

*CODE OF PRACTICE ----*

## **Safety Standards for Classes I, II and III Vessels**

(issued under Section 8 of the Merchant Shipping (Local Vessels) Ordinance, Cap 548)



Local Vessels Safety Section  
Marine Department, HKSAR

( December 2006 Edition )



## FOREWORD

(1) The Merchant Shipping (Local Vessels) Ordinance, Cap 548 (here below refers as “the Ordinance”), is to provide for the regulation and control of local vessels in Hong Kong and for other matters affecting local vessels, including their navigation and safety at sea (whether within or beyond the waters of Hong Kong).

(2) This Code of Practice is approved and issued by the Director in pursuant to section 8 of the Ordinance for the purpose of ensuring acceptable technical and safety standards in the design, construction, maintenance and inspection of local vessels in conjunction with the condition required or the standards prescribed by the Director under Merchant Shipping (Local Vessels)(Safety and Survey) Regulation (here below refers as “Survey Regulation”). This Code also provides necessary practical guidance on operational safety practices in conjunction with the relevant requirements in the Merchant Shipping (Local Vessels)(Certification and Licensing) Regulation.

(3) Section 9 of the Ordinance explains the use of approved codes of practice in proceeding which are quoted as followings:-

“(1) A failure on the part of any person to observe any provision of a code of practice approved under section 8 shall not of itself render the person liable to any civil or criminal proceedings but where in any proceedings under this Ordinance a person is alleged to have contravened a requirement under this Ordinance, being a requirement for which there was an approved code of practice at the time of the alleged contravention, subsection (2) shall have effect with respect to such code in relation to those proceedings.

(2) Any provision of a code of practice which appears to a specified body to be relevant to a requirement under this Ordinance alleged to have been contravened shall be admissible in evidence in the proceedings under this Ordinance concerned and if it is proved that there was at any material time a failure to observe any provision of the code which appears to that body to be relevant to any matter which it is necessary to prove in order to establish a contravention of such requirement, that matter shall be taken as proved in the absence of evidence that such requirement was in respect of that matter complied with otherwise than by way of observance of that provision.

(3) In any proceedings under this Ordinance, a code of practice which appears to a specified body to be the subject of a notice under section 8 shall be taken to be the subject of such notice in the absence of evidence to the contrary. ”

(4) The owner, agent and the coxswain of any Class II and III vessel when engaged in operations outside the waters of Hong Kong are required -

- (a) to ensure the compliance with relevant safety requirements specified by the Director. These requirements are promulgated in the Marine Department notices from time to time, and
- (b) to observe any relevant requirement required by local Authority of those waters.

# CODE OF PRACTICE - SAFETY STANDARDS FOR CLASS I, II AND III VESSELS

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# CHAPTER I

## GENERAL

### 1 Introduction

- 1.1 The legislation relating to the control, licensing and regulation of local vessels in Hong Kong is contained in the Merchant Shipping (Local Vessels) Ordinance, Cap. 548 (the Ordinance) and its subsidiary legislation. This Code of Practice is issued under section 8 of the Ordinance.
- 1.2 This "Code of Practice – Safety Standard for Class I, II and III Vessels" has been developed by the Hong Kong Marine Department in consultation with the local maritime industry through representation in relevant working groups and committees.
- 1.3 The primary aim in developing the Code has been to set standards of safety and protection for all passengers and crew on board. The Code relates especially to the construction of a vessel, its machinery, equipment and stability and to the proper operation of the vessel so that safety standards are maintained.
- 1.4 The builder, repairer or owner/managing agent of a vessel, as appropriate should take all reasonable 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.
- 1.5 The requirements in some of the paragraphs of this Code are provisions of the indicated relevant regulations, which are mandatory.
- 1.6 The owner, agent or the coxswain of a Class I, II or III vessel is required to observe and comply with relevant requirements relating to vessel's operation safety, operators requirements and their certification specified in the Merchant Shipping (Local Vessels)(Safety and Survey) Regulation ( "Survey Regulation"), Merchant Shipping (Local Vessels) (General) Regulation("General Regulation") and Merchant Shipping (Local Vessels)(Certification and Licensing) Regulation ("Certification & Licensing Regulation") relevant to the class, type or category of the vessel, in addition to the practical guidance requirements given in the following chapters and annexes of this Code where relevant and appropriate:-

Item No.	Chapter / Annex	Section of relevant Regulation
(a)	Para. 7.6, 7.7 of Chapter IIIA, Para. 8, 9 of Chapter XII and para. 5, 6 of Annex U-1	Section 30 - Display of certificate of survey on board under Survey Regulation Section 31 - Construction and maintenance of local vessels Survey Regulation
(b)	Para. 4 of Chapter XII, Annex I-4	Section 80 - Radar under Regulation

(c)	Annex V-2	Section 5 - Restriction on vessels of Class II and Class III - Certification & Licensing Regulation
(d)	Para. 2 to 4, 6 and 9 of Chapter XII, Annexes I-6, P, U-1, U-3, U-4, U-5 and V-3	Section 11 - Manning and equipment under General Regulation Section 31 - Local Passenger vessel cleanliness under General Regulation
(e)	Para. 9 of Chapter V	Section 33 - Notice stating maximum number of passenger to be posted under General Regulation
(f)	Chapter VIII	Section 18 (2) (a) (viii) and (ix)– as regards Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations and Merchant Shipping (Safety) (Use of Signal of Distress)Regulation requirements (i.e. the regulation as referred in para 2.1(h) & (i) of Chapter I of this Code) under Survey Regulation

1.7 In order to satisfy the requirements specified in the Survey Regulation for the issuance of Certificate of Survey relevant to the class, type or category of the vessel, the safety standards given in the following chapters and annexes of this Code are to be complied with additionally where relevant and appropriate:-

Item No.	Chapter / Annex (Notes 1 ,2 & 3)	Section of Survey Regulation
(a)	Chapter I and II	Section 7 to 30 - “Certificate of survey” - Ensuring the compliance with plan approval, survey and testing for the issuance of certificate of survey
(b)	Chapter IIIA, IIIB, IV, V, X & XII	Section 31 - Construction and maintenance of local vessels
(c)	Chapter V	Section 68 to 74 - Carriage of Passengers and space not measured as passenger space
(d)	Chapter VII	Section 32 - Provision of life-saving appliances on board the local vessels Schedule 3– Provision of life-saving appliances
(e)	Chapter VI and X	Section 33 - Fire prevention and provision of fire-fighting apparatus on board the local vessels Schedule 4– Fire protection and provision of fire-fighting apparatus
(f)	Chapter VIII	Section 18 (2) (a) (viii) and (ix)– as regards Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations and Merchant Shipping (Safety) (Use of Signal of Distress)Regulation requirements (i.e. the regulation as referred in para 2.1(h) & (i) of Chapter I of this Code) under Survey Regulation
(g)	Para. 4 of Chapter XII, Annex I-4	Section 80 - Radar

Note: (1) Relevant safety standards given in the Annexes of this Code are to be complied with additionally where relevant and appropriate in conjunction with the above .  
 (2) For high speed craft, relevant safety standards given in Chapter XI of this Code are to be complied with where relevant and appropriate.  
 (3) For vessel carrying dangerous goods, relevant safety standards given in Chapter X of this Code are to be complied with additionally where relevant and appropriate (refers to para. 1.13 of this Chapter) .

1.8 In order to satisfy the requirements specified in the Survey Regulation for the issuance of Survey Record of Safety Equipment (SRSE) relevant to the class, type, category or description of the vessel, the safety standards given in the following chapters and annexes of this Code are to be complied with additionally where relevant and appropriate:-

Item No.	Chapter/Annex (Note 1 & 2)	Section of Survey Regulation
(a)	Chapter I and II	Section 34 – application Section 36 – Survey leading to issue of survey record of safety equipment Section 37, 38 – Matters to be surveyed and declaration of survey Section 39, 40 – Issuance of SRSE and validity
(b)	Chapter VII and X	Schedule 3 – Provision of life-saving appliances
(c)	Chapter VI and X	Schedule 4 – Fire protection and provision of fire-fighting apparatus
(d)	Chapter VIII	Section 18 (2) (a) (viii) and (ix)– as regards Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations and Merchant Shipping (Safety) (Use of Signal of Distress)Regulation requirements (i.e. the regulation as referred in para 2.1(h) & (i) of Chapter I of this Code) under Survey Regulation
(e)	Para. 4 of Chapter XII, Annex I-4	Section – 80 Radar

Note : (1) For high speed craft, relevant safety standards given in Chapter XI of this Code are to be complied with where relevant and appropriate.  
 (2) For vessel carrying dangerous goods, relevant safety standards given in Chapter X of this Code are to be complied with additionally where relevant and appropriate (refers to para. 1.10 of this Chapter).

1.9 In order to satisfy the requirements specified in the Survey Regulation for the issuance of Hong Kong Load Line Certificate (HKLL certificate) or Freeboard Assignment Certificate (FA certificate) relevant to the class, type, category or description of the vessel, the safety standards given in the following chapters of this Code are to be complied with additionally where relevant and appropriate:-

Item No.	Chapter/Annex	Section of Survey Regulation
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(a)	Chapter I and II	Section 41 – application Section 43 – Survey leading to issue of HKLL certificate or FA certificate Section 46 and 47 – Issue of HKLL certificate or FA certificate and validity
(b)	Chapter IIIA, IIIB, IV, V, Annex C, D and E	Section 44 and 45 – Matters to be surveyed and declaration of survey Schedule 5 Freeboard assignment

1.10 In order to satisfy the requirements specified in the Survey Regulation in conjunction with requirements in relevant provisions of the Dangerous Goods(Shipping) Regulations (Cap 295 sub. Leg.) for the issuance of Declaration of Fitness for carriage of Dangerous Goods (DoF) relevant to the class, type, category or description of the vessel, the safety standards given in the following chapters and annexes of this Code are to be complied with additionally where relevant and appropriate:-

Item No.	Chapter/Annex	Section of Survey Regulation
(a)	Chapter I and II	Section 7(b)(vi) – a declaration of fitness (approval of plans) Section 9 (c), (e), (i), (j), (k), (l) and (o) (approval of plans relevant to the structure, equipment, signal, flags and arrangement) Section 49 – application Section 51, 54 and 55 – Survey leading to issue of DoF and validity
(b)	Chapter VI, X	Section 52 and 53 – Matters to be surveyed and declaration of survey (relevant to the structure, equipment, signal, flags and arrangement)

1.11 In order to satisfy the requirements specified in Survey Regulation on tonnage measurement and calculation for the issuance of Survey Record of Tonnage Measurement relevant to the class, type, category or description of the vessel, the standards given in the following chapter of this Code are to be complied with where relevant and appropriate:-

Item No.	Chapter/Annex	Section of Survey Regulation
(a)	Chapter IX	Section 9(1)(b) – tonnage measurements and calculations

1.12 In order to satisfy the requirements and conditions specified in the Survey Regulation for the issuance of Certificate of Survey for the vessel in respect to the prevention of oil pollution, the technical standards given in the following chapters and annexes of this Code are to be complied with additionally where relevant and appropriate:-



Item No.	Chapter (Note)	Section of Survey Regulation
(a)	Chapter I and II	Section 7 to 11 - Certificate of survey
(b)	Para. 19 of Chapter IIIA; or para. 14 of Chapter IIIB – relevant to the class, type, category or description of the vessel	Section 9(1)(n) – prevention and control of pollution Section 82 & Schedule 7 – local vessels required to comply with requirements of Merchant Shipping (Prevention of Oil Pollution) Regulations (Cap. 413 sub. leg. A)
Note: The Hong Kong Oil Pollution Prevention Certificate is required to be issued to vessels of gross tonnage as specified in Schedule 7 of Survey Regulation after confirming the compliance with Merchant Shipping (Prevention of Oil Pollution) Regulations, Cap. 413 sub. leg.		

- 1.13 In order to satisfy the requirements and conditions specified in the Survey Regulation for the issuance of Certificate of Survey for the vessel in respect to the control of pollution by noxious substances in bulk, the technical standards given in the following chapters and annexes of this Code are to be complied with additionally where relevant and appropriate:-

Item No.	Chapter (Note)	Section of Survey Regulation
(a)	Chapter I and II	Section 7 to 11 - Certificate of survey
(b)	Para. 20 of Chapter IIIA – for the compliance of the requirements of the Merchant Shipping (Control of Pollution by Noxious Liquid Substances in Bulk) Regulations Cap. 413 Sub. leg. relevant to the class, type, category or description of the vessel.	Section 9(1)(n) – prevention and control of pollution
Note: The Hong Kong Pollution Prevention Certificate for the carriage of Noxious Liquid Substances in Bulk is required to be issued to vessels over 400 gross tonnage after confirming the compliance with the Merchant Shipping (Control of Pollution by Noxious Liquid Substances in Bulk) Cap 413 sub. leg.		

- 1.14 In order to satisfy the requirements and conditions specified in the Survey Regulation for the issuance of Certificate of Survey or Certificate of Inspection for the vessel in respect to the prevention of air pollution, the technical standards given in the following chapters and annexes of this Code are to be complied with additionally as appropriate:-

Item No.	Chapter/Annex	Section of Survey Regulation
(a)	Chapter I and II	Section 7 to 30 - Certificate of inspection or certificate of survey

(b)	Annex I-10 - for the compliance of the requirements of Merchant Shipping (Prevention of Air Pollution) Regulation, Cap. 413 sub-leg.(Note 1) relevant to the class, type, category or description of the vessel.	Section 9(1)(n) – prevention and control of pollution
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Note 1 : Subject to enactment and enforcement of Merchant Shipping (Prevention of Air Pollution) Regulation, Cap 413 Sub-leg., which is expected ready in 2007.

## 2 Statutory Legislation and Certificate etc.

2.1 This Code should be applied in conjunction with the following statutory provisions and their amendments from time to time (if any) as appropriate:

- (a) Merchant Shipping (Local Vessels) Ordinance, Cap. 548 (hereafter referred to as “the Ordinance”)
- (b) Merchant Shipping (Local Vessels) (General) Regulation, Cap. 548 sub. leg.
- (c) Merchant Shipping (Local Vessels) (Certification and Licensing) Regulation, Cap. 548 sub. leg.
- (d) Merchant Shipping (Local Vessels) (Fees) Regulation, Cap. 548 sub. leg.
- (e) Merchant Shipping (Local Vessels) (Safety and Survey) Regulation, Cap. 548 sub. leg. (hereafter to be referred as "Survey Regulation")
- (f) Merchant Shipping (Local Vessels) (Works) Regulation, Cap. 548 sub. leg.
- (g) Merchant Shipping (Local Vessels)(Compulsory Third Party Risks Insurance) Regulation, Cap. 548 Sub. leg.
- (h) Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations, Cap. 369 sub. leg.
- (i) Merchant Shipping (Safety) (Use of Signals of Distress ) Regulations, Cap. 369 sub. leg.
- (j) Merchant Shipping (Prevention of Oil Pollution) Regulations, Cap. 413 sub. leg.
- (k) Merchant Shipping (Control of Pollution by Noxious Liquid Substances in Bulk) Regulations, Cap. 413 sub. leg.
- (l) Dangerous Goods Ordinance, Cap. 295
- (m) Dangerous Goods (Application and Exemption) Regulations, Cap. 295 sub. leg.
- (n) Dangerous Goods (General) Regulations, Cap. 295 sub. leg.
- (o) Dangerous Goods (Shipping) Regulations, Cap. 295 sub. leg.
- (p) Merchant Shipping (Prevention of Air Pollution) Regulation, Cap. 413 sub. leg. [subject to enactment and enforcement date of relevant legislation]

## 2.2 Other standards

- (1) The relevant requirements or guidelines promulgated by Marine Department, unless

otherwise clearly specified are not mandatory.

- (2) The vessel's strength, structure, arrangements, materials, scantlings, main and auxiliary machinery, boilers and pressure vessels, electrical installations, etc. should be so designed and installed as to ensure that the vessel is fit for the service for which it is intended. Apart from the requirements in this Code, present rules and standards of classification societies recognized by Marine Department or other equivalent standards should be used as assessment standards.

### 2.3 Statutory certificates or records

Upon satisfactory completion of statutory surveys or assessment, the following relevant statutory certificates or record document would be issued by Marine Department except those specified in paragraphs 2.5 and 2.7 :-

- (1) Certificate of Survey ;
- (2) Survey Record of Safety Equipment;
- (3) Hong Kong Load Line Certificate or Freeboard Assignment Certificate;
- (4) Survey Record of Tonnage Measurement ;
- (5) Survey Record of Inspection for Cement Tank, Air Receiver, Material or Equipment etc.
- (6) Exemption Certificate / Permit for alternative material, fitting or equipment
- (7) Minimum Safe Manning Document;
- (8) International Tonnage Certificate;
- (9) International Load Line Certificate;
- (10) Hong Kong Oil Pollution Prevention Certificate;
- (11) Hong Kong Air Pollution Prevention Certificate (Note);
- (12) Hong Kong Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (13) Declaration of Fitness for the Carriage of Dangerous Goods;
- (14) Certification of Lifting Appliances and Lifting Gear.

Note : Subject to enactment and enforcement date of relevant legislation.

2.4 For the issuance of certificates or survey records of items 2.3(7) to (13) of the above, owners shall apply to Marine Department directly. For initial certificate, application must be enclosed with relevant application details or approval plans assessment.

2.5 For survey records of items 2.3(4) and (5), these records may also be issued by an authorized surveyor or authorized organization or recognized authority.

2.6 The certificate of item 2.3(14) which may shall be issued by a competent examiner in accordance with the requirements of the Merchant Shipping (Local Vessels)(Works) Regulation.

2.7 The certificates of items 2.3(2), (4), (8) to (13) of the above issued in accordance with

the International Conventions by a recognized organization or recognized authority or Administration under the Convention may be considered as equivalent and accepted by the Director.

- 2.8 The Certificate of Survey and relevant remarks should be displayed in a conspicuous location onboard.

### **3 Definitions**

#### 3.1 In this Code-

“approved”, in relation to equipment, appliances, machinery, any other fittings or materials, means approved by the Director;

“authorised surveyor” means a person, or a person belonging to a class of persons, who is not a public officer, appointed by the Director under section 7(1) of the Ordinance to be a surveyor for the purposes of the Ordinance <sup>1</sup> and noticed in the Marine Department Notice from time to time;

“carrying xx passengers” means vessel’s permissible number of passengers that can be carried through out the text of this Code.”

“chemical carrier” means any vessel constructed or adapted and used for the carriage in bulk of any liquid product listed in chapter 17 of the IBC Code;

“certificate” means a Certificate of Survey, a Record of Safety Equipment, a Freeboard Assignment Certificate, a Hong Kong Load Line Certificate or a Declaration of Fitness for the Carriage of Dangerous Goods issued by the Director under the Survey Regulation; and a Hong Kong Oil Pollution Prevention Certificate, a Hong Kong Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk, a Hong Kong Air Pollution Prevention Certificate <sup>Note</sup> issued under Merchant Shipping (Prevention and Control of Pollution) Ordinance, Cap. 413.;

Note : Subject to enactment and enforcement of Merchant Shipping (Prevention of Air Pollution) Regulation, Cap 413 Sub-leg., which is expected ready in 2007.

“Class I vessel” means any vessel, other than a Class IV vessel, which is permitted to carry more than 12 passengers;

“Class II vessel” means any vessel, other than a Class IV vessel, which is permitted to carry not more than 12 passengers;

“Class III vessel” means any vessel used exclusively for fishing and related purposes;

“Class IV vessel” means any vessel used exclusively for pleasure purposes, regardless of

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<sup>1</sup> May include any person of the following classes, subject to formal conditions and authorization having been issued by the Director and such list of persons being published in the Marine Department Notice from time to time:

- (i) Registered Professional Engineer (Marine and Naval Architecture);
- (ii) classification societies;

the number of passengers it is permitted to carry;

“classification societies” means the classification societies recognised by the Director under s.8 of Cap. 369, which are as follows:

- (a) American Bureau of Shipping (ABS);
- (b) Bureau Veritas (BV);
- (c) China Classification Society (CCS);
- (d) Det Norske Veritas (DNV);
- (e) Germanischer Lloyd (GL);
- (f) Korean Register of Shipping (KR);
- (g) Lloyd’s Register (LR);
- (h) Nippon Kaiji Kyokai(NK); and
- (i) Registro Italiano Navale (RINA)

“Code” means this Code;

“coxswain” means the person having for the time being the charge or command of the vessel; but where there is no such person or the vessel is in the charge or command of a person under the age of 16, it means the person whose name appears in the vessel’s Certificate of Ownership;

“crew” means the coxswain and any other person employed or engaged in any capacity on board a local vessel on the business of the vessel;

“dangerous goods” means -

- (a) goods classified in the IMDG Code or any other IMO publication as dangerous for carriage by sea; and
- (b) any other substance or goods the properties of which might be dangerous if such substance or goods were carried by sea,

and includes empty receptacles, and residues in empty tanks or cargo holds, which have been used previously for the carriage of dangerous goods, except where such receptacles, empty tanks or cargo holds have been –

- (i) cleaned and dried;
- (ii) gas freed or ventilated as appropriate; or
- (iii) where the previous contents were radioactive substances, cleaned and adequately closed,

but shall not include goods forming part of the equipment or stores of the vessel in which goods or substances are carried;

“dangerous goods carrier” means a vessel, other than an oil carrier, certificated for the carriage of dangerous goods;

“Declaration” means Declaration of Survey;

“Director” means the Director of Marine;

“engine room” means a space of any vessel which contains propulsion machinery and/or

generators;

“existing vessel” means a vessel which is not a new vessel;

“favourable weather” means weather, when the visibility is good and when the combined effects of wind, sea or swell, upon the ship under consideration are never greater than those which would cause moderate rolling or pitching, or result in the shipping of green seas on to the main deck (in the case of open boats, over the gunwale);

“ferry vessel” means a vessel operating a franchised service or a licensed service as defined in the Ferry Services Ordinance (Cap. 104);

“final inspection” means the last or final visit for the purpose of survey or inspection, usually carried out on safety equipment items and functional trials in an initial survey or a periodical survey for a vessel;

“gross tonnage”, a measurement figure for a local vessel of which the details and calculation can be referred to Chapter IX of this Code;

“high risk vessel” means a Class I vessel, an Oil Carrier, a Dangerous Goods Carrier, a Noxious Liquid Substances Carrier or any Class II vessel intended for carrying cargoes of hazardous nature;

“HSC Code” means the International Code of Safety for High Speed Craft adopted by the Maritime Safety Committee (MSC) of the IMO by resolution MSC 36(63), as may be amended by the MSC from time to time;

“IBC Code” means the 1998 edition of the IMO International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, as may be amended by the IMO from time to time;

“IMDG Code” means the International Maritime Dangerous Goods Code, published by the IMO as amended from time to time by IMO;

“IMO” means the International Maritime Organization;

“initial survey” in connection with anyone of the certificates mentioned in s.7(1) of Survey Regulation means the survey (including its final inspection) to be completed for a new vessel for the first issue of the concerned certificate;

“length” (長度) or the symbol “(L)”, in relation to a local vessel, means the greater of the following –

- (a) the distance between the foreside of the stem and the axis of the rudder stock;
- (b) 96% of the distance between the foreside of the stem and the aftside of the stern, measured on a waterline at 85% of the least moulded depth, except that –
- (c) if the vessel has a rake of keel, the waterline on which the distance is measured shall be parallel to the designed waterline; and

- (d) if the vessel is not fitted with a rudder stock, the length shall be determined in accordance with paragraph (b);

“low risk vessel” means a vessel of other than high risk vessel;

“main engine” means the propulsion engine(s) of vessel;

“moulded breadth” is measured at amidship and is the maximum breadth over the frames.

“moulded depth” in relation to a ship means the vertical distance measured from the top of the keel to the top of the freeboard deck beam at side.

Provided that –

- (a) in the case of a wood or composite ship, it shall be measured from the lower edge of the keel rabbet;
- (b) if the form at the lower part of the midship section of the ship is of a hollow character, or if thick garboards are fitted, it shall be measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel;
- (c) in the case of a ship having rounded gunwales, it 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;
- (d) if the freeboard deck is stepped and the raised part of the deck extends over the point at which the moulded depth is to be determined, it shall be measured to a line of reference extending from the lower part of the deck along a line parallel to the raised part of the deck;

“new vessel” (新船隻) means –

- (a) a local vessel –
  - (i) that has never been licensed under Part IV of the Shipping and Port Control Ordinance (Cap. 313) before the commencement date of the Survey Regulation; and
  - (ii) in respect of which an application for an operating licence is made for the first time on or after the commencement date of the Survey Regulation, but does not include a vessel the keel of which is laid, or which is at a similar stage of construction, within 12 months immediately before that date and is still under construction on that date;
- (b) a local vessel that does not fall within paragraph (a) and undergoes, on or after the commencement date of the Survey Regulation, alteration –
  - (i) of –
    - (A) its length, breadth or depth as recorded in the certificate of ownership issued or endorsed under the Merchant Shipping (Local Vessels) (Certification and Licensing) Regulation;
    - (B) the output of its main propulsion engine so that –
      - (I) the output is increased by 10% or more than what is recorded in its certificate of inspection or certificate of survey; or
      - (II) particulars relating to the materials, scantlings or design of

the propulsion shafting or stern tube, as shown in the plans approved under Part 3 of Survey Regulation, are no longer accurate; or

- (C) its passenger capacity so that it increases from not more than 60 to more than 60, or from not more than 100 to more than 100; or
- (ii) to an extent that it is no longer suitable –
  - (A) to remain certificated for the particular class or type that it is certificated for under the Merchant Shipping (Local Vessels) (Certification and Licensing) Regulation; or
  - (B) to be categorized as a Category A vessel or a Category B vessel;

"noxious liquid substance carrier" means a mechanized, or a non-mechanized vessel, constructed or adapted for the carriage in bulk of any substance listed in column (a) of the table in Chapter 17 and/or 18 of the IBC Code (being a substance falling into category A, B, C or D) and any other liquid substance which is provisionally listed or class-approved as a category A, B, C or D substance;

"oil carrier" means a motor tanker, or a dumb barge, constructed or adapted for the carriage in bulk of liquid cargoes of a flammable nature (including sludge oil);

"Ordinance" or "LVO" (《商船(本地船隻)條例》或《條例》) means the Merchant Shipping (Local Vessels) Ordinance (Cap 548).

"owner", in relation to a local vessel, means-

- (a) the person or persons named in the vessel's certificate of ownership as the owner of the vessel; or
- (b) in the absence of such a certificate, the person or persons owning the vessel;

"passenger" means any person carried in a vessel other than -

- (a) a member of the crew;
- (b) a child under 1 year of age;

"periodical survey" in connection with anyone of the certificates mentioned in s.7(1) of Survey Regulation means the survey (including its final inspection) to be completed for an existing vessel for the renewal survey, annual endorsement survey or intermediate survey issue of the concerned certificate;

"Recognized Authority" (獲承認的當局) means a government authority recognized under section 7A of the Ordinance;

"river trade limits" means-

- (a) the waters in the vicinity of Hong Kong within the following boundaries-
  - (i) to the East, meridian 114° 30' East;
  - (ii) to the South, parallel 22° 09' North; and
  - (iii) to the West, meridian 113° 31' East; and
- (b) all inland waterways in the province of Kwangtung and Kwangsi on the



mainland of China to which access can be obtained by water from the area defined in paragraph (a).

“Survey Regulation” or “Survey Reg” (《檢驗規例》) means the Merchant Shipping (Local Vessels) (Safety and Survey) Regulation (Cap 548).

“waters of Hong Kong ” means waters of Hong Kong within the meaning of Schedule 2 of the Interpretation and General Clauses Ordinance (Cap. 1).

#### **4 Application**

- 4.1 Subject to paragraphs 4.2 below, this Code will apply to Class I, II and III vessels of all types of construction.
- 4.2 Chapter XI will apply to dynamically supported craft, and vessels which are designed and built to the requirements of rules and regulations applicable to high speed craft issued by a classification society as listed in Annex A of this Code.
- 4.3 Existing vessels shall comply with the requirements previously applicable to these vessels unless otherwise expressly specified in the safety survey regulation or in this Code. The approval and/or exemption of construction and equipment, if any, given to the existing vessels shall remain valid unless otherwise repealed.
- 4.4 Requirement in pair of angle brackets < > appeared in the other chapters in this Code are applicable to new vessels only.

#### **5 Category of Vessel**

- 5.1 Every vessel shall be categorised into Category A or B as indicated in the following table :

Class and Type of Vessel (6)	Vessel Category	A		B	
	Material	Steel/Al/GRP/Wooden		Wooden	Steel/Al/GRP/Wooden
	Propulsion	Fitted with propulsion engine	Not fitted with propulsion engine	Fitted with propulsion engine	Not fitted with propulsion engine
<b>Class I Vessel</b>					
Launch(9)		*			
Ferry Vessel		*			
Floating Restaurant			*		
Stationary vessel (Ceremonial Boat)			*		* (1)
Kaito (Primitive Vessel)				*	
Multi-purposes Vessel		*			
<b>Class II Vessel</b>					
Dangerous Goods Carrier		*	*	* (1)	* (1)
Noxious Liquid Substances Carrier		*	*		
Oil Carrier		*	*		
Edible Oil Carrier		*	*		
Dry Cargo Vessel		*		*(2)	
Dumb Lighter (incl. Flat Top Cargo Barge)					*
Dredger		*			
Hopper Barge					*
Water Boat		*(3)		*	
Tug		*			
Transportation Boat		*			
Transportation Sampan				*	*(8)
Pilot Boat		*		* (1)	
Floating Dock			*		
Floating Workshop (incl. Repair Barge, Welding Barge)		*	*	*(1)	*(1)
Crane Barge			*		*(1)
Work Boat		*(3)		*	*
Flat Top Work Barge		*(3)		*	*
Landing Pontoon					*
Landing Platform					*
Special Purpose Vessel		*	*		

Class and Type of Vessel (6)	Vessel Category	A		B	
	Material	Steel/Al/GRP/Wooden		Wooden	Steel/Al/GRP/Wooden
	Propulsion	Fitted with propulsion engine	Not fitted with propulsion engine	Fitted with propulsion engine	Not fitted with propulsion engine
<b>Class II Vessel (continued)</b>					
Stationary Vessel (Including Separation Barge, Kitchen Boat, Ice Barge, Fish Drying Barge, Waste Water Treatment Barge, Fish Storage Barge)			* (10)		*
<b>Class III Vessel</b>					
Fishing Vessel		*(4)		*	*(8)
Fish Carrier		*(4)		*	*(8)
Fishing Sampan				*(5)	
Outboard open sampans (P4)				*(7)	

(Asterisk\* means applicable)

#### Abbreviations in Table

Al : Aluminium  
GRP : Glass reinforced plastic

#### Remarks in Table

- (1) Existing vessels only.
- (2) Wooden cargo vessels (including wooden trading boats) operating solely within the Hong Kong waters.
- (3) Vessels other than wooden construction.
- (4) Other than wooden vessels and GRP vessels less than 15 metres in length.
- (5) Wooden vessel of less than 8 metres and prototype GRP vessel of less than 15 metres in length.
- (6) Any other type of vessel not included in the table will be specially considered.
- (7) Exempted from survey.
- (8) Refer to Chapter II Part 1.2
- (9) A new kaito carrying more than 12 passengers or a new Class IV vessel carrying more than 60 passengers is required to comply with the safety standard as that for Class I vessel of type "Launch" carrying the same number of passengers.
- (10) New vessels that are kitchen boats only

## **6. Application for survey / inspection and survey / inspection fees**

- 6.1 Subject to subsection 6.2 below the owner or builder applies for the issue of a certificate to a vessel should:
  - (a) submit an "Application for Survey / inspection";
  - (b) submit the plans and data as stipulated in Chapter II (required only for new vessel or modification on existing vessel); and

- (c) arrange the vessel to be surveyed as per items stipulated in Chapter II.
- 6.2 The application for survey of a new vessel is subject to prior provisional approval for licensing having been obtained from the Licensing and Port Formality Section. Before building any vessel the owner or builder when submitting the initial application should furnish the following information for consideration:
- (a) Ship's Name/Hull Number;
  - (b) Ship's Particulars;
  - (c) Ship's Type;
  - (d) Operation Mode (Plying Area);
  - (e) General Arrangement Plan (applicable to vessels required to submit plans for approval, (Ch. II refers)); and
  - (f) Typhoon Mooring Arrangement (applicable to oil carriers, dangerous goods carriers and vessels of length 50 m or above).
- 6.3 It is important that approval for above plans is obtained before commencement of construction. Owners and builders are therefore advised to submit their application well in advance.
- 6.4 Vessel owner or agent operator should apply as required to Marine Department or relevant authorized surveyor <sup>(Note)</sup> or authorized organization or recognized authority <sup>(Note)</sup> as appropriate for statutory survey and provide necessary survey conditions.
- Note: Director of Marine may delegate some or all of the statutory surveys specified in this Code to the authorized surveyor or authorized organization or recognized authority as indicated in the authorization / recognition document. List of authorized surveyors or authorized organizations or recognized authorities will be promulgated in the Marine Department Notice issued from time to time.
- 6.5 Applicant should, as required, pay survey fee, travelling fee and other necessary fees to authorized surveyor or authorized organization or recognized government authority.
- 6.6 Vessel owner or agent operator, when required, may also apply to Marine Department for the statutory approval and surveys, and pay the relevant fees.
- 6.7 The owner or agent of any high risk vessel should apply as required to the Marine Department for relevant statutory surveys and pay relevant fees.

## **7 Exclusion/exemption**

- 7.1 For vessel which is normally plying in Hong Kong waters or River Trade limits but which, in exceptional circumstances, is required to undertake a voyage beyond original plying waters, Marine Department may grant exemption to the relevant requirements under this Code or relevant regulation provided that the vessel complies with the safety requirements

of which Marine Department considers appropriate for the intended voyage.

- 7.2 For any vessel which embodies features of a novel kind, if the application of any requirements of this Code or regulation concerned might, seriously impede research into the development of such features and their incorporation in vessel plying in Hong Kong waters or River Trade limits, Marine Department may consider excluding such requirements. Nevertheless, any such kind of vessel should comply with the requirements of which Marine Department considers as appropriate to ensure the overall safety of the vessel.
- 7.3 Application for the above exemptions should be made to Marine Department. Owner's justifications or survey or assessment reports issued by the authorized surveyor or authorized organization or recognized government authority should also be submitted for Marine Department's consideration and review.

## **8 Equivalent**

- 8.1 Any requirements of this Code which cannot be fully met for one reason or another by the vessel concerned should be justified and arranged with suitable "equivalence". Marine Department may grant permission for providing on board any other fitting, material, appliance or apparatus, or type thereof, or other facilities that are different from those required in this Code, provided that they have been satisfied by testing or other methods and at least possessed equivalent effectiveness with those required in this Code.
- 8.2 Application for the use of equivalent fitting, material, appliance or apparatus, or type thereof, or other facilities specified in this Code should be made to Marine Department together with the survey and test reports for consideration, review and endorsement.

## **9 Interpretation**

- 9.1 Where a question of interpretation of a part of this Code arises, a decision may be obtained on written application to the Director (for attention to Local Vessels Safety Section), who will give clarification or advice as appropriate. The Director's decision is final.

**CHAPTER II**  
**SURVEY / INSPECTION, ISSUANCE OF CERTIFICATE**  
**AND PLAN APPROVAL**

**1 Survey / inspection for Issue or Endorsement of Certificate**

1.1 Except vessels of the types referred to in 1.2 below, every vessel should be surveyed per items as indicated in the tables in section 7 (items marked with '✓') as relevant -

- (a) new vessel: Table 1 (applicable vessels as indicated in the table) and Table 3;
- (b) existing vessel : Table 2 (applicable vessels as indicated in the table) and Table 3.

1.2 Vessels of the types referred to in the table below, which are not fitted with propulsion engine and not fitted with any internal combustion engine onboard, are not subject to any survey:

Class	Types	Material of construction	Length overall x extreme breadth <sup>(note)</sup>	Minimum requirements for life-saving appliances and fire fighting apparatus
II	transportation sampan	any material	not exceeding 25 m <sup>2</sup>	(a) 1 lifejacket for every person on board; (b) 1 lifebuoy; and (c) 1 fire bucket with lanyard
II	work boat	other than metal	not exceeding 25 m <sup>2</sup>	(a) 1 lifebuoy; and (b) 1 fire bucket with lanyard
III	fishing sampan	other than metal	not exceeding 25 m <sup>2</sup>	(a) 1 lifebuoy; and (b) 1 fire bucket with lanyard

**Note :**

“extreme breadth” (最大寬度), in relation to a local vessel, means the athwartship distance between the extremity of the outermost permanent structure on the port side and the extremity of the outermost permanent structure on the starboard side of the vessel.

1.3 A new Class IV vessel carrying more than 60 passengers should be surveyed in accordance with the requirements of a Class I vessel carrying more than 60 passengers.

1.4 A laid-up vessel should be presented for survey before returning to service if the inspection certificate/endorsement previously issued has expired. The survey should include the survey items due in the period as the vessel was not laid up.

1.5 When deemed necessary or at his discretion, the attending surveyor/inspector may request any other item to be presented for inspection

1.6 The Director may, on the certificate of ownership of a certificated Class III vessel, make an endorsement to the effect that the certificated vessel may be used with one or more ancillary vessels where each ancillary vessel meeting the following conditions: –

(a) belongs to the same owner as the certificated vessel;

(b) does not exceed 4 metres in length overall; and

(c) is not fitted with an engine;

## 2 Validity of Certificates and Endorsement

The expiry date of the certificate or endorsement except those vessels as listed in the remark 1 in Chapter II Part 7 Table 3 should be determined as follows:

No.	Date of Final inspection	Expiry Date of Certificate/Endorsement to be issued
(a)	New vessel	FSD + 12 months (Remark)
(b)	Re-commissioned laid-up vessel	FSD + 12 months
(c)	Existing vessel	
	(i) within two months before CED	CED + 12 months
	(ii) after CED	FSD + 12 months
	(iii) more than two months before CED	FSD + 12 months

### Abbreviations

CED = expiry date of existing certificate/endorsement

FSD = final inspection date

### Remark:

For new vessels required to be surveyed on slip (or in dry-dock), the validity of certificate to be issued should in no case exceed 14 months as counted from the last hull bottom survey date or the final date plus 12 months whichever is the earlier.

## 3. Statutory Surveys and Application

3.1 Officers delegated by the Director are responsible for conducting surveys of all local vessels and the issuance of relevant statutory certificates or records.

3.2 Authorized surveyors or authorized organizations or recognized authorities are authorized to conduct surveys of all local vessels other than vessels of high risk for the issuance of the following statutory certificates or records by Marine Department except items (d) and (e) which are issued by them:-

- (a) Certificate of Survey or Certificate of Inspection;
- (b) Survey Record of Safety Equipment;
- (c) Hong Kong Load Line Certificate or Freeboard Assignment Certificate;
- (d) Survey Record of Tonnage Measurement ;
- (e) Survey Record of Inspection for Cement Tank, Air Receiver, Material or Equipment etc.

3.3 If the owner or agent wishes his vessel to be surveyed by an authorized surveyor or authorized organization or recognized authority, he should provide the Department an “Engagement Form”:-

- (a) prior to the survey - the name of the authorized surveyor or authorized organization or recognized authority, the place and date of the intended survey; and
- (b) on completion of survey - a survey report and a declaration duly signed and issued by the authorized surveyor or authorized organization or recognized authority. The survey report may be furnished to the attending surveyor during final inspection - item No. (E&F-9 ) in Part 7 Table 3 refers.

### 3.4 Survey Application

3.4.1 The owner or his agent or operator of a local vessel should apply for the following surveys in accordance with the provisions to Marine Department or the relevant authorized surveyor or authorized organization or recognized authority as appropriate:-

- (a) initial survey ( for new or existing vessel applies for licence for the first time or licensed vessel involved alteration specified in item 3.4.2(b) and (c));
- (b) periodical survey ( existing licensed vessel)

3.4.2 When one of the following situations occurs, the owner or his agent should apply for an additional survey as required with Marine Department or the relevant authorized surveyor or authorized organization or recognized authority as appropriate for the issuance of survey report and /or relevant certificate:-

- (a) an accident to a vessel which affects its seaworthiness;
- (b) alteration of a vessel’s intended purpose or plying limits as restricted in its certificate;
- (c) alteration or modification affecting the safety of a vessel;
- (d) invalidity of a vessel’s statutory certificate;
- (e) change of the vessel’s name.



#### 4 Submission of Plans and Data

- 4.1 Plans and data should be submitted according to the tables in section 5 below for the construction of new vessel and modification of existing vessel.
- 4.2 For a not classed vessel, plans and data as marked with "MD/AS/AO/RA" should be submitted to the relevant survey party for approval (or for record, as specified), one copy of such approved plans and data as marked with @ should be submitted to Marine Department for record.
- 4.3 For a vessel classed with a classification society, plans and data as marked with "AO" should be submitted to the relevant classification society for approval. One copy of such approved plans and data as marked with @ should be submitted to the Marine Department for record.
- 4.4 Additional plans and data will be required when deemed necessary.

#### 5 Plans and Data required to be submitted <sup>(\*7) (\*12)</sup>

Note: MD=Marine Department; AS=Authorized Surveyor; AO=Authorized Organization; RA=Recognized Authority

Vessel Category		A		B
		not classed	classed	
Plans and Data				
<b>(A) GENERAL AND SAFETY</b>				
1)	General Arrangement @	MD/AS/AO/RA	AO	MD/AS/AO/RA (*1)
2)	Lines Plan including details of draft marks and offsets tables (for record)	MD/AS/AO/RA	AO	MD/AS/AO/RA (*2)
3)	Hydrostatic Curves	MD/AS/AO/RA	AO	MD/AS/AO/RA (*2)
4)	Cross Curves of Stability	MD/AS/AO/RA	AO	MD/AS/AO/RA (*2)
5)	Preliminary Intact Stability Information @	MD/AS/AO/RA	AO	MD/AS/AO/RA
6)	Estimated Damage Stability Information (Ch. IV para. 2 refers) @	MD/AS/AO/RA	AO	MD/AS/AO/RA
7)	Inclining Experiment Report/Rolling Period Test Report @	MD/AS/AO/RA	AO	MD/AS/AO/RA (*3)
8)	Stability Information Booklet (after inclining experiment) @	MD/AS/AO/RA	AO	MD/AS/AO/RA (*3)
9)	Damage Stability Calculation (after inclining experiment) (Ch. IV para. 2 refers) @	MD/AS/AO/RA	AO	MD/AS/AO/RA
10)	Tonnage Measurement and Calculation (*10) @	MD/AS/AO/RA	AO	MD/AS/AO/RA

Vessel Category		A		B
		not classed	classed	
<b>Plans and Data</b>				
11)	a) Passenger Space (shelter)/Seating Arrangement/Assessment (Ch. V refers) @	MD/AS/AO/RA	AO	MD/AS/AO/RA
	b) Passengers and Crew Accommodation Requirements ( e.g. handrail, seat belt, staircase, lighting and etc.) (Ch. V refers) @	MD/AS/AO/RA	AO	MD/AS/AO/RA
12)	Safety Plan showing arrangement of (a) life saving appliances, @	MD/AS/AO/RA	AO	MD/AS/AO/RA (*1)
	(b) fire fighting appliances, @	MD/AS/AO/RA	AO	MD/AS/AO/RA (*1)
	(c) light and sound signals, @	MD/AS/AO/RA	AO	MD/AS/AO/RA (*1)
	(d) means of escape, escape installation and arrangement, etc. @	MD/AS/AO/RA	AO	MD/AS/AO/RA (*1)
<b>(B) HULL</b>				
1)	Midship Sections	MD/AS/AO/RA	AO	MD/AS/AO/RA
2)	Scantling Calculation	MD/AS/AO/RA	AO	MD/AS/AO/RA (*2)
3)	Profile, Decks and Bulkheads	MD/AS/AO/RA	AO	MD/AS/AO/RA (*2)
4)	Shell Expansion	MD/AS/AO/RA	AO	MD/AS/AO/RA (*2)
5)	Rudder/Kort Nozzle, Rudder Stock, Skeg and Sole Piece	MD/AS/AO/RA	AO	MD/AS/AO/RA (*2)
6)	Mooring Arrangement and Equipment Number Calculation (for DG carriers and L>50m Dumb steel lighters)	MD/AS/AO/RA	AO	MD/AS/AO/RA
7)	Weathertight/watertight Closing Appliances Arrangement	MD/AS/AO/RA	AO	MD/AS/AO/RA
8)	Structural Fire Protection Arrangement @	MD/AS/AO/RA	AO	MD/AS/AO/RA
9)	Materials and Paints Specifications (*4)	MD/AS/AO/RA	AO	MD/AS/AO/RA
10)	Loadline / freeboard Certificate calculation and related requirements, such as coaming height watertightness and etc. @	MD/AS/AO/RA	AO	MD/AS/AO/RA
<b>(C) MACHINERY INSTALLATION</b>				
1)	Engine Room Arrangement	MD/AS/AO/RA	AO	MD/AS/AO/RA
2)	Pump Room Arrangement	MD/AS/AO/RA	AO	MD/AS/AO/RA
3)	Propeller Shafting, Stern Tube and Coupling	MD/AS/AO/RA	AO	MD/AS/AO/RA
4)	(a) Main engine and Gear Box Certificates (*5) @	MD/AS/AO/RA	AO	MD/AS/AO/RA
	(b) Aux. diesel engine Certificates (*5) @	MD/AS/AO/RA	AO	MD/AS/AO/RA
5)	Fuel Oil System (incl. tanks, piping)	MD/AS/AO/RA	AO	MD/AS/AO/RA

Vessel Category		A		B
		not classed	classed	
<b>Plans and Data</b>				
6)	Fire-fighting Piping Arrangement (incl. fire main, fixed fire extinguishing system) @	MD/AS/AO/RA	AO	MD/AS/AO/RA
7)	Bilge Pumping Arrangement	MD/AS/AO/RA	AO	MD/AS/AO/RA
8)	Compressed Air Piping System (for pressure 10 bar)	MD/AS/AO/RA	AO	MD/AS/AO/RA
9)	Air Receiver (Ch. IIIA para. 15 refers)	MD/AS/AO/RA	AO	MD/AS/AO/RA
10)	Steering Gear Hydraulic Piping System	MD/AS/AO/RA	AO	--
11)	Prevention of Oil Pollution Installation (Ch. IIIA para. 19 refers) @	MD	MD/AO	MD
12)	Fresh Water System (incl. tank construction, piping) (*6)	MD/AS/AO/RA	AO	MD/AS/AO/RA
13)	Cargo Tank Venting System	MD/AS/AO/RA	AO	--
14)	Mechanical Ventilation and Air-conditioning System (*7)	MD/AS/AO/RA	AO	MD/AS/AO/RA
15)	Domestic LPG Installation (Annex H refers)	MD/AS/AO/RA	AO	MD/AS/AO/RA (*8)
16)	Filling, Sounding and Air Vent System	MD/AS/AO/RA	AO	MD/AS/AO/RA (*8)
17)	Prevention of Air Pollution Installation (Annex I-10 etc) @	MD	MD/AO	MD
<b>(D) ELECTRICAL INTSALLATION (including Emergency Power System) (*9)</b>				
1)	A.C. System Line diagram @	MD/AS/AO/RA	AO	MD/AS/AO/RA
2)	Wiring Diagram of Main Switchboard	MD/AS/AO/RA	AO	MD/AS/AO/RA
3)	Layout of Main Switchboard	MD/AS/AO/RA	AO	--
4)	Electrical Arrangement	MD/AS/AO/RA	AO	MD/AS/AO/RA
5)	Wiring Diagram of Distribution Board	MD/AS/AO/RA	AO	--
<b>(E) RADIO COMMUNICATION AND NAVIGATIONAL EQUIPMENT</b>				
1)	Radio Communication equipment and arrangement@	MD/AS/AO/RA	AO	MD/AS/AO/RA
2)	Navigational equipment and arrangement @	MD/AS/AO/RA	AO	MD/AS/AO/RA
<b>(F) ADDITIONAL ITEMS FOR SPECIAL OPERATION (i.e. DG VESSELS) AND OTHERS</b>				
	Supplementary information/data and list of inspection, testing & trial requirements relating to the type of vessel (*12) @	MD/AS/AO/RA	AO	MD/AS/AO/RA
2)	Additional Items for Oil Carriers having cargoes $\leq 61^{\circ}\text{C}$ (Ch.VI refers) (*12)	MD	MD	MD
3)	Additional Items for DG or NLS Carrier (Ch.VI refers) (*12)	MD	MD	MD

Plans and Data	Vessel Category	A		B
		not classed	classed	
(G) <b>LIFTING APPLIANCES</b> ( including derrick cranes, extensible jib cranes and fixed-jib crane etc.) (*11)				
1)	Strength calculations for the stress members including derrick boom, mast, supporting structures, permanent attachments and other associated fittings @			Competent Examiner
2)	Rigging diagrams that should include all rigging arrangements used in all modes of operation of the derrick cranes			
3)	As fitted drawings including the scantling and dimensions of the of the derrick boom, mast and permanent attachments, and the arrangements for preventing the lifting of the foot of the derrick boom out of its support			

### Remarks in Tables

- \*1 Applicable to the following Category B vessels: dumb lighter, hopper barge, water boat, flat top work barge, landing pontoon, stationary vessel including separation barge, kitchen boat barge, ice barge, fish drying barge, waste water treatment barge and fish storage barge.
- \*2 Applicable to dumb lighters, hopper barges and prototype vessel of fishing sampan.
- \*3 For dumb lighters required to be submitted with heavy lifting stability calculations, hopper barges and prototype vessel of GRP fishing sampan.
- \*4 Applicable to floating restaurants and ceremony boats only.
- \*5 For new vessels, (i) maker certificate for petrol engine; (ii) for diesel engine maker or classification societies approved certificates / information and document as appropriate required in chapter IIIA or IIIB and in MARPOL Annex VI or Annex I-10.
- \*6 For water boats only.
- \*7 Applicable to simple design and construction vessels, such as Class III GRP fishing sampan , Class II Cat. A transportation sampan, etc, (length overall not more than 15m), simplified set of plans includes 5(A)(1), 5(A)(8), 5(A)(10), 5(A)(11), 5(A)(12), 5(B)(2), 5(C)(4) , 5(C)(5) & 5(D)(1) and supplementary information / data as necessary to be submitted.
- \*8 Applicable to vessels other than wooden construction.
- \*9 Applicable to the following Category B vessels fitted with A.C. generator:  
Dumb lighters, other barges, landing pontoons, all stationary vessels (including separation barges , kitchen barges , ice barges , fish drying barges , water dispensing barges and fish storage barges); and prototype vessels of GRP fishing sampans but not applicable to vessels of wooden construction.
- \*10 International Tonnage Certificate and calculation may be acceptable to MD.
- \*11 Any cranes for works, including cargo handling, fitted on local vessels, should have the document/drawing item 1) to 3) indicated below certified by a competent examiner. One copy of each of these documents/drawings certified under Merchant Shipping ( Local Vessels) (Works) Regulation, Cap 548 should be submitted to MD. Following document plans and data to be certified are:-
  - 1) Strength calculations for the stress members including derrick boom, mast, supporting structures, permanent attachments and other associated fittings (*Note: Recognised manufacturer's loading tables indicated essential information are acceptable instead of detailed strength calculations*)
  - 2) Rigging diagrams that should include all rigging arrangements used in all modes of operation of the cranes.
  - 3) As fitted drawings including the scantling and dimensions of the of the derrick boom, mast and permanent attachments, and the arrangements for preventing the lifting of the foot of the derrick boom out of its support
- \*12 For high risk vessels that are not classed, all plans and data to be submitted to Marine Department for approval.

**<6 Plans to be retained onboard**

- 6.1 Every Class I, II and III vessel (exclude wooden fishing vessel and sampan) should be provided onboard one copy of the plan(s) at least with the following information indicated thereon :
- (a) general arrangement of vessel with seating arrangement and escape routes if passengers are carried;
  - (b) types and dispositions of life saving appliance, fire fighting appliance, light, shape, sound signals and radiocommunications equipment(if fitted).
- 6.2 For every Class I vessel carrying more than 100 passengers, safety plan showing arrangement of life saving appliances, fire fighting appliances, light and sound signals and means of escape, escape installation and arrangement should be exhibited in conspicuous places throughout the vessel.
- 6.3 For Class II and III vessels, stability / loading & unloading information where applicable should be provided on board. >

## 7 Survey / Inspection Items and Survey / Inspection Programmes

**Table 1 Initial Survey** (its final inspection items are separately listed)

No.	Survey Item	Category of Vessel	A	B
<b>A</b>	<b>GENERAL AND SAFETY MEASUREMENT</b>			
1	Draft Marks/Load Line - verification		✓	✓
2	Measurement of Principal Dimensions and Tonnage		✓	✓
3	Inclining Experiment (*6)		✓	✓ (*4)
4	Lightship Verification (*7)		✓	✓ (*4)
5	Simple Inclining Test (a) for $C_{np} \geq 0.35$ Kaito		--	✓
	(b) for prototype vessel of fishing sampan		--	✓
6	Rolling Period Test (for Category B dry cargo vessel only)		--	✓
7	Loading Trial (for new design Hopper Barge only)		--	✓
8	Towing Test (for Tug only)		✓	--
9	Measurement of Noise Level in Passenger Space (For Cl. I vessel, Cl. II transportation boat and Cl. II transportation sampan)		✓	--
10	Measurement of Passenger Space / Seating		✓	✓
11	Minimum headroom in Accommodation Space - confirmation		✓	✓
12	Position of Navigation Light Seating - verification		✓	✓
13	Means of Escape in Accommodation Space and machinery spaces - inspection		✓	✓
<b>B</b>	<b>HULL</b>			
1	Mould Loft/GRP Shell Moulding - inspection		✓	✓ (*1)
2	Material test - Steel Plate/Aluminium Plate/GRP Polyester Resin (*2)		✓	✓ (*1)
3	- Propeller Shaft, Coupling, Rudder Stock (*3)		✓	✓ (*9)
4	Preparation before welding/Resin to glass ratio of Hull Structural Members (incl. underdeck structure, superstructure, skeg, rudder, kort nozzle, etc.) -inspection		✓	✓ (*1)
5	Hull Scantlings - verification		✓	✓ (*1)
6	Welding / GRP Lamination and Finishing - inspection		✓	✓ (*1)
7	Hose test/Flood test (*8)		✓	✓ (*4)
8	Structural Tanks - internal inspection		✓	✓ (*1)
9	- hydraulic test/air test (*8)		✓	✓ (*4)
10	Watertight / Weathertight Appliances - inspection		✓	✓ (*1)
11	- hose test (*8)		✓	✓ (*4)
12	Load Line Items/Freeboard Assignment Certificate Items - inspection		✓	✓

13	Freeboard Marks - initial verification	✓	✓ (*1)
14	Structural Fire Protection (Chapter VI Part 13 refers) - inspection	✓	✓
<b>C</b>	<b>MACHINERY</b>		
1	Main Engine, Gear Box - Type Approval Certificate (*5) / inspection	✓	✓ (*9)
2	Auxiliary Diesel Engine Certificate (*5) / inspection	✓	✓ (*9)
3	Tail Shafts and Coupling - verification of dimensions	✓	✓ (*9)
4	- taper bedding test	✓	✓ (*9)
5	Stern Tube - verification of dimension and hydraulic test	✓	✓ (*9)
6	Independent Fuel Oil Tanks - internal inspection and hydraulic test (*8)	✓	✓ (*9)
7	Verification of fuel oil tanks	✓	✓ (*9)
8	Fire Main - inspection and hydraulic test	✓	✓ (*9)
9	Bilge Line - inspection and hydraulic test	✓	✓ (*9)
10	Sea Suction valve – inspection and hydraulic test	✓	✓ (*9)
11	Steering System Hydraulic Line - inspection and hydraulic test	✓	✓ (*9)
12	Fuel Oil Line - inspection and hydraulic test	✓	✓ (*9)
13	CO <sub>2</sub> Pipe - inspection, hydraulic test and blowing test	✓	✓ (*9)
14	Compressed Air Pipe - hydraulic test (for P > 17.2 bar)	✓	✓
15	Air Receiver / Cement Tank - verification of wall thickness/dimensions	✓	✓
16	- hydraulic test (*8)	✓	✓
17	Independent water Tank for Water Boat only - hydraulic test	--	✓
18	Prevention of Oil Pollution Installation ( MD/ Class. Society ) - Inspection	✓	✓
19	- hydraulic test of independent bilge water / sludge holding tank	✓	✓
20	Ventilation and air conditioning system (Chapter V refers)	✓	✓ (*9)
<b>D</b>	<b>ELECTRICAL</b>		
1	Electrical Wiring - inspection	✓	✓
2	Generator circuit breaker load test ( Class I vessels with genset power > 50 kW )	✓	--
<b>E</b>	<b>OTHERS AND ADDITIONAL REQUIREMENTS</b>		
1	Supplementary information/data and list of inspection, testing & trial requirements relating to the type of vessel	✓	✓
2	Additional Items for Oil Carriers having cargoes ≤ 61°C (Chapter VI refers) - inspection and test	✓	✓
3	Additional Items for DG or NLS Carrier (Chapter VI refers) - inspection and test	✓	✓

## **Remarks in Table 1**

- \*1 Applicable to dumb lighter, hopper barge and vessel to be issued with Freeboard Assignment Certificate, and prototype vessel of fishing sampan.
- \*2 In lieu of the material test, mill sheet issued/endorsed by a classification society is acceptable.
- \*3 Ch.IIIA/Part 3 para. 9 and Ch.IIIA/Part 3 para. 17.4 refer.
- \*4 For hopper barge only.
- \*5 Ch.IIIA/Part 3 para. 7.1 refers. For new vessels, (i) maker certificate for petrol engines; (ii) for diesel engines maker or classification societies approved certificates / information and document as appropriate required in Ch. IIIA or Ch. IIIB and in MARPOL Annex VI or Annex I-10.
- \*6 Applicable to the 1st vessel of a series of four vessels.
- \*7 Applicable to the 2nd, 3rd and 4th of a series of four vessels.
- \*8 For guidance on machinery and hull wear down or corrosion tolerance limits and other inspection items, please refer to Annex M.
- \*9 For visual inspection and operational test at either initial or final inspection only.



**Table 2 Periodical Survey** (its final inspection items are separately listed)

No.	Survey Item	Class/Category /Type of Vessel	Class IA >60 P Vessel			Class I A 13-60 P Vessel, Class II A DG Carrier, Oil Carrier, NLS Carrier			Class IIA, IIIA Vessel			Class I B, II B, III B Vessel		
			1	2	4	1	2	4	1	2	4	1	2	4
<b>A</b>	<b>GENERAL AND SAFETY EQUIPMENT</b>													
1	Fixed Fire Ext. Installation CO <sub>2</sub> system - blowing test Sprinkler System - spraying test		✓				✓				✓			
2	- hydraulic test		(*)											
3	Fire Extinguisher, CO <sub>2</sub> Bottle - refill and hydraulic test	✓ (*8)				✓ (*8)								
4	Buoyant Apparatus - submerging test (*9)			✓			✓							
<b>B</b>	<b>HULL AND FITTINGS</b>													
1	Hull - external (incl. ship bottom) inspection	✓				✓			✓			✓		(*10)
2	- internal (excl. oil, water tanks and void spaces) inspection					✓								
3	- internal (incl. oil, water tanks and void spaces) inspection (*2) & (*13)		✓				✓			✓				✓ (*10)
4	- gauging thickness of deck, shell and bulkhead plating (*3) & (*13)			✓			✓			✓				✓ (*10)
5	Sea Suctions, Discharging Valves - stripped down inspection		✓				✓			✓				✓ (*10)
6	Anchors, Cables- ranged out for inspection (*13)		✓				✓			✓				
<b>C&amp;D</b>	<b>MACHINERY AND ELECTRICAL INSTALLATION</b>													
1	Main Engine hydraulic test of coolers - (incl. air, lub. oil, cooling water), cylinder head and water jacket		✓					✓			✓			
			(by engine workshop) (*4)											
2	- overhaul of fuel oil pump, fuel nozzles		✓				✓			✓				
			(by engine workshop) (*4)											
3	Main Engine and Gear Box - stripped down for inspection (*5)		✓				✓			✓				
			(by engine workshop) (*4)											

No.	Survey Item	Class/Category /Type of Vessel	Class IA >60 P Vessel			Class I A 13-60 P Vessel, Class II A DG Carrier, Oil Carrier, NLS Carrier			Class IIA, IIIA Vessel			Class I B, II B, III B Vessel		
			1	2	4	1	2	4	1	2	4	1	2	4
4	Generator engine- stripped down for inspection				✓			✓			✓			
						(by engine workshop) (*4)								
5	Main fire pump, emergency fire pump, bilge pump, windlass - stripped down for inspection			✓				✓			✓			
6	Air Receiver (P<17.2 bar) - internal inspection			✓				✓			✓			✓
7	- hydraulic test (*13)			✓				✓			✓			✓
8	Air Receiver (P≥17.2 bar) - internal inspection			✓				✓			✓			✓
9	- hydraulic test (*13)			✓				✓			✓			✓
10	Tail Shaft, Propeller, Rudder and Rudder Stock (*13) - drawn out for inspection			✓				✓			✓			
11	Independent Cement Tank – internal Inspection & thickness gauging (*14)													✓
12	Independent Cement Tank – external inspection(*14)												✓	
13	Independent Fuel Oil Tank – internal inspection & hydraulic test			✓				✓			✓			
14	Independent Water Tank (For Water Boat only) – hydraulic test												✓	
15	Oil Pollution Prevention Installation - vessel with HKOPP certificate		(*6)											
16	- vessel without HKOPP certificate: - hydraulic test of independent bilge water/sludge holding tank			✓				✓			✓			
17	AC electrical circuit –main circuit breaker load test			✓ (*12)										
18	Pump Room - inspection							✓						
19	Cargo Tank Vent Piping System – inspection							✓						
20	Cargo Tank Lids - inspection							✓						

### Abbreviations

- DG Carrier - dangerous goods carrier  
NLS Carrier - noxious liquid substances carrier

## **Remarks in Table 2**

### **\*1 Survey Intervals**

- 1 - to be conducted every year
- 2 - to be conducted every two years
- 4 - to be conducted every four years

The periodical survey should be carried out in subsequent order; i.e. a 1st year survey should be followed by a 2-yearly survey, a 3rd year survey should be followed by a 4-yearly survey, etc.

- \*2 In inner bottom spaces not provided with access holes, at least 5% of area of the inner bottom plate, in at least five sufficiently scattered locations, should be opened up to facilitate inspection of the inner bottom spaces.
- \*3 Applicable to vessels of age exceeding 8 years. For vessels possessing International Load Line Certificate the gauging inspections may be arranged when in the renewals of the load line certificate.
- \*4 Inspection record issued by engine workshop should be submitted for reference.
- \*5 For a brand new gear box, the strip down inspection should begin from the fourth anniversary the gear box is in service.
- \*6 For the renewal of HKOPP certificates, oil pollution prevention installation should be stripped down for inspection. Independent bilge water holding/sludge tank should be hydraulic tested.
- \*7 Hydraulic test for CO<sub>2</sub> and sprinkler systems should begin from the 10th anniversary the system is in service, and thereafter at intervals of 10 years. The hydraulic testing pressure for the CO<sub>2</sub> system high pressure manifold should not be less than 125bar.
- \*8 Inspection for portable fire extinguishers and CO<sub>2</sub> bottles should be in accordance with the following table. The inspection record should be retained on board for examination.

9 l, 45 l Water, Foam, Dry Powder Fire Extinguisher		CO <sub>2</sub> Fire Extinguisher, CO <sub>2</sub> Fixed Installation Bottle		
Refill / Weighting (*a)	Hydraulic Test (*b)	Weighting	Refill	Hydraulic Test (*b)
Owner (*c) /FSIC	FSIC/MD	FSIC/MD	DG Reg. 62	DG Reg. 66

### **Abbreviation**

- FSIC: Fire Service Installation Contractors registered in the Fire Service Department or institutions acceptable to the Director
- DG Reg. 62: A person holding a Dangerous Goods Licence issued under Reg. 62, Dangerous Goods (General) Regulation
- DG Reg. 66: A person approved by Fire Service Department under Reg. 66, Dangerous Goods (General) Regulation
- MD : Marine Department officer

**Note**

- (\*a) The need for refilling should be in accordance with the instruction of manufacturer of fire extinguisher.
  - (\*b) Intervals of hydraulic test:  
 Portable Fire Extinguishers - 5 years  
 CO<sub>2</sub> bottles - 10 years
  - (\*c) MD officers may examine the owner's competence on carrying out the servicing and conduct random checks including function test of the portable fire extinguishers.
- \*9 Air case not filled with buoyant materials should be tested for air tightness by submerging in water.
  - \*10 Applicable to ceremonial boat, dumb lighters and hopper barges only.
  - \*11 If the hull and machinery installation of a classed vessel are inspected by a surveyor of classification society, the inspection reports/certificates issued by classification society should be submitted for record. For dangerous goods carriers, oil carriers and noxious liquid substances carriers, MD officer should be invited for each hull external inspection carried out according to classification society's survey programme. (Class I category A vessels should be inspected as per Ch. II Part 7 Table 2).
  - \*12 Applicable to Class I Category A vessels fitted with generator of each capacity exceeding 50kW.
  - \*13 For guidance on machinery and hull wear down or corrosion tolerance limits and other inspection items, please refer to Annex M.
  - \*14 Upon satisfactory inspection, an inspection report will be issued.

**Table 3 Final Inspection** (\*1) (for initial survey or periodical survey)

No.	Survey Items (*2)
<b>A&amp;B</b>	<b>GENERAL, HULL &amp; SAFETY EQUIPMENT</b>
1	Life Saving Appliances - inspection and function test
2	Fire Fighting Appliances (incl. CO <sub>2</sub> fixed fire extinguishing installation, emergency fire pump) - inspection and function test
3	Navigation Lights and Sound Signals - inspection and function test
4	Watertight / Weathertight Closing Appliances (incl. door, ventilator, air pipe, etc.) - inspection
5	Freeboard Mark / Load Line Mark - verification
6	Passenger Space (incl. escape signs, 'No Smoking' signs, etc.), Crew Space, Escape Arrangement, Bulwarks and Rails - general inspection
7	General condition in Machinery Space (a) protection from injury of personnel (b) prevention of fire hazard (c) prevention of oil pollution hazard
8	Verification of principal dimensions, engine and major machinery particulars

<b>C&amp;D</b>	<b>MACHINERY AND ELECTRICAL INSTALLATION</b>
1	Main Engines, Generator Engines, Steering Gears - running test
2	Air Emission Assessment (*3)
3	Unattended Machinery Space Installation (Ch. IIIA/Pt 3/18 and Ch. IIIB/Pt 3/13 refer) - function test
4	Air Receiver / Cement Tank Safety Valves - function test
5	Bilge and Oily Water Pumping System - function test
6	Prevention of Oil Pollution Installation - function test
7	Electrical Circuit - earthing test
8	- insulation resistance test (*4)
9	- Main circuit breaker function test (*5)
10	Meters on Switchboard - function test
11	Domestic L.P.G. Installation - inspection
<b>E&amp;F</b>	<b>RADIO &amp; NAVIGATION EQUIPMENT AND OTHERS</b>
1	Radio Communication Equipment
2	Navigational Equipment
3	Verifying Certificates of Competency of Master and Engineer (if manoeuvring test required)
4	Permanent ballast - confirmation of amount and position
5	Fire Drill, Abandon Ship Drill (*6)
6	Ship Manoeuvring Trial (*8)
7	Operational and Safety Trial (*9)
8	Drawings required to be retained onboard - confirmation of numbers and contents (*7)
9	Survey report issued by MD/AS/AO/RA - verification
10	Inspection of remedial deficiency items in Initial / Periodical Survey
11	Marking of Safe Working Load and Certificate of Lifting Appliances – verification (*10)
12	Supplementary information/data and list of inspection, testing & trial requirements relating to the type of vessel

Note: MD=Marine Department; AS=Authorized Surveyor; AO=Authorized Organization; RA=Recognized Authority

### **Remarks in Table 3**

- \*1 The final inspection should be carried out annually except the following types of vessels:  
Category B Fishing Vessel, Ice Boat, Fish Drying Barge, Waste water treatment Barge and Live

#### Fish Dealing Boat:

- (a) vessels of L x B Numeral not exceeding 25m<sup>2</sup> - triennially.
  - (b) vessels of L x B Numeral exceeding 25m<sup>2</sup> - biennially.
- \*2 Where practicable the listed items may be presented for inspection prior to the final inspection.
  - \*3 Air emission requirements to be conducted as per Annex I-10.
  - \*4 Applicable to all vessels other than category B wooden construction vessels. For guidance on machinery and hull wear down or corrosion tolerance limits and other inspection items, please refer to Annex M. (Electrical system insulation test reports from EMSD qualified registered engineers or electricians are also acceptable.)
  - \*5 Applicable to all vessels fitted with generator of each capacity exceeding 50 kW.
  - \*6 Applicable to launches, ferries, floating restaurants, oil carriers, dangerous goods carriers, noxious liquid substances carriers and vessels plying beyond Hong Kong waters.
  - \*7 Ch. II Para.6 refers.
  - \*8 Applicable to ferry vessels only. The trial should include crash ahead and astern running, turning and windlass operation test. Valid sea trial permit should be produced at the time of sea trial.
  - \*9 Applicable to vessels of the type stated in Ch.I/Part4 para.4.2.
  - \*10 The following document / certificates certified by competent examiner should be presented in final inspection for verification of validity.
    - i) Register of Lifting Appliance & Lifting Gear (Form 1);
    - ii) Certificate of Test and Examination of Winches, Derricks and their Accessory Gear (Form 2);
    - iii) Certificate of Test and Examination of Lifting Appliance and their Accessory Gear other than Derricks (Form 3);

### **8 Large Cargo Vessel**

- 8.1 “Large Cargo Vessel”: means local licensed cargo vessel of overall length exceeding 50 metres. These vessels are prohibited to enter the typhoon shelter and must be anchored or leave Hong Kong Waters during typhoon period, consequently reinforcement of relevant shipboard equipment and installation as stated the para. 8.2 and 8.3 are required.
- 8.2 In addition to the requirements as stated in this Code of Practice, following equipment and installation are also required :
  - (a) Non-mechanically propelled vessel: one kind of communication equipment, anchor and windlass;
  - (b) Mechanically propelled vessel: compass, echo sounder, radar, VHF(Very High Frequency) radio telephone(with licence issued by Telecommunication Authority, Hong Kong), anchor, windlass and inclinometer.
- 8.3 Standard of anchor and anchoring machine must comply with relevant strength and calculation requirements of Classification Societies or an equivalent Standard.

**CHAPTER III A**  
**HULL CONSTRUCTION, MACHINERY, ELECTRICAL INSTALLATIONS**  
**AND FITTINGS - CATEGORY A VESSEL**

**PART 1 GENERAL REQUIREMENTS**

- (1) Except as otherwise specified, every vessel should be designed and built to the requirements of rules and regulations of a classification society as listed at Annex A, having regard the size, construction material, and operational services of the vessel. Such rules and regulations should be complied with in its entirety. However in the case of any inconsistency between this Code and any of the requirements of the classification society rules, the requirements of this Code should be complied with.
- (2) Main propulsion, control, fuel oil, compressed air, electrical and refrigeration systems; generator machinery; air receivers and other pressure equipment; piping and pumping arrangements; steering equipment, shafts and couplings for power transmission should be designed, constructed and tested to the satisfaction of the surveyor. Suitable means or device should be provided to machinery, equipment, lifting gear, winches, fish handling and fish processing equipment, etc. so as to reduce to a minimum any danger to persons on board. Special attention should be paid to moving parts, hot surfaces and other potential dangers.

**PART 2 HULL CONSTRUCTION**

**1 Main Deck Construction**

Every vessel should be fully decked. Sunken deck intended to be used for passenger cabin should have scantlings equivalent to those of main deck, and should be at least 300 mm above the deepest loaded waterline.

**2 Bulkheads**

- 2.1 Every launch or ferry vessel should be fitted with the following watertight bulkheads:
  - (a) collision bulkhead;
  - (b) fore and after bulkhead of main engine space;
  - (c) when any compartment exceeds 2/5ths of the length, an additional bulkhead at an intermediate position unless it meets the relevant damage stability requirements;
  - (d) if the vessel exceeds 24 metres in length, an aft peak bulkhead unless the engine room is situated at aft end of the vessel.
- 2.2 In double-ended vessels, collision bulkheads should be fitted at both ends.
- 2.3 On a motor vessel other than launch and ferry vessel, the dispositions and construction of watertight bulkheads should meet the relevant requirements of classification societies.

- 2.4 Vessels required complying with the provision of the prevention of pollution regulations, the dispositions and construction of bulkheads in such vessels should meet the relevant damage stability criteria.
- 2.5 On all vessels other than wooden vessels, and as far as practicable on wooden vessels, bulkheads should be of watertight construction.
- 2.6 Access openings fitted in watertight bulkheads should be equipped with effective watertight closing appliances.

**3 Closing Appliances, Freeing Ports**

- 3.1 On every vessel, air pipes, ventilators, cargo hatchways, small hatchways, manholes, skylights and doors leading to a space below main deck should be fitted with weathertight closing appliance and should have a minimum coaming height as follows:

Plying Limits	Coaming Height (mm)
Hong Kong Waters	230 <300>
River Trade Limits	600

No coaming is required for watertight manholes.

- 3.2 Special consideration may be given to vessel of a design for a particular operation. Such restriction or condition, if any, would be endorsed on the inspection certificate of the vessel.
- 3.3 Sidescuttles below main deck should be of watertight and non-opening type fitted with deadlight.
- 3.4 Vessels issued with Hong Kong Load Line Certificate (HKLL Certificate) or International Load Line Certificate (ILL certificate) should in addition comply with the relevant requirements on closing appliances prescribed in the load line regulations.
- 3.5 If bulwark is fitted at the shipside, freeing ports should be provided in the bulwark with the minimum aggregate area in accordance with the rules of the classification based on the vessel’s size and operational services.

**4 Protection of Passengers and Crew**

- 4.1 Bulwark, guardrails or equivalent should be installed near the periphery of weather decks accessible to passengers and crew. Storm rails or handgrips should be fitted in passenger standing areas, fixed at deck or at wall.
- 4.2 Bulwarks and rails should have a minimum height of 1000 mm above deck. Where it can be shown that higher rails would interfere with the normal operation of the vessel a reduced height may be accepted. Sufficient freeing ports are to be provided on bulwarks. When guardrails are fitted, the opening below the lowest course of the rails should not exceed 230 mm and the other courses should not be more than 380 mm apart.



- 4.3 Vessels issued with HKLL Certificate or ILL Certificate should be in addition comply with relevant requirements on means of protection prescribed in the load line regulations.

## **5 Flooring**

Metallic or wooden flooring, if fitted above bilge, should be readily removable for cleaning and inspection. A steel inner bottom, if fitted, should meet the requirements of classification society rules in respect of double bottom. Access openings and air pipes should be provided for such spaces.

## **6 Marking of Hull**

- 6.1 The certificate of ownership number of a vessel should be marked in accordance with section 11 of the Certification and Licensing Regulation.
- 6.2 On every launch and ferry vessel, the name of vessel and the total number of persons (passenger and crew) should be painted on vessel's bows and stern. The minimum size of lettering is 100 mm in height.
- 6.3 Permanent draft marks should be provided on port and starboard side of stem and stern of a vessel. The marks should be measured from the bottom of the keel, with letters and figures being in decimetric heights and at two decimetric intervals.

## **PART 3 MACHINERY INSTALLATION**

### **7 Main Engine, Auxiliary Engine and Gear Box**

- 7.1 In any
- (a) launch or ferry vessel carrying more than 60 passengers;
  - (b) oil tanker;
  - (c) noxious liquid substances carrier;
  - (d) dangerous goods carrier;
  - (e) tug; or
  - (f) vessel plying beyond Hong Kong waters

which is not classed with a classification society and has main engine power output exceeding 130 kW, such main engine and its associated gear box should be of a type approved by a classification society or maritime administration.

- 7.2 The main engine and the associated gearbox should be matched at the maximum continuous rating condition. Alternative rating may be accepted subject to proper justification is given.
- 7.3 New main engines and gear boxes are required to be fitted on new vessels stated in 7.1 above. For vessels other than those stated in 7.1 above and carrying more than 12 passengers, if used engine is intended to be installed, it should be properly stripped down and overhauled for examination. To facilitate the confirmation of the source of origin and/or the quality of reconditioning of the engines, proper document from the original engine maker or purchase document from the engine workshop should be submitted. The data on engine model, type and identification number; the fuel injection pump model and

size should be clear and adequate for accurate assessment of the engine power. The reconditioning reports should give adequate details similar or same as the items and format given on checklist of engine and gearbox inspection in Annex I-2 and I-3. For new engine requirements, owners are drawn attention to the recommendation in Annex I-10.

- 7.4 For main engine and gear box fitted on vessel other than that stated in 7.1 above, documentation provided by manufacturer indicating that the main engines are of marine type is sufficient.
- 7.5 Auxiliary engine(s) on new mechanically propelled vessel should be 'marine type'; auxiliary engine(s) on existing mechanically propelled vessel should also be 'marine type' if they are being replaced/renewed.
- 7.6 Any engine fitted on a vessel should be properly maintained at all time free from dark smoke emission. In this regard, during the final survey for initial and periodic survey, engine performance condition check would include smoke emission test using Ringelmann Chart. Shade 2 of the Ringelmann Chart and a continuous period of 3 minutes are the upper limits. The emission beyond this limit is considered not acceptable.
- 7.7 Any vessel if found or reported emitting excessive dark smoke, owners would be requested to present vessel's engine(s) for special inspection and smoke test to ensure compliance. Any non-compliance will be pursued in accordance with relevant legislation requirement.

## **8 Engine Fittings**

- 8.1 Main engine and generator engine should be provided with effective means of control and indication.
- 8.2 If remote control of main engine is provided from the wheelhouse, local control should also be provided at engine side.
- < 8.3 Emergency stopping device for main engine should be provided in wheelhouse. >
- 8.4 Main engine installed on any
  - (a) <launch or ferry vessel carrying more than 60 passengers>;
  - (b) <oil tanker carrying cargo oil having a flash point not exceeding 61°C (closed cup test)>;
  - (c) <dangerous goods carrier>;
  - (d) <noxious liquid substances carrier>;
  - (e) <tug>; or
  - (f) <Category A vessel that may ply beyond Hong Kong waters>should be provided with means of protection due to engine faults as follows:

Engine Fault	Means of Protection	
	Audible and Visible Warning Alarm	Automatic Shut-off
Lubrication oil low pressure	✓	
Cooling water high temperature	✓	
Overspeed	✓	✓

8.5 The control for re-setting of main engine should be fitted at the helmsman's position.

8.6 Engine with cylinder diameter greater than 200 mm or a crankcase volume greater than 0.6 m<sup>3</sup> should be provided with crankcase explosion relief valves of approved type. Other engines of smaller size should be fitted with crankcase venting pipe leading to the open deck.

8.7 The engine's exhaust pipe should be lagged with heat-resistant material unless it is served by a water cooling system. A silencer or expansion chamber should be fitted on the exhaust pipe.

## 9 Propeller Shafting

9.1 The diameter of propeller shaft should meet the minimum requirements of the classification society rules. The owner and/or builder of vessel are suggested to consider an allowance for wear down of the shaft. Repair by machining to eliminate defects of the shaft may be permitted, provided the minimum diameter as required by the classification society rules is maintained.

9.2 Propeller shaft and its coupling should be physically tested and certificated as follows:

Type of Vessel \ Shaft Diameter	> 75 mm	≤ 75 mm
As stated in section 7.1	MD/CS	manufacturer
Others	manufacturer	manufacturer

MD : Marine Department  
CS : classification society

9.3 Propulsion systems including shafting of non-conventional type may be accepted if that are of the types approved by classification society.

## 10 Engine Room

10.1 Engine room should be so designed as to provide safe and free access to all machinery and its controls as well as to any other parts which may require servicing.

- 10.2 Adequate ventilation should be provided in engine room. If only natural ventilation is provided, at least two cowl ventilators of adequate size should be fitted. One of the cowl vents should be led well down into the space to vent out the accumulated vapour in the lower part of the space. Ventilation trunk if passing through other compartments should be of watertight or gastight construction, as appropriate. The ventilator should be fitted with damper or other means of closing. The fire damper, if fitted, should be provided with indicator showing its open or close position.
- 10.3 If the vessel is constructed of wooden or GRP of non-oil resistant material, a suitable metal tray which can readily be cleaned should be fitted under the engine to protect the bilges against saturation by oil.
- 10.4 Two means of escape including suitable ladders and exits should be provided for the engine room. One of these means of escape may be waived with regard to the size and disposition of the space. If such means of escape is led to passenger space, it should be clear of any seating.
- 10.5 Every machinery spaces shall be at all times kept clean and free from unnecessary combustible materials and that waste oil is not allowed to accumulate in the bilges.

## **11 Nature of Fuel**

Except otherwise permitted by the Director, marine fuel oil of flash point above 61°C (closed cup test) should be used for engine.

## **12 Tanks**

- 12.1 The arrangements for filling fuel tanks should be such that oil will not spill or overflow into any compartment of the vessel. Woodwork surrounding the deck filling mouth should be covered with metal piece. No loose can/barrel of fuel oil should be carried on board.
- 12.2 Fuel tanks should be substantially constructed of suitable material and securely fixed in position. The tanks and their connections should be tested by hydraulic pressure to a water head of 2.5 metres, or to the height of the overflow whichever is the higher.
- 12.3.1 The materials for water tank of water boats should be of steel, aluminum or glass reinforced fibre (GRP) subject to :
- (a) the tanks are watertight;
  - (b) the tanks do not affect the stability, structure and safety of the vessel;
  - (c) the shell of water tank shall not be formed as any part of ship hull unless the ship hull is constructed of steel or aluminum;
  - (d) the physical construction and installation of the water tank, fittings and piping are up to the Director's satisfaction;
  - (e) the tank coating/paint used shall not cause any health and hygiene risk; and
  - (f) the requirements from other Department (if any) shall be fulfilled.
- 12.3.2 If water boat requires ballasting; detail information, drawing and calculation of the ballast tank and ballast system shall be prior approved by the Director.

### **13 Pumping and Piping Arrangement**

- 13.1 All fuel oil tank, lubrication oil tank and spaces where flammable gas may collect should be fitted with venting pipes leading to the weather deck. The open end of any oil tank's venting pipe should be fitted with properly secured metallic wire-gauze.
- 13.2 Safe and efficient means of ascertaining the amount of fuel oil in any oil tank should be provided. For sounding pipes, their upper ends should terminate in safe positions and be fitted with suitable means of closure. Any transparent level gauge should be of robust construction and of a type acceptable to the Department and fitted with automatic closing valves at both ends. Other means of proven design may be allowed subject to any failure or overfilling of the tank will not permit release of oil from it. Filling pipes should have suitable screwed cap.
- 13.3 Fuel oil pipes, their valves and fittings should be of copper, steel or other equivalent material. Where necessary flexible pipes may be allowed provided such pipes and their end attachments are of adequate strength, made of approved fire-resistant materials or design, to the satisfaction of the surveyor. Pipe joints in general are to be readily accessible. Fuel tank outlet valves should be readily closed from a position outside the space where the tank is situated. An automatic closing drain valve should be fitted at a lower position of fuel oil tank.
- 13.4 Oil pipes, water pipes and engine exhaust pipes should generally not be fitted above and close to electrical distribution board, switchboard, etc. or any hot surface. Should it be unavoidable, suitable protection should be provided. Oil pipes should not be led through any fresh water tank.
- 13.5 A suitable metal tray for collection of leaking oil should be fitted under each valve of oil tanks and filters.
- 13.6 Independently driven fuel oil pump should be provided with -
- (a) a suitable relief valve at discharge side of the pump;
  - (b) a means of stop outside of the space where the pump is situated.

### **14 Bilge Pumping Arrangement**

- 14.1 Every vessel should be provided with a bilge pumping system for pumping out bilge water from any compartment other than oil tanks and water tanks appropriate to the size of vessel as given by classification society rules.
- 14.2 A screw-down non-return valve should be fitted at the following positions in the bilge line:
- (a) bilge valve distribution chests;
  - (b) direct bilge suction; and
  - (c) bilge pump connections to main bilge line.
- 14.3 Bilge pipes should not be led through any fresh water tank. Bilges pipes, if pass through fuel oil, ballast or double bottom tanks, should be of heavy gauge steel construction.
- 14.4 Any bilge pipe piercing collision bulkhead should be fitted with a positive means of closing at the bulkhead with remote control from the working deck with an indicator

showing the position of the valve provided that, if the valve is fitted on the after side of the bulkhead and is readily accessible under all service conditions, the remote control may be dispensed with.

## 15 Compressed Air System

- 15.1 Suitable pressure-relief arrangements should be provided to prevent excess pressure in any part of the compressed air systems.
- 15.2 The starting air arrangements for main engine of a cylinder diameter exceeding 300 mm should be adequately protected against the effects of back firing and internal explosion in the starting air pipes.
- 15.3 The discharge pipes from starting air compressor should be led directly to the starting air receiver. Starting air pipes from air receivers serving main or generator engines should be entirely separate from other services.
- 15.4 Provision should be made to avoid or minimize the entry of oil into the air pressure systems and to drain the oil from the systems.
- 15.5 (a) Construction of air receivers should meet the standard of a maritime administration's national standard or a classification society, and be subject to the approval of the Director. The air receivers are classified according to the following table:

Class I	Class II	Class III
$P > 39.2$	$39.2 \geq P \geq 17.2$	$P < 17.2$
Or $S > 38$	or $38 \geq S \geq 16$	or $S < 16$
Or $T > 350$	or $350 \geq T \geq 150$	or $T < 150$

where P = maximum design or working pressure (bar)

S = shell thickness (mm)

T = working temperature (°C)

(b) Class I and II air receivers should be built under the survey of one of the abovementioned maritime institutions, and issued with appropriate certificates. For Class III air receivers, submission of appropriate certificates issued by manufacturer is sufficient.

(c) Each air receiver should be provided with the following fittings:

- (i) Stop valve and pressure gauge
- (ii) Drain valve
- (iii) Safety valve

(d) The following information should be submitted in duplicate for approval:

- (i) Air receiver construction (including details of welded connections, attachments, dimensions and supports etc.)
- (ii) Construction of pressure parts (cylindrical shell, end plates, etc.)
- (iii) Arrangement of mountings and fittings

- (iv) Mechanical properties of material
- (v) Test pressure.

15.6 Every air receiver should be tested at pressure according to the following table:

Type of Construction	Maximum Working Pressure (MWP)	Test Pressure
Riveted or Fusion welded	$MWP \leq 7 \text{ bar}$	$2 \times MWP$
Riveted	$7 \text{ bar} < MWP \leq 20 \text{ bar}$	$1.5 \times MWP + 3.5$
Riveted	$MWP > 20 \text{ bar}$	$MWP + 14$
Fusion welded	$MWP > 7 \text{ bar}$	$1.5 \times MWP + 3.5$

## 16 Anchors, Cables and Windlass

- 16.1 The sizes of chain cables and anchors should be in accordance with classification society rule requirements prescribed for vessels operating in sheltered waters. Where ropes are proposed instead of chain cables, the ropes sizes and strengths should be equivalent to that of chain cables.
- 16.2 A windlass for recovering the cables and anchors is recommended.

## 17 Steering System

- 17.1 Every motor vessel should be provided with a main steering gear and an emergency means for actuating the rudder. The main steering gear should be capable of turning the rudder over from  $35^\circ$  on either side to  $30^\circ$  on the other side in not more than 28 seconds, at vessel's maximum service speed. The emergency means may be of powered or manually operated.
- 17.2 Pressure relief valve should be fitted at the hydraulic line.
- 17.3 The position of rudder, if power operated, should be indicated in the wheelhouse. The rudder angle indication for power-operated steering gear should be independent of the steering gear control system.
- 17.4 Material tests for rudder stocks should be carried out as that for propeller shafts. Rudder stock assembly should be enclosed with efficient watertight glands and packing. Suitable stopping devices are to be provided for the rudder to prevent it from excessive angular motion and vertical jumping.
- 17.5 The steering system of vessels of the type stated in Chapter I, paragraph 4.2 should comply with the relevant requirements specified in Chapter XI.

## 18 Wheelhouse - Engine Room Communication

- 18.1 On any vessel with manned engine rooms, a suitable system of communication between wheelhouse and engine room should be provided.

18.2 Any vessel with length or propulsion power as indicated below, operating in unattended machinery spaces mode should be provided with the following installation in the proximity of the position of helmsman:

- (a) Vessel of  $L \leq 37$  m or total propulsion power  $\leq 1500$  kW (2,010HP)
- (i) for main engine-
    - (1) means of start, stop and control of speed
    - (2) control of gearbox or clutch
    - (3) lubricating oil pressure gauges
    - (4) < lubricating oil low pressure alarm >
    - (5) cooling water pressure gauges (if fitted on the engine)
    - (6) cooling water temperature gauges
    - (7) < cooling water high temperature alarm >
    - (8) exhaust temperature gauges (if fitted on the engine)
    - (9) a fixed fire detection (operated by fire detectors) and fire alarm system for engine room. <sup>(Note)</sup>
  - (ii) for generator engine-  
means to stop
  - (iii) for bilge water in engine room-  
high level audible alarm.

Note : For the purpose of “combined coxswain” operation, vessels of length less than 12 m, except those operating beyond waters of Hong Kong or “high risk” type, if regular surveillance (such as through tale-tell pipe or transparent glass view-hole fittings etc.) can be exercised from outside engine room or control station by the coxswain or a crewmember, these requirements can be waived.

(b) Vessel with length  $L > 37$  m or total propulsion power  $> 1500$  kW(2010HP) would be specially considered.

## 19 Installation for Prevention of Oil Pollution

19.1 In accordance with Schedule 7 of Survey Regulation, vessels to which the requirements of Merchant Shipping (Prevention of Oil Pollution) Regulations (Cap 413A) applicable are reproduced in the following table:

Type of vessel	Category of vessel	A		B	
	Propulsion	Fitted with propulsion engine	Not fitted with propulsion engine	Fitted with propulsion engine	Not fitted with propulsion engine
		Gross tonnage	Gross tonnage	Gross tonnage	Gross tonnage
Class I vessel					
ferry vessel		$\geq 80$	-	-	-
floating restaurant		-	$\geq 80$	-	-
launch		$\geq 80$	-	-	-



multi-purposes vessel	≥80	-	-	-
primitive vessel (kaito)	≥80	-	≥400	-
Class II vessel				
dangerous goods carrier	≥80	-	≥400	-
dredger	≥80	-	-	-
dry cargo vessel	≥80	-	≥400	-
edible oil carrier	≥80	-	-	-
floating dock	-	≥80	-	-
floating workshop (including repair pontoon, welding barge)	≥80	≥80	≥80	≥80
noxious liquid substance carrier	≥80	-	-	-
oil carrier	of any tonnage	of any tonnage	-	-
pilot boat	≥80	-	≥400	-
special purpose vessel	≥80	-	-	-
transportation boat	≥80	-	-	-
transportation sampan	-	-	≥400	-
tug	≥80	-	-	-
water boat	≥80	-	≥400	-
work boat	≥80	≥80	≥80	≥80
Class III vessel				
fish carrier	≥80	-	≥400	-
fishing sampan	-	-	≥400	-
fishing vessel	≥80	-	≥400	-

19.2 The installation and documentation required on board, and information required to submit for approval are detailed in the following table:

Type of Vessel	Oil Carrier (incl. Sludge Oil Carrier)		Vessels other than Oil Carrier	
	GT<150	GT≥150	80≤GT<400	GT≥400
Gross Tonnage (GT)	GT<150	GT≥150	80≤GT<400	GT≥400
Required Installation and Documentation	(c),(f)	(a),(b),(c), (d),(e)	(c),(f)	(a),(b), (c),(d), (e)
Information to be submitted	(i),(k), (l),(m)	(g),(h),(j), (k),(l),(m)	(i)	(g),(h), (j)

## **Legend**

- (a) An approved type oily water separator designed to produce effluent not more than 15 ppm of oil.
- (b) Tank (sludge tank) for oil residue in engine room.
- (c) Standard discharge connection.
- (d) For oil carrier (including sludge oil carrier)  $\geq 150$  GRT or vessels other than oil carrier  $\geq 400$  GRT, Hong Kong Oil Pollution Prevention Certificate and Supplement issued/endorsed by the Director or International Oil Pollution Prevention Certificate and Supplement issued/endorsed by a classification society.
- (e) Oil record book (Part I and Part II); Vessels other than oil carriers require Part I.
- (f) Bilge water holding tank.

The minimum capacity (V) of the tank is to be determined by the following formula:

$$V = 0.9 P + 50 \quad \text{litres}$$

where P = total horsepower of main engine(s), in kW.

The above formula is for an interval of discharge of 18 hours. For alternate intervals of discharge, the capacity should be adjusted accordingly.

- (g) Installation plans for oily-water separator consist of:
  - (i) piping arrangements, and
  - (ii) wiring diagram of electrical installation.
- (h) Sludge tank and discharge arrangement plans include:
  - (i) construction, size and location of sludge tank; and
  - (ii) piping diagram of sludge tank from machinery spaces to reception facility via standard discharge connection.
- (i) Bilge water holding tank and discharge arrangement plans include:
  - (i) construction, size and location of bilge holding tank; and
  - (ii) piping diagram of bilge water holding tank from machinery spaces to reception facility via standard discharge connection.
- (j) Shipboard oil pollution emergency plan (not required for sludge oil carriers).
- (k) Cargo oil pump room bilge pumping arrangements.
- (l) Brief description of scheme for cleaning cargo oil tanks.
- (m) Damage stability calculations.

19.3 Vessels shall maintain a valid certificate relevant to prevention of oil pollution as required by Merchant Shipping (Prevention of Oil Pollution) Regulations (Cap 413 sub. leg A) for the intended purpose of the vessel.

19.4 Provisions for discharge prohibition for oil pollution prevention as stipulated in Cap 313, Cap 413 and Cap 548 are to be strictly obeyed for all local vessels, including those vessels not mandatory required to provide with the physical arrangements/equipment/document on board

as indicated in paragraphs 19.1 and 19.2 above.

## **20 Pollution Prevention for Vessels carrying Noxious Liquid Substances in bulk**

Every vessel carrying noxious liquid substance, including unassessed liquid substances, in bulk shall comply with the relevant requirements of the Merchant Shipping (Control of Pollution by Noxious Liquid Substances in Bulk) Regulations, Cap 413B and maintain a valid certificate as appropriate for the intended purpose of the vessel.

## **PART 4 ELECTRICAL INSTALLATION**

### **21 Electrical Power Source**

- 21.1 Nominal voltage of electrical system is recommended to be 380V for generation and power circuits, 220V for lighting and distribution circuits and 24V D.C. for low voltage circuits.
- 21.2 The hull return system should not be used for power or lighting.
- 21.3 An earthed distribution system should not be used on an oil carrier carrying petroleum products or other types of vessel with flammable cargo.
- 21.4 Where electrical power constitutes the only means of driving the lubrication oil pump and cooling water pump for the main engine, a main source of electrical power should be provided which should include at least two generating sets, one of which should be driven by internal combustion engine.
- 21.5 The vessel's emergency lighting, navigation lights for vessels of length exceeding 24 metres, fixed fire extinguishing system, fire detection and alarm system and public address system should be provided with emergency power supply of sufficient capacity.
- 21.6 Ventilation fans serving machinery or cargo spaces, engines' oil fuel pumps and other similar oil pumps should be capable to be stopped outside of the space where the appliance is situated.
- 21.7 Each navigation light should be connected separately to the distribution board served for this purpose.
- <21.8 In every electric or electro-hydraulic power steering gear system on vessel:
  - (a) the steering gear should have two independent sets of supply cables connecting direct to main switchboard;
  - (b) the supply circuits of steering gear control system should be provided with short circuit protection only;
  - (c) the steering gear motors should have an overload alarm instead of overload protection. The short circuit protection should be not less than twice the total rated current of the motor in the circuit protected.

This subsection is not applicable to vessels fitted with a separate power-operated means of steering.>

## **22 Precautions against Shock, Fire and Other Hazards of Electrical Origin**

- 22.1 (a) Exposed permanently fixed metal parts of electrical machines or equipment which are not intended to be "live", but which are liable under fault conditions to become "live" should be earthed unless they are supplied at a voltage not exceeding 50 volts.
- (b) Electrical apparatus should be so constructed and so installed that it should not cause injury to person when handled or touched in the normal manner.
- 22.2 Main and emergency switchboards should be so arranged as to give easy access as may be needed to apparatus and equipment, without danger to attendants. The sides and backs and, where necessary, the fronts of switchboards, should be suitably guarded. Exposed "live" parts having voltages exceeding 50 volts should not be installed on the front of such switchboards. There should be non-conducting mats or gratings at the front and rear, where necessary.
- 22.3 The distribution system if exceeds 50V, whether primary or secondary, for power or lighting, with no connection to earth is used, a device capable of monitoring the insulation level to earth should be provided.
- 22.4 (a) The voltage rating of any cable should not be less than the nominal voltage.
- (b) Every conductor of a cable, flexible cable or flexible cord should be capable of carrying the maximum current which will normally flow through it without exceeding the appropriate current rating as specified by manufacturer of the cable.
- (c) Cable runs should be selected so as to avoid action from condensed moisture or drip. Cables should, as far as possible, be remote from sources of heat, such as hot pipes, resistors, etc.
- (d) Cables should be prevented from mechanical damage. When necessary cables should be enclosed in suitable conduits or casings, or armoured cables should be used.
- 22.5 (a) Circuits should be protected against short circuit and overload.
- (b) The current rating of circuit breaker should not exceed the current rating of the smallest size of cable in the circuit protected by the circuit breaker.
- 22.6 Lighting fittings should be arranged to prevent temperature rises which could damage the wiring and to prevent surrounding material from becoming excessively hot.
- 22.7 In spaces where flammable gas mixtures are liable to collect and in any compartment assigned principally to the containment of an accumulator battery, the electrical fittings should be of flameproof type.
- 22.8 (a) The housing of accumulator batteries should be properly stowed in a locker which should be well ventilated.
- (b) Accumulator batteries should not be located in the crew or passenger spaces.
- <22.9 A lightning conductor is recommended to be fitted for a vessel which hull or mast is constructed of nonconductive materials. The lightning conductor might be connected to a copper plate fixed to the vessel's hull well below the lightship waterline. >

## **PART 5 REFRIGERATION INSTALLATION**

### **23. Refrigerating Chamber and Refrigerating Machinery**

#### 23.1 Refrigerating Chamber

- 23.1.1 The insulation layer should be intact and properly fixed.
- 23.1.2 Effective drainage arrangement should be provided for the refrigerating chamber and evaporator.
- 23.1.3 All accessories of the system including the thermometer, pressure gauge should be properly maintained to indicate the correct parameters.
- 23.1.4 Door alarm or manual call point, if provided, should be properly maintained and routine testing is necessary to ensure their correct functioning.
- 23.1.5 The chamber should be well lit and evaporator fan, if provided, should be fitted with protective guard.

#### 23.2 Refrigerating Machinery

- 23.2.1 All the accessories including the thermometer, pressure gauge, relief valve, liquid indicator should be properly maintained.
- 23.2.2 The relief valves and bursting disc should not be blanked and damaged. Blow test would be required if the stamp seal has been damage.
- 23.2.3 The high pressure (discharge) and low pressure (suction) cut-out of the refrigerating compressor should be properly maintained. Periodic testing is necessary to ensure their normal functioning.
- 23.2.4 Insulation resistance of the electrical supply of the system should not be less than 1 mega ohms.
- 23.2.5 Safety protective device of switchgear should be properly maintained and tested to ensure their normal functioning.
- 23.2.6 Control and safety cut-out of the system should be properly maintained and tested to ensure their normal functioning.

**CHAPTER III B**  
**HULL CONSTRUCTION, MACHINERY, ELECTRICAL INSTALLATIONS**  
**AND FITTINGS - CATEGORY B VESSELS**

**PART 1 GENERAL REQUIREMENTS**

- (1) Dumb lighter, hopper barge and any vessel required to possess a Hong Kong Load Line Certificate or a Freeboard Assignment Certificate; and fishing sampan should be designed and built to the requirements of the relevant rules and regulations as listed at Annex A, having regard the size, construction material and operational services of the vessel. Such rules and regulations should be complied with in its entirety. However in the case of any inconsistency between this Code and the requirements of the classification society rules, this Code should be complied with. Wooden fishing vessels should be of adequate structural strength appropriate for the sea and weather conditions likely to be encountered in the intended area of operation.
- (2) Suitable means or device should be provided to machinery, equipment, lifting gear, fish handling and fish processing equipment, etc. so as to reduce to a minimum any danger to persons on board. Special attention should be paid to moving parts, hot surfaces and other potential dangers.

**PART 2 HULL CONSTRUCTION**

**1 Hull and Bulkheads**

1.1 A motor vessel other than a fishing sampan should be fitted with:

- < (a) collision bulkhead (for vessels of other than wooden vessels and of length (L) exceeding 8 m); >
- (b) machinery space fore bulkhead; and
- (c) machinery space aft bulkhead, unless the machinery space is situated at aft end of the vessel.

Vessels other than wooden construction, the bulkheads should be of watertight construction. Bulkheads in vessels of wooden construction should be as far as practicable of watertight construction.

- < Access opening fitted in a watertight bulkhead should be equipped with effective watertight closing appliance. No opening is to be fitted in collision bulkhead on vessels other than wooden construction. >

1.2 A fishing sampan should be fitted with superstructure or erection to enable the proper display of navigation lights. Other requirements should be referred to Annex I-7.

1.3 Fishing sampan should have:

- (a) A main deck from stem to stern;
- (b) 100% internal reserved buoyancy (vessel under full load condition), or the underdeck hold filled with non combustible plastic foam;

- (c) Superstructure or erection to enable display of navigation light.

## 2 Closing Appliances, Freeing Ports

- 2.1 The air pipes, ventilators, cargo hatchways, small hatchways, manholes and doors which are leading to a space below main deck should be fitted with closing appliance and should have a minimum coaming height of 230 or <300> mm on every vessels of-
- (a) vessel of other than wooden vessel not in possession of a Freeboard Assignment Certificate; or
- < (b) wooden vessel plying beyond Hong Kong waters >
- 2.2 No coaming is required for watertight manholes.
- 2.3 If bulwark is fitted at the shipside on vessels operating outside the Specified Sheltered Waters, freeing ports should be provided in both sides of the bulwark with the minimum aggregate area (in m<sup>2</sup>) indicated in the following table. For vessels operating beyond Hong Kong Waters, the aggregate area should be twice of that indicated in the tables.

Length (L) (m)	Aggregate Freeing Port Area (m <sup>2</sup> )
L 12	0.0115 L
12 < L 24	(0.00146 L-0.006) L
L 24	0.029 L

## 3 Protection of Passengers and Crew

Ch.III A/Part 2 para. 4 refer.

## 4 Flooring

Ch.III A/Part 2 para. 5 refers.

## 5 Marking of Hull

5.1 For vessels of all kinds of construction, Ch.III A/Part 2 para. 6.1 refers.

<5.2 Every steel fishing vessel and vessel assigned with a freeboard in compliance with requirement of Ch.IV para. 1.1 should provide with draft marks per requirements of Ch.III A/Part 2 para. 6.3>.

## PART 3 MACHINERY INSTALLATION

### 6 Main Engine and Engine Fitting

6.1 The engine's exhaust pipe should be lagged with heat-resistant material unless it is served by a water cooling system. A silencer or expansion chamber should be fitted on the exhaust pipe. <Main engine crankcase should be fitted with venting pipe leading to the open deck>.

- 6.2 The maximum horsepower of main engine to be installed on fishing sampans should not exceed that indicated in the following table:

Length (L) (m)	Maximum Horsepower (BHP)
$L < 6$	40
$6 \leq L < 8$	75
$8 \leq L < 15$	90

## 7 Engine Room

- 7.1 Adequate ventilation should be provided in engine room. If only natural ventilation is provided, at least two cowl ventilators of adequate size should be fitted.
- 7.2 If the vessel is of wooden construction, a metal tray, which can readily be cleaned, should be fitted under the engine to protect the bilges against saturation by oil.
- 7.3 Every machinery spaces shall be at all times kept clean and free from unnecessary combustible materials and that waste oil is not allowed to accumulate in the bilges.

## 8 Nature of Fuel

Ch.III A/Part 2 para. 11 refers.

## 9 Tanks

- 9.1 The arrangements for filling fuel tanks are to be such that oil will not spill or overflow into any compartment of the vessel. Woodwork surrounding deck-filling mouth should be covered with sheet metal. No loose can/barrel of fuel oil is to be carried on board.
- 9.2 Fuel tanks should be substantially constructed of suitable material and securely fixed in position.
- 9.3 On Class III GRP fishing sampan, the petrol fuel tank may be of portable plastic tank approved by engine manufacturer. The fuel tank capacity is as follows:

Length (L) (m)	5 $L < 6$	6 $L < 8$	8 $L < 15$
Maximum capacity for each fuel tank	50 litres		100 litres
Maximum capacity for all fuel tanks on board	100 litres		150 litres

- 9.4.1 The materials for water tank of water boats should be of steel, aluminum or glass reinforced fibre (GRP) subject to:
- the tanks are watertight;
  - the tanks do not affect the stability, structure and safety of the vessel;



- (c) the shell of water tank shall not be formed as any part of ship hull unless the ship hull is constructed of steel or aluminum;
- (d) the physical construction and installation of the water tank, fittings and piping are up to the Director's satisfaction;
- (e) the tank coating / paint used shall not cause any health and hygiene risk; and
- (f) the requirements from other Department (if any) shall be fulfilled.

9.4.2 If water boat requires ballasting, detail information, drawing and calculation of the ballast tank and ballast system shall be prior approved by the Director.

## **10 Pumping and Piping Arrangement**

Ch.IIIA/Part 3 para. 13 refers.

## **11 Bilge Pumping Arrangement**

A hand or electrical operated bilge pump of sufficient capacity should be fitted for pumping out water in the bilge. On dumb lighters, a portable type submerged pump is accepted for the purpose.

## **12 Compressed Air System**

Ch.IIIA/Part 3 para. 15 refers.

## **13 Wheelhouse - Engine room Communication**

Ch.IIIA/Part 3 para. 18 refers

Note: For the purpose of "combined coxswain" operation, any existing vessel of length less than 24m, total propulsion power not more than 750 kW (1,000 HP), and operating within waters of Hong Kong, fittings of a fixed fire detection (operated by smoke detectors) and fire alarm system for engine room can be waived, provided regular surveillance (such as through tale-tell pipe or transparent glass view-hole fittings etc.) can be exercised from outside engine room or control station by the coxswain or a crewmember.

## **14 Oil Pollution Prevention Installation**

Ch.IIIA/Part 3 para. 19 refers.

## **PART 4 ELECTRICAL INSTALLATION**

## **15 Electrical Installations**

Ch.IIIA/Part 4 refers.

## CHAPTER IV

### FREEBOARD AND STABILITY

#### 1 Freeboard Assignment, Certification, Intact Stability

1.1 The freeboard assignment, certification and stability requirements for a vessel should be according to the following table, unless an International Load Line Certificate has been issued to the vessel:

Vessel Type and Plying Limits	Length (L)	L ≥ 24 m		L < 24 m	
	Requirement	Freeboard, Certification	Stability	Freeboard, Certification	Stability
<b>Class I Vessel (plying solely within HKW)</b>					
Launch, Ferry ≤ 100 passengers		L&FV	GM ≥ 0.3m + Crowding + Turning	L&FV	GM ≥ 0.3m + Crowding + Turning
> 100 passengers		L&FV	IMO + Crowding + Turning + Wind Mt	L&FV	IMO + Crowding + Turning + Wind Mt
Primitive Transportation Vessel (kaito) 0.35 < C <sub>np</sub> ≤ 0.85 vessel (*1)		L&FV	GM ≥ 0.3m + Crowding + Turning	L&FV	< Simple Inclining Test (*2) >
<b>Class II Vessel</b>					
Dangerous Goods Carrier ) Noxious Liquid Substance ) Carrier ) Oil Carrier ) Motor ) HKW ) RTL ) Dumb ) HKW ) RTL )		HKLLC HKLLC FAC FAC	IMO IMO IMO IMO	FAC not permitted FAC not permitted	IMO - IMO -
Motor ) Category A Dry Cargo Vessel ) Dredger ) Edible Oil Carrier ) HKW ) RTL )		HKLLC HKLLC	IMO IMO	<FAC> not permitted	MDN (*3) < GM ≥ 0.3m (*4) > not permitted
Category A Water Boat Category B Water Boat		HKLLC FAC	IMO	FAC FAC	MDN (*3) GM ≥ 0.3m (*4)

Category B Dry Cargo Vessel				
HKW	<FAC>	MDN (*3) < GM ≥ 0.3m (*4) >	<FAC>	MDN (*3) < GM ≥ 0.3m (*4) >
RTL	<HKLLC>	<IMO>	not permitted	not permitted
Dumb Lighter (incl. Flat Top Cargo Barge)				
HKW	FAC	<H Wt>	FAC	<H Wt>
RTL (*5)	FAC	<H Wt>	not permitted	-
Edible Oil Carrier				
HKW	FAC	IMO	FAC	IMO
RTL (*5)	FAC	IMO	not permitted	--
Hopper Barge				
HKW	FAC	Spill	FAC	Spill
RTL (*5)	FAC	Spill	not permitted	--
Tug				
HKW )	L&FV	Tow	L&FV	Tow
RTL )		+ IMO		+ IMO
Transportation Boat, )				
Pilot Boat )	L&FV	GM ≥ 0.3m	L&FV	GM ≥ 0.3m
operating solely within HKW )				
Floating Dock operating solely within HKW	HKLLC	IMO		
Crane Barge operating solely within HKW (*5)	CB FB	H Wt	CB FB	H Wt
<b>Class III Vessel</b>				
Category A Vessel	--	IMO (*6)	--	IMO (*6)
Fishing Sampan			Turning	Simple Inclining Test (*7)

### Abbreviations

HKW - Hong Kong waters  
RTL - River Trade Limits

### Remark

- \*1 Ch.V Part 3 refers.
- \*2 Annex E, Part 1 refers.
- \*3 Refer to requirements stipulated in Marine Department Notice No. 60/1998.
- \*4 To be determined by a rolling period test (Annex E, Part 2 refers) in the anticipated worst loading condition.
- \*5 Operate in favourable weather conditions only.

- \*6 The stability should be sufficient for the designed freeboard at fully loaded condition.
- \*7 Required for vessels intended to be used for carrying fish as cargo.

**Legend**

**Freeboard Requirements**

L&FV A freeboard assigned appropriate to the length of vessel according to the following table:

Length (L) (m)	$L \leq 6$	$L = 19$	$L \geq 50$
Freeboard (mm)	380	760	1100

*Freeboard of intermediate length should be obtained by interpolation.*

HKLLC The freeboard assignment and stability requirements should be in accordance with Merchant Shipping (Safety)(Load Line) Regulations 1991, and the amended.

Upon the prescribed requirements are complied with the vessel should be issued with a Hong Kong Load Line Certificate.

FAC Assignment of following freeboard, appropriate to the length of vessel (L) as follows -

Length (L) (m)	Freeboard (mm) (Remark i)	
	Oil Carrier (Remark ii), Hopper Barge (Remark iii)	Other Vessels
Up to 30	380	530
40	500	650
50	660	710
60	850	1000
70	1080	1230
80	1330	1480
90	1600	1750

*Freeboard of intermediate lengths should be obtained by interpolation.*

**Remark:**

- (i) Where the height of coaming for openings leading to below deck space is less than 600 mm, the above freeboard shall be increased by 12.5 mm for each 25 mm that is below 600 mm in height. But in no case the coaming height is less than 300 mm.
- (ii) This includes vessels having cargo tanks with small openings closed by steel watertight cover.
- (iii) Vessels with bottom door which can be opened to the sea.

Freeboard marks shall be marked in accordance with Annex B of this code.

Upon the prescribed requirements are complied with the vessel shall be issued with a Freeboard Assignment Certificate.

CB FB For crane barge, the freeboard fore and aft throughout the lifting operations (whether with or without counter ballasting capability) should not be less than 0.5 m.

### **Intact stability requirements in all probable loading conditions of vessel**

GM  $\geq$  0.3m the transverse metacentric height (GM<sub>T</sub>) should not be less than 300 mm.

Crowding Crowding of passengers –

the angle of heel due to the effect of crowding of passengers should not be greater than 10° or 80% of the angle of deck edge immersion, whichever is lesser. The passengers should be assumed to be congregated at 0.25 m<sup>2</sup> per person on the uppermost deck(s), with 2/3 of the passengers distributed on one side of the vessel and 1/3 on the other side. The vertical centre of gravity of each person should be taken as a standing passenger.

Turning Turning moment of vessel -

- (i) In Class I vessels the angle of heel due to the effect of turning the vessel should not exceed 10° or 80% of the angle of deck edge immersion, whichever is lesser.
- (ii) In Fishing Sampan when plying at the maximum operation speed, the angle of heel due to the effect of turning the vessel should not exceed 8° or 80% of the angle of deck edge immersion, whichever is lesser; and the angle of trim should not exceed 4°.

The heeling moment developed due to the effect of turning of the vessel may be derived from the following formula (for the ratio of the radius of the turning circle to L<sub>wl</sub> is 2~4):-

$$M_R = 0.196 V_o^2 \quad \text{KG/L}_{wl}$$

where

M<sub>R</sub> = heeling moment (kN-m)

V<sub>o</sub> = speed of the vessel in the turn (m/sec)

L<sub>wl</sub> = length of vessel on the waterline (m)

= displacement (tonne)

KG = height of the centre of gravity above keel (m)

Wind Mt Wind moment –

as calculated under the "Intact Stability Criteria for Passenger and Cargo Ships" published by IMO in respect of wind moment effect. The wind pressure factor should be taken to be 250 Pa or <500 Pa>.

IMO IMO Recommended Stability Criteria

- (1) the  $GM_T$  should not be less than 0.15 metres,
- (2) the area under the curve of the righting levers (GZ curves) should not be less than:-
  - (i) 0.055 m-rad up to an angle of  $30^\circ$ ;
  - (ii) 0.090 m-rad up to an angle of either  $40^\circ$  or the angle at which the lower edges of any openings in the hull, superstructures or deckhouses, being openings which cannot be closed weathertight, are immersed if that angle be less;
  - (iii) 0.030 m-rad between the angles of heel of  $30^\circ$  and  $40^\circ$  or such referred to in ii) above;
- (3) the righting lever (GZ) should be at least 0.20 metres at an angle of heel equal to or greater than  $30^\circ$ ; and
- (4) the maximum righting lever ( $GZ_{max}$ ) should occur at an angle of heel not less than  $25^\circ$  but preferably over  $30^\circ$ .

Vessels of the type stated in Ch. I para 4.3 should comply with the relevant requirements specified in Chapter XI.

Tow Towing Stability

A vessel permitted to tow should conform to the following criteria:

$$GM_T = \frac{P \times h}{110 \times \quad \times F/B} \quad (\text{metres})$$

where

- P = total brake power of main engines (kW)
- h = vertical distance between top of towing point to centre of propeller (m)
- = displacement (tonnes)
- F = freeboard (m)
- B = maximum breadth (m)

Spill 'Spill out' Method

Annex C of this Code refers. The standard applies to all types of hopper barges regardless of bottom door being fitted.

The maximum volume of cargo that can be carried should be determined by dividing the total cargo deadweight by the anticipated maximum saturated cargo stowage rate which is normally  $0.45 \text{ m}^3/\text{t} \sim 0.53 \text{ m}^3/\text{t}$ . If these calculations show that in event of the maximum volume of cargo is not completely filled but the vessel is at the assigned freeboard, spillways may be introduced.

H Wt Stability when lifting and/or carrying containers

- (a) A vessel equipped with lifting appliances to lift cargo or other heavy objects, during lifting operations if a maximum heeling moment due to the

total hook load(s) is equal to or greater than -

$$0.21 \times \Delta \times GM_T \times F / B \quad (\text{m-t})$$

where

$$\begin{aligned} \Delta &= \text{displacement (tonnes)} \\ GM_T &= \text{metacentric height (m)} \\ F &= \text{freeboard (m)} \\ B &= \text{maximum breadth (m)} \end{aligned}$$

is expected, should comply with the criteria prescribed in Annex D.

(Note: the values of  $\Delta$ ,  $GM_T$  and  $F$  should be taken at the condition the vessel has the maximum hook load).

The operation of lifting very heavy loads should be carried out only in favourable weather conditions.

(b) A vessel should have a  $GM_T$  of not less than 300 mm when carrying containers of more than 4 stacks.

## 1.2 Determination of minimum freeboard

A vessel should meet the relevant stability criteria for the draught corresponding to the freeboard assigned.

## 1.3 Equivalent freeboard and stability criteria

Where it is not practical for any particular vessel, due to the design and operating condition, to fully comply with the stipulated freeboard or stability criteria, the Department may permit the application of equivalent criteria which are at least as effective as that so specified.

## 2 Damage Stability

2.1 Every launch and ferry vessel designed to carry more than 100 passengers should meet a damaged stability standard as prescribed in Annex F of this Code.

2.2 Vessels of the type stated in Chapter I paragraph 4.2 should comply with the relevant requirements specified in Chapter XI.

2.3 Every oil carrier or noxious liquid substance carrier should meet the damage stability criteria prescribed in the relevant prevention of pollution regulations.

## 3 Inclining Experiment

3.1 With the exception of a vessel which stability is to be determined by a rolling period test, every vessel which stability information is required as stated in paragraph 1 should be inclined to confirm the vessel's displacement, vertical centre of gravity (V.C.G.) and longitudinal centre of gravity (L.C.G.) in lightship condition when on completion or close to completion of construction (new vessels) or modification (existing vessels).

Inclining experiment report should be submitted for approval.

3.2 Dispensation with conducting an inclining experiment may be given to -

- (a) a vessel having been carried out a satisfactory lightweight survey (see paragraph 4 below) and being similar in all respects to the sister ship for which a satisfactory inclining experiment report is available; or
- (b) a vessel in which an accurate result cannot be obtained due to the particular design of hull form (e.g. a dumb lighter with extreme beam), provided a detailed assessment of vessel's displacement and V.C.G. in lightship condition to be submitted.

#### **4 Lightweight Survey**

4.1 A lightweight survey report including the calculation of the lightship displacement and L.C.G. of the vessel should be submitted for approval.

4.2 If the results of the lightweight survey are found not acceptable, an inclining experiment should be conducted.

#### **5 Determination of Deadweight and Its Effects**

5.1 The deadweight should comprise the following items:

- (a) full number of passengers and crew;
- (b) full load of cargo;
- (c) fuel tanks and fresh water tanks, filled to 96% full and 100% full respectively; and
- (d) consumable stores.

5.2 The following information should be used for the consideration of the effects of passenger and crew weight:

- (a) the distribution of passengers is 4 persons per square metre;
- (b) each person has a mass of 68 kg or <75 kg>;
- (c) V.C.G. of seated passengers is 0.3 m above seat;
- (d) V.C.G. of standing passengers is 1.0 m above deck;
- (e) passengers and luggage should be considered to be in the space normally at their disposal.

#### **6 Stability Information Booklet**

6.1 After inclining test or lightweight survey, a stability information booklet (for each vessel) should be submitted for approval.

6.2 The booklet should include the vessel's following particulars:

- (a) name, principal dimensions;
- (b) general arrangement showing names of all compartments;
- (c) the capacity and the centre of gravity (longitudinally and vertically) of every



- compartment available for the carriage of cargo, fuel, water, water ballast, etc.;
- (d) the estimated weight and the disposition and centre of gravity of deck cargo;
- (e) hydrostatic particulars, cross curves;
- (f) calculation of loading and righting levers (GZ) curves of light condition, fully loaded (to the assigned freeboard) condition and probable worst conditions.

6.3 The approved stability booklet should be placed on board the vessel for the reference of the coxswain.

## **7 Permanent Ballast**

7.1 When ballast is required to improve stability of the vessel, the correct quantity of ballast should at all times be stowed at the specified position. Such quantity and position of permanent ballast should be endorsed in the Certificate of Survey.

## **8 Lashing of Cargo**

8.1 In cargo hold and cargo space on deck, appropriate lashing gear and fittings should be provided to prevent the cargo from sliding or tipping. These gear and fittings should be regularly maintained and inspected.

## **9 Modification onboard**

9.1 Before a vessel is to undergo any modifications, application should be submitted specifying the nature of the proposed alternations. Stability estimates for the modifications may be required to submit for approval.

9.2 If the stability estimates show that the alterations will adversely affect the stability of the vessel, a lightweight survey, or an inclining experiment, or a rolling period test, as appropriate, should be conducted.

9.3 No local vessel is allowed to construct or altered to have false bottom or secret compartment.

## **10 Towing**

10.1 No vessel under towing is permitted to carry passengers.

## **CHAPTER V**

### **PASSENGER AND CREW ACCOMMODATION**

#### **1 General Requirements**

- 1.1 In every vessel the spaces allocated for passengers and crew should be -
- (a) constructed properly;
  - (b) protected from sea and weather;
  - (c) minimum 1.85 metres clear headroom above deck covering or stair tread;
  - (d) well lighted and ventilated ; and
  - (e) maintained in a clean and habitable condition.
- 1.2 Any deck or bulkhead, or part of a deck or bulkhead, which separates a passenger or crew space from any engine room, machinery space, paint room, galley, or spaces used for the storage of flammable oils, should be of gastight construction. There should not be manhole or opening in passenger spaces leading to the oil fuel bunker.
- 1.3 Toughened safety glass should be used for window, the thickness should meet the requirements of a classification society rules.
- 1.4 Glass or mirror shall be made of materials which will not break into dangerous fragments if fractured (such as BS6206 or equivalent).

#### **2 Deck Areas Disallowed as Passengers Spaces**

- 2.1 The following spaces should not be used as passenger space:
- (a) any compartment below main deck except on a sunken deck meeting the requirements of Ch.IIIA/Part 2 para. 1;
  - (b) the areas forward of collision bulkhead or abaft rudder stock on main deck;
  - (c) the areas forward of the wheelhouse on the same deck, and the portion of a compartment or of a deck used for the purpose of navigation;
  - (d) within one metre (1 m) distance of deck machinery (such as windlass);
  - (e) machinery compartments, casings and skylights;
  - (f) decks or part of a deck set apart exclusively for the carriage of motor vehicles, luggage, etc.;
  - (g) stairways (including stairway landings), hatchways and ventilators;
  - (h) areas permanently occupied by equipment, fittings (such as inflatable liferaft, hatch, ventilation trunking, etc.);
  - (i) crew spaces;
  - (j) sanitary spaces, galley/pantry and any other service spaces;
  - (k) spaces not covered;
  - (l) spaces where noise level exceeds 85 dB(A), measured at maximum operating speed of propulsion engines.

2.2 A guidance plan showing areas to be excluded for measuring passenger space is at Annex G.

**3 Maximum Carrying Capacity and Seating**

3.1 The maximum number of passengers which may be carried in any vessel other than primitive transportation vessel (kaito) should be determined having regard to the clear space properly available in such vessels and to the following scales:

- (a) Launch, Ferry Vessel and mechanically propelled Class II vessels  
 passengers no. = the number of fixed passenger seats provided onboard.  
 The measurement of passenger seating should be guided by the method given on the plan at Annex G;
- (b) Floating Restaurant  
 passengers no. = the total areas of clear space (m<sup>2</sup>) divided by 1.1.
- (c) Mechanically propelled Class II vessels operating within typhoon shelter only.  
 Passenger no. = the number of fixed passenger seats provided onboard.  
 Maximum passenger no. = 0.35 x L x B and not greater than 10;  
 with an additional crew allowance of 4 persons.

3.2 The maximum crew allowance for Class III vessel is depended on the factor  $A=3.21(L-B)B^2$ , in which, L & B are in metre.

Factor	Crew Allowance
$A \geq 150$	4
$1000 \geq A > 150$	8
$A > 1000$	15

<3.3 The maximum carrying capacity (including passengers and crew) in any primitive transportation vessel (kaito) of single deck should be determined by the following :

Maximum carrying capacity (including passenger and crew) for Kaito of single deck	
Total number of persons = $L \times B \times C_{np}$	
(a) if no simple inclining test is carried  C <sub>np</sub> = 0.35	(b) subject to a simple inclining test and operate in favorable weather condition. C <sub>np</sub> = 0.35~ 0.85
Total number of persons = $L \times B \times 0.35$	Total number of persons = $L \times B \times C_{np}$
where L : vessel's (deck) length overall in metres B : vessel's maximum breadth in metres	

>

The carrying capacity of primitive transportation vessels (kaitos) with more than one deck should be specially considered depending on the situation.

The passenger number for existing Kaito remains unchanged. If the vessel is altered or

replaced, the passenger number shall be determined as para. 3.3

3.4 The maximum number of passengers on each deck of **existing vessels** (other than Kaito) have been determined as follows:

- (a) on main deck/sunken deck, by dividing the clear space in square metres by 0.65 subject to the condition that not less than 70% of the maximum number of passengers are provided with seating, and sufficient hand grips or hand rails are fitted for standing passengers.
- (b) on all decks above main deck/sunken deck, subject to the condition that every passenger is provided with a seat, by
  - (i) dividing the clear space in square metres by 0.65, or
  - (ii) counting the number of fixed passenger seats;

whichever is the lesser.

3.5 The form, design and attachments to the deck of passenger seats should be adequate for the intended service. The seating construction and safety belts on vessels of the type stated in Ch.I para. 4.2 should comply with the relevant requirements specified in Chapter XI.

#### **4 Stairway, Passageway, Door and Exit in Passenger Space**

4.1 Every stairway should -

- (a) have aggregate clear width not less than 10 mm for each person appropriate to the space or the evacuation route it is intended to serve, but in no case should be less than 600 mm or <800 mm> in width. A smaller width may be acceptable for a short stairway. The width should be measured on a tread and within the sides unless the handrails encroach on the tread, in such case, the width of the stairway should be ascertained by measuring the distance between the handrails;
- (b) have the angle from the vertical not less than 37°;
- (c) have a rise not less than 200 mm and not more than 225 mm. The tread should be determined by the angle and the rise of the stairway but in no case less than 150 mm;
- (d) be fitted with continuous handrails at a vertical height of not less than 850 mm above the treads and adequately supported at each side of the stairway and the landing. Where the width of any stairway exceeds 1.6 m, intermediate rails should be fitted not less than 0.8 m and not more than 1.6 m apart;
- (e) have an additional rail fitted below each handrail, if the sides of any stairways are not bound by bulkheads;
- (f) have landings fitted at both ends of each flight of stairs. The width of each landing should be at least as wide as the stairway and the length should not be less than 800 mm.

4.2 Passageways

4.2.1 Except as otherwise provided in 4.2.2, the clear width of every passageway in way of the escape route should be at least as wide as the required width of the stairway.

4.2.2 Where passenger seatings are arranged transversely in rows, there should be at least a

longitudinal passageway of width not less than 800 mm. Where the seatings are facing the passageway, the width of the passageway should not be less than 600 mm or <800 mm>.

#### 4.3 Doors and exits

4.3.1 The clear width of every door, hinged or sliding, in way of the escape route from an enclosed space, should be at least as wide as the required width of the passageway or stairway.

4.3.2 The opening direction of doors of enclosed passenger spaces should be such that it would not obstruct the route of escape. The doors should not be capable of being locked during the voyage.

### **5 Ventilation, Lighting, Deck Sheathing and Insulation in Passenger Space**

#### 5.1 Ventilation

5.1.1 Every enclosed space should be provided with a ventilation system which can be a mechanical or natural system.

5.1.2 When a natural ventilation system is installed, the system should meet the following requirements :-

(a) the inlet ventilator which is situated in the open air should be of a cowl or other equally efficient type and should be arranged in such positions so as to ensure proper intake of fresh air;

(b) the aggregate sectional area of the natural ventilation system serving each passenger space should be at least 0.006 m<sup>2</sup> per person for as many persons as are likely to use the space at any one time.

<5.1.3 When a mechanical ventilation system (including an air conditioning system) is provided, the system should be

(a) capable to provide a minimum air change rate of 15 times per hour; and

(b) run in at least two parallel sub-systems, so as to reduce the risk of a complete break down of the system, unless a separate natural ventilation system of aggregate sectional area of 50% of that required in 5.1.2 (b) is provided.>

5.1.4 An emergency stop should be provided and fitted in the wheelhouse for the air conditioning system in order to stop all ventilators served for the passenger spaces.

#### 5.2 Lighting

All accommodation spaces should be sufficiently lighted by day and night.

#### 5.3 Deck covering

Every deck in any part of the accommodation space should have a surface which provides a good foothold and can be easily kept clean. Any deck covering and wooden deck should be impervious to water and, if the deck is directly over an oil tank, impervious to oil.

#### 5.4 Heat Insulation

Every deck, which forms the crown of any part of enclosed accommodation spaces and is exposed to the weather should be -

- (a) insulated on its underside with insulation materials which do not readily ignite and are not injurious to health; or
- (b) covered on its upper side with wood.

## **6 Sanitary Apparatus**

- 6.1 Sanitary apparatus should be provided on vessels for the use of passengers where space is available.
- 6.2 Launches and ferry vessels carrying more than 60 passengers should be provided with sanitary space solely for the use of passengers. Such sanitary spaces should conform to the following requirements –
  - (a) it should be of adequate size and be so arranged as to permit unobstructed access and to ensure the user's privacy;
  - (b) bulkheads exposed to weather should be constructed of steel or other suitable materials, and should be of weathertight construction. Interior bulkheads which separate from other part of the vessel should be of gastight construction. Self-closing door should be fitted;
  - (c) floor deck should be covered with terrazzo, tiles or other hard materials impervious to liquids and should provide a good foothold;
  - (d) a hand rail or grip should be provided for each water closet and urinal;
  - (e) it should be sufficiently lighted and be adequately ventilated to remove odour to open air;
  - (f) efficient means should be provided at the discharge outlet to prevent it from the accidental admission of water.

## **7 Public Address System**

- 7.1 A public address system should be provided on every Class I vessel which -
  - (a) carries more than 100 passengers, or
  - (b) passengers are accommodated in more than one deck
- 7.2 The system should cover areas where passengers and crew have access and escape routes; and should be such that a flooding or fire in any compartment does not render other parts of the system inoperable. < The system should be fitted with 'talk-back' facility.>

## **8 Boarding Facility On Ferry Vessel**

- 8.1 A proper gangplank should be provided for the safe embarkation and disembarkation of the passengers.
- 8.2 It is recommended that facility to be provided for the disables to embark and disembark, and stay safely in the vessel.

## **9 Marking in Passenger Space**

- 9.1 On every launch or ferry vessel the number of passengers which each deck can

accommodate should be indicated, in a conspicuous location at all places where passengers will be embarking, in Chinese and English:-

Upper Deck	xxx
Main Deck	xxx
Others	xxx
Maximum Number of Passengers	----- xxx

9.2 Evacuation routes, exits and lifejacket stowage should be clearly marked.

# CHAPTER VI

## FIRE PROTECTION AND FIRE-FIGHTING APPARATUS

### 1. Definitions

1.1 ““A” Class division” means a bulkhead or part of a deck which is -

- (a) constructed of steel or other equivalent material;
- (b) suitably stiffened;
- (c) so constructed as to be capable of preventing the passage of smoke and flame to the end of the 60 minutes standard fire test; and
- (d) so insulated where necessary with suitable non-combustible materials that if the division is exposed to a standard fire test the average

temperature on the unexposed side of the division shall not increase more than 139°C above the initial temperature nor shall the temperature at any one point, including any joint, rise more than 180°C above the initial temperature within the time listed below -

“A-60” standard 60 minutes

“A-30” standard 30 minutes

“A-0” standard 0 minutes;

1.2 ““B” Class division” means a bulkhead or part of a deck which is -

- (a) constructed of non-combustible material
- (b) so constructed as to be capable of preventing the passage of flame to end of the first half hour of the standard fire test
- (c) they shall have an insulation value such that the average temperature of the unexposed side will not rise more than 139°C above the original temperature, nor will the temperature at any one point, including any joint, rise more than 225°C above the original temperature within the time listed below -

“B-15” standard 60 minutes

“B-0” standard 0 minutes;

1.3 “cargo area” means that part of the vessel which contains -

- (a) the cargo tanks, slop tanks and cargo pump rooms; and
- (b) the following spaces when they are adjacent to the cargo tanks; namely, pump rooms other than cargo pump rooms, cofferdams, ballast spaces and void spaces, and extends fore and aft between the forward end of the most forward of those tanks or other spaces and the after end of the aftermost of those tanks or other spaces and athwartships over the whole breadth of the vessel; and the deck area over that part of the vessel;

1.4 “cargo pump room” means a room in which any pumps used for loading, discharging or transferring cargoes are located;

1.5 “cargo spaces” are all spaces used for cargo including cargo oil tanks, slop tanks and trunks to such spaces;



- 1.6 “engine room” means a space which contains propulsion machinery and generators;
- 1.7 “machinery space” means a space which contains internal combustion engines, electrical machinery, ventilation and air conditioning machinery and similar spaces;
- 1.8 “non-combustible material” means a material which neither burns nor gives off flammable vapours in sufficient quantity for self-ignition when heated to a temperature of 750°C, and the expression “combustible material” shall be construed accordingly;
- 1.9 “service spaces” include galleys, pantries containing cooking appliances, lockers and store rooms, workshops (other than those forming part of machinery spaces) and similar spaces and trunks to such spaces.

## **2. Fire-fighting Apparatus, Type and Quantity**

- 2.1 <Fire-fighting apparatus and structural fire protection items should be of approved types. Apparatus approved by the maritime administration of a convention country or classification society in accordance with the recommendations of the International Maritime Organization are acceptable. >

For existing vessels other than high risk vessels, fire-fighting apparatus which have been approved by the national maritime authority of their country of manufacture in accordance with the national standard or have been approved or accepted by the Department are also considered acceptable.

- 2.2 Fire-fighting apparatus, type and quantity of Class I and II vessels should comply with Table 1, 2, 3, 4, 5 and 6 in Schedule 4 of the Survey Regulation.
- 2.3 Fire-fighting apparatus, type and quantity of Class III vessels should comply with Table 7 in Schedule 4 of the Survey Regulation. An extract of the regulation can also be found at Annex N-1B of this COP.
- 2.4 In Tables 1, 3, 5 and 6 in Schedule 4 of the Survey Regulation, there are notes specifying that “the requirement for a local vessel of 75m or more in length shall be specified by the Director on a case-by-case basis” and in Table 7, the notes is the same but the vessel’s length is 45m.

The fire fighting requirement for such vessels will be considered based on the following factors:

- (a) the vessel’s mode of operation;
  - (b) the vessel’s intended service;
  - (c) the vessel’s size;
  - (d) the vessel’s construction;
  - (e) the total number of persons on board (and crew manning);
  - (f) the compliance of regional standards or international standards, if applicable; and
  - (g) potential hazards to the safety of the vessel and any person or property on board the vessel.
- 2.5 Whenever a local vessel is being used or operated, every fire-fighting apparatus carried on board the vessel shall be –

- (a) in working order;
- (b) ready for immediate use; and
- (c) placed in a position easily accessible.

### 3. Fire Pumps

- 3.1 In a vessel which is required to be provided with fire pumps operated by power, such fire pumps (other than any emergency fire pumps) shall together be capable of delivering for fire fighting purposes a quantity of water, under the conditions and at the pressure specified in section 4 of this Part of not less than that obtained from the following formula -

$$Q = cd^2 \quad \text{m}^3/\text{hour}$$

where

$c = 5$  for vessels required to be provided with more than one fire pump (excluding any emergency fire pump) and

$c = 2.5$  for vessels required to be provided with only one fire pump

$$d = 1 + 0.066 \sqrt{[Lr(B+D)]}$$

Lr, B and D are registered length, moulded breadth and moulded depth of the vessel.

- 3.2 A fire pump required to be operated by power shall be operated by means other than the vessel's main engines. Fire pumps may be sanitary, ballast, bilge or general service pumps.
- 3.3 In a vessel required to be provided with fire pumps operated by power, arrangements shall be made to ensure immediate availability of a water supply from the fire main at the required pressure by suitably placed remote starting of the fire pumps, unless the machinery space is continually manned.
- 3.4 In a vessel which is required to be provided with more than one fire pump operated by power (other than any emergency pump) every such fire pump shall have a capacity of not less than 80% of the total capacity of the fire pumps required in para. 3.1 divided by the number of fire pumps to be provided in the vessel provided that each pump has a capacity of not less than 25 m<sup>3</sup>/hour. When more fire pumps are provided in any vessel, the Director may permit the capacity of any such additional fire pumps to be less than 80%.
- 3.5 A fire pump required which is operated by power shall be capable of producing from any fire hydrant one jet of water, while maintaining the pressure required in para. 4.2 of this Chapter.
- 3.6 Relief valves shall be provided in conjunction with all fire pumps if the pumps are capable of developing a pressure exceeding the design pressure of the fire main, water service pipes, hydrants and hoses. Such valves shall be so placed and adjusted as to prevent excessive pressure in any part of the fire main system.
- 3.7 A centrifugal pump which is connected to the fire main shall be fitted with a non-return valve.
- 3.8 In a vessel, any emergency fire pump shall be situated in a position aft of the

vessel's collision bulkhead.

- 3.9 A manually operated pump should be capable of producing a jet of water having a throw of not less than 6 m from nozzle.

#### **4. Fire Main, Water Service Pipes and Hydrants**

- 4.1 In a vessel which is required to be provided with fire pumps operated by power, the diameter of the fire main and of the water service pipes connecting the hydrants thereto shall be sufficient for the effective distribution of the maximum discharge from -

- (a) where only one pump is required; or
- (b) where 2 such pumps are so required, both pumps operating simultaneously.

- 4.2 Any fire pump shall, when discharging the quantity of water required in para. 3.1 through adjacent fire hydrants in any part of the vessel from nozzles of sizes specified in para. 5 of this Chapter, be capable of maintaining the following pressure at any hydrant –

- (a) of vessel's gross tonnage 1000 tons or vessel's registered length 60 metres, whichever is the smaller, and upwards: 2.7 bar (0.27N/mm<sup>2</sup>);
- (b) of vessel's gross tonnage under 1000 tons or vessel's registered length under 60 metres, whichever is the smaller: 2.1 bar (0.21N/mm<sup>2</sup>)

provided that the maximum pressure at any hydrant shall not exceed that at which the effective control of a fire hose can be demonstrated.

- 4.3 Where any vessel is required to be provided with appliances capable of producing one jet of water, hydrants sufficient in number shall be so positioned as to enable one jet of water from a single length of hose to reach any part of the vessel.
- 4.4
- (a) The fire main shall have no connections other than those necessary for fire fighting and washing down. However, fire main may be permitted to have connection to ballast lines, cooling water lines and bilge ejector etc., provided that shut-off valves to these lines are fitted and kept closed at all times when not in use.
  - (b) Materials readily rendered ineffective by heat shall not be used for fire mains unless adequately protected.
  - (c) The fire hydrants shall be so placed that the fire hoses may be easily coupled to them except where hoses and nozzles are permanently attached to the fire hydrant.
  - (d) In vessels which may carry deck cargo the fire hydrants shall be so placed that they are always readily accessible and the pipes shall be arranged as far as practicable to avoid risk of damage by such cargo.
  - (e) Hydrant valves of the screw lift type shall be fitted in such position that any of the fire hoses may be isolated and removed while the fire pumps are at work.
  - (f) The water pipes if made of iron or steel shall be galvanised or alternatively the pipe wall thickness shall be increased by a corrosion

allowance satisfactory to the Director.

- (g) Isolating valves to separate the section of the fire main within the machinery space containing the main fire pump or pumps from the rest of the fire main shall be fitted in a position outside the machinery spaces which shall be easily accessible when there is a fire. The fire main shall be so arranged that when the isolating valves are shut all the hydrants on the vessel, except those in the machinery space referred to above, can be supplied with water by a fire pump not located in this machinery space through pipes which do not enter this space. Exceptionally, the Director may permit short lengths of the emergency fire pump suction and discharge piping to penetrate the machinery space if it is impracticable to route it externally, provided that the integrity of the fire main is maintained by the enclosure of the piping in a substantial steel casing.
- (h) In every oil carrier, isolation valves should be fitted in the fire main at house front in a protected position and on the tank deck at intervals of not more than 40 m to preserve the integrity of the fire main system in case of fire or explosion.
- (i) Hydrants should be positioned as to allow at least one jet of water from a single prescribed length of fire hose to reach any part of the vessel normally accessible during navigation. If only one hydrant is provided for engine room it should be located outside of the space and near the entrance.
- (j) Except otherwise specified, at least one hose and one nozzle should be provided for every hydrant.

## **5. Fire Hoses, Nozzles, etc.**

- 5.1 Fire hoses provided shall not exceed 18 metres in length. Such hose shall be made of closely woven flax, canvas or other suitable material; and every other such hose shall be made of non-perishable material.
- 5.2 Every fire hose together with the tools and fittings necessary for its use, shall be kept in a conspicuous position near the hydrants or connections with which it is intended to be used. Hose diameters shall be not less than 65 mm if unlined or 45 mm if lined.
- 5.3 Fire hoses so provided shall not be used for any purpose other than for fire fighting or testing the fire-fighting apparatus.
- 5.4
  - (a) A vessel which is required to be provided with fire pumps operated by power shall be provided with nozzles of 12 mm in diameter or as near thereto in diameter as possible.
  - (b) A vessel provided with manual fire pumps shall be provided with nozzles of 9 mm in diameter or as near thereto in diameter as possible.

## **6. Location and Arrangement of Water Pumps for Other Fire Extinguishing Systems**

Pumps required for the provision of water for other fire extinguishing systems, their sources of power and their controls shall be installed outside the space or spaces protected by such systems and shall be so arranged that a fire in the space

or spaces protected will not put any such system out of action.

## 7. Fixed Fire Extinguishing System Not Required by the Survey Regulation

In a vessel where a fixed extinguishing system not required by the Survey Regulation is provided, such a system shall be to the satisfaction of the Director, shall be installed outside the space or spaces protected by such systems and shall be so arranged that a fire in the space or spaces protected will not put any such system out of function.

## 8. Fire Extinguishers

8.1 Each type of fire extinguishers should have a minimum capacity as shown in the following table:

Media	Capacity	
	Portable Type	Non-Portable Type
Foam	9 litres	45 litres
CO <sub>2</sub>	3 kg	16 kg
Dry Powder	4.5 kg	
Water	9 litres	

- 8.2 Fire extinguishers to be used for switchboard, control panels, batteries, etc. should be of the type suitable for electrical fires, e.g. dry powder or CO<sub>2</sub> fire extinguisher.
- 8.3 Fire extinguishers to be used for machinery spaces should be of the type suitable for oil fires, e.g. foam, dry powder or CO<sub>2</sub> fire extinguisher.
- 8.4 Portable extinguishers are to be suitably distributed throughout the protected spaces. Normally at least one should be stowed near the entrance inside that space.
- 8.5 The use of CO<sub>2</sub> fire extinguisher in a confined space is not recommended.
- 8.6 Portable fire extinguishers provided for use in accommodation or service spaces of any vessel shall so far as practicable have a uniform method of operation.
- 8.7 Portable and non portable fire extinguishers shall be periodically examined and subject to such tests as the Director may require.
- 8.8 Portable carbon dioxide extinguishers shall not be located in accommodation spaces. Where such extinguishers are provided in radio rooms, at switchboards and other similar positions, the volume of any space containing one or more extinguishers shall be such as to limit the concentration of vapour that can occur due to discharge to not more than 5% of the net volume of the space. The volume of carbon dioxide shall be calculated at 0.56 m<sup>3</sup>/ kg.
- 8.9 Fire extinguishers provided for use in any vessel shall not contain any extinguishing medium which has not been approved by the Director.
- 8.10 The capacity of a carbon dioxide extinguisher shall be taken to be the greatest

weight of carbon dioxide which it can safely contain in a tropical climate.

- 8.11 The capacity of any fire extinguisher, other than a carbon dioxide fire extinguisher, shall be taken to be the greatest volume or weight of extinguishing medium which it can contain when sufficient space is left to ensure the proper operation of the extinguisher.
- 8.12 Every fire extinguisher shall be kept fully charged at all times.

## **9. Firemen's Outfits**

- 9.1 Every fireman's outfit shall consist of -
- (a) a breathing apparatus of either air hose type or self-contained compressed air operated type and lifeline complying with the requirements of the appropriate code; and
  - (b) personal equipment comprising -
    - (i) a portable self-contained electric battery-operated safety lamp of an approved type capable of functioning efficiently for a period of at least 3 hours;
    - (ii) a fireman's axe;
    - (iii) protective clothing of material capable of protecting the skin from the heat radiating from the fire and from burns and scalding by steam; the outer surface shall be water resistant;
    - (iv) boots and gloves of rubber or other electrically non-conducting material; and
    - (v) rigid helmet providing effective protection against impact.
- 9.2 Firemen's outfits shall be stored in readily accessible positions which are not likely to be cut off in the event of fire and, where more than one such outfit is provided, they shall be stored in widely separated positions.

## **10. Means for Stopping Machinery, Shutting Off Oil Fuel Suction Pipes and Closing of Openings**

- 10.1 In every vessel there shall be provided -
- (a) means for stopping ventilation fans serving machinery, accommodation and cargo spaces;
  - (b) means for closing all skylights, doorways, ventilators and other openings to such spaces; and
  - (c) means to permit the release of smoke from machinery spaces.

Such means shall be capable of being operated from positions outside the said spaces and which would not be made inaccessible by a fire within such spaces.

- 10.2 Machinery driving forced and induced draught fans, oil fuel transfer pumps and other similar fuel pumps shall be fitted with remote controls situated outside the spaces in which such machinery or pumps are situated and which would not be made inaccessible by a fire within such spaces. The controls shall be capable of stopping such machinery or pumps in the event of fire in such spaces. For engine room in Class I vessel carrying more than 60 passengers such controls together with the controls required in subsection 10.1 shall be situated at one control

position or grouped in as few positions as possible. Such controls shall have safe access from the open deck.

- 10.3 A pipe connected to any oil fuel or lubricating oil storage, not being a double bottom tank, which if damaged would permit discharge of the contents so as to cause a fire hazard, shall be fitted with a valve or cock which shall be secured to the tank to which it is connected and which shall be capable of being closed from a readily accessible position outside the space in which the tank is situated.

## **11. Fire Control Plans**

- 11.1 In a vessel required to be provided with fire control plans there shall be permanently exhibited by the owner of the vessel for the guidance of the crew of the vessel, general arrangement plans showing clearly for each deck the position of the control stations, the sections of the vessel which are enclosed by "A" Class divisions together with particulars of the fire alarms, fire detection systems, the sprinkler installations, the fixed and portable fire extinguishing apparatus and firemen's outfits, the means of access to the various compartments and decks in the vessel, the ventilating system including particulars of the master fan controls, the position of dampers and identification numbers of the ventilating fans serving each section of the vessel, the location of the international shore connection and the position of all means of control referred to in para. 10 of this Chapter. Descriptions in such plans shall be in either Chinese or English.
- 11.2 The general arrangement plans required by this section shall be kept up-to-date, any alterations to general arrangements being recorded thereon without delay.

## **12. Availability of Fire-fighting Apparatus**

Fire-fighting apparatus carried in any vessel shall be maintained in good order and shall be kept available for immediate use at all times. All movable fire-fighting apparatus, other than firemen's outfits, carried shall be stowed where they will be readily accessible from the spaces in which they are intended to be used and, in particular, one of the portable fire extinguishers intended for use in any space shall be stowed near the entrance to that space.

## **13. Structural Fire Protection**

### **13.1 Application**

- (a) This part shall apply to new vessels.
- (b) In Class II vessels, this part applies to vessels of gross tonnage not exceeding 2000, plying within Hong Kong waters or river trade limits. Vessels beyond this scope will be specially specified by Director.

### **13.2 Requirements for All Vessels**

#### **13.2.1 In all spaces –**

- (a) paints, varnishes and other finishes used on exposed surfaces shall not contain nitrocellulose or other highly flammable base products and shall not be capable of producing excessive quantities of smoke;
- (b) insulating materials shall be of non-combustible materials;

- (c) stairways, includes interior stairway, lifts and escalators (other than those wholly contained within the machinery spaces and enclosures) thereto, should be constructed of steel or insulated with material of equivalent fire resistance, and as far as practicable arranged in fore and aft direction; and
- (d) any means of escape should be led to open deck.

13.2.2 In accommodation, service spaces and control stations –

- (a) all exposed surfaces in corridors, exposed surfaces of ceilings and surfaces in concealed or inaccessible spaces shall have low flame spread characteristics
- (b) primary deck coverings shall be of a material which will not readily ignite or give rise to toxic or explosive hazards at elevated temperatures;
- (c) the doorways and stairways for escape purpose shall be evenly distributed and arranged so as to avoid congestion in any part of a vessel. Such door and hatch cover shall be operable from either side;
- (d) dead-end corridor shall not be more than 7 metres in length; and
- (e) the width and continuity of the means of escape shall be to the satisfaction of the Director.

13.2.3 In vessels constructed of reinforced glass fibre plastic (GRP), fire retarding material should be applied in hull and bulkhead structures of engine room boundaries.

**13.3 Additional Requirements for Category A Vessels**

- 13.3.1 Any deck or bulkhead, or part of a deck or bulkhead, which separates a passenger or crew space from any machinery space, paint room, galley, or spaces used for the storage of flammable oils, shall be of gastight construction.
- 13.3.2 In Class I vessels the bulkheads and decks of engine room boundary shall be provided with structural fire protection based on providing protection for a period of 30 min. The bulkheads and decks separating wheelhouse and passenger spaces shall be of gastight construction insulated with non-combustible fire resisting materials.
- 13.3.3 At least two means of escape shall in general be provided for the passenger space and crew space and spaces accessible to them. However, one of the means of escape may be dispensed with in exceptional case having regard to the size and location of the space.
- 13.3.4 The requirement of Class I floating restaurant shall be specially specified by Director.

**13.4 Additional Requirements for Vessels of 24 Metres and Above in Length -**

- (a) Dangerous Goods Carriers, Noxious Liquid Substances Carriers, Dry Cargo Vessels, Edible Oil Carrier, Tug, Hopper Barge, Water Boat and Dredgers operating within River Trade Limits; and
- (b) Oil Carriers operating within Hong Kong Waters or River Trade Limits



#### 13.4.1 **Structure**

The hull, superstructures, structural bulkheads, decks and deck houses shall be constructed of steel or other equivalent material, except that the crowns and casing of engine room shall be of steel construction.

#### 13.4.2 **Means of Escape in Accommodation, Service Spaces and Control Stations**

- (a) At all levels of accommodation at least two widely separated means of escape which may include the normal means of access from each restricted space or group of spaces.
- (b) Below the lowest open deck such escapes shall be by means of stairways except that one of these stairways may be replaced by a trunked vertical ladder.
- (c) Above the lowest open deck the means of escape shall be stairways or doors to an open deck or a combination thereof.
- (d) One of the means of escape may be dispensed with in an exceptional case having regard to the nature and location of the space and to the number of persons who normally might be accommodated or employed there.

#### 13.4.3 **Means of Escape in Machinery Space**

- (a) Machinery spaces shall be provided with two widely separated door. One of the door may be substituted by an escape hatch.
- (b) From machinery spaces other than engine room, escape routes shall be provided to the satisfaction of the Director having regard to the nature and location of the space and the number of persons normally employed in that space.

#### 13.4.4 **Fire Integrity of Bulkheads and Decks Separating Adjacent Spaces**

The boundaries of control station and machinery space shall be constructed of A-0 bulkheads.

#### 13.4.5 **Stairway**

Stairways which penetrate only a single deck shall be protected at least at one level by at least "B-0" class divisions and self-closing doors. Stairways which penetrate more than a single deck shall be surrounded by at least "A-0" class divisions and be protected by self-closing doors at all levels. However, this may be waived if a ladder is fitted outside of the accommodation.

#### 13.4.6 **Door in a Casing of Engine Room**

The doors shall be gastight and provided with self-closing device. Hold-back hooks shall not be fitted.

#### 13.4.7 For Dangerous Goods Carrier, bulkheads forming boundaries between cargo

spaces and machinery spaces should be insulated to “A-60” standard unless the dangerous goods are stowed at least 3m horizontally away from such bulkheads. Other boundaries between such spaces should be insulated to “A-60” standard.

### **13.5 Additional Requirements for Oil Carriers Having Cargoes of Flashpoint Not Exceeding 61°C (Closed Cup Test)**

#### **13.5.1 Location and Separation of Spaces**

- (a) Machinery spaces shall be positioned aft of cargo tanks; cargo pump rooms and cofferdams, but not necessarily aft of the oil fuel bunker tanks. Any machinery space shall be isolated from cargo tanks by cofferdams, cargo pump rooms, oil fuel bunker tanks or permanent ballast tanks.
- (b) Accommodation spaces, main cargo control stations, control stations and service spaces (excluding isolated cargo handling gear lockers) shall be positioned aft of all cargo tanks, cargo pump rooms and cofferdams which isolate cargo or slop tanks from machinery spaces but not necessarily aft of the oil fuel bunker tanks.
- (c) Means shall be provided to keep deck spills away from the accommodation and service areas. This may be accomplished by provision of a permanent continuous coaming of a suitable height extending from side to side.
- (d) Exterior boundaries of superstructures and deckhouses enclosing accommodation, including any overhanging decks which support such accommodation, shall be insulated to A-60 standard for the whole of the portions which face the cargo area and for 3 metres aft of the front boundary. In the case of the sides of those superstructures and deckhouses, such insulation shall be carried to a height as considered necessary by the Director.
- (e) Entrances, air inlets and openings to accommodation spaces, service spaces and control stations shall not face the cargo area. They shall be located on the transverse bulkhead not facing the cargo area or on the outboard side of the superstructure or deckhouse at a distance of at least 4% of the length of the vessel but not less than 3 metres from the end of the superstructure or deckhouse facing the cargo area; provided that such distance need not exceed 5 metres.
- (f) No doors shall be fitted within the limit specified in paragraph 5 except that the Director may permit doors to a space within those limits if
  - (i) that space is a cargo control station, provisions room or store room; and
  - (ii) that space does not have access to any accommodation space, service space or control station. Where such doors are fitted to a space located aft of the cargo area, the boundaries of the space shall be insulated to A-60 (may be A-15 for vessels of gross tonnage less than 500) standard, with the exception of the boundary facing the cargo area. Bolted plates for removal of machinery may be fitted within the limits specified in paragraph 5. Wheelhouse doors and wheelhouse windows may be located within the limits specified in paragraph 5 so long as they are designed to ensure that the

wheelhouse can be made rapidly and efficiently gastight and vapourtight.

- (g) Windows and sidescuttles facing the cargo area and on the sides of the superstructures and deckhouses facing the cargo area and on the sides of the superstructures and deckhouses within the limits specified in paragraph 5 shall be of the fixed (non-opening) type. Such windows and sidescuttles in the first tier on the main deck shall be fitted with inside covers of steel or other equivalent material.

**13.5.2 Structure**

The exterior boundaries of superstructures and deckhouses which are required to be insulated to A-60 standard shall be constructed only of steel.

**13.5.3 Fire Integrity of Bulkheads and Decks Separating Adjacent Spaces**

Table 1- Fire integrity of bulkheads separating adjacent spaces

Spaces	(1)	(2)	(3)	(4)	(5)
Control Station (1)	A-0	A-0	A-60	A-60	A-60
Passageway, Stairway (2)		A-0	A-0	A-60	A-0
Accommodation Spaces (3)			A-0	A-60	A-0
Engine Room, Pump Room (4)				A-0	A-60
Galley and high risk area (5)					A-0

Table 2- Fire integrity of decks separating adjacent spaces

<b>Space below</b> Spaces above	(1)	(2)	(3)	(4)	(5)
Control Station (1)	A-0	A-0	A-0	A-60	A-0
Passageway, Stairway (2)	A-0	A-0	A-0	A-60	A-0
Accommodation Spaces (3)	A-60	A-0	A-0	A-60	A-0
Engine Room, Pump Room (4)	A-60	A-60	A-60	A-0	A-60
Galley and high risk area (5)	A-60	A-0	A-0	A-60	A-0

**13.5.4 Cargo Tank Venting**

An approved venting system consisting of venting line, pressure-vacuum valve and vent outlets for cargo loading, discharging of ballasting shall be provided.

**13.5.5 Cargo Tank Purging and/or Gas-freeing**

An approved purging and/or gas freeing system shall be provided.

#### **13.5.6 Ventilation**

The ventilation system for cargo pump room and accommodation space shall be acceptable to the Director.

#### **13.6 Requirements for Vessels Carrying Cargoes of Additional Fire Hazards**

Where liquid cargoes which introduce additional fire hazards are intended to be carried on vessels other than those referred to in subsection 13.4 and 13.5, additional safety measures shall be required to the satisfaction of the Director, having due regard to the provisions of the IMO International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.

## **CHAPTER VII**

### **LIFE-SAVING APPLIANCES AND ARRANGEMENTS**

#### **1. Definitions**

- 1.1 “Survival craft” means lifeboat and liferaft.
- 1.2 “LSA Code” means the International Life-Saving Appliance (LSA) Code adopted by the Maritime Safety Committee of the Organization by Resolution MSC.48(66).
- 1.3 “SOLAS A Pack Liferafts” are the liferafts provided with normal equipment prescribed by the abovementioned LSA Code.
- 1.4 “SOLAS B Pack Liferafts” are the liferafts provided with normal equipment prescribed by the LSA Code less the following equipment:
- (a) half number of rocket parachute flares, hand flares and buoyant smoke signals;
  - (b) tin openers;
  - (c) fishing tacklers;
  - (d) food ration;
  - (e) water tank; and
  - (f) graduated drinking vessels

#### **2. General**

- <2.1 Life-saving appliances should be of approved types. Appliances which conform to the LSA Code, adopted by the Maritime Safety Committee of IMO by resolution MSC.48(66) and approved by the maritime administration of a convention country or a classification society are acceptable. >

For existing vessels other than high risk vessels, life-saving appliances which have been approved by the national maritime authority of their country of manufacture in accordance with the national standard or have been approved by the Department are also considered acceptable.

- 2.2 For Class I and II vessel, the life-saving appliances, type and quantity should be provided according to Schedule 3 Tables 1, 2, 3, 4 and 5 of the Survey Regulation.
- 2.3 For Class III vessel, the life-saving appliances and radiocommunication equipment, type and quantity should be provided according to Schedule 3 Tables 6 of the Survey Regulation.
- 2.4 Radiocommunication equipment should be of a type approved by Office of the

Telecommunications Authority, Hong Kong.

- 2.5 One lifebuoy is deemed to support two adult persons.
- 2.6 Each of the buoyant lifeline, self-igniting light and self-activating smoke signal required by the Survey Regulation should be attached to a lifebuoy and be placed in proximity of the vessel's both sides.
- 2.7 Lifebuoys should be marked on both sides with the name or Certificate of Ownership number of the vessel on which they are carried.
- 2.8 On vessels plying in waters beyond Hong Kong, the lifejackets and lifebuoys should be fitted with the following:
  - (a) for lifejacket : lifejacket light, whistle and retro-reflective tape
  - (b) for lifebuoy : retro-reflective tape
- 2.9 Donning instructions should be posted at suitable positions in the vessel.

### **3. Replacement of life-saving appliances**

Any item of life-saving equipment marked with an expiry date shall be replaced on or before that date.

### **4. Operational readiness, maintenance, inspections and servicing**

- 4.1 Whenever a local vessel is being used or operated, every life-saving appliance carried on board the vessel shall be –
  - (a) in working order;
  - (b) ready for immediate use; and
  - (c) placed in a position easily accessible.
- 4.2 Falls used in launching shall be turned end for end at intervals of not more than 30 months and be renewed when necessary due to deterioration of the falls or at intervals of not more than 5 years, whichever is the earlier. Stainless steel falls shall be turned end for end at intervals of not more than 30 months but need not be renewed provided that on inspection there are no signs of mechanical damage or other possible defects.
- 4.3 Lifeboat disengaging gears shall be overhauled at intervals not exceeding 5 years.
- 4.4 Every inflatable liferaft and hydrostatic release unit shall be serviced at a service station accepted by the Director at intervals not exceeding 12 months or a period as permitted by the Director.

## **5. Survival craft muster and embarkation arrangements**

- 5.1 Lifeboats and liferafts shall be stowed as close to accommodation and service spaces as possible.
- 5.2 Muster and embarkation stations shall be readily accessible from accommodation and work areas.
- 5.3 Alleyways, internal and external stairways and exits give access to the muster and embarkation stations shall be lighted.

## **6. Stowage of survival craft and buoyant apparatus**

- 6.1 Each survival craft shall be stowed –
  - (a) so that neither the survival craft nor its stowage arrangements will interfere with the operation of any other survival craft at any other launching station;
  - (b) as near the water surface as is safe and practicable and, in the case of a lifeboat, in such a position that the lifeboat in the embarkation position is not less than 2 metres above the waterline with the vessel in the fully loaded condition under unfavourable conditions of trim and listed up to 20 degrees either way, or to the angle at which the vessel's weather deck edge becomes submerged, whichever is less;
  - (c) in a state of continuous readiness so that two crew members can carry out preparations for embarkation and launching in less than 5 minutes;
  - (d) fully equipped;
  - (e) as far as practicable, in a secure and sheltered position and protected from damage by fire and explosion.
- 6.2 Lifeboats shall be stowed together with the launching appliances.
- 6.3 Liferafts shall be so stowed as to permit manual release from their securing arrangements.
- 6.4 Liferafts shall be stowed as to be readily transferable for launching on either side of the vessel unless liferafts, are stowed on each side of the vessel.
- 6.5 Every liferaft shall be stowed with its painter permanently attached to the vessel and with a float-free arrangement so that the liferaft floats free and, if inflatable, inflates automatically when the vessel sinks.
- 6.6 Each buoyant apparatus shall be stowed -

- (a) as to be readily transferable for launching on either side of the vessel;
- (b) with a float-free arrangement so that the apparatus floats free when the vessel sinks.

6.7 Radar transponder shall be stowed -

- (a) that it can be rapidly placed in any survival craft or one radar transponder stowed in each survival craft;
- (b) with a float-free arrangement so that the equipment floats free when the vessel sinks.

**7. Launching stations**

Launching stations shall be in such positions as to ensure safe launching having particular regard to the clearance from the propeller and steeply overhanging portions of the hull with the object of ensuring that so far as practicable, survival craft can be launched down the straight side of the vessel.

**8. Survival craft launching arrangements**

8.1 Each lifeboat shall be provided with an appliance which is capable of launching and recovering the lifeboat.

8.2 Means shall be available to prevent any discharge of water on to survival craft during abandonment.

**9. Stowage of lifebuoys**

9.1 Lifebuoys shall be so distributed as to be readily available on both sides of the vessel and as far as practicable on all open decks extending to the vessel's side. At least one lifebuoy shall be placed in the vicinity of the stern.

9.2 Lifebuoys shall be so stowed as to be capable of being rapidly cast loose, and not permanently secured in any way to allow to be float free.

9.3 Except as otherwise provided one lifebuoy on each side of the vessel shall be fitted with a buoyant lifeline.

9.4 Except as otherwise provided lifebuoys with self-igniting lights and those with self-igniting lights and self-activating smoke signals shall be equally distributed on both sides of the vessel and shall not be the lifebuoys provided with buoyant lifeline.

**10. Stowage of life jackets**



- 10.1 Lifejackets shall be so placed as to be readily accessible and their position shall be plainly indicated.
- 10.2 The additional lifejackets, when provided, shall be stowed in conspicuous places on deck or at muster stations.

## **11. Stowage and packing of pyrotechnic distress signals**

- 11.1 Pyrotechnic distress signals provided for use on board vessel shall be stowed on or near the navigating bridge.
- 11.2 All pyrotechnic distress signals provided for use on board vessels or for use in a lifeboat shall be packed in a water-resistant casing and stowed.

## **12. Operating instructions for survival craft and their launching controls**

Posters and signs provided on or in the vicinity of survival craft and their launching controls shall illustrate the purpose of controls and the procedures for operating the appliance and give relevant instructions.

## **13. Manning of survival craft**

There shall be a sufficient number of crew members to operate the survival craft and launching arrangements required for abandonment by the total number of persons on board. The crew should acquaint with their duties.

## **14. Requirements of life-saving appliances & radiocommunication equipment for fishing vessels, please refer to Annex N-1A for detail.**

## CHAPTER VIII

### LIGHTS, SHAPES AND SOUND SIGNALS

#### 1 General

- 1.1 Lights, shapes and sound signals provided for navigational purpose shall be in accordance with the provisions of the Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations, Cap. 369 sub. Leg. N, which gives effect to the International Regulations for Preventing Collisions at Sea 1972 (COLREG), as amended.
- 1.2 All lanterns and sound signals should be of the type approved/certified by this department or Maritime Administration of a convention country.
- 1.3 Where applicable special signals as required in the 'International and Hong Kong Port Signals' shall be exhibited.
- 1.4 The mast height of high speed craft should be referred to Chapter XI , page XI-3 paragraph 14.
- 1.5 For ease of reference for meeting relevant provisions of the Regulations mentioned in section 1.1 above, the following sections, tables or diagrams indicate the signal appliances that are to be carried by or fitted to vessels of type and length as indicated.

#### 2 Definitions

For the purpose of this chapter, except where the context otherwise requires:

- (a) The words "length (L)" and "breadth" of a vessel mean her length overall and greatest breadth.
- (b) The term "height above the hull" means height above the uppermost continuous deck. This height shall be measured from the position vertically beneath the location of the light.

#### 3 Alternative Lights

- 3.1 All vessels of  $L \geq 24.4$  metres shall carry a complete set of alternative (standby) lanterns for the masthead lights, side lights (P. and S.) and stern light.
- 3.2 On oil carriers, noxious liquid substances carriers and dangerous goods carriers, all lanterns including alternative lanterns shall be of electric type. On other vessels the alternative lanterns may be either electric or oil type.
- 3.3 One set of spare bulbs (one per light) should be carried for the electric lanterns. A set of spare chimneys (one per light) should be carried for the oil lanterns.

## **4 Lights and Sound Signals**

#### 4.1 Power Driven Vessels $L \geq 50$ m

Item	No. Reqd	Intensity/Size	Remark
Masthead Light	1 fwd 1 aft	visibility 6 n. miles	
Side Light (P&S)	1 set	" 3 n. miles	
Stern Light	1	" 3 n. miles	
Anchor Light	1 fwd 1 aft	" 3 n. miles	all round white
N.U.C. Light	2	" 3 n. miles	all round red
Black Ball	3	0.6 m diameter	
Black Diamond	1	0.6 m diameter, 1.2 m height	
Whistle	1	audibility 50 m $\leq$ L < 75 m 1 n. mile 75 m $\leq$ L < 200 m 1.5 n. mile	
Bell	1	0.3 m mouth diameter	
Gong	1		for L $\geq$ 100 m

#### 4.2 Power Driven Vessels $20 \text{ m} \leq L < 50 \text{ m}$

Item	No. Reqd	Intensity/Size	Remark
Masthead Light	1	visibility 5 n. miles	
Side Light (P&S)	1 set	" 2 n. miles	
Stern Light	1	" 2 n. miles	
Anchor Light	1	" 2 n. miles	all round white
N.U.C. Light	2	" 2 n. miles	all round red
Black Ball	3	0.6 m diameter	
Black Diamond	1	0.6 m diameter, 1.2 m height	
Whistle	1	audibility 1 n. mile	
Bell	1	0.3 m mouth diameter	

#### 4.3 Power Driven Vessels $12 \text{ m} \leq L < 20 \text{ m}$

Item	No. Reqd	Intensity/Size	Remark
Masthead Light	1	visibility 3 n. miles	
Side Light (P&S)	1 set	" 2 n. miles	may be combined lantern
Stern Light	1	" 2 n. miles	
Anchor Light	1	" 2 n. miles	all round white
N.U.C. Light	2	" 2 n. miles	all round red
Black Ball	3	dimensions commensurate with size of vessel	
Black Diamond	1	ditto	
Whistle	1	audibility 0.5 n. miles	
Bell	1	0.2 m mouth diameter	

#### 4.4 Power Driven Vessels L < 12 m

Item	No. Reqd	Intensity/Size	Remark
Masthead Light	1	visibility 2 n. miles	
Side Light (P&S)	1 set	" 1 n. miles	may be combined lantern
Stern Light	1	" 2 n. miles	
Anchor Light	1	" 2 n. miles	all round white
Black Ball	3	dimensions commensurate with size of vessel	
Black Diamond	1	ditto	
Sound Signal	1	means of making efficient sound signal	

4.5 **Power Driven Vessels L < 7 m** and maximum speed not exceed 7 knots may in lieu of the lights prescribed in 4.4 above, exhibit an all round white light and shall, if practicable, also exhibit sidelights.

#### 4.6 Additional Requirements for Power Driven Vessels engaged in Towing

Item	No. Reqd	Remark
Masthead Light	3	for length of tow (Note) $\geq$ 200 m
	2	for length of tow < 200 m (to be arranged in a vertical line)
Towing Light (yellow)	1	Visibility : L < 50 m 2 n. miles L $\geq$ 50 m 3 n. miles (to be arranged in a vertical line above stern light)
Black Diamond	1	applicable to length of tow $\geq$ 200 m, size 0.6 m diameter and 1.2 m height,

#### Note

The length of tow is measured from the stern of the towing vessel to the after end of the tow.

#### 4.7 Additional Requirements for Fishing Vessels

##### 4.7.1 A vessel engaged in trawling

Item	No. Reqd	Remark
All Round Light Green and White or X Shape	1	to be arranged in a vertical line, the upper being green and the lower white  two cones with their axes together in a vertical line one above the other
	1	
	1	
Masthead Light	1	applicable to L $\geq$ 50 m, to be positioned abaft and higher than the green light required above

#### 4.7.2 A vessel engaged in fishing other than trawling

Item	No. Reqd	Remark
All Round Light Red and White or X Shape	1 1 1	to be arranged in a vertical line, the upper being red and the lower white  two cones with their axes together in a vertical line one above the other
All Round Light White or Cone Apex	1 1	applicable when there is outlying gear extending > 150 m horizontally from the vessel

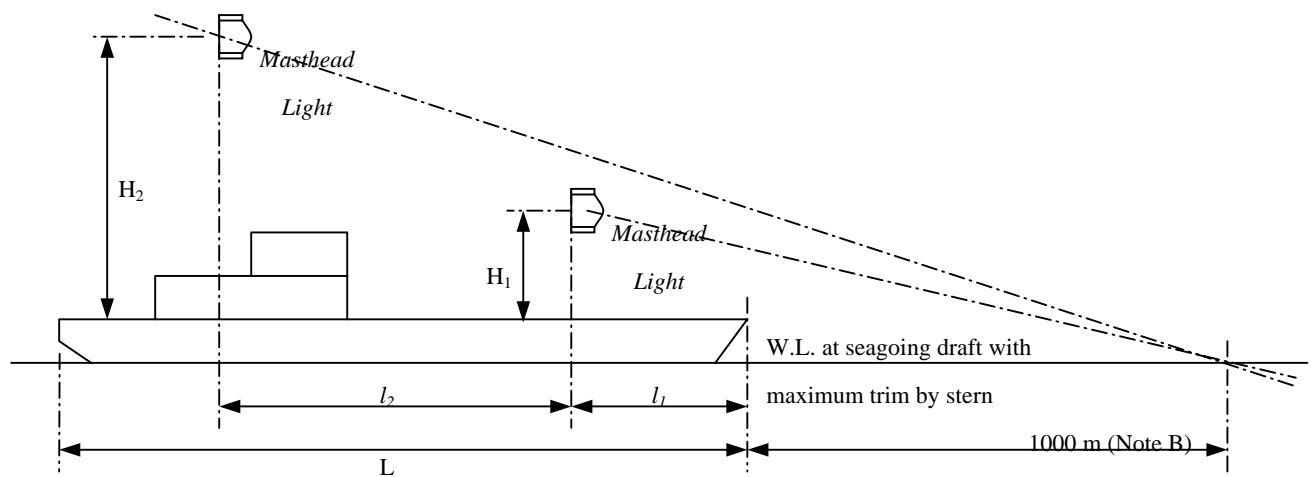
#### 4.8 Dumb Vessels

shall carry lights, shapes and sound signals prescribed for a power driven vessel of her length except the masthead lights.

#### 5 Positioning of Light Signals

Except in special cases, the masthead light, side lights and stern light shall be so placed as to be above and clear of all other lights and obstructions.

##### 5.1 Masthead Light



Length (m)	$L < 12$ (Note A)	$12 \leq L < 20$ (Note A)	$20 \leq L < 50$ (Note A)	$L \geq 50$
$l_1$	--	--	--	$\leq 0.25L$
$l_2$	--	--	--	$\geq 0.5 L$
$H_1$	may be < 2.5 m (Note D,F)	$\geq 2.5$ m (Note C,F)	$\geq 6$ m or ship's breadth (whichever is greater), but need not > 12 m (Note F)	
$H_2$	--	--	--	$\geq (H_1+4.5)$ (Note E,F)

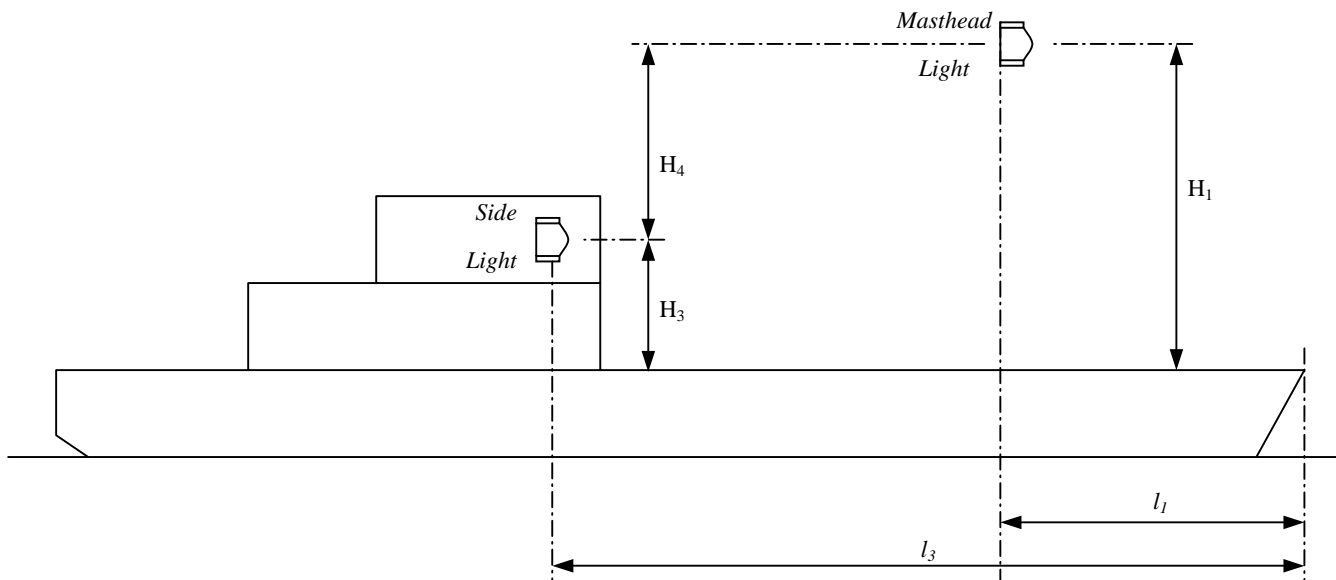
## Note

- (A) On vessels of  $L < 50$  m only one masthead light is required.
- (B) The vertical separation of masthead lights of power-driven vessels shall be such that in all normal conditions of trim the after light will be seen over and separate from the forward light at a distance of 1000 m from the stem when viewed from sea level.
- (C) On vessels of  $12 \text{ m} \leq L < 20$  m the height is measured from gunwale.
- (D) Vessels of  $L < 12$  m carry the uppermost light as a height of less than 2.5 m above the gunwale. When however a masthead light is carried in addition to side lights and a stern light or the all-round lights prescribed in the regulation is carried in addition to side lights, then such masthead light or all-round light shall be carried at least 1 m higher than the side lights.
- (E) One of the two or three masthead lights prescribed for a vessel when engaged in towing or pushing another vessel shall be placed in the same position as either the forward masthead light or the after masthead light; provided that, if carried on the after mast, the lowest after masthead light shall be at least 4.5 m vertically higher than the forward masthead light.
- (F) The masthead light of high speed vessel with a length to breadth ratio of less than 3 may be placed at a height related to the breadth of the vessel lower than that prescribed for  $H_1$ , provided that the base angle of the isosceles triangles formed by the sidelights and masthead light, when seen in end elevation, is not less than  $27^\circ$ .

## 5.2 Side Light

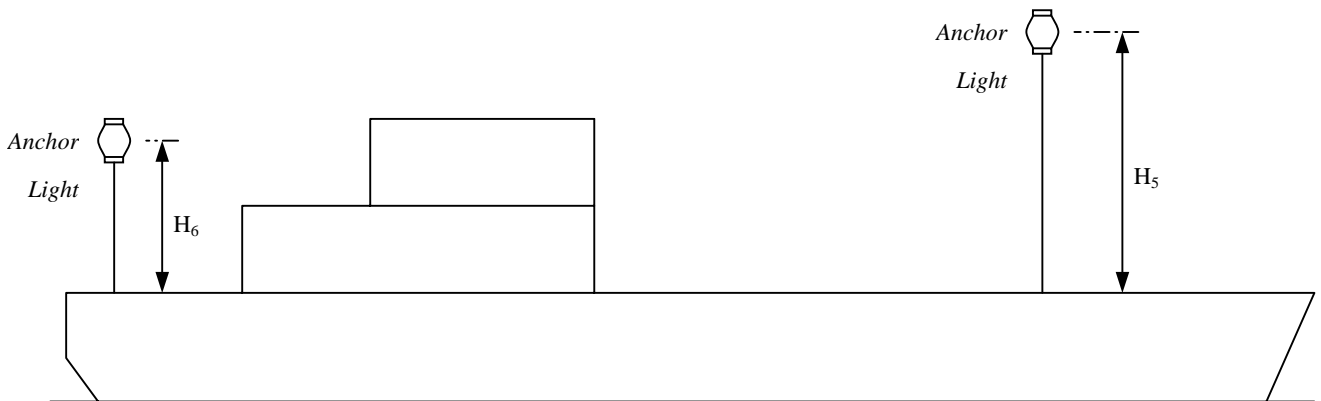
5.2.1 The side lights of vessels of  $L \geq 20$  m shall be fitted with inboard screens painted matt black. On vessels of  $L < 20$  m the side lights, if necessary to provide with horizontal sectors, shall be fitted with inboard matt black screens. With a combined lantern, using a single vertical filament and a very narrow division between the green and red sections, external screens need not be fitted.

5.2.2 Side lights shall not be so low as to be interfered with by deck lights. They shall be placed at or near the side of the vessel (recommended not more than 0.1 ship's breadth from shipside).



Length (m)	$L < 20$	$12 \leq L < 50$	$L \geq 50$
$I_3$	no requirement	$> I_1$ (i.e. side light not to be in front of masthead light)	$> I_1$ (i.e. side light not to be in front of forward masthead light)
$H_3$	$\leq 0.75 H_1$		
$H_4$	in the case of combined lantern, $\geq 1\text{m}$	--	--

### 5.3 Anchor Light

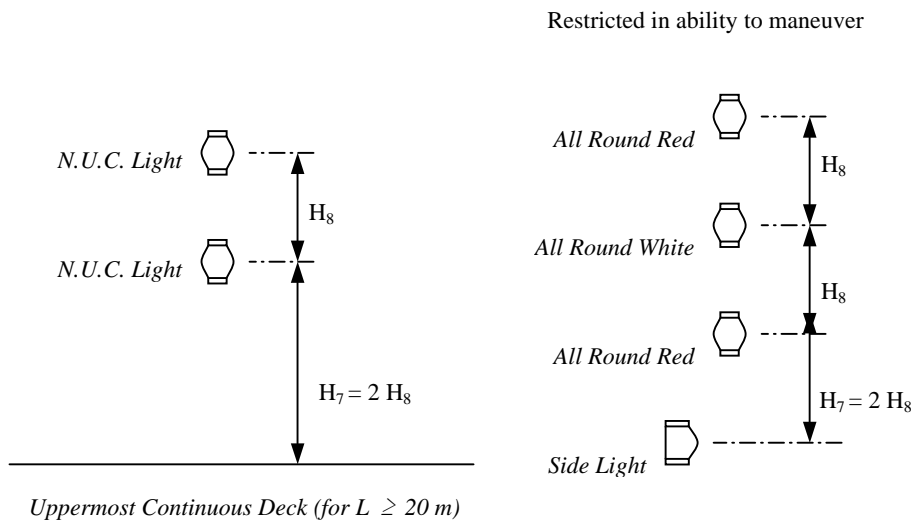


Length (m)	$L < 50$ (Note)	$L \geq 50$
$H_5$	Position can best be seen	$\geq 6\text{ m}$
$H_6$		$\leq (H_5 - 4.5)$

#### Note

On vessels of  $L < 50\text{ m}$ , only one anchor light is required.

### 5.4 Vertical Spacing of Lights





Length (m)	$L < 20$	$L \geq 20$
$H_7$	$\geq 2$ m (Note A)	$\geq 4$ m (Note A)
$H_8$ (Note B)	$\geq 1$ m	$\geq 2$ m

**Note**

- (A) In the case of after masthead light,  $H_7$  shall be at least 4.5 m higher than the forward masthead light.
- (B) When 3 lights are carried they shall be equally spaced.

# **CHAPTER IX**

## **TONNAGE MEASUREMENT**

### **PART 1 General**

#### **1 Application**

1.1 Subject to para.1.2 below, this chapter shall apply to -

- (a) new vessel; and
- (b) at the request of the owner for re-measurement of tonnage, existing vessel.

1.2 The following vessels are not required to be measured in accordance with this chapter -

- (a) any vessel the tonnage of which has been measured in accordance with the Merchant Shipping (Registration)(Tonnage) Regulations and is issued with the relevant tonnage certificate; or
- (b) any vessel in possession of International Tonnage Certificate issued in accordance with the International Convention on Tonnage Measurement of Ships, 1969.

#### **2 Method of Tonnage Measurement**

2.1 The gross and net tonnages shall be determined in accordance with Part 2 of this chapter provided that in the case of novel types of vessel with constructional features which render the application of the provisions of Part 2 unreasonable or impracticable, the gross and net tonnages shall be determined as required by the Director.

2.2 All measurements used in the calculations of volumes shall be taken and expressed in metres to the nearest centimetre.

2.3 Gross and net tonnages shall be expressed as whole numbers, decimals being rounded off downwards.

2.4 All volumes included in the calculation of gross and net tonnages shall be measured, irrespective of the fitting of insulation or the like, to the inner side of the shell or structural boundary plating in ships constructed of metal, and to the outer surface of the shell or to the inner side of the structural boundary surfaces in ships constructed of any other material.

2.5 The total volume shall include the volumes of appendages (e.g. rudder, kort nozzle, skeg, etc.), but exclude the volumes of spaces opened to sea.

## **PART 2 Ascertainment of Tonnage**

### **3 Vessels of 24 Metres in Length and Above**

3.1 Except wooden fishing vessels and primitive vessels (kaitos), tonnage of vessels of 24 metres in length and above should be ascertained in accordance with Part II of the Merchant Shipping (Registration)(Tonnage) Regulations.

### **4 Wooden Fishing Vessels and Primitive Vessels (kaitos) of Any Length, and Other Vessels of Less Than 24 Metres in Length**

4.1 The tonnage of wooden fishing vessels and primitive transportation vessels (kaitos) of any length; and all vessels of less than 24 m in length should be ascertained in accordance with this section.

4.2 Gross tonnage

4.2.1 The gross tonnage (GT) shall be determined by the following formula:

$$GT = K_1 (V_1 + V_2)$$

where:  $K_1 = 0.2 + 0.02 \log_{10} V_1$

$V_1 = V_H$  , total volume of all enclosed spaces under the main deck, in  $m^3$ ; which should be obtained from 4.2.2 below (in catamaran,  $V_1 = 2 \times V_H$ ).

$V_2$  = total volume of all enclosed spaces above the main deck, in  $m^3$ ; which should be obtained from 4.2.3 below.

4.2.2  $V_1$  shall be determined by the following formula:

$$V_H = L_m B D C \quad m^3$$

where:

$L_m$  = length of the main deck, m;

$B$  = in vessels of other than wooden construction, the moulded breadth (in catamaran, the moulded breadth of one hull); and in wooden vessels, the breadth measured to the outer planking of the hull, m;

$D$  = moulded depth, m;

$C$  = coefficient obtained from the following tables depending on the type of vessel:

Main deck is the deck which form the top of the enclosed space of the hull.

Class and Type of Vessel	Propulsion	Basic Hull Form	Hull Form Factor (C)
<b>Class I Vessel</b>			
Launch Ferry vessel	Fitted with Propulsion engine	ship	monohull      0.55
			catamaran      0.50
Primitive vessel (Kaito)		junk	0.60
<b>Class II Vessel</b>			
Dangerous Goods Carrier	Not fitted with propulsion engine	box	0.90
Noxious Liquid Substance Carrier	Not fitted with propulsion engine	box	0.90
Oil Carrier	Not fitted with propulsion engine	box	0.90 (Note)
	Fitted with Propulsion engine	ship	0.80 (Note)
Dry Cargo Vessel	Fitted with Propulsion engine	junk	0.60
		ship	0.80 (Note)
		box	0.90 (Note)
Dumb Lighter (incl. Flat Top Barge)	Not fitted with propulsion engine	box	0.90
Edible Oil Barge	Not fitted with propulsion engine	box	0.90
Water Boat	Fitted with Propulsion engine	ship	0.60
Tug	Fitted with Propulsion engine	ship	0.60
Transportation Boat	Fitted with Propulsion engine	ship	0.55
Transportation Sampan	Fitted with Propulsion engine	junk	0.60
Pilot Boat	Fitted with Propulsion engine	ship	0.60
Floating Workshop (incl. Repair Pontoon, Welding Barge) Crane Barge Flat Top Work Barge Landing Pontoon, Separation Barge, Ice Boat Fish Drying Hulk	Not fitted with propulsion engine	box	Vertical ends      1 (Note)
			Sloped ends      0.90 (Note)
<b>Class III Vessel</b>			
Fishing Vessel	Fitted with Propulsion engine / Not fitted with propulsion engine	junk	0.60
GRP Fishing Sampan	Fitted with Propulsion engine	ship	0.60

**Note:** For a vessel with intermediate hull form, for example, bow in ship form and stern in box form,  $C$  shall be the mean of the two coefficients, i.e.  $(0.80 + 0.90) / 2 = 0.85$ .

4.2.3  $V_2$  shall be determined by the following formula:

$$V_2 = \Sigma l \times b \times h \quad \text{m}^3$$

where  $l, b, h$  are respectively the mean length, mean breadth and mean height of each tier of the enclosed spaces above the main deck, in m.

4.3 Net Tonnage

4.3.1 The net tonnage (NT) shall be determined by the following formula:

$$NT = K_2GT$$

where:  $K_2$  = coefficient obtained from the following table;

GT = gross tonnage calculated by 4.2.1 above.

<b>Class and Type of Vessel</b>	<b><math>K_2</math></b>	
<b>Class I Vessel</b>		
All types of vessels	0.50	
<b>Class II Vessel</b>		
	Fitted with Propulsion engine	Not fitted with propulsion engine
Dangerous Goods Carrier Noxious Liquid Substance Carrier Oil Carrier Dry Cargo Vessel Edible Oil Carrier	0.56	0.84
Dumb Lighter (incl. Flat Top Cargo Barge) Hopper Barge	0.84	
All types other than the above	0.30	
<b>Class III Vessel</b>		
All types of vessels	0.30	

**CHAPTER X**  
**SPECIAL REQUIREMENTS FOR VESSELS**  
**CARRYING DANGEROUS GOODS**

**PART 1 Hull Construction and Equipment**

**1 Hull Construction**

- 1.1 < The hull should be constructed of metal >.
- 1.2 Cargo holds should be efficiently ventilated.
- 1.3 A means for effectively closing the engine room and other machinery spaces should be fitted so as to prevent a fire in that space from spreading.
- 1.4 No passenger is to be carried on board a vessel when it is engaged in carrying dangerous goods.

**2 Windlass**

- 2.1 Every vessel should be fitted with windlass of sufficient number, strength and power for recovering the cables and anchors.

**3 Signals**

- 3.1 A vessel on which explosives are being handled (carriage, loading and unloading, etc.) should -
  - (a) between sunrise and sunset, fly the international code signal "B" at the fore masthead; and
  - (b) between sunset and sunrise, exhibit an all-round red light at a height of not less than 6 metres above the uppermost deck, and such light shall be of such intensity as to be visible in clear atmosphere on a dark night at a distance of at least one nautical mile.
- 3.2 A vessel on which petroleum having a flash point of less than 61°C (closed cup test) is being handled should -
  - (a) between sunrise and sunset, fly a red flag of not less than one metre square with a white circular centre 150 mm in diameter at the fore masthead and also fly the international code signal "S.U.7."; and
  - (b) between sunset and sunrise, exhibit an all-round red light at a height of not less than 6 metres above the uppermost deck, and such light shall be of such intensity as to be visible in clear atmosphere on a dark night at a distance of at least one nautical mile.

#### **4 Notices**

- 4.1 A vessel on which dangerous goods is being handled should prominently display at suitable locations onboard two of each of the following notices –

不准吸煙 No Smoking
-----------------

不准明火 No Naked Lights
----------------------

The Chinese characters and English letters should be at least 100 mm in height.

### **PART 2 Carriage of Dangerous Goods in Packaged Form or in Solid Form in Bulk**

#### **5 Regulatory Requirements**

- 5.1 Unless otherwise specified elsewhere in this code, any vessel intended for the carriage of dangerous goods in packaged form or in solid form in bulk should -
- (a) (i) in addition to complying with the fire protection requirements prescribed in Schedule 4 of the Survey Regulation;
  - (ii) comply with the special requirements for ships carrying dangerous goods as stipulated in Part C, chapter II-2 of the SOLAS; and
  - (b) be in accordance with the requirements of the IMDG Code with regard to classification, identification, marking, labelling, placarding, packing, stowage, segregation, fire precautions and documentation.

#### **6 Dumb Steel Lighters carrying Packaged Dangerous Goods in Freight Containers**

- 6.1 Dumb steel lighters intended for the carriage of any class(es) of dangerous goods as shown in the following table may, instead of complying with the above para. 5.1(b), comply with the relevant requirements indicated in the following table. Dumb lighters which carry cargoes in open-hatch type cargo hold should meet the requirements of items A to G; flat top barges which carry cargoes on a complete weather deck should meet the requirements of items A, F and G. Notwithstanding meeting the safety construction requirements shown in the table, the carriage of such cargoes should comply with the control measures that embrace segregation, stowage and safe handling of dangerous goods as imposed from time to time by the Port Control Division of the Department.

(✓ means applicable)

No.	Requirement	Class of DG								
		1.4 s	2	3	4	5.1	5.2	6.1	8	9
A	<p><b>Fire Pump Water Supplies</b> readily availability of water supplies sufficient for 2 jets, each with a 15 m length hoses and Ø12 mm nozzles, to cover the whole designated cargo area. On existing vessel such fire pump may be electrical driven submerged pump rigged on frame fitted at shipside with hose attached for readily uses. On new vessel, a permanently installed fire pump should be fitted.</p>	✓	✓	✓	✓	✓	✓	✓	✓	✓
B	<p><b>Electrical Installation</b> electrical equipment and wiring fitted in cargo hold should be of ignition-proof type. However there should not be any electrical equipment or wiring fitted in such cargo space if classes 1.4s, 2.1 and class 3 having flashing point less than 23°C (closed cup test) are to be carried.</p>	✓	✓	✓				✓	✓	
C	<p><b>Detection System</b> fixed fire detection and fire alarm system should be fitted in cargo hold. However such system may be waived if it can be shown that the crew can provide regular watch of the cargoes onboard.</p>	✓	✓	✓	✓	✓		✓	✓	
D	<p><b>Ventilation System</b> power ventilation of at least 2 air changes per hour for an empty hold. On existing vessel portable extraction fans of sufficient power may be provided. On new vessel, a fixed ventilation fan and ducting system should be fitted. The fans should be of ignition-proof type.</p>		✓	✓	✓	✓		✓	✓	✓



(✓ means applicable)

No.	Requirement	Class of DG								
		1.4 s	2	3	4	5.1	5.2	6.1	8	9
E	<p>Bilge pump</p> <p>An independent cargo hold bilge pump should be provided. (*)</p> <p><u>Note:</u></p> <p>(*) Bilge pump should be of self-priming type and of capacity should be not less than 50mm/hour multiplied by the length (l) and breath (w) of the cargo hold. There should be two bilge wells; one on Port and one on Starboard of the cargo hold, connecting to the bilge pump located outside the cargo hold.</p>			✓				✓	✓	
F	<p><b>Portable Fire Extinguisher</b></p> <p>A minimum of additional 3 × 4 kg dry powder portable fire extinguishers should be provided.</p>			✓	✓	✓	✓	✓	✓	
G	<p><b>Separation from Machinery Space and Fire Protection</b></p> <p>lifting appliance and generator engines located on fore mast should be partitioned (with height not less than to the top of the engines) on the rear side (facing the cargo stowage area) and the two sides. Spark arrester should be fitted for engine exhaust pipes.</p>	✓	✓	✓	✓	✓		✓	✓	

### PART 3 Carriage of Dangerous Goods in Liquid Form in Bulk

#### 7 Carriage of Flammable Cargoes

- 7.1 Oil carriers and any vessel intended for carrying cargoes having a flash point not exceeding 61°C (closed cup test) should meet the applicable structural fire protection requirements prescribed in Schedule 4 of the Survey Regulation.
- 7.2 Any internal combustion engine installed on deck should be of air, hydraulic or hand starting. The engine exhaust pipe should be fitted with spark-arrestor.

#### 8 Carriage of Dangerous Liquid Chemicals

- 8.1 The construction and equipment of any vessel constructed or adapted and used for the carriage in bulk of any liquid product listed in chapter 17 of the IBC Code should comply with the relevant requirements of the said Code.

**CHAPTER XI**  
**VESSELS BUILT TO CLASSIFICATION SOCIETY'S RULES**  
**AND REGULATIONS FOR HIGH SPEED CRAFT**

**1 General**

- 1.1 This chapter applies to dynamically supported craft, and vessels which are designed and built to the requirements of rules and regulations applicable to high speed craft (HSC) issued by a classification society as listed in Annex A of this Code.
- 1.2 The requirements of this chapter apply to new vessels of HSC since 1.1.2000 operating solely within the waters of Hong Kong.

**2 Intact Stability**

- 2.1 The intact stability should meet the relevant requirements of sections 2.3, 2.4, 2.5, 2.11, 2.12 and annex 6 and 7 (except paragraph 1.5) of the HSC Code.

**3 Damaged Stability**

- 3.1 The damaged stability should meet the relevant requirements of sections 2.6, 2.13 and annex 7 (except paragraph 1.5) of the HSC Code

**4 Seating Construction, Safety Belts**

- 4.1 A seat should be provided for each passenger and crew member for which the vessel is certified to carry.
- 4.2 The installation of seats should be such as to allow adequate access to any part of the accommodation space. In particular, they should not obstruct access to, or use of, any essential emergency equipment or means of escape.
- 4.3 Seats and their attachments, and the structure in the proximity of the seats, should be of a form and design, and so arranged, such as to minimize the possibility of injury and to avoid trapping of the passengers after the assumed damage in the collision design condition. Dangerous projections and hard edges should be eliminated or padded.
- 4.4 One-hand-release safety belts should be provided for front row seats. The  $g_{coll}$  acceleration for seat belt should not be less than 3.
- 4.5 All seats, the supports and deck attachments should have good energy-absorbing characteristics and should meet the requirements of annex 9 of the HSC Code.

**5 Directional Control System**

- 5.1 Means for directional control in compliance with requirements of chapter 5 of the HSC Code should be provided.

## **6 Structural Fire Protection**

- 6.1 The bulkheads and decks of engine room boundary should be provided with structural fire protection based on providing protection for a period of 30 minutes.
- 6.2 The bulkheads and decks separating wheelhouse and passenger spaces should be constructed with smoke-tight materials.
- 6.3 The requirements of sections 7.4.3.1 and 7.4.3.4 of HSC Code should be complied with.

## **7 Fire Detection and Fixed Fire Extinguishing System**

- 7.1 A fire detection system and a fixed fire extinguishing system should be provided for engine rooms.
- 7.2 A fire detection system should be provided for compartments where fuel oil tank are located.

## **8 Remote Control, Alarm and Safety Systems**

- 8.1 The remote control, alarm and safety systems should meet the requirements of chapter 11 of the HSC Code.

## **9 Radar Installations**

- 9.1 One set of radar should be fitted. If a radar in compliance with section 80 of the safety survey regulation has been fitted on the vessel, no additional radar is required.

## **10 Wheelhouse Layout**

- 10.1 The wheelhouse should be designed so that an all-round view of the horizon from the navigating workstation is obtained.
- 10.2 The layout of the wheelhouse should comply with the requirements of sections 15.3.2~15.3.6 of HSC Code.

## **11 Documentation**

- 11.1 Every vessel should be provided with operating manual, route operating manual, training manual and maintenance manual in accordance with section 18.2 of HSC Code.

## **12 Failure Mode and Effect Analysis**

- 12.1 A failure mode and effect analysis (FMEA) in respect of the vessel's directional control systems, machinery, electrical installation and stabilization systems should be conducted according to the requirements in annex 4 of the HSC Code. A detailed FMEA may not be required for a system if it meets the conditions stated in sections 4.4 and 4.5 of the annex.

### **13 Operational and Safety Trial**

- 13.1 The operational and safety performance of the vessel should be demonstrated in accordance with annex 8 of the HSC Code.

### **14 Masthead Light**

- 14.1 The masthead light of high speed vessel with a length to breadth ratio of less than 3 may be placed at a height related to the breadth of the vessel lower than that prescribed in paragraph 2(a)(i) of the annex I for “Positioning and technical details of lights and Shapes” of International Regulations for Preventing Collisions at Sea 1972, provided that the base angle of the isosceles triangles formed by the sidelights and masthead light, when seen in end elevation, is not less than  $27^{\circ}$ .

## Chapter XII

### VESSEL SAFE OPERATION AND OPERATOR REQUIREMENTS

#### 1 General

Every Class I, II or III vessel that is fitted with propulsion engine should be controlled by the following appropriate complement when underway -

- (a) coxswain; and
- (b) engine operator, except that specified in Schedule 3 of the Merchant Shipping (Local Vessels ) (Certification and Licensing) Regulation (Cap. 548 sub. leg.).

#### 2 Certificate Classes and Validity

2.1 Local certificates of competency issued before, and after commencement of the Merchant Shipping (Local Vessels)(Local Certificates of Competency) Rules, (Local Certificates of Competency Rules), and its validity limitations are shown in the following table :

Certificates issued before the commencement of Local Certificates of Competency Rules	Certificates issued under Local Certificates of Competency Rules	Vessels Applicable
Local Certificate of Competency as Master of a vessel of 300 tons and under; Local Certificate of Competency as Trawling Master	Coxswain Grade 1	Up to and including 1600 gross ton
Local Certificate of Competency as Master of a vessel of 60 tons and under	Coxswain Grade 2	Up to and including 24 m length
Local Certificate of Competency as Master of a Fishing Vessel;	Coxswain Grade 3	Up to and including 15 m length
Local Certificate of Competency as Ferry engineer; Local Certificate of Competency as Engineer for a vessel with engine power over 150 BHP	Engine Operator Grade 1	Up to and including 3000 kW total propulsion power
	Engine Operator Grade 2	Up to and including 1500 kW total propulsion power
Local Certificate of Competency as engineer of a vessel with engine power up to 150 BHP; Local Certificate of Competency as Engineer of a Fishing Vessel	Engine Operator Grade 3	Up to and including 750 kW total propulsion power

Note : If vessel's gross tonnage is greater than 1600 or vessel's total propulsion power is greater than 3000kW, special consideration may be sought from the Director.

- 2.2 Local certificate of competency as master restricted to operate a craft of not more than 10 metres in length and fitted with either a petrol outboard engine of not more than 12 kW power or a diesel engine of not more than 38kW power within limits of permitted areas issued before the commencement of the Local Certificates of Competency Rules shall, unless earlier suspended or cancelled-
- (a) continue in force until the date of its expiry;
  - (b) valid for operation within the limits of the permitted areas as shown shaded on the map in Schedule 3 of the Local Certificates of Competency Rules; and
  - (c) subject to the conditions except the geographic operational limits as endorsed in the original certificate.
- 2.3 Local certificate of competency as master restricted to operate in typhoon shelters only issued before the commencement of the Local Certificates of Competency Rules shall, unless earlier suspended or cancelled-
- (a) continue in force until the date of its expiry;
  - (b) valid for operation in typhoon shelters only; and
  - (c) subject to the conditions as endorsed on the original certificate.

### **3 Vessel Permitted to be Operated by Combined Coxswain and Engine Operator**

- 3.1 Except the types of vessels stated in 3.2 below, and subject to the condition stated in 3.3 below, vessels equipped for unattended machinery space operation as required in Ch.IIIA/Pt 3/18 when operating within Hong Kong waters may be operated under the command of a person who is a holder of both valid coxswain certificate and valid engine operator certificate (i.e. "combined coxswain").
- 3.2 The following types of mechanically propelled vessels while under way are not allowed to be controlled by only a combined coxswain:
- (a) vessel permitted to carry more than 100 passengers
  - (b) oil carrier;
  - (c) dangerous goods carrier;
  - (d) noxious liquid substances carrier;
  - (e) tug;
  - (f) vessel of length exceeding 24 metres;
  - (g) vessel of total engine horsepower exceeding 1000 kW (1340 BHP);
  - (h) any other type of vessel as considered by the Director not suitable to be operated by only a combined coxswain.
- 3.3 On a vessel commanded by only a combined coxswain, there should be at least one crew member with common engineering knowledge on board to assist the combined coxswain while the vessel is underway.

- 3.4 Any fishing vessel equipped as required in Ch.IIIA/Pt 3/18 and of length not exceeding 24 metres and total propulsion power not exceeding 260 kW (350 BHP), may be controlled by only a combined coxswain.

#### **4 Radar Operator**

A ferry vessel operating a franchised service or a licensed service as it is defined in the Ferry Services Ordinance (Cap. 104) and plying outside the boundaries of the Victoria Port, is required to be fitted with a radar of approved type and to have on board, at all times when under way, a radar operator who has successfully completed a radar training course approved by the Director for the operation of the radar.

#### **5 Reporting of Accidents**

- 5.1 It is a statutory requirement for the owner or coxswain or agent of any local vessel to report accidents relating to collisions and fires etc. as required in Part XI of the Ordinance.

#### **6 Observance of Safe Navigational Speed, Carrying Certificated Operators and Adequate Number of Crew**

- 6.1 When any local vessel is under way, the coxswain should ensure the vessel is proceeding at a safe navigational speed, and diligently comply with the speed limits in the relevant operating areas and the relevant operational requirements as promulgated in Marine Department notices from time to time.
- 6.2 Any Class I, II or III vessel owner or coxswain of the vessel should observe any specified licensing conditions on vessel operator requirements, including those indicated in para. 18 of Chapter IIIA, para. 13 of Chapter IIIB, Chapter XII and Annex U-4 of this Code, in order to cope with operational needs including helping out emergency measures etc..

#### **7 Third Party Risks Insurance Coverage**

- 7.1 It is the obligation of the owner and agent of any local vessel to ensure compliance with the relevant requirements of the Merchant Shipping (Local Vessels) (Compulsory Third Party Risks Insurance) Regulation.

#### **8 Duties Relating to Owner and Agent of any Class I, II and III Vessel**

- 8.1 It is the responsibility of the owner and agent of any Class I, II or III vessel :-
- (a) to ensure that the vessel is properly maintained, surveyed and certificated in accordance with the requirements of the Ordinance and regulations as mentioned in paragraph 2 above, in addition to this Code; and
  - (b) to ensure that the vessel is built and constructed with adequate strength and stability, adequacy in safety for machinery, electrical and in safety arrangement and equipment for vessel's intended purpose through statutory survey and certification.

8.2 It is the responsibility of the owner, agent and the coxswain of any Class I, II or III vessel to observe applicable duties as indicated in the Merchant Shipping (Local Vessels)(General) Regulation and Merchant Shipping (Local Vessels)(Certification and Licensing) Regulation, and in particular relating to restrictions imposed under section 6 and operators holding relevant certificates of competency etc. required on any Class I, II or III vessel specified under sections 46 to 50 of the latter Regulation. These are extracted in Annex V-2 and Annex V-3 for reference.

## **9 Operational Safety Requirements on Cleanliness**

9.1 The owner of a local passenger vessel and his agent shall ensure that vessel is kept clean at all times as specified under s. 29 of general regulation.

9.2 The owner or master of a local passenger vessel should ensure the vessel is in a proper state of cleanliness and repair, its equipment and appliances to be maintained in good order and kept in readiness for immediate use.



**RULES AND REGULATIONS FOR CALSSIFICATION OF VESSELS  
APPLICABLE TO LOCAL VESSELS**

**1 American Bureau of Shipping (ABS)**

- (a) Rules for Building and Classing: Steel Vessels under 90 metres in Length

Part 2	Materials and Welding
Part 3	Hull Construction and Equipment
Part 4	Machinery Equipment and Systems

- (b) High Speed Craft Guide

**2 Bureau Veritas (BV)**

- (a) Rules and Regulations for the Classification of Ships (steel vessels only)

Part I	Classification - Surveys
Part II	Hull structure
Part III	Machinery - Systems

- (b) Rules for the Construction and Classification of High Speed Craft

**3 China Classification Society (CCS)**

- (a) Rules and Regulations for the Construction and Classification of Sea-going Steel Ships

Vol. 2, Part 2	Hull Structure
Vol. 3, Part 3	Machinery
Vol. 4, Part 4	Electrical Equipment
Vol. 6, Part 8	Welding
Vol. 6, Part 9	Materials

- (b) Rules and Regulations for Construction and Classification of Inland Waterways Steel Ships (applicable to vessels of appropriate principal dimension ratio, operating solely within Hong Kong waters)

Vol. 1, Part 2	Hull Structure
Vol. 2, Part 3	Machinery
Vol. 2, Part 4	Electrical Equipment
Vol. 3, Part 8	Materials
Vol. 3, Part 9	Welding

- (c) Rules and Regulations for Construction and Classification of Sea-going High Speed Craft

#### **4 Det Norske Veritas (DNV)**

(a) Rules for Classification of Ships

Part 2	Materials and Welding
Part 3	Hull and Equipment
Part 4	Machinery and Systems

(b) Rules for Classification of High Speed and Light Craft

Part 3	Structures, Equipment
Part 4	Machinery and Systems - Equipment and Operation

#### **5 Germanischer Lloyds (GL)**

(a) GL Rules and Regulations - Ship Technology

Part 1 - Seagoing Ships

Chapter 1	Hull Structures
Chapter 2	Machinery Installations
Chapter 3	Electrical Installations
Chapter 5	High Speed Craft

#### **6 Lloyd's Register (LR)**

(a) Classification of Ships - Rules and Regulations

Vol. 3, Part 3, 4	Ship Structures
Vol. 3, Part 5	Main and Auxiliary Machinery
Vol. 3, Part 6	Electrical System

(b) Rules and Regulation for Classification of Special Service Craft  
(applicable to high speed craft, light displacement craft, multi-hull craft and craft with draught to depth ratio less than or equal to 0.55)

Vol. 4-6, Part 6-8	Hull Construction
Vol. 7, Part 9-16	Machinery and Electrical System

#### **7 Nippon Kaiji Kyokai (NK)**

(a) Rules for the Survey and Construction of Steel Ships -

Part C	Hull Construction and Equipment
Part CS	Hull Construction and Equipment of Small Ships
Part D	Machinery Installations
Part H	Electrical Installations
Part K	Materials
Part M	Welding

(b) Rules for High Speed Craft - Guidance for high speed craft

## **Note**

1. The above lists the current rules and regulations applicable to local vessels and is not exhaustive. Alternative standards may be considered.
2. For fishing vessel, vessel owner may refer to the “Rules and Regulations for Construction Glass Reinforced Fibre Fishing Vessel, 1995 (applicable to fishing sampan only) and “Rules and Regulations for Construction Sea-going Steel Fishing Vessel” issued by the Register of Fishing Vessel of the People's Republic of China; or refer to the rules and regulations as listed in Annex N-1C.

## FREEBOARD MARK

### 1. Position of Marks

On receiving particulars of the assigned freeboard, the owner of the Class II vessel concerned or his agent shall cause to be marked on each side of the vessel, to the satisfaction of the Director or competent surveyor, the appropriate marks in accordance with this Annex.

### 2. Method of Marking

- 2.1. The lines described in section 3 shall be marked in such a manner as to make them plainly visible. They shall be painted in white or yellow on a dark background or in black on a light background, and shall be carefully cut in or centre punched.
- 2.2. On steel or aluminum vessels, the marks shall be made by cutting plate or welding bead; on wooden vessels, the marks shall be cut into the planking to a depth of not less than 3 mm; on glass reinforced plastic (GRP) vessels, the marks shall be permanently affixed to the sides of the vessel by bonding or some other effective method.

### 3. Details of Marks

A Class II vessel to which this Part applies shall be marked on each side at amidships, with a deck line and freeboard line as follows -

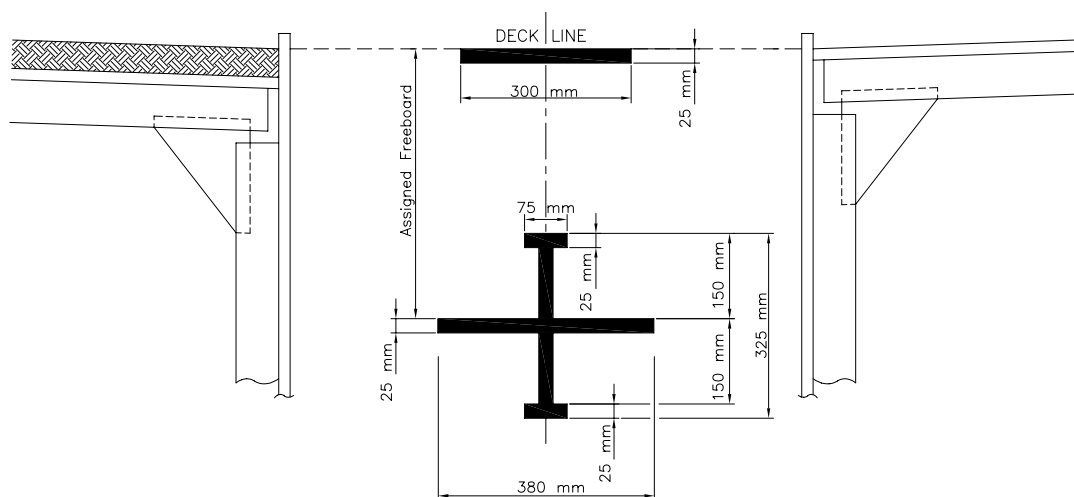


Figure (Midship)

- (a) The deck line shall be a horizontal line of 300 mm in length and 25 mm in breadth marked amidships with its upper edge passing through the point where the continuation outwards of the upper surface of the freeboard deck intersects the outer surface of the shell. Where the deck is partly sheathed amidships, the upper edge of the deck line shall pass through the point where the continuation outwards of the upper surface of the actual sheathing at amidships intersects the outer surface of the shell.
  
- (b) The horizontal freeboard line shall be 380 mm in length and 25 mm in breadth, and 2 additional lines each 75 mm in length and 25 mm in breadth, shall be located with their upper edges at distances of 150 mm, one above, and one below, the upper edge of the horizontal freeboard line. All horizontal lines shall be at right angles to a vertical line 325 mm in depth and 25 mm in width which bisects the horizontal lines.
  
- (c) The assigned freeboard shall be measured from the upper edge of the deck line to the upper edge of the horizontal freeboard line.

**SPILL OUT METHOD**

- 1 The following 'spill out' method takes account of the spillage of saturated cargo and water overboard as the vessel heels and may be developed either by direct means or by computer.
  
- 2 When the investigation is done by direct means curves should be prepared for the vessel at various angles of inclination (see Figure C 1.1 at next page) representing :-
  - (a) the effective volume of the cargo hold to the top of the hatch coaming;
  
  - (b) the cargo heeling lever ( $y$ ); and
  
  - (c) the KN lever, i.e. horizontal distance between the keel and the centre of buoyancy.
  
- 3 In developing these curves the cargo surface should normally be assumed to remain horizontal (i.e. parallel to the sea level) and to be touching the top of the hatch coaming. Where however it can be shown that the distribution and area of the spillways on either side of the vessel are capable of rapidly releasing the cargo with the vessel at any angle of heel consideration may be given to lowering this final level of the cargo surface to a point coincident with the lower edge of the spillway openings. The KN lever curve (i.e. cross curve) is derived from calculations which assume that the top of the hold is open and that the buoyancy above the level of the horizontal cargo surface beyond the line of the hatch coaming does not exist (see Figure C 1.2 at next page). An allowance may be given for all erections which have weathertight means of closure.
  
- 4 With this information, curves of righting levers ( $GZ$ ) for various loaded conditions can be prepared. The initial stability of the vessel in the upright condition should be calculated in the normal manner with the metacentric height ( $GM$ ) corrected for the effect of all free surfaces including that in the main cargo hold where account should be taken of the actual density of the contents therein; normally a specific gravity the mean of that for saltwater and the cargo will be acceptable. This method of investigating the stability characteristics is illustrated by a typical calculation sheet which is available from the Department upon request.

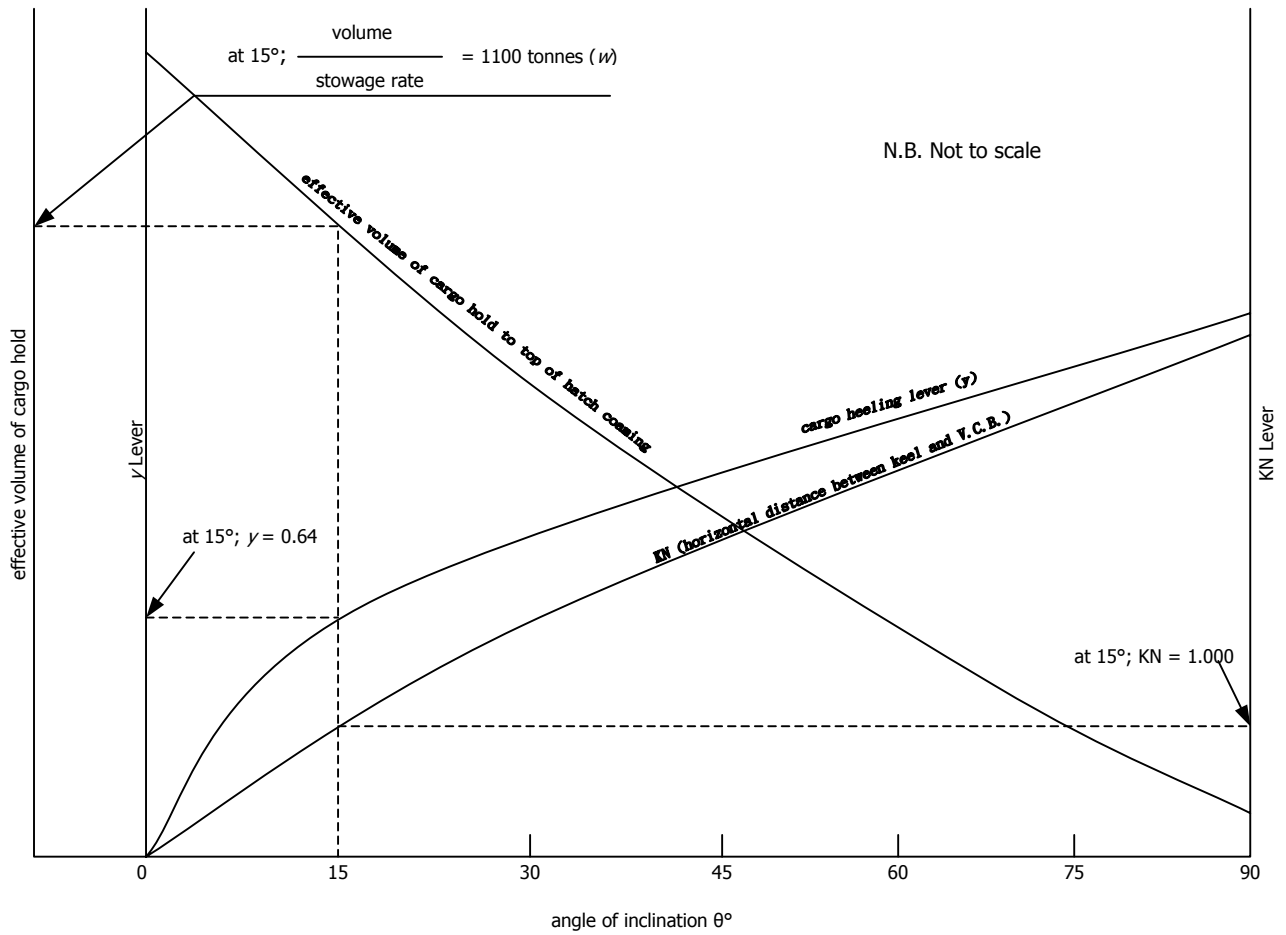


Figure C 1.1

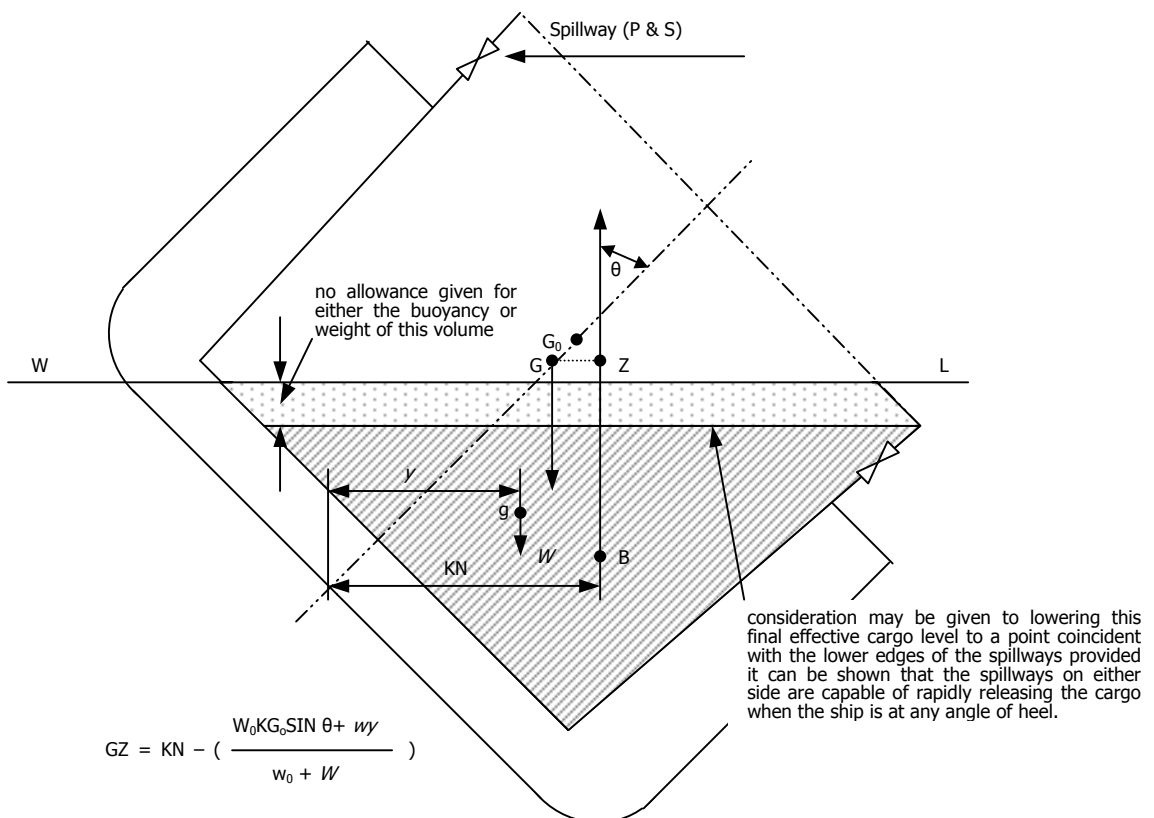


Figure C 1.2

**STABILITY WHEN LIFTING**

**1 Conditions to be computed**

1.1 A vessel's various loading conditions at free running and at the worst condition of combination of hook load and outreach of hook should be computed.

**2 Stability Standard**

2.1 If the vessel's hull proportions fall within any one of the following limits:

- (a) Beam / depth            3.40~4.76; or
- (b) Registered length / beam        3.20~4.50; or
- (c) Draft / depth            0.60~0.85

it is sufficient if the vessel owner can demonstrate that the vessel, at the condition stated in paragraph 1.1, will not heel beyond the limits of one-half of the freeboard or one-half of the draft, whichever occurs first.

2.2 Any vessel which hull proportions fall beyond the limits stated in paragraph 2.1 above, should meet the stability standard prescribed below:

Area under GZ curve up to the smallest of the following angles:

- (a) the angle corresponding to the maximum GZ
- (b) the downflooding angle
- (c) 40<sup>0</sup>

should not be less than:

0.053 m-rad if the vessel operates within Hong Kong waters; or  
0.080 m-rad if the vessel operates in River Trade Limits.



## **APPROXIMATE DETERMINATION OF STABILITY**

### **Part 1 Simple Inclining Test**

#### **1 General**

- 1.1 The simple inclining test is to ascertain the angle of heel a vessel would occur when 2/3 of the passengers distributed on one side of the vessel and 1/3 on the other side. The objective being that it should be ensured that no angle of heel exceeding 7° will arise as a result of the movement of passengers from one side of the vessel to the other side.

#### **2 Test Procedure**

- 2.1 The vessel should be tested with weights to represent the fully laden service condition.
- 2.2 The weights should be disposed, as far as practicable, with their centres of gravity in the correct vertical and lateral positions having regard also to those vessels where passengers should be taken as congregated at 0.3 m<sup>2</sup> each on the uppermost deck or decks to which they have access.
- 2.3 The test should be carried out in the following manner: -
- (a) the vessel is to be loaded with weights as described above,
  - (b) calculate a heeling moment equal to 1/12<sup>th</sup> the weight of the passengers (W) multiplied by the extreme breadth (B) of the vessel (WB/12),
  - (c) transfer weights from one side of the vessel to the other side in 3 equal increments such that the final heeling moment is equal to WB/12, the same vertical CG of the whole being maintained.  
  
The weights and the distance that are moved together with the angle of heel should be recorded for each of the 3 moves.
  - (d) restore all the weights to their original positions and record angle of heel when they are restored,
  - (e) repeat (c) moving weights from opposite side,
  - (f) repeat (d),
  - (g) if the angle of heel exceeds 7° during the test, the owner might add ballast weight and to repeat the test procedures (c), (d), (e) and (f). The weight and position of such ballast should be recorded.

#### **3 Acceptance of Stability**

- 3.1 As a general rule, no vessel will be accepted where the angle of heel exceeds 7° as a result of a heeling moment of WB/12 or any greater heeling moment that could be expected to arise in service.

- 3.2 In any case where an angle of heel exceeding 4° has arisen as a result of a heeling moment of WB/12, the seating and other arrangements of the vessel should be examined to see whether a heeling moment greater than WB/12 could be expected to arise in service. If this is found to be so, proper measure should be taken to avoid an angle of heel greater than 7° would arise as a result of this heeling moment.

## **Part 2 Rolling Period Test**

### **4 General**

The rolling period is the duration for one complete oscillation, i.e. starting from the extreme end of a roll to one side of the vessel, moves right across to the other extreme side and returns to the original starting point.

### **5 Test Procedure**

- (a) The test should be conducted in harbour, in smooth water with the minimum interference from wind and tide.
- (b) The mooring should be slack. A reasonable clearance at the sides of the vessel should be maintained to avoid making any contact during its rolling.
- (c) Weights which are liable to swing 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.
- (d) The vessel is made to roll (e.g. by rhythmically lifting up and putting down a weight far off middle-line; by people running athwartships in unison; or by any other means). As soon as this forced rolling has commenced the vessel is allowed to roll freely and naturally.
- (e) By means of a stopwatch, the time is taken for not less than about five complete oscillations.
- (f) After allowing the roll to completely fade away, repeat the operations in paragraphs (d) and (e) twice and time recorded.

### **6 Determination of Metacentric Height (GM)**

- (a) From the total time for the total number of oscillations made, calculate the mean time (say T seconds) for one complete oscillation.
- (b) The metacentric height  $GM_0$  is to be determined from the following formula:

$$GM_0 = 0.77 (B/T)^2$$

where

B = extreme breadth of vessel in metres

(Note: the formula is valid for motor dry cargo vessel of length not more than 24 metres in lightweight condition).

## DAMAGED STABILITY REQUIREMENTS FOR LAUNCHES, FERRY VESSELS

### PART 1 Damaged Stability Requirements

- (1) Every vessel to which this Annex applies should be subdivided by bulkheads, which should be watertight up to the bulkhead deck, into compartments the maximum length of which should not exceed the length permitted by the required freeboard and intact stability as calculated in accordance with Parts 2 and 3 of this Annex.
- (2) Every vessel should be so constructed as to keep asymmetrical flooding, when the vessel is in a damaged condition, at the minimum consistent with efficient arrangements.

### PART 2 Assumptions on which calculations are to be based

The stability of every vessel should be determined by calculation in accordance with the following conditions and assumptions-

- (3) Applicable size and arrangement of vessel:
  - (a) the registered length of vessel is not more than 79 metres;
  - (b) no passenger is carried underdeck;
  - (c) the vessel is fitted with plane bulkheads and no stepped bulkhead between main compartment is fitted;
  - (d) no partial subdivision above margin line is provided; and
  - (e) no cross-flooding fitting is provided.
- (4) The vessel should be assumed to be in the worst service conditions as regards stability which is likely to be experienced having regard to the intended service of the vessel, or damage calculations should be made over the operational draught range as a basis for curves of required metacentric height (GM) values or permissible vertical centre of gravity (KG) values.
- (5) The permeabilities should be assumed to be as follows:-

Spaces	Permeability
Appropriated for stores but not occupied by substantial quantities thereof, void spaces	95
Appropriated as accommodation	95
Appropriated for machinery	85
Appropriated for liquids	0 or 95, whichever results in the more onerous requirements

- (6) The extent of damage should be assumed to be as follows-
- (a) longitudinal extent: 3 metres plus 3% of the length of the vessel, or 11 metres or 10% of the length of the vessel, whichever is the least;
  - (b) transverse extent: 20% of the breadth of the vessel, measured inboard from the vessel's side at right angles to the centre line at the level of the deepest subdivision load waterline taken parallel to the keel;
  - (c) vertical extent: from the base line upwards to main deck;
  - (d) if any damage of lesser extent than that indicated in sub-subparagraphs (a) or (b) and (c) would result in a more severe condition regarding heel or loss of GM, such damage should be assumed for the purposes of the calculation.
- (7) Where the vessel is fitted with decks, inner skins or longitudinal bulkheads of sufficient tightness to restrict the flow of water, regard should be had to such restrictions in the calculation.

### **PART 3 Sufficiency of Stability in the Damaged Condition**

The intact stability of the vessel should be deemed to be sufficient if the calculation specified in Part 2 shows that, after the assumed damage, the condition of the vessel is as follows-

- (8) In the final stage after damage -
- (a) the positive residual righting lever curve should have a minimum range of 15° beyond the angle of equilibrium;
  - (b) the area under the righting lever curve should be at least 0.015 metre radians, measured from the angle of equilibrium to the lesser of-
    - (i) flooding angle (the angle at which progressive flooding occurs);
    - (ii) 22° (measured from the upright);
  - (c) a residual righting lever is to be obtained within the ranged specified in subparagraph (1)(a), taking into account the greater of the following heeling moments-
    - (i) the crowding of all passengers towards one side;
    - (ii) due to wind pressure as calculated by the formula-

$$GZ = \frac{\text{heeling moment}}{\text{Displacement}} + 0.04 \quad (\text{m})$$

However, in no case is this righting lever to be less than 0.10 metres;

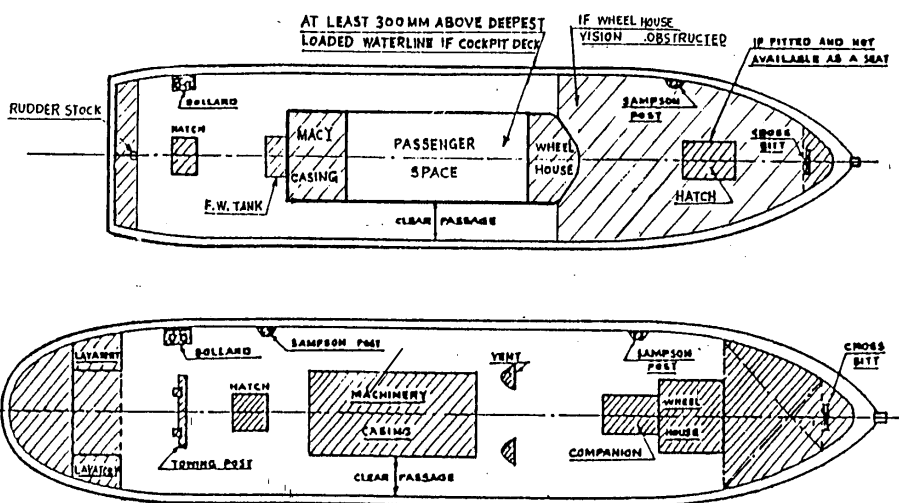
- (d) for the purpose of calculating the heeling moments in sub-subparagraph (c), the following assumptions should be made-
  - (i) moments due to crowding of passengers-
    - (aa) 4 persons per square metre;
    - (bb) a mass of 75 kg for each passenger;

- (cc) passengers should be distributed on available deck areas towards one side of the vessel on the decks where muster stations are located and in such a way that they produce the most adverse heeling moment;
  - (ii) moments due to wind pressure-
    - (aa) a wind pressure of  $120\text{N/m}^2$  to be applied;
    - (bb) the area applicable should be the projected lateral area of the vessel above the waterline corresponding to the intact condition;
    - (cc) the moment arm should be the vertical distance from a point at one half of the mean draught corresponding to the intact condition to the centre of gravity of the lateral area;
  - (e) in intermediate stages of flooding the maximum righting lever should be at least 0.05 metre and the range of positive righting levers should be at least  $7^\circ$ . In all cases only one breach in the hull and only one free surface need to be assumed.
- (9) The final condition of the vessel after damage should be as follows-
  - (a) there should be a positive residual GM of at least 50 mm as calculated by the constant displacement method;
  - (b) in no case should the margin line be submerged in the intermediate stages or final stage of flooding.

# Guidance Plan for Determination of Passenger Space for Launches, Ferry Vessels, Tugs, Transportation Boats and Pilot Boats

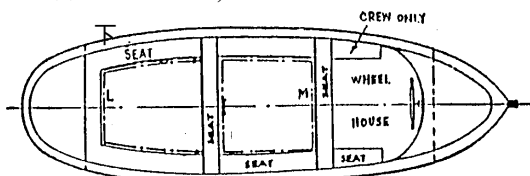
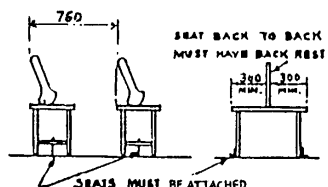
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(Area as shown thus  to be excluded)

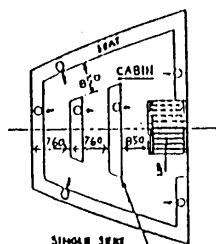
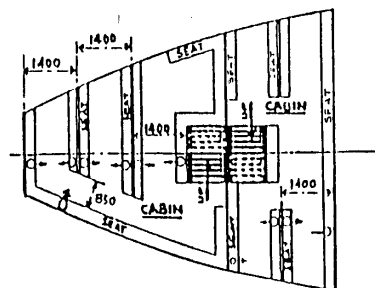


## Requirements on Seating Arrangement (mm)

- (a) minimum width 460
- (b) minimum pitch
  - (i) seats facing each other 1400
  - (ii) seats facing the same way 760
- (c) minimum leg room
  - (i) not more than 6 seats in one row 250
  - (ii) more than 6 seats in one row 300
- (d) corner seats, calculations see below



EXAMPLES  $\frac{L-460}{460} = \text{PASSENGERS}$   $M \text{ LESS } 4 @ 230$   $\frac{M-920}{460} = \text{PASSENGERS}$



○ MARKED SHOWING THE DIRECTION OF PASSENGERS ON THE SEAT.

**ANNEX I**

**MISCELLANEOUS REQUIREMENTS  
AND GUIDANCE**

## **VISIBILITY REQUIREMENT FOR WHEELHOUSE**

Regarding navigation bridge visibility, new vessels of 45m and over in registered length should comply with the Regulation 22, Chapter V of the SOLAS; new vessels of 12m to 45m in registered length should comply with the following paragraphs 1 to 12; new vessels of under 12m in registered length should comply as far as practicable to the requirements for larger vessels as set out in this Code of Practice.

**Requirements for new vessels of 12m to 45m in registered length are as follows.**

1. The view of the sea surface from the conning position (it is defined in this Code of Practice as the main steering position controlled by the coxswain in wheelhouse) shall not be obscured by more than two ship lengths, forward of the bow to 10 degrees on either side under all conditions of draught, trim, deck weight and cargo handling gear.
2. No blind sector caused by cargo, cargo handling gear or other obstructions outside of the wheelhouse forward of the beam which obstructs the view of the sea surface as seen from the conning position, shall exceed 10 degrees. The total arc of blind sectors shall not exceed 20 degrees. The clear sectors between blind sectors should be at least 5 degrees.
3. The horizontal field of vision from the conning position should extend over an arc of not less than 225 degrees, that is from right ahead to not less than 22.5 degrees abaft the beam on either side of the ship.
4. From each bridge wing the horizontal field of vision of vision should extend over an arc of at least 225 degrees, that is from at least 45 degrees on the opposite bow through right ahead and then from right ahead to right astern through 180 degrees on the same side of the ship.
5. From the main steering position the horizontal field of vision should extend over an arc from right ahead to at least 60 degrees on each side of the ship.
6. The ship's side should be visible from bridge wing.
7. The height of the lower edge of the wheelhouse front windows above bridge deck should be kept as low as possible. In no case should the lower edge present an obstruction to the forward view.
8. The upper edge of the wheelhouse front windows should allow a forward view of the horizon, for a person with a height of eye of 1600 mm above the deck at the conning position, when the ship is pitching in seas.
9. Framing between the wheelhouse windows should be kept to a minimum and not installed immediately forward of any workstation.



10. To help avoid reflections, the bridge front windows should be inclined from the vertical plane top out, at an angle of not less than 10 degrees and not more than 25 degrees.
11. Polarized and tinted windows should not be fitted.
12. At all time, regardless of weather conditions, at least two of the forward windows should provide a clear view, and in addition depending on the wheelhouse configuration, an additional number of windows should provide a clear view.

**Requirement for existing vessels**

It is required that existing vessels have a clear view ahead from the steering position and where practicable, comply with the requirements in this Code.

## Checklist for Engine Inspection

**Annex I-2**

( to be completed by Engine Workshop except Part 3 )

[Note : This form is applicable to vessels installed with propulsion and generator engines ]

**Name of Vessel :** \_\_\_\_\_ **License No.:** \_\_\_\_\_

**Type of Engine :** \_\_\_\_\_

**Engine Model :** \_\_\_\_\_

**Engine Serial No.:** \_\_\_\_\_

<b>Part 1 : Inspection item</b>	Yes	No	N/A	Remarks
Cylinder head				
Valves, inlet/exhaust				
Liners and jackets				Hydraulic test
Pistons and gudgeon pins				
Bottom end bearings				
Cooling system				Hydraulic test
Injectors				Injectors calibration report shall be submitted
Fuel system				Fuel pump calibration report shall be submitted
Crankshaft/main bearing/Camshaft system				Inspection report shall be submitted
Governors				
Turbocharger				Inspection report shall be submitted
Lubrication system				
Starting system				
Electrical system				
Control system				
Instrumentation and monitoring system				
Mounting and alignment				
Detailed engine maintenance report attached				

### **Part 2 : Maintenance Workshop Particulars**

Name of Responsible Person : \_\_\_\_\_ Tel.: \_\_\_\_\_

Position / Rank : \_\_\_\_\_ Date : \_\_\_\_\_

Responsible Person's Signature : \_\_\_\_\_ Tel : \_\_\_\_\_

Name of Engine Workshop : \_\_\_\_\_ Company Chop : \_\_\_\_\_

Company Address : \_\_\_\_\_

Business Registration No. : \_\_\_\_\_

### **Part 3: Vessel Owner Declaration**

I have inspected the open up and overhaul of engine on \_\_\_\_\_

Actual Completion date: \_\_\_\_\_ Signature/Chop: \_\_\_\_\_

Name of Owner/Coxswain/Engine Operator \_\_\_\_\_

Telephone No. : \_\_\_\_\_

- Note : (1) Please use separate sheets if inspections are conducted by more than one workshop.  
(2) Officers of Marine Department or Authorized Surveyors/Organizations reserve the right to inspect and dismantle the engine if necessary.

## Checklist for Gearbox Inspection

**Annex I-3**

( to be completed by Maintenance Workshop except Part 3 )

[ Note : This form is applicable to vessels installed with gearboxes for propulsion ]

**Name of Vessel :** \_\_\_\_\_ **License No.:** \_\_\_\_\_

**Type of Gearbox :** \_\_\_\_\_

**Gearbox Model :** \_\_\_\_\_

**Gearbox Serial No.:** \_\_\_\_\_

<b>Part 1 : Inspection item</b>	Yes	No	N/A	Remarks
Casing				
Gears and shafts				
Disc				
Clutch system				
Bearings				
Gasket and seal				
Gearbox control system				
Cooling system				Hydraulic test
Hydraulic system				
Lubrication system				
Instrumentation and monitoring system				
Mounting and alignment				
Other items				
Detailed gearbox maintenance report attached				

### **Part 2 : Maintenance Workshop Particulars**

Name of Responsible Person : \_\_\_\_\_ **Tel.:** \_\_\_\_\_

Position / Rank : \_\_\_\_\_ **Date :** \_\_\_\_\_

Responsible Person's Signature : \_\_\_\_\_ **Tel :** \_\_\_\_\_

Name of Maintenance Workshop : \_\_\_\_\_ **Company Chop :** \_\_\_\_\_

Company Address : \_\_\_\_\_

Business Registration No. : \_\_\_\_\_

### **Part 3: Vessel Owner Declaration**

I have inspected the open up and overhaul of gearbox on \_\_\_\_\_

Actual Completion date: \_\_\_\_\_ **Signature/Chop:** \_\_\_\_\_

Name of Owner/Coxswain/Engine Operator \_\_\_\_\_

Telephone No. : \_\_\_\_\_

Note: (1) Please use separate sheets if inspections are conducted by more than one workshop.

(2) Officers of Marine Department or Authorized Surveyors/Organizations reserve the right to inspect and dismantle the gearbox if necessary.

**PERFORMANCE SPECIFICATIONS FOR RADAR  
ABOARD FERRY VESSELS**

The radar should:

1. Have a display of the raster scan type and may be either in colour or monochrome. The display should be capable of being viewed in either daylight or darkness without the use of hoods.
2. Have at least the display modes of “Head-up” and “Course-Up” in addition to any other modes which may be available.
3. Be stabilized by a compass input from either a gyro compass, a transmitting magnetic compass, or a fluxgate compass.
4. Have a screen display of not less than 280 millimetres (11 inches diagonal).
5. Have means for suppressing precipitation returns, which may be of the FTC type or of the video processor type and the control of which may be either progressive or on-off type.
6. Have means suppressing sea clutter returns, the control of which must be progressive and which may be of swept gain type or the video processor type.
7. Have a clearly identifiable heading marker capable of being suppressed temporarily by a spring loaded switch or similar device.
8. Have at least one variable range marker with a clearly displayed digit readout of range.
9. Be equipped with a switchable fixed range rings of an accuracy such that the range of an object on a range ring may be determined to within 1.5% of the range scale in use or 75 metres whichever is the greater.
10. Be equipped with either a rotating cursor with parallel lines marked on it or with an electronic bearing marker having an adjustable origin.
11. Have a facility for displaying the historical relative tracks of all echoes. The echo tracks must be capable of being removed and restarted afresh on demand.

12. Have a horizontal beam width of not more than 2.5 degrees measured between the half power points (-3dB).
13. Have a pulse length on range scales up to 1.5 miles of not greater than 0.08μsec.
14. Have a power output not less than 3 kilowatt.
15. Have an antenna system capable of sustained operation in relative wind speeds of 50 knots or greater.
16. Be equipped with a means of ascertaining that the receiver is correctly tuned.

**REQUIREMENTS FOR THE REPLACEMENT OF MAIN ENGINE**

**1. Document/Data/Drawing to be Submitted**

- 1.1 Proof of sales of the new /used engine;
- 1.2 Type Approval Certificate of the new/used engine;
- 1.3 The added weight, vertical centre of gravity (V.C.G.) and longitudinal centre of gravity (L.C.G.) of new new/used main engine and its accessories;
- 1.4 The percentage of the added weight based on the lightship weight;
- 1.5 Engine Seating Arrangement for approval; (if any modification)
- 1.6 Piping Arrangement for approval; (if any modification)

**2. Devices to be Provided and Fitted**

- 2.1 Main engine automatic shut-off and alarm arrangements; (see remarks for applicable vessels)
- 2.2 Main engine emergency stopping device in the wheelhouse; (all vessels)
- 2.3 A silencer or expansion chamber should be fitted on the exhaust pipe (all vessels)
- 2.4 Existing gearbox and shafting system should be in acceptable condition. (all vessels)

**3. Fee and Form to be Done by Owner**

- 3.1 Appropriate fees are to be paid in advance and surveys are to be arranged at appropriate stages;
- 3.2 “Particulars of Vessel under Survey” and “Form Survey 6A” are to be completed and returned to this office for further action.

**4. Inspection/Masurement to be Taken**

- 4.1 Inspection of device 2.3 and noise level measurement at passenger accommodation should not exceed 85 dB(A) for all Class I Category A vessels, Class II Category A Transportation Boat, Class II Category A Transportation Sampan and Class IV vessels carrying more than 60 passengers;
- 4.2 Testing of all safety devices of 2.1, 2.2 and general inspection of 2.4;
- 4.3 Lightship weight verification / inclining experiment if required;
- 4.4 Inspection of modified items; and
- 4.5 The engine should be stripped down and inspected by MD officer (used engine only).

**Remarks:**

Types of vessels applicable:

- Launch of ferry vessel carrying more than 60 passengers;
- Oil tanker carrying cargo oil having a flash point not exceeding 61°C (closed cup test);
- Dangerous goods carrier;
- Noxious liquid substances carrier;
- Tug;
- Category A vessels that may ply beyond Hong Kong waters

**REQUIREMENTS FOR THE REPLACEMENT OF GENERATOR SET**

**1. Document/Data/Drawing to be Submitted**

- 1.1 Proof of sales of the new generator set;
- 1.2 Maker Certificate certifying that the new/used generator set is of Marine Type;
- 1.3 The added weight, vertical centre of gravity (V.C.G.) and longitudinal centre of gravity (L.C.G.) of new generator set and its accessories;
- 1.4 The percentage of the added weight based on the lightship weight;
- 1.5 Engine Seating Arrangement for approval; (if any modification)
- 1.6 Piping Arrangement for approval; (if any modification)
- 1.7 Electrical Arrangement / Revised Electrical Arrangement; (if any modification)
- 1.8 Main Switchboard Wiring Diagram; (if any modification)
- 1.9 A.C. Electrical System Diagram. (if any modification)

**2. Devices to be Provided and Fitted**

- 2.1 A silencer or expansion chamber should be fitted on the exhaust pipe (all vessels).

**3. Fee and Form to be Done by Owner**

- 3.1 Appropriate fees are to be paid in advance and surveys are to be arranged at appropriate stages;
- 3.2 “Particulars of Vessel under Survey” and “Form Survey 6A” are to be completed and returned to this office for further action.

**4. Inspection/Masurement to be Taken**

- 4.1 Inspection of device 2.1 and noise level measurement at passenger accommodation should not exceed 85 dB(A) for all Class I Category A vessels, Class II Category A Transportation Boat, Class II Category A Transportation Sampan and Class IV vessels carrying more than 60 passengers;
- 4.2 Lightship weight verification / inclining experiment if required.
- 4.3 Inspection of modified items.
- 4.4 The engine should be stripped down and inspected by MD officer (used engine only).



**REQUIREMENTS FOR WAIVING INCLINING EXPERIMENT  
AFTER THE ADDITION / REPLACEMENT OF ENGINE(S)**

**1. Technical Requirements**

In general speaking, the Inclining Experiment can be waived subject to the total increased/decreased weight of the engine and its accessories do not exceed 2% of lightship weight and the following conditions;

- a. Heel is not more than 5 degree;
- b. Trim does not make the passenger deck less than 300mm above deepest loaded waterline;
- c. The final GM is greater than 300mm (for vessel less than 500 passengers);
- d. Minimum freeboard comply the requirements of Ch. IV, paragraph. 1.1.
- e. Comply with the applicable requirements of this Code.

**2. Information to be Submitted**

- a. The added/decreased weight, vertical centre of gravity (V.C.G.) and longitudinal centre of gravity (L.C.G.) of engine and its accessories
- b. The owners are required to provide the lightship weight of the ship and the percentage of the added/decreased weight.

**FIRST AID KIT**  
**FOR LICENSED CLASS II VESSELS PLYING WITHIN**  
**RIVER TRADE LIMITS <sup>(REMARK 5)</sup>**  
**AND LICENSED CLASS I VESSELS**

	Name		Quantity required
1	Triangular of Calico	36" x 36" x 51"	8 offs
2	Conforming bandage	2" x 6.5'	2 rolls
3	Bandage	2" x 18'	2 rolls
4	Bandage	3"x 18'	2 rolls
5	Tape	Assorted, sterile, adhesive	20 offs
6	Dressings	Sterile paraffin gauze	10 offs
7	Dressing strip	1" x 16.5'	2 rolls
8	Absorbent cotton wool	35 gm	2 packs
9	Safety pins	Rustless, size 5cm	1 dozen
10	Scissors	Stainless steel throughout	1 pair
11	Disinfectant		0.2 Litre
12	Burn treatment- Cetrimide cream	50 g	1 tube

Notes:

- (1) The first aid kit should be regularly replenished as and when it is used up.
- (2) At least the following numbers of first aid kits should be carried on each vessel:-
  - (i) not less than one (1) first aid kit for passenger capacity of not more than 100 .
  - (ii) not less than two (2) first aid kits for passenger capacity of more than 100
- (3) The first aid kit(s) should be placed in conspicuously marked and easily accessible container(s)
- (4) Ship owner/coxswain may add more contents to first aid kit to meet the need of their operations.
- (5) Licensed "River Trade Limits" cargo vessels should carry not less than half of the contents for the first aid kit but in no case be less than one piece for each item.

**PERIODICAL SURVEY CYCLE FOR CLASS II VESSEL**

- (A) Steel vessel or GRP vessel/ newly licensed<sup>(3)</sup> wooden vessel 8 metres and above in length (operating within Hong Kong waters or River Trade limits)[ Refer requirements in Annex I-7(E)]
- (I) Annual Survey (afloat)
  - (II) Biennial Survey (periodical or on slipway)
  - (III) Quadrennial Survey (full survey on slipway)
- (B) Existing licensed<sup>(4)</sup> wooden vessel 8 metres and above in length (operating within Hong Kong waters or River Trade limits)[ Refer requirements in Annex I-7E]
- (I) Annual Survey (afloat)
  - (II) Quadrennial Survey (full survey on slipway)<sup>(2) & (5)</sup> (only applicable to vessels 24 metres and above in length and operating within Hong Kong waters or River Trade limits)
  - (III) Sixth annual Survey(full survey on slipway)<sup>(2) & (5)</sup> (only applicable to vessels 8 metres to less than 24 metres in length and operating within Hong Kong waters)
- (C) GRP vessel less than 8 metres in length or newly licensed<sup>(3)</sup> wooden vessel (operating within Hong Kong waters)[ Refer requirements in Annex I-7F]
- (I) Annual Survey (afloat)
  - (II) Triennial Survey (periodical or on slipway)
  - (III) Sixth annual Survey(full survey on slipway)<sup>(5)</sup>
- (D) Existing mechanically propelled wooden vessel less than 8 metres in length<sup>(4)</sup> (operating within Hong Kong waters)[ Refer requirements in Annex I-7F]
- (I) Annual Survey (afloat)
- (E) Non mechanically propelled wooden vessel or GRP vessel, including steel landing pontoon/platform (operating within Hong Kong waters)[ Refer requirements in Annex I-7F]
- (I) Produce a safety declaration during annual licence renewal (declaration of annual inspection on CLASS II vessel safety and equipment)[Refer requirement in Annex I-7B]
  - (II) Biennial Survey (afloat)<sup>(7)</sup>
  - (III) Triennial Survey (afloat)<sup>(6)</sup>

Note: (1) The survey items relating to annual or biennial survey(afloat), periodical and full survey of above survey programme are the same as Annex I-7E

- (2) The date of full survey on slipway of wooden vessel will begin on the first licensed date, effective two years after the commencement of the Ordinance
- (3) Newly licensed vessel: means vessel first licensed on or after the commencement of the Ordinance
- (4) Existing licensed vessel: means vessel which are already licensed before the commencement of the Ordinance
- (5) The requirement related to full survey during quadrennial and sixth annual survey in paragraph (B) & (C) are flexible; ship owner if at any time had undergone a survey on slipway, the fore mentioned survey requirement can be restart from the beginning; moreover, the open up inspection of relevant machineries can be extended if a good performance record can be produced
- (6) Applicable to vessel type – Ice Boat, Fish Drying Barge, Waste Water Treatment Barge and Live Fish Dealing Boat. (Refer Remarks \*1(a) in Table 3 of Chapter II paragraph 7 : applicable to vessel with the product of overall length(L) x (B)maximum breath not exceeding 25m<sup>2</sup> )
- (7) The following vessel with product (L) x (B) not exceeding 25m<sup>2</sup> are not required to be surveyed: (Refer Chapter II para 1.2 of this COP) namely Transportation Sampan and Dry Cargo Vessel)

## DECLARATION ON ANNUAL SURVEY OF SAFETY AND EQUIPMENT FOR CLASS II B VESSEL

(Applicable to non-mechanised wooden vessel or existing licensed mechanised wooden vessel  
less than 8 metres in length and operating in Hong Kong Waters)(To be ready before licence renewal)

1. This declaration is to be completed in accordance to safety standard for Class I, II and III vessels, Code of Practice; owner of the vessels should inspect and declare the safety and equipment of his vessel at the time of licence renewal, the owner should produce this declaration together with the Certificate of Survey at the time of renewal of licence

船隻名稱 Name of Vessel .....		船隻擁有權證明書號碼 Certificate of Ownership No .....	
類別 Class .....	分類 Category .....	類型 Type .....	
總長度 (米) Overall Length (m) .....	註冊長度 (米) Registered Length (m) .....	最大寬度 (米) Extreme Breadth (m) .....	船身材料 Hull Material .....
總噸 Tonnage Gross .....	淨噸 Tonnage Nett. ....	長 x 闊度 (米 <sup>2</sup> ) L x B numeral .....	

Name of Owner : \_\_\_\_\_  
 Last inspection date of certificate : \_\_\_\_\_  
 Expiry date of inspection certificate : \_\_\_\_\_

2. Declare by Owner / \* Master (Name) : \_\_\_\_\_

I hereby verify that the following items:

- (a) The equipment and quantities of LSA and FFA onboard this vessel were found in compliance with Certificate of Survey, have appropriate maintenance and the conditions are good and not exceeding the expiry date of such equipment; (if such equipment have expiry date);
- (b) The working condition of the radio communication equipment is normal;
- (c) That the vessel is properly fitted with navigational equipment, light and sound signals. They also comply COLREG 1972 regulations
- (d) The conditions of vessel, construction, machinery, electrical apparatus and escape routes were found in good condition and fit for service intended
- (e) The vessel have not been altered without the approval by the Director of Marine
- (f) Watertight doors and hatches are in good and normal condition; and
- (g) Vessel's operators hold valid certificates of competency. (Please fill in the master and engineer certificate no.)

Name of Master \_\_\_\_\_ Certificate No. \_\_\_\_\_  
 Name of Engineer \_\_\_\_\_ Certificate No. \_\_\_\_\_

Last inspection date of Inspection \_\_\_\_\_ Signed by \_\_\_\_\_  
 Certificate(First Annual) : \_\_\_\_\_ Owner /\* Master : \_\_\_\_\_ Date : \_\_\_\_\_

- Remarks : (1) The original copy of this Declaration must be kept together with the Certificate of Survey for future inspection  
 (2) / delete if not applicable  
 (3) \* If the Owner is not the Master, he may also inspect the above items with the Master and make and sign the declaration

**INITIAL SURVEY FOR INITIAL LICENSING OF STEEL VESSEL OR  
GRP VESSEL / NEW WOODEN VESSEL<sup>(1)</sup> OF 8 METRES AND ABOVE  
IN LENGTH (APPLICABLE TO VESSEL OPERATING IN  
HONG KONG WATER OR RIVER TRADE LIMIT)**

**(A) Plans approval requirements for initial survey of above mentioned vessel**

New vessel, according to its safety navigation limits, and based on a recognized design and construction standard, should be inspected by officer from this Department at different stages during construction. Before carry out such inspections, the vessel owner should apply and submit to this Department the following plans(in duplicate copies) for approval (address: Local Vessel Safety Section, 23/F Harbour Building. Tel: 2852 4444) :-

- 1) General Arrangement
- 2) Tonnage Measurement and Calculation
- 3) Hull
  - a) Midship Sections
  - b) Scantling Calculation
  - c) Profile, Decks and Bulkheads
  - d) Shell Expansion
  - e) Rudder/Kort Nozzle, Rudder Stock, Skeg and Sole Piece
- 4) Freeboard calculation
- 5) Weathertight/watertight Closing Appliances Arrangement
- 6) Stability information
  - a) Lines Plan including details of draft marks and offsets tables (for record)
  - b) Hydrostatic Curves
  - c) Cross Curves of Stability
  - d) Preliminary Intact Stability Information
- 7) Cabin arrangement
- 8) Safety Plan showing means of escape, escape installation and arrangement
- 9) Fuel Oil, Machinery and Electrical Installation, including:
  - a) Engine Room Arrangement
  - b) Propeller Shafting, Stern Tube and Coupling
  - c) Fuel Oil System (incl. tanks, piping)
  - d) Fire-fighting Piping Arrangement (incl. fire main, fixed fire extinguishing system)
  - e) Bilge Pumping Arrangement
  - f) Air Receiver(if fitted)
  - g) Compressed Air Piping System (for pressure 10 bar)(if fitted)
  - h) Steering Gear Hydraulic Piping System

- i) Filling, sounding and air vent system
  - j) Domestic LPG Installation
  - k) Electrical System Line diagram
  - l) Wiring Diagram of Main Switchboard
  - m) Layout of Main Switchboard
  - n) Electrical Arrangement
  - o) Wiring Diagram of Distribution Board
- 10) life saving appliances, fire fighting appliances, light and sound signals arrangement
  - 11) Structural Fire Protection Arrangement
  - 12) Navigational equipment and Radio Communication equipment and arrangement
  - 13) Prevention of Air and Oil Pollution Installation<sup>(2)</sup>, and
  - 14) Prevention measure against potential danger to vessel or shipboard personnel or properties

Remark: (1) New wooden Vessel : means wooden vessel first licensed after the commencement of the Ordinance

(2) Prevention and control of pollution installation for new vessel less than 400 Gross Ton can be waived, however, basic and effective pollution prevention arrangement should be provided

(3) Under normal procedure, plan approval by Marine Department normally require two months, Ship owner must ensure that the drawing and plans are approved before arranging any survey work. In order not to cause any undue delay in the surveying work, ships owner are requested to submit their drawings and plans as early as possible.

(B) Initial survey items for licence of above vessel

- (1) On completion of drawing and plans approval, ship owner may apply for survey arrangement by officers of Marine Department or by authorized surveyors
- (2) Under the Ordinance, owner may appoint an authorized surveyor/organization or recognized authority to carry out the drawing and plans approval. [According to authorization or recognized inspection time plan]

**CONSTRUCTION AND SURVEY/INSPECTION REQUIREMENTS FOR  
WOODEN VESSEL AND GRP VESSEL OF LESS THAN 8 METRES IN LENGTH**

**1 Interpretation**

“new vessel” means a vessel in respect of which an application for an operating licence is made for the first time on or after the commencement of the Ordinance.

**2 Construction and Survey Requirements**

2.1 New vessel of overall length exceeding 15 metres (including new constructed vessel and first time licensed vessel)

2.1.1 Design and Construction standard

Any vessel must be designed and constructed in compliance to a Classification Society or a National Standard according to its size, usage and intended operating waters.

2.1.2 Plan approval

The following plans/information should be submitted for approval:

- (1) General Arrangement Plan (incl. layout of life-saving and fire fighting appliances);
- (2) Cross-section plan and structural plan (including the side and deck);
- (3) Propeller shafting and stern tube plan;
- (4) Oil fuel tank and oil fuel piping plan;
- (5) Fire fighting piping and bilge pumping system;
- (6) Electrical wiring diagram and electrical installation plan (if fitted with generator exceeding 220 volts);
- (7) Inclining Experiment Report and Stability Information Booklet.

2.1.3 Survey

The following items should be presented for survey (for new constructions - during the construction stage):

- (1) Hull construction (incl. material test, verification of scantling of hull structural members, inspection of planking connections, etc.);
- (2) Machinery installation (incl. engines and gear boxes, fuel tanks construction, etc.);



- (3) Electrical installation (incl. insulation test);
- (4) Verification of principal dimensions and draft marks;
- (5) Inclining test;
- (6) Final inspection (safety equipment etc.).

2.2 Vessels (may adapt prototype design) of length overall not exceeding 15 metres

- (a) The first vessel of an approved series should be subject to plan approval and surveys as per the requirements listed in para. 2.1 above.
- (b) For the second to the twelve vessels being constructed with the same design in the same workshop, the following relevant requirements are suffice:
  - (i) Submission of the certificate of manufacture, construction inspection and test records, photos etc issued by the inspected workshop.
  - (ii) Lightship weight confirmation;
  - (iii) Final inspection (safety equipment etc.).

2.3 Survey requirement for initial licensing of above vessel

- (a) Under normal procedure, plan approval by Marine Department normally require two months, Ship owner must ensure that the drawing and plans are approved before arranging any survey work. In order not to cause any undue delay in the surveying work, ships owner are requested to submit their drawings and plans as early as possible.
- (b) On completion of drawing and plans approval, ship owner may apply for survey arrangement by officers of Marine Department or by authorized surveyors
- (c) Under the Ordinance, owner may employ a authorized surveyor/organization or recognized authority to carry out the drawing and plans approval. [According to authorization or recognized inspection time plan]

3. Survey for existing vessel and submission of supplementary plan

3.1 Existing vessel of any length

3.1.1 Hull Construction

Existing licensed vessel of any length with good hull condition, inspection requirement according to Annex J-2 should be referred

3.1.2 Vessel installation and equipment etc

Any machinery, equipment, lifting appliance and winch etc must be provided with appropriate measure or installation, to minimize danger to personnel onboard. Attention should be drawn to revolving and moving parts, hot surfaces and other possible danger.

The machinery, electrical appliances, escape arrangement, lifesaving, fire fighting and light and sound equipments, must comply with safety and licensing condition, and avoid fire and explosion risk etc.

3.1.3 Photo or plan record

Owner must provide 4R sized photos showing the front and side view etc and relevant simple plan for record.

4. Survey under running condition

Refer Annex I-7E, I-7F and J-2 for information

- Note :
- (1) For new vessel of overall length less than 12 metres and to fulfill the requirement in para. 2.1.2 and 2.2(a), the owner may provide relevant simple plan for approval
  - (2) For new vessel of overall length less than 12 metres and operate only in Hong Kong Waters, a simple inclining test and report in lieu of the requirement in para 2.1.2(7) and 2.1.3(5) is sufficient
  - (3) For newly constructed wooden vessel, please refer Annex J-1 for the special survey requirement for initial licensing.

**PERIODICAL SURVEY/INSPECTION REQUIREMENT**  
**FOR STEEL VESSEL OR GRP / NEW WOODEN VESSEL**  
**OF 8 METRES AND ABOVE IN LENGTH**

Detailed requirements for the annual, biennial, triennial, quadrennial and sixth annual survey of a steel vessel or GRP or a new wooden vessel of not less than 8m in length (applicable to vessel operating in Hong Kong and River Trade limits) and for renewal of a Certificate of Survey, are as follows :

- (A) The periodical survey requirement in paragraph (B) are applicable to:
- (i) Steel vessel or GRP vessel or newly licensed<sup>(3)</sup> wooden vessel 8 metres and above in length (applicable to vessel operating within Hong Kong waters or River Trade limits)
    - (a) Annual survey (afloat)
    - (b) Biennial survey (periodical or on slipway)
    - (c) Quadrennial survey (full survey on slipway)
  - (ii) Existing licensed<sup>(4)</sup> wooden vessel 8 metres and above in length (applicable to vessel operating within Hong Kong waters or River Trade limits)
    - (a) Annual survey (afloat)
    - (b) Quadrennial survey (full survey on slipway)<sup>(2)</sup> and <sup>(5)</sup> (applicable to vessel 24 metres and above in length and operating within Hong Kong waters or River Trade limits)
    - (c) Sixth annual survey (full survey on slipway) <sup>(2)</sup> and <sup>(5)</sup> (applicable to vessel 8 metres and less than 24 metres in length and operating within Hong Kong waters)
- (B) Periodical Survey Procedure
- (i) Annual Survey (Afloat)
    - (a) General inspection of the condition of hull, closing appliances, air vents etc.
    - (b) Inspection of fire-fighting appliances, life saving-appliances, lights and sound signals, etc.
    - (c) Operation tests of all equipment on board including running tests of main and auxiliary engines, and function tests of all other equipment including remote control devices and oil pollution prevention installations, etc.
    - (d) Setting of relief valves for the air receivers.
    - (e) Megger tests of all A.C. electrical circuits, function tests of the meters etc. on the switchboards and earthing tests.
    - (f) L.P.G. system for domestic use to be checked, if fitted.
    - (g) Fire and abandon ship drills to be conducted, as appropriate.
    - (h) Verification of principal dimensions, engine and major machinery particulars.

Note : Megger test report issued by RPE or technician registered in EMSD are acceptable.

(ii) Biennial Survey on slipway

- (a) The vessel is to be slipped and cleaned for examination of the external hull. Internal examination will also be conducted.
- (b) All cargo tanks including oil tanks, water tanks, and ballast tanks are to be gas freed, as appropriate, for internal inspection.
- (c) Air receivers are to undergo a hydraulic test.
- (d) Tailshaft(s) of the water bath type is to be drawn out for inspection and examination.
- (e) Rudder stock(s) is to be lifted for inspection at the same time the tailshaft(s) is withdrawn.
- (f) All sea water suction and discharge valves are to be opened up for inspection.
- (g) All fuel oil tanks must be cleaned for internal inspection.
- (i) According to (B)(i) above.

(iii) Quadrennial survey on slipway

- (a) The vessel is to be slipped and cleaned for examination of the external hull. Internal examination will also be conducted.
- (b) All cargo tanks including oil tanks, water tanks, and ballast tanks are to be gas freed, as appropriate, for internal inspection.
- (c) Air receivers are to undergo a hydraulic test.
- (d) Tailshaft(s) of the oil or water bath type is to be drawn out for inspection and examination.
- (e) Rudder stock(s) is to be lifted for inspection at the same time the tailshaft(s) is withdrawn.
- (f) All sea suction and discharge valves are to be opened up for inspection.
- (g) All fuel oil tanks are to be hydraulically tested to the appropriate heads.
- (h) Function tests of auxiliaries, such as steering gears, windlass or capstan, anchor and chains, auxiliary pumps, and communication devices between engine room and wheel house, etc.
- (i) Gauging of the thickness of the keel, bottom, shell, deck and bulkhead plates shall be conducted when the vessel is eight (8) years old and the shell expansion plan is to be updated. Gauging shall then be carried out in the subsequent quadrennial survey.
- (j) According to (B)(i) above.
- (k) For the renewal of HKOPP certificates, oil pollution prevention installations shall be opened up for inspection.
- (l) For fixed fire fighting installations, such as CO<sub>2</sub> system, blow test shall be carried out.

(iv) Sixth annual survey on slipway

- (a) Survey items according to (iii) above excluding (iii)(i); and
- (b) If(new wooden vessel) vessel aged 12 years or above, full survey of hull condition and on subsequent sixth annual survey is required.  
[Please refer requirement in Annex J-2]

(v) Additional Requirements – it should be noted, however, that the Surveyor or Ship Inspector has the authority to, and may at his discretion, require any

item of machinery or equipment to be opened up at any annual survey or any other time.

- Note :
- (1) The following vessel with product (L) x (B) not exceeding 25m<sup>2</sup> are not required to be surveyed: (Refer Chapter II para 1.2 of this COP) namely Transportation Sampan and Dry Cargo Vessel)
  - (2) The date of full survey on slipway of wooden vessel will begin on the first licensed date, effective two years after the commencement of the Ordinance
  - (3) Newly licensed vessel: means vessel first licensed on or after the commencement of the Ordinance
  - (4) Existing licensed vessel: means vessel which are already licensed before the commencement of the Ordinance
  - (5) The requirement related to full survey during quadrennial and sixth annual survey in paragraph (A) are flexible; ship owner if at any time had undergone a survey on slipway, the fore mentioned survey requirement can be restart from the beginning; moreover, the open up inspection of relevant machineries can be extended if a good performance record can be produced

**PERIODICAL SURVEY/INSPECTION REQUIREMENT**

**FOR GRP / NEWLY LICENSED WOODEN VESSEL AND EXISTING LICENSED MECHANICALLY PROPELLED WOODEN VESSEL LESS THAN 8 METRES IN LENGTH (APPLICABLE TO VESSEL OPERATING IN HONG KONG WATERS)**

Detailed requirements for the annual, triennial and sixth annual survey of GRP or wooden vessel or newly licensed wooden vessel and existing licensed mechanically propelled wooden vessel (applicable to vessel in Hong Kong waters) of less than 8m in length and for renewal of a Certificate of Survey, are as follows :

- (A) The periodical survey requirement in paragraph (B) are applicable to: <sup>(1)</sup>
- (i) GRP vessel or newly licensed<sup>(3)</sup> wooden vessel less than 8 metres in length (applicable to vessel operating within Hong Kong waters)
    - (a) Annual survey (afloat)
    - (b) Triennial survey (periodical or on slipway)
    - (c) Sixth annual survey (full survey on slipway) <sup>(5)</sup>
  - (ii) Existing licensed<sup>(4)</sup> mechanically propelled wooden vessel less than 8 metres in length (applicable to vessel operating within Hong Kong waters)
    - (a) Annual survey (afloat)
  - (iii) Non mechanically propelled wooden vessel or GRP vessel, including steel hulled landing barge / platform (applicable to vessel operating in Hong Kong Waters)
    - (a) Produce a safety declaration during annual renewal of licence (Declaration of Annual Inspection of Safety and Equipment for Class II vessel)[Refer Annex I-7(B)]
    - (b) Biennial Survey (afloat) <sup>(1)</sup>
    - (c) Triennial Survey (afloat) <sup>(6)</sup>

(B) Periodical Survey Procedure

- (i) Annual / biennial / triennial survey (Afloat)

Surveying officer will exercise following duties:

- (a) General inspection of the condition of hull, closing appliances, air vents etc.
- (b) Inspection of fire-fighting appliances, life saving-appliances, lights and sound signals, etc.
- (c) Operation tests of all equipment on board including running tests of main and auxiliary engines, and function tests of all other equipment including remote control devices and oil pollution prevention installations, etc.
- (d) Setting of relief valves for the air receivers.
- (e) Megger tests<sup>(note)</sup> of all A.C. electrical circuits, function tests of the meters etc. on the switchboards and earthing tests.
- (f) L.P.G. system for domestic use to be checked, if fitted.
- (g) Fire and abandon ship drills to be conducted, as appropriate.
- (h) Verification of principal dimensions, engine and major machinery particulars.

Note : Megger test report issued by RPE or technician registered in EMSD are acceptable.

- (ii) Triennial Survey on slipway (periodical or intermediate survey on slipway)
  - (a) The vessel is to be slipped and cleaned for examination of the external hull. Internal examination will also be conducted.
  - (b) All cargo tanks including oil tanks, water tanks, and ballast tanks are to be gas freed, as appropriate, for internal inspection.
  - (c) Air receivers are to undergo a hydraulic test.
  - (d) Tailshaft(s) of the water bath type is to be drawn out for inspection and examination.
  - (e) Rudder stock(s) is to be lifted for inspection at the same time the tailshaft(s) is withdrawn.
  - (f) All sea water suction and discharge valves are to be opened up for inspection.
  - (g) All fuel oil tanks are to be cleaned for internal inspection.
  - (h) According to Section (B) (i) above.
  
- (iii) Sixth annual survey on slipway (full survey on slipway)
  - (a) The vessel is to be slipped and cleaned for examination of the external hull. Internal examination will also be conducted.
  - (b) All cargo tanks including oil tanks, water tanks, and ballast tanks are to be gas freed, as appropriate, for internal inspection.
  - (c) Air receivers are to undergo a hydraulic test.
  - (d) Tailshaft(s) of the oil or water bath type is to be drawn out for inspection and examination.
  - (e) Rudder stock(s) is to be lifted for inspection at the same time the tailshaft(s) is withdrawn.
  - (f) All sea water suction and discharge valves are to be opened up for inspection.
  - (g) All fuel oil tanks are to be hydraulically tested to the appropriate heads.
  - (h) Function tests of auxiliaries, such as steering gears, windlass or capstan, anchor and chains, auxiliary pumps, and communication devices between engine room and wheel house, etc.
  - (i) If the GRP vessel is twelve (12) years or over twelve (12) years old, thorough inspection of the hull condition and gauging of the hull thickness is required and to be carried on subsequent sixth annual survey. If a wooden vessel is twelve (12) years old or above, thorough inspection of the hull condition is required and to be carried on subsequent sixth annual survey. (Please refer annex J-2)
  - (j) According to Section (B)(i) above.
  - (k) For the renewal of HKOPP certificates, oil pollution prevention installations shall be opened up for inspection.
  - (l) For fixed fire fighting installations, such as CO<sub>2</sub> or Halon system, blow test shall be carried out.
  
- (iv) Additional Requirements – it should be noted, however, that the Surveyor or Ship Inspector has the authority to, and may at his discretion, require any item of machinery or equipment to be opened up at any annual survey or any other time.

- Note :
- (1) The following vessel with product (L) x (B) not exceeding 25m<sup>2</sup> are not required to be surveyed: (Refer Chapter II para 1.2 of this COP) namely Transportation Sampan and Work Vessel)
  - (2) The date of full survey on slipway of wooden vessel will begin on the first licensed date, effective two years after the commencement of the Ordinance
  - (3) Newly licensed vessel: means vessel first licensed on or after the commencement of the Ordinance
  - (4) Existing licensed vessel: means vessel which are already licensed before the commencement of the Ordinance
  - (5) The requirement related to full survey during quadrennial and sixth annual survey in paragraph (A) are flexible; ship owner if at any time had undergone a survey on slipway, the fore mentioned survey requirement can be restart from the beginning; moreover, the open up inspection of relevant machineries can be extended if a good performance record can be produced
  - (6) Applicable to ice boat, fish drying barge, waste water treatment barge and live fish dealing boat. (Refer remarks \*1(a) of table 3 in Chapter II, para. 7 of this COP. Applicable to vessels of L x B numeral not exceeding 25 m<sup>2</sup>)



**PERIODICAL SURVEY REQUIREMENT FOR  
NON-MECHANISED DUMB LIGHTER AND HOPPER BARGE**

Detailed requirements for the annual, biennial, triennial or quadrennial survey of a dumb lighter and a dumb hopper barge for renewal of an Assignment of Freeboard Certificate and also for the renewal of a Certificate of Survey if an auxiliary engine(s) is fitted, are as follows :

(i) **Annual Survey Afloat**

The inspector will carry out the following duties:

- (a) A general inspection of the condition of the hull, closing appliances, air vents etc, to ensure the conditions of assignment are complied with. (internal inspection of void spaces, tanks and double bottoms are **not** required);
- (b) an inspection of fire-fighting appliances, life-saving appliances, light and sound signals, etc.;
- (c) an inspection and functional test of the cargo hold bilge pumping system;
- (d) an inspection of the fuel oil system of auxiliaries for fire and oil pollution hazards prevention , and a running test of auxiliary and winch engines (if fitted), etc.;
- (e) checking the relief valves setting for the air receivers (if fitted);
- (f) witness megger tests of all A.C. electric circuits<sup>(\*1)</sup>, function tests of the meters on the switchboard, and earthing tests (if fitted);
- (g) checking the domestic LPG system, if fitted;
- (h) checking the Freeboard Marks are legible; and
- (i) Verification of principal dimensions, engine and major machinery particulars.

(ii) **Biennial Survey on Slipway**

**(A) Dumb Lighter**

- (a) The vessel is to be slipped and cleaned for inspection of the external hull (internal inspection of void spaces, tanks and double bottoms are **not** required);
- (b) Verification of Freeboard Marks;
- (c) Items in Section (i) above.

**(B) Dumb Hopper Barge**

- (a) The vessel is to be slipped and cleaned for inspection of the external hull. Internal inspection of the hull including void spaces, tanks and double bottoms will also be conducted.
- (b) All sea and overboard discharge valves are to be opened up for inspection.
- (c) Verification of Freeboard Marks;
- (d) Air receivers to undergo a hydraulic test (if fitted);
- (e) Items in Section (i) above.

**(iii) Triennial Survey Afloat**

- (a) Items in Section (i) above.

**(iv) Quadrennial Survey on Slipway**

- (a) The vessel is to be slipped and cleaned for inspection of the external hull. Internal inspection of the hull including void spaces, tanks and double bottoms will also be conducted.
- (b) All sea and overboard discharge valves are to be opened up for inspection.
- (c) Gauging of the thickness of the keel, bottom, shell, deck and bulkhead plates (if the vessel is eight (8) or more years old);
- (d) Verification of Freeboard Marks;
- (e) Verification of Draft Marks;
- (f) Air receivers to undergo a hydraulic test plus an internal inspection where appropriate (if fitted);
- (g) Items in Section (i) above.

**(v) Additional Requirements**

It should be noted, however, that the Surveyor or Ship Inspector has the authority to, and may at his discretion, inspect any space, or require any item of machinery or equipment to be opened up, at an annual survey or any other time.

**Remark**

- (\*1) Electric circuits insulation test reports issued from EMSD qualified registered engineers or electricians are also acceptable

## **THE GUIDANCE NOTES FOR INSPECTION OF LANDING PLATFORM**

(Landing Platform is defined as a floating structure having construction in the form of floating bridge or overhang platform supported by objects with sufficient flotation, used for embarking and disembarking of any people from vessels other than ferries, primitive vessels (kaitos) and floating restaurants)

1. At the first time of licensing, photos and drawings of general arrangement of Landing Platform should be submitted for record purpose
2. At least one life buoy for each platform should be provided for marine work or landing purposes
3. At least one fire extinguisher for each platform should be fitted for marine work or machinery fitted on board
4. If the platforms are used in the night time, adequate illumination should be provided. An all round white light should be installed if a location of platform is within the marine traffic area.
5. If two or more platforms chained together to form a single walkway, the requirement of provision of life buoy may be reduced appropriately to suit the conditions.
6. A notice board for the maximum allowable passengers on transit to be installed on board or adjacent to landing area.
7. The lightship freeboard at four corners will be recorded in the licence book
8. A visual inspection for structure will be carried out. The structural scantling for deck loading may be submitted for approval subject to the working condition, shape and size of the landing platform.
9. A simple inclining experiment for the landing platform may be carried out for approval in the present of authorized surveyor. The simple inclining experiment requires that the angle of heel should not be greater than  $7^{\circ}$  and the deck edge should not be immersed, when the passengers distributed on the platform with  $2/3$  of the passengers standing on one side of the platform and  $1/3$  on the other side. The simple inclining experiment can be replaced by an acceptable Naval Architecture calculation.
10. The landing platform is to be surveyed by authorized surveyor every two years. A written declaration from owner stating the landing platform is in good operating condition is to be provided in the alternate year when survey is not carried out.

Note : Fire Fighting and Life Saving requirements are indicated in the Survey Regulation.

**TBT ANTI-FOULING SYSTEM**

All ship owners/ operators are recommended that their vessels should not be applied with any antifouling system containing the organotin tributyltin (TBT).

It has been proven that TBT is harmful. TBT persists in the water, killing sea life, harming the environment and possibly entering the food chain.

**Implementation of the Requirements of  
Annex VI of MARPOL 73/78 to Locally Licensed Vessels**

Annex VI of MARPOL 73/78 for the Prevention of Air Pollution from Ships together with the requirement for diesel engines with Engine International Air Pollution Prevention Certificate (EIAPP) came into force internationally on 19 May 2005. The following relevant requirements will be applied to all locally licensed vessels when the above Annex of the conventions are enforced.

2. The Requirements of Annex VI of MARPOL 73/78 contains wide-ranging regulations covering the following areas:

- (a) Prohibition of the use or release of ozone depleting substances - As per Regulation 12 of Annex VI, deliberate emission of ozone depleting substances including halons and chlorofluorocarbons (CFCs) will be prohibited. Also, new installations containing ozone-depleting substances will be prohibited on all ships. However, new installations containing hydro-chlorofluorocarbons (HCFCs) may be allowed until 1 January 2020.
- (b) Nitrogen oxide (NO<sub>x</sub>) emission from diesel engines as per Regulation 13 of Annex VI (refers to requirements of NO<sub>x</sub> emission limits in paragraph 5).
- (c) Sulphur oxide (SO<sub>x</sub>) emissions from ships - As per Regulation 14 of Annex VI, a global cap of 4.5% m/m on the sulphur content of fuel oil used on board ships together with limitation of sulphur oxide emissions from ship exhausts will be imposed.

There will be designated “SO<sub>x</sub> Emission Control Areas” that may impose more stringent sulphur oxide emission controls. In these areas, the sulphur content of fuel oil used onboard ships must not exceed 1.5% m/m, unless the ship is fitted with an exhaust gas cleaning system (or by using other technological methods) to limit its SO<sub>x</sub> emission.

- (d) Volatile organic compounds (VOCs) emission from cargo tanks of oil tankers during loading may be subject to controls from Administration as per Regulation 15 of Annex VI. Should such control requirement is notified by an Administration to IMO, there is a three years grace period from the effective date.
- (e) Shipboard incineration of waste as per Regulation 16 of Annex VI.
- (f) Fuel oil quality - As per Regulation 18 of Annex VI, fuel oil quality that will be allowed to be used onboard ships requires that:
  - (i) fuel oil used onboard ships for combustion purposes must comply with the quality standards required by Annex VI;
  - (ii) all ships of 400 gross tonnage or above are to record details of the fuel oil used on board, by means of a bunker delivery note. The bunker delivery note must include the information given in Appendix VI of Annex VI; and the bunker

delivery note must also contain a declaration signed and certified by the fuel oil supplier's representative to confirm that the fuel oil supplied is in conformity with Annex VI requirements. The bunker delivery note is to be kept on board for ready inspections, and it should be kept for 3 years after the fuel oil has been delivered on board; and

(iii)a representative sample of the fuel oil delivered on board is required to accompany the bunker delivery note; which is to be sealed and signed by the supplier's representative as well as by the master or officer in charge of the bunker operation, and should be kept by the ship for a period of 12 months or until the fuel oil is consumed, whichever is of the latter.

### **Application MARPOL Annex VI requirements to Local Vessels**

3. For local vessels, it has been decided that –

(a) as regards the requirement in paragraph 2(d), since the VOCs involved is very small in Hong Kong, it is not necessary to impose VOCs emission control to ships loading in Hong Kong at this stage;

(b) no incinerator is allowed to be installed onboard for the requirement mentioned in paragraph 2 (e); and

(c) for the requirements mentioned in paragraph 2 (f) such as fuel oil sampling device, keeping of bunker delivery notes and samples -

(i) for vessels of less than 400 gross tonnage

- if the vessel trading only in local waters is using only marine diesel fuel (sulphur contents not more than 0.5% m/m), and solely supplied by local registered fuel oil suppliers<sup>(Note)</sup>, keeping documentary evidence of bunker delivery notes onboard ready for inspection is suffice for the compliance of regulation 18 of the Annex.

- For vessels other than the above, control measures on bunker delivery notes and fuel oil samples would be same as those specified in para (3(c)(ii).

(ii) for vessels of 400 gross tonnage or above

- if the vessel is using fuel solely supplied by from registered fuel oil suppliers<sup>(Note)</sup>, only bunker delivery notes are required to be maintained on board ready for inspection.

- oil samples in addition to bunker delivery notes are required for the vessel if the fuel oil is not supplied by the local registered fuel oil suppliers or registered fuel oil suppliers outside Hong Kong.

Note: Vessel operators may voluntarily keep fuel oil samples on board for a reasonable period in order to protect their interests in case of a dispute.

(d) Per para (3(c)(ii), bunker delivery notes should be retained for 3 years and fuel oil samples are to be kept 1 year or until the fuel oil has been subsequently consumed; and they should be readily available for inspection.

4. The application control measures on air pollution prevention to vessels under Annex VI of

MARPOL 73/78 applied to local vessels, which are operated in river trade limits or Hong Kong waters (non international voyages), are as follows:

- (a) For self-propelled vessels of 400 gross tonnage and above  
Surveys and inspections on these vessels should be in accordance with Regulation 5 of Annex VI. Upon satisfactory completion of the survey, a Hong Kong Air Pollution Prevention (HKAPP) Certificate is to be issued or endorsed as appropriate.
- (b) For self-propelled vessels of less than 400 gross tonnage and non-self-propelled vessels of any tonnage  
A Hong Kong Air Pollution Prevention Certificate (HKAPP Cert) is **not required**. However, an effective visual inspection will be carried out to ensure no unauthorized modifications or installation of equipment in compliance with Annex VI during the initial/annual/periodic safety survey of the vessel for the issuance of the Certificate of Survey or Certificate of Inspection (with inspection record) to indicate its compliance with MARPOL Annex VI.

**Application of the NOx emission requirements to Local Vessels**

- 5. The requirements relating to the control of Nitrogen oxide (NOx) emission from diesel engines fitted onboard vessels are prescribed under Reg. 13 of the Annex, of which the control NOx limits are summarized as follows:

	Rated Engine Speed (rpm) (n)	Maximum allowable NOx-emissions (g/kWh)
a.	n < 130	17
b.	130 ≤ n < 2000	45n <sup>-0.2</sup>
c.	n ≥ 2000	9.8

- 6. Subsequent to 19 May 2005, all diesel engines of more than 130 kW power output installed on board a local vessel constructed / licensed or a vessel has undergone a major conversion as defined under Regulation 13(2) (a) of the Annex after that date must subject to NOx emission control. Shipowners and operators should ensure that these engines could meet the relevant requirements.
- 7. The NOx requirements for engine emission do not apply to emergency generator engines, lifeboat engines and any engine installation intended to be used solely for emergency purpose.
- 8. (a) A diesel engine of more than 130 kW power output installed on board a local vessel of 400 gross tonnage and above is required to be certified for full compliance with the provisions of Regulation 13 and the NOx Technical Code by an EIAPP certificate together with a Technical File containing record of information as stipulated in paragraph 2.4 of the Technical Code.

(b) A diesel engine more than 130 kW power output installed on board a local vessel of less than 400 gross tonnage, should be certified by an EIAPP certificate or a certificate (with similar format as EIAPP) issued by the engine maker or authorized surveyor or recognized organization showing that it is in compliance with Regulation 13 and the NOx Technical Code or similar standard acceptable to the Director.

9. When the local legislation (Cap. 413 sub-leg.) comes into force, the engines mentioned in paragraph 6 above will be inspected to confirm their compliance with the NOx requirements of the Annex. All engines are expected to be certified either by the engine manufacturers, authorized surveyors or recognized organizations, as appropriate, for its compliance with the relevant Nox requirements.

### **Periodic Inspection of Engines**

10. The Nox Technical Code allows different on-board verification procedures. Owners may adopt one of the following procedures for periodic inspection:

- (a) engine parameter check method as per Code procedure 6.2 – on board inspections including verification of the engine parameters, critical components, settings and operating data against the engine certificate and Technical File; or
- (b) simplified measurement method – actual trial run and test run like the engine parent test in the test bed but in a simplified manner as described in the Code procedure 6.3 by verifying against the information in the engine certificate and Technical File, or similar procedures approved or accepted by the Director; or
- (c) direct measurement and monitoring method in accordance with paragraph 2.3.4, 2.3.5, 2.3.7, 2.3.8, 2.3.11, 2.4.4, and 5.5 of the Code.

11. All diesel engines of more than 130 kW power output will be periodically inspected during the safety certification survey of a local vessel to ensure that they are in compliance with the relevant Nox emission criteria.

### **Implementation schedules**

12. The implementation schedules of the relevant Annex VI requirement as indicated in above paragraph 2 and the application measures in paragraph 4 are as follows<sup>(see remarks)</sup>:

- (a) vessels constructed / licensed on or after 19 May 2005 shall comply.
- (b) vessels constructed/ licensed before 19 May 2005 are required to comply no later than their first scheduled docking after 19 May 2005, but in no case later than three years, i.e. 19 May 2008, whichever is earlier.
- (c) vessels installed with diesel engines as mentioned in the above paragraph 6 are required to comply on or after 19 May 2005.

Remarks : (1) The aforementioned requirements will be finalized in the relevant legislation in consultation with relevant Policy Bureaux and Department of Justice.

(2) When the local legislation on Annex VI requirement comes into force, which is expected to be in 2007, all local vessels will be mandatory inspected to



ensure its compliance. Before that commencement date, owners of local vessels are urged for voluntary compliance of the Annex for the issue of a Certificate of Compliance (with inspection records) or Record of Inspection as appropriate.

## **SPECIAL REQUIREMENTS OF INITIAL SURVEY FOR LICENSING OF NEWLY BUILT WOODEN FISHING VESSELS**

### **1. General Requirement**

Due to the difference in hull form and the structure pattern, if the arrangement of main longitudinal structural component and the section scantling satisfy the total section area of the various components in the midship region, it is allowed to adequately adjust the section scantling of various components in the deck and the ship's bottom part (below bilge keel).

### **2. Inspection before Commencement of Work**

#### **2.1. Examination of raw material**

- 2.1.1. Examine whether the material quality, strength and performance of primary structural components for the construction of ship are conformed to the requirements of drawings, rules and standards.
- 2.1.2. Besides the natural contorted material used in the curving shape structure, the timber wood used on ship should be fully exsiccated.
- 2.1.3. According to the toughness of different types of tree, it may be divided into hard wood (如坤甸、紅稠、柞、櫟、榆、水曲柳、黃菠蘿、樟、槐、柚、柯、梢等) and soft wood (如紅松、落葉松、馬尾松、杉柏、桉等) two major types.

The components of bulkhead base, stem, stern frame, rudder post, stern centre girder, stern side girder, bracket, bulkhead stiffeners etc should used hard wood. Keel plate, side planking and engine bed plate should used hard wood or high quality pine wood

- 2.1.4. Whether it is planking or batten, the front side should be facing outward when installed. And the reverse side (tree ring side) should be facing inward
- 2.1.5. Defects and limitation of usage of timber material can refer to the relevant requirements of recognized classification societies or flag administrations.
- 2.2 Building yard should submit the important construction workmanship to Marine Department for approval.
- 2.3 Examine the workshop for pre-fabrication of frames and ensure the workshop is neat and solid.

### **3. Hull Inspection**

- 3.1. According to approved drawing, inspect whether the material and dimensions of all components and shell plate are conformed to the approved drawing or the relevant

requirements of recognized classification societies or flag administrations. Keel plate, engine bed and rubbing strake should use hard wood. If good quality pine wood is to be used, permission from Marine Department to be obtained.

- 3.2. When laying the keel, surveyor should check the size and type of the joint. Also check whether two hard wood treenails are effectively piled at the centre line of the joint.
- 3.3. To inspect the structural style of stem, stern frame structural style, and whether the connections of other components are fasten and reliable.
- 3.4. Spot check the quality of the constitution of frames, the deviation of the half breadth of the frames at waterline should not be greater than 3mm. The quality of the joint should conform to the relevant requirement.

To survey the position of the frame installed on the keel and the deviation of the level of left and right, the deviation should not be greater than 4mm. If distortion appeared after the installation, corresponding corrective process should be carried out before the construction can continue.

- 3.5. The end of the joints of longitudinal structure, side shell and deck plating, except there is limitation in the structure, should fit in the transverse aggregate and fastened by bolts. The contact face must be closely fitted. The shifted distance between planks in way of the joints should satisfy the relevant requirements of recognized classification societies or flag administrations.
- 3.6. The side shell plating and frame should be closely fitted; the contact area should not be less than 90% of the total contact area. The contact face should be spread with putty. The gap of plank seam between every plate should meet the requirements of recognized classification societies or flag administrations.
- 3.7. The joints of garboard plate and sub-garboard plate should avoid placing under the engine base, the connection to the two sides of the keel plate should be suitably process and closely fitted.
- 3.8. Deck plating and beams should be closely fitted. The contact face should be spread with putty. The gap of plank seam between every plate should meet the requirements of recognized classification societies or flag administrations.
- 3.9. According to the approved drawings, inspect the installation position of the engine bed plate. The deviation should not be greater than 5mm. If the installation position changed, permission must be obtained from surveyor.

The lower surface of engine bed plate and the upper surface of side shell frame should

be closely fitted. The un-contact face of each side shell frame should not be more than 30% of the total contact face. The thickness of the outside engine base plate should not be less than 60mm.

#### **4. The Installation and Process of Hull Components**

- 4.1. Inspect the condition of the process of the surface of the hull main components, the smooth finish of the surface should conform to the relevant requirement.
- 4.2. Mast post, rudder stock and others round shape components should be fine processed.
- 4.3. The adjoining plane of stern frame and stern tube, mutual adjoining plane of parts of combination stern tube should be precise processed, the surface can be rough machining.
- 4.4. Engine bed plate surface should be precise processed, other surface allow fine processed.
- 4.5. Measurement of main components of hull dimensions, the tolerances should not be more than the following required value:
  - a) The allowable deviation of material of keel, keelson, stem, stern frame, rudder stock, stern tube: length is  $\pm 0.3\%$ ; wide is  $\pm 1\%$ ; thickness (height) is  $\pm 1\%$
  - b) The allowable deviation of material of garboard plating, ship side planking, deck planking, longitudinal girder, beam stringer: width is  $\pm 5$  mm; thickness is  $\pm 4$ mm.
  - c) The allowable deviation of deck beam, hatch end beam, half beam, hatch side girder, hatch coaming, engine base plate, deck plate, side planking: width is  $\pm 4$ mm, thickness is  $\pm 2$ mm.
  - d) The allowable deviation of the height of side frame is  $\pm 3\%$
- 4.6. The allowable deviation of the hull principal dimensions:
  - a) The allowable deviation of ship length (L) is  $\pm 0.3\%$
  - b) The allowable deviation of ship breadth (B) is  $\pm 0.3\%$
  - c) The allowable deviation of ship depth (D) is  $\pm 0.4\%$
  - d) The allowable deviation of stem, centre line of stern frame and centre line of keel should not be greater than 5mm
  - e) The allowable deviation of centre line of tailshaft and centre line of rudder stock should not be greater than 3mm
  - f) The width of side frame at waterline level should not be greater than 0.3% of the width of waterline

#### **5. Inspection of Nails, Screws and Bolts**

- 5.1. Examine the strength performance test report of the connection of material, verify the

whether the machined dimension of the connecting piece conform to the requirements.

- 5.2. Check whether the number and arrangement of nails, screws and bolts for connection of each component are conforming to the relevant requirements.
- 5.3. Check whether the size of the hole drilled for nails and bolts during fabrication with diameter 1mm less than the diameter of the nails and bolts to be fitted. Check whether the nails and bolts inserted into each component are fastened.
- 5.4. When using nails and bolts, gasket (rove) should be added. Before insert, the head should wrap with 2 to 3 layer of yarn (or rattan) soaked with putty. The nut of the bolts should be in the inboard of the hull.
- 5.5. The end of the joints of longitudinal structure, side shell and deck plating, except there is limitation in the structure, should fit in the transverse aggregate and fastened by bolts. The contact face must be closely fitted.
- 5.6. Except due to special condition in the structure, all nails, ends of bolts and the top surface of screws installed on board should be embedded 3mm to 10mm under the surface of components, and plastered by putty.

## **6. Caulk and Watertight**

### 6.1. General requirement of caulking of hull

- 6.1.1. Caulking must not be carried out on any components when nails, screws and bolts are not in fasten condition or the timber is in wet condition.
- 6.1.2. The seam of all components such as hull plating, deck plating, deck house, bulkhead of superstructure and watertight transverse bulkhead, etc after caulking and all nails, screw and bolts should be plastered to ensure the watertightness and surface smoothness of the hull.
- 6.1.3. In the important watertight position, such as side planking, deck plating, watertight transverse bulkhead and water tank, etc, “clinch” and “spike nail” for connection of seam should be applied at suitable distance (about 100mm).
- 6.1.4. When the depth of crackle on the hull surface components exceeds 1/10 the thickness of the material, repair by caulking should be carried out. When there is decay, borer or other defects on components, patch should be applied (remove all the defected timber and inert the filler material of the caulk) to bridge and fill up. For larger area, should gouge and clinching, and then patch to increase the adhesive strength.

- 6.1.5. The edge of the seam of the two plank should be beveled, the seam should be in “V” shape when place in position together.
- 6.1.6. The seam between two planks should be as close as possible. If the thickness of plank is less than 60mm, the outside gap of the seam should not be greater than 5mm, the inside gap of the seam should not be greater than 3mm. If the thickness of the plank is greater than 60mm, the outside gap of the seam should not be greater than 8mm, the inside gap of the seam should not be greater than 3mm.
- 6.1.7. The gap of the seam of hull plating, deck plating cannot meet the about requirement, it is allowed to use clinching to process.
- 6.2. The requirements of caulking technique
- 6.2.1. Caulking layer included bottom putty, filling material and top putty three parts. The bottom putty should be a smaller amount and evenly spread, do not put excessive putty. The filing material should be shredded into small piece and squeezed into the seam. After squeezed into the seam should have a recess of 2 ~ 5 mm. After the external area of the filler about 30% ~ 35% desiccated, the seam should be plastered by putty. The putty should be leveled with the surface of the plank.
- 6.2.2. The overlapping of the same putty connection should not be less than 100mm and should be repeatedly kneaded.
- 6.2.3. For double side caulk, caulking to be carried out in the inboard side before the outboard side. The depth of the caulk of the seam in the inboard side should be 10% ~ 20% of the plank thickness. The depth of the caulk of the seam in the outboard side should be 50% ~ 60% of the plank thickness. For single side caulk, the depth of the caulk should be 60% ~ 70% of the plank thickness.
- 6.2.4. If the putty is not congealed 15 days after the completion of the caulking of the hull, the reason to be find out and take necessary action.
- 6.3. Inspection of caulking material
- 6.3.1. Examine whether the yarn, gauze, rattan and putty are conforming the requirements of recognized classification societies or flag administrations.
- 6.3.2. Examine the certificate of the product of wood oil, whether the physical properties are conforming the requirements of recognized classification societies or flag administrations. The following simple testing methods can be used during survey to verify:
- a) Smell: Whether there is a special odour of the wood oil;

- b) Colour: Whether the oil is clear. The colour of good oil is pure and no impurity;
- c) Viscosity: Use a rod to soak some oil and drop into still and clear water. Check whether the oil will congregate into a circular droplet and not diffuse. If the oil quickly diffused into the water, it means water content is high and it fake oil;
- d) Boil: Put a spoon of wood oil into an iron pan, heat to 250°C ~ 290°C temperature. If the oil can form a honeycomb shape solid, the wood oil is pass.

#### 6.4. Hull Tightness Test

6.4.1. After all the putty of the vessel dried up, tightness test is to be carried out before launching of the vessel. Surveyor can deem necessary the condition of the vessel to decide which part to be tested. During the test, no leakage occur in the part tested is considered acceptable.

6.4.2. There are three types of tightness test, flood test, hose test and spray test:

- a) Flood test: the height of the flooding to be up to maximum loaded draught for not less than 1 hour;
- b) Hose test: The nozzle diameter for the test should not be less than 16mm. During the test, the height of the water jet should not be less than 10m and the distance between the nozzle and the testing area should not be greater than 3m;
- c) Spray test: Use water spray to testing area and simulate the windy and rainy weather condition.

6.4.3. Flood test is applicable for the hull shell plate and water tank bulkhead; hose test is applicable for deck plate, deck house bulkhead and hatch cover; spray test is suitable for skylight of engine room, windows and doors of bridge and other windows and doors to open area.

6.4.4. When it is difficult to carry out tightness test when the vessel is on slipway, the tightness test can be carried out after the launching of the vessel with the approval from the surveyor.

### **7. Special Requirements and Inspection of Machinery and Electrical Installation**

7.1. Inspection of main engine and gearbox installation

7.1.1. Main engine and gear box seating should have adequate strength and rigidity. The roughness of upper and lower contact area of seating should not exceed 6.3 μ m, and the tolerance of the total length of plane should not exceed 0.10mm. The holding down fitted bolts of engine should not be less than 15% of the total bolts and minimum should have 4 fitted bolts. At least 2 fitted bolts are to be fitted for

gearbox.

- 7.1.2. The foundation and the engine bed plate should be uniformly contact, the contact area should not be less than 75%.
- 7.1.3. One to three layer of metallic liners may be used for adjusting the space between the engine bed plate and foundation, and preventive measure is to be provided to avoid loosen of fitted bolts.
- 7.1.4. The gap between side frame and the casing of main engine and gear box shall not be less than 25 mm.
- 7.1.5. If the main engine has been installed on the slipway, the main engine and the shafting system to be re-examined after 48 hours of the launching of the vessel.

## 7.2. Inspection of lightning protection system

- 7.2.1. All wooden fishing vessels should be fitted with lightning protection.
- 7.2.2. Air terminals should be made from copper rod of not less than 12mm diameter or iron rod of not less than 25mm diameter, and project at least 150mm above the top of the vessel (or fittings).
- 7.2.3. Down conductors should have a minimum cross sectional area of 70mm<sup>2</sup> for copper tape or 100mm<sup>2</sup> for iron tape. The tape shall be solidly connected between air terminal and earth plate.
- 7.2.4. Down conductors should be securely connected between air terminal and earth plate. The earth plate shall be installed on exterior of hull shell plate and ensure the plate remain immersed when the vessel is rolling. The earth plate shall be of copper and the area shall not be less than 0.2m<sup>2</sup>. The earth plate shall not be painted.

## 7.3. Inspection of earthing of electrical appliance

All electrical appliances should be earthed. The requirements of main earth plate and lightning earth plate are the same. However, the two systems shall not be connected to the same earth plate.

Note: The above are made reference to the relevant requirements of “The ‘Ocean Fishing Vessels Statutory Survey Standard 2003’ of Register of Fishing Vessels of the People’s Republic of China”



## HULL INSPECTION REQUIREMENTS (OPERATION INSPECTION) OF WOODEN VESSEL

### 1. General Requirements

- 1.1. If the components or parts of the hull of wooden vessel under operation, exceed the required erosion (decay) limitation as specified in Table 1.1. The repair or renewal shall be carried out according to the requirements of original building.

Limitation of erosion (decay) of main components of hull

Table 1.1

Serial No.	Components	Type of erosion, decay	Allowable erosion limit
1	Keel, keelson	Normal borer, decay	Depth exceed 20% of the thickness; Partial depth exceed 30% of the thickness
2	Hull shell plate	Borer, decay, wear down	Depth exceed 25% of the thickness
3	Deck plate	Wear down, decay	Depth exceed 25% of the thickness
4	Stem, rudder stock, deck beam, hatch side girder	Rotten	Depth exceed 35% of the thickness
5	Side frame and it stiffeners	Erosion	Partial depth exceed 25% of the thickness; Area of erosion more than 25% of the surface

- 1.2. On hull shell plate, main deck and other external and internal longitudinal components. If the depth and area of the wear and tear or decay affect the fastening function of the nails and bolts or cannot carry out caulking and there is leakage. The repair or renewal shall be carried out according to the requirements of original building.
- 1.3. Before docking of the vessel, the fuel tank, cargo hold, fish hold, refrigerating hold and water tank, etc should be emptied. Blocking should be properly arranged to avoid local concentration of loading.
- 1.4. Inspect of hull of wooden vessel also need to conform the relevant requirements of

## **2. Annual Survey**

- 2.1. In general external inspection of each part of the hull is to be carried out. Particular attention will be paid on the main structural components of amidship and forward side planking (planking), rubbing strake, bulwark stay, bulwark stringer, fwd and aft handrail, deck longitudinal, etc. Also the technical condition of the caulk will be checked.
- 2.2. All opening and hatch arrangement to be inspected and tested. The relevant requirements of Load Line survey shall refer to Chapter IV of this Code.

## **3. Intermediate Survey**

- 3.1. The inspection items, contents and requirements of intermediate survey shall include the annual survey items. In addition, the survey of hull bottom is to be carried out.
- 3.2. Intermediate survey shall normally carry out on slipway. External inspection of keel, garboard plate, bottom plate, bilge keel, stem, stern frame, rudder stock and keel band shall be carried out. The caulk of the underwater hull part to be carefully examined. When crack appear on caulk of seam, the caulk to be partially gouged out for inspection if necessary. Inspection shall also include the effectiveness of the coating for the prevention of borer, decay and anti-fouling.
- 3.3. The under water hull inspection shall also include the examination of propeller, rudder, oil sealing arrangement of tailshaft and the examination and measurement of the rudder pintle clearance and tailshaft bearing clearance.

## **4. Renewal Survey**

- 4.1. Renewal survey shall be carried out on slipway together with the repair works of the vessel if possible. Surveyor shall carry out survey together with the ship owner and the shipyard. According to the results of the survey and the requirements of Table 1.1 of this Annex, verify the repair items of the vessel.
- 4.2. After docking of the vessel, the bottom sheathing and any sundries inside the fish hold, refrigerating hold and water tank etc shall be removed. The paneling, insulation and other obstacle shall be partially removed, if necessary, to facilitate the inspection of the technical condition of the covered hull structure.

- 4.3. For vessel less than 10 years of age, inspection shall concentrate on the hull shell plate, keel band, deck plate, bulwark, cargo hold or fish hold, including the components near the insulation and the condition of the joints, tabled-scarf, caulk and coating, etc.
- 4.4. For vessel more than 10 years of age, more thorough inspection shall be carried out on main components of the vessels such as keel, stem, stern frame, side frame, deck beam, internal longitudinal girder, bulkhead, etc. To check the level of borer, decay, wear and tear and contact damage. If the damages exceed the required limit, repair or renewal shall be carried out.
- 4.5. Full inspection shall be carried out for all the caulk below waterline. For vessels more than 8 years old, all caulk of the hull shall be gouged and renewed. In general the outer gap of the seam should not be greater than 15mm; the inner gap of the seam shall be closely fitted. Otherwise, it shall not carry out caulking. If the width of the seam is large and not suitable for caulking, the plank shall be replaced to reduce the width of the seam. All caulk shall be subject to tightness test after repair or renewal.
- 4.6. When examine the condition of the stern structure, pay attention to distortion in the joints of components, leakage in seam, variation in shaft line of tailshaft, increase in vibration, etc. If abnormality find, repair shall be carried out. If the variation of the shaft line of tailshaft is due to insufficient hull strength, repairs shall combine with partial reinforcement of the strength and rigidity of the hull.

## **5. Hull Repair Requirements**

- 5.1. When the main components of the hull exceed the erosion (decay) limit (Table 1.1), the component shall be replaced. If the limit is not excess, the borer and decay part shall be removed. Use patch method to gouge and fill up. For wider area, rabbet shall be bored or clinching and patch to increase the adhesive strength.
- 5.2. If transverse cracks or broken damages appear in the components of the hull, the component shall be renewed.
- 5.3. If the joint in side shell, longitudinal components, strengthened deck plate, transverse framing of amidship area find loosen or crack or distortion appear in the seam. Repair and reinforcement of the structure shall be carried out.
- 5.4. In the seam and tabled-scarf area at the end face of the important components. If

cross crack appear and the colour of the component near the crack changed to black, the component shall be replaced. Under the condition that the strength and watertightness are not affected, the main plank can be partially renewed.

- 5.5. The requirements for the precision of machining, tolerance after machining, connection method, the shifted distance between planks, choice of nails, screw or bolts, etc shall follow the relevant requirements of recognized classification societies or flag administrations.
- 5.6. The old caulking material shall be removed and re-filled with new caulking material in caulk required for repair. The bevel edge of the plank shall not be damage during the removed of old caulking material. The caulk shall be smooth, clean and grease free.
- 5.7. For scattered worm holes with diameter less than 5mm. The worm shall be removed and fill up with putty and gauze. For diameter less than 10mm, bore hole in way of the worm hole and remove the worm. Plug the hole with treenail and interlace the surrounding gap with gauze and cover with putty.
- 5.8. For exposed nuts, depend on the condition of the surrounding timber. Interlace with gauze and plaster with putty, if necessary. Not caulking shall be carried out if the bolt is not fastened.

## **6. Prevention of Worm and Decay**

- 6.1. The periodical requirements of worm and decay preventive measure on main structural components:
  - a) The wooden structural components below fully loaded waterline shall carry out a worm prevention process every four years (in line with renewal survey).
  - b) The surface of all steel components below fully loaded waterline and weather exposed area shall be coated every year, can be in line with annual survey.
  - c) Anti-fouling coating for the vessel bottom shall be re-coated every year.
  - d) Asphalt type coating for under water hull below the fully loaded waterline and coating for the hull surface above fully loaded waterline and components inside accommodation. Shall be re-coated every two years together with renewal survey or intermediate survey.

Note: The above are made reference to the relevant requirements of “The ‘Ocean Fishing Vessels Statutory Survey Standard 2003’ of Register of Fishing Vessels of the People’s Republic of China”

**SURVEY SCHEDULE FOR MEDIUM SPEED ENGINES  
(for the extension to 3 year interval)**

1. This requirement may apply to ferries and launches carrying not less than 100 passengers fitted with medium speed engines.
2. The medium speed engine survey interval may be extended from 2 years to 3 years on owners request provided with documentary information of Maker's recommended maintenance practices for the fully opened up overhaul to be carried out at period exceeding 3 years and that owner undertakes the following conditions :-
  - (a) he running hours of each year and the total accumulated running hours will be recorded continuously and that the engine will be maintained and inspected in full compliance with Maker's recommended practice in respect to accumulative running hours or period with proper record.
  - (b) he engine will be opened up for inspection and overhauling after 2 years running is due.
  - (c) a 25% (or more, at the discretion of the inspection officer) of total cylinder number are to be opened up for inspection. Wear down of these components will be measured and confirmed to be within the tolerance based on the criteria given by the engine maker for comparison.
  - (d) photographs are taken to record condition of major components;
  - (e) when the condition of the engine is found to be satisfactory from the above inspection, an inspection report and confirmation of safe operation for further year of operation will be issued by owner;
  - (f) after 3 years running the engine will be fully opened up, inspected and overhauled.

During the inspection as mentioned in para. 2.(f), if the wear-down of all key components are found within the tolerances recommended by the maker, a 3 year inspection and overhaul interval shall apply and no further request for extension is required thereafter; the relevant inspection and maintenance items are mentioned in para. 2.(a) to 2.(f).

**IMPLEMENTATION OF THE  
REVISED REGULATIONS 13G AND 13H OF ANNEX I  
OF MARPOL 73/78 TO LOCALLY LICENSED VESSELS**

1. In response to tighter control of single-hull oil tanker on prevention of pollution at sea, IMO adopted “Resolution MEPC 111(50)” on 4 December 2003 for the following purposes:
  - (a) to amend regulation 13G to further accelerate phasing out of single hull tankers of 5,000 tons dwt and above; and
  - (b) to add a new regulation 13H to ban carriage of heavy grade oil (HGO) in single hull tankers of very old age and new requirements for double hull tankers.

The new requirements will come into force internationally on 5 April 2005, which is also applicable to locally licensed vessels.
2. The revised regulation 13G of Annex I of MARPOL 73/78 is aimed to phase out all single hull tankers of deadweight 5,000 dwt and above by 2010 on their anniversary delivery date. Prior to that cut-off date, those single hull tankers of 15 years of age or above will need to comply with the requirements of the Condition Assessment Scheme (CAS). By that time, tankers below 15 years of age are of double hull.
3. The revised regulation 13H of Annex I of MARPOL 73/78 is aimed to ban all single hull tankers of deadweight between 600 dwt and less than 5,000dwt to be used for carriage of heavy grade oil (HGO) on their anniversary delivery date in 2008. However, the revised regulations of the Convention permits the Flag Administration to extend the operation life of those vessels until the 25 years of age are reached with certain measures to be fulfilled. Beyond 5 April 2005, no tanker of deadweight 5,000 dwt and above are allowed to carry HGO.
4. Exemption from complying with regulation 13H would be granted to those single hull tankers, which are operated solely within Hong Kong waters, and subjected to conditions as described below:
  - (a) these tankers may continue operations until 5 April 2008 provided they are maintained in a satisfactory condition;
  - (b) tankers older than 25 years on and after 5 April 2008 may be considered an extension on two year basis provided that the tankers are subject to more stringent inspection requirements. These vessels will be required to be drydocked in each annual inspection and subject to a well documented measurement of hull plate thickness for consideration BEFORE the two year extension of life is granted.
5. All tankers licensed on or after 5 April 2005 should be constructed or have been constructed for full compliance with the relevant requirements of regulation 13H of Annex I of MARPOL 73/78, i.e. double skin construction requirement.

6. Marine Department Notice No. 53 of 2005 regarding the implementation of the amended regulation 13 G and the new Regulation 13 H of annex I to MARPOL 73/78 on the local licensed tankers carrying Heavy Grade oil (HGO) had been promulgated on 15 April 2005.

**GUIDANCE ON MACHINERY AND HULL WEAR DOWN OR CORROSION TOLERANCE LIMITS AND OTHER INSPECTION ITEMS**

*[ This annex is applicable to all class I, II & III vessels. If a vessel is being built under a recognized classification society, the corresponding technical guidance of such recognized classification society may be applied to such vessels.]*

**(A) Hull**

**1. Repairing of Corroded Hull and Structural Member**

1.1 The thickness reduction of hull plating and structural members caused by corrosion should not be more than the specified percentage of the original thickness as shown in the following table:

Structural Member	Corrosion Limit (%)
Decks, shell, structural member	30
Seating for main engine, crane, windlass & etc.	25

When the percentage of thickness reduction of hull plating and structural members caused by corrosion exceeds the above limit, it should be cropped and renewed.

1.2 Local scar corrosion: the corroded member should be cropped and renewed if the width of the scar exceeds 50mm or the depth of the scar exceeds 40% of the fabricated thickness.

1.3 Pitting corrosion: the corroded member should be cropped and renewed if the depth of the pitting exceeds the limit of paragraph 1.1 and the pitted area exceeds 30% of the concerned area. (see following diagram for reference)



1.4 According to the requirements of paragraphs 1.1 to 1.3, the renewed plating area should be 150mmx150mm (minimum) and the structural member should be



150mm long (minimum).

- 1.5 Scattered pitting: pitting, which diameter between 15mm to 50mm and depth exceeds 50% of the fabricated thickness, shall be repaired by welding. After repair, the rebuilt areas shall be smoothed and ground to normal thickness.
- 1.6 For significant worn out structural member or suspected area, ultra-sonic gauging or other equivalent method may be required.

## 2. Other Requirement for Inspection of Structural Member

### 2.1 Buckling of plating( deflection of plating between framing)

Maximum allowable deflection =  $0.06s$ ;  
 $s$  = frame spacing at indents area (mm)

### 2.2 Indent of framing structure (deflection of combined framing and plating)

Maximum allowable deflection =  $6l + 10mm$ ;                       $l$  = span (m)

- 2.3 Buckling of plating and indent of framing structure are to be rectified by hot work or crop and renew.
- 2.4 Crack is not allowed in any case on main deck plating and structural members below main deck.
- 2.5 No buckling is allowed at bracket. Mis-alignment between beams and frames should not exceed the frame thickness.

## 3. Water Tank & Oil Tank Tightness Test

### 3.1 Initial Inspection

Item	Type of tank	Water pressure head (m)
1	Fore / aft peak tank, deep tank, cofferdam	Top of air pipe
2	Fuel tank, liquid cargo tank	2.5m above highest point of tank top

### 3.2 Periodical Inspection

For all tanks, pressure test (to top of air pipe or 2.5m above highest point of tank top) as appropriate or air test to 0.14kg/cm<sup>2</sup>.

## 4. Requirements for the Inspection of Water Tightness by Hose Test

- 4.1 The water jet pressure should not be less than 1.0 kg/cm<sup>2</sup>
- 4.2 Nozzle should not be more than 3m from the test item
- 4.3 Nozzle diameter should not be less than 16mm

## 5. Mooring Equipment

- 5.1 Wear down of chain cable and related parts should not exceed 85% of the original diameter.
- 5.2 Loss of anchor weight should not exceeds 20 % of original weight.

## 6. Wear Down Limit of Steering System and Tightness Test

- 6.1 Wear down clearance limit for rudder

Items	Wear Limit
Rudder stock	7 % of rule diameter
Kort nozzle, Rudder	30 % of design thickness
Flange	10 % of design thickness
Rudder chain	10 % of design diameter

Defect of steering component may be repaired by welding.

- 6.2 Kort nozzle and double plate rudder tightness test

- (i) Hydraulic test - 0.25 kg/cm<sup>2</sup>
- (ii) Air test - 0.20 kg/cm<sup>2</sup>

## **(B) Machinery & Electrical**

### **7. Air Receiver**

- 7.1 Corrosion limit of plating for air receiver should not exceed 10% of original thickness.
- 7.2 Air receiver and piping system should be hydraulic tested to the pressure specified in the Chapter IIIA/Part 15.6.

### **8. Tail Shaft and Bearing**

- 8.1 Polishing may be used to remove defect on tail shaft, however, the diameter of the tail shaft should not less than rule requirement after surface finishing.
- 8.2 Clearance limit between tail shaft and bearing

Tail shaft diameter (mm)	Bearing material	Lignum Viatae, Layered rubber	White metal alloy		Cast rubber
	Clearance Limit (mm)		Oil lubricated	Water lubricated	
<100		4.0	1.50	2.0	3.5
100~<150		4.4	1.65	2.2	4.4
150~<200		4.8	1.80	2.4	4.8
200~<250		5.2	1.95	2.6	-

### **9. Minimum Allowable Insulation Resistance Value**

For the electrical circuit of nominal voltage over 50V, the insulation resistance should not be less than 1.0 MΩ

Note: The insulation resistance shall be measured by a 500V megger tester.

## **ANNEX N**

**CONSTRUCTION, INITIAL SURVEY REQUIREMENTS,  
PERIODICAL SURVEY PROCEDURE AND CYCLES, ETC. OF  
CLASS III HONG KONG LICENSED FISHING VESSELS**

**REQUIREMENTS OF LIFE-SAVING APPLIANCES &  
RADIOCOMMUNICATIONS EQUIPMENT FOR FISHING VESSELS**

**1. Life-saving Appliances and Radiocommunications Equipment for Fishing Vessels**

Requirements of life-saving appliances for fishing vessels quoted from Table 6 of Schedule 3 of Survey Regulation are as below:-

**QUOTE**

**Table 6 of Schedule 3**

**Class III Vessels**

Life-saving appliances	Category of vessel	A		B	
	Vessel length(L)(m)	(L)<24	24≤(L)<45 <sup>(1)</sup>	(L)<24	24≤(L)<45 <sup>(1)</sup>
lifejacket		100% <sup>(2)</sup>		100% <sup>(2)</sup>	
lifebuoy		2	4	2 <sup>(3)</sup> and <sup>(4)</sup>	2 or < 4 <sup>(5)</sup>
buoyant apparatus (for vessel (L)>30 m)		-	100% <sup>(2)</sup>	-	
inflatable liferaft		100% <sup>(2)</sup> (type, equipment, location and arrangement of liferaft shall be in accordance with the relevant plans approved under Part 3 of this regulation)		-	
buoyant lifeline <sup>(6)</sup>		2		2 <sup>(3)</sup>	
< self-activating smoke > <sup>(5)</sup>		1 <sup>(7)</sup>		1 <sup>(7)</sup>	
self-igniting light		1 <sup>(7)</sup>	2 <sup>(7)</sup>	1 <sup>(7)</sup>	2 <sup>(7)</sup>
< rocket parachute flare > <sup>(5)</sup>		4 <sup>(7)</sup>		4 <sup>(7)</sup>	
< radar transponder > <sup>(5)</sup>		1 <sup>(7)</sup>		1 <sup>(7)</sup>	
radio communications equipment		description, quantity, type, function and location of equipment shall be in accordance with the relevant plans approved under Part 3 of this Regulation		-	

Note :

- (1) The requirement for a Class III vessel of 45 m or more in length shall be specified by the Director on a case-by-case basis.

- (2) Where the required quantity of life-saving appliances is expressed as a percentage, it means the percentage of the total number of persons on board.
- (3) 1 lifebuoy with 30 m buoyant lifeline is sufficient for –
  - (a) a fishing sampan –
    - (i) made of glass reinforced plastic; and
    - (ii) of less than 15 m in length;
  - (b) a fishing sampan –
    - (i) of wooden construction; and
    - (ii) of less than 8 m in length; and
  - (c) a fishing vessel –
    - (i) of wooden construction; and
    - (ii) of less than 12 m in length.
- (4) For a fishing sampan that falls within paragraph (b) of Schedule 2, the minimum requirement for life-saving appliance is 1 lifebuoy.
- (5) Requirements in angle bracket (“< >”) are for new vessels only.
- (6) The minimum length of buoyant lifeline is 30 m.
- (7) Applicable to a Class III vessel that -
  - (a) holds a valid port clearance; or
  - (b) is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance.

***UNQUOTED***

- ( Remark : (a) “(L)” means registered length (symbol in Survey Regulation).  
 (b) The above content shall quote from the latest version after the consideration and legislation of the Survey Regulation

1.1 The life saving requirements for a Class III vessel of 45 m or more in length will be considered based on the following factors:

- (a) the vessel’s mode of operation;
- (b) the vessel’s intended service;
- (c) the vessel’s size;
- (d) the vessel’s construction;
- (e) the total number of persons on board (and crew manning);
- (f) the compliance of regional standards or international standards, if applicable; and
- (g) potential hazards to the safety of the vessel and any person or property on board the vessel.

## 2. Requirement of Inflatable Liferaft for Fishing Vessel

	Category of Vessel	A		B	
Life Saving Appliances	Vessel Length (L) (m)	L < 24	24 ≤ L < 45 <sup>(1)</sup>	L < 24	24 ≤ L < 45 <sup>(1)</sup>
Inflatable Liferaft <sup>(2)(7)</sup>		100% “SOLAS B Pack inflatable liferaft <sup>(4)(6)</sup>	100% “SOLAS A Pack inflatable liferaft <sup>(3)</sup>  100% “SOLAS B Pack inflatable liferaft <sup>(4)(5)</sup>		

Note:

- (1) The requirement for a Class III vessel of 45 m or more in length shall be specified by the Director on a case-by-case basis. The consideration factors include:
  - (a) the vessel’s mode of operation;
  - (b) the vessel’s intended service;
  - (c) the vessel’s size;
  - (d) the vessel’s construction;
  - (e) the total number of persons on board (and crew manning);
  - (f) the compliance of regional standards or international standards, if applicable; and
  - (g) potential hazards to the safety of the vessel and any person or property on board the vessel.
  
- (2) Where the required quantity of life-saving appliances is expressed as a percentage, it means the percentage of the total number of persons on board.
  
- (3) “SOLAS A Pack Liferrafts” are the liferafts provided with normal equipment prescribed by the LSA Code as defined in section 2(1) of the Merchant Shipping (Safety) (Life-saving Appliances) Regulation (Cap. 369 sub. leg. AY). “Y” type inflatable liferafts approved by Bureau of Fishing Vessel Inspection may also be accepted, this type of liferaft is applicable for sea-going vessel.
  
- (4) “SOLAS B Pack Liferrafts” are the liferafts provided with normal equipment prescribed by the LSA Code as defined in section 2(1) of the Merchant Shipping (Safety) (Life-saving Appliances) Regulation (Cap. 369 sub. leg. AY) less the following equipment –
  - (a) half number of rocket parachute flares, hand flares and buoyant smoke signals;
  - (b) tin openers;
  - (c) fishing tacklers;

- (d) food ration;
- (e) water tank; and
- (f) graduated drinking vessels.

“YJ” type inflatable liferafts approved by Bureau of Fishing Vessel Inspection may also be accepted, this type of liferaft is applicable to vessels operating in area not more than 200 nautical miles away from the coast.

- (5) Fishing vessels intended to operate in area not more than 200 nautical miles away from the coast, may use “SOLAS B Pack” inflatable liferaft for at least 80% of the total persons onboard, and use buoyant apparatus for the remaining persons.
- (6) Fishing vessels of L<20m and intended to operate in area not more than 120 nautical miles away from the coast, may use “SOLAS B Pack” inflatable liferaft for at least 60% of the total persons onboard, and use buoyant apparatus for the remaining persons.
- (7) Applicable to a Class III vessel that -
  - (a) holds a valid port clearance; or
  - (b) is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance.

### 3. Radiocommunications Equipment for Fishing Vessels

Radiocommunications Equipment	Category of Vessel	A		B	
	Vessel Length(L) (m)	L < 24	24 ≤ L < 45 <sup>(1)</sup>	L < 24	24 ≤ L < 45 <sup>(1)</sup>
VHF(Very High Frequency) Radio <sup>(5)</sup>				1 <sup>(2)</sup>	
Single Side Band Radio <sup>(5) &amp; (7)</sup>			1	1 <sup>(3) &amp; (6)</sup>	
Citizen Band Transceiver			1	1 <sup>(4)</sup>	

Note;

- (1) The requirement for a Class III vessel of 45 m or more in length shall be specified by the Director on a case-by-case basis. The consideration factors include:
  - (a) the vessel’s mode of operation;
  - (b) the vessel’s intended service;
  - (c) the vessel’s size;
  - (d) the vessel’s construction;
  - (e) the total number of persons on board (and crew manning);
  - (f) the compliance of regional standards or international standards, if applicable; and
  - (g) potential hazards to the safety of the vessel and any person or property on board the vessel.
- (2) Required equipment for GRP fishing sampan that holds a valid port clearance or is



exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance.

- (3) Required equipment for leader fishing vessel or individual fishing vessel that holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance.
- (4) Required equipment for fishing sampans of Lr<8m (GRP fishing sampans not included) that holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance.
- (5) Shall be fitted with DSC and GPS function, effective date shall be determined and announced by relevant authority.
- (6) Individual fishing vessels intended to operate in area not more than 25 nautical miles away from the coast, may be substituted by a VHF Radio plus a 406MHz EPIRB. EPIRB should be registered and annually checked.
- (7) Requirement may be substituted by an INMARSAT Ship Earth Station.

#### **4. Licensing, Operating, Operating Condition and Maintenance of Radiocommunications Equipment for Fishing Vessel**

- 4.1 According to Laws of Hong Kong(Radio Communication Ordinance)(Chapter 106) The type and model of radiocommunications equipment for fishing vessels should be approved or accepted by OFTA. and to be issued a licence of radio equipment by OFTA.
- 4.2 Equipment operator should have an appropriate training and also obtain the operator certificate issued by OFTA. If the operator possess the relevant operator certificate issued by Mainland or other country is also acceptable.
- 4.3 The general condition of radiocommunications equipment should be efficiently maintained. While the vessel is in operation, the certified operator or the ship master should regularly carry out the operation test or examine the equipment and maintain record keeping.
- 4.4 Upon initial licensing or installation of radiocommunications equipment, the vessel owner must submit a testing and inspection report issued by the supplier or a suitable radio service company.

**REQUIREMENTS OF FIRE FIGHTING APPARATUS FOR FISHING VESSELS**

Requirements of fire fighting apparatus equipment for fishing vessels are quoted from Table 7 of Schedule 4 of Survey Regulation. The provisions are quoted as below:-

**QUOTE**

**Table 7**  
**Class III vessels**

Fire-fighting apparatus	Category of vessel	A		B <sup>(1)</sup>	
	Vessel length (L) (m)	(L) < 30	30 ≤ (L) < 45 <sup>(2)</sup>	(L) < 10	(L) ≥ 10
portable fire extinguisher <sup>(3)</sup>	accommodation space	1	2	1	1 within not more than 10 m walking distance, but at least 2 and not more than 4 within each space
	wheel house	1	1		
	engine room	2	4		
	machinery space	2	4		
non-portable fire extinguisher	engine room	-	1	-	-
main fire pump	power	1 <sup>(4)</sup>	1	-	-
emergency fire pump	power	1	1	-	< 1 > <sup>(5) &amp; (6)</sup>
	manual				
fire main + hose + hydrant + jet nozzle		quantity, size, length, type, location and arrangement shall be in accordance with the relevant plans approved under Part 3 of this Regulation		-	< 1 set > <sup>(5) &amp; (6)</sup>
hydrant	engine room	1	1	-	-
spray nozzle <sup>(7)</sup>		1 on each deck 1 in each engine room	1 on each deck 1 in each engine room	-	-
fire bucket with lanyard		2	2	1	2
additional requirements for a Class III vessel with any engine room that may be periodically unattended when the vessel is being used or operated					
< fire detection and alarm system > <sup>(6)</sup>	engine room	quantity, type, location and	quantity, type, location and	-	-

		arrangement shall be in accordance with the relevant plans approved under Part 3 of this Regulation <sup>(8)</sup>	arrangement shall be in accordance with the relevant plans approved under Part 3 of this Regulation <sup>(8)</sup>		
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Notes :

- (1) For a fishing sampan made of glass reinforced plastic, only the following fire-fighting apparatus are required –
  - (a) if the sampan is less than 8 m in length, 1 portable dry powder fire extinguisher that has a capacity of not less than 2.7 kg of dry powder and 1 fire bucket with lanyard; and
  - (b) if the sampan is 8 m or more in length, 2 portable dry powder fire extinguishers each of a capacity of not less than 2.7 kg of dry powder and 2 fire buckets with lanyard.
- (2) The requirement for a Class III vessel of 45 m or more in length shall be specified by the Director on a case-by-case basis..
- (3) A Class III vessel that falls within paragraph (b) of Schedule 2 is not required to be provided with any portable fire extinguisher. Instead, such a vessel shall be provided with 1 fire bucket with lanyard.
- (4) The fire pump may be propulsion engine driven, provided it can be readily engaged to the engine.
- (5) Applicable to a Class III vessel that –
  - (a) holds a valid port clearance; or
  - (b) is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance.
- (6) Requirements in angle brackets (“< >”) are for new vessels only.
- (7) An engine room that contains internal combustion type machinery having in aggregate a total power output of not less than 375 kW shall be provided with at least one dual purpose nozzle.
- (8) The fire detection and alarm system may be waived, provided the location of the machinery space facilitates the detection of fire by persons on board.

**UNQUOTE**

- ( Remark : (a) “(L)” means registered length (symbol in Survey Regulation).  
 (b) The above content shall quote from the latest version after the consideration and legislation of the Survey Regulation

- 1.1 The requirement for a Class III vessel of 45 m or more in length will be considered based on the following factors:
  - (a) the vessel’s mode of operation;
  - (b) the vessel’s intended service;
  - (c) the vessel’s size;
  - (d) the vessel’s construction;
  - (e) the total number of persons on board (and crew manning);
  - (f) the compliance of regional standards or international standards, if applicable; and
  - (g) potential hazards to the safety of the vessel and any person or property on board the vessel.

**GENERAL SAFETY STANDARD AND REGULATIONS  
FOR THE CONSTRUCTION OF FISHING VESSELS**

Accordance with the rule and arrangement stipulated in paragraph 2.2 relating to “Other Standards” and paragraph 8 relating to “Equivalence” of Chapter 1 “General” section, the following regulations and standards will generally be recognized, accepted and applicable to fishing vessels.

	SAFETY STANDARD AND REGULATIONS FOR THE CONSTRUCTION OF FISHING VESSELS
1	IMO (Torremolinos International Convention for the Safety of Fishing Vessels, 1977) promulgated technical standards and regulations
(a)	IMO (1993 Torremolinos Protocol and Torremolinos International Convention for the Safety of Fishing Vessels, 1977, Consolidated Edition – Construction and equipment of fishing vessels) (Applicable to fishing vessels of length 24 m and over )
(b)	Guidelines for the Safety of Fishing Vessels of 24 metres and over but less than 45 metres in Length Operating in the East and South-East Asia Region Note: This is a voluntary guidelines.
(c)	Voluntary Guidelines for the Design, Construction and Equipment of Small Fishing Vessels, 2005 (Applicable to decked vessels of length 12m and over but less than 24m) Note: This is a voluntary guidelines.
(d)	Code of Safety for Fishermen and Fishing Vessels, 2005– Part A – Safety and Health Practice (relating to construction and equipment of fishing vessels ) (Applicable to decked or undecked vessels of length 12m or less and decked vessels of length 12m and over) Note: This is a voluntary code.
(e)	Code of Safety for Fishermen and Fishing Vessels, 2005–Part B – Safety and Health Requirements for the construction and equipment of Fishing Vessels (Applicable to vessels of length 24m and over but less than 45m ) Note: This is a voluntary code.
2	(Register of Fishing Vessels of the PRC) promulgated the inspection rules technical standards and regulations
(a)	(Regulations for Fishing Vessel of the PRC ) (Came into force on 1 August 2003)
(b)	(Regulation for the Construction of Steel Sea Going Fishing Vessels – 1998) (Applicable to steel fishing vessels of length not less than 12m and but less than 90m )
(c)	(Regulation for Statutory Surveys of Fishing Vessels of the PRC(2000) )

(d)	(Regulation for Statutory Surveys of Fishing Vessels of the PRC – River Trade, GRP, Wooden Sea-going and Small Steel Fishing Vessels Statutory Surveys and Technical Regulations (2002) )
(e)	(Regulation for Statutory Surveys of Sea-going Fishing Vessels of the PRC (2003) )
(f)	(Regulation for Statutory Surveys of Fishing Vessels of the PRC –fire protection of fuel oil pipe of diesel engine, prevention of sewage pollution and implement nitrogen oxide emission from diesel engines of statutory surveys and technical regulations(2003) )
(g)	(Regulation for Design Specimen and Technical Appraisal Document for Fishing Vessels(2003) )
3	(British Sea Fish Industrial Authority ( Construction Standard for GRP Fishing Vessels of length less than 24m) )

Remark : (1) IMO means International Maritimes Organization

(2) Fishing vessels are to be complied the above relevant standards, but also complied with the requirements of this Code of Practice, [Merchant Shipping (Local Vessels) Ordinance] and [Merchant Shipping(Local Vessels)(Safety & Survey) Regulation]

**INITIAL SURVEY FOR LICENSING OF STEEL FISHING VESSELS OR  
GRP FISHING VESSELS OF LENGTH 15 METRES OR ABOVE–**

(Applicable to vessel that holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance)

**(A) Plans Required to be Submitted for Approval for New Built Fishing Vessels –**

According to the safety navigation limits of the vessels, new built fishing vessels should be surveyed by the officer of this department at appropriate stages in accordance with the recognized rules and design. Owner of the vessels should apply for drawing approval by submission of the following drawings, in duplicate. (Address : Local Vessels Safety Section, 23 Floor, Harbour Building, Telephone No. 2852 4444) –

- 1) General Arrangement
- 2) Tonnage Measurement and Calculations
- 3) Structures and Scantlings, including
  - a) Midship Section
  - b) Scantling Calculation
  - c) Profile, Deck and bulkhead
  - d) Shell Expansion
  - e) Rudder / Kort Nozz;e, Rudder Stock, Skeg and Sole Piece
- 4) Freeboard Calculation
- 5) Arrangements relating to watertightness, weathertightness, bulkheads, hatchways, coamings, side scuttles, air vents, freeing ports, scuppers, inlets and discharges
- 6) Stability information, including:
  - a) Lines Plan including details of draft marks and offset tables (for record)
  - b) Hydrostatic Curves
  - c) Cross Curves of Stability
  - d) Preliminary Intact Stability
- 7) Accommodation Layouts
- 8) Escape Routes
- 9) Fuel, Machinery and Electrical Systems, including
  - a) Engine Room Arrangement
  - b) Propeller Shafting, Stern Tube and Coupling
  - c) Fuel Oil System (including tanks and piping)
  - d) Fire-fighting Piping arrangement (including fire main, fixed fire extinguishing system, etc)
  - e) Bilge Pumping Arrangement

- f) Air Receiver (if fitted)
  - g) Compressed Air Piping System (for pressure  $\geq 10$  bar) (if fitted)
  - h) Steering Gear Hydraulic Piping System
  - i) Filling, Sounding and Air Vent system
  - j) Domestic LPG Installation (if fitted)
  - k) Electrical System Line Diagram
  - l) Wiring Diagram of Main Switchboard
  - m) Layout of Main Switchboard
  - n) Electrical Equipment Arrangement
  - o) Wiring Diagram of Distribution Boxes
- 10) Safety Plan showing arrangement of life-saving appliances, fire-fighting apparatus, light and sound signals
  - 11) Structural Fire Protection Arrangement
  - 12) Navigational and Communication Equipment
  - 13) The Prevention and Control of Pollution<sup>(1)</sup> and
  - 14) Measures against potential hazards to the safety of the vessel or any person or property on board the vessel

Remarks:

- (1) If vessel's gross tonnage is less than 400, the requirement for installation of Prevention of Oil Pollution equipment may be waived provided that some basic and effective means for prevention of oil pollution is arranged on board.

**(B) Initial Survey Items for Fishing Vessels**

- (1) Having returned the approval of the submitted drawings, ship owner can apply to Marine Department for all the survey work of the vessel or arrange to delegate survey work as prescribed in section (2) and (3).
- (2) Arrangement of Recognized Survey
  - (a) In order to cater for the need of ship owner, Marine Department has requested the Register of Fishing Vessel of PRC or the Bureau of Fisheries of Guangdong to carry out most of the items of new construction and docking survey for fishing vessels in China. This would include the survey report of newly constructed vessel, the assessment, verification and endorsement of the inspection record of existing vessels. Ship owners can at their discretion to invite the Bureau of Fisheries to carry out the "recognized survey" items.
  - (b) The plan approval, audit survey for the assessment, verification and

endorsement of the inspection record together with the final inspection would still be carried out by Marine Department.

- (3)
  - (a) For those existing vessels constructed in China, the ship owner should submit the relevant inspection report and record (ship owner may ask the construction shipyard for the necessary assistance) and request the Bureau of Fisheries to arrange the “recognized survey” soonest as possible. This would also include the verification and endorsement of the relevant document of the inspection record and survey report.
  - (b) The ship owner should submit to the department the Bureau of Fisheries endorsed and verified inspection record and survey report. Ship owner may submit the relevant documents through agent of Bureau of Fisheries.
- (4) Under normal circumstances, the plan approval work would require two months for completion and the ship owner should arrange the survey work after the plan approval has been completed. In order to avoid unnecessary delay, ship owner should submit the relevant drawing, plan and document for approval soonest possible. Ship owner should note that any delay in submitting plans and other documents may hinder the inspection schedule.
- (5) Under the new Ordinance, the ship owner may have the discretion to select the competent surveyor and recognized authority for plan approval and survey work.  
[Owner should follow the time table for authorization of survey]



**CONSTRUCTION AND INITIAL SURVEY FOR LICENSING  
OF GRP FISHING VESSEL OR FISHING SAMPAN**

**1. Interpretation**

- 1.1 New Vessel: in respect of which an application for an operating licence is made for the first time on or after the commencement of the Ordinance.

**2. Construction and Initial Survey for Licensing**

(Including new construction and first licensed existing vessels)

Application for licensing should comply with the procedures in the paragraph 6 of Chapter I of this Code. Construction, initial survey for licence, approval and issue of licence etc. shall be considered and take reference to relevant safety operating waters requirement.

- 2.1 Glass Reinforced Plastic fishing vessel of length 15 metres or above, drawing approval and construction survey, should be according to Annex N-2.

- 2.2 New Glass Reinforced Plastic fishing vessel of length between 8 metres and below 15 metres

- (a) The relevant plans and information requirement should be submitted according to Chapter II that applicable to a Cat. B vessel.
- (b) Information such as the design standards or construction specifications of the hull components and engine equipment should be produced.
- (c) Report on hull material verification and GRP material test should be produced.

**2.2.1 Design and Construction Standard**

The design and construction standard of the vessels should be in accordance with the standard from classification societies or national maritime administration with regard to its size, purpose and area of operation.

**2.2.2 Drawing approval**

Drawings required to be submitted for approval:

- (1) General arrangement (including L.S.A., F.F.A. evacuation arrangement, L.S.S. and radio communication equipment arrangement)
- (2) Cross-section plan and structural plan (including the side and deck), rudder and rudder stock
- (3) Propeller shafting and stern tube plan
- (4) Fuel oil tanks and piping
- (5) Fire fighting piping and bilge pumping system
- (6) Electrical wiring diagram and electrical installation plan (if fitted with 220V or above generator)
- (7) Inclining experiment report and stability information booklet

### 2.2.3 Initial Survey

The following items should be presented for survey (for new vessels under construction):

- (1) Hull construction (incl. material test, verification of scantling of hull structural members, inspection of hull connections etc.)
- (2) Machinery installation (incl. main engines and gearboxes, fuel tanks construction etc.)
- (3) Electrical installation (incl. insulation test)
- (4) Verification of principal dimensions, engines, major machineries and draft marks
- (5) Inclining test
- (6) Final inspection (safety equipment etc.)

### 2.3 Vessels of length below 15 metres (may apply prototype)

- (a) The first vessel (original design vessel) of an approved series should be subject to plan approval and surveys as per the requirements listed in para. 2.2 above.
- (b) For the second to the eighth vessels being constructed with the same design in the same workshop, the following relevant requirements are suffice:
  - (i) Submission of the certificate of manufacture, construction inspection; and test records issued by the inspected workshop together with photos;
  - (ii) Lightship weight confirmation;
  - (iii) Final inspection (safety equipment etc.).

Remarks: (1) For new vessel (including modification) of length not exceeding 10 metres, in lieu of para. 2.2.2 and 2.3(a), owner may submit relevant “simple plans/information” for verification.

- (2) For new vessel of length not exceeding 10 metres and only operating in Hong Kong waters, in lieu of para. 2.2.2 (7) and 2.2.3 (5), a simple inclining test and report is required for verification.

**GUIDANCE NOTE ON THE CONSTRUCTION AND INITIAL  
SURVEY FOR LICENSING OF GRP FISHING SAMPAN OF  
LENGTH LESS THAN 15 METRES**

- 1.** Application for new construction
  - 1.1 The procedure should follow the guidelines stated in Chapter I section 6.
  - 1.2 Requirements of vessels shall be considered and take reference to relevant safety operating waters requirement.
  
- 2.** Drawings required to be submitted for approval.(May refer to para.2.2, 2.3 of annex-N3)
  - 2.1 The relevant plans and information stipulated in Chapter II applicable to a Cat. B vessel should be submitted.
  - 2.2 Information such as the design standards or construction specifications of the hull components and engine equipment should be produced.
  - 2.3 Report on hull material verification and GRP material test should be produced.
  
- 3.** Survey for initial licensing
  - 3.1 The workshop and relating facilities should be inspected by Marine Department. The requirements for the workshop are as follows:
    - (a) The workshop should be adequately sheltered from wind and rain and provide with suitable ventilation equipment. Workshop intended for constructing large vessels should be fitted with thermostat and humidistat.
    - (b) Sufficient natural lighting and illumination should be provided. Direct exposure of product to sunlight and strong lamplight that affect the normalization of resin should be avoided.
    - (c) Air exhausting and drainage facilities should be installed.
    - (d) Sufficient fire fighting and safety facilities should be installed.
  - 3.2 During the construction of the first vessel (prototype) of a series, the following items should be inspected by Marine Department: hull construction (verification of thickness of the hull members laminate); oil fuel tank construction; engine and gear box; electrical installation/insulation test; verification of principal dimensions, engines, major machineries and draft marks; inclining test/lightship inspection; final inspection (safety equipment etc.).
  - 3.3 For the subsequent vessels (for the second to eighth vessel) being constructed with the same mould in the same workshop, submission of only the certificate of manufacture, construction inspection and test records issued by the inspected workshop together with mould photos are sufficed. These vessels are required for final inspection and issuing certificate prior to licensing.

## Requirements for Class III GRP Fishing Sampan Fitted with Diesel Engine

Length (L)	$5m \leq L < 8m$	$8m \leq L < 15m$
Power	Diesel inboard/ outboard engine $\leq 90HP$ (67kW)	Diesel inboard/ outboard engine $\leq 250HP$ (187kW)
Ship Construction	<ul style="list-style-type: none"> <li>Fully decked with deckhouse as per the proposal of the representatives of fishermen.</li> <li>Scantlings in compliance with the relevant requirements such as RFV, FIA or any recognized classification societies etc ( including properties of glass-fibre material)</li> </ul>	
Stability and Buoyancy	<ul style="list-style-type: none"> <li>Simple inclining test to indicate that heel <math>&lt; 7^\circ</math> in fully loaded condition,</li> <li>At full power, the longitudinal heeling <math>&lt; 4^\circ</math> &amp; turning <math>&lt; 8^\circ</math> or 80% of freeboard,</li> <li>Any one water-tight compartment should meet 100% built-in buoyancy at full load condition or by filling those compartments with foam</li> </ul> Or <ul style="list-style-type: none"> <li>Inclining test</li> <li>Stability information as other vessels operating outside Hong Kong waters</li> </ul>	
Inspection	Survey afloat every 2 years	
Operating Limits	(1) For vessel length $5m \leq L < 8m$ , Hong Kong waters only (2) For vessel length of $8m \leq L < 15m$ , Hong Kong waters or not exceeding 10 n miles from shore. (Applicable to vessel that holds a valid port clearance or is exempted under section 69(1) of the Ordinance (LVO) from complying with section 28(1) of the LVO)	
LSA	<ul style="list-style-type: none"> <li>One lifejacket for each person on board; <i>and</i></li> <li>One Life buoy</li> </ul>	
FFA	<ul style="list-style-type: none"> <li>One 2.7kg dry powder portable fire extinguisher <i>and</i> one bucket with lanyard</li> <li>For vessel length of 8m or above, one additional set of above is required</li> </ul>	
Navigation lights	One masthead light, sidelights, sternlight. N.U.C. light and post height requirements as per details in COLREGS.	
Emergency communication means	Not required for HK waters. Those operating in mainland waters would have to meet mainland required standards.	
Drawings-hull/mc	The first vessels is required for approval of proto-type design and inspection standards which would cover a certain hull number of subsequent vessels built to approved standards	
Survey-hull/mc/final	Subject to satisfactory inspection of prototype by Marine Department on hull and machinery and final inspections to meet the approved standard and tests with proper records submission. Then, each subsequent vessel is built and tested to approved standards for a certain hull number with inspection records submission to Marine Department for vetting and subject to final inspection.	
Certificate of Survey	Local Vessel Certificate of Survey will be issued ( as per category B according to Survey Regulation)	

RFV Register of Fishing Vessel of PRC's " Construction Standard for GRP Fishing Vessels 2002 "  
 FIA Sea Fish Industry Authority <Glass Reinforced Plastic - fishing vessels of less than 24m Reg. Length>

## Requirements for Class III GRP Fishing Sampan Fitted with Petrol Outboard Engine

Length (L)	$5m \leq L < 6m$	$6m \leq L < 8m$	$8m \leq L < 15m$
Power (P)	Petrol outboard Engine $P \leq 40HP$ (30kW)	Petrol outboard Engine $P \leq 75HP$ (56kW)	Petrol outboard Engine $P \leq 90HP$ (67kW)
F.O. Storage System	Max. fuel oil capacity not more than 100 litres, each tank capacity not exceeding 50 litres <sup>(1)</sup> .		Max. fuel oil capacity not more than 150 litres, each tank capacity not exceeding 100 litres <sup>(1)</sup> .
Hull Construction	<ul style="list-style-type: none"> <li>Fully decked with deckhouse as per the proposal of the representatives of fishermen.</li> <li>Scantlings in compliance with the relevant requirements such as RFV, FIA or any recognized classification societies etc ( including requirement for glass-fibre material</li> </ul>		
Stability and Buoyancy	<ul style="list-style-type: none"> <li>Simple inclining test to indicate that angle of heel <math>&lt; 7^\circ</math> in fully loaded condition,</li> <li>At full speed light-load condition, angle of trim <math>&lt; 4^\circ</math> &amp; angle of heel due to turning effect <math>&lt; 8^\circ</math> or 80% of the angle of deck edge immersion whichever greater.</li> <li>Any water-tight compartment should meet 100% inherent buoyancy at full load condition or filling those compartments with foam.</li> </ul> <p>Or</p> <ul style="list-style-type: none"> <li>Inclining test</li> <li>Stability should fulfil requirements same as vessels leaving Hong Kong waters.</li> </ul>		
Inspection	Survey afloat every 2 years.		
Plying Limits	(1) $5m \leq L < 8m$ , operating within Hong Kong waters only (other than port of Victoria) (2) $8m \leq L < 15m$ , operating within Hong Kong waters (other than port of Victoria) and not exceeding 10 n. miles from shore. (applicable to vessel that holds a valid port clearance or is exempted under section 69(1) of the Ordinance (LVO) from complying with section 28(1) of the LVO)		
LSA	<ul style="list-style-type: none"> <li>One lifejacket for each person on board; <i>and</i></li> <li>One Life buoy with lifeline</li> </ul>		
FFA	<ul style="list-style-type: none"> <li>One 2.7kg dry powder portable fire extinguisher <i>and</i> one bucket with lanyard</li> <li>For vessel length(L) of 8m or above, one additional set of above FFA is required.</li> </ul>		
Navigation lights	One masthead light, sidelights, stern light, N.U.C. light and position of lights should meet requirements in COLREGS.		
Emergency communication	Not required for HK waters. To comply Mainland's requirement when operating in Mainland waters.		
Exemption	Existing	Should comply the revised version.	
	LVO	Section 81 and Schedule 6 of the Survey Regulation.	
Drawings-Hull /Machinery	The first vessels is required for approval of proto-type design and inspection standards which would cover a certain hull number of subsequent vessels built to approved standards		
Survey-Hull/mc/final	Subject to satisfactory inspection of prototype by Marine Department on hull and machinery and final inspections to meet the approved standard and tests with proper records submission. Then, each subsequent vessel is built and tested to approved standards for a certain hull number with inspection records submission to Marine Department for vetting and subject to final inspection.		
Certificate of Survey	According to Survey Regulation, Certificate of Survey for Category B Local Vessel will be issued.		

RFV Register of Fishing Vessel of PRC's " Construction Standard for GRP Fishing Vessels 2002 "

FIA Sea Fish Industry Authority <Glass Reinforced Plastic - fishing vessels of less than 24m Reg. Length>

**Remark :** (1) Petrol tanks including its pipings must fulfil safety standard and be made according to the engine manufacturer or a type approved by the engine manufacturer (see annex U-2). Relevant endorsement should be obtained before using an engine with fuel oil having a flash point below  $61^\circ C$ .

**SURVEY/INSPECTION REQUIREMENTS FOR  
WOODEN FISHING VESSELS OR FISHING SAMPANS**  
(Applicable to vessels 8 metres or above<sup>(A)</sup> or less than 8 metres<sup>(B)</sup>)

**1. Annual Extension of the Licence Should Have Owner Declaration for Safety<sup>(A or B)</sup>**

(Declaration of Safety for license extension of fishing vessels) [See Annex N-6(B)]

**2. Initial Survey for Licence and Subsequent Biennial<sup>(A)</sup> or Triennial<sup>(B)</sup> Survey Afloat**

- (a) Inspection of general hull condition, fire-fighting appliances, life-saving appliances, escape route, light and sound signals, navigation, communication equipment and pollution prevention of vessel etc.
- (b) Inspection of the condition of closing appliances and air vents etc.
- (c) General inspection of the fuel oil systems for fire prevention.
- (d) Functional test of bilge water pumping system.
- (e) Operation tests of all equipment on board including running tests of steering gear, main and auxiliary engines.
- (f) Function tests of the meters etc. on the switchboards and earthing tests or megger tests report is to be submitted for record purposes (Insulation resistance shall not be less than 1 MΩ).
- (g) Setting of the relief valves for the air receivers, if fitted.
- (h) L.P.G. system to be checked, if fitted.
- (i) Verification of Certificate of Competency of the engineer and the master on board.
- (j) Verification of principal dimensions, engine and major machinery particulars.

Remarks : (1) Before the commencement of the new Ordinance. The initial and periodical survey of fishing vessels should be carried out by Marine department. Vessel owners can also request relevant Mainland Fishing Vessels Bureau to carry out the “recognized survey” (“recognized survey” means the survey items which MD agreed to be carried out by Register of Fishing Vessels of PRC or RFV of Guangdong). However, the final inspection and the audit survey should be carried out by MD.

(2) Vessel inspection should also include general (including the stability) hull condition. The equipment and measures of fire-fighting, life-saving and pollution prevention should also satisfy the relevant requirements. Radio equipment (if require to install) should comply with the concerned ordinance of

Hong Kong. If the vessel operated in Chinese waters, they should also comply with the requirement of local legislation in order to provide the need of rescue and emergency communication.

- (3) After the commencement of the new Ordinance, vessel owner may choose to employ the authorized surveyors/corporation(Classification Society) or recognized government body (Fishing Vessel Inspection Authority) to carried out the relevant inspection and plan approval according to arrangement.

**PERIODICAL SURVEY CYCLE FOR FISHING VESSELS<sup>(1) (3)</sup>**

- (A) Steel Hull or GRP fishing Vessels (Vessel length 24 metres or above and holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance)
- (I) Annual Survey (Afloat)
  - (II) Biennial Survey (Intermediate Survey)<sup>(2)</sup>
  - (III) Quadrennial Survey (Survey-on-slip)<sup>(2)</sup>
- (B) (1) Steel fishing Vessels (Vessel length below 24 metres and holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance)
- (2) GRP Fishing Vessels (Vessel length between 15 and below 24 metres and holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance)
- (I) Annual Survey (Afloat)
  - (II) Triennial Survey (Intermediate Survey)
  - (III) Survey for every six years (Survey-on-slip)
- (C) Wooden Fishing Vessel of length above 8m or GRP Fishing Sampans of length between 8 and below 15 metres and holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance)
- (I) Annual renewal of the licence should have owner declaration for safety (Declaration of Safety for license extension of fishing vessels) [See Annex N-6B]
  - (II) Biennial Survey (Afloat)
- (D) Wooden Fishing Vessel or GRP Fishing Sampan (vessel length below 8 metres and operate within Hong Kong waters only)
- (I) Annual renewal of the licence should have owner declaration for safety (Declaration of Safety for license extension of fishing vessels) [See Annex N-6B]
  - (II) Biennial Survey (Afloat) (applicable to GRP Fishing Sampan only)
  - (III) Triennial Survey (Afloat) (applicable to Wooden Fishing Vessels only)

Remark:

- (1) The inspection items of above-mentioned inspection for annual, biennial or triennial survey should be the same as Annex N-7A or N-7B.



- (2) Depends on the vessel condition, the ship owner can apply to extend the date of survey-on- slip during the annual survey. Extension (not exceeding one year) may be granted upon satisfactory inspection or on condition. Following that, the quadrennial survey can be extended accordingly.
- (3) Vessel which holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance), when operate outside the territory, should comply the safety requirements or instructions laid by the officer-in-charge of the local waters.

## Declaration of Safety and Equipment for Renewal of Fishing Vessel/Fishing Sampan Licence

(Applicable to Wooden Fishing Vessel/fishing sampan or GRP Fishing Sampan  
less than 15 Metres in length)(To be completed before licensing)

1. This declaration is to be completed in accordance to safety standard for Class I, II and III vessels, Code of Practice; owner of the vessels should inspect and declare the safety and equipment of his vessel at the time of licence renewal, the owner should produce this declaration together with the Certificate of Survey at the time of renewal of licence.

船隻名稱 Name of Vessel .....		船隻擁有權證明書號碼 Certificate of Ownership No. ....
級別 Class .....	類別 Category. ....	類型 Type .....
總長度 (米) Overall Length (m) .....	註冊長度 (米) Registered Length (m).....	最大寬度 (米)      船體材料 Extreme Breadth (m). .... Hull Material.....
總噸 Tonnage Gross.....	淨噸 Tonnage Nett. ....	長 x 闊數 (米 <sup>2</sup> ) L x B numeral .....

Name of owner: \_\_\_\_\_  
 Inspection date of certificate: \_\_\_\_\_  
 Expiry date of certificate: \_\_\_\_\_

2. Declaration of owner or master (Name: \_\_\_\_\_):

I hereby verify the following items:

- (a) The equipment and quantities of LSA and FFA onboard this vessel were found in compliance with Certificate of Survey, have appropriate maintenance and the conditions are good and not exceeding the expiry date of such equipment; (if such equipment have expiry date)
- (b) The working condition of the radio communication equipment is normal;
- (c) That the vessel is properly fitted with navigational equipment, light and sound signals. They also comply COLREG 1972 regulations;
- (d) The conditions of vessel, construction, machinery, electrical apparatus and escape routes were found in good condition and fit for service intended;
- (e) The vessel have not been altered without the approval from Director of Marine;
- (f) Watertight doors and hatches are in good and normal condition; and
- (g) Vessel's operators hold valid certificates of competency. (Please fill in the master and engineer certificate no.)

Master's name \_\_\_\_\_ Certificate No. \_\_\_\_\_

Engineer's name \_\_\_\_\_ Certificate No. \_\_\_\_\_

Inspection date of cert.      Owner's signature/  
(Annually)                      \*Master's signature \_\_\_\_\_ Date: \_\_\_\_\_

Inspection date of cert.      Owner's signature/  
(Biennially) #                    \*Master's signature \_\_\_\_\_ Date: \_\_\_\_\_

- Remarks: (1) This declaration together with the Certificate of Survey should be kept in good custody.  
 (2) / Delete inappropriate.  
 (3) \* If the owner is not the master of the vessel, he can check the above items with the master and makes the above declaration.  
 (4) # Only applicable to wooden vessel of registered length not exceeding 8 metres.

**PERIODICAL SURVEY PROGRAMME FOR STEEL FISHING VESSELS  
AND GRP FISHING VESSELS OF LENGTH 15 METRES OR ABOVE**

(Applicable to vessels that holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance) <sup>(7)</sup>

- (A) Steel fishing vessels or GRP fishing vessels of length 24m or above  
(Applicable to vessel that holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance)
- (I) Annual Survey (Afloat) (See remark 1, 2, 3)
- (a) Inspection of hull general condition, fire-fighting appliances, life-saving appliances, escape route, light and sound signals, navigation, communication equipment and pollution prevention of vessel etc.
  - (b) Inspection of the condition of closing appliances and air vents etc.
  - (c) General inspection of the fuel oil systems for fire prevention.
  - (d) Functional test of bilge water pumping system.
  - (e) Operation tests of all equipment on board including running tests of steering gear, main and auxiliary engines.
  - (f) Function tests of the meters etc. on the switchboards and earthing tests.
  - (g) Setting of the relief valves for the air receivers, if any.
  - (h) L.P.G. system to be checked, if fitted.
  - (i) Verification of Certificate of Competency of the engineer and the master on board.
  - (j) Verification of principal dimensions, engine and major machinery particulars.
- (II) Biennial Survey (See remark 1, 2, 3)
- Survey on slipway (Intermediate Survey)
- (a) The vessel is to be cleaned for external examination of the hull (internal inspection of the hull, void spaces and tanks are not required).
  - (b) If the vessel is 8 years old or above, 50% of the fuel oil tanks are to be hydraulically tested to the appropriate heads. [See remark (4)];
  - \* (c) Tail shafts, propellers, rudders and rudder stocks are to be drawn out for examination by Surveyors or Inspectors of the Marine Department [or refer remarks (1)]. The conditions of stern bush will also be checked. (For water lubricated tailshaft, the stern bush and shaft clearance is not to be exceeded 4% of the shaft diameter); or remarks (5) & (6) can be referred;

- \* (d) Main engines, gear boxes and generator engines are to be completely stripped down by engine repairing workshops or vessel owner follows the schedule of engine manufacturer through the guidance of engine repairing workshop to carry out repairing and maintenance. Inspection reports are to be submitted for reference and record purposes; Afloat test should also be necessary and remark (5) and (6) can also be checked for reference.

Note: \*[The above item(s) (c) and/or (d) may either be carried out during this inspection or if conditions are good (e.g. Submission of information on engine's good running record, etc), the items can be deferred to the 4<sup>th</sup> annual (major cycle) survey. Or remark (4) can also be referred.

#### Survey Afloat

- (e) According to Section (I) above,
- (f) Megger tests report is to be submitted for record purposes (Insulation resistance shall not be less than 1 MΩ).  
(Megger test report may defer to submit at major cycle survey if the earth leakage indicating lamps indicate normal condition.)

#### (III) Triennial Survey (Afloat) (See remark 1, 2, 3)

- (a) According to Section (I) above.

#### (IV) Quadrennial Survey (See remark 1, 2, 3)

##### Survey on slipway (Major Cycle Survey)

- (a) The vessel is to be cleaned for external examination of the hull. Internal examination of the hull, void spaces and tanks are also required.
- (b) All sea suction and discharge valves are to be opened up for inspection.
- (c) 50% of the fuel oil tanks are to be hydraulically tested to the appropriate heads if the vessel is 8 years old or above. {See remark (4)}
- (d) All air receivers (if any) are to be cleaned for internal examination and hydraulic test as appropriate.
- (e) Gauging of the thickness of the keel, bottom, shell, deck and bulkhead plates shall be conducted and the shell expansion plan is to be updated if the vessel is 8 years old or above. (The minimum thickness of the plates is not to be less than 5 mm) [See remark (4)].
- \* (f) Tail shafts, propellers, rudders and rudder stocks are to be drawn out for examination by Surveyor or Inspectors of the Marine Department [or see remark (1)]. The conditions of stern bush will also be checked. (For water lubricated tailshaft, the stern bush and shaft clearance is not to be exceeded 4% of the shaft diameter)
- \* (g) Main engines, gear boxes and generator engines are to be completely stripped down buy engine repairing workshops or the vessel owner follows the schedule of engine manufacturer through the guidance of engine repairing workshop to carry out repairing and maintenance. Inspection reports are to be

submitted for reference and record purpose. Afloat test should also be necessary; or remark (5) and (6) can also be referred.

Note: \* [above items (f) and/or (g) can be waived if they have been carried out during the biennial survey (intermediate survey). Or remark (4) can also be referred.

#### Survey Afloat

- (h) According to Section (I) above.
  - (i) Megger tests report is to be submitted for record purposes (Insulation resistance shall not be less than 1 MΩ)
- (V) Additional requirements – It should be noted, however, that the Surveyor or Ship Inspector [or see remark (1) and the assigned surveyors] has the authority to, and may at his discretion, inspect any space, or require any item of machinery or equipment to be opened up, at an annual survey or any other time.
- (B) Steel fishing vessels of length less than 24m and GRP fishing vessels of length 15m to below 24m (Applicable to vessel that holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance)

Periodical survey programme same as (A); Intermediate Survey must be carried at least every 3 years and Major Cycle Survey must be carried at least every 6 years, extension is not allowed.

- Remark: (1) Before the commencement of the new Ordinance. The initial and periodical survey of fishing vessels should be carried out by Marine department. Vessel owners can also request relevant Mainland Fishing Vessels Bureau to carry out the “recognized survey” (“recognized survey” means the survey items which MD agreed to be carried out by Register of Fishing Vessels of PRC or RIV of Guangdong). However, the final inspection and the audit survey should be carried out by MD.
- (2) Vessel inspection should also include general (including the stability) hull condition. The equipment and measures of fire-fighting, life-saving and pollution prevention should also satisfy the relevant requirements.
  - (3) Radio equipment installation (if required to be installed) should comply with the requirements of relevant legislation of Hong Kong. Vessel which holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance), when operate in such areas, should also comply with the requirement of local legislation in order to ensure the needs of rescue and emergency communication.
  - (4) Vessel owner can apply to extend the date of survey-on- slip during the annual survey. Extension (not exceeding one year) would be granted or with condition after assessing the condition of the vessel is acceptable. Following that, the quadrennial survey can be extended accordingly.

- (5) Vessel owner can apply to extend the date of inspection of machineries and installation during the annual survey with submission of machinery system running records. Extension (not exceeding one year) would be granted with or without condition after assessing the condition and checking of wear down limit of the machineries and installation is acceptable.
- (6) If the vessel is fitted with more than one set of main engine, generator set, tailshaft, propeller and rudder installation, the vessel owner can decide either to open up or completely strip down all the engines and installation or one set of engine system (for main engine and generator set, the stripped down set should have not less than 40% of total power) and installation for detail inspection. The remaining sets should be stripped down for detail survey in the next annual or survey-on-slip. And the concerned inspection items can also be deferred accordingly. [This is on a trial basis or transitional arrangement, and would be reviewed after three years.]
- (7) After the commencement of the new Ordinance, the vessel owner may choose to employ the authorized surveyors/corporation(Classification Society) or recognized government body(Fishing Vessel Inspection Authority) to carried out the relevant inspection and plan approval according to arrangement.

**PERIODICAL SURVEY PROGRAMME FOR WOODEN FISHING  
VESSELS OR FISHING SAMPAN LESS THAN 8 METRES IN LENGTH  
OR GRP FISHING SAMPAN LESS THAN 15 METRES IN LENGTH**

**(I) Following Periodical Survey Programme is Applicable to :**

- (a) Wooden fishing vessels of length over 8 metres or GRP fishing sampans of length 8 metres to less than 15 metres (vessel that holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance).  
---Survey afloat of the above two types of vessels should be conducted at least every two years. Annual renewal of the licence should have owner declaration of safety [See Annex N-6B].
- (b) Wooden fishing sampan less than 8 metres in length or GRP fishing sampan (Operating within Hong Kong waters only)  
---Survey afloat of the above two types of vessels should be conducted at least every two years for GRP vessel and every three years for wooden vessels. Annual renewal of the licence should have owner declaration of safety [See Annex N-6B].

**(II) Declaration of Safety and Equipment for Renewal of Licence to be Required**

(Declaration of Safety and Equipment for Renewal of Fishing Vessel License) [See Annex N-6B ]

**(III) Biennial or Triennial Survey Afloat [See remark 1, 2, 3]**

- (a) Inspection of hull general condition, fire-fighting appliances, life-saving appliances, escape route, light and sound signals, navigation, communication equipment and pollution prevention of vessel etc.
- (b) Inspection of the condition of closing appliances and air vents etc.
- (c) General inspection of the fuel oil systems for fire prevention.
- (d) Functional test of bilge water pumping system.
- (e) Operation tests of all equipment on board including running tests of steering gear, main and auxiliary engines.
- (f) Function tests of the meters etc. on the switchboards and earthing tests or Megger test report of electric circuits is to be submitted for record purposes (Insulation resistance should not be less than 1M $\Omega$ ).

- (g) Setting of the relief valves for air receivers, if fitted.
- (h) L.P.G. system is to be checked, if fitted.
- (i) Verification of Certificate of Competency of the engineer and the master on board.
- (j) Verification of principal dimensions, engine and major machinery particulars.

(IV) **Additional Requirements** – It should be noted, however, that the Surveyor or Ship Inspector [or see remark (1) and the assigned surveyor] has the authority to, and may at his discretion, inspect any space, or require any item of machinery or equipment to be opened up at any time.

- Remark: (1) Before the commencement of the new Ordinance. The initial and periodical survey of fishing vessels should be carried out by Marine department. Vessel owners can also request relevant Mainland Fishing Vessels Bureau to carry out the “recognized survey” (“recognized survey” means the survey items which MD agreed to be carried out by Register of Fishing Vessels of PRC or RFV of Guangdong). However, the final inspection and the audit survey should be carried out by MD.
- (2) Vessel inspection should also include general (including the stability) hull condition. The equipment and measures of fire-fighting, life-saving and pollution prevention should also satisfy the relevant requirements.
  - (3) Radio equipment (if require to install) should satisfy the concerned ordinance of Hong Kong. Vessel which holds a valid port clearance or is exempted under section 69(1) of the Ordinance from complying with section 28(1) of the Ordinance), when operate in such areas, should also comply with the requirement of local legislation in order to ensure the needs of rescue and emergency communication.
  - (4) After the commencement of the new Ordinance, the vessel owner may choose to employ the authorized surveyors/corporation(Classification Society) or recognized government body (Fishing Vessel Inspection Authority) to carried out the relevant inspection and plan approval according to arrangement.



**第 I 或 II 類別船隻的最高可運載人數的計算及/或檢驗證明裝置是適合由一名“兼任輪機員船長”操控**

**Determination of maximum number of persons to be carried and / or Survey Certification on installation suitable for “combined coxswain” operation of a Class I or II vessel**

Name of Vessel.....Certificate of Ownership No:.....Class/ Cat Vsl:.....	
船名 : ..... 擁有權證明書編號 : ..... 船隻類別/分類:.....	
Type of vessel 船隻類型:.....	
<b>1 (a) 最高可運載量和座椅 Maximum Carrying Capacity and Seating</b>	
船隻的最高可運載量(包括乘客和船員在內)的計算方法如下 : (參照第 V 章相關的要求) The maximum carrying capacity (including passengers and crew) are determined as follows:(Chapter V refers)	
[ ] (i) 第二類別機動船隻在特定遮蔽水域 Mechanized Class II vessel operating in specified sheltered water	
0.35 x L x B passenger numeral	所得乘客人數 ( ) ≤ 10
Minimum number of crew	最少船員名額 ( ) ≤ 4
Determined Total No. of Persons	計算總人數 ( )
[ ] (ii) 圍蔽式甲板船隻 enclosed deck vessel	
總人數 total number of persons = L x B x Cnp	(Cnp : 0.35~ 0.85 )
計算總人數 Determined Total No. of Persons	( )
及/and 船東指示要求最少船員名額 Owner's indicated the requested minimum number of crew = ( )	
式中 where L : 船隻(甲板)的總長(米) vessel's (deck) length overall in metres = ( )	
B : 船隻的最大寬度(米) vessel's maximum breadth in metres = ( )	
<b>(b) 乘客座椅的形狀、設計與固定在甲板的狀況須足以應付所需服務。第 I 章第 4(c)段所述船隻的座椅結構和安全帶須遵守第 XI 章所訂明的相關規定。乘客座椅安置及要求應按照第 V 章第 3.1, 3.2, 3.3 及 4.2.2 段的相關規定。</b> The form, design and attachments to the deck of passenger seats should be adequate for the intended service. The seating construction and safety belts on vessels of the type stated in I/4 (c) should comply with the relevant requirements specified in Chapter XI. Seating arrangement and requirements should be as per paras 3.1, to 3.3 and 4.2.2 of Ch V as relevant.	<b>不適用</b> Not applicable
	<b>足夠 / 不足夠</b> Adequate / Not Adequate
<b>(c) 運載乘客的船隻之乘客空間的標記</b>	
<b>Marking in Passenger Space for vessel carrying passengers</b>	
須在乘客上船的顯眼位置，以中、英文註明每層甲板可載運的乘客人數，如以下所示 The number of passengers in which each deck can accommodate should be indicated, in a conspicuous location, at all spaces where passengers will be embarking, in Chinese and English :-	
上層甲板 Upper level ( )	<b>不適用</b> Not applicable
主甲板 Main Deck ( )	
等等 Etc. ( )	
最高乘客名額 Maximum number of passengers ( )	<b>已標記 / 未有標記</b> Marking Completed / Marking Not Done
最少船員名額 Minimum number of crew ( )	
最高運載量 Maximum carrying capacity ( )	
<b>2. 證明這船隻裝置是適合由一名“兼任輪機員船長”操控</b> Certification on installation suitable for “Combined Coxswain” operation for this vessel	<b>不適用</b> Not applicable
	<b>適合 / 不適合</b> Suitable / Not suitable
以此證明這船隻的無人操作機器艙間備有適合由一名“兼任輪機員船長”操控的配備並經檢驗及測試滿意，包括艙底水警報，主要的主機控制、儀錶、主機及發電機故障警報裝置，主機、發電機及抽氣扇的遙控關閉，煙霧偵測及警報裝置等裝置。(參照第 III-A 章第 18 節及第 XII 章相關的要求) This is to certify that this vessel has appropriately equipped, inspected and tested satisfactory, including fittings of bilge alarm, essential main engine controls, indicators and main / generator engines abnormal warning alarms, remote shutdown of main / generator engines and ventilation fans, and a fire or smoke detection system etc., as appropriate, for unattended machinery space requirements suitable for “combined coxswain” operation. (Refers to relevant requirements in paragraph 18 of Chapter III-A and Chapter XII)	
- 裝置 / 額外詳細資料 Installation / Additional Details: -	

**備註 Remark :** (如有需要可另加頁數 additional sheet if required)

.....  
 特許驗船師姓名 / 特許機構名稱 / 獲承認當局及其驗船師姓名  
 Name of Authorized Surveyor / Authorized Organization / Recognized Authority and name of surveyor

.....  
 簽署 Signature ..... 日期 Date .....

**For use on simple GRP transportation or fishing sampan / GRP or wooden small boat or sampan etc.****適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖維或木質小船或舢舨等****(Vessel length less than 15 m / 船隻長度小於 15 米)****Simple Plans Required Approval for Initial Licensing of Local Vessels****本地船隻首次牌照 需要審批的簡單圖則**

* Delete where not appropriate / 刪去不需要處	File No. / 檔案號碼	
Licence No./ Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼		Vessel Class / Type / Category 船隻類別 / 類型 / 種類
<b>Approval Plans / 審批圖則</b>		<b>Remark / 備註</b>
<b>(A) <u>General Plans / 一般圖則</u></b>		
1. <b>簡單圖則 Plan(Simp)-G-01</b>		
<b>General Arrangement Plan</b> (Owner to provide necessary information on layout, decks etc.) <b>一般佈置圖則</b> (船東提供所需資料如外形、甲板層數等)		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
2. <b>簡單圖則 Plan(Simp)-G-02 / 11</b>		
( Only applicable to vessel carrying more than 4 passengers / 只適用載乘客 4 人以上 ) <b>Passenger Space (shelter)/ Seating Arrangement &amp; Position / Freeboard Mark Diagram</b> <b>乘客艙(遮閉安排) / 座位佈置及座位設置 / 吃水標示圖則</b>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
3. <b>簡單圖則 Plan(Simp)-G-01+ HS-01/ 09</b> (equiv to Plan-G-01 and Plan-H-09 )		
(Only applicable to vessel length less than 8 m / 只適用於船隻長度小於 8 米) <b>Vessel Particulars , General Arrangement and Basic Hull and Deck Plate Thickness Diagram</b> <b>船隻特別資料、一般佈置及基本船殼和甲板之板厚示意圖則</b>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
<b>(B) <u>Hull and Safety Equipment Plans / 船殼及安全設備圖則</u></b>		
4. <b>簡單圖則 Plan(Simp)-HS-01/ 09</b> (equiv to Plan- HS-03, H-09 )		
<b>Vessel Particulars , and Basic Hull and Deck Plate Thickness Diagram</b> <b>船隻特別資料及基本船殼和甲板之板厚示意圖則</b>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
5. <b>簡單圖則 Plan(Simp)-HS-07</b>		
<b>Inclining Experiment Report/Rolling Period / Simple Inclining - Test Report</b> <b>傾斜試驗 / 橫搖週期 / 簡單傾斜- 測試報告</b>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
6. <b>簡單圖則 Plan(Simp)-HS-10A&amp;B (HS-10C)</b>		
<b>LSA &amp; FFA Installation and Arrangement Diagram</b> <b>救生及救火設備及佈置示意圖則</b>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
7. <b>簡單圖則 Plan(Simp)-HS-10C</b> (Not applicable to open boat / 開敞船隻不需要)		
<b>Escape Installation and Arrangement Diagram</b> <b>逃生設備及佈置示意圖則</b>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
8. <b>簡單圖則 Plan(Simp)-HS-10D</b>		
<b>Lights, Shapes &amp; Sound Signals Installation and Arrangement Diagram</b> <b>號燈、號型、聲號備及佈置示意圖則</b>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
<b>(C) <u>Machinery Installation Plans 機器及其系統設備圖則</u></b>		
9. <b>簡單圖則 Plan(Simp)-M-01/ to / 10 etc.( )</b>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
<b>(D) <u>Electrical Installation Plans 電器及其系統設備圖則</u></b>		
10. <b>簡單圖則 Plan(Simp)-E-01 / to / 05 etc.( )</b>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
<b>(C/D) <u>Machinery / Electrical Installation Plans 機器/電器及其系統設備圖則</u></b>		
11. <b>簡單圖則 Plan(Simp)- M-01/ to / 10 + E-01 / to /05 etc.( )</b>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
Note : If required, owner must submit additional plans to supplement for deficient information (please refer to relevant Code of Practice or regulation).		
註 : 如有需要, 船東必須另加圖則去補充不足資料之處 (請參考本有關工作守則或規例)。		

For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc  
適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

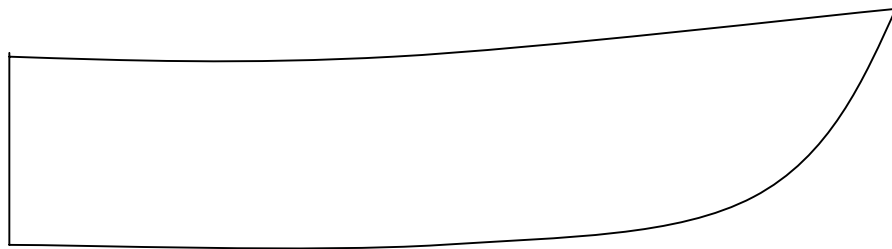
簡單圖則 Plan(Simp)-G -01

**General Arrangement Plan** (Owner to provide necessary information on layout, decks etc.)

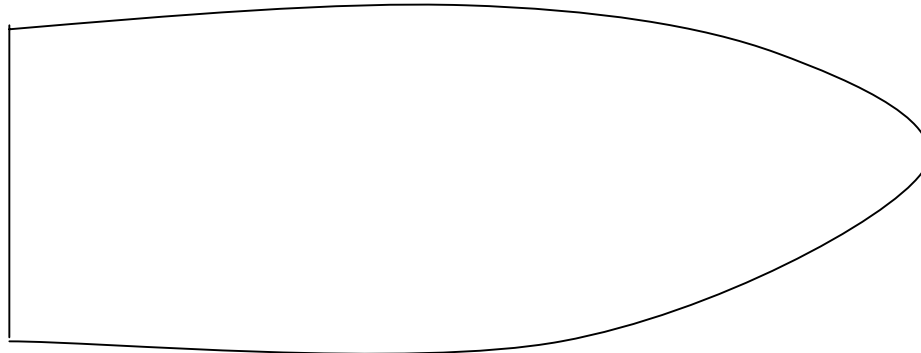
**一般佈置圖則** (船東提供所需資料如外形、甲板層數等)

( Note : A copy of this diagram must be kept onboard )

( 註 : 一份此圖則必須放置在船上 )



**側面圖**  
**Side View Profile**



**甲板**  
**DECK**

Remarks 備註:

1. If there is superstructure, please indicate.  
如設有上層建築, 請標示
2. Details can be supplement by photos or separate sheets.  
詳程可以相片補充或另加紙張
3. Not to proportion/scale.  
不按比例/標尺

<u>Vessel information</u> <b>船隻資料</b>	<b>Content</b> <b>資料內容</b>
1. File No. 檔案號碼	
2. Licence No./ Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻 類別 / 類型 / 種類	
4. Length 長度	
5. Width 闊度	
6. Depth 深度	
7. No. of decks 甲板層數 (Please Show Location / 請顯示位置)	
Approved by 經辦審批 :	Date 日期 :

For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc

適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

簡單圖則/ Plan(Simp)-G-02 /11

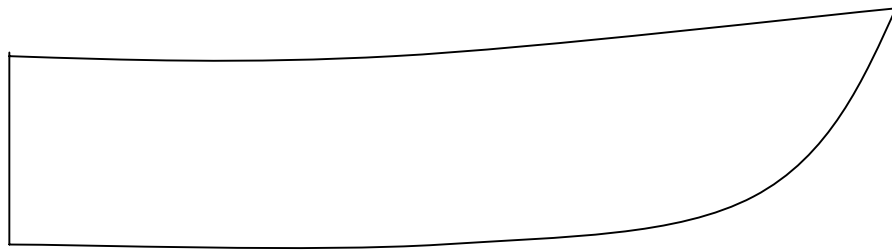
( Only applicable to vessels carrying more than 4 passengers / 只適用載乘客 4 人以上 )

### Passenger Space (shelter)/ Seating Arrangement and Position / Freeboard Mark Diagram

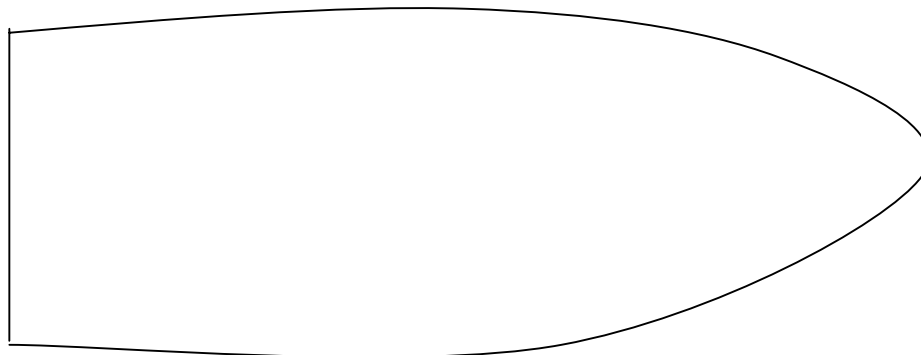
乘客艙(遮閉安排) / 座位佈置及座位設置 / 吃水標 示意圖則

( Note : A copy of this diagram must be kept onboard )

( 註 : 一份此圖則必須放置在船上 )



**側面圖**  
**Side View Profile**



**甲板**  
**DECK**

Remarks 備註:

1. If there is superstructure, please indicate.  
如設有上層建築, 請標示
2. Details can be supplement by photos or separate sheets.  
詳情可以相片補充或另加紙張
3. Not to proportion/scale.  
不按比例/標尺

<b>Vessel information</b> <b>船隻資料</b>	<b>Content</b> <b>資料內容</b>
1. File No. 檔案號碼	
2. Licence No./ Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻 類別 / 類型 / 種類	
4. Length 長度	
5. Width 闊度	
6. Depth 深度	
7. Freeboard Mark ( mm below main deck) 吃水標 (主甲板以下( mm )) (Please Show Location / 請顯示位置)	
8. Seating Arrangement / Position(*) 座佈置及座位設置(*)	
Approved by 經辦審批 :	Date 日期 :

For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc

適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

(Only applicable to vessel length less than 8 m / 只適用於船隻長度小於 8 米)

簡單圖則/ Plan(Simp)- G-01+ HS-01/09

**Vessel Particulars / General Arrangement and Basic Hull and Deck Plate Thickness Diagram**

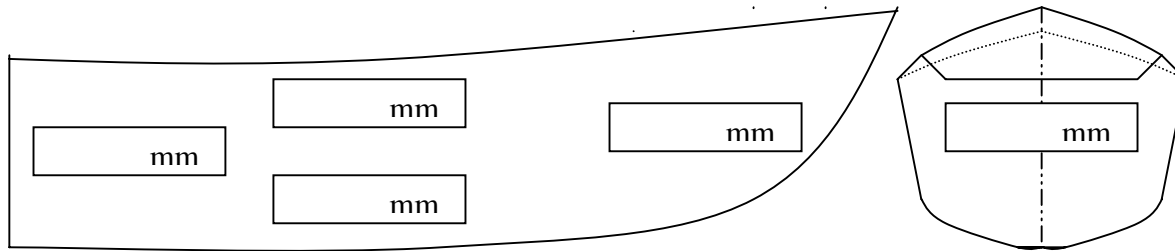
**船隻特別資料/一般佈置/及基本船殼和甲板之板厚示意圖則**

( Note : A copy of this diagram must be kept onboard )

( 註 : 一份此圖則必須放置在船上 )

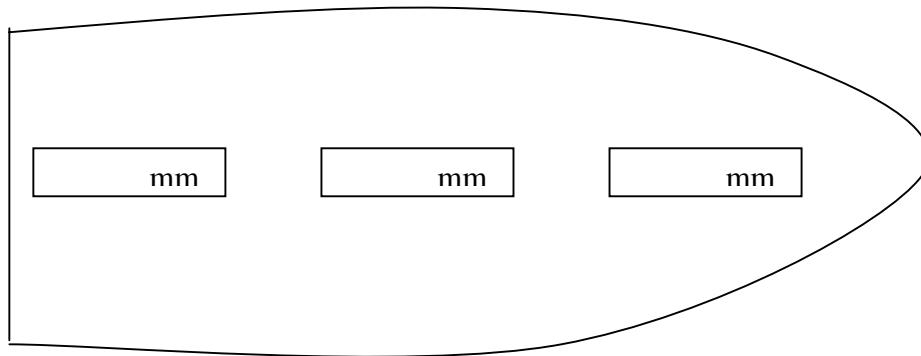
Remarks 備註:

1. If there is superstructure, please indicate. 如設有上層建築, 請標示
2. Details can be supplemented by photos or separate sheets. 詳程可以相片補充或另加紙張.
3. Please show by dotted line long/transverse frame. 請以虛線列出縱及橫向肋骨.
4. Not to proportion/scale. / 不按比例/標尺



**船旁及船底板  
SIDE & BOTTOM PLATING**

**船尾板圖  
TRANSOM**



**甲板  
DECK PLATING**

Vessel Particulars & Basic Hull information 船隻特別資料及基本船殼資料	Content 資料內容
1. File No. 檔案號碼	
2. Licence No./ Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻 類別 / 類型 / 種類	
4. Length 長度	
5. Width 闊度	
6. Depth 深度	
7. Material 構造材料 ( GRP 或 木質 )	
8. Number of Transverse Frame 橫架數目	
9. Number of Long. Girder/Keelson/ Frame 縱龍骨/邊龍骨/直隔擋數目	
10. Number / Size of Buoyancy Space 浮艙數目及容量 ____ / _____ (Please show location/ 請顯示位置)	
11. Hull design / construction standards /rules adopted 應用的船殼/結構標準/規則	
Approved by 經辦審批	Date 日期

For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc

適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

簡單圖則 Plan(Simp)-HS-01/09

## Vessel Particulars and Basic Hull and Deck Plate Thickness Diagram

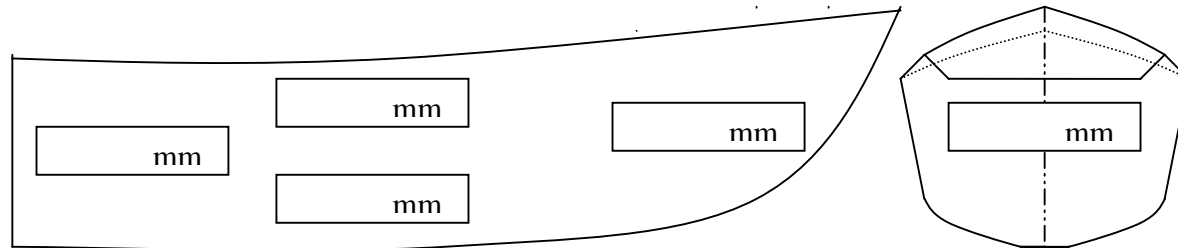
### 船隻特別資料及基本船殼和甲板之板厚示意圖則

( Note : A copy of this diagram must be kept onboard )

( 註 : 一份此圖則必須放置在船上 )

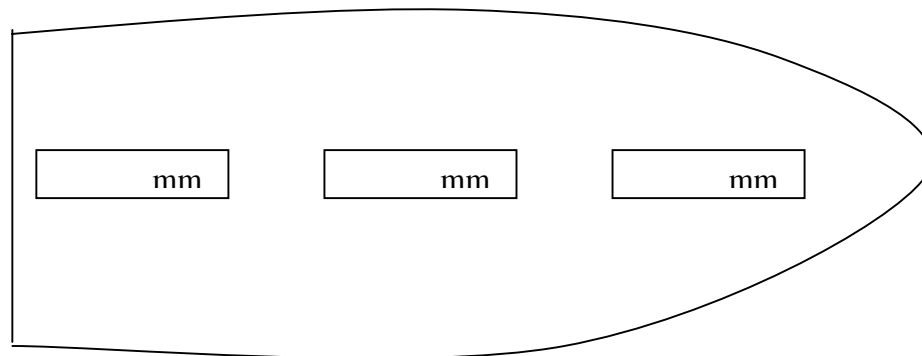
#### Remarks 備註:

1. If there is superstructure, please indicate.  
如設有上層建築, 請標示
2. Details can be supplemented by photos or separate sheets.  
詳程可以相片補充或另加紙張.
3. Please show by dotted line long/transverse frame.  
請以虛線列出縱及橫向肋骨.
4. Not to proportion/scale. / 不按比例/標尺



船旁及船底板  
**SIDE & BOTTOM PLATING**

船尾板圖  
**TRANSOM**



甲板  
**DECK PLATING**

Vessel Particulars & Basic Hull information 船隻特別資料及基本船殼資料	Content 資料內容
1. File No. 檔案號碼	
2. Licence No./ Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻 類別 / 類型 / 種類	
4. Length 長度	
5. Width 闊度	
6. Depth 深度	
7. Material 構造材料 ( GRP 或 木質 )	
8. Number of Transverse Frame 橫架數目	
9. Number of Long. Girder/Keelson/ Frame 縱龍骨/邊龍骨/直隔擋數目	
10. Number / Size of Buoyancy Space 浮艙數目及容量 ____ / ____ (Please show location/ 請顯示位置)	
11. Hull design / construction standards /rules adopted 應用的船殼/結構標準/規則	
Approved by 經辦審批	Date 日期

For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc

適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

簡單圖則 Plan(Simp)-HS-07

**Inclining Experiment Report/Rolling Period /  
Simple Inclining - Test Report  
傾斜試驗 / 橫搖週期 / 簡單傾斜- 測試報告**

Remarks 備註:

1. Details can be supplemented by photos or separate sheets.  
詳程可以相片補充或另加紙張。
2. Please show by dotted line long/transverse frame.  
請以虛線列出縱及橫向肋骨。
3. Not to proportion/scale.  
不按比例/標尺

Vessel Particulars & Basic Hull information 船隻特別資料及基本船殼資料	Content 資料內容
1. File No. 檔案號碼	
2. Licence No./ Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻 類別 / 類型 / 種類	
4. Length 長度	
5. Width 闊度	
6. Depth 深度	
7. Material 構造材料 ( GRP 或 木質 )	
8. Number of Transverse Frame 橫架數目	
9. Number of Long. Girder/Keelson/ Frame 縱龍骨/邊龍骨/直隔擋數目	
10. Number / Size of Buoyancy Space 浮艙數目及容量 ____ / _____ (Please show location/ 請顯示位置)	
Approved by 經辦審批	Date 日期

For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc  
適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

簡單圖則 Plan(Simp)-HS-10A&B (HS-10C)

## LSA & FFA Installation and Arrangement Diagram

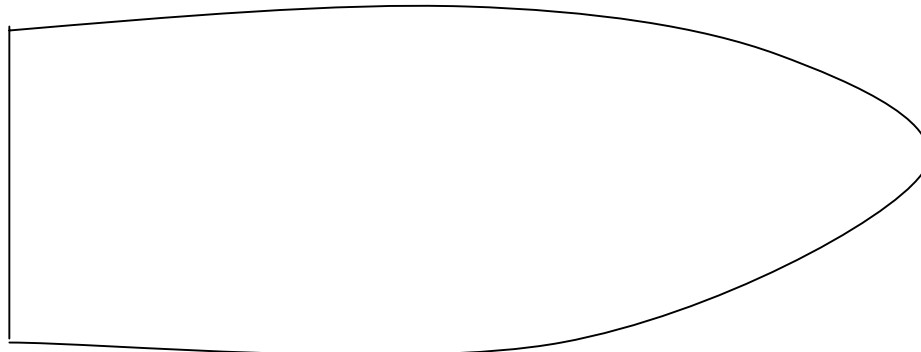
### 救生及救火設備及佈置示意圖則

( Note : A copy of this diagram must be kept onboard )

( 註 : 一份此圖則必須放置在船上 )



**側面圖**  
**Side View Profile**



**甲板**  
**DECK**

#### Remarks 備註:

1. If there is superstructure, please indicate.  
如設有上層建築, 請註明
2. May use separate sheet for each arrangement of information  
可用另外紙張顯示每種設備或佈置
3. Escape routes can be shown in this plan or in separate sheets.  
逃生佈置可顯示在本圖則上或另外紙張
4. Details can be supplemented by photos or separate sheets.  
詳情可以相片補充或另加紙張
5. Not to proportion/scale.  
不按比例/標尺

<b><u>Vessel information</u></b> <b>船隻資料</b>		<b>Content</b> <b>資料內容</b>	
1. File No. 檔案號碼			
2. Licence No. / Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼			
3. Vessel Class / Type / Category 船隻類別 / 類型 / 種類			
4. LSA & FFA installation 救生及救火設備		(Please show location/ 請顯示位置)	
(a)			
(b)			
(c)			
(d)			
(e)			
(f)			
(g)			
Approved by 經辦審批		Date 日期	



For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc.

適用於簡單玻璃纖維交通或捕漁舢舨及玻璃纖或木質小船 / 舢舨等

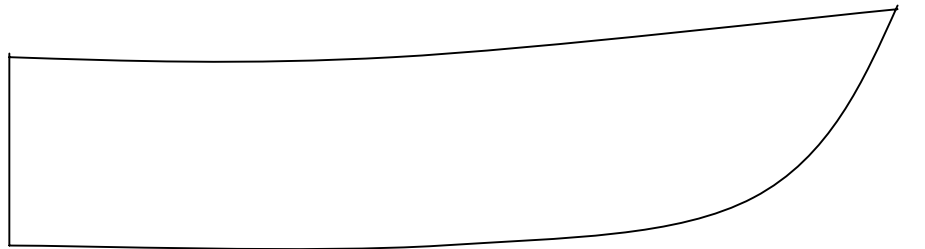
簡單圖則 Plan(Simp)-HS-10C (Not applicable to open boat / 開敞船隻不需要)

## Escape Installation and Arrangement Diagram

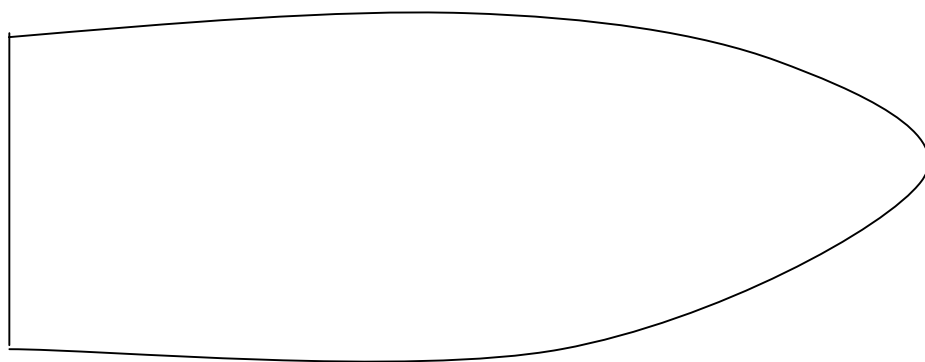
### 逃生設備及佈置示意圖則

( Note : A copy of this diagram must be kept onboard )

( 註 : 一份此圖則必須放置在船上 )



側面圖  
Side View Profile



甲板  
DECK

#### Remarks 備註:

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如設有上層建築, 請標示
2. Details can be supplemented by photos or separate sheets.  
詳程可以相片補充或另加紙張
3. Not to proportion/scale.  
不按比例/標尺

<u>Vessel information</u> <u>船隻資料</u>	<u>Content</u> <u>資料內容</u>
1. File No. 檔案號碼	
2. Licence No. / Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻 類別 / 類型 / 種類	
4. Escape Installation 逃生及設備 (Please show location/ 請顯示位置)	
Approved by 經辦審批	Date 日期

For use on GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc

適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

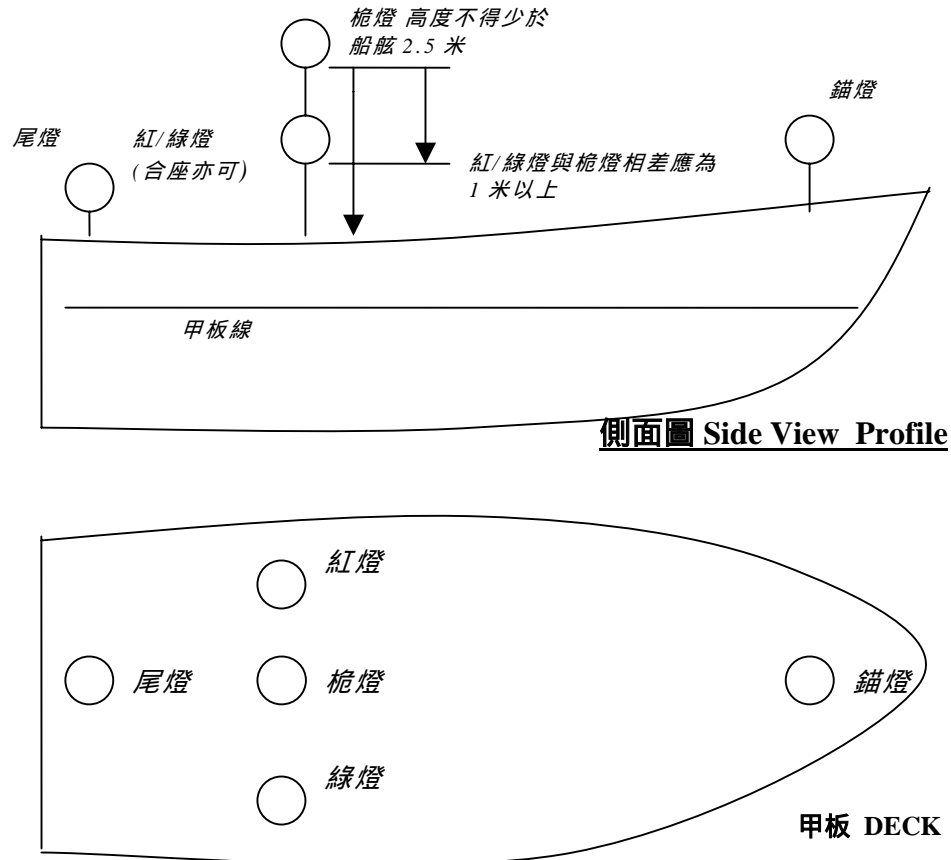
簡單圖則 Plan(Simp)-HS -10D

## Lights, Shapes & Sound Signals Installation and Arrangement Diagram

### 號燈、號型、聲號設備及佈置示意圖則

( Note : A copy of this diagram must be kept onboard )

( 註 : 一份此圖則必須放置在船上 )



- 註: 1) 長度未滿 7 米, 最大航速不超過 7 節, 只需環照白(錨燈)一盞。如條件許可, 亦需裝設紅及綠燈。  
2) 長度滿 7 米至小於 12 米, 需加 3 個黑色球體, 1 個黑色菱形體及一個能發出有效聲號器具。  
3) 長度滿 12 米至小於 20 米, 需加 2 支環照紅(失控燈), 1 個黑色菱形體及 3 個黑色球體, 號笛及號鐘各一個。

Remarks 備註:

1. If there is superstructure, please indicate.  
如設有上層建築, 請標示
2. Details can be supplemented by photos or separate sheets.  
詳程可以相片補充或另加紙張
3. Not to proportion/scale.  
不按比例/標尺

<b>Vessel information</b> <b>船隻資料</b>	<b>Content</b> <b>資料內容</b>
1. File No. 檔案號碼	
2. Licence No. / Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻類別 / 類型 / 種類	
4. Lights, Shapes & Sound Signals installation 號燈、號型、聲號設備 (Please show location/ 請顯示位 置)	
Approved by 經辦審批	Date 日期

For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc

適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

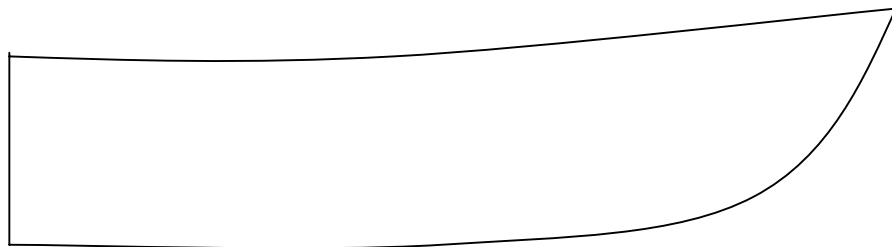
## Machinery Installation Plans

### 機器及其系統設備圖則

( Note : A copy of this diagram must be kept onboard )

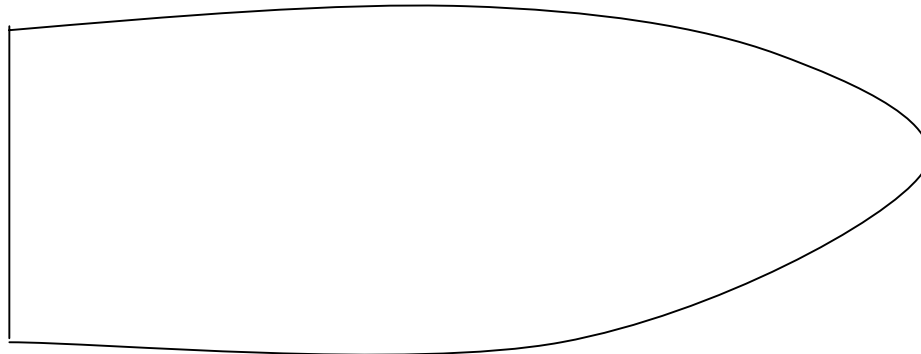
( 註 : 一份此圖則必須放置在船上 )

簡單圖則 Plan(Simp)-M-01/ / 16 etc



側面圖

Side View Profile



甲板

DECK

### Remarks 備註:

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如設有上層建築, 請標示
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3. Not to proportion/scale.  
不按比例/標尺

Vessel information 船隻資料	Content 資料內容
1. File No. 檔案號碼	
2. Licence No. / Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻 類別 / 類型 / 種類	
4. No. of Main engines/ Propellers. 主機 / 推進器 數量	
5. Main engine maker /type. 主機製造商/型類	
6. Main engine serial number. 主機號碼	
7. Total engine power (kW)/ RPM. 主機總功率 (千瓦) / 轉速	
8. Fuel type/ tank no./ total capacity 燃油類 / 油缸數量 / 總容量	
9. Generator IC engine maker /type. 發電內燃機製造商/型類	
10. Generator engine serial number. 發電內燃機號碼	
11. Fuel type/ tank no./ total capacity 燃油類 / 油缸數量 / 總容量 (If not same as above / 如與上不同)	
(Please show location/ 請顯示位置)	
Approved by 經辦審批	Date 日期

For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc

適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

## Electrical Installation Plans

### 電器及其系統設備圖則

( Note : A copy of this diagram must be kept onboard )

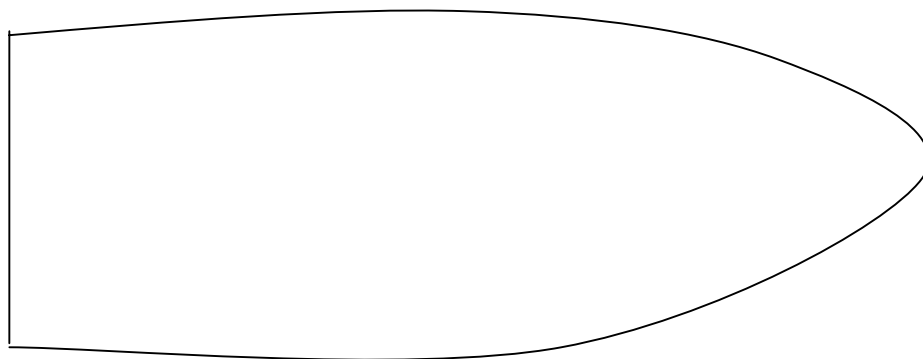
( 註 : 一份此圖則必須放置在船上 )

簡單圖則 Plan(Simp)-E 01/ / 05 etc



側面圖

Side View Profile



甲板

DECK

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如設有上層建築, 請標示
2. Details can be supplemented by photos or separate sheets.  
詳程可以相片補充或另加紙張
3. Not to proportion/scale.  
不按比例/標尺

Vessel information 船隻資料	Content 資料內容
1. File No. 檔案號碼	
2. Licence No./ Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻 類別 / 類型 / 種類	
4. Generator maker /type. 發電機製造商/型類	
5. No. of Generator / serial no.. 發電機數目 / 號碼	
6. Total engine power (kW)/ RPM. 發電總功率(千瓦) / 轉速(每分)	
7. Voltage (V) / Frequency (Hz) 電壓(伏特) / 週頻(轉數/每秒)	
(Please show location/ 請顯示位置)	
Approved by 經辦審批	Date 日期

For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc  
 適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

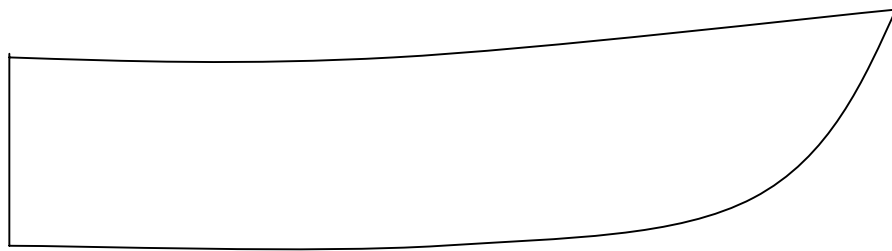
## Machinery & Electrical Installation Plans

### 機器與電器及其系統設備圖則

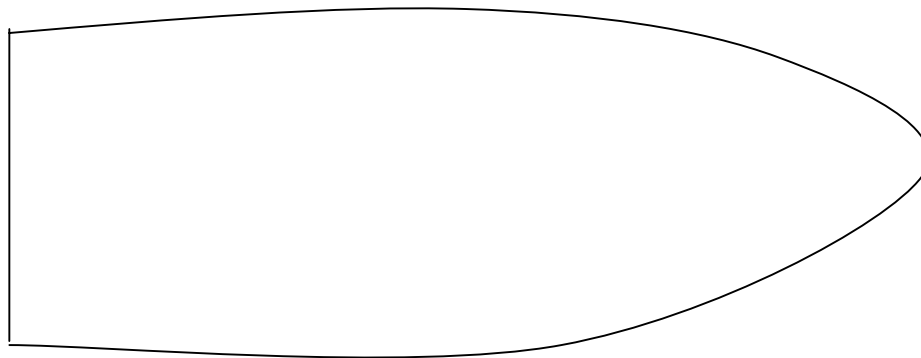
( Note : A copy of this diagram must be kept onboard )

( 註 : 一份此圖則必須放置在船上 )

簡單圖則 Plan(Simp)-M-01/ / 16 & E-01/ /05 etc



側面圖  
Side View Profile



甲板  
DECK

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8. Fuel type/ tank no./ total capacity 燃油類 / 油缸數量 / 總容量	
9. Generator IC engine maker / type. 發電內燃機製造商/型類	
10. Generator engine serial no. 發電內燃機號碼	
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13. Total engine power (kW)/ RPM. 發電總功率 (千瓦) / 轉速(每分)	
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(Please show location/ 請顯示位置)	
Approved by 經辦審批	Date 日期

### Fire Detection System

#### 1. General

Every automatic fire alarm and fire detection system shall comply with the following requirements.

- 1.1 The system shall be capable of immediate operation at all times and no action of the crew shall be necessary to set it into operation.
- 1.2 The system shall be based on the self monitoring principle and include facilities for periodic testing.
- 1.3 The system shall not be used for any purpose other than fire detection.
- 1.4 The system shall be operated by an abnormal air temperature, by an abnormal concentration of smoke or by other factors indicative of incipient fire in any one of the spaces to be protected. Systems which are sensitive to air temperature shall not operate at less than 57°C and shall operate at a temperature of not greater than 74°C when the temperature increase to those levels is not more than 1°C per minute. The permissible temperature of operation may be increased to 30°C above the maximum deckhead temperature in drying rooms and similar places of normally high ambient temperature. Systems which are sensitive to smoke concentration shall operate on the reduction of the intensity of a transmitted light beam, scatter of a light beam or changes in electric current in an ionising chamber by an amount determined by the Director. Other methods of operation may be accepted if the Director is satisfied that such methods are equally effective.
- 1.5 The detectors may be arranged to operate the alarm by the opening or closing of contacts or by other appropriate methods and shall be of a re-settable type such that after response to an alarm condition they can be restored to normal surveillance without the renewal of any component. They shall be fitted in an overhead position and shall be suitably protected against impact and physical damage. They shall be suitable for use in a marine environment. They shall be placed in an open position clear of beams and other objects likely to obstruct the flow of hot gases or smoke to the sensing element. Detectors operated by the closing of contacts shall be of the sealed contact type.
- 1.6 Each section of detectors shall include means for giving a visual and audible alarm automatically at one or more indicating units whenever any detector comes into operation. Such units shall give an indication of any fire and its location in any space served by the system. A list or plan shall be displayed adjacent to each indicating unit showing the spaces covered by each section and the location of that section in the ship.

- 1.7 Provision shall be made for testing the correct operation of the detectors and the indicating unit by supplying means for applying hot air or smoke at detector positions.
- 1.8 At least one spare detector of each type for each section shall be provided.
- 1.9 The power supply for the electrical equipment used in the operation of the system shall be from an independent source which would not be the interruption of normal supply. The supply shall be provided by separate feeders reserved solely for that purpose. The electric wiring shall be so arranged as to avoid galleys, machinery spaces and other enclosed spaces having a high fire risk except in so far as it is necessary to provide for fire detection and alarm in such spaces or to reach the appropriate switchboard.
- 1.10 Suitable instructions for testing and maintenance shall be available. Accommodation and service spaces.
- 1.11 In accommodation and service spaces, the system shall comply with the following additional requirements-
  - (a) Detectors shall be grouped into separate sections. Each section shall contain not more than 100 detectors and shall cover not more than 50 rooms. No section covering such spaces shall cover machinery spaces of Category A or cargo spaces.
  - (b) In passenger ships, each section shall not serve spaces on both the port and starboard sides of the ship nor more than one deck and neither shall it be situated in more than one main vertical zone, except that the Director, if satisfied that the protection of the ship against fire will not thereby be reduced, may permit such a section of detectors to serve both port and starboard sides of the ship and more than one deck.
  - (c) At least one detector shall be installed in each space where detection facilities are required and in accommodation and service spaces there shall be not less than one detector for approximately each 37 square metres of deck area. In large spaces the detectors shall be arranged in a regular pattern so that no detector is more than 9 metres from another detector or more than 4.5 metres from a bulkhead. However the surface area and distances referred to in this sub-paragraph may be varied if the Director deems that safety is not lessened taking into account the type of detectors used, the conditions of ventilation and other factors prevailing in the space in which the detectors are installed.
  - (d) The indicating units required in paragraph 1.6 shall be centralised on the navigating bridge or in the main fire control station of passenger ships which shall be so manned or equipped as to ensure that such alarm from the system is immediately received by a responsible member of the crew.

## **2. Machinery spaces**

In machinery spaces the system shall comply with the following additional requirements-

- (a) The system shall be designed and the detectors so positioned as to detect rapidly the onset of fire in any part of these spaces and under any normal conditions of operation of the machinery and variations of ventilation as required by the possible range of ambient temperatures.
- (b) No section covering a machinery space of Category A shall cover any accommodation, service or cargo spaces.
- (c) Except in spaces of restricted height and where their use is specially appropriate, systems using only thermal detectors shall not be permitted.
- (d) The indicating units required in paragraph 1.6 shall be located in sufficient places to ensure that any alarm is received by a responsible engineer officer. When the bridge is unmanned in port the alarm shall sound in a place where a responsible person will be on duty. In addition, when a machinery space of Category A is to be left periodically unattended, such indicating units shall also be located on the navigating bridge.

## **3. Cargo spaces**

In cargo spaces the system shall comply with the following additional requirements-

- (a) Detectors shall be grouped into separate sections such that a section shall cover not more than one cargo space. Each section shall contain not more than 100 detectors.
- (b) The type, number and spacing of detectors shall be to the satisfaction of the Director taking into account the conditions of ventilation and other factors prevailing in the space in which the detectors are installed.
- (c) The indicating units required by paragraph 1.6 shall be located on the navigating bridge or in the main fire control station, if fitted, which shall be so manned or equipped to ensure that the alarm from the system is immediately received by a responsible member of the crew.



Note: Machinery spaces of category A are those spaces and trunks to such spaces which contain:

1. internal combustion machinery used for main propulsion; or
2. internal combustion machinery used for purpose other than main propulsion where machinery has in the aggregate a total power output above 375kW;
3. any oil-fired boiler or fuel unit, and any trunking leading to above spaces.

### CO<sub>2</sub> Fixed Installation for Fire Fighting System

1. In every such installation provided for the injection of CO<sub>2</sub> into any compartment for fire extinguishing purposes, the pipes for conveying the gas shall be provided with control valves or cocks which shall be so placed that they will be easily accessible and not readily cut-off from use by an outbreak of fire within the protected compartment. Such control valves or cocks shall be permanently marked to indicate clearly the compartments to which the pipes are led. Suitable provisions shall be made to prevent inadvertent admission of gas to any compartment. Where cargo spaces fitted with a gas extinguishing system for fire protection are used as passenger spaces the extinguishing connection shall be blanked during service as a passenger space.
2. The piping shall be so arranged as to provide effective distribution of the fire extinguishing gas.
3.
  - (a) When carbon dioxide is used as the extinguishing medium in cargo spaces, the quantity of gas available shall be sufficient to give a minimum volume of free gas equal to 30% of the gross volume of the largest cargo compartment in the ship which is capable of being sealed.
  - (b) When carbon dioxide is used as the extinguishing medium in cargo spaces containing motor vehicles with fuel in their tanks for their own propulsion or in closed ro/ro spaces or closed ro/ro spaces used for bulk stowage of cargo, the quantity of gas available shall be sufficient to give a minimum volume of free gas equal to 45% of the gross volume of the largest such cargo space which is capable of being effectively sealed.
  - (c) When carbon dioxide is used as an extinguishing medium for machinery spaces or pump rooms the quantity of gas available shall be sufficient to give a minimum quantity of free gas equal to the larger of the following quantities, either-
    - (i) 40% of the gross volume of the largest space, such volume being measured up to the level at which the horizontal area of the casing is 40% or less of the gross area of such space measured midway between the tank top and the lowest part of the casing; or
    - (ii) 35% of the gross volume of the largest space including the casing: provided that the aforesaid percentages may be reduced to 35% and 30% respectively for ships of under 2000 tons, not being passenger ships. Where the volume of free air contained in air receivers in any machinery space of Category A is such that, if released in such space in the event of fire, such a release of air within the space would seriously affect the efficiency of the fixed fire installation, an additional quantity of carbon dioxide shall be provided.

(d) When carbon dioxide is used as the extinguishing medium for machinery spaces and cargo spaces or pump rooms the quantity of gas shall not be required to be more than the maximum required for the largest compartment so protected.

(e) For the purpose of this paragraph the volume of gas shall be calculated at 0.56 cubic metre to the kilogram.

(f) (i) When carbon dioxide is used as the extinguishing medium for machinery spaces or pump rooms the arrangements shall be such that 85% of the gas required to provide the concentration referred to in subparagraph (c) when applied to the space concerned can be discharged into that space within 2 minutes.

(ii) When carbon dioxide is used as the extinguishing medium in cargo spaces containing motor vehicles with fuel in their tanks for their own propulsion or in closed ro/ro spaces the arrangements shall be such as to ensure that at least two thirds of the gas required for the space can be introduced within 10 minutes.

(g) Carbon dioxide cylinder storage rooms shall be situated at a safe and readily accessible position and shall be effectively ventilated. Access to such rooms shall normally be from the open deck and shall be independent of the protected space and accommodation spaces. Access doors shall be gas-tight and bulkheads and decks which separate such rooms from enclosed spaces shall be gas-tight and adequately insulated.

(h) Means shall be provided for giving audible warning to persons within the space when carbon dioxide is about to be released into any working space. The warning shall operate for a suitable period before the gas is released.

4. No part of the control, storage or generating arrangement of any fixed fire extinguishing installation shall be situated forward of the collision bulkhead in any passenger ship.
5. Operating instructions in clear and permanent lettering shall be affixed to every fixed fire extinguishing gas installation or in a position adjacent thereto.

### Automatic Sprinkler System

1. The automatic sprinkler and fire alarm and detection system shall be of the wet type with overhead sprinklers and shall at all times be fully charged. Small sections of the dry type may be permitted as necessary.
2. The sprinkler pump and tank shall be situated in a position reasonably remote from any machinery space of Category A and shall not be situated in any space required to be protected by the sprinkler system.
3. Details of the system

The system shall comply with the following arrangements-

#### **(a) Pressure tank**

(i) A pressure tank of adequate strength and construction having regard to the charge of water specified in this subparagraph shall be provided and shall contain a standing charge of fresh water equivalent to the amount of water which would be discharged in one minute by the pump referred to in subparagraph (e)(v). The total capacity of the tank shall not be less than twice the standing charge of fresh water required for the automatic operation of the system. The arrangements shall provide for maintaining such air pressure in the tank to ensure that when the standing charge of fresh water in the tank has been used the pressure will be not less than the working pressure of the sprinkler plus the pressure due to a head of water measured from the bottom of the tank to the highest sprinkler in the system.

(ii) The pressure tank shall be fitted with an efficient relief valve and with a water gauge glass and a pressure gauge. Stop valves or cocks shall be provided at each of the gauge connections. Means shall be provided to prevent the inadvertent admission of sea water into the tank.

#### **(b) Air supply**

The pressure tank shall be connected to an air supply capable of maintaining in the tank the pressure required by subparagraph (a).

#### **(c) Pipes**

(i) The pipes forming part of the system shall be made of steel or other suitable material and shall be of adequate strength having regard to the pressure to which they may be subjected, and shall be properly jointed and supported.  
(ii) Means shall be provided which will enable the standing fresh water charge in the pressure tank to be replenished and the pipes to be flushed with fresh water after the use of salt water in the system. (iii) Any pipes which may be

affected by frost shall be insulated so as to prevent the water therein from freezing.

**(d) External connections**

Every sprinkler system shall have a connection from the ship's fire main provided with a screw-down valve and a non-return valve at the connection which will prevent a back flow from the sprinkler system to the fire main. In addition, there may be fitted hose couplings with shut-off valves and non-return valves situated close to the couplings for the purpose of coupling to a shore supply, but no other external connection shall be fitted. The sprinkler system shall be a self-contained unit. Shut off valves for the shore supply and the ship's fire mains connections shall be clearly and permanently marked to show their purpose and shall be capable of being locked in the closed position.

**(e) Pump**

(i) An independent power pump shall be provided solely for the purpose of continuing automatically the discharge of water from the sprinkler heads. The pump shall be brought into action automatically by the pressure drop in the system before the standing fresh water charge in the pressure tank is completely exhausted.

(ii) The pump shall have a suction direct from the sea which shall be independent of any other suction and which shall be in the space containing the pump. The sea inlet to the pump shall be so arranged that when the ship is afloat it will not be necessary to shut off the supply of sea water to the pump for any purpose other than the inspection or repair of the pump.

(iii) The pump shall have fitted on the delivery side a test valve with a short open-ended discharge pipe. The effective area through the valve and pipe shall be adequate to permit the release of the required pump output while maintaining the pressure in the system specified in subparagraph (a).

(iv) The arrangements shall be such as will prevent the pump from passing sea water into the pressure tank.

(v) The pump and the piping system shall be capable of maintaining the necessary pressure at the level of the highest sprinkler to ensure a continuous output of water sufficient for the simultaneous coverage of a minimum area of 280 square metres at the application rate specified in subparagraph (f)(v).

**(f) Sprinkler heads**

(i) Sprinkler heads shall be grouped into separate sections, each of which contains not more than 200 sprinkler heads. A section of sprinkler heads shall not serve more than 2 decks and shall not be in more than 1 water-tight compartment. Provided that, in any ship, a section of sprinkler heads may serve more than 2 decks or be in more than 1 vertical zone if the Director is satisfied that the protection of the ship against fire is not thereby reduced.

(ii) Each section of sprinkler heads shall be controlled by one control valve and no other valves shall be provided for controlling any of the sprinklers in that section. The control valves shall be readily accessible and their location shall be clearly and permanently indicated. Means shall be provided to prevent the operation of the control valves by any person not authorised to do so by the owner or owner representative of the vessel.

(iii) A pressure gauge shall be provided at each control valve and at a central station to indicate the pressure of water available throughout the system.

(iv) The sprinkler shall be resistant to corrosion by marine atmospheres and shall come into operation at a temperature of not less than 68°C and not more than 79°C, except in drying rooms and similar hot spaces the operating temperature may be increased by not more than 30°C above the maximum deck head temperature.

(v) Sprinklers shall be placed in an overhead position and spaced in a suitable pattern to maintain an average application rate of not less than 5 litres per square metre per minute over the nominal area covered by the sprinkler. Alternative distribution arrangements or sprinklers providing other amounts of water may be permitted providing the arrangements are no less effective.

(vi) Sprinkler heads shall be spaced not more than 4 metres apart and not more than 2 metres from a bulkhead. They shall be placed as clear as possible of beams or other objects likely to obstruct the projections of water and in such positions that combustible material in the space concerned will be well sprayed.

(vii) At least 6 spare sprinkler heads shall be provided for each section.

**(g) Automatic alarm**

Each section of sprinklers shall include means for giving a visual and audible alarm signal automatically at one or more indicating units whenever any sprinkler comes into operation. Such units shall give an indication of any fire and its location in any space served by the system and shall be secularized on the navigating bridge or in the main fire control station which shall be so manned or equipped as to ensure that any alarm from the system is immediately received by a responsible member of the crew. Such alarm system shall be constructed so as to indicate if any fault occurs in the system.

**(h) Power supply**

Not less than 2 sources of power supply for the sprinkler pump, air compressor and automatic alarm and detection system shall be provided. Where the sources of power are electrical one shall be an emergency source. One supply for the pump shall be taken from the main switchboard and one from the emergency switchboard by separate feeders reserved solely for that purpose. The feeders shall be arranged so as to avoid galleys, machinery spaces and other enclosed spaces of high fire risk except in so far as it is necessary to

reach the appropriate switchboards, and shall be run to an automatic change-over switch situated near the sprinkler pump. This switch shall permit the supply of power from the main switchboard so long as a supply is available therefrom, and be so designed that upon failure of that supply it will automatically change over to the supply from the emergency switchboard. The switches on the main and emergency switchboards shall be clearly labelled and normally kept closed. No other switch shall be permitted in the feeders concerned. One of the sources of power supply for the alarm and detection system shall be an emergency source. Where one of the sources of power for the pump is an internal combustion-type engine it shall, in addition to complying with the provisions of paragraph (2), be so situated that a fire in any protected space will not affect the air supply to the machinery.

**(i) Provision for testing**

(i) A test valve shall be provided for testing the automatic alarm for each section of sprinklers by a discharge of water equivalent to the operation of one sprinkler. The test valve for each section shall be situated near the control valve for that section.

(ii) Means shall be provided for testing the automatic operation of the pump on reduction of pressure in the system.

(iii) Means shall be provided at one of the indicating positions referred to in subparagraph (g) which will enable the alarm and the indicators for each section of the sprinkler system to be tested.

4. A plan shall be displayed at each indicating unit showing the spaces covered and the location of the zone in respect of each section.
5. Suitable instructions for testing and maintenance shall be provided.

## **ANNEX U**

### **SAFE OPERATION OF VESSELS**



## DOMESTIC LIQUEFIED PETROLEUM GAS INSTALLATION

### 1 Marking

- 1.1 Liquefied petroleum gas (LPG) cylinders should be clearly marked of the name of their contents.

### 2 Properties of LPG

- 2.1 Possible dangers arising from the use of LPG appliances include fire, explosion and asphyxiation due to leakage of gas from the installation, etc.
- 2.2 LPG is heavier than air and, if released in a space with coaming, may travel some distance whilst seeking the lowest part of that space and its adjoining spaces. The accumulation of LPG probably poses dangerous consequence and fatality when triggered by inadvertent spark or ignition.

### 3 Storage

- 3.1 No more than 50 kg (or combined water capacity 130 litres) of LPG should be carried on board.
- 3.2 LPG cylinders and expended cylinders should as far as practicable be stowed on open decks. The cylinders and all valves, pressure regulators and pipes leading from such cylinders should be properly secured, protected against mechanical damage, and excessive variations in temperature and direct rays of the sun. The cylinders should be installed upright to prevent liquid from flowing into the pipes.
- 3.3 The LPG cylinder storage locker, and associated pipes and joints should be readily accessible for the check of suspected leaks; and should be as far away from any air pipes, ventilators, hatchways, etc. and close to the cooking appliances as practicable.
- 3.4 Except as necessary for service within the space, electrical wiring and fittings should not be permitted within compartments used for the storage of LPG. Where such electrical fittings are installed, they should be to the satisfaction of the Department for use in a flammable atmosphere. Sources of heat should be kept clear of such spaces and "不准吸煙 No Smoking" and "不准明火 No naked light" notices should be displayed in a prominent position.
- 3.5 Compartments used for the storage of LPG should not be used for storage of other combustible products nor for tools or objects nor part of the gas distribution system. The LPG locker should be marked with "LPG" on the door of the locker.

## 4 Installation

### 4.1 LPG pipes-

- (a) LPG pipes should be of solid drawn copper alloy or stainless steel pipes, with appropriate compression or screwed fittings.
- (b) Flexible connections should be avoided. Should they be used, an approved type of synthetic rubber hose connection should be fitted. When used with flexible connections, appliances should be controlled from the nearest isolating valve fitted on metallic pipe.

### 4.2 LPG cylinder storage locker

- (a) For storage above main deck-
  - (i) ventilation openings should be provided on top and bottom of locker;
  - (ii) when LPG pipe is arranged to pass through bulkhead, the opening on bulkhead should be of suitable size and height, to avoid the gas being leaked into the accommodation. If the LPG pipe is a synthetic rubber hose, precaution should be taken to prevent the hose being chafed. A protecting conduit should be fitted when necessary.
- (b) For storage below main deck-
  - (i) the locker bulkhead should be of gastight construction. Bulkhead piece should be fitted when LPG pipe is arranged to pass through bulkhead;
  - (ii) adequate ventilation should be provided at top and bottom of locker and be led overboard;
  - (iii) gas detectors should be fitted to detect any accumulation of LPG in the bilge.

- 4.3 Newly fitted or replaced gas consuming appliances should be of type approved by Gas Authority, EMSD and marked with “GU” on them. Existing Gas consuming appliances (e.g. stove, water heater etc.) are recommended to be fitted with automatic gas shut-off device to stop the gas supply in the event of flame failure.



## **5 Maintenance**

- 5.1 Changing cylinders should be done according to instructions of gas dealers. If it is suspected that either a cylinder or valve is faulty, put it ashore as quickly as possible, and in the meantime keep it in the open air, clear of any gratings, hatches or other openings leading below decks.
- 5.2 Sufficient ventilation should be provided at the cooking space to displace the products of combustion and respiration.

## **6 Inspection**

- 6.1 The vessel's crew or operator should regularly examine joints of the LPG installation. If a leakage is suspected, the cylinder stop valve should be turned off immediately; the vessel's engine should be stopped, no switch on/off of electrical appliances and no other means of ignition allowed until it is certain that the vessel is clear of gas. Never put an appliance back into use without the leak having been found and rectified.

## **SAFETY PRECAUTION ON THE PROPER STORAGE AND USING OF PETROL**

- 1 No excessive quantity of petrol should be carried on board vessel.
- 2 If portable container is used to carry petrol, the container should be of a type approved by the manufacturer of petrol engine and fitted with air vent (if necessary, owner must submit supporting document issued by the manufacturer, e.g. invoice, sale receipt etc.).
- 3 The portable container should be stored in a well ventilated place, if necessary, on the open deck. The containers and all valves and pipes leading from such containers should be made of suitable material and properly secured and protected against mechanical damage, excessive temperature variations and direct sunlight. The container, storage cabinet, associated valve, pipes and joints should not have any fuel leaking, and should be readily accessible for checking of suspected leaks.
- 4 The storage spaces should be kept clear of any heat source and caution notices "不准吸煙 No Smoking" and "不准明火 No naked light" should be displayed in a conspicuous place when necessary.
- 5 Petrol should not be used for other purposes, e.g. cleaning of engine parts, which may impose un-necessary fire risk.
- 6 Unless it is certain that the containers storage space is well ventilated, otherwise the containers and the petrol should be removed from the storage space which is expected to be unattended for a period of time.

**PRECAUTIONS TO BE TAKEN BEFORE ENTERING TANKS AND  
OTHER ENCLOSED SPACES ON LOCAL VESSELS**

1. Entering a tank or other enclosed space without first taking the precaution of thorough ventilation and atmospheric test is extremely dangerous. There is no guarantee that the atmosphere inside the tank would still be life supporting after being closed for a long period and no person should be allowed to enter such a space without first ensuring that adequate oxygen is present.

2 The Shipping and Port Control Ordinance requires that no work should be carried out in dangerous conditions. It shall be the duty of the owner, coxswain or person in charge of a vessel to ensure a safe working condition by providing adequate ventilation of every workplace, or other place on a local vessel to which persons employed are permitted for access, or are required to have to access, in the course of their employment. It is important that owner, coxswain or person in charge of a local vessel should ensure relevant safety measures are carried out and complied with.

3 Examples of Enclosed Spaces onboard vessel inadvertently ignored

3.1 Some places may not be considered dangerous in the beginning but become an enclosed space due to the change of condition within the space or in their vicinity. For instance, a cleaned ballast tank would be painted for better protection but at the time of painting, the ballast tank atmosphere would be filled up with solvent vapours or paint oil mist if proper ventilation is not maintained.

3.2 In case a space normally with continuous supply of air or ventilation gradually has reduced or ceased its ventilation, the space would then become an enclosed space with inherent hazard. For the example given above, it may form a flammable atmosphere leading to gas explosion if its ventilation is not immediately restored.

4 Assessment and Identification of Potential Hazards

4.1 The potential hazards in an enclosed space include one or a combination of the following conditions such as oxygen deficiency, toxicity or flammability of cargoes or other substances in the form of gases or vapours or contaminants of chemicals which are mainly due to a lack of sufficient and continuous ventilation.

4.2 The followings are general guidelines which could be considered in the assessment and identification of potential hazard so that appropriate precautions can be taken:

(a) Oxygen Deficiency

The oxygen of confined space may have been reduced owing to a number of reasons:

- (i) rusting may have occurred due to oxygen combining with steel.
- (ii) oxygen absorbing chemical or cargoes may have been carried or gases from volatile cargoes may have displaced the oxygen in tanks.
- (iii) oxygen may have been displaced by the use of carbon dioxide or other fire-extinguishing or preventing media.

(b) Toxicity of Oil Cargoes

- (i) Hydrocarbon gases are flammable as well as toxic and may be present in fuel or cargo tanks which have contained crude oil or its products.
- (ii) Hydrocarbon gases or vapours may also be present in pump rooms and cofferdam, duct keels or other spaces adjacent to cargo tanks due to the leakage of cargo.
- (iii) The components in the vapour of some oil cargoes, such as benzene and hydrogen sulphide are very toxic.

(c) Toxicity of other substances

- (i) Cargoes carried in oil carrier, edible oil carrier, noxious liquid substances carrier and dangerous goods carrier, may be toxic.
- (ii) There is the possibility of leakage from drums of chemicals or other packages of dangerous goods where there has been mishandling or incorrect stowage or damage due to heavy weather.
- (iii) The trace components of inert gas such as carbon monoxide, sulphur dioxide, nitric oxide and nitrogen dioxide are very toxic.
- (iv) The interaction of vegetable or animal oils with sea water may lead to the release of hydrogen sulphide which is very toxic.
- (v) Hydrogen sulphide or other toxic gases may be generated where the residue of grain or similar cargoes permeates into or chokes bilge pumping systems.
- (vi) The chemical cleaning painting or the repair of tank coating may involve the release of solvent vapours.

(d) Flammability

- (i) Flammable vapours may still be present in cargo or other tanks that have contained oil product or chemical cargoes.
- (ii) Cofferdams and other spaces that are adjacent to cargo and other tanks may contain flammable vapours should there have been leakage into the space.

(e) Other Hazards

- (i) Although the inhalation of contaminated air is the most likely route through which harmful substances enter the body, some chemicals can be absorbed through the skin.
- (ii) Some of the cargoes carried in chemical tankers are irritant or corrosive if permitted to come into contact with the skin.
- (iii) The disturbance of rust, scale or sludge residues of cargoes of animal, vegetable or mineral origin, or of water that could be covering such substances may lead to the release of toxic or flammable gases

## 5. Types of tanks or other enclosed spaces onboard local vessels

5.1 Tanks or other enclosed spaces normally onboard local vessel are referred to as:

- (i) seldom accessed spaces such as pipe ducts, pipe tunnels, anchor chain lockers, storerooms or rope store rooms etc.
- (ii) places having an enclosed nature such as cargo holds and tanks, freight containers and pressure reservoirs etc.;
- (iii) normally void spaces such as void tank, cofferdam, ballast tank and double bottoms etc.;

## 6. Precautionary measures

6.1 If enclosed spaces or tanks; or their adjacent or connected spaces are involved or recently have been involved in carrying dangerous goods, a competent person is required to carry out assessment and identify the potential hazards of enclosed spaces or tanks and appropriate tests are made, so that precautionary and safety measures are carried out as necessary.

6.2 Precautions should be taken as appropriate before a potentially hazardous enclosed space or tank is entered so as to make the space or tank safe for entry without breathing apparatus and to ensure it remains safe whilst working personnel are within the space or tank. For enclosed spaces or tanks other than those indicated in para 6.1 above, following precautions should be taken as appropriate:-

- (i) Forced and continuous ventilation must be arranged for an adequate period prior to conduct test or entry and maintained at all time if working personnel are within the space or tank.
- (ii) The space or tank must be well illuminated or portable illumination equipment is used for the entry operation.
- (iii) Any inlet or piping of gases and fluids with connection to the space or tanks being entered must be isolated and well secured.
- (iv) If there is any doubt about the atmosphere of the enclosed space or tank being entered, appropriate tests should be carried out to ascertain the condition. Testing of the enclosed space or tank should be carried out by persons trained in the use of the equipment. Tests should be carried out before entry and at regular interval thereafter if working personnel are within the space.
- (v) Where necessary, any sludge or deposit or other residues liable to give off fumes should be cleaned out.
- (vi) If the enclosed space or tank is uncertain of its internal hazard condition other than atmospheric condition mentioned in para. 6.2(iv) above, the owner, coxswain or person in charge of a local vessel should consider to implement the entry operation and to carry out necessary precautionary and safety measures prior to entry.
- (vii) For each enclosed space or tank entry operation, there should be a person in charge who is responsible for ensuring all necessary precautionary and safety measures including those mentioned in this practice are complied with prior to the entry and during the work being carried out in an enclosed space or tank. The person in charge of the entry operation

should give briefing on safety measures relating to the entry operation to the crew or workers who are required to enter or work in an enclosed space or tank.

6.3 If enclosed spaces or tanks or their adjacent or connected spaces or tanks are involved or recently have been involved in carrying dangerous goods, the following additional measures should be considered and carried out:-

- (i) A competent person is required to assess and identify hazards and to conduct the test of the enclosed space or tank. The tests should cover all identified potential hazards, such as oxygen deficiency, toxicity gas or flammability of cargoes or other substances, gases or vapours etc. as related.
- (ii) For prolonged working or staying in an enclosed space or tank, regular checking of the working atmosphere should be performed at appropriate stages or intervals.
- (iii) The person making the first entry should wear breathing apparatus, smoke helmet or smoke mask and carry with himself a lifeline. An attendant who is fully aware of the emergency procedure should also stand by at the entrance for any emergency situation that may arise. These persons must be suitably trained for the purpose intended.
- (iv) An agreed and tested system of communication should be established between any person entering the space or tank and the attendant at the entrance, and between the attendant at the entrance to the space and the owner, coxswain or person in charge of the vessel.
- (v) Portable illumination equipment or torches or electrical equipment used in enclosed spaces or tanks should be explosion-proof type. If there is identified hazard of toxicity from chemical substances, personnel protection gears should be worn.
- (vi) No source of ignition should be taken into the space or tank unless the person in charge of the entry operation is satisfied that it is safe to do so.
- (vii) Rescue procedure and equipment must be in readiness to cater for emergency situations.

6.4 For enclosed spaces, particularly those below decks and normally without forced ventilation, their entrances should be well secured and, where practicable, locked with the keys kept by the owner, coxswain or person in charge of the vessel who may authorize any crew or workers to enter to those spaces when the condition of those spaces are ascertained safe for entry.

6.5 To ensure effective ventilation, one should try to open up at least two openings of the enclosed space or tank concerned as far as practicable for such arrangement. If only one opening is available, thorough ventilation can also be achieved by arranging a drop-in flexible ventilation trunk, of size smaller than the opening, for the air inlet to reach the inner part of the space allowing longer hours of forced ventilation.

6.6 It is important that forced ventilation is maintained at all time when personnel are working within the space. If for any reason that the ventilation is ceased or stopped, all personnel in the enclosed space or tank should be evacuated immediately. For enclosed space relating to cargo holds with natural ventilation,



ample time should be allowed to ensure thorough ventilated and then tested to ensure that all harmful gasses are removed and no pockets of oxygen deficient atmosphere remain.

6.7 In case there is a casualty happened in an enclosed space or tank caused by gas or lack of oxygen, anyone who is entering the space for the rescuing should also wear breathing apparatus, smoke helmet or smoke mask and carry himself with a lifeline and arrange an attendant standing-by at the entrance.

6.8 It is recommended that warning notices should be posted at pump room entrances prohibiting entry unless authorised by the owner, coxswain or person in charge of the vessel and that similar notices concerning cargo tanks and other enclosed spaces, where applicable, should be posted in prominent places.

## 7. Competent persons

7.1 A competent person for the purpose of this practice is a person capable of making an informed assessment of the likelihood of a dangerous or hazardous atmosphere being present or arising subsequently in the enclosed space or tank. This person should have sufficient theoretical knowledge and practical experience in the testing of oxygen, flammable and toxic gases or substances; and relating to the potential hazards that might be encountered in order to be able to assess and conduct testing if the precautions are necessary. This assessment should include consideration of any potential hazards associated with the particular space or tank to be entered. It should also take into consideration dangers from neighbouring or connected spaces as well as at work that has to be done within the space or tank.

7.2 The following persons, having obtained not less than one year relevant shipboard working experience involving assessment and testing of enclosed spaces and tanks for entry operation in connection with the carriage of dangerous goods, are acceptable as competent persons for the purpose of this practice :-

- (i) persons approved by the Director of Marine under Dangerous Goods (Shipping) Regulations ( Cap.295C);
- (ii) persons approved by Director of Fire Services under Dangerous Goods (General) Regulations (Cap295B);
- (iii) holders of Class 2 Certificate of Competency as Deck Officer ( foreign-going vessel ) or above issued or recognised by Director of Marine ; and
- (iv) holders of Class 2 Certificate of Competency as Marine Engineer Officer( foreign-going vessel) or above issued or recognised by Director of Marine.

## 8. Training and instruction information

8.1 An employer / owner or person in charge of the vessel should provide any necessary training and instruction information to employees / coxswain or crew who would be involved in enclosed spaces or tanks in entry operation as person-in-charge, persons involved in entering the concerned spaces or tanks and entrance attendant in order to ensure the relevant safety requirements are complied with. The training should include:-

- (i) recognition of the situations and activities into hazardous enclosed spaces or tanks likely to lead to the presence of the dangerous atmosphere

- (ii) the hazards associated with entry into hazards likely to encounter in enclosed spaces or tanks and precautions taken;
- (iii) the use and maintenance of any equipment and protection gears as required for the entry into enclosed spaces or tanks; or
- (iv) instruction and drills in rescue from enclosed spaces or tanks.

8.2 The following trained or certificated persons are considered as being suitably trained for persons involved in entry operation and person in charge of the entry operation of the tanks and enclosed spaces for the purpose of this practice :-

- (i) holders of Local Master Certificate of Competency ( less than 300 NT) or Local Engineer Operator Certificate of Competency ( over 150 hp) and with specialized training on local tanker safety or dangerous goods safety organized by Maritime Services Training Institute recognized / approved by Director of Marine.
- (ii) holders of Class 3 Certificate of Competency as Deck Officer ( foreign-going vessel ) or above issued or recognised by Director of Marine; or
- (iii) holders of Class 4 Certificate of Competency as Marine Engineer Officer( foreign-going vessel) or above issued or recognised by Director of Marine.

8.3 For the purpose of this practice, the following trained or certificated persons are considered as being suitably trained for persons involved in entry operation and person in charge of the entry operation of the tanks and enclosed spaces other than those indicated in para. 6.1 above which would mainly encounter the potential hazard of oxygen deficiency only:-

- (i) holders of a certificate of Works Supervisor Safety Training Course issued by an issuing authority approved by the Director of Marine and has been suitably trained in using of breathing apparatus.

8.4 The following trained or certificated persons are considered as being suitably trained for entrance attendants involved in entry operation of enclosed spaces or tanks for the purpose of this practice :-

- (i) one-day course of safety training on enclosed or confined spaces organized by Occupational Safety and Health Council or Maritime Services Training Institute recognized / approved by Director of Marine.

**[Table-1] Minimum Safe Manning Requirements for Hong Kong Licensed Vessels****operating in Hong Kong Waters and River Trade Limits** [Remark (1), (2) and (3)]

(These requirements on Minimum Safe Manning are based on vessels meeting unmanned engine room installation requirements)

Minimum Safe Manning Standards			Mechanically Propelled Class II Vessels - Types and Length Limits						
Persons onboard	Trading Area/ Vessel Length (L)	No. of Persons	Tug		Dry Cargo Vessel <sup>(c)</sup> and Oil Carrier/Tanker <sup>(f)</sup>				
			L < 24m	24m ≤ L < 35m	L < 24m	24m ≤ L < 35m	35m ≤ L < 50m	50m ≤ L < 75m	75m ≤ L < 100m
Coxswain (a) (h)	Hong Kong Waters	1	1	1	1	1	1	1	1
	River Trade Limits <sup>(b)</sup>	2 <sup>(g)</sup>	2	2	2	2	2	2	2
Engine Operator <sup>(a)</sup>	Hong Kong Waters or River Trade Limits	1 <sup>(e)</sup>	1	1	1	1	1	1	1
Deck crew <sup>(d)</sup>	Hong Kong Waters or River Trade Limits	as below							
	24m ≤ L < 35m	+1	-	1	-	1	1	1	1
	35m ≤ L < 50m	+1	-	-	-	-	1	1	1
	50m ≤ L < 75m	+1	-	-	-	-	-	1	1
	75m ≤ L < 100m	+1	-	-	-	-	-	-	1
Hong Kong Waters: Minimum Manning Scale			2	3	2	3	4	5	6
River Trade Limits: Minimum Manning Scale			3	4	3	4	5	6	7

Remarks: (1) These requirements are made under section 11 of Merchant Shipping (Local Vessels) (General) Regulation. The minimum safe manning scales are prescribed for practical guidance of owners and coxswains to ensure sufficient crew onboard with appropriate skills and experience, having regard to vessel size, speed, power, duration and nature of voyage or trade area, equipment and machinery commonly adopted for different types of vessels, for the purpose of maintaining general surveillance and safe navigation, mooring and unmooring operation safety, safe of carriage of cargo during transit, measures on prevention of fire and pollution of environment and the handling of general emergency situation. For vessel types or operation condition or situation outside the above basic scope would require consideration or assessment on case by case basis by Marine Department. In general, the manning crew number would be expected higher for additional work or tasks to be taken by crewmember on repair maintenance and business/cargo handling etc. The requirements in this Annex should be complied together with those specified in Chapter XII of this Code.

(2) For Class I vessels including passenger ferries or high speed ferries operating in Hong Kong waters, the manning requirements would depend on their operational needs. Marine Department will prescribe the minimum safe manning requirement individually through making reference to necessary assessment including fire and emergency drills etc. during final survey of the vessel.

(3) On HK licensed fishing vessels operating in mainland waters, all crewmembers (including coxswain & engine operator) shall carry “four mini certificates” and maintain necessary watchkeeping duties and minimum manning as required by mainland authority. In Hong Kong waters, owner and Master / Coxswain should observe the practice indicated in Note (h) below with particular consideration of safe navigation and the size and length of the vessel.

Notes: (a) Crew of Vessels should hold relevant basic maritime safety training certificates (see Remark (3) above and Note (d) below). Types of Local Certificates of Competency as required under statutory requirements are indicated in Table-2 of this Annex.

(b) River Trade Limits is defined in section 2 of the Survey Regulation.

(c) Also applicable to Class II vessel types: edible oil carrier, water boat, work boat and pilot boat. The minimum manning of these are treated same as dry cargo vessel.

(d) Deck and engine crew (other than certificated coxswain and engine operator) of mechanically propelled Class II vessels operating in mainland waters should hold the basic maritime safety training certificates issued by Hong Kong Maritime Services Training Institute- Basic Safety Training for Local Vessels' Crew Certificate (Yellow Card), or “Fire fighting Certificate” plus “Personal Survival Techniques Certificates”.

(e) If the navigation time of the vessel is exceeding 12 hours within any 24 hours operation and the vessel does not meet unmanned engine room requirements, one additional engine operator is required for vessels of length exceeding 24 metres.

(f) Coxswain, engine operator and crewmembers working onboard oil tankers/carriers should hold relevant oil tanker/carrier safety training certificates. For oil tankers/carriers, noxious liquid substance carriers and dangerous goods carriers, one extra deck crew is required to assist with deck operational and emergency measures.

(g) (i) Alternative, the arrangement of one coxswain and one assistant coxswain are acceptable provided that the assistant coxswain must hold a Certificate of Competency of one grade lower than the coxswain relevant to the type of vessel and have gained not less than 12 months practical experience relating to River Trade Limits / mainland waters operation and have familiar with watchkeeping duties to assist the Coxswain.

(ii) For those vessels trading to close limits to neighbouring ports of Hong Kong, including Macau, Zhuhai, Shenshen Yantian in Mirs Bay and Shenzhen Shekou in Deep Bay, one assistant coxswain could be waived.

(h) Master /Coxswain should ensure adequate hands of ship's crew available for mooring and unmooring /berthing and unberthing operations as required.

**[Table-2] Statutory Requirements on Local Certificates of Competency for  
Hong Kong Licensed Vessels operating in Hong Kong Waters or River Trade Limits**

Post onboard	Before LVO <sup>(i)</sup> being in force		After LVO <sup>(i)</sup> being in force	
	Size of Vessel - Tonnage (NT) or Main Engine Power (HP)/ (kW)	Local Certificate of Competency required (see Remarks (v))	Size of Vessel - Gross Tonnage (GT)/ Length (m) or Total Main Engine Power (kW)	Local Certificate of Competency required
Master/ Coxswain	Vessel Tonnage: 60 NT and under	Master [60 NT and under]	Vessel Length: not more than 15m	Coxswain <b>Grade 3</b>
	Vessel Tonnage: Exceeded 60 NT But vessel length < 24m and Tonnage < 300 NT	Master [60 NT and under] + Exemption or Master [300 NT and under]	Vessel Length: not more than 24m	Coxswain <b>Grade 2</b>
	Vessel Tonnage: More than 300 NT But not more than 1600 NT	Master [up to 300 NT] <sup>(ii)</sup> + Tonnage Endorsement	Vessel Tonnage: Not more than 1600 GT	Coxswain <b>Grade 1</b> <sup>(iv)</sup>
Engineer/ Engine Operator	Power of one single engine: Up to 150 HP	Engineer [for engine power up to 150 HP]	Main engine total power: Up to 750kW	Engine Operator <b>Grade 3</b>
	Power of one single engine: Over 150 HP, but total main engine power not more than 750 kW	Engineer [for engine power up to 150 HP] + Exemption		
			Main engine total power: Not exceeded 1500kW	Engine Operator <b>Grade 2</b>
	Power of one single engine: Over 150 HP	Engineer [for engine power over 150 HP] <sup>(iii)</sup>	Main engine total power: Up to 3000kW	Engine Operator <b>Grade 1</b> <sup>(iv)</sup>

**Remarks:**

- (i) LVO means [Merchant Shipping (Local Vessels) Ordinance]. Local Certificates of Competency issued under LVO, except those endorsed with restrictions, would be valid for use on relevant size of Class I, II or III vessels.
- (ii) After the enforcement of LVO, holder of the Local Certificate of Competency as Master – [up to 300 NT] issued before LVO with Tonnage Endorsement could operate vessels not exceeded 1600 GT.
- (iii) After the enforcement of LVO, the Local Certificate of Competency as Engineer – [for engine power over 150 HP] issued before LVO would be applicable to vessels with main engine total power not more than 3000kW.
- (iv) Based on experience and/or oral/practical assessment, Director may consider application for endorsement to relevant Grade 1 Local Certificate of Competency to allow the holder to operate vessels more than 1600 GT or main engine total power more than 3000kW.
- (v) Local Certificates of Competency issued before LVO mentioned in above table, including Local Certificates of Competency as Ferry Engineer, would continue to be valid for use on relevant size or type of Class I or II vessels. Local Certificates of Competency as Master of a Fishing Vessel, “Restricted Master” Certificates of Competency and Local Certificates of Competency as Engineer of a Fishing Vessel would continue to be valid for use on the relevant size/type of Class III vessels. If a Local Certificate of Competency is obtained through examination held by Marine Department, the holder of:
  - (1) a Local Certificate of Competency as Master of a Fishing Vessel issued before LVO may apply with prescribed fee paid for the issue of a Local Certificate of Competency as Coxswain Grade 3. If the holder has more than 1 year experience as the master of a fishing vessel or vessels other than pleasure vessel within 3 years before application, he may apply, within 2 years after the commencement date of the new legislation, for a Grade 2 Certificate that is endorsed to the effect that the holder may also act as the coxswain on a fishing vessel of more than 24 metres in length overall.
  - (2) A Local Certificate of Competency as Engineer of a Fishing Vessel issued before LVO may apply with prescribed fee paid for the issue of a Local Certificate of Competency as Engineer Operator Grade 3 or for examination of Grade 2 certificate under LVO.
  - (3) a Local Certificate of Competency as Ferry Engineer issued before LVO may apply with prescribed fee paid for the issue of a Local Certificate of Competency as Engineer Operator Grade 1 under LVO.

**SAFETY BRIEFING FOR CLASS I AND CLASS II VESSELS  
ENGAGED IN VOYAGE CARRYING PASSENGERS**

1. Before the commencement of any voyage carrying passengers, the coxswain should ensure that all persons on board are briefed on the stowage and use of personal safety equipment such as lifejackets, buoyancy aids and lifebuoys, and the procedures to be followed in cases of emergency.
  
2. In addition to the requirements of paragraph 1, the coxswain should brief at least one other person or assistant who will be sailing with the vessel regarding the following: -
  - 2.1 Procedures for the recovery of a person from the sea;
  - 2.2 Location of first aid kit, if any;
  - 2.3 Procedures and operation of radios carried on board, if any;
  - 2.4 Location of navigation light switches and other light switches;
  - 2.5 Location and use of fire-fighting equipment;
  - 2.6 Method of starting, stopping, and controlling the main engine; and
  - 2.7 Handling emergency situations and communication arrangements.
  
3. Safety guide plates or cards will be considered to be an acceptable way of providing the information required in paragraph 2 above.

## **ANNEX V**

## **REFERENCES**

**Relevant Contacts of Marine Department**

**Local Vessels Safety Section**

Harbour Building, 23/Floor, Room 2308, 38 Pier Road, Central, Hong Kong.

Fax: (852)-2542 4679

Enquiry Tel: (852)-2852 4444

Section Head Tel: (852)-2852 4430

**Marine Industrial Safety Section**

Harbour Building, 23/Floor, Room 2315, 38 Pier Road, Central, Hong Kong.

Fax: (852)-2543 7209

Enquiry Tel: (852)-2852 4477

Section Head Tel: (852)-2952 4472

**Local vessels Safety Branch-General Manager**

Harbour Building, 22/Floor, Room 2202A, 38 Pier Road, Central, Hong Kong.

Fax: (852)-2854 9416

Tel: (852)-2852 4406

**Provisions in Merchant Shipping (Local Vessels)( Certification and Licensing) Regulation on matters relating to restrictions on a Class II or III vessel**

The provisions are quoted as below:-

QUOTE

**5. Restrictions on vessels of Classes II and III**

- (1) No full licence or temporary licence for a Class II vessel shall permit the vessel to carry more than 12 passengers.
- (2) No full licence or temporary licence for a Class III vessel shall permit the vessel to carry any passenger.
- (3) A Class III vessel shall be used exclusively for fishing and related purposes.
- (4) If a Class III vessel is used in contravention of subsection (3) without reasonable excuse, the owner, his agent and the coxswain each commits an offence and is liable on conviction to a fine at level 3.

UNQUOTE



**Provisions in Merchant Shipping (Certification and Licensing) Regulation on matters relating to Certificate of Competency required for a Class I, II or III vessel**

The provisions are quoted as indicated below.

**QUOTED**

**PART 4**

**LOCAL CERTIFICATES OF COMPETENCY**

**46 Application of Part 4**

This Part does not apply to a local vessel that is being towed by another vessel.

**47. Vessels required to carry operators holding local certificates of competency**

(1) A Class I, II or III vessel that is fitted with any propulsion engines shall not be underway unless there is on board –

- (a) a person in charge of the vessel who is the holder of a local certificate of competency as a coxswain appropriate for the vessel, or any equivalent certificate specified in the Local Certificate of Competency Rules;
- (b) in addition to the person referred to in paragraph (a), a person in charge of the engines who is the holder of a local certificate of competency as an engine operator appropriate for the total propulsion power of the engines of the vessel, or any equivalent certificate specified in the Local Certificate of Competency Rules; and
- (c) such additional number of crew with such qualification, training and experience as may be specified in the full licence or temporary licence for the vessel.

(2) Subsection (1)(b) does not apply to a local vessel specified in Schedule 3.

(3) It is sufficient compliance with subsection (1)(a) and (b) if –

- (a) a Government surveyor, having regard to the size of the vessel, the engines of the vessel, and the location of the controls, certifies in writing that a Class I, II or III vessel (including its engines) can be properly controlled by one person; and
- (b) the person in charge of the vessel (including its engines) is the holder of both of the certificates referred to in subsection (1)(a) and

(4) A Class IV vessel or an ancillary vessel of a Class IV vessel that is more than 3 metres in length overall or is fitted with engines of more than 3 kilowatts total propulsion power shall not be underway unless there is on board a person in charge of the vessel who is the holder of a local certificate of competency as a pleasure vessel operator, or any equivalent certificate as specified in the Local Certificate of Competency Rules.

(5) If subsection (1) or (4) is contravened, the owner and the coxswain of the local vessel each commits an offence and is liable on conviction to a fine at level 3 and imprisonment for 6 months.

#### **48. Person under 16 prohibited from operating certain vessels**

(1) A person under the age of 16 shall not steer, navigate or operate a local vessel that is fitted with a propulsion engine.

(2) If subsection (1) is contravened by any person, that person, the owner and the coxswain of the local vessel each commits an offence and is liable on conviction to a fine at level 3.

#### **49. Additional certificates required for coxswains and engine operators of dynamically supported craft**

(1) A Class I vessel that is a dynamically supported craft shall not be underway in the waters of Hong Kong unless there is –

- (a) on board and in charge thereof a person who, in addition to holding any other appropriate local certificate of competency as a coxswain, holds a local certificate of competency issued under the Local Certificate of Competency Rules and known as a Type Rating Certificate; and
- (b) on board a person in charge of the engines who, in addition to holding any other appropriate local certificate of competency as an engine operator, holds a local certificate of competency issued under the Local Certificate of Competency Rules and known as a Type Rating Certificate.

(2) If subsection (1) is contravened, the owner and the coxswain of the vessel each commits an offence and is liable on conviction to a fine at level 3 and imprisonment for 6 months.

#### **50. Local certificates of competency to be carried on board**

(1) A person while in charge of a local vessel fitted with a propulsion engine shall carry with him in the vessel the local certificates of competency, or their equivalents, required under sections 47 and 49 and shall, on request by an authorized officer, produce them for inspection.

(2) A person while in charge of the engines of a local vessel fitted with a propulsion engine shall carry with him in the vessel the local certificates of competency, or their equivalents, required under sections 47 and 49 and shall, on request by an authorized officer, produce them for inspection.

(3) A person who contravenes subsection (1) or (2) commits an offence and is liable on conviction to a fine at level 2.

UNQUOTED