fishing gear and fishing techniques.

6.25 Maritime law and fisheries regulations

6.25.1 Skippers and officers should possess a knowledge of appropriate international maritime law, embodied in international agreements and conventions, as they affect their specific obligations and responsibilities, particularly those concerning fishing safety and the protection of the marine environment. In addition, skippers should possess sufficient knowledge of regional regulations and agreements affecting fishing in the area of operation of the fishing vessels on which they serve, and should give due regard to the FAO Code of Conduct for Responsible Fisheries.

6.25.2 The extent of knowledge of national maritime legislation is left to the discretion of the competent authorities but should include national arrangements for implementing international agreements and conventions.

6.26 Marine insurance

6.26.1 Skippers should possess a knowledge of marine insurance sufficient to protect themselves and owners of fishing vessels from financial loss. More detailed guidance is set out in appendix 33.

6.27 Fishing vessel management

6.27.1 Skippers should be given training to achieve a standard of knowledge appropriate to their respective duties in personnel management, organization, welfare and training aboard vessels.

6.28 Human relationships and social responsibilities

6.28.1 Training programmes for fishing vessel personnel should include the basic principles of human relationships and social responsibilities.

6.28.2 Such training should include guidance as to the particular social aspects of seagoing employment and point out the need for good human relationships on board fishing vessels

6.28.3 Such training should include guidance on the dangers of fatigue of fishing vessel personnel and the means to recognize and reduce such fatigue.* (Attention is drawn to resolutions 3 and 9 of the STCW-F Convention, paragraph 2.17 and appendix 41 of this Document.)

6.28.4 Such training should cover applicable national laws and regulations concerning the living and working conditions of fishing vessel personnel.

* Refer to IMO resolution A.772(18), Fatigue factors in manning and safety.