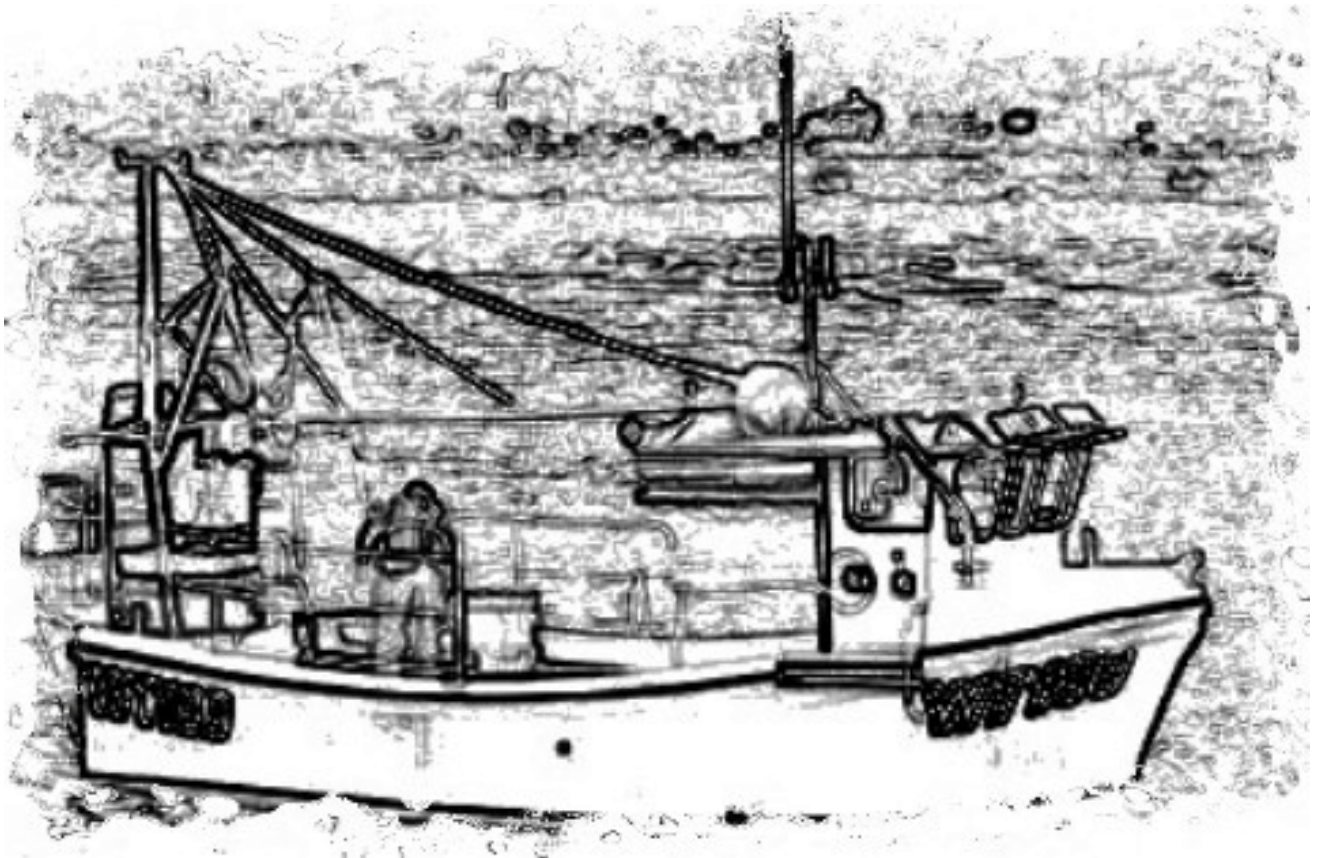


**Design, Construction and Equipment of
Small Fishing Vessels
of less than 15 m Length overall**

Code of Practice



Revision Status.....	vi
Amendments in this release	vi
Chapter 1 General	1
1.1 Foreword	1
1.2 Definitions.....	2
1.3 Application and Interpretation	4
1.3.1 Application	4
1.3.2 Certification.....	4
1.3.3 Interpretation	4
1.3.4 Updating of the Code.....	4
1.4 Compliance Procedures, Inspection, Certification and Maintenance	4
1.4.1 Compliance Inspection for first issue of a Declaration of Compliance.....	4
1.4.2 Compliance Inspection for Renewal of a Declaration of Compliance	5
1.4.3 Appeal Against the Findings of an Inspection.....	5
1.4.4 Maintaining and Operating a Vessel	5
1.4.5 Validity and cancellation of Declaration of Compliance	6
Chapter 2 Construction, Structural Strength and Weathertight Integrity ..	7
2.1 General Requirements	7
2.2 Construction Materials	7
2.3 Structural Strength.....	7
2.4 Decks.....	7
2.5 Bulkheads	8
2.6 Bulkhead Doors	8
2.7 Doorways above Weather deck.....	8
2.8 Hatches and Coamings.....	8
2.9 Weather deck Hatches.....	8
2.10 Flush Hatches and Scuttles	8
2.11 Skylights	8
2.12 Side Scuttles and Portlights	9
2.13 Windows	9
2.14 Ventilators	9
2.15 Exhaust Systems	9
2.16 Air Pipes	9
2.17 Sea Inlets and Discharges	10
2.18 Materials for Valves and Associated Piping - Sea Water Systems.....	10
2.19 Freeing Ports.....	10
Chapter 3 Stability	12
3.1 General	12
3.2 Stability Standard	12
3.3 Capsize Safety	12
Chapter 4 Machinery and Electrical Installations	13
4.1 Machinery.....	13
4.1.1 General Requirements and Recommendations.....	13
4.1.2 Propulsion Machinery and Stern Gear	13
4.1.3 Engine Starting.....	13
4.1.4 Controls and Instruments	14
4.1.5 Steering System	14
4.2 Electrical Installations.....	14
4.2.1 General.....	14
4.2.2 D.C. Systems Up To 24 volts.....	15
4.2.3 A.C Systems	15

4.3	Pumping and Piping Systems	16
4.3.1	Fuel Oil Installations	16
4.3.2	Cooling Water Systems	16
4.3.3	Bilge Pumping Systems	16
4.3.4	Bilge Pumps	16
4.4	Anchors & Cables	17
4.4.1	General	17
4.4.2	Anchors	17
4.4.3	Cables	17
4.4.4	Towline	17
4.5	Fishing and Handling Equipment	18
Chapter 5 Fire Protection, Detection and Extinction		19
5.1	Fire Safety	19
5.1.1	Provision for Gas-Extinguishing System	19
5.1.2	Fire Prevention	19
5.1.3	Cleanliness and Pollution Prevention	19
5.1.4	Open-Flame Gas Appliances (including Gas Refrigerators)	19
5.1.5	Gas Detection	20
5.1.6	Emergency Action	20
5.1.7	Smoke Detection	20
5.2	Fire Fighting Appliances	20
5.2.1	General	20
5.2.2	Requirements for decked vessels of 9.0 m to less than 15.0 m Length overall	21
5.2.3	Requirements for decked vessels of 6.0 m to less than 9.0 m Length overall	21
5.2.4	Requirements for decked vessels of less than 6.0 m Length overall	21
5.2.5	Requirements for open boats	21
5.2.6	Requirements for all vessels	21
Chapter 6 Protection of the Crew		22
6.1	Protection of Personnel	22
6.1.1	General	22
6.1.2	Bulwarks, Guard Rails and Handrails	22
6.1.3	Safety Harnesses	22
6.1.4	Surface of Working Decks	22
6.1.5	Personal Protective Equipment	22
6.2	Medical Stores	23
6.3	Securing or Heavy Items or Equipment and Fishing Gear etc	23
Chapter 7 Life-Saving Appliances		24
7.1	General	24
7.2	Servicing	24
7.3	Lifejackets	24
7.4	Inflatable Liferafts	24
7.5	Lifebuoys	25
7.6	Personal Flotation Devices	25
7.7	Loose equipment	25
7.8	Distress Signals	25
7.9	Means for Recovering Persons from the Water	25

Chapter 8	Manning, Training and Certification.....	26
8.1	General	26
8.2	Manning.....	26
8.3	Standards of Competence	26
8.4	Operation and Maintenance of Propulsion Machinery	26
8.5	Operation of Radio Equipment.....	26
8.6	Safety Training.....	26
8.7	Responsibility of the Owner For Safe Manning of Vessel.....	27
8.8	Safe Navigational Watch	27
Chapter 9	Radio Equipment.....	28
9.1	The Global Maritime Distress and Safety System (GMDSS).....	28
9.2	Fishing Vessel (Radio Installations) Regulations, 1998.....	28
9.3	Functional requirements.....	28
9.4	Installation, location and control of radio equipment.....	28
9.5	Radio equipment to be provided for all sea areas.	30
9.6	Additional radio equipment to be provided for sea areas A1 and A2.....	31
9.7	Radio Watches.....	32
9.8	Sources of energy.	32
9.9	Performance standards.	33
9.10	Serviceability and maintenance requirements.....	33
9.11	Radio personnel.	33
9.12	Radio records.	34
Chapter 10	Navigation Equipment, Lights, Shapes & Sound Signals	35
10.1	Navigation Equipment	35
10.2	Navigation Lights - General.....	35
10.3	Steaming Lights	35
10.4	Fishing Lights.....	35
10.5	Additional Fishing Light.....	36
10.6	Anchor Light.....	36
10.7	Position of Lights	36
10.8	Day Signals	36
10.9	Sound Signals	36
10.10	Charts and Nautical Publications	37
10.11	Signalling Lamp.....	37
10.12	Radar Reflector.....	37
10.13	Search Light	37
Chapter 11	Accommodation and Working Spaces.....	38
11.1	General	38
11.2	Living Quarters	38
11.3	Sleeping Accommodation	38
11.4	Food Preparation.....	38
11.5	Messing Arrangements.....	38
11.6	Toilet Facilities	38
11.7	Access and Escape Arrangements.....	38
11.8	Ventilation	39
11.9	Water Services.....	39
11.10	Lighting	39
11.11	Temperature.....	39
11.12	Hand Holds and Grab-rails	39

ANNEX 1	40	
		Determination of vessel's stability by means of rolling period tests 40
ANNEX 2	45	
		Guidance on Capsize Safety 45
ANNEX 3	47	
		Radio Equipment Tests And Reserve Power Checks 47
ANNEX 4	48	
		Radio Log 48
ANNEX 5	49	
		Anchors and Cables -Table or Requirements 49
ANNEX 6	50	
		Medicines and Medical Equipment 50
ANNEX 7	54	
		NEW VESSEL CONSTRUCTION 54
		1 Foreword 54
		2 Construction and Structural Strength 55
		3 Weathertight Integrity 55
		4 Stability 56
		5 Machinery 57
		6 Piping Systems 57
		7 Shafting and Stern Gear 57
		8 Bilge Pumping Systems 57
		9 Steering Gear 58
		10 Electrical Systems 58
		11 Fire Safety 58
		12 Accommodation and Working Spaces 59
ANNEX 8	60	
		Declaration of Compliance 60

Revision Status

Revision Number	Date	Reason
0	20/04/2004	Initial release
1	14/02/2005	Correction to Tables in Annex 6

Amendments in this release

Chapter Title	Chapter No.	Amendment Summary
—	—	Revision Status added
—	—	Page numbering amended
Medicines & Medical equipment	Annex 6	Table entitled “Antidotes” deleted.
Fire Protection, Detection and Extinction	5	5.2.1.1 Reference to Council Directive 96/98/EC corrected.
Life-Saving Appliances	7	7.1.2 Reference to Council Directive 96/98/EC corrected.
Navigation Equipment, Lights, Shapes & Sound Signals	10	10.7 Editorial change to title
		10.10.1 Web site address updated

Chapter 1 General

1.1 Foreword

1.1.1 The aim of this Code of Practice is to set standards of safety and protection for all persons on board small fishing vessels, of less than 15 metres length overall, which go to sea to fish for profit.

There are many differing designs, materials and methods of construction of small fishing vessels. Equally, methods of fishing, duration of voyages, operating distances and operational procedures also vary greatly.

The Code, therefore, deals specifically with the vessel construction, its machinery, equipment and stability and its correct operation so that safety standards are maintained.

The Code contains mandatory requirements in addition to recommendations. Mandatory requirements are described by the use of the words *shall* or *must* and recommendations are described by the use of the word *should*.

1.1.2 Chapters 2, 3, 4, 5 and 11 apply principally to existing vessels. For the topics covered by those chapters relating to new vessels, see Annex 7. The other chapters apply to all vessels, both new and existing.

1.1.3 When selecting the materials and equipment to be used in its construction, designers and builders of new vessels should pay special attention to the working conditions to which a vessel will be subjected.

1.1.4 The builder, repairer or owner of a vessel, as appropriate, should take all measures to ensure that a material or appliance fitted in accordance with the requirements of the Code is suitable for the purpose intended, having regard to its location in the vessel, the area of operation and the weather conditions which may be encountered. In cases of doubt, such judgements should be made after consultation between an authorised person appointed by the Maritime Safety Directorate and the builder, repairer or owner.

1.1.5 The Commission of the European Union's general mutual recognition clause should be accepted. The clause states:-

Any requirement for goods or materials to comply with a specified standard shall be satisfied by compliance with:-

- i) a relevant standard or code of practice of a national standards body or equivalent body of a Member State of the European Community; or
- ii) any relevant international standard recognised for use in any Member State of the European Community; or
- iii) a relevant specification acknowledged for use as a standard by a public authority of any Member State of the European Community; or
- iv) traditional procedures of manufacture of a Member State of the European Community where these are the subject of a written technical description sufficiently detailed to permit the assessment of the goods or materials for the use specified; or
- v) a specification sufficiently detailed to permit assessment for goods or materials of an innovative nature (or subject to innovative processes of manufacture such that they cannot comply with a recognised standard or specification) and which fulfil the purpose provided by the specified standard;

provided that the proposed standard, code of practice, specification or technical description provides, in use, equivalent levels of safety, suitability and fitness for purpose.

1.1.6 It is important to stress that absolute safety at sea can never be guaranteed. As a consequence it is strongly recommended that the owner of a vessel should take out a policy of insurance for all persons who are part of the vessel's complement from time to time. This should include liability for damage to property and/or injury to Third Parties, a requirement which is increasingly specified by local authorities for those vessels using harbour facilities. This cover is widely available in the insurance market. Such insurance should provide cover which is reasonable for claims which might arise. If a policy of insurance is in force, it is recommended that a copy of the certificate of insurance is either displayed or available for inspection.

1.1.7 Finally, it is important to emphasise that, whilst the Code sets out requirements and recommendations relating to safety on board small fishing vessels, the skipper has ultimate responsibility for the safety of his vessel and its crew.

1.2 Definitions

In the Code:-

"Accommodation space" means any non-working space, enclosed on all sides by solid division, provided for the use of persons on board;

"Authorised Person" means a person authorised by the Maritime Safety Directorate for the purpose of inspecting vessels for compliance with this Code, issuing and signing Declarations of Compliance;

"Breadth (B)" means the maximum breadth of the vessel, measured amidships to the moulded line of the frame in a vessel with a metal shell and to the outer surface of the hull in a vessel with a shell of any other material;

"Code" means this Code;

"Compliance inspection" means an in-water inspection of the vessel, its machinery, fittings and equipment, by an authorised person, to ascertain that the vessel's structure, machinery, equipment and fittings comply with the requirements of the Code, coupled with an out-of-water hull inspection;

"Crew" means a person employed or engaged in any capacity on board the vessel on the business of the vessel;

"Declaration of Compliance" means a declaration that the vessel complies with the Code. (The form of the declaration of compliance is given in Annex 8);

"Decked vessel" means a vessel having a watertight weather deck extending for the entire length of the vessel and which is situated wholly above the waterline in any condition of loading;

"Depth (D)" means the moulded depth amidships:

- (a) "The moulded depth" is the vertical distance measured from the keel line to the top of the working deck beam at side. In wood and composite ships the distance is to be measured from the lower edge of the keel rabbet.
- (b) In vessels having rounded gunwales, the moulded depth shall be measured to the point of intersection of the moulded lines of the deck and side shell plating, the lines extending as though the gunwale were of angular design.
- (c) Where the working deck is stepped and the raised part of the deck extends over the point at which the depth is to be determined, the moulded depth shall be measured

to a line of reference extending from the lower part of the deck along a line parallel with the raised part;

“Efficient” in relation to a fitting, piece of equipment or material means that all reasonable and practicable measures have been taken to ensure that it is suitable for the purpose for which it is intended;

“Existing fishing vessel” means a vessel to which this Code applies and which is not a new vessel;

“Fishing vessel” means a vessel of less than 15 metres length overall which goes to sea to fish for profit;

“Freeboard” means the distance measured vertically downwards from the lowest point of the upper edge of the weather deck to the waterline in still water;

“Home base” means the place from which a vessel normally operates;

“Hull Inspection” means an inspection of the hull, underwater fittings and appendages by an authorised person;

“Inspection” means a general or partial inspection of a vessel, its machinery, fittings and equipment to ascertain that the arrangements, fittings and equipment, together with their maintenance, are as required by the Code.

“Length overall” (L_{oa}) means the length from the foreside of the foremost fixed permanent structure to the aft side of the aftermost fixed permanent structure of the vessel;

“Machinery space” means the space containing the vessel’s propulsion engine;

“Major structural modifications” means alterations to a vessel or its fishing gear which affect the stability or freeboard characteristics of the vessel;

“Mile” means a nautical mile of 1852 metres;

“Mono-hull vessel” means any vessel with a rigid hull structure which penetrates the surface of the sea over a discrete area, in any normally achievable operating trim or heel angle;

“Multi-hull vessel” means any vessel with a rigid hull structure which penetrates the surface of the sea over more than one separate or discrete area, in any normally achievable operating trim or heel angle;

“New fishing vessel” means a vessel to which this Code applies, the keel of which was laid or lay-up was started on or after 1 May 2004 or a vessel which already exists, not already being a vessel to which the Code applies but newly used as such a vessel on or after that date;

“Open boat” means a vessel where water coming onto the vessel normally drains to the bilge;

“Owner” means the registered owner of the vessel at the time of inspection. “Owners” should be construed accordingly;

“Recent” with regard to hull inspections means within the previous twelve months, but after the last compliance inspection.

“Recess” means an indentation or depression in a deck and which is surrounded by the deck and has no boundary common with the shell of the vessel;

“Safe haven” means a harbour or shelter of any kind which affords entry, subject to prudence in the weather conditions prevailing, and protection from the force of the weather;

“Sea” means beyond smooth or partially smooth waters as defined in a Marine Notice;
“Watertight” means capable of preventing the passage of water in either direction;
“Weather deck” means the main deck which is exposed to the elements;
“Weathertight” means capable of preventing the admission of a significant quantity of water into the vessel when subject to a hose test;
“Working space” means any space on the vessel, apart from accommodation and machinery spaces to which the crew normally has access in connection with the operation of the vessel.

1.3 Application and Interpretation

1.3.1 Application

- 1.3.1.1 The Code applies to all fishing vessels, registered in Ireland, of less than 15 metres length overall, which go to sea to fish for profit.
- 1.3.1.2 The Code applies to mono-hull and multi-hull vessels.
- 1.3.1.3 It is the responsibility of the owner to ensure that a vessel is properly maintained and inspected in accordance with the Code.

1.3.2 Certification

To be issued with a declaration of compliance a vessel must comply with all the requirements of the Code for the declared operating area, to the satisfaction of the authorised person.

1.3.3 Interpretation

Provision will be made for technical interpretations of the Code to be developed through consultation with relevant bodies and promulgated through the Maritime Safety Directorate to its authorised persons.

1.3.4 Updating of the Code

- 1.3.4.1 In addition to the arrangements for interpretation in 1.3.3, the requirements of the Code will be considered not more than two years after completion of the phase-in period, to take account of experience gained from its application.
- 1.3.4.2 Thereafter the Code will be reviewed at intervals not exceeding five years to take into account experience and any new statutory requirements which it might be considered reasonable to apply to vessels operating under the Code.
- 1.3.4.3 If new standards are developed and finalised by the European Union (EU), the International Maritime Organisation (IMO) or International Standards Organisation (ISO) which impact upon the requirements of the code, amendment of the code may be considered immediately.

1.4 Compliance Procedures, Inspection, Certification and Maintenance

This section applies to all vessels, both new and existing

1.4.1 Compliance Inspection for first issue of a Declaration of Compliance

- 1.4.1.1 The owner of a vessel must arrange for the necessary compliance inspection of the arrangements, fittings and equipment to be completed by an authorised person.
- 1.4.1.2 An authorised person must carry out the compliance inspection, including a hull inspection. The arrangements, fittings and equipment provided on the vessel are to be documented on the declaration of compliance. Upon satisfactory completion of the

inspection verifying that the arrangements, fittings and equipment are in compliance with the Code and that the vessel, its hull and its machinery are in a sound and well-maintained condition, the authorised person must complete a declaration of compliance. Both the authorised person and the owner must sign the declaration of compliance. The declaration of compliance is to be kept on board the vessel and is to be available for inspection at all times. One copy is to be sent to the Marine Surveyors' Office of the Maritime Safety Directorate and one is to be retained by the Authorised Person.

1.4.2 Compliance Inspection for Renewal of a Declaration of Compliance

1.4.2.1 Within a 3 month period before the existing declaration expires, the owner must arrange for a compliance inspection, including a hull inspection, to be carried out by an authorised person. Upon satisfactory completion of the inspection verifying that the arrangements, fittings and equipment remain in compliance with the Code and that the vessel, its hull and its machinery are in a sound and well-maintained condition, the authorised person must complete a declaration of compliance. Both the authorised person and the owner must sign the declaration of compliance. The declaration of compliance is to be kept on board the vessel and is to be available for inspection at all times. One copy is to be sent to the Marine Surveyors' Office of the Maritime Safety Directorate and one is to be retained by the Authorised Person.

1.4.2.2 If a vessel is inspected up to 3 months after the expiry date of the existing declaration of compliance, the renewal declaration of compliance will normally be valid for four years from the expiry date. However, if there is evidence that the vessel has been laid up since the existing declaration of compliance's expiry date, the renewal declaration of compliance may be valid for not more than four years from the date the inspection is satisfactorily completed.

1.4.3 Appeal Against the Findings of an Inspection

1.4.3.1 If an owner is dissatisfied with the findings of an inspection and agreement cannot be reached with the authorised person who carried out the inspection, the owner may appeal to the Maritime Safety Directorate to review the findings. At this review, the owner may call a representative or professional adviser to give opinions in support of the argument against the findings of the inspection.

1.4.4 Maintaining and Operating a Vessel

1.4.4.1 A surveyor from the Maritime Safety Directorate may inspect a vessel at any reasonable time.

1.4.4.2 It is the responsibility of the owner to ensure that at all times a vessel is maintained and operated in accordance with the requirements of the Code, the arrangements as documented in the Declaration of Compliance and any conditions stated on the vessel's Declaration of Compliance. If for any reason the vessel does not continue to comply with any of these requirements, the owner must immediately notify the authorised person who issued the declaration of compliance. (See also 1.4.6.2).

1.4.4.3 If a vessel suffers a collision, grounding, fire or other event that causes major damage, the owner must immediately notify the authorised person who issued the declaration of compliance.

1.4.4.4 The nature and extent of major repairs or major structural modifications must comply with this Code.

1.4.5 Validity and cancellation of Declaration of Compliance

- 1.4.5.1 A declaration of compliance will normally be valid for not more than four years from the date of completion of satisfactory inspection, subject to an intermediate declaration from the owner after two years that the vessel arrangements, fittings and equipment have been maintained in accordance with the Code.
- 1.4.5.2 The validity of a Declaration of Compliance issued under the Code is dependent upon the vessel being maintained, equipped and operated in accordance with the Code. Proposals to change any of the arrangements must be agreed in writing before a change is implemented. Copies of the written agreement detailing change(s) must be appended to the declaration of compliance, which is to be retained on board the vessel.
- 1.4.5.3 When the vessel is found not to have been maintained or equipped or operated in accordance with the Code, the Maritime Safety Directorate may cancel the declaration of compliance.
- 1.4.5.4 When a vessel is sold the declaration of compliance becomes void.
- 1.4.5.5 When an existing vessel is purchased the new owner must apply to an authorised person issue of a new declaration of compliance.

Chapter 2 Construction, Structural Strength and Weathertight Integrity

Except where noted, this chapter applies to existing vessels only. Requirements for new vessels are contained in Annex 7.

2.1 General Requirements

As there are many designs, types and construction methods, it is more difficult to incorporate the standards required for new vessels into existing vessels. Therefore, subject to the conditions stated in this chapter, existing arrangements for weathertight integrity will be accepted.

The hull structure and machinery should provide the required strength and service for the safe operation of the vessel in all expected operating conditions at the required draught and power, in the sea and weather conditions likely to be met. Particular attention should be paid to the intended fishing methods.

The vessel should be designed and constructed in such a manner as to prevent the ready ingress of seawater. The number of openings in the weathertight structure of the vessel must be as few as practicable and be provided with the closing and securing arrangements described below.

2.2 Construction Materials

2.2.1 Vessels should be constructed of the following materials or a suitable combination:

- (i) Wood
- (ii) Fibre/Glass reinforced plastic (F.R.P.) (G.R.P.)
- (iii) Steel
- (iv) Aluminium Alloy

2.2.2 Vessels of construction and materials differing from those in 2.2.1 will be specially considered, taking into account the nature of the material and soundness of construction.

2.2.3 When modifications or repairs are carried out to a vessel, the additional or replacement construction materials must be of a similar nature and standard as the original material. Alternative materials must also be compatible with the original hull material.

2.3 Structural Strength

A vessel will be considered to be acceptable if the structure, such as the hull, decks and bulkheads, are in a good state of repair and the vessel and structure is adequate for its intended service. The structure must be sound, watertight and free from significant damage and corrosion.

2.4 Decks

2.4.1 Full length and partial weather decks, including shelter decks, must be of sound and weathertight construction, and be of sufficient strength to withstand the sea and weather conditions likely to be encountered.

2.4.2 Recesses in weather decks must be fitted with drainage arrangements so that the deck drains under all normal conditions of trim, and it is recommended that they operate efficiently at a heel of 10°.

2.5 Bulkheads

- 2.5.1 Bulkheads are not a requirement for compliance with the Code, nor, if bulkheads are fitted, are they required to be watertight. However, watertight bulkheads, which comply with the compulsory standards for new vessels, are recommended. (see Annex 7)
- 2.5.2 If practicable, the requirements for new vessels should be incorporated when the vessel undergoes major structural work or alterations and in the case of machinery space bulkheads, when the vessel is re-engined.

2.6 Bulkhead Doors

Doors in watertight bulkheads, if fitted, must be of sound construction and be capable of efficient operation, to the standard required for new vessels (See Annex 7)

2.7 Doorways above Weather deck

- 2.7.1 Doorways giving access to space below the deck should be fitted with a permanent coaming of 300 mm minimum height. Alternatively a portable coaming may be provided, fixed in guide channels to give a minimum coaming height of 300 mm.
- 2.7.2 Doors must be of sound construction and be weathertight.

2.8 Hatches and Coamings

- 2.8.1 Where access or loading/unloading hatchways are fitted in the weather deck raised coamings, of substantial construction and with a minimum height of 300 mm, should be provided. If this is not practicable, owing to the operation of fishing gear or working space obstructions, the coaming height may be reduced, or the coaming omitted, provided that the hatch can be secured weathertight (excluding lashings and eyeplates as per 2.9.2).
- 2.8.2 Hatchways should be as small as possible subject to the requirements of 11.7 (Access and Escape Arrangements).

2.9 Weather deck Hatches

- 2.9.1 Hatchway covers fitted in the weather deck must be provided with efficient means of weathertight closure.
- 2.9.2 The securing arrangements may include lashing and eyeplates.

2.10 Flush Hatches and Scuttles

Ice scuttles, where fitted, must be of metal construction, with screw or bayonet type clamp fastening and with the loose cover permanently attached to the structure with chain.

2.11 Skylights

Skylights must be of efficient construction. Where the glazing material and its method of fixing is not equivalent in strength to the surrounding structure, portable blanking pieces or plates that can be secured over the glazing must be provided. Portable blanking pieces or plates must be stored in a readily accessible position.

2.12 Side Scuttles and Portlights

- 2.12.1 Side scuttles or portlights fitted below the weathertight deck and not fitted with an attached deadlight must be provided with a portable blanking plate, which can be efficiently secured, if the glazing breaks. Portable blanking plates must be stored in a readily accessible position.
- 2.12.2 Glazing material in existing sidelights must be sound and efficiently secured. When the glazing material is damaged it must be blanked off. Replacement material must meet the requirements for new vessels.

2.13 Windows

- 2.13.1 Windows fitted to spaces above the weather deck, such as a deckhouse or superstructure protecting an opening leading to below the weather deck, must be weathertight.
- 2.13.2 Windows should not be fitted below the weather deck. Where windows are fitted below the weather deck, they must be of sound construction, provide watertight integrity, and be of strength compatible with their size. In case the glazing breaks, portable blanking plates must be provided, which can be efficiently secured to the window frame, and which are sufficient to cover a total of 50% of the number of windows. Portable blanking plates must be stored in a readily accessible position.
- 2.13.3 Glazing material in existing windows must be sound and efficiently secured, and glass should be toughened or laminated. When the glazing material is damaged it must be blanked off. Replacement material must meet the requirements for new vessels.

2.14 Ventilators

- 2.14.1 Ventilators must be efficient.
- 2.14.2 Ventilators serving spaces below the weathertight deck must be provided with an effective means of weathertight closure.

2.15 Exhaust Systems

- 2.15.1 Engine exhaust systems of the dry or water-injected type, which discharge through the hull below the weathertight deck at the side or stern, should be provided with means of preventing back flooding into the hull or engine through the exhaust system. This may be by system design or valve or non-return device.
- 2.15.2 Existing systems will be accepted, provided that they are of sound construction and that existing hoses are of a suitable material, well supported, free from defects, and contact with combustible materials is avoided.

2.16 Air Pipes

- 2.16.1 Air pipe arrangements will be accepted subject to the following provisions:
 - (i) Air pipes must be of sound construction and operate efficiently.
 - (ii) Air pipe tops without a proprietary closing device or fitting, must be fitted with collapsible hose or other effective means of closure.
 - (iii) Provision should be made to prevent a vacuum forming in the pipe or tank.
- 2.16.2 Exposed air pipes, in excess of 25 mm diameter, serving fuel oil, hydraulic oil, and lubricating oil tanks must be fitted with anti-flash gauze diaphragms.

2.17 Sea Inlets and Discharges

- 2.17.1 Sea inlets and discharges should be fitted with an efficient means of closure.
- 2.17.2 Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction.
- 2.17.3 Inlet or discharge openings should be fitted with a valve or seacock at the hull connection, which is readily accessible for operation in an emergency. If such valves are inaccessible in an emergency, they should be fitted with a remote means of operation i.e. by extended spindle or wire pull device.
- 2.17.4 Openings serving as discharges from engine cooling water, bilge and general service pumps, galley and toilet drains etc, should be also fitted with an automatic non-return valve adjacent to the closing valve. Alternatively, a screw down non-return type valve may be fitted.

2.18 Materials for Valves and Associated Piping - Sea Water Systems

- 2.18.1 Valves, pipes and fittings serving as sea inlets and discharges attached directly to the hull of the vessel below the load waterline should be of steel, bronze, or other equivalent and compatible material.
- 2.18.2 Where the sea inlet valve or fitting is connected to the hull by means of a tube or distance piece, the tube or distance piece should be of a material that is compatible with the hull and valve.
- 2.18.3 Valves, piping and flexible hoses must be of sound and efficient construction and installation. All piping systems must be well supported with pipe clips or mounts and protected against vibration and chafing.

2.19 Freeing Ports

This section applies to all vessels, both new and existing

- 2.19.1 In fishing operations, especially when towing, or hove-to when attending to pots or nets, a problem can arise with decked vessels having fixed bulwarks, whereby water is shipped over the bulwark into the enclosed deck. This not only creates uncomfortable working conditions, but more dangerously, can lead to the accumulation of water and consequential down flooding into enclosed or below-deck spaces, and also create a detrimental effect on stability by the introduction of "free surface effect" particularly on a large deck area. It is essential, therefore, that means of rapidly clearing entrapped water is fitted in all vessels with fixed bulwarks. At the same time, however, the means of clearing water must not provide easy access for water to enter the enclosed deck.
- 2.19.2 Means to clear entrapped water may comprise any, or any combination, of the following:
 - i) Freeing ports with an attached means of closing (provided that the freeing port is only closed during fishing operations).
 - ii) Permanent openings in the bulwarks such as slots.
 - iii) Apertures in and under bulwark or stern ramp doors.
 - iv) Deck scuppers where the discharge is above the load waterline.
- 2.19.3 The total area of the water freeing arrangements should be a minimum of 3% of the area of the fixed bulwarks enclosing the deck or space under consideration.
- 2.19.4 Any freeing port or slot in the bulwark must have the bottom edge as close to the deck as possible. Freeing ports greater than 230 mm in depth and wider than 500 mm must be fitted with bars.

- 2.19.5 Where freeing ports are fitted with hinged flaps or shutters, there must be sufficient clearance to prevent jamming, and the hinges must be fitted with pins of non-corrodible material.
- 2.19.6 The freeing ports must be arranged throughout the length of the bulwark or well in order to give maximum drainage under all normal conditions of trim.
- 2.19.7 Care must be taken that deck pounds, machinery and net or gear stowage do not impede the free flow of trapped water to the freeing ports or slots.
- 2.19.8 Lift-up closing appliances fitted to freeing ports must be so arranged that they are secure in the open position and will not float off from the stowed positions.

Chapter 3 Stability

This chapter applies to existing vessels only. Requirements for new vessels are contained in Annex 7.

3.1 General

3.1.1 Adequate margins of freeboard and stability should be provided for the safe operation of the vessel.

3.2 Stability Standard

3.2.1 It is strongly recommended that the stability standards described in Annex 7, paragraph 4.2 be applied.

3.2.2 Notwithstanding the foregoing recommendation, all existing vessels shall be subjected to a roll test as described in Annex 1. The roll test shall be carried out with the vessel in the “normal departure port condition”.

3.2.3 The GM obtained from the roll test shall be at least 10% greater than the minimum metacentric height, GM_{min} , obtained from the formula:

$$GM_{min} = 0.53 + 2B \left\{ 0.075 \left\{ \frac{f}{B} \right\} + 0.82 \left\{ \frac{f}{B} \right\}^2 + 0.014 \left\{ \frac{B}{D} \right\} + 0.032 \left\{ \frac{l_s}{L} \right\} \right\}$$

Where:

- L is the length of the vessel on the waterline in maximum load condition (m)
- l_s is the actual length of enclosed superstructure extending from side to side of the vessel (m)
- B is the extreme breadth of the vessel on the waterline in maximum load condition (m)
- D is the depth of the vessel measured vertically amidships from the base line to the top of the upper deck at side (m)
- f is the smallest freeboard measured vertically from the top of the upper deck at side to the actual waterline (m)

The formula is applicable for vessels having;

- .1 f/B between 0.02 and 0.20;
- .2 l_s/L smaller than 0.60;
- .3 B/D between 1.75 and 2.15;

for vessels with parameters outside of the above limits the formula should be applied with special care.

3.3 Capsize Safety

3.3.1 The guidance notes for vessel operators, given in Annex 2, should be studied and followed where practicable.

Chapter 4 Machinery and Electrical Installations

Except where noted, this chapter applies to existing vessels only. Requirements for new vessels are contained in Annex 7.

4.1 Machinery

4.1.1 General Requirements and Recommendations

- 4.1.1.1 Access for persons to machinery spaces must be arranged clear of any moving or heated surfaces and the latter must be sufficiently insulated. Effective guards must protect exposed moving parts such as shafts, drive pulleys and belts. Access ladders must be securely fixed to the vessel's permanent structure. Ancillary equipment and piping must be in accordance with the appropriate part of the Code.
- 4.1.1.2 Layout and installation of machinery spaces and propulsion machinery should be designed for safe and efficient operation;
- 4.1.1.3 Lighting should be designed to facilitate easy inspection and be unaffected by vibration.
- 4.1.1.4 Ventilation should be provided either by mechanical fans or natural vents to meet the air requirements of the propulsion machinery and to prevent build-up of fumes or excessive heat.
- 4.1.1.5 Access ladders should be of metal such as steel where practicable
- 4.1.1.6 Floor plates, where fitted, should be non-slip and securely fastened with accessible fasteners.

4.1.2 Propulsion Machinery and Stern Gear

- 4.1.2.1 Propulsion engines and associated stern gear must be of a design, type and rating to suit the design and size of the vessel taking account of the vessel's history, operating conditions and area of operation. Inboard-mounted engines should be diesel powered for use with fuel oil having a flash point greater than 60°C.
- 4.1.2.2 Inboard-mounted petrol engines will be accepted, but when such engines are being replaced, the replacements should be suitable marine diesel engines.
- 4.1.2.3 Outboard-mounted petrol or gasoline engines will be accepted provided that the engine is mounted on a substantial transom. A chain for outboard engines should be attached to the vessel. Small vessels should have alternative means of propulsion.
- 4.1.2.4 Flexibly mounted engines should be fitted with short flexible connections of an appropriate type, fitted to associated piping and exhaust systems. Flexible sections of piping must be fitted when the engine or systems are repaired or replaced, provided that the existing installation is sound and efficient and is safe in use. Flexible shaft couplings must be in a sound condition and suitable for the power being transmitted.
- 4.1.2.5 A vessel fitted with an inboard engine must have adequate means and power for going astern in order to maintain control of the vessel in all foreseeable circumstances.
- 4.1.2.6 The propeller shaft and any intermediate shaft, together with the stern tube, bearings and bushes, must be in a sound condition and operate efficiently. Shaft materials and diameter should be suitable for the power being transmitted. Inboard-mounted stern glands must be accessible for adjustment.

4.1.3 Engine Starting

All propulsion engines, excepting those engines fitted only with hand starting arrangements, should be provided with a secondary means of starting, where practicable.

4.1.4 Controls and Instruments

- 4.1.4.1 The controls and instrumentation systems as fitted will generally be accepted, provided that the systems are in a good state of repair and operate satisfactorily.
- 4.1.4.2 Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheelhouse or helm position must be provided, on or adjacent to the engine, with arrangements or mechanism for stopping the engine.
- 4.1.4.3 High water temperature and low lubricating oil pressure alarms shall be fitted, where practicable.

4.1.5 Steering System

- 4.1.5.1 The steering system must operate efficiently and be well maintained. The steering gear, including bearings and rudder stock, must be of sound and efficient construction, and suitable for the size and power of the vessel. (see also 4.2.1.5)
- 4.1.5.2 Vessels fitted with motorised or hand hydraulic, chain, cable, or mechanical steering must be provided with an alternative means of steering which will operate if the main system fails.
- 4.1.5.3 The main control or helm position must be located such that the person operating the steering gear has a clear view for the safe navigation of the vessel.
- 4.1.5.4 All parts of mechanical linkages of rod and chain should be accessible with adequate lubrication arrangements provided.

4.2 Electrical Installations

4.2.1 General

- 4.2.1.1 The design and installation of electrical systems shall be such that the risk of fire and electrical shock to operating personnel is minimised.
- 4.2.1.2 Detailed guidance on the design and installation of electrical equipment is given in the following documents. Where practicable, these regulations should be followed when rewiring or fitting additional circuits and equipment.
 - i) The Institution of Electrical Engineers (IEE) Regulations for the Electrical and Electronic Equipment of Ships with Recommended Practice for their Implementation, 6th Edition 1990 and Supplement 1994.
 - ii) Marine Notice No. 7 of 1992, Electrical Equipment for use in Fishing Vessels.
 - iii) ISO 10133 - Small Craft Electrical Equipment Extra-low Voltage DC Installations.
 - iv) ISO 13297 - Small Craft Electrical Equipment Alternating Current Installations.
- 4.2.1.3 Particular attention must be given to protection against water ingress and the effects of vibration.
- 4.2.1.4 All circuits must be clearly identified on switchboards and distribution boards, including service, protective device rating, current carrying capacity and voltage values. Differing voltages should not be included in any one distribution board.
- 4.2.1.5 All circuits, except the main supply from the battery to the starter motor, and electrically driven steering motors should be provided with electrical protection against overload and short circuit (i.e. fuses or circuit breakers should be installed). Steering motors should have an overload alarm in lieu of overload protection. Short circuit protection should be for not less than twice the total rated current of the steering motors in the circuit protected.

- 4.2.1.6 Cables which are not provided with electrical protection should be kept as short as possible and be “short circuit proofed”, e.g. single core with an additional insulating sleeve over the insulation of each core. Normal marine cable (e.g. in compliance with BS 6883) which is single core will meet this recommendation without an additional sleeve, since it has both conductor insulation and a sheath.
- 4.2.1.7 In the event of failure of engine and charging systems, the battery capacity must be able to supply the emergency lights for at least one hour.
- 4.2.1.8 The electrical generating system must have sufficient capacity in normal running conditions to ensure the correct operation of all safety and navigation equipment including navigation and fishing lights, where fitted.
- 4.2.1.9 With regard to existing cable installations and to any additional cables fitted:
- i) Cables should not be run below floor plate level except, where this is necessary for connections to underwater equipment etc., the cable should be run in conduit.
 - ii) Cables running through machinery spaces should not be secured with plastic clips.
 - iii) Cables running through fish holds should be fitted in conduit and cables should not be secured directly to fuel or oil storage tanks.
 - iv) Cables should be of the correct current carrying capacity for their application.
 - v) When selecting cables, particular attention should be given to environmental factors such as temperature and contact with substances, e.g. polystyrene, which degrades P.V.C. insulation.
- 4.2.1.10 Vessels should be fitted with an adequate cathodic protection system. Anodes should be efficiently connected to the system and the hull, and not painted over.

4.2.2 D.C. Systems Up To 24 volts

- 4.2.2.1 Systems should be two wire.
- 4.2.2.2 Existing earthing systems will be accepted provided that the system is sound and efficient and that no danger to the system or vessel may occur. Hull earth plates, if fitted, must be efficiently connected and not painted over.
- 4.2.2.3 Batteries should be fitted in enclosed boxes or trays with covers, and provided with sufficient ventilation for the battery type. Battery boxes should be sited clear of heat sources and the battery installation and ventilation should be in accordance with IEE Regulations and Marine Notice No. 7 of 1992, “Electrical Equipment for use in Fishing Vessels”.
- 4.2.2.4 A battery cut-off switch double pole type should be fitted at each battery or bank. Systems such as automatic bilge pumps or alarms for when the vessel is unattended should be connected before the cut-off switch.

4.2.3 A.C Systems

- 4.2.3.1 Cables for A.C systems must be kept separate from D.C Systems and run in separate trays and conduits.
- 4.2.3.2 Switchgear for A.C systems must be fitted in switchboards and panels which are separate from those containing D.C. systems. Systems and equipment must be clearly marked.
- 4.2.3.3 Switchgear and sockets must be so arranged as to prevent the fitting of low voltage equipment and lamps into high voltage systems.

4.3 Pumping and Piping Systems

4.3.1 Fuel Oil Installations

- 4.3.1.1 Tanks will generally be accepted provided that they are of sound and efficient construction and safe in operation. Glass contents gauges, where fitted, must have self-closing valves at the base. Metal rods or slotted covers must protect sight gauges.
- 4.3.1.2 Piping systems should be of sound construction, in a good state of repair and suitable for the service intended. Flexible connections should be of an appropriate armoured fire-resistant metallic hose with screwed fittings, and kept as short as practicable.

4.3.2 Cooling Water Systems

- 4.3.2.1 Provided that the piping and fittings are of sound construction and efficient in operation, the cooling water system fitted in existing vessels will be accepted until such time as the system is renewed or the vessel is re-engined, when the following requirements are to be met:
- i) Cooling water inlets for main and auxiliary machinery must be kept to a minimum and comply with the requirements of 2.17 and 2.18.
 - ii) Sea inlet trunks or boxes built into the hull structure must be of such a design that they remain below the waterline at all normal conditions of trim and heel, and must be fitted with arrangements for purging of trapped air.
 - iii) The sea inlet pipe to the propulsion engine must be fitted with an accessible strainer.
 - iv) Where a common sea main supplying a number of services is installed, each branch pipe must be fitted with an easily accessible isolating valve, with open/closed indication.
 - v) Vessels of 7 m L_{oa} and over with a single sea water cooling supply to the propulsion engine must be fitted with an additional hose connection with a valve, whereby an emergency supply of cooling water from a bilge or general service pump may be introduced in the event of blockage of the main sea inlet valve.

4.3.3 Bilge Pumping Systems

- 4.3.3.1 Vessels must have an efficient bilge pumping arrangement fitted, with the number of pumps as required by 4.3.4.1
- 4.3.3.2 Where applicable, each watertight compartment must have a bilge suction and each suction must be fitted with a strum (filter).

4.3.4 Bilge Pumps

- 4.3.4.1 Decked vessels of 7 m L_{oa} and over must have 1 hand and 1 power-driven bilge pump fitted; all other vessels must have at least 1 hand bilge pump.
- 4.3.4.2 The power-driven pump referred to in 4.3.4.1 may be the general service/deckwash pump provided that any sea connection to the pump is isolated from the bilge suction main by a switch cock or interlocked valve system such that sea water cannot drain into the bilge main.
- 4.3.4.3 Flexible connections and hoses, where fitted, must be soundly constructed and operate efficiently, and they should be readily accessible.
- 4.3.4.4 Where watertight bulkheads are fitted, means should be provided in the piping system to prevent any leakage via the system from compartment to compartment.

- 4.3.4.5 Where a deckwash pump is also utilised for bilge suction purposes, means must be provided to prevent flooding of any compartment from the sea inlet via the bilge main.
- 4.3.4.6 In all vessels, except where the bilge can be readily seen, an audible and visible bilge level alarm must be fitted to indicate leakage of water into the machinery space. Indication should be at the helm or control position.

4.4 Anchors & Cables

This section applies to all vessels, both new and existing.

4.4.1 General

All vessels must have an efficient means of anchoring. The recommendations given in the Anchors and Cables Table at Annex 5 are for a vessel of displacement mono-hull form which may be expected to ride out storms whilst at anchor and when seabed conditions are favourable.

4.4.2 Anchors

- 4.4.2.1 The anchor sizes shown are for high holding power types (H.H.P).
- 4.4.2.2 When a fisherman type anchor is provided the weight given in the table should be increased by 25%, but the diameter of the anchor cable need not be increased.
- 4.4.2.3 When a vessel has an unusual hull form and an unusually high windage area, due to its high freeboard or large superstructure, the weight of the anchor should be increased to take account of the increase in wind loading. The diameter of the anchor cable should be appropriate for the increase in weight of the anchor.
- 4.4.2.4 The recommended weight of anchors is given in the Table at Annex 5.

4.4.3 Cables

The length of the anchor cable attached to the anchor should be appropriate to the holding ground and depth of water in the area of the operation of the vessel. (see Table at Annex 5)

4.4.4 Towline

All vessels must be provided with a means of being towed.

4.5 Fishing and Handling Equipment

This section applies to all vessels, both new and existing.

- 4.5.1 Every vessel provided with winches, tackles and lifting gear must have this equipment efficiently and safely installed having regard to the intended service of the vessel. All parts of lifting gear and similar equipment, whether fixed or movable, and items used in connection with such equipment must be of solid construction, designed and built to withstand foreseeable loads. They must be appropriately and suitably secured, supported or hung in relation to the purposes for which they are intended. There must be easy access for maintenance purposes.
- 4.5.2 All parts of the running gear including wires and chains and the like must be of sufficient strength and safe working load to withstand foreseeable loads. All load bearing parts must be regularly maintained and inspected for condition.

Chapter 5 Fire Protection, Detection and Extinction

Except where noted, this chapter applies to existing vessels only. Requirements for new vessels are contained in Annex 7.

5.1 Fire Safety

5.1.1 Provision for Gas-Extinguishing System

In a vessel with a gas-extinguishing system, the boundary of the machinery space must be able to contain the fire-extinguishing medium i.e. the space must be capable of being closed down in order that the fire-extinguishing medium cannot penetrate to any other part of the vessel or outside the vessel. This arrangement includes the closure of ventilation systems and hatchways.

5.1.2 Fire Prevention

5.1.2.1 Glass portlight and deadlight arrangements, if fitted in the boundaries of machinery spaces, will be accepted if they are in a sound condition, but if damaged they must be blanked off.

5.1.2.2 Fire hazardous items such as petrol tanks and gas containers must not be stowed in machinery spaces.

5.1.2.3 Exhaust pipes and ducts must be adequately insulated to avoid igniting combustible materials and be protected from damage.

5.1.2.4 Areas surrounding stoves and cooking appliances must be adequately protected with non-combustible materials.

5.1.2.5 A suitable fire extinguisher must be provided adjacent to any compartment containing a permanent fuel oil tank. Petrol engines must be fitted in an enclosure with a suitable fire-extinguishing system or portable fire extinguisher.

5.1.3 Cleanliness and Pollution Prevention

5.1.3.1 Wherever practicable, provision should be made to retain any oil leakage within the confines of the machinery space by the use of metal drip trays or other adequate means.

5.1.3.2 When petrol in portable containers is carried on board, for use in an outboard engine, the containers must be clearly marked and stowed in a protected position on the weather deck.

5.1.3.3 Any oil spillage within the vessel must be collected and retained on board for discharge to collection facilities ashore.

5.1.4 Open-Flame Gas Appliances (including Gas Refrigerators)

5.1.4.1 Appliances must not be positioned close to engines and fuel tanks. Selection of open-flame cooking appliances must have due regard to the fire risk involved. The type of equipment should be suitable for marine duty, and manufacturers' fitting and operating instructions must be carefully followed.

5.1.4.2 All types of stoves and heating appliances must be strongly secured to the surrounding structure. New appliances must conform to the requirements of Council Directive 90/396/EEC and Marine Notice No.1 of 2002.

5.1.4.3 Liquefied petroleum gas (L.P.G.) systems must comply with Marine Notice No.1 of 2002. It should be noted that the Marine Notice also contains maintenance and servicing requirements.

5.1.4.4 Curtains or any other suspended textile materials must not be fitted within 600 mm of any open-flame cooking, heating or other appliance.

5.1.5 Gas Detection

Safe means for detecting the leakage of gas must be provided in any compartment containing a gas-consuming appliance or in any adjoining space or compartment into which the gas may seep. Detectors must be fitted in the lower part of each compartment. The alarm unit which should incorporate an audible and visible alarm, and the control panel, should be fitted outside the space containing the installation. In all cases arrangements must be such that the detection system can be tested frequently whilst the vessel is in service.

5.1.6 Emergency Action

5.1.6.1 A suitable notice, detailing the action to be taken when an alarm is given by the gas detection system, should be displayed prominently in the vessel.

5.1.6.2 The information given should include advice:-

- i) To be ever alert for gas leakage.
- ii) When leakage is detected or suspected, to shut off all gas consuming appliances at the main supply from the container(s) and to refrain from smoking until safe to do so.
- iii) **NEVER TO USE NAKED LIGHTS AS A MEANS OF LOCATING GAS LEAKS.**

5.1.7 Smoke Detection

In a decked vessel an efficient smoke detector system should be fitted in the machinery space.

5.2 Fire Fighting Appliances

This section applies to all vessels, both new and existing.

5.2.1 General

5.2.1.1 All fire appliances must be adequate for the expected fire risk. Where appropriate appliances must comply with Marine Equipment Directive 96/98/EC as amended.

5.2.1.2 Multi-purpose fire extinguishers can deal with both category A fires (involving solid materials) and category B fires (involving liquids or liquefiable solids) and are marked with the multi-purpose rating e.g. 13A/113B (see 5.2.2(iii) and 5.2.3(ii) below); and 5A/34B (5.2.2(iv), 5.2.3(iii) and 5.2.4(i) below). A wide variety of extinguisher types and sizes are available to meet the fire rating requirements, and advice on suitability should be sought from suppliers.

5.2.1.3 Fire extinguishers must be regularly serviced as recommended by the manufacturers and be fitted in ready accessible positions, mounted vertically and adequately secured.

5.2.1.4 The use of halons is prohibited in accordance with EU Regulation (EC) No 2037/2000. New fixed or portable fire extinguishers containing halons must not be used and existing fixed or portable halon fire extinguishers are to be decommissioned and replaced with halon-free alternatives. The use of CO₂ fire extinguishers in accommodation spaces should be avoided.

5.2.1.5 Fire buckets may be of metal, plastic or other suitable material and must be sufficiently robust for the intended purpose.

5.2.2 Requirements for decked vessels of 9.0 m to less than 15.0 m Length overall

- (i) One jet of water to reach any part of the vessel. This is to be demonstrated by the use of a self-priming hand fire pump fitted above deck level, with the sea suction outside the machinery space. If the self-priming hand pump mentioned above is also used for bilge pumping duties, a change-over valve must be fitted at the pump position outside the machinery space. One hose with a 10mm spray/jet nozzle must be provided.
- (ii) In vessels constructed of wood, a CO₂ or water spray fire extinguishing system is to be fitted in the machinery space
- (iii) Two portable multi-purpose fire extinguishers with minimum fire rating of 13A/113B, suitable for extinguishing oil based machinery space fires.
- (iv) In addition, two portable multi-purpose fire extinguishers with a minimum fire rating of 5A/34B suitable for extinguishing electrical or accommodation fires.
- (v) One fire bucket and lanyard.

5.2.3 Requirements for decked vessels of 6.0 m to less than 9.0 m Length overall

- (i) Two portable multi-purpose fire extinguishers with a minimum fire rating of 13A/113B, suitable for extinguishing oil based machinery room fires.
- (ii) In addition, for a vessel fitted with accommodation spaces one portable multi-purpose fire extinguisher with a minimum fire rating of 5A/34B, suitable for extinguishing electrical or accommodation fires.
- (iii) One fire bucket and lanyard.

5.2.4 Requirements for decked vessels of less than 6.0 m Length overall

- (i) One portable multi-purpose fire extinguisher with a minimum fire rating of 13A/113B, suitable for extinguishing oil based machinery room fires.
- (ii) One fire bucket and lanyard.

5.2.5 Requirements for open boats

- (i) One portable multi-purpose fire extinguisher with a minimum fire rating of 13A/113B. When an inboard/outboard engine is fitted, the extinguisher above must be suitable for extinguishing oil/petrol based fires.
- (ii) One fire bucket and lanyard.

5.2.6 Requirements for all vessels

Means of closing all skylights, doorways, vents and funnel openings to machinery spaces and remote controls, operable from outside the machinery space, to fuel tank outlet valves shall be provided.

Chapter 6 Protection of the Crew

This chapter applies to all vessels, both new and existing, except where otherwise stated.

6.1 Protection of Personnel

6.1.1 General

The requirements set out below are generally applicable to the larger vessels covered by this Code with deckhouses or exposed decks. For smaller vessels where the same risks to personnel exist it is recommended that the same measures be applied to the maximum extent practicable.

6.1.2 Bulwarks, Guard Rails and Handrails

6.1.2.1 The perimeter of an exposed deck should be fitted with bulwarks, guard rails or guard wires of sufficient strength and height for the safety of persons on deck; the height of tubular railings and guard wires being not less than 1000 mm above the deck (915 mm where already fitted), the lower course of rails or wires having a clearance of not more than 230 mm and the remaining courses being evenly spaced. Where there would be unreasonable interference with the efficient operation of the vessel the height may be reduced.

6.1.2.2 Sections of rails or wires may be portable where necessary for the vessel's fishing operations.

6.1.2.3 Access stairways, ladder ways and passageways must be provided with handrails and grab rails for the safety of the crew.

6.1.2.4 A pound barrier should be fitted to separate the creel ropes from the crew.

6.1.3 Safety Harnesses

6.1.3.1 Safety harnesses provide excellent protection against falling from exposed decks or into the sea and they should be carried and worn, particularly by single-handed operators.

6.1.3.2 Efficient means for securing lifelines for the safety harnesses should be provided to enable crewmembers to traverse safely the length of the weather deck in bad weather.

6.1.4 Surface of Working Decks

6.1.4.1 Decks to which the crew are expected to have access must be provided with an adequate non-slip surface or efficient non-slip covering.

6.1.4.2 Particular attention must be paid to the provision of a non-slip surface to any hatch cover fitted on a working deck.

6.1.4.3 The exposed bottom boards of open boats must have a non-slip surface.

6.1.5 Personal Protective Equipment

6.1.5.1 In accordance with the Safety, Health and Welfare at Work Act, 1989 and the Safety, Health and Welfare at Work (General Application) Regulations, 1993, personal protective equipment shall be provided where safety risks to the crew cannot be avoided, or adequately reduced, by structural or mechanical means via the vessel's layout, structure or machinery.

6.1.5.2 Personal protective equipment in the form of clothing, or of items worn over clothing, should be in bright colours contrasting with the marine environment and clearly visible.

- 6.1.5.3 In accordance with the Fishing Vessel (Personal Flotation Devices) Regulations, 2001 (S.I. No. 586 of 2001), a suitable Personal Flotation Device shall be carried for every person on board. Guidance on the selection of personal flotation devices (PFDS) for use on-board fishing vessels can be found in Marine Notice No 7 of 2002.

6.2 Medical Stores

- 6.2.1 All vessels must carry medical stores depending on the length of trip from the nearest port with adequate medical equipment.

- 6.2.2 Vessels are classed in three categories, namely:

Category A Seagoing or sea-fishing vessels, with no limitation on length of trips.

Category B Seagoing or sea-fishing vessels making trips of

(a) less than 150 nautical miles from the nearest port with adequate medical equipment, and

(b) less than 175 nautical miles from the nearest port with adequate medical equipment and which remain continuously within range of the helicopter rescue services.

Category C (a) Harbour vessels, boats and craft staying within 30 nautical miles of the shore or with no cabin accommodation other than a wheelhouse, and

(b) lifeboats and liferafts.

- 6.2.3 Definitive lists of medical stores and equipment applicable to the three categories of vessel are given in S.I. No. 506 of 1997; *European Communities (Minimum Safety And Health Requirements For Improved Medical Treatment On Board Vessels) Regulations, 1997*, which sets, out the minimum safety and health requirements for improved medical treatment on board vessels of all kinds.

- 6.2.4 For reference purposes only, the tables for Category B and Category C vessels are reproduced in Annex 6.

- 6.2.5 The provision and replenishment of the medical supplies on any vessel is the owner's responsibility. The skipper is responsible for the use and maintenance of the medical supplies but he may delegate this function to one or more competent members of the crew.

6.3 Securing or Heavy Items or Equipment and Fishing Gear etc

- 6.3.1 Heavy items of equipment such as batteries, cooking appliances and spare gear must be securely fastened in place, to prevent movement due to motion of the vessel in a seaway.

- 6.3.2 Stowage lockers containing heavy items must have lids or doors with secure fastenings.

Chapter 7 Life-Saving Appliances

This chapter applies to all vessels, both new and existing.

7.1 General

- 7.1.1 Life-saving appliances must be provided in accordance with this Code of Practice.
- 7.1.2 Life-saving appliances must be of types acceptable to the Maritime Safety Directorate and, where appropriate, must comply with Marine Equipment Directive 96/98/EC as amended.

7.2 Servicing

Where carried, inflatable liferafts, hydrostatic release units (HRUs) and inflatable life jackets must be serviced in accordance with the manufacturer's recommendations.

7.3 Lifejackets

- 7.3.1 All vessels must carry at least one lifejacket for each person on board.
- 7.3.2 Lifejackets must be stowed in an easily accessible position.
- 7.3.3 Lifejackets must be SOLAS approved type and be fitted with a signalling whistle, light, and retro-reflective tape. Lifejacket donning notices should be displayed, where practicable, in the wheelhouse or other prominent positions.

7.4 Inflatable Liferafts

Where carried, inflatable liferafts must be of a capacity to accommodate all persons on board. The liferaft must be stowed in a GRP container and be fitted in a position to enable it to float free if the vessel sinks, and be fitted with an approved HRU. If this is not practicable, for example in an open vessel, it is recommended that the liferaft should be stowed in an accessible place; it may be contained within a valise. While it may not be capable of floating free it must be readily accessible to throw overboard. If it goes down with the vessel it will not operate. Liferafts must be equipped with "SOLAS 'B' Pack".

- 7.4.1 The requirements for the carriage of liferafts are as follows:
 - i) **All** vessels with 4 or more persons on board **must** carry one or more liferafts, regardless of their area of operation.
 - ii) **All** vessels operating beyond 5 miles from a safe haven **must** carry a liferaft.
 - iii) **All** vessels operating less than 5 miles from a safe haven with fewer than 4 persons on board are **recommended** to carry a liferaft.
- 7.4.2 Vessels of L_{oa} greater than 12 metres and vessels carrying more than 4 persons must carry an approved MED/SOLAS liferaft.

Vessels of L_{oa} 12 metres or less or carrying 4 persons or less may carry non-SOLAS/non-MED liferafts. Guidance on the carriage of non-SOLAS type inflatable liferafts is given in Marine Notice No. 2 of 2003.

7.5 Lifebuoys

- 7.5.1 All vessels must carry at least two lifebuoys.
- 7.5.2 One of the lifebuoys must be fitted with 18 metres of buoyant heaving line.
- 7.5.3 In addition, on vessels of greater than 12 m L_{oa} , a combined light and smoke signal must be fitted to one of the lifebuoys.
- 7.5.4 Lifebuoys must be of an approved type and stowed in readily accessible positions.
- 7.5.5 Each lifebuoy must be marked with the vessel's Name and Port of Registry.

7.6 Personal Flotation Devices

In accordance with the Fishing Vessel (Personal Flotation Devices) Regulations, 2001 (S.I. No. 586 of 2001), a suitable Personal Flotation Device shall be provided for each person on board, and worn on deck at all times.

7.7 Loose equipment

Where space is restricted in smaller vessels, a portable watertight container should be carried which is capable of stowing the following safety items:-

- Distress signals
- Waterproof torch
- Signalling whistle
- Compass
- First aid kit
- Hand-held radio, if required by 9.4.5

7.8 Distress Signals

In addition to those provided with any liferaft carried, the following distress signals must be carried:

<u>L_{oa} less than 12 m</u>	<u>L_{oa} 12 m or more</u>
6 Red Star Signals	12 Parachute Distress Rocket Signals

7.9 Means for Recovering Persons from the Water

- 7.9.1 To aid the recovery of a person from the water a retrieval system must be provided *or* a system specifically adapted to the vessel, which can accomplish the same function, e.g. an overside boarding ladder or scrambling net extending from the weather deck to at least 1000 mm below the operational waterline.
- 7.9.2 Whilst it is desirable to lift a person from the water in a horizontal position, this is considered secondary to the speed of retrieval so that the person does not become hypothermic.
- 7.9.3 Each vessel must carry a buoyant rescue quoit, fitted with 18 metres of buoyant heaving line.

Chapter 8 Manning, Training and Certification

This chapter applies to all vessels, both new and existing

8.1 General

This chapter provides information on manning and qualifications relating to the operation of small commercial fishing vessels.

8.2 Manning

8.2.1 Where applicable, the vessel must be manned in accordance with the Fishing Vessels (Certification of Deck Officers and Engineer Officers) Regulations, 1988 as amended by the Fishing Vessels (Certification of Deck Officers and Engineer Officers)(Amendment) Regulations, 2000; SI No.289 of 1988 & SI No.192 of 2000 respectively.

8.2.2 Single-handed operation should be restricted to 30 miles from a safe haven.

8.3 Standards of Competence

8.3.1 Fishermen must be sufficiently competent to keep a vessel safe at all times.

8.3.2 Certain skills are required to carry out particular jobs and fishermen need to be competent in:

- (i) operating and maintaining the engine, including ancillary machinery and systems;
- (ii) responding to requests for help in emergencies and using radios to seek help;
- (iii) navigating or piloting a vessel;
- (iv) manoeuvring a vessel;
- (v) work place safety.

8.3.3 The level of competence required depends on the area of operation. The further away from a safe haven or home base the fisherman operates, the more competent across a wider range of skills he will need to be.

8.4 Operation and Maintenance of Propulsion Machinery

The skipper or other appropriate person onboard must be competent to operate and maintain the vessel's main propulsion machinery and ancillary equipment.

8.5 Operation of Radio Equipment

Every vessel must carry at least one person suitably qualified, in accordance with 9.11, to operate the radio equipment carried onboard.

8.6 Safety Training

8.6.1 All persons on board must comply with the Fishing Vessel (Basic Safety Training) Regulations 2001. Those not legally required to undertake Basic Sea Survival and Fire fighting courses are strongly recommended to do so. It is also recommended that safety skills and knowledge be updated on a regular basis.

8.6.2 The skipper or any other appropriate person onboard must comply with the *European Communities (Minimum Safety And Health Requirements For Improved Medical*

Treatment On Board Vessels) Regulations, 1997 applying to the vessel's area of operation.

8.7 Responsibility of the Owner For Safe Manning of Vessel

8.7.1 It is the owner's responsibility to ensure that the skipper has, in addition to the certification already detailed, recent and relevant experience of the type and size of vessel, the machinery onboard, and the type of operation undertaken. The owner must also ensure that there are sufficient qualified crew onboard, having regard to the type and duration of the voyage undertaken.

8.8 Safe Navigational Watch

It is the skipper's responsibility to ensure that there is, at all times, an alert person with adequate experience in charge of the navigational watch. In making this decision the skipper should take account of all the factors affecting the safety of the vessel, including:

- the present and forecast state of the weather, sea state and visibility
- the proximity of navigational hazards
- the density of traffic in the area

Chapter 9 Radio Equipment

This chapter applies to all vessels, both new and existing.

9.1 The Global Maritime Distress and Safety System (GMDSS)

The basic concept of the GMDSS is that search and rescue authorities ashore, as well as shipping the immediate vicinity of the ship in distress, will be rapidly alerted to a distress incident so that they can assist in a co-ordinated SAR operation with the minimum delay.

The system also provides for urgency and safety communications and the promulgation of navigational and meteorological warnings and forecasts and other urgent safety information to ships. In other words, every ship is able, irrespective of the GMDSS Sea Area in which it operates, to perform those communication functions which are essential for the safety of the ship itself and of other ships operating in the same area

The equipment to be carried depends on the sea area in which ships operate. There are four sea areas:

- i) **A1** means an area within the radiotelephone coverage of at least one VHF coast station in which continuous alerting by Digital Selective Calling is available;
- ii) **A2** means an area within the radiotelephone coverage of at least one MF coast station in which continuous alerting by DSC is available;
- iii) **A3** means an area within the coverage of an Inmarsat geostationary satellite in which continuous alerting is available and;
- iv) **A4** means an area outside of sea areas A1, A2 and A3.

9.2 Fishing Vessel (Radio Installations) Regulations, 1998

9.2.1 Every vessel must comply with the requirements of the *Fishing Vessel (Radio Installations) Regulations, 1998* and be surveyed in accordance with the *Fishing Vessel (Radio Installations Survey) Regulations, 1999*. The following sections are an amalgam of the radio installations regulations for vessels of less than 12 m L_{oa} and those for vessels of L_{oa} greater than or equal to 12 m but less than 17 m.

9.3 Functional requirements.

Every fishing vessel, while at sea, shall be capable:

- (a) of transmitting ship-to-shore alerts
- (b) of receiving shore-to-ship distress alerts
- (c) of transmitting and receiving ship-to-ship distress alerts;
- (d) of transmitting and receiving search and rescue co-ordinating communications;
- (e) of transmitting and receiving on-scene communications;
- (f) of transmitting and receiving maritime safety information;
- (g) of transmitting and receiving ship to ship communications.

In addition, vessels of greater than 12 m L_{oa} shall be capable:

- (h) of transmitting and receiving signals for locating

9.4 Installation, location and control of radio equipment.

9.4.1 Every vessel shall be provided with radio installations capable of complying with the

functional requirements prescribed by 9.3 throughout its intended voyage unless exempted under Regulation 3 of the Radio Installations Regulations.

9.4.2 Where, in the opinion of the Minister, it is feasible to comply with the functional requirements prescribed by 9.3 by means of a fixed installation, every radio installation shall:

- (a) be so located that no harmful interference of mechanical, electrical or other origin affects its proper use, and so as to ensure electromagnetic compatibility and avoidance of harmful interaction with other equipment and systems;
- (b) be so located as to ensure the greatest possible degree of safety and operational availability;
- (c) be protected against harmful effects of water, extremes of temperature and other adverse environmental conditions;
- (d) be clearly marked with the call sign, the ship station identity and other codes as applicable for the use of the radio installation.

In addition, on vessels of greater than 12 m L_{oa} , every radio installation shall:

- (e) be provided with reliable, permanently arranged electrical lighting, independent of the main and emergency sources of electrical power, for the adequate illumination of the radio controls and for operating the radio installation

9.4.3 Control of the VHF radiotelephone channels, required for navigational safety, shall be immediately available in the wheelhouse, convenient to the conning position.

9.4.4 Every radio transmitter and receiver fitted in accordance with the Radio Regulations shall be provided with a suitable antenna or antennas. The antennas shall be so constructed and sited to enable each radio installation to perform effectively its intended communication function.

On vessels of greater than 12 m L_{oa} , where wire antennas are provided as part of a radio installation they shall be fitted with suitable insulators and, if suspended between supports liable to whipping, be protected against breakage.

9.4.5 Where, in the opinion of the Minister, it is not feasible to comply with the requirements prescribed by 9.3 by means of a fixed installation, every radio installation shall:

- (a) be an approved portable waterproof transmitter and receiver;
- (b) be provided with a suitable antenna; and
- (c) be provided with a fully charged sealed reserve power pack at all times while the vessel is at sea.

9.5 Radio equipment to be provided for all sea areas.

9.5.1 Every fishing vessel of less than 12 m L_{oa} shall be provided with:

- (a) a VHF radio installation capable of transmitting and receiving radiotelephony on the frequencies 156.300 MHz (channel 6), 156.650 MHz (channel 13), and 156.800 MHz (channel 16).
- (b) a satellite emergency position-indicating radio beacon (satellite EPIRB) which shall be
 - (i) capable of transmitting a distress alert either through the polar orbiting satellite service operating in the 406 MHz and 121.5 MHz bands, or the 1.6 GHz band;
 - (ii) installed in a readily accessible position;
 - (iii) ready to be manually released and capable of being carried by one person into a survival craft;
 - (iv) capable of floating free if the vessel sinks and of being automatically activated when afloat; or
 - (v) capable of being activated manually.

9.5.2 Every fishing vessel of 12 m L_{oa} and greater shall be provided with:

- (a) a VHF radio installation capable of transmitting and receiving:
 - (i) DSC on the frequency 156.525 MHz (channel 70). It shall be possible to initiate the transmission of distress alerts on channel 70 from the position from which the vessel is normally navigated; and
 - (ii) radiotelephony on the frequencies 156.300 MHz (channel 6), 156.650 MHz (channel 13), and 156.800 MHz (channel 16).
- (b) a radio installation capable of maintaining a continuous DSC watch on VHF channel 70, which may be separate from, or combined with, that required by subparagraph (a)(i);
- (c) a radar transponder capable of operating in the 9 GHz band, which:
 - (i) shall be stowed so that it can be easily utilised.
- (d) a satellite emergency position-indicating radio beacon (satellite EPIRB) which shall be:
 - (i) capable of transmitting a distress alert either through the polar orbiting satellite service operating in the 406 MHz and 121.5 MHz bands;
 - (ii) installed in a readily accessible position;
 - (iii) ready to be manually released and capable of being carried by one person into a survival craft;
 - (iv) capable of floating free if the vessel sinks and of being automatically activated when afloat; and
 - (v) capable of being activated manually.
- (e) a receiver capable of receiving International NAVTEX service broadcasts

9.6 Additional radio equipment to be provided for sea areas A1 and A2.

9.6.1 In addition to meeting the requirements of 9.5.1, every fishing vessel of less than 12 m L_{oa} engaged on voyages beyond Sea Area A1, but remaining within Sea Area A2, shall be provided with:

- (a) a VHF radio installation capable of transmitting and receiving
 - (i) DSC on the frequency 156.525 MHz (Channel 70). It shall be possible to initiate the transmission of distress alerts on channel 70 from the position from which the vessel is normally navigated; and
 - (ii) radiotelephony on the frequencies 156.300 MHz (Channel 6), 156.650 MHz (Channel 13), and 156.800 MHz (Channel 16).
- (b) a radio installation capable of maintaining a continuous DSC watch on VHF channel 70, which may be separate from, or combined with, that required by sub-paragraph (a)(i).
- (c) an MF radio installation capable of transmitting and receiving, for distress and safety purposes, on the frequencies:
 - (i) 2187.5 kHz (assigned frequency) using DSC; and
 - (ii) 2182 kHz using radiotelephony; and,
- (d) a radio installation capable of maintaining a continuous DSC watch on the frequency 2187.5 kHz (assigned frequency) which may be separate from, or combined with, that required by subparagraph (c) (i) ;

9.6.2 In addition to meeting the requirements of 9.5.2, every fishing vessel of 12 m L_{oa} and greater engaged on occasional voyages beyond Sea Area A1 but remaining within sea area A2 shall be provided with:

- (a) an MF radio installation capable of transmitting and receiving, for distress and safety purposes, on the frequencies:
 - (i) 2187.5 kHz (assigned frequency) using DSC; and
 - (ii) 2182 kHz using radiotelephony;
- (b) a radio installation capable of maintaining a continuous DSC watch on the frequency 2187.5 kHz (assigned frequency) which may be separate from, or combined with, that required by subparagraph (a)(i);
- (c) a portable VHF radiotelephone which shall:
 - (i) be waterproof, and capable of transmitting and receiving radiotelephony on the frequencies 156.300 MHz (Channel 6), 156.650 MHz (Channel 13) and 156.800 MHz (Channel 16);
 - (ii) be located in a readily accessible position in the wheelhouse; and
 - (iii) have a fully charged power pack available at all times while the vessel is at sea.

9.7 Radio Watches.

- 9.7.1 Every vessel while at sea shall maintain a continuous watch:
- (i) on VHF channel 16;
 - (ii) on VHF DSC channel 70, if the vessel is fitted with a VHF DSC installation.
 - (iii) on the distress and safety DSC frequency 2187.5 kHz (assigned frequency), if the vessel is fitted with an MF DSC radio installation
- 9.7.2 Every vessel, while at sea, shall maintain a radio watch for broadcasts of maritime safety information on the appropriate frequency or frequencies on which such information is broadcast for the area in which the vessel is navigating.

9.8 Sources of energy.

- 9.8.1 There shall be available at all times, while the vessel is at sea, a supply of electrical energy sufficient to operate the radio installations and to charge any batteries used as part of a reserve source or sources of energy for the radio installations.
- 9.8.2 A reserve source or sources of energy shall be provided on every vessel complying with the provisions of 9.5, to supply radio installations, for the purpose of conducting distress and safety radiocommunications, in the event of failure of the vessel's main source of electrical power. The reserve source or sources of energy shall be capable of simultaneously operating the VHF radio installation required by 9.5, and any of the additional loads mentioned in 9.6 for a period of at least six hours.
- 9.8.3 The reserve source or sources of energy shall be independent of the propelling power of the vessel and the vessel's electrical system.
- The reserve source or sources of energy may be used to supply the electrical lighting required by Regulation 9.4.2(e).
- 9.8.4 Where a reserve source of energy consists of a rechargeable accumulator battery or batteries:
- (a) a means of automatically charging such batteries shall be provided which shall be capable of recharging them to minimum capacity requirements within 10 hours; and
 - (b) the capacity of the battery or batteries shall be checked, using an appropriate method, at intervals not exceeding 12 months, when the vessel is not at sea
- 9.8.5 The siting and installation of accumulator batteries which provide a reserve source of energy shall be such as to ensure:
- (a) the highest degree of service;
 - (b) a reasonable lifetime;
 - (c) reasonable safety;
 - (d) that battery temperatures remain within the manufacturer's specifications whether under charge or idle;
 - (e) that when fully charged, the batteries will provide at least the minimum required hours of operation under all weather conditions; and
 - (f) that the batteries are situated in the upper part of the vessel.

- 9.8.6 If an uninterrupted input of information from the vessel's navigational or other equipment to a radio installation required by the Radio Regulations is needed to ensure its proper performance, means shall be provided to ensure the continuous supply of such information in the event of failure of the vessel's main or emergency source of electrical power.
- 9.8.7 For the purpose of calculating the required capacity of the reserve source or sources of energy, the following formula is recommended for determining the electrical load to be supplied by the reserve source or sources of energy for each radio installation required for distress conditions:
- $\frac{1}{2}$ of the current consumption necessary for transmission + the current consumption necessary for reception + the current consumption of any additional loads.

9.9 Performance standards.

- 9.9.1 Equipment required to be provided under the Radio Regulations shall conform to appropriate performance specifications issued by the Commission for Communications Regulation, and the references to those specifications shall be deemed to include references to any specifications set out in any document amending the same which is considered by the Commission to be relevant from time to time.

9.10 Serviceability and maintenance requirements.

- 9.10.1 Equipment shall be so designed that the main units can be replaced readily, without elaborate recalibration or readjustment.
- 9.10.2 Where applicable, equipment shall be so constructed and installed that is readily accessible for inspection and on-board maintenance purposes.
- 9.10.3 Adequate information shall be provided to enable the equipment to be properly operated and maintained.
- 9.10.4 On every fishing vessel of 12 m L_{oa} and greater, a member of the crew, nominated by the Skipper shall, while the vessel is at sea, carry out the appropriate tests and checks specified in Annex 3. If any of the radio installations required by the Radio Regulations is not in a working order, the Skipper shall be informed and the details recorded in the Radio Log.

9.11 Radio personnel.

- 9.11.1 Every vessel shall carry personnel qualified for distress and safety radio communication purposes as specified in paragraphs 9.11.2, 9.11.3 and 9.11.4.
- 9.11.2 In the case of fishing vessels complying with the requirements of 9.4.1, the personnel shall be holders of at least the Restricted Certificate of Competency in Radiotelephony (VHF) granted by the Commission for Communications Regulation, or an equivalent certificate recognised by the Commission for Communications Regulation as being equivalent, and be the holders of an authorisation granted by the Commission for Communications Regulation to operate a radio station established in a vessel under a licence granted by the said Commission.

- 9.11.3 In the case of fishing vessels complying with the requirements of 9.5.2, the personnel shall be holders of at least the Radio Operator's Short Range Certificate granted by the Commission for Communications Regulation, or an equivalent certificate recognised by the Commission as being equivalent, and be the holders of an authorisation granted by the Commission for Communications Regulation to operate a radio station established in a vessel under a licence granted by the said Commission.
- 9.11.4 In the case of fishing vessels complying with the additional requirements of 9.6.1 and 9.6.2, the personnel shall be holders of at least the Radio Operator's Long Range Certificate granted by the Commission for Communications Regulation, or an equivalent certificate recognised by the Commission for Communications Regulation as being equivalent, and be the holders of an authorisation granted by the Commission for Communications Regulation to operate a radio station established in a vessel under a licence granted by the said Commission.

9.12 Radio records.

On every fishing vessel of 12 m L_{oa} and greater, a record shall be kept, as specified in Annex 4, and as required by the Radio Regulations, of all incidents connected with the radiocommunication service which appear to be of importance to safety of life at sea.

Chapter 10 Navigation Equipment, Lights, Shapes & Sound Signals

This chapter applies to all vessels, both new and existing.

10.1 Navigation Equipment

- 10.1.1 All vessels must carry a magnetic compass to provide an accurate course setting. The compass shall be properly adjusted and its table or curve of residual deviations shall be available at all times.
- 10.1.2 All vessels should carry an efficient echo sounder.
- 10.1.3 The visibility from the wheelhouse should be adequate both ahead and astern.

10.2 Navigation Lights - General

- 10.2.1 All fishing vessels must comply with the International Regulations for Preventing Collisions at Sea which are laid down in the Collision Regulations (Ships And Water Craft On The Water) Order, 1984 as amended.
- 10.2.2 Vessels, which operate only during daylight hours and in good visibility, are not required to carry navigation lights. However, failure to exhibit navigation lights while underway between sunset and sunrise or in restricted visibility would be in contravention of the Regulations.

10.3 Steaming Lights

- | 10.3.1 | <u>less than 12 m L_{oa}</u> | <u>12 m or more L_{oa}</u> |
|-------------------|--------------------------------------|------------------------------------|
| | Visibility | Visibility |
| 1 Masthead light | 2 miles | 3 miles |
| 1 Starboard light | 1 mile | 2 miles |
| 1 Port light | 1 mile | 2 miles |
| 1 Stern light | 2 miles | 2 miles |
- 10.3.2 A power-driven vessel of less than 12 metres L_{oa} may, in lieu of the above lights, exhibit an all-round white light and sidelights.
 - 10.3.3 A power-driven vessel of less than 7 metres L_{oa} with a maximum speed not exceeding 7 knots may, in lieu of the above requirements, exhibit an all-round white light of visibility 2 miles and, if practicable, side lights.

10.4 Fishing Lights

10.4.1 Trawlers

One all-round green light over one all-round white light, one metre apart; both with a range of visibility of two miles.

10.4.2 Vessels other than trawlers

One all-round red light over one all-round white light, one metre apart; both with visibility 2 miles.

10.5 Additional Fishing Light

Where there is outlying gear extending more than 150 metres horizontally from the vessel, one all-round white light must be exhibited in the direction of the gear. The light must be visible for at least 2 miles.

10.6 Anchor Light

When at anchor, an all-round white light must be shown where it can best be seen. The light must be visible for at least 2 miles.

10.7 Position of Lights

10.7.1 The masthead light of vessels 12 metres or more L_{oa} must be exhibited not less than 2.5 metres above the gunwale. However, on vessels less than 12 metres L_{oa} the mastlight may be carried less than 2.5 metres above the gunwale, providing there is at least one metre between the sidelights and the mast light.

10.7.2 The lower of the two all-round fishing lights shall be at a height above the sidelights not less than twice the distance between the vertical lights. Sidelights must be positioned above the gunwale so as not to be so low as to be interfered with by deck lights. The stern light must be positioned where it can be clearly seen.

10.7.3 Where an additional all-round white light is fitted to indicate the direction of outlying fishing gear, it must be shown at a horizontal distance of not less than 2 metres and not more than 6 metres away from the all-round red and white lights. It must be vertically displayed not higher than the all-round white light, and above the sidelights.

10.8 Day Signals

10.8.1 Fishing Signal - Two Black Cones with Apexes together or a basket..

Anchor Signal - Single Black Ball

10.8.2 Where the outlying fishing gear extends more than 150 metres horizontally from the vessel, an additional black cone must be displayed, apex upwards, in the direction of the gear.

10.8.3 The size of the shapes must be commensurate with the size of the vessel.

10.8.4 The shapes and signals must be shown only when the vessel is engaged in fishing and at no other time. It is a contravention of the Collision Regulations to display these signals when not engaged in fishing.

10.9 Sound Signals

All vessels must be provided with the means of making an efficient sound signal. Vessels of 12 metres or more L_{oa} must be provided with an approved whistle with a frequency between 250 and 700 Hz which is audible for a distance of 0.5 nautical miles, and a bell with a diameter of at least 200mm.

10.10 Charts and Nautical Publications

- 10.10.1 Fishermen should be aware of the contents of important, 'fishing related' Marine Notices, which are a source of valuable safety advice. Copies of individual Notices are available from the Maritime Safety Directorate website at <http://www.dcmnr.gov.ie/Home/Marine/>, the Maritime Safety Directorate at the Department of Communications, Marine and Natural Resources head office and from Mercantile Marine Offices.
- 10.10.2 Vessels operating beyond 5 miles from a safe haven must carry up to date navigational charts and, as appropriate, tide tables and a list of the International Code of Signals. All other vessels should also carry the foregoing items.

10.11 Signalling Lamp

All vessels should be provided with an efficient signalling lamp or waterproof torch suitable for Morse signalling.

10.12 Radar Reflector

All vessels should carry a radar reflector.

10.13 Search Light

Where electrical power supply is provided, and where practicable, all vessels of 7 m L_{oa} and over should carry an efficient fixed and/or portable searchlight suitable for use in man overboard search and recovery operations.

Chapter 11 Accommodation and Working Spaces

This chapter applies to existing vessels only. Requirements for new vessels are contained in Annex 7.

11.1 General

- 11.1.1 The provisions within this chapter, except for those referred to in 11.1.2, represent *recommendations* owners may wish to use for guidance when optionally up-grading their vessels.
- 11.1.2 The following provisions which are safety-related - *flooding danger where a toilet is fitted (11.6), escapes (11.7), safety ventilation (11.8) and lighting (11.10)* - **must be complied with**, taking into account the size of the vessel and range of operation.
- 11.1.3 Accommodation and working spaces should be kept clear and, as far as possible, protected from the sea and provide adequate protection for crew against falls on the vessel or falling overboard.

11.2 Living Quarters

The location, construction and insulation should provide protection against the sea, weather and excessive heat or cold.

11.3 Sleeping Accommodation

In vessels intended to be at sea regularly for more than 24 hours, a sufficient number of bunks should be provided on board.

11.4 Food Preparation

Means for cooking and for supplying hot water should be provided, together with adequate space for the preparation and storage of food. Sufficient ventilation should be provided.

11.5 Messing Arrangements

Where space permits, facilities should be provided to permit the crew to rest and eat when not working.

11.6 Toilet Facilities

- 11.6.1 Any toilet which discharges through the side of the vessel must be of an approved commercial marine standard design and quality with inlet and discharge pipe connections complying with 2.17.3 and 2.17.4.
- 11.6.2 When the rim of the toilet is either below, or less than 300 mm above, the deepest waterline of the vessel, anti-siphon measures must be provided.

11.7 Access and Escape Arrangements

- 11.7.1 Routes and exits, which can be used as emergency escape routes, must be unobstructed, easily accessible and lead out as directly as possible to the open deck.
- 11.7.2 All accommodation and work spaces must normally be provided with an escape which may be through any hatch, door, window or portlight which must have minimum clear opening of 500 mm x 380 mm. The adequacy of escapes must be functionally tested.

- 11.7.3 Emergency hatches or doors must be capable of easy opening from both the inside and the outside without the use of keys or tools. The use of a loose handle, hammer or special device kept in a central position such as the wheelhouse will be accepted. Emergency exits must not be fitted with padlocks when the vessel is occupied.
- 11.7.4 Where emergency routes pass through other spaces, the doors or hatches serving those spaces must not be capable of being locked unless kick panels or other suitable alternative arrangements are provided. In all of these cases escape routes and exits must be indicated by appropriate permanent signs and be illuminated. (See 11.10.2.)
- 11.7.5 In sleeping accommodation efficient smoke detectors must be provided as necessary to give early warning of a fire emergency, which could cut off escape from a space.
- 11.7.6 Ladders, steps and handgrips etc necessary for escape must be fitted.

11.8 Ventilation

- 11.8.1 Effective means of ventilation must be provided to enclosed spaces, which under normal operating conditions may be entered by persons on board. This is particularly important in sleeping accommodation. In this context it is considered that the hatch will effectively ventilate fish holds.
- 11.8.2 Mechanical ventilation may be required for safety reasons in accommodation spaces, which are situated completely below the level of the weather deck. As far as practicable, such ventilation arrangements must be designed to provide at least 6 changes of air per hour when the access openings to the spaces are closed. (see 5.1.4.2 and 5.1.4.3 - L.P.G. installations)
- 11.8.3 Sanitary spaces should be provided with separate exhausts to the open air.

11.9 Water Services

An adequate supply of cold fresh water, including drinking water, should be provided.

11.10 Lighting

- 11.10.1 An electric lighting system must be installed which is capable of supplying adequate light to all enclosed accommodation and working spaces.
- 11.10.2 Adequate lighting must be provided to illuminate escape routes and life-saving appliance stowage positions. Waterproof torches, appropriately located, will be considered to meet this requirement.

11.11 Temperature

The temperature within accommodation spaces and enclosed work areas should be kept within a comfortable range having regard to the physical demands placed on the crew and the actual or potential weather conditions in the area in which the vessel operates.

11.12 Hand Holds and Grab-rails

Sufficient handholds should be provided to allow safe movement around the accommodation and working spaces when the vessel is in a seaway.

ANNEX 1

Determination of vessel's stability by means of rolling period tests

1. The IMO, recognizing the desirability of supplying to masters of small vessels instructions for a simplified determination of initial stability, developed a standard for the performance of rolling period tests. It was concluded that the rolling period test was a useful means of approximately determining the initial stability of small vessels when it is not practicable to give approved loading conditions or other stability information, or as a supplement to such information. Accordingly, the IMO incorporated this guidance in Annex 3 of the *Code on intact stability for all types of ships covered by IMO instruments*. The following duplicates this guidance in a form appropriate to small fishing vessels.
2. Investigations comprising the evaluation of a number of inclining and rolling tests according to various formulae showed that the following formula gave the best results and has the advantage of being the simplest:

$$GM_0 = \left\{ \frac{f \cdot B}{T_r} \right\}^2$$

where:

- f = factor for the rolling period (rolling coefficient) as given in paragraph 4;
 - B = breadth of the vessel in metres;
 - T_r = time for a full rolling period in seconds (i.e. for one oscillation "to and fro" port - starboard - port, or vice versa).
3. The factor f is of the greatest importance and the data from the above tests were used for assessing the influence of the distribution of the various masses in the whole body of the loaded vessel.
 4. For fishing vessels, the following average values were observed:

	f values (approximate) ¹
Double-boom shrimp fishing boats	0.95
Deep-sea fishing boats	0.80
Boats with a live fish well	0.60

5. The tabulated f values were based upon a series of limited tests and therefore it is recommended that Administrations should re-examine these values in the light of any different circumstances applying to their own vessels. It would be of advantage to Administrations to collect and analyse information on the stability and f values of vessels within their own jurisdictions in order to reflect accurately the application of stability criteria obtained from rolling tests to typical vessel types.
6. It should be noted that the greater the distance of masses from the rolling axis, the greater the rolling coefficient will be. Therefore it can be expected that:
 - (a) the rolling coefficient for an unloaded vessel will be higher than that for a loaded vessel and
 - (b) the rolling coefficient for a vessel carrying a great amount of bunkers and ballast - both groups are usually located in the double bottom, i.e. far away from the rolling axis - will be higher than that of the same vessel having an empty double bottom.

¹ The stated values are mean values. Generally, f values observed during the tests were within ± 0.05 of those given above.

7. The above recommended rolling coefficients were determined by tests with vessels in port and with their consumable liquids at normal working levels; thus, the influences exerted by the vicinity of the quay, the limited depth of water and the free surfaces of liquids in service tanks are included.
8. Experiments have shown that the results of the rolling test method get increasingly less reliable the nearer they approach GM values of 0.20 m and below.
9. For the following reasons, it is not generally recommended that results be obtained from rolling oscillations taken in a seaway:
 - (a) exact coefficients for tests in open waters are not available;
 - (b) the rolling periods observed may not be free oscillations but forced oscillations due to the seaway;
 - (c) frequently, oscillations are either irregular or only regular for too short an interval of time to allow accurate measurements to be observed; and
 - (d) specialised recording equipment is necessary.
10. However, sometimes it may be desirable to use the vessel's period of roll as a means of approximately judging the stability at sea. If this is done, care should be taken to discard readings, which depart appreciably from the majority of other observations. Forced oscillations corresponding to the sea period and differing from the natural period at which the vessel seems to move should be disregarded. In order to obtain satisfactory results, it may be necessary to select intervals when the sea action is least violent and it may be necessary to discard a considerable number of observations.
11. In view of the foregoing circumstances, it needs to be recognized that the determination of the stability by means of the rolling test in a seaway should only be regarded as a very approximate estimation.
12. The formula given in paragraph 2 can be reduced to:

$$GM_0 = \frac{F}{T_r^2}$$

and the Administration should determine the F value(s) for each vessel.

13. The determination of the stability can be simplified by giving the master permissible rolling periods, in relation to the draughts, for the appropriate value(s) of F considered necessary.
14. The initial stability may also be more easily determined graphically by using the sample nomogram (fig.1) as described below:
 - (a) The values for B and f are marked in the relevant scales and connected by a straight line (1). This straight line intersects the vertical line mm at the point M.
 - (b) A second straight line (2) which connects this point M and the point on the T_r scale corresponding with the determined rolling period intersects the GM scale at the requested value.
15. The following section shows an example of a recommended form in which these instructions might be presented by the Administration to the masters. Each Administration should recommend the F value or values to be used on the basis of its own experience.

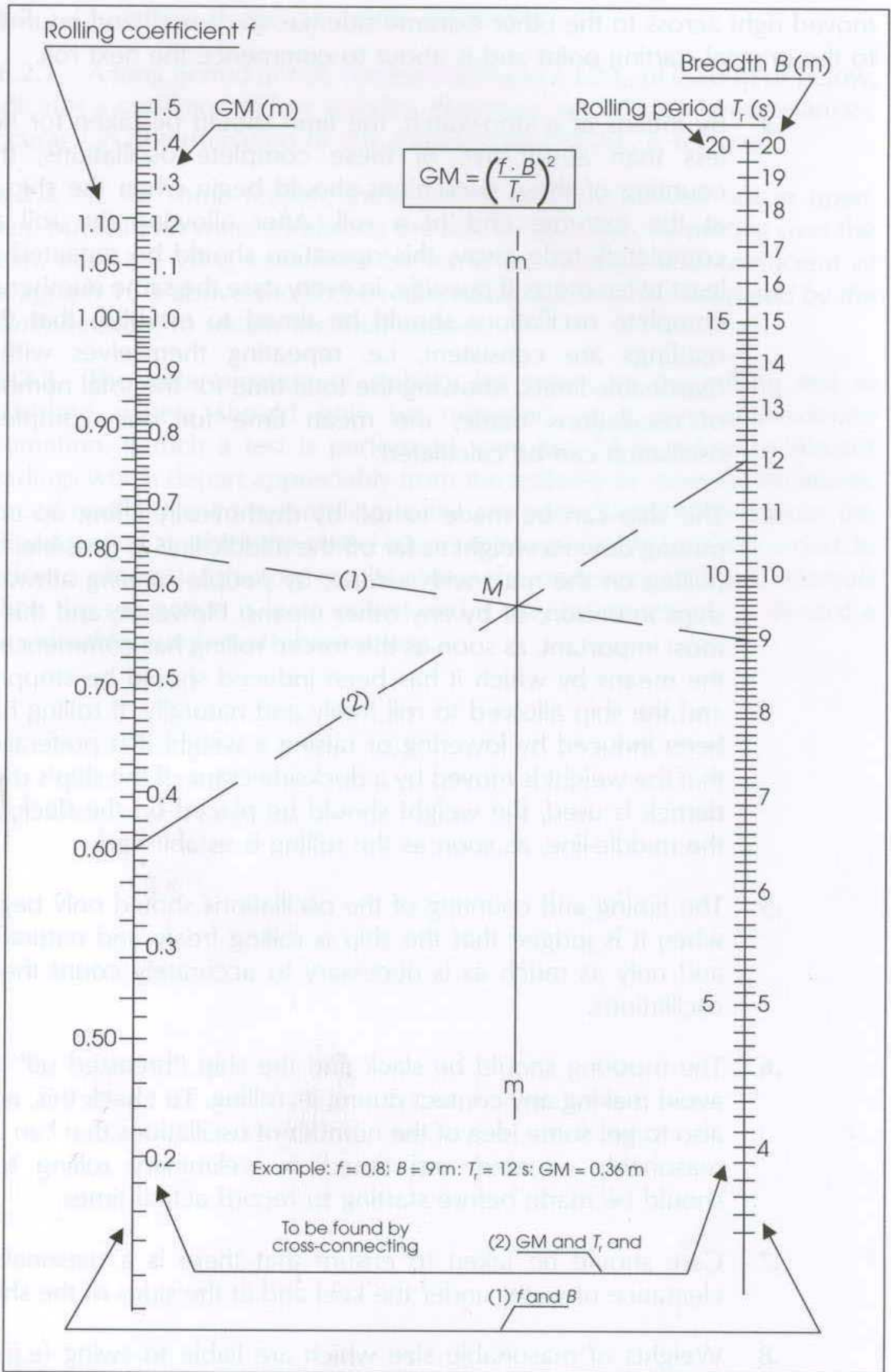


Fig.1

Recommendations on procedures for the conduct of rolling tests

1. The rolling period required is the time for one complete oscillation of the vessel and to ensure the most accurate results in obtaining this value the following precautions should be observed.
 - 1.1 The test should be conducted with the vessel in harbour, in smooth water with the minimum interference from the wind and tide.
 - 1.2 Starting with the vessel at the extreme end of a roll to one side (say port) and the vessel about to move towards the upright, one complete oscillation will have been made when the vessel has moved right across to the other extreme side (i.e. starboard) and returned to the original starting point and is about to commence the next roll.
 - 1.3 By means of a stop-watch, the time should be taken for not less than about five complete oscillations. Counting of the oscillations should begin when the vessel is at the extreme end of a roll. After allowing the roll to completely fade away, this operation should be repeated at least twice more. If possible, in every case the same number of complete oscillations should be timed to establish that the readings are consistent, i.e. repeating themselves within reasonable limits. Knowing the total time for the total number of oscillations made, the mean time for one complete oscillation can be calculated.
 - 1.4 The vessel can be made to roll by rhythmically lifting up and putting down a weight as far off the centreline as possible; by pulling on the mast with a rope; by people running athwartships in unison; or by any other means. However, and this is most important, as soon as this forced rolling has commenced, the means by which it has been induced should be stopped and the vessel allowed to roll freely and naturally. If rolling has been induced by lowering or raising a weight it is preferable that the weight is moved by a dockside crane. If the vessel's own derrick is used, the weight should be placed on the deck, at the centreline, as soon as the rolling is established.
 - 1.5 The timing and counting of the oscillations should only begin when it is judged that the vessel is rolling freely and naturally, and only as much as is necessary to accurately count these oscillations.
 - 1.6 The mooring should be slack and the vessel breasted off to avoid making any contact with the wharf or any other structure during its rolling. To check this, and also to get some idea of the number of oscillations that can be reasonably counted and timed, a preliminary rolling test should be made before starting to record actual times.
 - 1.7 Care should be taken to ensure that there is a reasonable clearance of water under the keel and at the sides of the vessel.
 - 1.8 Weights of reasonable size which are liable to swing (e.g. a lifeboat), or liable to move (e.g. a drum), should be secured against such movement. The free surface effects of slack tanks should be kept as small as is practicable during the test.

2. *Limitations on the use of this method*

- 2.1 A long period of roll, corresponding to a GM_0 of 0.20 m or below, indicates a condition of low stability. However, under such circumstances, accuracy in determination of the actual value of GM_0 is reduced.
- 2.2 If, for some reason, these rolling tests are carried out in open, deep but smooth waters, inducing the roll, for example, by putting over the helm, then the GM_0 calculated by using the method and coefficient of paragraph 1 above should be reduced by a figure to be estimated by the Administration to obtain the final answer.
- 2.3 The determination of stability by means of the rolling test in disturbed waters should only be

regarded as a very approximate estimation. If such a test is performed, care should be taken to discard readings, which depart appreciably from the majority of other observations. Forced oscillations corresponding to the sea period and differing from the natural period at which the vessel seems to move should be disregarded. In order to obtain satisfactory results, it may be necessary to select intervals when the sea action is least violent and it may be necessary to discard a considerable number of observations.

ANNEX 2

Guidance on Capsize Safety

1 Actions in Port

It is important to ensure that the vessel is in as near an upright position as practicable prior to departure.

2 Reducing Top Weight

- 2.1 It is prudent to identify any items fitted or stowed high on the vessel which are redundant and therefore can be removed ashore. Anything, which can be moved, should be stowed somewhere lower.
- 2.2 “High” in this context means above main deck or thwart level. Pay particular attention to masts and gantries, and deckhouse tops and contents -particularly in the case of spare fishing gear which can be heavy.
- 2.3 Removing top weight ashore always has two beneficial effects. The first is to increase freeboard, thus helping to protect against shipping water and increasing the range of positive stability. It also lowers the centre of gravity, increasing both upright statical stability, and its positive range. This is particularly important for open boats.

3 Vessel Modifications

- 3.1 Never fit any ballast to a vessel, in an attempt to improve statical stability, without professional advice from a fully qualified naval architect. This is because one effect of adding ballast is to reduce freeboard. Its effect on stability is therefore uncertain without proper investigation.
- 3.2 If a vessel regularly rolls too quickly, or alternatively to unusually large angles in a seaway, investigate fitting or increasing the area of bilge keels (rolling chocks), but take special care with their attachment to the hull.
- 3.3 If heavy items can be positioned, at the same height, either on the centreline or equally distributed at the boat’s sides, then rolling will normally be reduced with such items at the sides.
- 3.4 Measures to limit roll are particularly important for open boats, or those of low freeboard, to limit the potential for shipping water and swamping.
- 3.5 Never remove any ballast in an attempt to improve the rolling behaviour of a stiff vessel (that is a boat with high initial stability, and therefore a short roll period), without the express professional advice of a fully qualified naval architect.
- 3.6 Investigate the possibilities for increasing reserve buoyancy; both to limit the chance of capsizing for decked vessels, and to increase the survivability of open boats in the event of swamping.

4 Actions at Sea

4.1 Watertight Integrity

- 4.1.1 Whenever practicable, especially during bad weather or when undertaking fishing operations, care should be taken to maintain watertight integrity. For instance, it is prudent to close and secure hatch covers, companionways etc., and to keep wheelhouse doors and windows closed whenever possible. Any hatch required to be opened at sea should be opened for as short a time as practicable. However, vessel operators should take care not

to close ventilators to engine compartments or accommodation spaces except when necessary in emergency situations.

4.2 Freeing Ports

- 4.2.1 Operators of decked vessels must ensure that freeing ports are of adequate dimensions and are correctly positioned so that they drain any water from the deck quickly and effectively. If fitted with flaps or slides, these should be regularly maintained and lubricated, and secured open at sea, if appropriate. Chapter 2 gives technical advice on this subject.
- 4.2.2 Care should be taken to ensure that freeing ports are not obstructed by fishing gear, catch, etc., and that deck pound arrangements do not have the potential to trap water on deck.

4.3 Stowage

- 4.3.1 As little equipment as possible should be stowed at any time on the deck or in any other high location, i.e. in deckhouses, forecastles, etc.
- 4.3.2 Where practicable, on decked boats, spare fishing gear, fuel, water, ice and boxes - should be securely stowed below deck, as should the catch, as soon as possible after taking it on board.
- 4.3.3 All stowage must be secure. Care should be taken that fishing gear, catch, ice or boxes, cannot shift as a result of vessel motion.

4.4 Vessel Operation

- 4.4.1 When working with gear such as trawls or dredges, arrange the towing blocks or other attachment to the vessel, as low as possible and near to the centreline.
- 4.4.2 If towed gear comes fast on a seabed or other obstruction - reduce engine power immediately.
- 4.4.3 If possible, handle heavy lifts, such as those generated by fastened fishing gear, near the vessel's centreline at bow or stern.
- 4.4.4 Remember that the lives of the crew and the vessel are always more valuable than fishing gear or lost time. If in any doubt, run off or cut-away fastened gear, buoy off, and return later with assistance for retrieval.
- 4.4.5 Do not lift pots (creels), nets, cod ends, etc. from unnecessarily high points, as any suspended load acts from the point of suspension.
- 4.4.6 It is advisable to avoid operating a vessel with a list.

ANNEX 3

Radio Equipment Tests And Reserve Power Checks

1. Daily

- (a) The proper functioning of the DSC facilities shall be tested at least once daily without radiation of signals, by use of the means provided by the equipment.
- (b) Batteries providing a source of energy for any part of the radio installations shall be tested daily and, where necessary, brought up to the fully charged condition.
- (c) Where the reserve source of energy is not a battery (for example, a motor generator), the reserve source of energy shall be tested daily.

2. Weekly

The proper operation of the DSC facilities shall be tested at least once each week by means of a test call, when within communication range of a coast radio station fitted with DSC equipment. Where a ship has been out of communication range of a coast radio station fitted with DSC equipment for a period of longer than one week, a test call shall be made on the first occasion that the ship is within communication range of such a coast radio station.

3. Monthly

- (a) Each EPIRB and satellite EPIRB shall be tested at least once each month to determine its capability to operate properly using the means provided on the device and without using the satellite system.
- (b) Each search and rescue radar transponder shall be checked at least once each month for security and signs of damage.
- (c) Each survival craft two-way VHF equipment shall be tested at least once each month on a frequency other than 156.800 MHz (VHF channel 16)
- (d) A check shall be made at least once each month on the security and condition of all batteries providing a source of energy for any part of a radio installation. The battery connections and compartment shall also be checked.

ANNEX 4

Radio Log

The following shall be recorded in the Radio Log :

- (a) the time and source of each communication relating to distress, urgency and safety traffic and a summary of its contents,
 - (b) the occurrence and time of important service incidents,
 - (c) the position of the ship at, at least, one given time each day,
- and the recording shall be made as soon as may be after the event concerned.

ANNEX 5

Anchors and Cables -Table or Requirements

LxBxD	Total weight of Anchors (kg)	Number of Anchors	Length of cable(m)		Diameter of chain (mm)	Diameter of rope (mm)
			Minimum Chain (m)	Total Length (m)		
10	9	1	4	25	5	10
15	12	1	5	30	5	12
20	14	1	6	30	6	15
25	17	1	7	35	6	15
35	20	1	8	35	8	18
50	24	1	9	40	8	18
70	29	2	10	45	8	20
90	33	2	12	50	10	20
110	36	2	15	55	10	25
150	42	2	20	60	10	25
200	48	2	25	65	12	30
250	54	2	30	70	12	35
300	60	2	35	75	12	40
350	65	2	40	80	12	40

Notes

- (i) L = Length overall in metres
 B = Beam in Metres (Maximum -Outside planking or plating)
 D = Depth in Metres (Maximum -Deck at side to top of keel)

Example:

GRP Potter:- L = 11.34 m; Beam = 4.08 m; Depth = 2.12 m

$11.34 \times 4.08 \times 2.12 = 98.08$;

therefore using Table, requirement is Total anchor weight of 34 kg (1 anchor 20 kg and 1 anchor 14 kg).

Minimum length of anchor chain 15 metres of 10 mm dia, plus 38 metres of 25 mm dia nylon rope. Length of anchor cable is subject to depth of water.

- (ii) Chain cable diameter is given for short link chain. Chain cable should be sized in accordance with EN 24/565:1989 (Covering I.S.O. 4565:1986 and covered by BS 7160:1990. Anchor chains for Small Craft) or equivalent.
- (iii) The rope diameter given is for nylon construction, when rope of differing construction is provided, the breaking load should not be less than that of the nylon rope specified in the table.
- (iv) Where stud link chain cable is used, the diameter may be 1.5 mm less than the tabular diameter stated

ANNEX 6

Medicines and Medical Equipment

Medicines

Regulation 3 Minimum Quantities

Code		Category B	Category C
1.	Cardiovascular		
1.1.2	Adrenaline 1mg ampule for injection	1	0
1.2.1	Glyceryl trinitrate sublingual 0.5mg tablets or sublingual spray 0.4mg/metered dose	20 1	10 1
1.3.1	Frusemide 20mg	5	0
1.4.2	Phytomenadione 2mg/ml x 0.5ml ampule (if women on board)	1	1
1.4.11	Ergometrine maleate 0.5mg injection, oxytocin 5 units/ml 1ml ampule (if women on board)	1	1
2.	Gastrointestinal System		
2.1.2	Aluminium hydroxide 400mg (minimum content) tablets	5	0
2.2.3	Metoclopramide hydrochloride 10mg ampule (IM)	1	0
2.2.4	Prochlorperazine 3mg buccal tablets	15	10
2.4.1	Loperamide hydrochloride 2mg	5	3
2.6.3	Bismuth oxide anti-haemorrhoidal suppositories or preparation tube	6 1	0 0
3.	Analgesics and Anti-spasmolytics		
3.1.3	Aspirin 300mg (minimum content)	20	5
3.3.2	Diclofenac sodium 100mg suppository	2	0
3.5.1	Hyoscine butylbromide 10mg	8	0
4.	Nervous System		
4.1.1	Diazepam 2mg	5	0
4.1.2	Diazepam rectal dispenser 10mg	2	0
4.2.3	Chlorpromazine hydrochloride 25mg/ml x 2ml ampule injection	2	0
4.2.4	Chlorpromazine hydrochloride 25mg	10	0
4.3.3	Cinnarizine 15mg	15	5
5.	Anti-allergies and Anti-anaphylactics		
5.1.1	Terfenadine 60mg	5	0
5.2.2	Hydrocortisone 100mg ampule (IM)	1	0
6.	Respiratory System		
6.1.2	Salbutamol inhaler 0.1mg metered dose x 200 doses	1	0
6.2.1	Dextromethorphan hydrobromide 7.5mg/5mls (minimum concentration)	100 mls	0
6.3.2	Pseudoephedrine hydrochloride 60mg (or 60mg/10mls)	5	0

Code		Category B	Category C
7.	Anti-infection		
7.1.1	Amoxycillin 250mg	12	0
7.1.6	Erythromycin 250mg	12	0
7.2.2	Trimethoprim 100mg	12	0
7.4.1	Metronidazole 400mg	10	0
7.6.1	Tetanus toxoid vaccine 0.5ml (IM)	1	0
7.6.2	Anti-tetanus immunoglobulin injection 250 units (IM)	1	0
7.7.0	Water for injection 2mls	4	0
8.	Compounds Promoting Rehydration, Caloric Intake and Plasma Expansion		
8.1.1	Oral rehydration salts containing at least glucose 90mmol/L, sodium 35mmol/L, potassium 20mmol/L when diluted in 1 litre of water	1	0
9.	Medicines for External Use		
9.1	Skin Medicines		
9.1.3	Chlorhexidine gluconate (minimum concentration 0.05%) (minimum volume 12mls)	2	1
9.1.13	Silver sulphadiazine 1% x 25g (minimum amount)	1	1
9.1.20	Hydrocortisone ointment 1%x 15g	1	0
9.2	Eye Medicines		
9.2.3	Amethocaine 0.5% eyedrops (0.5mls)	1	0
9.2.4	Pilocarpine 1% eye drops (0.5mls)	1	0
9.2.6	Chloramphenicol eye drops 0.5% 10mls	1	0
9.2.7	Dexamethasone 0.05%, Framycetin sulphate 0.5%, 5mls drops	1	0
9.3	Ear Medicines		
9.2.7	Dexamethasone 0.05%, Framycetin sulphate 0.5%, 5mls drops	1	0
9.4	Medicines for Oral and Throat Infections		
9.1.3	Chlorhexidine gluconate (minimum concentration 0.05%) (minimum volume 12mls)	2	1
9.5	Local Anaesthetics		
9.5.2	Lignocaine hydrochloride injection 2%, 2mls ampule	2	0
9.5.4	Oil of clove 10mls	1	0

Medical Equipment

		Minimum Quantities	
Code		Category B	Category C
E.1.	Resuscitation Equipment		
E.1.1	Manual resuscitation device i.e. bag and mask	1	0
E.1.2	Oxygen container/concentrator or pressure reducing valve if ship's oxygen can be used	1	0
E.1.3	Aspirator to clear upper airway	1	0
E.1.4	Mouth to mouth resuscitator device (Brook's airway or Laerdal facemask)	1	1
E.2.	Dressing and Suturing Equipment		
E.2.1	Suture stapler or suturing needle and thread	1	0
E.2.2	Adhesive elastic bandage (1.25cm x 1m)	1	1
E.2.5	Sterile gauze compresses (90cm x 1 metre)	2	1
E.2.6	Cotton wool 15gm	1	0
E.2.7	Sterile sheet for bums victim	1	0
E.2.8	Triangular sling (90cm x 90cm x 127cm)	1	0
E.2.9	Disposable polyethylene gloves (pair)	1	1
E.2.9.1	Adhesive elastic dressings (i.e. plasters)	10	5
E.2.9.2	Sterile compression bandages (10cm x 3m)	1	1
E.2.9.3	Adhesive sutures or zinc oxide bandages	4	4
E.2.9.5	Paraffin gauze (10cm x 10cm)	5	0
E.3.	Instruments		
E.3.2	Stainless steel instrument box	1	0
E.3.3	Scissors	1	0
E.3.4	Dissecting forceps	1	0
E.3.5	Haemostatic clamps	1	0
E.4.	Examination and Monitoring Equipment		
E.4.1	Disposable tongue depressors	2	0
E.4.4	Medical evaluation sheets	2	0
E.4.5	Stethoscope	1	0
E.4.6	Aneroid sphygmomanometer	1	0
E.4.7	Standard medical thermometer	1	0
E.4.8	Hypothermic thermometer	1	0
E.5.	Equipment for Injection, Perfusion, Puncture and Catheterisation		
E.5.5	Disposable syringes (2ml, 5ml, 10ml) and needles	3	0
E.5.7	Pre-injection swabs with isopropyl alcohol bp	10	0
7.	Immobilisation and Setting Equipment		
E.7.1	Malleable finger splint	1	0
E.7.2	Malleable forearm and hand splint	1	0
E.7.3	Inflatable splint or vacuum splint	1	0
E.7.4	Thigh splint	1	0
E.7.5	Collar for neck immobilisation	1	0

GUIDES TO THE USE OF THE MEDICINES, MEDICAL EQUIPMENT AND ANTIDOTES

Category of vessel	Guide or guides required for category of vessel
B.	Either of the following guides- (1) Ship's Captain's Medical Guide published by HMSO, or (2) International Medical Guide for Ships published by the World Health Organisation
C.	The Department of Communications, Marine and Natural Resources (in conjunction with the Health and Safety Authority) guide to medical supplies for category C vessels and one of the following First Aid at Sea, published by International Log Book, or First Aid Manual published by St. John's Ambulance .

ANNEX 7

NEW VESSEL CONSTRUCTION

1 Foreword

- 1.1 This Annex to the Code relates to the construction of new Irish fishing vessels less than 15 metres length overall which go to sea to fish for profit. In addition to the requirements of construction rules issued by a recognised classification society, BIM, the UK Sea Fish Industry Authority, the Nordic Boat Standard or other such rules acceptable to the Maritime Safety Directorate, such vessels must comply with the following provisions.
- 1.2 Recognised classification societies are:
- American Bureau of Shipping
 - Bureau Veritas
 - Det Norske Veritas
 - Germanischer Lloyd
 - Lloyds Register of Shipping
 - Nippon Kaiji Kyokai
 - Registro Italiano Navale
- 1.3 The rules referred to in 1.1 are referred to hereafter in this annex as *acceptable construction rules*. Only one set of rules is to be used for any one vessel.
- 1.4 This Annex relates especially to the construction of the vessel, its machinery, equipment, and stability, to ensure that minimum safety standards are attained and can be maintained.
- 1.5 When selecting materials and equipment to be used in the vessel's construction, designers and builders of new vessels shall pay special regard to the working conditions to which each vessel will be subjected and its area of operation.
- 1.6 In addition to the requirements of *acceptable construction rules*, requirements and recommendations for the following subjects are contained in the appropriate chapters or sections of the Code.
- 1.4 Compliance Procedures, Inspection, and Certification
 - 2.19 Water Freeing Arrangements
 - 4.4 Anchors and Cables
 - 4.5 Fishing and Handling Equipment
 - 5.2 Fire Fighting Appliances
 - 6 Protection of Personnel
 - 7 Life Saving Appliances
 - 8 Manning Training and Certification
 - 9 Radio Equipment
 - 10 Navigation Equipment, Lights, Shapes and Sound Signals
- 1.7 It is the responsibility of the owner of the vessel to ensure that the vessel is built and inspected in accordance with the requirements of this Annex.

2 Construction and Structural Strength

2.1 Vessels must be constructed of materials in accordance with acceptable construction rules. These include:

Wood

Fibre/Glass Reinforced Plastic

Steel

Aluminium Alloy

or any acceptable combination of these materials.

2.2 Proposals to use other materials must be submitted to the Maritime Safety Directorate.

2.3 The structural strength of any vessel must meet the following minimum requirements.

2.3.1 Hulls General

Scantlings and construction of the main hull or shell are to be as required by acceptable construction rules.

2.3.2 Decks

A weathertight deck must have positive freeboard throughout the length of the deck in any condition of loading and be of adequate strength to withstand conditions likely to be met in the proposed area of operation. Drainage arrangements must meet the requirements specified for existing vessels, or the requirements of acceptable construction rules.

2.3.3 Bulkheads

All vessels of $L_{oa} \geq 7$ m decked in the forward part must be fitted with a substantially watertight collision bulkhead situated in the fore part of the vessel. Machinery space bulkheads must be fitted to the requirements of acceptable construction rules.

2.3.4 Bulkhead Doors

Vessels of $L_{oa} \geq 7$ m must not have doors in watertight bulkheads. In other vessels, doors may be fitted where necessary for the safe operation of the vessel and they must be constructed and permanently attached to the bulkhead in such a manner as to be of equivalent strength to the un-pierced bulkhead, in accordance with acceptable construction rules.

3 Weathertight Integrity

Openings in the watertight structure of the vessel should be kept to a minimum and designed to prevent the ready ingress of water and comply with the requirements of acceptable construction rules.

3.1 Doors

Doors and doorways above and below the weather deck are to meet the requirements of acceptable construction rules. Doorways above the weather deck leading directly to spaces below the deck are to have a minimum coaming height of 300 mm.

3.2 Hatches and Coamings

Hatchways in weather decks must be fitted with a weathertight closure to the requirements of acceptable construction rules. Weather deck hatch coamings are to have a minimum height of 300 mm, except where fishing operations necessitate a reduced height. Flush hatches are to have permanently attached weathertight covers. The minimum clear opening size of any access or escape hatch is to be 500 mm x 380 mm.

3.3 Skylights, Portlights, Windows etc.

All skylights, portlights, windows, and side scuttles, where fitted to spaces contributing to intact buoyancy, must be to the requirements of acceptable construction rules for height above deck, size, glazing thickness, and frame materials. Windows or portlights must not be fitted below the weather deck.

3.4 Ventilators and Air Pipes

The minimum height of any ventilator or air pipe above the weathertight deck is to be not less than 300 mm to the lowest part of the gooseneck or bend. Ventilators and air pipes terminating at less than 1.5 m height above the weathertight deck must be fitted with a closing device in accordance with acceptable construction rules.

3.5 Sea Inlets and Discharges

All inlets and discharges below the weathertight deck must be fitted with a valve and connection, in accordance with the requirements of acceptable construction rules. Valves, which are not easily accessible, must be fitted with a remote means of control operated from above the deck.

4 Stability

4.1 It is the responsibility of the builder and designer to ensure that adequate margins of freeboard and stability are provided for the safe operation of the vessel.

4.2 Stability standards to be applied are those of acceptable construction rules. As an alternative the stability standards of the “IMO Code on Intact Stability” or “PrEN ISO 12217: Small Craft - Stability and Buoyancy – Methods of Assessment and Categorisation” may be used.

4.3 In addition to the requirement of paragraph 4.2, all vessels shall be subjected to a roll test as described in Annex 1. The roll test shall be carried out at the same time as the inclining experiment required under paragraph 4.2.

4.3.1 The freeboard and the resulting rolling coefficient are to be recorded for comparison with future roll tests and to allow more accurate roll coefficients to be developed for different types of vessel.

4.4 The skipper shall take the precautionary measures necessary to maintain the stability of the vessel in accordance with the stability information book supplied.

4.5 Those on watch shall strictly observe instructions supplied in the stability information book.

4.6 The guidance notes for vessel operators, given in Annex 2, should be studied and followed where practicable.

5 Machinery

- 5.1 The layout of engine rooms and propulsion machinery must satisfy the following and the requirements of acceptable construction rules.
- i) Access to be arranged clear of moving parts and heated surfaces
 - ii) Exposed moving parts such as shafts, pulleys and belts to be fitted with guards
 - iii) Access ladders are to be of metal
 - iv) Floor plates are to be non-slip and securely fastened with accessible fasteners
 - v) Lighting to be weathertight and vibration proof
 - vi) Ventilators are to be designed to prevent build up of excessive heat
 - vii) Valves and fittings in piping systems to be clearly marked with function
 - viii) Ease of access is to be provided for all servicing operations
 - ix) Enclosed engine rooms in vessels of $L_{oa} \geq 7$ m must be provided with an alternative means of escape to the open deck
 - x) On decked vessels, with enclosed engine rooms, fuel supply mains are to be capable of being closed from outside the engine room, by means of wire or rod operated valves.
- 5.2 Propulsion engines to be designed for use with fuel oil having a flash point greater than 60°C. Petrol driven engines will be acceptable only when mounted as outboards on transoms.
- 5.3 All engines are to be provided with efficient means of control and are to be capable of being started from a dead ship condition.
- 5.4 Inboard engines in open boats must be fitted with a weathertight cover or box.

6 Piping Systems

Fuel oil and cooling water systems and valves are to be fitted in accordance with acceptable construction rules. Vessels of $L_{oa} \geq 7$ m are to be fitted with a means of providing an alternative engine cooling water supply in the event of blockage of the engine sea inlet.

7 Shafting and Stern Gear

The arrangement, material, and diameter of the propeller shaft and any intermediate shafts are to be in accordance with acceptable construction rules.

8 Bilge Pumping Systems

All vessels are to have a bilge pumping system in accordance with acceptable construction rules. The number and capacity of bilge pumps are to be a minimum of those required for existing vessels. Bilge piping minimum diameters are to be as follows:

- Bilge main, vessels of $L_{oa} \geq 7$ m - 35 mm inside diameter
- Bilge main, vessels of $L_{oa} < 7$ m - 30 mm inside diameter
- Branch bilge pipes, all vessels - 30 mm inside diameter

In vessels where the engine is enclosed under the deck, or in open boats, where the bilge space cannot be readily seen, an audible and visual level alarm is to be fitted, with indication at the helm or control position.

9 Steering Gear

- 9.1 All vessels are to be fitted with an efficient means of steering in accordance with acceptable construction rules. Vessels fitted with mechanical or hydraulic systems must have an alternative emergency means of steering.
- 9.2 In vessels of $L_{oa} \geq 7$ m, where fitted with an autopilot, it is recommended that an approved watch alarm is incorporated.
- 9.3 The control or helm position must be located such that the person operating the steering gear has a clear view for the safe navigation of the vessel.

10 Electrical Systems

Low voltage direct current systems up to 24v D.C. and A.C. systems, are to be to the requirements of acceptable construction rules and to the following regulations:

- (i) The Institution of Electrical Engineers (IEE) Regulations for the Electrical and Electronic Equipment of Ships with Recommended Practice for their Implementation, 6th Edition 1990 and Supplement 1994.
- (ii) Marine Notice No. 7 of 1992, Electrical Equipment for use in Fishing Vessels.
- (iii) ISO 10133 - Small Craft Electrical Equipment Extra-low Voltage DC Installations.
- (iv) ISO 13297 - Small Craft Electrical Equipment Alternating Current Installations.

11 Fire Safety

11.1 General

Vessels must be constructed to avoid the risk of fire occurring and to mitigate the effects of any fire by giving appropriate attention to the choice of materials, equipment and layout.

11.2 Fire Prevention

- 11.2.1 Fire hazardous materials such as petrol, gas and paint must not be stowed within the boundaries of engine spaces.
- 11.2.2 Vessels with permanent fuel oil tanks must have a suitable fire extinguisher fitted closely adjacent to the fuel tank compartment and to the engine, whether inboard or outboard.

11.3 Cleanliness

- 11.3.1 Means should be provided to retain any oil leakage within the engine space, by using metal drip trays or other adequate means. Oil spillages within the engine space must be collected and retained on board for discharge to collection facilities ashore.
- 11.3.2 Portable petrol containers must be clearly marked and stowed on the weather deck.

11.4 Open-Flame Gas Appliances (including Gas Refrigerators)

- 11.4.1 Appliances must conform to the requirements of Council Directive 90/396/EEC and Marine Notice No.1 of 2002.
- 11.4.2 Open-flame gas appliances must not be positioned close to engines and fuel tanks. Selection of open-flame cooking appliances must have due regard to the fire risk involved. Equipment must be suitable for marine duty and be fitted and operated in accordance with manufacturers' instructions.

- 11.4.3 All types of stoves and heating appliances must be adequately secured to the surrounding structure.
- 11.4.4 Materials close to open-flame cooking or heating appliances must be non-combustible and curtains or other suspended textile materials must not be fitted near these appliances.
- 11.4.5 Where other types of heater are fitted, the ventilators must not be blocked off.
- 11.5 Furnishing Materials
- Only combustion modified high resilient (CMHR) foams must be used in upholstered furniture and mattresses.
- 11.6 Means of Escape
- 11.6.1 Provision of a ready means of escape is recommended from accessible engine and fuel tank compartments and from those parts of the vessel from which exit may be obstructed if a fire breaks out. Hatches to such escapes must be operable from both sides.
- 11.6.2 Every vessel of $L_{oa} \geq 7$ m with accommodation spaces used for sleeping or rest, which may be subject to a fire risk, must have two means of escape, if practicable. A single means of escape may be acceptable in exceptional cases, such as when that escape is direct to an open deck or when a second means of escape would be considered detrimental to the overall safety of the vessel.

12 Accommodation and Working Spaces

In addition to the requirements of acceptable construction rules, the following sections of Chapter 11 must be incorporated in any new vessel taking account of the vessel's size and area of operation.

- 11.6 - Toilet facilities
- 11.7 - Access and escape arrangements
- 11.8 - Ventilation
- 11.9 - Water services
- 11.10 - Lighting
- 11.11 - Temperature
- 11.12 - Hand holds and grab rails
- 11.13 - Securing of equipment

ANNEX 8

Declaration of Compliance



**Design, Construction and Equipment of
Small Fishing Vessels of less than 15 m Length overall**

**Code of Practice
Declaration of Compliance**

To be completed by an Authorised Person

Declarations on page v to be signed by the Authorised Person and Owner

Name of Vessel	Fishing Letters & Number	Official Number	Port of Registry
Overall Length (less than 15 metres)	Breadth	Depth	Date keel laid
Engine Make & Model			Engine Power (kW)

Name & Address of Owner	
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Description of vessel

Description of operational area

Chapter 2 Construction, Structural Strength and Weathertight Integrity

*2.1	Is hull suitable for the intended fishing method and sea areas?			Yes / No
*2.2	Construction Materials	Hull	Superstructure	
*2.3	Is structure sound, watertight & free from significant damage & corrosion?			Yes / No
*2.4	Do decks comply?			Yes / No
2.5	Number of bulkheads	Non-watertight	Watertight	
*2.6	Do bulkhead doors comply with Annex 7 (2.3.4)?			Yes / No
*2.7	Doors	Coaming height		
		Are doors of sound construction and weathertight?		Yes / No
2.8	Hatchway coaming height			
*2.9	Can hatches be secured weathertight?			Yes / No
*2.10	Do flush hatches comply?			Yes / No
*2.11	Do skylights comply?			Yes / No
*2.12	Do side scuttles & portlights comply?			Yes / No
*2.13	Do windows comply?			Yes / No
*2.14	Do ventilators comply?			Yes / No
2.15	Is exhaust system acceptable			Yes / No
*2.16	Do air pipes comply?			Yes / No
*2.17.2	Do sea inlets and discharges comply?			Yes / No
*2.18.3	Do valves, piping & hoses comply?			Yes / No
*2.19	Do freeing ports comply?			Yes / No

Chapter 3 Stability

*3.1	Is stability information supplied?			Yes / No
	Are requirements of Annex 7 applied?			Yes / No
*Annex 7 (para.4)	Stability standard applied			
	Freeboard		Roll coefficient	
Annex 2	Are guidance notes on board?			Yes / No

Chapter 4 Machinery and Electrical Installations

4.1	Machinery			
*4.1.1.1	General Requirements - comply?			Yes / No
*4.1.2	Propulsion Machinery and Stern Gear - comply?			Yes / No
*4.1.4	Controls and Instruments - comply?			Yes / No
*4.1.5	Steering System - comply?			Yes / No
4.2	Electrical Installations			
*4.2.1	General - comply?			Yes / No
*4.2.2	D.C. Systems Up To 24 volts - comply?			Yes / No
*4.2.3	A.C Systems - comply?			Yes / No
4.3	Pumping & Piping			
*4.3.1	Fuel Oil Installations - comply?			Yes / No
*4.3.2	Cooling Water Systems - comply?			Yes / No
*4.3.3	Bilge Pumping Systems - comply?			Yes / No
*4.3.4	Bilge Pumps - comply?			Yes / No
4.4	Anchors & Cables			
*4.4.1	General - comply?			Yes / No
*4.4.4	Towline - comply?			Yes / No
4.5	Fishing & Handling Equipment			
*4.5.1	Winches, tackles and lifting gear - comply?			Yes / No
*4.5.2	Running gear - comply?			Yes / No

Chapter 5 Fire Protection, Detection & Extinction

5.1	Fire Safety				
#5.1.1	Machinery space capable of being closed down?				Yes / No
*5.1.2	Fire Prevention - comply?				Yes / No
*5.1.3	Cleanliness and Pollution Prevention - comply?				Yes / No
*5.1.4	Open-Flame Gas Appliances - comply?				Yes / No
*5.1.5	Gas Detection - comply?				Yes / No
5.2	Fire Fighting Appliances				
#5.2.1	Are extinguishers of an approved type				Yes / No
#5.2.2	Portable Extinguishers	Serviced Date			
⋮		Engine room	Type	Rating	N ^o
⋮		Other spaces	Type	Rating	N ^o
#5.2.5		Fire buckets			N ^o
#5.2.6	Remote controls for fuel tank valves	Yes / No	Number		
			Location		
#5.2.6	Are means of closing skylights, doorways etc to machinery and cargo spaces adequate?				Yes / No

Chapter 6 Protection of Crew

6.1	Protection of Personnel				
*6.1.2	Bulwarks, Guard Rails and Handrails - comply?				Yes / No
*6.1.4	Surface of Working Decks - comply?				Yes / No
#6.1.5	Personal Protective Equipment - comply?				Yes / No
#6.2	Medical Stores - comply?				Yes / No
*6.3	Securing of Heavy Items or Equipment and Fishing Gear etc - comply?				Yes / No

Chapter 7 Life-Saving Appliances

#7.1	Are all items of LSA of an approved type				Yes / No	
#7.2	Have relevant items of LSA been serviced				Yes / No	
#7.3	1 Lifejacket for every person on board			Yes / No	N ^o :	
*7.4	Liferafts sufficient for 100% persons		Yes / No	N ^o	Last Serviced	
	Hydrostatic Release Unit (HRU)		Yes / No	N ^o	Last Serviced	
#7.5	Lifebuoys		Total N ^o of Lifebuoys			
			N ^o with 18m line			
			N ^o with combined light & smoke signal			
#7.6	1 Personal Floatation Devices (PFD) for every person on board			Yes / No	N ^o :	
#7.8	Distress signals	6 red star	Yes / No	12 parachute rockets	Yes / No	
*7.9	Means for Recovering Persons from the Water				Yes / No	

Chapter 8 Manning, Training & Certification

#8.2	Manning - comply?				Yes / No
*8.8					
*8.3	Standards of Competence - comply?				Yes / No
*8.5	Operation and Maintenance of Propulsion Machinery - comply?				Yes / No
#8.6	Operation of Radio Equipment - comply?				Yes / No
#8.7	Safety Training - comply?				Yes / No
	Is there a copy of the Code of Practice on board?				Yes / No

Chapter 9 Radio Equipment

	Sea Area (A1 or A1 & A2)	
#9.3	Functional requirements - comply?	Yes / No
#9.4	Installation, location and control of radio equipment - comply?	Yes / No
#9.5	Radio equipment to be provided for all sea areas - comply?	Yes / No
#9.6	Additional radio equipment to be provided for sea areas A1 and A2 - comply?	Yes / No
#9.7	Radio Watches - comply?	Yes / No
#9.8	Sources of energy - comply?	Yes / No
#9.9	Performance standards - comply?	Yes / No
#9.10	Serviceability and maintenance requirements - comply?	Yes / No
#9.11	Radio personnel - comply?	Yes / No
#9.12	Radio records - comply?	Yes / No

Chapter 10 Navigation Equipment Lights, Shapes & Sound Signals

*10.1	Navigation Equipment - comply?	Yes / No
*10.2	Are navigation lights fitted?	Yes / No
#10.3	Steaming Lights - comply?	Yes / No
#10.4	Fishing Lights - comply?	Yes / No
#10.5	Additional Fishing Light - comply?	Yes / No
#10.6	Anchor Light - comply?	Yes / No
#10.7	Positions or Lights - comply?	Yes / No
	Are any all-round lights obscured by mast, etc. by more than 6°?	Yes / No
#10.8	Day Signals	2 Black Cones with apexes together or a basket
		1 black ball
#10.9	Sound Signals - comply?	Yes / No
*10.10	Charts and Nautical Publications - comply?	Yes / No

Chapter 11 Accommodation & Working Spaces

*11.6	Toilet Facilities - comply?	Yes / No
*11.7	Access and Escape Arrangements - comply?	Yes / No
*11.8	Ventilation - comply?	Yes / No
*11.10	Lighting - comply?	Yes / No

Annex 7 New Vessel Construction

1.1	Construction Rules used	
*1.6	Are relevant chapters of Code complied with?	Yes / No
*2	Construction and Structural Strength - comply?	Yes / No
*3	Weathertight Integrity - comply?	Yes / No
*4	Stability - comply?	Yes / No
*5	Machinery - comply?	Yes / No
*6	Piping Systems - comply?	Yes / No
*7	Shafting and Stern Gear - comply?	Yes / No
*8	Bilge Pumping Systems - comply?	Yes / No
*9	Steering Gear - comply?	Yes / No
*10	Electrical Systems - comply?	Yes / No
*11	Fire Safety - comply?	Yes / No
*12	Accommodation and Working Spaces - comply?	Yes / No

Notes:

1. # indicates Statutory requirements
2. * indicates mandatory requirement for Code compliance
3. ‡ indicates statutory requirement for vessels $\geq 12m L_{oa}$ and mandatory requirement for Code compliance for vessels $< 12m L_{oa}$
4. Only Statutory and mandatory Code requirements are to be addressed when completing the Declaration.
5. If 'No' is answered to any question, please supply, in a separate statement, the reasons why the particular item is not complied with.
6. If a particular item is not applicable, please state the reason why.

Declaration by Authorised Person

Name of Vessel	Fishing Letters & Number	Official Number	Port of Registry

I hereby declare that on _____ at _____ I completed the inspection of the Fishing Vessel _____ and that:

1. the particulars given on this form are true and correct;
2. in my judgement the vessel complies with the Code of Practice and is fit for its intended fishing method and for the sea areas in which it is intended to operate.

Dated at _____
this _____ day of _____ 20_____

Signed _____

This Declaration is valid until
_____ day of _____ 20_____

Company Stamp.

Declaration by Owner

I/We _____
Owner(s) of the above-described vessel declare that the particulars given on this form are correct and that we have no reason to believe that vessel is not fit for its intended fishing method or for the sea areas in which it is intended to operate.

Signature(s): _____

If company, state position held: _____

Date _____

Intermediate Declaration by Owner

(To be completed not less than 21 months nor more than 27 months after the initial inspection date for the issue of the Declaration of Compliance)

Name of Vessel	Fishing Letters & Number	Official Number	Port of Registry

Name & Address of Owner	
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I/We hereby certify, in respect of the above named vessel, that:

- (i) The particulars given on the Declaration of Compliance remain valid;
- (ii) The safety and other specified equipment have been checked in accordance with the Declaration of Compliance;
- (iii) Such safety and other specified equipment carried are in accordance with the requirements of the Code;
- (iv) Such safety and other specified equipment have been properly maintained and serviced in accordance with manufacturers' recommendations;

Signature(s):

.....

If company, state position held:

Date