

PROVISIONAL LOCAL VESSELS ADVISORY COMMITTEE

AMENDMENTS TO “FINALISED VERSION OF CODE OF PRACTICE - SAFETY STANDARD FOR CLASS I, II & III VESSELS (DRAFT, NOV 2004)”

Purpose

1. This paper is a follow-up of the previously endorsed Paper No. 23/2004 - ‘Finalised Version of Code of Practice - Safety Standards for Class I, II and III Vessels (Draft, Nov 2004)’, to incorporate some of the necessary amendment requirements, and seeks members’ endorsement on the enclosed draft documents.).

Background and Amendments introduced

- 2 The Code is issued under s. 8 of the Merchant Shipping (Local Vessels) Ordinance (“LVO”), which stipulates that the Director of Marine may approve and issue such codes of practice **and their amendments** as in his opinion are suitable for that purpose; and approve different codes of practice for different classes or types of local vessels.
3. Since the previous version of the Code was issued, amendments have been introduced in the Code in order to cater for -
 - (i) better alignment in practice with other “Code of Practice – Safety Standard for Class IV vessels (Draft , Nov 2004)” and “Code of Practice – Safety and Technical Standards for Coastal Trade Vessels (Draft, Nov 2004) already endorsed by this Committee;
 - (ii) giving further practical guidance or further streamlining of some of the safety standards for similar types of vessels or;
 - (iii) matching the contents of the Code to be in line with the relevant requirements specified in the draft Merchant Shipping (Local Vessels) (Safety and Survey) Regulation; and
 - (iv) inserting new requirements in the Code, i.e. some fire prevention and life-saving appliances requirements, that were originally planned for the draft Merchant Shipping (Local Vessels) (Safety and Survey) Regulation.
4. The amendments introduced in the finalized version of the Code are summarised in Annex 1 attached.

Consultation

5. The proposed amendments of the Code were consulted and accepted by the Technical Sub-committee under this Committee in the recent meeting. The relevant owners and operators associations have also been consulted on concerned issues.

Advice Sought

6. Members are welcome to give comments/views and requested to endorse this proposed document.

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Hong Kong S.A.R. Government
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List of Amendments to “Finalised Version of Code of Practice - Safety Standard for Class I, II & III Vessels (Draft, Nov 2004)”

Item	Ch/page	Description of amendment	Reason
1	Content	Revised list of Annexes	Update the list of the Annexes
2	Ch. I	Amended and added some paragraphs into this chapter. A revised chapter is issued.	Bring the Code to be in line with other endorsed Codes, and making reference with the relevant requirements of the drafted Survey Regulation and;
3	Ch. II	Amended and added some paragraphs into this chapter. A revised chapter is issued.	Bring the Code to be in line with other endorsed Codes and the drafted Survey Regulation, and further elaborate the detail of survey procedure and items.
4	Ch. V	Added “ Passenger carrying capacity” table for kaitos.	Elaborate in further details
5	Ch. VI	Added new paragraphs on some fire prevention requirements	Insert new requirements in the Code, i.e. some fire prevention requirements, that were originally planned for the drafted Survey Regulation
6	Ch. VII	Added new paragraphs some life-saving appliances requirements.	Insert new requirements in the Code, i.e. some life-saving appliances requirements, that were originally planned for the drafted Survey Regulation
7	Ch. X	Amended and added new paragraphs. A revised chapter is issued.	Elaborate in further detail and make reference to Merchant Shipping (Local Vessels)(General) Regulation and Merchant Shipping (Local Vessels)(Certification and Licensing) Regulation, and bring the Code to be in line with other endorsed Codes
8	Annex I-12	Added a new annex on “Construction and survey requirements for Class II-B Wooden vessels”	Add new Annex for streamlining practice which is similar to the contents specified on Annex I-11 for wooden fishing vessels
9	Annex L	Added new paragraphs regarding notification by Marine Department	Add the notification of the concerned issue in Marine Department Notice
10	Annex M	Added a new annex on “Guidance on Machinery and Hull Wear Down or Corrosion Tolerance Limits and Other Inspection Items”	Add New annex for practical guidance.
11	Annex P	Amended the annex on manning requirements	Elaborate further details
12	Annex Q	Added a new annex on “Safety Briefing for a Class I and II vessels engaged in voyages carrying passengers”.	Add new annex for practical guidance.
13	Annex R	Added a new annex on “ Determination of maximum number of persons to be carried and / or survey certification on installation suitable for ‘Combined coxswain operation of a class I and II vessel’”	Add new annex for practical guidance.
14	Annex S	Added a new annex on “Simplified Plans for small vessels - for use on simple GRP transportation or fishing sampan/GRP or wooden small boat/sampan etc.”	Add new annex for practical guidance.
15	Annex T-1 & T-2	Added a new Annexes - “Provisions in Merchant shipping (Local Vessels) (Certification and Licensing) Regulation on matters relating to restrictions on a Class II or III vessels.” and “Provisions in Merchant shipping (Certification and Licensing) Regulation on matters relating to Certificate of Competency Required for a Class I, II or III vessels.”	Make reference to relevant regulations under LVO
16	Annex U	Added a new annex for fire detection system	New annex for practical guidance.
17	Annex V	Added a new annex for CO ₂ fixed installation for fire fighting system	New annex for practical guidance.
18	Annex W	Added a new annex for automatic sprinkler system	New annex for practical guidance.

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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, 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 correct 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 Owner or agent of a Class I, II or III vessel is required to observe and comply with relevant requirements relating to vessel safe operation and operator requirements specified in the Merchant Shipping (Local Vessels)(Safety and Survey) Regulation, Merchant Shipping (Local Vessels) (General) Regulation and Merchant Shipping (Local Vessels)(Certification and Licensing) Regulation, in addition to requirements given in the following chapters and annexes of this Code.

Item No.	Chapter	Section of “(Safety and Survey) Regulation”
(a)	Para. 8 and 9 of Ch. X, para. 5 and 6 of Annex H	Section 42 20 on “Construction and maintenance of local vessels” under (Safety and Survey) Regulation Section 19 on Certificate of survey or certificate of Inspection kept on board under (Safety and Survey) Regulation
(b)	Para. 4 of Chapter X, Annex I-4	Section 33A 55 on “Radar” under (Safety and Survey) Regulation
(c)	Annex T-1	Section 5 “Restriction on vessels of Class II and Class III” under (Licensing and Certification and Licensing) Regulation

(d)	Para. 2 to 4, 6 and 9 of Chapter X, Annexes I-1, I-6, I-8, R, P, Q and T-2	Section 11 on “Manning and equipment” under (General) Regulation Section 29 “Local Passenger vessel cleanliness” under (General) Regulation
(e)	Para. 9 of Chapter V	Section 31 “Notice stating maximum number of passenger to be posted” under (General) Regulation

1.7 In order to satisfy the requirements specified in the Merchant Shipping (Local Vessels) (Safety Survey) Regulation for the issuance of Certificate of Survey or Certificate of Inspection, the safety standards given in the following chapters and annexes of this Code are to be complied with:-

Item No.	Chapter	Section of “(Safety and Survey) Regulation”
(a)	I and II	Section 3 9 to 19 on “CERTIFICATE OF SURVEY AND CERTIFICATE OF INSPECTION” - Ensuring the compliance on plan approval, survey and certification for the issuance of Certificate of survey or Certificate of Inspection, Survey Record of Tonnage Measurement; and Certification of Lifting Appliances and Lifting Gear
(b)	III A, III B, IV, V, XII s.3 of X	20. Construction and maintenance of local vessels
(c)	V	51 to 53 Carriage of Passengers and space not measured as passenger space
(d)	VII	21. Provision of life-saving appliances on board of local vessels Schedule 3 4 Life Saving Appliances
(e)	VI and XII	22. Fire prevention measures and provision of fire-fighting apparatus on board local vessels Schedule-4 5 Fire Protection
(f)	VIII	5 (1) (i) 12 (2) (a) (vii) Collision regulation
(g)	s.4 of X Annex I-4	55. Radar

Note: For High speed craft, relevant safety standards in Chapter XI are to be complied with.

1.8 In order to satisfy the requirements specified in the Merchant Shipping (Local Vessels) (Safety and Survey) Regulation for the issuance of Survey Record of Safety Equipment, the safety standards given in the following chapters and annexes of this Code are to be complied with:-

Item No.	Chapter	Section no. of “(Safety and Survey) Regulation”
(a)	I and II	23 – application 24 – Survey leading to issue of survey record of safety equipment 25, 26 – Matters to be surveyed and declaration 27, 28 – Issuance of certificate and validity
(b)	VII and XII	Schedule 3 4– Life Saving Appliances
(c)	VI and XII	Schedule 4– 5 – Fire Protection
(d)	VIII	5(1)(i) 12 (2) (a) (vii) Collision regulation
(e)	Section 4 of X, Annex I-4	33A 55 Radar

1.9 In order to satisfy the requirements specified in the Merchant Shipping (Local Vessels) (Safety and Survey) Regulation for the issuance of Hong Kong Load Line Certificate or Freeboard Assignment Certificate, the safety standards given in the following chapters of this Code are to be complied with:-

Item No.	Chapter	Section no. of “(Safety and Survey) Regulation”
(a)	I and II	29 – application 30 – Survey leading to issue of HKLL Certificate or FA certificate ^(Note 1) 33, 34 – Issue of HKLL certificate or FA certificate and validity
(b)	IIIA, IIIB, IV, V, Annex C, Annex D and Annex E	31, 32 – Matters to be surveyed and declaration Schedule 5 6 – Minimum Freeboard for certain Class II vessels

1.10 In order to satisfy the requirements specified in the Merchant Shipping (Local Vessels) (Safety Survey) Regulation for the issuance of Declaration of Fitness, the safety standards given in the following chapters and annexes of this Code are to be complied with:-

Item No.	Chapter	Section no. of “(Safety and Survey) Regulation”
(a)	I and II	37 – application 40, 41 – Survey leading to issue of declaration of fitness and validity
(b)	VI, XII	38, 39 – Matters to be surveyed and declaration

1.11 In order to satisfy the requirements for the issuance of Survey Record of Tonnage Certificate-Measurement , the safety standards given in the chapter IX of this Code is to be complied with.

1.12 In order to satisfy the requirements and conditions specified in the Merchant Shipping (Local Vessels) (Safety and Survey) Regulation for the issuance of Hong Kong Oil Pollution Prevention under Merchant Shipping (Prevention of Oil Pollution) Regulation, Cap. 413 Sub-leg., or Pollution Prevention Certificate for the carriage of Noxious Liquid Substances in Bulk under Merchant Shipping (Control of Pollution by Noxious Liquid Substance in Bulk under Merchant Shipping, Cap. 413 Sub-leg., the safety standards given in the following chapters and annexes of this Code are [to be complied with](#):-

Item No.	Chapter	Section no. of “(Safety and Survey) Regulation”
(a)	I and II	Section 3 to 11 on “CERTIFICATE OF SURVEY AND CERTIFICATE OF INSPECTION”
(b)	Para. 19 and 20 of IIIA; or para. 14 of IIIB	Schedule 7 – exemption etc.

1.13 In order to satisfy the requirements and conditions specified in the Merchant Shipping (Local Vessels) (Safety and Survey) Regulation for the issuance of Hong Kong Air Pollution Prevention under Merchant Shipping (Prevention of Air Pollution) Regulation, Cap. 413 Sub-leg.^(Note 2), the safety standards given in the following chapters and annexes of this Code are [to be complied with](#):-

Item No.	Chapter	Section no. of “(Safety and Survey) Regulation”
(a)	I and II	Section 3 to 11 on “CERTIFICATE OF SURVEY AND CERTIFICATE OF INSPECTION”
(b)	Para. 7 and of Annex I-10	(Note 2)

Note 1 : HKLL means Hong Kong Loadline Certificate
FA certificate means Freeboard Assignment Certificate

Note 2 : Subject to enactment and enforcement of Merchant Shipping (Prevention of Air pollution) Regulation, Cap 413 Sub-leg..

2 Statutory Regulations Legislation and Certificate etc.

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

- (a) Merchant Shipping (Local Vessels) Ordinance, Cap. 548 (hereafter referred to as '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) (Works) Regulation, Cap. 548 sub. leg.
- (e) Merchant Shipping (Local Vessels) (Fees) Regulation, Cap. 548 sub. leg.

- (f) Merchant Shipping (Local Vessels) (Safety and Survey) Regulation, Cap. 548 sub. leg. (hereafter to be referred as "safety survey regulation")
- (g) Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations, Cap. 369 sub. leg.
- (h) Merchant Shipping (Prevention of Oil Pollution) Regulations, Cap. 413 sub. leg.
- (i) Merchant Shipping (Control of Pollution by Noxious Liquid Substances in Bulk) Regulations, Cap. 413 sub. leg.
- (j) Dangerous Goods Ordinance, Cap. 295
- (k) Dangerous Goods (Application and Exemption) Regulations, Cap. 295 sub. leg.
- (l) Dangerous Goods (General) Regulations, Cap. 295 sub. leg.
- (m) Dangerous Goods (Shipping) Regulations, Cap. 295 sub. leg.

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) Certificate of Inspection;
- (3) Survey Record of Safety Equipment;
- (4) Hong Kong Load Line Certificate ~~or Certificate of Freeboard Assignment Certificate~~;
- (5) Survey Record of Tonnage Measurement ;
- (6) Survey Record of Inspection for certain Equipment or Tests etc.
- (7) Exemption Certificate / Alternative material, fitting or equipment endorsement;
- (8) Minimum Safe Manning document;
- (9) International Tonnage Certificate;
- (10) International Load Line Certificate

- (11) Hong Kong Oil Pollution Prevention Certificate;
- (12) Hong Kong Air Pollution Prevention Certificate
- (13) Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
- (14) ~~Certificate~~ Declaration of Fitness for the Carriage of Dangerous Goods;
- (15) Certification of Lifting Appliances and Lifting Gear. ~~Survey Certificate or Lifting Appliances Survey and Test Certificate.~~

Note : Subject to enactment and enforcement of relevant 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(2), (5) and (6), these records may be issued by an authorized surveyor or authorized organization or recognized government authority.
- 2.6 The certificate of item 2.3(15) ~~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(3), (8) to (11) of the above issued in accordance with the International Conventions by a recognized organization or recognized government authority may be considered as equivalent and accepted by the Director.
- 2.8 It is required to display the Certificate of Survey or Certificate of Inspection in a conspicuous location onboard and same remark should be indicated on the certificate.

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 ¹ 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.”

¹ May include any person of the following classes, subject to formal authorization having been issued by the Director:

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

“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, a Hong Kong Oil Pollution Prevention Certificate, a Hong Kong Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk or a Declaration of Fitness for the Carriage of Dangerous Goods issued by the Director under the Merchant Shipping (Local Vessels) (Safety Survey) Regulation;

“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 the number of passengers it is permitted to carry;

“classification societies” means the classification societies recognised by the Director, which are as follows:

- (a) American Bureau of Shipping;
- (b) Bureau Veritas;
- (c) China Classification Society;
- (d) Det Norske Veritas;
- (e) Germanischer Lloyd;
- (f) Korean Register of Shipping
- (g) Lloyd’s Register of Shipping; and
- (h) Nippon Kaiji Kyokai;

“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 **Cap. 295** 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);

“gross tonnage”, a measurement figure for a [local Class IV](#) vessel of which the details and calculation can be referred to Chapter IX of this Code ~~the “Code of Practice—Safety Standards for Class I, II and III Vessels”~~;

“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;

“length (L_r)” means the registered length and the greater of the following -

- (a) the distance between the fore side of the stem and the axis of the rudder stock;
or
- (b) a distance measured from the fore side of the stem, being 96% of the distance between that point and the aft side of the stern,

the said points and measurements being taken respectively at and along the waterline which shall be at 85% of the least moulded depth of the vessel. In the case of a vessel having a rake of keel the waterline shall be parallel to the designed waterline. In the case of a vessel in which no rudder stock is fitted, the registered length shall be determined as per 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” means-

- ~~(a) a vessel in respect of which an application for an operating licence is made for the first time; or~~
- ~~(b) an existing vessel which is undergoing alteration of its registered length, moulded breadth and / or moulded depth; or~~
- ~~(c) an existing vessel in respect of which an application for alteration of its class as specified in the Merchant shipping (Local Vessels) (Certification and Licensing) Regulation is made; or~~
- ~~(d) an existing vessel in respect of which an application for alteration from operating~~

as a vessel in the low risk group to a vessel in the high risk group

on or after the commencement of the Ordinance;

(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 of this Regulation; or
- (ii) in respect of which an application for an operating licence is made for the first time on or after the commencement of this 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 the commencement and is still under construction at the commencement;

(b) a local vessel that does not fall within paragraph (a) and undergoes alteration on or after the commencement of this Regulation –

(i) of –

- (A) its length, breadth or depth as recorded in the certificate of ownership issued or endorsed under the Certification and Licensing Regulation;
- (B) the output of its main propulsion engine so that –
 - (I) the output is higher than what is recorded in its certificate of survey or certificate of inspection; and
 - (II) particulars relating to the materials, scantlings or design of the propulsion shafting or stern tube, as shown in the plans approved under Part 2 of the Ordinance, 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 99 to more than 99; 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 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 mechanised, or a non-mechanised 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);

“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;

"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).

“transportation vessel” means a vessel licensed as a launch under the repealed Merchant Shipping (Launches and Ferry Vessels) Regulations, used for the carriage of not more than 12 passengers within the Hong Kong waters.

“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		Steel/Al/GRP/Wooden	
	Propulsion	Mechanically Propelled	Non-Mech. Propelled	Mechanically Propelled	Non-Mech. Propelled
Class I Vessel					
Launch (incl. new Class IV vessel carrying > 60 passengers) (9)		*			
Ferry Vessel		*			
Floating Restaurant			*		
Stationary vessel (Ceremonial Boat)			*		* (1)
Katio (Primitive Vessel)				*	
Multi-purposes Vessel		*			
Class II Vessel					
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					*
ater 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		Steel/Al/GRP/Wooden	
	Propulsion	Mechanically Propelled	Non-Mech. Propelled	Mechanically Propelled	Non-Mech. Propelled
Class II Vessel (continued)					
Stationary Vessel (Including Separation Barge, Kitchen Barge, Boat, Ice Barge, Fish Drying Barge, Water dispensing Waste Water Treatment Barge, Fish Storage Barge)					*
Class III Vessel					
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 of other than wooden construction.
- (4) Other than wooden vessels and vessels of GRP construction up to 15 metres in length.
- (5) Vessels of GRP construction of prototype up to 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.

6. Application for survey and survey 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";
- (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 ^(Note) or authorized organization **or recognized government authority** ^(Note) **as appropriate** for statutory survey and provide necessary survey conditions.
- 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 statutory approval and surveys, and pay the relevant fees.

Note: Director of Marine may delegate some or all of the statutory surveys specified in this Code to authorized surveyor or authorized organization **or recognized government authority** as indicated in the authorization/ **recognition** document. List of authorized surveyors or authorized organizations **or recognized government authority** will be promulgated in the Marine Department Notice issued from time to time.

- 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 ~~engaged in non international voyage for particular plying zone/routes~~ **plying in Hong Kong waters or River Trade limits** but which, in exceptional circumstances, is required to undertake a voyage beyond original plying ~~zone/routes~~ **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** ~~engaged in non international voyages~~, Marine Department may consider excluding such requirements. **Nevertheless, provided that** any such kind of

vessel ~~should comply~~ ~~complies~~ with the ~~intended purposes considered by~~ requirements of which Marine Department ~~considers as~~ appropriate ~~and should~~ ~~to~~ ~~guarantee 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, ~~and~~ 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, ISSUANCE OF CERTIFICATE AND PLAN APPROVAL

1 Survey 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 non-mechanically propelled and not fitted with any internal combustion engine onboard, are not subject to any survey:

No.	Class of Vessel	Type of Vessel	Material of Construction	Length Overall x Extreme Breadth ^(note)
(i)	II	Transportation Sampan	any material	Not exceeding 25 m ²
(ii)	II	Dry Cargo Vessel Hawker Boat	other than steel	Not exceeding 25 m ²
(iii)	III	Fishing Vessel	other than steel	Not exceeding 25 m ²
(iv)	III	Sailing Fishing Vessel (sailing type)	any material	any size

Note : the product of vessel's overall length L (m) and extreme breadth B (m)

“extreme breadth” 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 a local 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 Survey	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 survey 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 conducted by Authorized Surveyor etc.~~ **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 government 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**

(4) and (5) which are issued by them:-

- (1) Certificate of Survey or Certificate of Inspection;
- (2) Survey Record of Safety Equipment;
- (3) Hong Kong Load Line Certificate or ~~Certificate of Freeboard Assignment Certificate~~;
- (4) Survey Record of Tonnage Measurement ;
- (5) Survey Record of Inspection for Cement Tank or Air Receiver or Material Test or Equipment Test etc.

3.3 If the owner or agent wishes his vessel to be surveyed by an authorized surveyor or authorized organization or recognized government 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 government 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 government authority. The ~~Part 1 of initial or periodic~~ survey report may be furnished to the attending surveyor during final survey - 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 government authority as appropriate:-

- (1) 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(2) and (3));
- (2) periodic 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 (~~provisional survey~~) as required with Marine Department or the relevant authorized surveyor or authorized organization or recognized government authority as appropriate for the issuance of survey report and /or relevant certificate:-

- (1) an accident to a vessel which affects its seaworthiness;
- (2) alteration of a vessel's intended purpose or plying limits as restricted in its certificate;
- (3) alteration or modification affecting the safety of a vessel;
- (4) invalidity of a vessel's statutory certificate;
- (5) change of a vessel's owner or agent, the vessel's name.

4 Submission of Plans and Data

- 4.1 Plans and data should be submitted according to the tables in section 6 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). ~~For vessel survey by AS/AO/RA,~~ 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 "CS" "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 (*7) (*12)

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

Vessel Category		A		B
		not classed	classed	
Plans and Data				
(A) GENERAL AND SAFETY EQUIPMENT				
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/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/Part 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
Plans and Data				
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) HULL				
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
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
(C) MACHINERY INSTALLATION				
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

Vessel Category		A		B
Plans and Data				
5)	Fuel Oil System (incl. tanks, piping)	MD/AS/AO/RA	AO	MD/AS/AO/RA
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 \geq 10 bar)	MD/AS/AO/RA	AO	MD/AS/AO/RA
9)	Air Receiver (Ch. IIIA/Pt. 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/Pt. 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	--
17)	Prevention of Air Pollution Installation (COP Annex I-10 etc) @	MD	MD/AO	MD
(D) ELECTRICAL INTSALLATION (including Emergency Power System) (*9)				
1)	AC 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	--
(E) RADIO COMMUNICATION AND NAVIGATIONAL EQUIPMENT				
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
(F) ADDITIONAL ITEMS FOR SPECIAL OPERATION (i.e. DG VESSELS) AND OTHERS				
1)	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°C (COP Ch.VI refers) (*12)	MD	MD	MD

Plans and Data	Vessel Category	A	B
	3) Additional Items for DG or NLS Carrier (COP Ch.VI refers) (*12)		MD
(G) LIFTING APPLIANCES (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; wooden fishing vessel and prototype vessel of fishing sampan. Existing wooden fishing vessels are required to submit General Arrangement drawings with main particulars not later than 1st survey date after implementation of Local Vessel Ordinance.
- *2 Applicable to dumb lighters, hopper barges, wooden fishing vessels and prototype vessel of fishing sampan.
- *3 For dumb lighters required to be submitted with heavy lifting stability calculations, hopper barges, wooden fishing vessels and prototype vessel of 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 of 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 the first vessel for prototype vessels of 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 II and class III vessel ~~Category A vessel or Category B vessel or Class IV vessel carrying over 60 passengers under engaged in chartering~~, dumb lighter, hopper barge, stationary vessel including separation barge, kitchen barge, ice barge, fish drying barge, water dispensing barge and fish storage barges; landing pontoon, and flat top work barge should be provided onboard one copy of the plan(s) 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 and fire fighting appliance, light and sound signals and stability / loading and unloading information.

6.2 ~~In addition to para 6.1, On for~~ every Class I vessel carrying more than 100 passengers, ~~such plans required in section 3.1 with the instructions to be followed in the event of an emergency indicated thereon,~~ safety plan showing arrangement of life saving appliances, fire fighting appliances, light and sound signals, means of escape, escape installation and arrangement should be exhibited in conspicuous places throughout the vessel. >

7 Survey Items and Survey Programmes

Table 1 Initial Survey

No.	Category of Vessel Survey Item	A	B
A	GENERAL AND SAFETY MEASUREMENT		
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	(a) Position of Navigation Light Seating - verification	✓	✓
13	(b) Minimum headroom in Accommodation Space and machinery spaces - inspection	✓	✓
B	HULL		
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	✓	✓
C	MACHINERY		
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 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 ₂ 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 (COP- Chapter V)	✓	✓ (*9)
D	ELECTRICAL		
1	Electrical Wiring - inspection	✓	✓
2	Generator circuit breaker load test (Class I vessels with genset power > 50 kW)	✓	
E	OTHERS AND ADDITIONAL REQUIREMENTS		
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/Pt 3/9 and Ch.IIIA/Pt 3/17.4 refer.
- *4 For hopper barge only.
- *5 Ch.IIIA/Pt 3/7.1 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. IIIBand 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 technical inspection guidance on hull and machinery items , please refer to Annex M.
- *9 For visual inspection and operational test at either initial or final survey only.

Table 2 Periodical Construction Survey

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
A	GENERAL AND SAFETY EQUIPMENT													
1	Fixed Fire Ext. Installation CO ₂ system - blowing test Sprinkler System - spraying test		✓			✓				✓				
2	- hydraulic test													
3	Fire Extinguisher, CO ₂ Bottle - refill and hydraulic test	✓ (*8)			✓ (*8)									
4	Buoyant Apparatus - submerging test (*9)			✓			✓							
B	HULL AND FITTINGS													
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)		✓				✓			✓				
C&D	MACHINERY AND ELECTRICAL INSTALLATION													
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)							

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											✓
12	Independent Cement Tank – external inspection									✓		
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 CO₂ 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 CO₂ system high pressure manifold should not be less than 125bar.
- *8 Inspection for portable fire extinguishers and CO₂ 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 ₂ Fire Extinguisher, CO ₂ 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
 - CO₂ 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 technical inspection guidance on hull and machinery items, please refer to Annex M.

Table 3 Final Survey (*1)

No.	Survey Items (*2)
A&B	GENERAL, HULL & SAFETY EQUIPMENT
1	Life Saving Appliances - inspection and function test
2	Fire Fighting Appliances (incl. CO ₂ 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 <ul style="list-style-type: none">(a) protection from injury of personnel(b) prevention of fire hazard(c) prevention of oil pollution hazard

C&D	MACHINERY AND ELECTRICAL INSTALLATION
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
E&F	RADIO & NAVIGATION EQUIPMENT AND OTHERS
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 –Part 1
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 Government Authority

Remarks in Table 3

*1 The final survey should be carried out annually except the following types of vessels:

Category B Fishing Vessel, Ice Boat, Fish Drying Hulk Barge, Water Dispensing Boat, Waste water treatment Barge and Live Fish Dealing Boat:

- (a) vessels of L x B Numeral not exceeding 25 - triennially
 - (b) vessels of L x B Numeral exceeding 25 - biennially.
- *2 Where practicable the listed items may be presented for inspection prior to the final survey.
 - *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 technical inspection guidance on hull and machinery items, please refer to Annex M Part 9. (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/Pt.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/Part4/4.2.
 - *10 The following document / certificates certified by competency examiner should be presented in final survey 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);

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.

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/Pt 2/1;
 - (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 (m²) 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 carrying capacity (including passengers and crew) in any primitive transportation vessel (kaito) of single deck should be determined by the following formula:

$$\text{Total No. of passenger + crew} = L \times B \times C_{np}$$

where C_{np} is determined as follows:

(a) $C_{np} = 0.35$ if no simple inclining test is carried out;

(b) $C_{np} = 0.35 \sim 0.85$, subject to—

(i) a simple inclining test is demonstrated and found satisfactory;

(ii) the vessel is only operated in favourable weather conditions.>

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 $C_{np} = 0.35$	(b) subject to a simple inclining test and operate in favorable weather condition. $C_{np} = 0.35 \sim 0.85$
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.

3.3 The maximum number of passengers on each deck of **existing vessels** 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.

3.4 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 / Part 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 $<800 \text{ mm}>$.

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^2 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.

- 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
etc.	xxx

Maximum Number of Passengers	xxx

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

CHAPTER VI

FIRE PROTECTION

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. Acceptance of Appliances

Fire fighting appliances and structural fire protection items should be of approved types. Appliances 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 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 or accepted by the Department are also considered acceptable.>

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 -

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

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

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

L_r , 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 by subsection 2.1 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 m³/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 by subsection 4.2 of this Part.
- 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 by subsection 4.1 through adjacent fire hydrants in any part of the vessel from nozzles of sizes specified in section 5 of this Part, 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/mm²);
- (b) of under vessel's gross tonnage 1000 tons or vessel's registered length 60 metres, whichever is the smaller: 2.1 bar (0.21N/mm²). 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 the closing 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 15 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 provided shall not be used for any purpose other than for fire fighting or testing the fire appliances.
- 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 systems not required by the Safety Survey Regulation

In a vessel where a fixed extinguishing system not required by the Safety 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 action.

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 ₂	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 CO₂ 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 CO₂ 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 CO₂ 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 m³/ 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 for Class I (over 60 passengers) vessel, dangerous goods carrier, floating dock, noxious liquid substance carrier, oil carrier, Class III Cat. A fishing vessel—

- 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 appliances 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 section 10 of this Part. 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 appliances

Fire appliances carried in any vessel shall be maintained in good order and shall be kept available for immediate use at all times. All movable fire appliances, 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

- (1) This part shall apply to new vessels.
- (2) 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 –

- (1) 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;
- (2) insulating materials shall be of non-combustible materials;
- (3) 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
- (4) any means of escape should be led to open deck.

13.2.2 In accommodation, service spaces and control stations –

- (1) all exposed surfaces in corridors, exposed surfaces of ceilings and surfaces in concealed or inaccessible spaces shall have low flame spread characteristics
- (2) primary deck coverings shall be of a material which will not readily ignite or give rise to toxic or explosive hazards at elevated temperatures;
- (3) 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;
- (4) dead-end corridor shall not be more than 7 metres in length; and
- (5) 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 in length or over of -

- (i) 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**
- (ii) 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

- (1) 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.
- (2) 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.

- (3) Above the lowest open deck the means of escape shall be stairways or doors to an open deck or a combination thereof.
- (4) 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**

- (1) Machinery spaces shall be provided with two widely separated door. One of the door may be substituted by an escape hatch.
- (2) 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**

- (1) 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.

- (2) 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.
- (3) 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.
- (4) 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.
- (5) 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.
- (6) 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
 - (a) that space is a cargo control station, provisions room or store room; and
 - (b) 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.
- (7) 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

Spaces above	(1)	(2)	(3)	(4)	(5)
Space below					
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 Acceptance of Appliances

Life saving appliances should be of approved types. Appliances which conform to the International Life Saving Appliances (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 or accepted by the Department are also considered acceptable.

- 2.2 Very high frequency (VHF) radio equipment should be of a type approved by Office of the Telecommunications Authority, Hong Kong.
- 2.3 One lifebuoy is deemed to support two persons.
- 2.4 Each of the buoyant lifelines, self-igniting lights and self-activating smoke signals required to be provided by the Regulation should be attached to a lifebuoy and be placed in proximity of the vessel's both sides.

- 2.5 Lifebuoys should be marked with the name or Certificate of Ownership number of the vessel on which they are carried, on both sides of lifebuoy.
- 2.6 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
- 2.7 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 All life-saving appliances shall be in working order and ready for immediate use before any vessel commences a voyage and at all times during the voyage.
- 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. 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.

6. Survival craft muster and embarkation arrangements

- 6.1 Lifeboats and liferafts shall be stowed as close to accommodation and service spaces as possible.

- 6.2 Muster and embarkation stations shall be readily accessible from accommodation and work areas.
- 6.3 Alleyways, internal and external stairways and exits give access to the muster and embarkation stations shall be lighted.

7. Stowage of survival craft and buoyant apparatus

- 7.1 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.
- 7.2 Lifeboats shall be stowed attached to launching appliances.
- 7.3 Liferrafts shall be so stowed as to permit manual release from their securing arrangements.
- 7.4 Liferrafts 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.
- 7.5 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.
- 7.6 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.
- 7.7 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.

8. 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.

9. Survival craft launching arrangements

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

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

10. Stowage of lifebuoys

10.1 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.

10.2 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.

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

10.4 Except as otherwise provided lifebuoys with lights and those with lights and smoke signals shall be equally distributed on both sides of the vessel and shall not be the lifebuoys provided with lifelines.

11. Stowage of life jackets

11.1 Lifejackets shall be so placed as to be readily accessible and their position shall be plainly indicated.

11.2 The additional lifejackets, when provided, shall be stowed in conspicuous places on deck or at muster stations.

12. Stowage and packing of pyrotechnic distress signals

- 12.1 Pyrotechnic distress signals provided for use on board vessel shall be stowed on or near the navigating bridge.
- 12.2 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.

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.

Chapter X

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 (MS(LV) (LC of C)Rules) and its validity limitations are shown in the following table :

Certificates issued before the commencement of (MS(LV)(LC of C)Rules)	Certificates issued under (MS(LV) (LC of C)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 MS(LV) (LC of C) 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 MS (LV) (LC of C) 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 MS (LV) (LC of C) 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 a ~~Class IV~~ 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, and Carrying Certificated Operators ~~or~~ and adequate number of crew

- 6.1 When a ~~Class IV~~ 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. ~~Further operational safety guidance on vessel operator requirements is given in Chapter IX.~~
- 6.2 Any ~~Class IV~~ Class I, II or III vessel carrying more than 60 passengers or having vessel length exceeding 24 metres or its total propulsion power more than 1,000kW (1,340 BHP), 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 X and Annex P 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 a ~~Class IV~~ 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 vessels

- 8.1 It is the responsibility of the owner and agent of any Class I, II or III ~~IV~~ 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** ~~IV~~ 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** ~~IV~~ vessel specified under sections ~~47, 48 and~~ **46 to 50** of the latter Regulation. These are extracted in Annex ~~1A QT-1~~ and Annex ~~1B QT-2~~ 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.

Annex I-12

CONSTRUCTION AND SURVEY REQUIREMENTS FOR CATEGORY B WOODEN VESSELS

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 Merchant Shipping (Local Vessels) Ordinance.

2 Construction and Survey Requirements

2.1 Existing Vessels of all lengths

2.1.1 Hull construction

Any vessel licensed for not more than 5 years should provide evidence showing that its design and construction was based on an empirical design having not less than 5 years safe operation history in the same intended operation waters.

2.1.2 Machinery installation, etc.

Suitable means or device should be provided to machinery, equipment, lifting gear, winches, etc. so as to reduce to minimize any danger to persons on board. Special attention should be paid to moving parts, hot surfaces and other dangers. From the machinery installation and the equipment provided for the extinction of fire on the vessel there is not undue risk of fire or explosion if the conditions of the licence are fully complied with.

2.1.3 Photo/Plan record

Photos of 4R size, or plans showing the elevation and side elevation of the vessel should be submitted for record.

2.2 New Vessels of Length Overall exceeding 15 m (including new constructions and first licensed existing vessels)

2.2.1 Design and building standard

Every vessel should be designed and built to the requirements of rules and regulations of a classification society having regard the size, use and intended operation area of the vessel.

2.2.2 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 (for generator of exceeding 220 volts);
- (7) Inclining Experiment Report and Stability Information Booklet.

2.2.3 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 survey (safety equipment etc.).

2.3 Vessels of Length Overall not exceeding 15 metres ~~using prototype design~~

- (1) The first vessel (~~prototype~~) of an approved series should be subject to plan approval and surveys as per the requirements listed in para. 2.2 above.
- (2) For the subsequent vessels being constructed with the same ~~mould~~ design in the same workshop, are suffice, the following are relevant:
 - (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 survey (safety equipment etc.).

Note: The requirements of this Annex are same as that in Annex I-11 for wooden fishing vessels.

Annex L
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.

ANNEX M

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

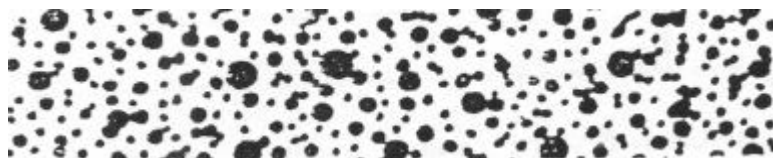
1.1 The thickness reduction of hull plating and structural members caused by corrosion should not be more than the specified percentage of the original thickness as shown in the following table:

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 40% 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 defection =6 l+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^2 .

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^2
- 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^2
- (ii) Air test - 0.20 kg/cm^2

(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 MO

Note: The insulation resistance shall be measured by a 500V megger tester.

Annex P-[Table-1] Minimum Safe Manning Requirements for Hong Kong Licensed Vessels Operating in Hong Kong Waters and River Trade Limits

(These requirements on Minimum Safe Manning are based on vessels meeting unmanned engine room installation requirements)

Minimum Safe Manning Standards ^(a)			Cargo Vessel Types and Length Limits						
Persons onboard	Trading Area/ Vessel Length (L)	No. of Persons	Tug		Dry Cargo Vessel and Oil Tanker ^(f)				
			1	2	1	2	3	4	5
			L < 24 m	24 ≤ L < 35 m	L < 24 m	24 ≤ L < 35 m	35 ≤ L < 50 m	50 ≤ L < 75 m	75 ≤ L < 100 m
Coxswain	Hong Kong Waters	1	1	1	1	1	1	1	1
	River Trade Limits ^{(b) (g)}	2 ^(c)	2	2	2	2	2	2	2
Engine Operator	Hong Kong Waters or River Trade Limits	1 ^(d)	1	1	1	1	1	1	1
Deck crew	Hong Kong Waters or River Trade Limits	As below							
	24 m ≤ L < 35 m	+1	-	1	-	1	1	1	1
	35 m ≤ L < 50 m	+1	-	-	-	-	1	1	1
	50 m ≤ L < 75 m	+1	-	-	-	-	-	1	1
	75 m ≤ L < 100 m	+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: These requirements are made under s.11 of M.S. (Local Vessel) (General) Regulation. The manning scales, having regard mainly design, size, speed, power, equipment and machinery commonly adopted for different type of vessels, are given for practical guidance for safe navigation and the handling of general emergency situation. Operation condition or situation outside the above basic scope would require consideration on case basis. 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.

- Notes: (a) Crew of vessels should hold the basic maritime safety training certificates. Statutory requirements for the types of Certificates of Competency as Coxswain or Engine Operator are indicated in Table-2.
- (b) River Trade Limits relating to Pearl River Delta Area.
- (c) Master / Coxswain and Engine Operator must have attended special training course relating to River Trade Limits operation.
- (d) 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.
- (e) For ferries and high speed ferries in Hong Kong waters, the manning requirements would depend on their operational needs. Marine Department will prescribe the minimum safe manning requirement individually.
- (f) Crew working onboard oil tankers should hold relevant oil tanker safety training certificates.
- (g) One coxswain and one assistant coxswain are required. Assistant coxswain needs to hold a relevant Certificate of Competency of one grade lower than the coxswain for t type of vessel.
- (h) Master / Coxswain should ensure adequate hands of ship's crew available for mooring and unmooring /berthing and unberthing operations as required.

Annex P

[Table-2] Type of Certificates of Competency of Masters and Engine Operators Statutory Required for Hong Kong Licensed Vessels operating in Hong Kong Waters or River Trade Limits

Post onboard	Before LVO ⁽ⁱ⁾		After LVO ⁽ⁱ⁾	
	Sizes of Vessel Tonnage (NT) Main Engine Power (HP)	Types of Local Certificate of Competency	Sizes of Vessel Gross Tonnage (GT) / Length (m) or Total Main Engine Power (kW)	Types of Local Certificate of Competency
Master	Vessel Tonnage: Not exceeded 60 NT	Local Certificate of Competency as Master – Not Exceeded 60 NT Local Certificate of Competency as Master of a Fishing Vessel	Vessel Length: not exceeded 15m	Coxswain Grade 3
	Vessel Tonnage: Exceeded 60 NT	Local Certificate of Competency as Master - Exceeded 60 NT + Exemption	Vessel Length: not exceeded 24m	Coxswain Grade 2
	Vessel Tonnage: Not exceeded 300 NT	Local Certificate of Competency as Master- Not exceeded 300 NT ⁽ⁱⁱ⁾		
	Vessel Tonnage: Exceeded 300 NT	Local Certificate of Competency as Master- Exceeded 300 NT ⁽ⁱⁱ⁾ + Tonnage Endorsement Local Certificate of Competency as Trawling Master	Vessel Tonnage: Not exceeded 1600 GT	Coxswain Grade 1
Engine Operator	Power of one single engine: Not exceeded 150 HP	Local Certificate of Competency as Engineer - for engine power not exceeded 150 HP Local Certificate of Competency as Engineer of a Fishing Vessel	Main engine total power: Not exceeded 750kW	Engine Operator Grade 3
	Power of one single engine: Exceeded 150 HP but total main engine power not exceeded 750 kW	Local Certificate of Competency as Engineer - for engine power not exceeded 150 HP + Exemption		
			Main engine total power: Not exceeded 1500kW	Engine Operator Grade 2
	Power of one single engine: Exceeded 150 HP	Local Certificate of Competency as Engineer - for engine power exceeded 150 HP ⁽ⁱⁱⁱ⁾ Local Certificate of Competency as Ferry Engineer	Main engine total power: Not exceeded 3000kW	Engine Operator Grade 1

Remarks:

- (i) LVO means [Merchant Shipping (Local Vessels) Ordinance]. Local Certificates of Competency issued before LVO would continue to be valid for relevant type of vessels.
- (ii) After the enforcement of LVO, the Local Master Certificate of Competency (Coxswain Grade 1) would be only applicable to vessels not exceeded 1600 GT.
- (iii) After the enforcement of LVO, the Local Engine Operator Certificate of Competency (Engine Operator Grade 1) would be only applicable to vessels with engine total power not exceeded 3000kW.
- (iv) Director may consider application for endorsement to relevant Local Certificate of Competency for vessel's operating limits exceeded 1600 GT or main engine total power exceeded 3000kW.

Annex Q

SAFETY BRIEFING FOR A CLASS I AND CLASS II VESSELS ENGAGED IN VOYAGE CARRYING PASSENGERS

1. Before the commencement of any voyage carrying with 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 or media broadcast will be considered to be an acceptable way of providing the information required in paragraph 2 and these means will also be considered acceptable alternative for the briefing on the use of safety equipment and emergency procedures required in paragraph 1 above.

附件 Annex R

第 I 或 II 類船隻的最高可載運人數的計算 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 :.....	類別/種類船隻:.....
Type of vessel 類型船隻:.....		
1 (a) 最高可載運量和座椅 Maximum Carrying Capacity and Seating		
船隻的最高可載運量(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) 乘客坐椅的形狀、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)段所述船隻的坐椅結構和安全帶須遵守第 XI 章所訂明的相關規定。乘客坐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。 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.	不適用 Not applicable	
(c) 載運乘客的船隻之乘客艙室的標記 Marking in Passenger Space for vessel carrying passengers		足夠 / 不足夠 Adequate / Not Adequate
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	()	不適用 Not applicable /
主甲板 Main Deck	()	
等等 Etc.	()	
最高乘客名額 Maximum number of passengers	()	已標記 / 未有標記 Marking Completed / Marking Not Done
最少船員名額 Minimum number of crew	()	
最高載運量 Maximum carrying capacity	()	
2. 證明這船隻裝置是適合由一名“兼任輪機員船長”操控 Certification on installation suitable for “Combined Coxswain” operation for this vessel		
不適用 Not applicable		
適合 / 不適合 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 段及第 X 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 X)		
- 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 / 特許機構名稱及其驗船師姓名

Name of Authorized Surveyor / Authorized Organization / **Recognized Government 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 /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 / 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	
Approval Plans / 審批圖則		Remark / 備註
(A) <u>General Plans / 一般圖則</u>		
1. 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)		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
2. 簡單圖則 Plan(Simp)-G-02 /11 (Only applicable to vessel carrying more than 4 passengers /只適用載乘客 4 人以上) Passenger Space (shelter)/ Seating Arrangement & Position / Freeboard Mark Diagram 乘客艙(遮閉安排) / 座位佈置及座位設置 / 吃水標示圖則		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
3. 簡單圖則 Plan(Simp)-G -01+ HS-01/ 09 (equiv to Plan-G-01and Plan-H-09) (Only applicable to vessel length less than 8 m / 只適用於船隻長度小於 8 米) 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		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
(B) <u>Hull and Safety Equipment Plans / 船殼及安全設備圖則</u>		
4. 簡單圖則 Plan(Simp)-HS-01/ 09 (equiv to Plan- HS-03, H-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		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
5. 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		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
6. 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		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
7. 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 <u>逃生設備及佈置示意圖則</u>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
8. 簡單圖則 Plan(Simp)-HS -10D Lights, Shapes & Sound Signals Installation and Arrangement Diagram 號燈、號型、聲號備及佈置示意圖則		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
(C) <u>Machinery Installation Plans 機器及其系統設備圖則</u>		
9. 簡單圖則 Plan(Simp)-M-01/ to / 10 etc.()		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
(D) <u>Electrical Installation Plans 電器及其系統設備圖則</u>		
10. 簡單圖則 Plan(Simp)-E-01 / to / 05 etc.()		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
(C/D) <u>Machinery / Electrical Installation Plans 機器/電器及其系統設備圖則</u>		
11. 簡單圖則 Plan(Simp)- M-01/ to / 10 + E-01 / to /05 etc.()		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

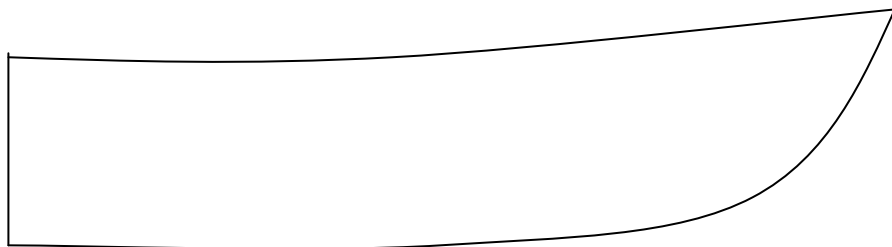
簡單圖則 Plan(Simp)-G-01

General Arrangement Plan (Owner to provide necessary information on layout, decks etc.)

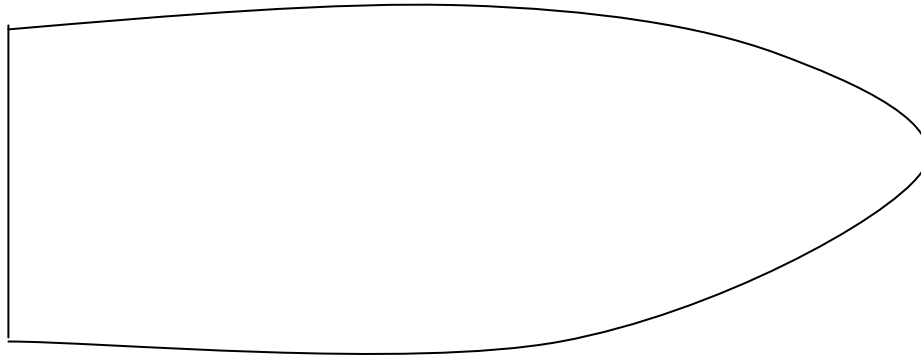
一般佈置圖則 (船東提供所需資料如外形、甲板層數等)

(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> 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. 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

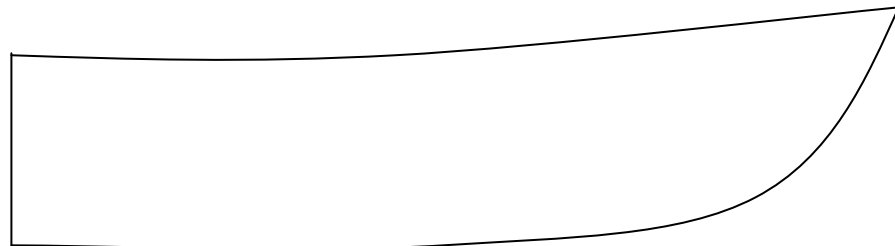
(Only applicable to vessels carrying more than 4 passengers / 只適用載乘客 4 人以上)

Passenger Space (shelter)/ Seating Arrangement and Position / Freeboard Mark Diagram

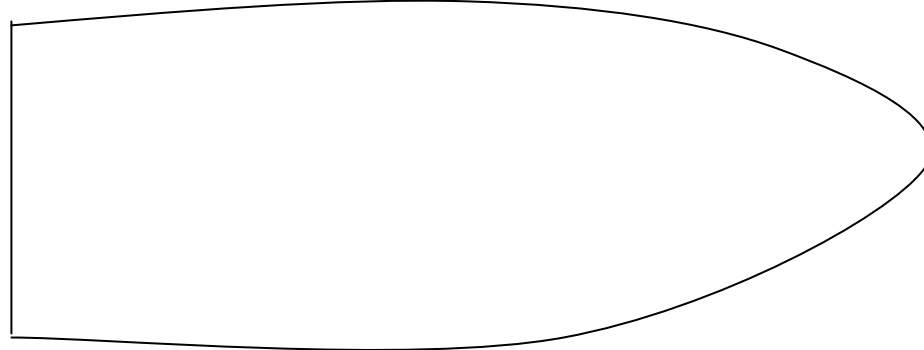
乘客艙(遮閉安排) / 座位佈置及座位設置 / 吃水標 示意圖則

(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> 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. 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

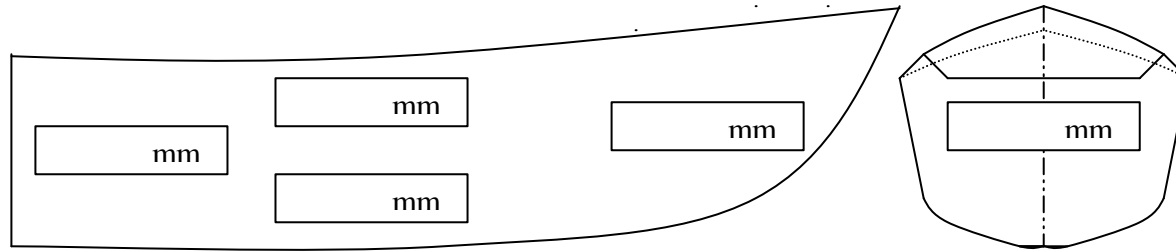
船隻特別資料/一般佈置/及基本船殼和甲板之板厚示意圖則

(Note : A copy of this diagram must be kept onboard)

(註 : 一份此圖則必須放置在船上)

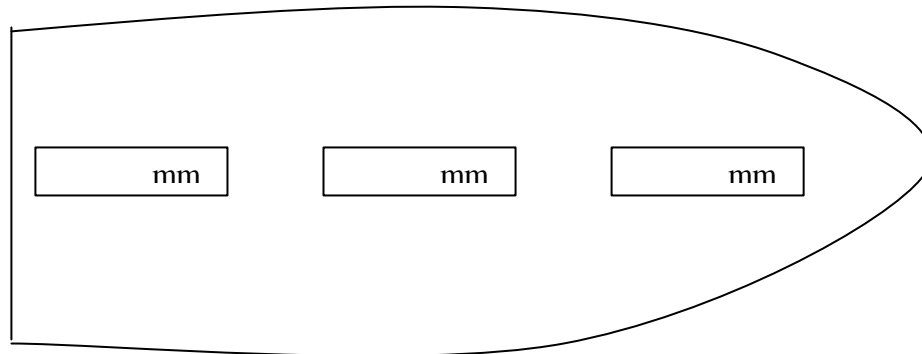
Remarks 備註:

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

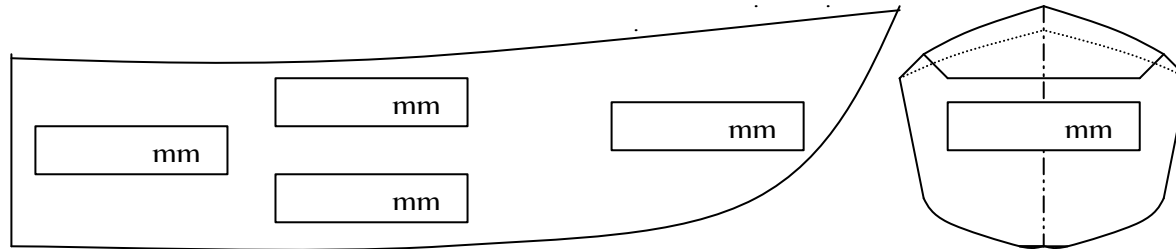
船隻特別資料及基本船殼和甲板之板厚示意圖則

(Note : A copy of this diagram must be kept onboard)

(註 : 一份此圖則必須放置在船上)

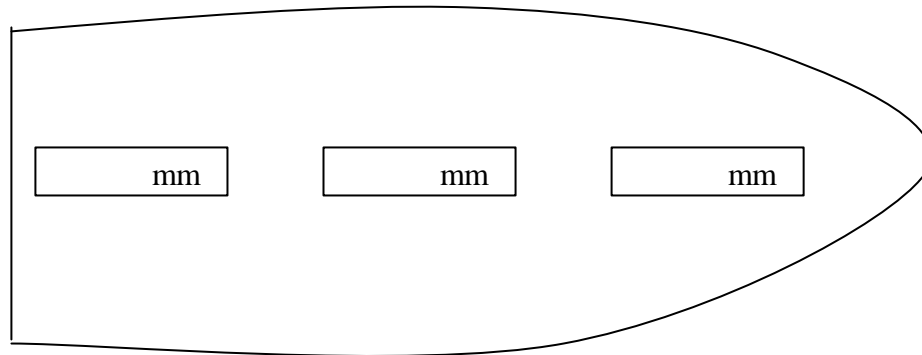
Remarks 備註:

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

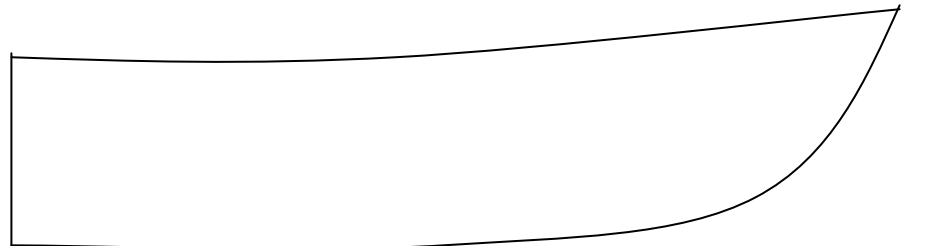
簡單圖則 Plan(Simp)-HS-10A&B (HS-10C)

LSA & FFA Installation and Arrangement Diagram

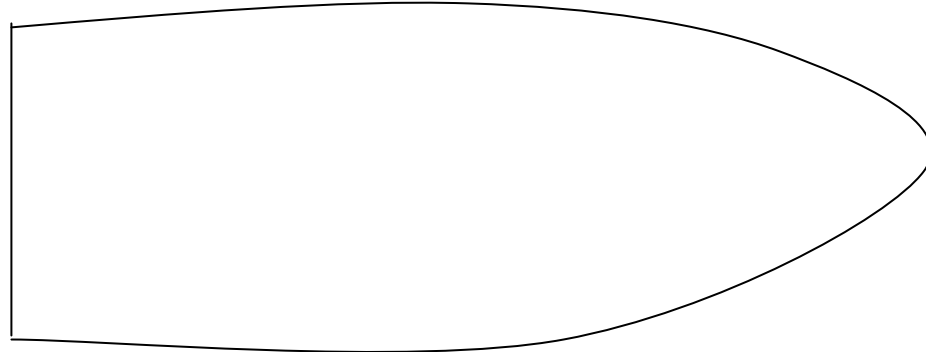
救生及救火設備及佈置示意圖則

(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

<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. 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

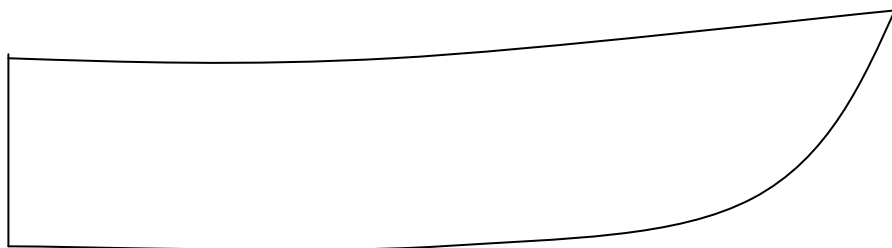
簡單圖則 Plan(Simp)-HS-10C (Not applicable to open boat / 開敞船隻不需要)

Escape Installation and Arrangement Diagram

逃生設備及佈置示意圖則

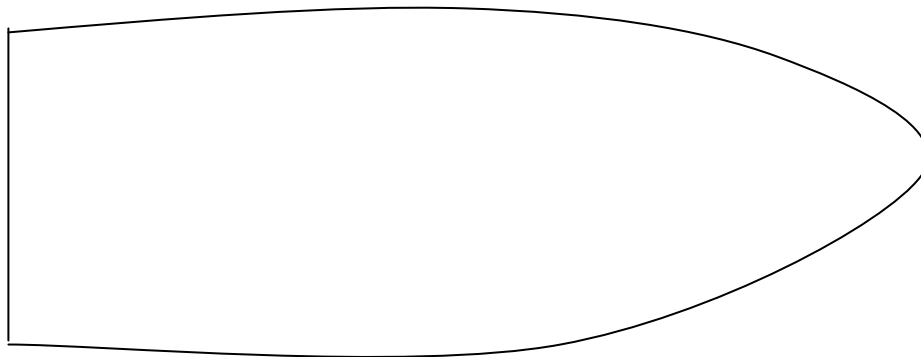
(Note : A copy of this diagram must be kept onboard)

(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:

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

<u>Vessel information</u> 船隻資料	<u>Content</u> 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. 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*

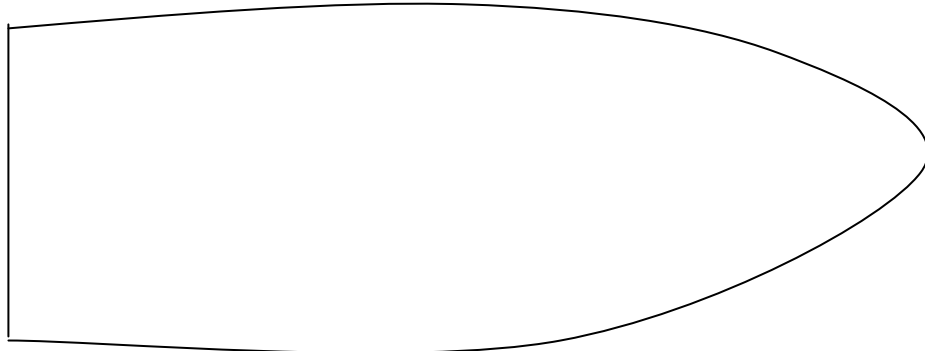
Lights, Shapes & Sound Signals Installation and Arrangement Diagram

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)



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 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> 船隻資料	<u>Content</u> 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. 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

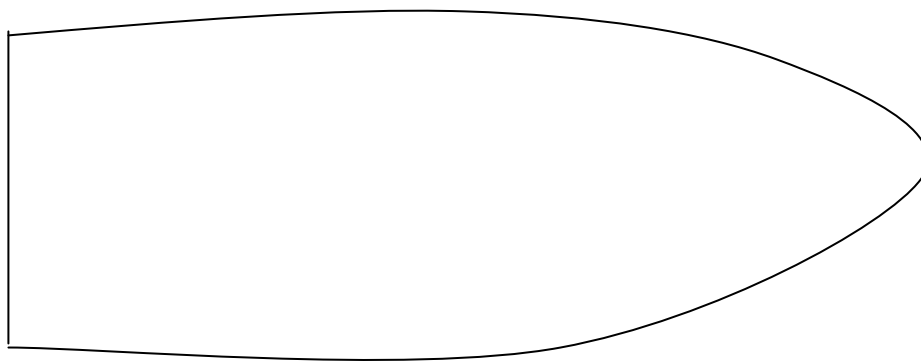
Machinery Installation Plans 機器及其系統設備圖則

(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:

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

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

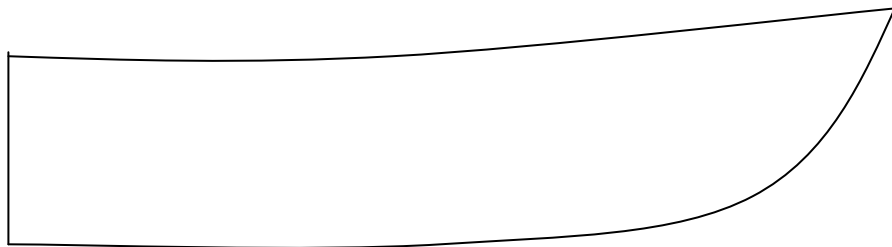
For use on simple GRP transportation or fishing sampan / GRP or wooden small boat / sampan etc
適用於簡單玻璃纖維交通或捕漁舢舨 / 玻璃纖或木質小船 / 舢舨等

Electrical Installation Plans

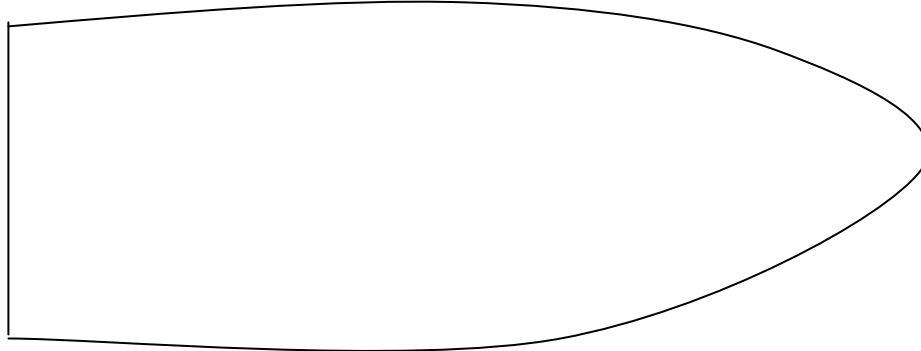
電器及其系統設備圖則

(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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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
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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

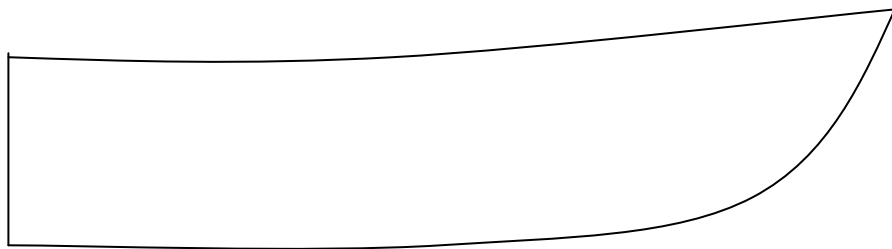
Machinery & Electrical Installation Plans

機器與電器及其系統設備圖則

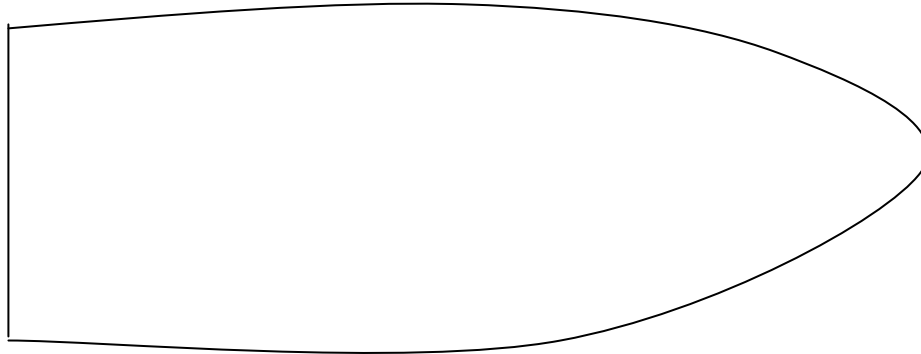
(Note : A copy of this diagram must be kept onboard)

(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

Remarks 備註:

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8. Fuel type/ tank no./ total capacity 燃油類 / 油缸數量 / 總容量	
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10. Generator engine serial no. 發電內燃機號碼	
11. Generator maker /type. 發電機製造商/型類	
12. No. of Generator / serial no.. 發電機數目 / 號碼	
13. Total engine power (kW)/ RPM. 發電總功率 (千瓦) / 轉速(每分)	
14. 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

Annex T-1

Provisions in Merchant Shipping (Local Vessels)(Certification and Licensing) Regulation on matters relating to restrictions on a Class II or III IV vessels and let for hire or reward

[Ref. to Annex IA and IB of COP- Class IV vessels]

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

Annex T-2

Provisions in Merchant Shipping (Certification and Licensing) Regulation on matters relating to Certificate of Competency required for a Class I, II or III ~~IV~~ 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.

Annex U

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 ~~There shall be not less than 2 sources of~~ The power supply for the electrical equipment used in the operation of the system shall be from an independent source which would not be affected by the interruption of normal supply. The supply shall be provided by separate feeders reserved solely for that purpose. ~~Such feeders shall run to a change over switch situated in the control station for the system.~~ 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 spaces 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.

Annex V

CO₂ Fixed Installation for Fire Fighting System

- 1. In every such installation provided for the injection of CO₂ 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.

Annex W

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.