

***CODE OF PRACTICE ----***

## **Safety Standards for Class I Vessels**

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



Local Vessels Safety Section  
Marine Department, HKSAR  
(February 2023 Edition)

## Record on Updating and Amendments

This code of practice is issued under section 8 of the Merchant Shipping (Local Vessels) Ordinance, (Cap. 548). This code was first notified in the Gazette Notice on 29 December 2006 to take effect on 2 January 2007. Subsequent updating and amendments would be notified to the industry through further notice in the Gazette from time to time. This record sheet is intended for good record keeping of the amendment history of this code.

Amend. No.	Gazette No.	Gazette Date	Effective Date	Topic Areas / Pages
1	G.N.7136	29 November 2013	29 November 2013	revision of sections 7.2 and 8.2 of Chapter I / Page 17
2	G.N.7136	29 November 2013	29 May 2014	addition of new item 13 to “(A) GENERAL AND SAFETY” in the table under section 5 of Chapter II/ Page 5& 9
3	G.N.7136	29 November 2013	29 May 2014	addition of new sections 6.4 and 6.5 to Chapter II / Page 9
4	G.N.7136	29 November 2013	29 May 2014	addition of new section 2.7 to Chapter IIIA / Page 2
5	G.N.7136	29 November 2013	First annual survey after 1 March 2014	addition of new section 15 to Chapter VII / Page 5&6
6	G.N.7136	29 November 2013	section 10.2.1(i) and (ii) – first annual survey after 29 November 2014 section 10.2.1(iii) and section 10.2.2 – 29 November 2014	addition of new section 10 to Chapter XII / Page 4&5
7	G.N.7136	29 November 2013	First annual survey after 1 March 2014	revision of section 1 of Annex U-5/Page 1
8	G.N.6640	21 November 2014	29 November 2014	revision of section 3.1 of Chapter I for – (i) addition of a new definition of “authorized organization” and “classification society”; (ii) repeal of the definition of “classification societies”; and (iii) addition of a new definition of “margin line”
9	G.N.6640	21 November 2014	29 November 2014	revision of sections 4.2, 4.3 and 6.1 of Chapter II;
10	G.N.6640	21 November 2014	29 November 2014	revision of the heading of section 5 of Chapter II

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11	G.N.6640	21 November 2014	29 November 2014	addition of a new provision on high risk vessel to section 5 of Chapter II
12	G.N.6640	21 November 2014	29 November 2014	revision of items 1, 8, 10 and 12 under “(A) GENERAL AND SAFETY” in the table under section 5 of Chapter II
13	G.N.6640	21 November 2014	29 November 2014	revision of items 1, 2 and 3 under “(B) HULL” in the table under section 5 of Chapter II
14	G.N.6640	21 November 2014	29 November 2014	revision of items 3, 4(a), 4(b), 5, 6 and 7 under “(C) MACHINERY INSTALLATION” in the table under section 5 of Chapter II
15	G.N.6640	21 November 2014	29 November 2014	revision of item 1 under “(D) ELECTRICAL INSTALLATION (including Emergency Power System)” in the table under section 5 of Chapter II
16	G.N.6640	21 November 2014	29 November 2014	revision of remark *7 on the table under section 5 of Chapter II
17	G.N.6640	21 November 2014	29 November 2014	repeal of remark *12 on the table under section 5 of Chapter II
18	G.N.6640	21 November 2014	29 November 2014	omission of remark *13 on the table under section 5 of Chapter II
19	G.N.6640	21 November 2014	29 November 2014	addition of a new section 6.1A to Chapter II
20	G.N.6640	21 November 2014	29 November 2014	omission of the remarks on sections 6.4 and 6.5 of Chapter II
21	G.N.6640	21 November 2014	29 November 2014	revision of items 1 and 12 under “(A) GENERAL AND SAFETY MEASUREMENT” in Table 1 under section 7 of Chapter II
22	G.N.6640	21 November 2014	29 November 2014	revision of remark *11 on Table 2 under section 7 of Chapter II
23	G.N.6640	21 November 2014	29 November 2014	revision of item 6 under “(A&B) GENERAL, HULL & SAFETY EQUIPMENT” in Table 3 under section 7 of Chapter II
24	G.N.6640	21 November 2014	29 November 2014	addition of a new item 6A under “(A&B) GENERAL, HULL & SAFETY EQUIPMENT” in Table 3 under section 7 of Chapter II
25	G.N.6640	21 November 2014	29 November 2014	addition of a new item 9A under “(C&D) MACHINERY AND ELECTRICAL INSTALLATION” in Table 3 under section 7 of Chapter II
26	G.N.6640	21 November 2014	29 November 2014	addition of a new remark *5A on Table 3 under section 7 of Chapter II

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27	G.N.6640	21 November 2014	29 November 2014	omission of the remarks on section 2.7 of Chapter IIIA
28	G.N.6640	21 November 2014	29 November 2014	revision of the English text of section 3.5 of Chapter IIIA
29	G.N.6640	21 November 2014	29 November 2014	revision of section 10.2 of Chapter IIIA
30	G.N.6640	21 November 2014	29 November 2014	addition of new sections 21.5A and 21.5B to Chapter IIIA
31	G.N.6640	21 November 2014	29 November 2014	revision of sections 6.1, 9.1 and 9.2 of Chapter IV
32	G.N.6640	21 November 2014	29 November 2014	revision of sections 1.1(c), 3.1(a), 3.2, 3.4, 3.5, 7.1 and 7.2 of Chapter V
33	G.N.6640	21 November 2014	29 November 2014	addition of new sections 1.5, 3.6, 3.7, 3.8, 3.9 and 7.1A to Chapter V
34	G.N.6640	21 November 2014	29 November 2014	revision of section 10.1(a) of Chapter VI
35	G.N.6640	21 November 2014	29 November 2014	repeal of section 13.5.2 of Chapter VI
36	G.N.6640	21 November 2014	29 November 2014	revision of section 3.1 of Chapter XI
37	G.N.6640	21 November 2014	29 November 2014	revision of section 10 of Chapter XII
38	G.N.6640	21 November 2014	29 November 2014	addition of a new section 11 to Chapter XII;
39	G.N.6640	21 November 2014	29 November 2014	omission of paragraph 1 of Annex U-5
40	G.N.6640	21 November 2014	29 November 2014	revision of paragraph 2 of Annex U-5
41	G.N.6640	21 November 2014	29 November 2014	addition of a new Annex U-6
42	G.N.6824	28 November 2014	29 November 2014	revision of section 11.2 of Chapter XII
43	G.N.3790	29 May 2015	29 May 2015	revision of sections 1.2 and 2.1 of Chapter VII
44	G.N.4986	2 September 2016	2 September 2016	addition of new requirements to section 1.3 of Chapter III B
45	G.N.4986	2 September 2016	2 September 2016	omission of section 1.3(c) of Chapter III B

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46	G.N.4986	2 September 2016	2 September 2016	addition of new section 1.4 to Chapter IIIB
47	G.N.4986	2 September 2016	2 September 2016	revision of section 1.1 of Chapter IV
48	G.N.4986	2 September 2016	2 September 2016	revision of section 1.5 of Chapter V
49	G.N.4986	2 September 2016	2 September 2016	revision of section 1.6 of Chapter V
50	G.N.4986	2 September 2016	2 September 2016	revision of section 2.8 of Chapter VII
51	G.N.4986	2 September 2016	2 September 2016	addition of sections 10.3 and 10.4 to Chapter VII
52	G.N.4986	2 September 2016	2 September 2016	revision of sections 4.1 to 4.4 and 5.1[ <b>Note(F)</b> ] of Chapter VIII
53	G.N.4986	2 September 2016	2 September 2016	revision of Annex I-10
54	G.N.4986	2 September 2016	2 September 2016	addition of Annex K-2
55	G.N.4986	2 September 2016	2 September 2016	revision of Annex L
56	G.N.4986	2 September 2016	2 September 2016	addition of new requirements to Annex N-4B
57	G.N.4986	2 September 2016	2 September 2016	addition of new requirements to Annex N-4C
58	G.N.1134	3 March 2017	3 March 2017	the code is rewritten and partitioned into 3 volumes; namely Code of Practice – Safety Standards for Class I Vessels, Code of Practice – Safety Standards for Class II Vessels and Code of Practice – Safety Standards for Class III Vessels; and contents are comprehensively amended
59	G.N.5924	11 August 2017	11 August 2017	Chapter II amended: in Table 5-1, revision of items (A)(1), (2), (B)(1), (2); omission of remark *2; in Table 7-1, revision of items (A)(2) and remark *9; in Table 7-3, revision of Remark*6
60	G.N.5924	11 August 2017	11 August 2017	In Chapter IIIA: revision of sections 2.1(c), 7.3 (English version only)
61	G.N.5924	11 August 2017	11 August 2017	In Chapter IIIB: revision of section 2.3
62	G.N.5924	11 August 2017	11 August 2017	In Chapter IV, addition of new section 1.5.2
63	G.N.5924	11 August 2017	11 August 2017	In Annex F, addition of new para. (10)

<b>Amend. No.</b>	<b>Gazette No.</b>	<b>Gazette Date</b>	<b>Effective Date</b>	<b>Topic Areas / Pages</b>
64	G.N.500	26 January 2018	26 January 2018	In Chapter V, addition of new paragraphs at end of section 3.4
65	G.N.500	26 January 2018	26 January 2018	Addition of new Annex W
66	G.N.6489	31 August 2018	31 August 2018	In Chapter II, Table 5-1, add in item (C)(7a) and remark *2; Table 7-1, add in item (D)(10) and remark *10; Table 7-2, add in item (B)(7) and remark *16; Table 7-3, amend remark *9
67	G.N.6489	31 August 2018	31 August 2018	In Chapter IV, add in subsection 7.2
68	G.N.6489	31 August 2018	31 August 2018	Addition of new Annex Y
69	G.N.8215	20 December 2019	20 December 2019	Chapter VII Section 1 –definition of “LSA Code” revised; Section 2 –subsection 2.1 and 2.3 revised; subsection 2.2 repealed and new subsection 2.1A inserted to specify the new and former lifejacket requirements; Section 13 –subsection 13.1(i) revised to adopt e-marking in lieu of physical marking on lifejacket;
70	G.N.8215	20 December 2019	20 December 2019	New Annex AA added to specify the requirements of former regulations
71	G.N.6256	2 November 2020	2 November 2020	Chapter II: Section 2 – subsection 2.2 and 2.5(b) revised; Remarks in Table 7-3 – remark *1 revised
72	G.N.7604	3 December 2021	3 December 2021	Chapter I: Section 3 – definitions relating to high speed vessel revised; Section 4 – subsection 4.2 revised.
73	G.N.7604	3 December 2021	3 December 2021	Chapter II: Section 1 – subsections 1.2, 1.7 revised; Section 3 – all revised; Table 7-1 –items (G)(1) revised; Table 7-2.1 inserted; Table 7-2 retitled to Table 7-2.2; Table 7-2.2 –item (C)(11A) added, (D)(2) deleted; Remarks in Table 7-2.1&2 –*1 revised; Remarks in Table 7-3 –*9 revised.
74	G.N.7604	3 December 2021	3 December 2021	Chapter XI: Completely revised
75	G.N.7604	3 December 2021	3 December 2021	Addition of new Annex AB

<b>Amend. No.</b>	<b>Gazette No.</b>	<b>Gazette Date</b>	<b>Effective Date</b>	<b>Topic Areas / Pages</b>
76	G.N.1314	18 March 2022	18 March 2022	Chapter V: Section 7 – new paragraphs 7.4 & 7.5 inserted; and Chapter VI: Section 2 – new paragraph 2.4 inserted
77	G.N.949	10 February 2023	20 February 2023	Table of content – Chapter XI revised
78	G.N.949	10 February 2023	20 February 2023	Chapter I: Section 2 – subsection 2.1 revised Section 3 – definitions of “certificate” revised
79	G.N.949	10 February 2023	20 February 2023	Chapter II: Section 7 – Table 7-1 item (B)(3) revised
80	G.N.949	10 February 2023	20 February 2023	Chapter III A: Section 19 – subsection 19.2(d) revised Section 20 – subsection 20.5 revised
81	G.N.949	10 February 2023	20 February 2023	Chapter VI: Section 2– subsection 2.2 and 2.3 revised Section 2 – addition new paragraph 2.5 Section 5 – addition new paragraph 5.5
82	G.N.949	10 February 2023	20 February 2023	Chapter VII: Section 2 –subsection 2.1A.2, 2.1A.3 and 2.1A.8 revised; Section 2 –subsection 2.1A.1, 2.1A.9, 2.1A.10 and 2.6 repealed;
83	G.N.949	10 February 2023	20 February 2023	Chapter XI: Section 2 – subsection 2.2(d) revised
84	G.N.949	10 February 2023	20 February 2023	Chapter XII: Section 2 – new Note*4 added in the Table 2.1 Section 3 – subsection 3.2(c) revised
85	G.N.949	10 February 2023	20 February 2023	Annex F subsection 8(c) in part 3 revised
86	G.N.949	10 February 2023	20 February 2023	Annex I-4 New paragraph 17 inserted
87	G.N.949	10 February 2023	20 February 2023	Annex I-5A section 4.1 revised
88	G.N.949	10 February 2023	20 February 2023	Annex V-4 section 1.(6) revised
89	G.N.949	10 February 2023	20 February 2023	Annex AA– repealed.

## **FOREWORD**

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

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

(3) Section 9 of the Ordinance explains the use of approved codes of practice in proceeding.



**CODE OF PRACTICE -  
SAFETY STANDARDS FOR CLASS I VESSELS**

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# **CHAPTER I**

## **GENERAL**

### **1 Introduction**

- 1.1 The legislation relating to the control, licensing and regulation of local vessels in Hong Kong is contained in the Merchant Shipping (Local Vessels) Ordinance, Cap. 548 (the Ordinance) and its subsidiary legislations. This Code of Practice is issued under section 8 of the Ordinance.
- 1.2 This "Code of Practice – Safety Standard for Class I Vessels" has been developed by the Hong Kong Marine Department in consultation with the local maritime industry through representation in relevant working groups and committees.
- 1.3 The primary aim in developing the Code has been to set standards of safety and protection for all passengers and crew on board. The Code relates especially to the construction of a vessel, its machinery, equipment and stability and to the proper operation of the vessel so that safety standards are maintained. In accordance with the legal status prescribed in section 9 of the Ordinance, requirements set out in this Code shall be followed.
- 1.4 The legislative requirements quoted in this Code should be subject to authentic provisions of the legislative instrument and its latest amended. These requirements are mandatory and must be complied with.
- 1.5 The builder, repairer or owner/managing agent of a vessel, as appropriate shall 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.

### **2 Statutory Legislation and Standards**

- 2.1 This Code must be construed in the light of the following statutory provisions and their amendments from time to time (if any) as appropriate:

- (A) Merchant Shipping (Local Vessels) Ordinance (Cap. 548) (hereafter referred to as "the Ordinance")
  - (1) Merchant Shipping (Local Vessels) (Certification and Licensing) Regulation (Cap. 548, sub. leg. D) (hereafter referred to as "Certification and Licensing Regulation")
  - (2) Merchant Shipping (Local Vessels) (Typhoon Shelter) Regulation (Cap. 548, sub. leg. E)
  - (3) Merchant Shipping (Local Vessels) (General) Regulation (Cap. 548, sub. leg. F)
  - (4) Merchant Shipping (Local Vessels) (Safety and Survey) Regulation (Cap. 548, sub. leg. G) (hereafter to be referred as "Survey Regulation")
  - (5) Merchant Shipping (Local Vessels) (Compulsory Third Party Risks Insurance) Regulation (Cap. 548, sub. leg. H)
  - (6) Merchant Shipping (Local Vessels) (Works) Regulation (Cap. 548, sub. leg. I)
  - (7) Merchant Shipping (Local Vessels) (Fees) Regulation (Cap. 548, sub. leg. J)
  - (8) Merchant Shipping (Local Vessels) (Local Certificates of Competency) Rules
- (B) Merchant Shipping (Prevention and Control of Pollution) Ordinance (Cap. 413)
  - (1) Merchant Shipping (Prevention of Oil Pollution) Regulations (Cap. 413, sub. leg. A)
  - (2) Merchant Shipping (Control of Harmful Anti-Fouling Systems on Ships) Regulation (Cap. 413, sub. leg. N)
  - (3) Merchant Shipping (Prevention of Pollution by Garbage) Regulations (Cap. 413, sub. leg. O)
  - (4) Merchant Shipping (Prevention of Air Pollution) Regulations (Cap. 413, sub. leg. P)
- (C) Merchant Shipping (Safety) Ordinance (Cap. 369)



- (1) Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations (Cap. 369, sub. leg. N)
- (2) Merchant Shipping (Safety) (Use of Signals of Distress) Regulations (Cap. 369, sub. leg. O)
- (D) Dangerous Goods Ordinance (Cap. 295)
  - (1) Dangerous Goods (Application and Exemption) Regulation 2012 (Cap. 295, sub. leg. E)
  - (2) Dangerous Goods (Shipping) Regulation 2012 (Cap. 295, sub. leg. F).

## 2.2 Other Standards

The vessel's strength, structure, arrangements, materials, scantlings, main and auxiliary machinery, boilers and pressure vessels, electrical installations, etc. shall 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 may be used as assessment standards.

## 3 Definitions

### 3.1 In this Code-

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

“Authorized Organization (AO)” means the classification society authorized (by means of authorization document) by the Director to carry out statutory survey work for local vessels;

“authorized surveyor”, as defined in section 2 of the Ordinance;

“carrying xx passengers” means vessel's permissible number of passengers that can be carried throughout the text of this Code;

“certificate” means a Certificate of Survey, or a Declaration of Fitness for the Carriage of Dangerous Goods issued by the Director under the Survey Regulation; and a HKOPP Certificate or a HKAPP Certificate issued under Merchant Shipping (Prevention and Control of Pollution) Ordinance, Cap. 413;

“Class I vessel” means any local vessel, other than a Class II, III or IV vessel defined in sections 5 and 6 of the Merchant Shipping (Local Vessels) (Certification and Licensing) Regulation;

“classification society (CS)” means an organization approved under section 8 of the Merchant Shipping (Safety) Ordinance (Cap 369), which is one of the following –

- (a) American Bureau of Shipping (ABS);
- (b) Bureau Veritas (BV);
- (c) China Classification Society (CCS);
- (d) DNV AS; (Amended G.N. 7604 of 2021)
- (e) Korean Register of Shipping (KR);
- (f) Lloyd's Register (LR);
- (g) Nippon Kaiji Kyokai (NK);
- (h) RINA S.p.A. (RINA); or

(i) Russian Maritime Register of Shipping (RS)

“Code” means this Code;

“dynamically supported craft (DSC)”, as defined in Ch. XI/1; (Added G.N. 7604 of 2021)

“existing vessel” means a vessel which is not a new vessel defined in section 2 of the Survey Regulation;

“extreme breadth”, in relation to a local vessel, means the athwartship distance between the extremity of the outermost permanent structure (including fenders of any kind, bulwark, hand rails, etc.) on the port side and the extremity of the outermost permanent structure on the starboard side of the 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 onto the main deck (in the case of open boats, over the gunwale);

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

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

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

“high speed craft (HSC)”, as defined in Ch. XI/1; (Amended G.N. 7604 of 2021)

“HSC Code”, as defined in Ch. XI/1; (Amended G.N. 7604 of 2021)

“IMO” means the International Maritime Organization;

“initial survey” in connection with anyone of the certificates mentioned in Part 3 and Part 4, in so far as applicable, of Survey Regulation means the survey (including its final inspection) to be completed for a new vessel for the first issue of the concerned certificate;

“length” or the symbol “(L)”, as defined in section 2 of the Survey Regulation;

“length overall”, as defined in section 2 of the Ordinance;

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

“margin line” means a line drawn at least 76 mm below the upper surface of the bulkhead deck at the side of the ship;

“moulded breadth” is measured at amidship and is the maximum breadth over the frames in respect of vessels built of steel or aluminium; and is the maximum breadth over the outside surface of hull planking in respect of vessels built of wood or composite materials;.

“moulded depth” , as defined in section 2 of the Survey Regulation;

“multi-purposes vessel” means a local vessel or launch which can carry more than 12 passengers and can be used with other purposes;

“new vessel”, unless indicated otherwise, as defined in section 2 of the Survey Regulation;

“Ordinance” or “LVO” means the Merchant Shipping (Local Vessels) Ordinance (Cap 548).

- “owner” , as defined in section 2 of the Ordinance;
- “passenger”, as defined in section 2 of the Ordinance;
- “periodical survey” in connection with anyone of the certificates mentioned in Part 4, in so far as applicable, of Survey Regulation means the survey (including its final inspection) to be completed for an existing vessel for the renewal survey, annual endorsement survey or intermediate survey for the issue of the concerned certificate;
- “Recognized Authority (RA)”, as defined in section 2 of the Survey Regulation;
- "river trade limits", as defined in section 2 of the Survey Regulation;
- “sister vessels” or “series of vessels” means vessels constructed of the same design (i.e. the same hull form with identical length, breadth, depth and arrangement) in the same shipyard;
- “waters of Hong Kong ” means waters of Hong Kong within the meaning of Schedule 2 of the Interpretation and General Clauses Ordinance (Cap. 1).
- "watertight", as defined in regulation 1 of the Merchant Shipping (Safety) (Passenger Ship Construction And Survey) (Ships Built On Or After 1 September 1984) Regulations;
- "weathertight", as defined in regulation 1 of the Merchant Shipping (Safety) (Passenger Ship Construction And Survey) (Ships Built On Or After 1 September 1984) Regulations;

#### **4 Application**

- 4.1 Subject to section 4.2, this Code will apply to Class I vessels of all types of construction.
- 4.2 Chapter XI will apply to new DSC and HSC. (Amended G.N. 7604 of 2021)
- 4.3 Existing vessels shall comply with the requirements previously applicable to these vessels unless otherwise expressly specified in the 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; i.e. the new vessels as on or after 2 January 2007.

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

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

Class and Type of Vessel	Vessel Category	A		B	
	Material	Steel/Al/GRP/Wooden		Wooden	Steel/Al/GRP/Wooden
	Propulsion	with Main Engine	No Main Engine	with Main Engine	No Main Engine
<b>Class I Vessel</b>					
Launch		*			
Ferry Vessel		*			
Floating Restaurant			*		
Stationary vessel (Ceremonial Boat)			*		*(1)
Primitive Vessel (Kaito) <sup>(2)</sup>				*	
Multi-purposes Vessel		*			

(Asterisk\* means applicable)

#### Abbreviations in Table

Al : Aluminium

GRP : Glass reinforced plastic

#### Remarks in Table

- (1) Existing vessels only.
- (2) A new wooden primitive vessel (kaito) 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 Equivalent

Under section 83 of the Survey Regulation 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 if the department is satisfied by testing or other methods that their effectiveness is equivalent to that required in this Code; supported by necessary survey and test reports.

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

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

- 1.1 Any local vessel to which sections 7(1) and (3) of Survey Regulation apply when applying for an initial licence is subject to the approval of plans per items (appropriate according to category and type of vessel) indicated in Table 5-1.
- 1.2 Any local vessel to which Part 4 of Survey Regulation applies when applying for an initial licence is subject to the initial survey per items (appropriate according to category and type of vessel) indicated in Tables 7-1 and 7-3; and after licensing the periodical survey per items indicated in Tables 7-2.1 or 7-2.2 (where applicable) and 7-3. (Amended G.N. 7604 of 2021)
- 1.3 Any licensed vessel of the above sections 1.1 or 1.2 intended for alteration shall be subject to the approval of plans (if section 1.1 is applicable) and survey relating to the alteration under section 76(5) of the Survey Regulation.
- 1.4 A replacement primitive vessel (kaito) carrying more than 60 passengers is required to comply with the standard of plan approval and survey as that for Class I vessel of type “Launch” carrying the same number of passengers.
- 1.5 Any vessel intended for change of the vessel’s name is subject to a survey relating to the change of name and the relevant fees.
- 1.6 A laid-up vessel (which is granted with a permission for laid-up) shall be subject to survey when returning to service if the Certificate of Survey previously issued has expired. If the expiry is not exceeding 2 years, the survey shall cover items due in the past 2 years as the vessel was not laid up.
- 1.7 Any vessel having its Certificate of Survey expired for more than 2 year but less than 8 years, for vessels not classed with an Authorized Organization (AO)(see definition in Ch. I/3.1) the surveys shall follow the quadrennial survey programme prescribed in Table 7-2.2; for vessels classed with an AO the surveys shall follow the survey programme of AO.  
(Amended G.N. 7604 of 2021)
- 1.8 Any vessel having its Certificate of Survey expired for more than 8 years, it shall be subject to thorough inspection according to items of Table 7-1. If alterations had been carried out onboard vessel plans relating to the alterations shall be submitted for approval. The survey and plan approval are to comply with standards applicable to existing vessels, and the amended (if any).
- 1.9 When deemed necessary or at his discretion, the attending surveyor/inspector may request any other item to be presented for inspection

**2 Statutory Surveys and Application**

- 2.1 Subject to the below section 2.2 officers delegated by the Director are responsible for the statutory plan approval and survey of vessel.
- 2.2 The Director may delegate the statutory plan approval and surveys (items other than that marked with ‘MD’) to authorized surveyor employed by AO as indicated in the

authorization/recognition document. List of AOs will be promulgated in the Marine Department Notice issued from time to time. Vessel owner or agent, when required, may also apply to Marine Department for plan approval and surveys.

(Amended G.N. 6256 of 2020)

- 2.3 Upon satisfactory completion of surveys or assessment, the following relevant statutory certificates or record document would be issued by Marine Department as specified in the following table. Annex V-4 also lists the other certificates and documents that a local vessel might require, as appropriate:

No.	CERTIFICATES / RECORDS
(1)	Certificate of Survey
(2)	Exemption Certificate / Permit for alternative material, fitting or equipment (when applicable)

- 2.4 The Certificate of Survey and relevant remarks must be displayed in a conspicuous location onboard under section 30 of the Survey Regulation.

- 2.5 If the owner or agent wishes his vessel to be surveyed by an authorized organization he shall provide the Department an “Engagement Form”:

- (a) prior to the survey - the name of the authorized organization, 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 organization.

(Amended G.N. 6256 of 2020)

### 3 Validity of Certificate and Endorsement

For the expiry date of the certificate or endorsement, refer to Marine Department Notice No. 199 of 2021.

(Amended G.N. 7604 of 2021)

### 4 Submission of Plans and Data

- 4.1 Plans and data shall be submitted according to Table 5-1 (as marked with "✓"). Additional plans and data will be required when deemed necessary. The required plans and data may be consolidated into one plan (or plans) according to the size of vessel and complexities of the plan.
- 4.2 Except for any vessel classed with a classification society; and otherwise indicated in the table (items marked with ‘MD’), the plans and data may be submitted to any of the AO for approval at the discretion of the owner. For any vessel classed with a classification society, plans and data shall be submitted to the relevant classification society for approval.
- 4.3 For plans and data to be submitted for Marine Department’s approval, 3 copies of each shall be submitted for the 1<sup>st</sup> vessel of a series and 2 copies for the subsequent vessels.
- 4.4 One copy of such plans and data approved by AO shall be submitted to Marine Department for record. Supplementary plans and data may be required should any survey be undertaken by Marine Department.
- 4.5 Plans of General Arrangement, vessel construction and relevant plans shall be drawn in

appropriate scale of legibly quality.

**5 Plans and Data required to be submitted** [Survey Regulation, section 9 refers]

5.1 For new primitive vessel (kaito) carrying not more than 60 passengers (Category B vessel), plans and data stipulated in Annex Q shall be submitted for approval.

5.2 For vessels other than 5.1, plans and data shall be submitted according to Table 5-1 below.

**Table 5-1 Plans and Data**

Table 5-1 No.	PLANS AND DATA
<b>(A)</b>	<b>GENERAL ARRANGEMENTS, ACCOMMODATION LAYOUTS, PASSENGER SPACE, SEATING ARRANGEMENTS, NUMBER OF PASSENGERS AND ESCAPE ROUTES</b>
(1)	General Arrangement <sup>(*1)</sup>
(2)	Passenger Space (shelter)/Seating Arrangement (Ch. V refers)
(3)	Passengers and Crew Accommodation Requirements (incl. handrail, seat belt, staircase, lighting and etc.) (Ch. V refers)
<b>(B)</b>	<b>SAFETY EQUIPMENT INCLUDING LIFE-SAVING APPLIANCES, FIRE-FIGHTING APPARATUS, LIGHTS, SHAPES AND SOUND SIGNALS ; EMERGENCY CONTROLS, STRUCTURAL FIRE PROTECTION</b>
(1)	Safety Plan showing arrangement of - (a) life saving appliances (b) fire fighting apparatus and structural fire protection arrangement (c) light and sound signals (d) means of escape, escape installation and arrangement, etc.
(2)	Structural Fire Protection Arrangement
(3)	A muster list specifying the duties of every member of crew in the events of emergency including collision, grounding, fire and abandonment of ship (only applicable to ferries and launches carrying more than 100 passengers)
<b>(C)</b>	<b>STABILITY, FREEBOARD CALCULATIONS; ARRANGEMENTS RELATING TO WATERTIGHTNESS, WEATHERTIGHTNESS, BULKHEADS, HATCHWAYS, COAMINGS, SIDE SCUTTLES, AIR VENTS, FREEING PORTS, SCUPPERS, INLETS AND DISCHARGES</b>
(1)	Lines Plan and Offsets Table (for record)
(2)	Hydrostatic Curves
(3)	Cross Curves of Stability
(4)	Preliminary Intact Stability Information
(5)	Estimated Damage Stability Information (Ch. IV/2 refers)
(6)	Inclining Experiment Report/Rolling Period Test Report/Lightweight Survey Report (Ch. IV/4 refers)
(7)	Stability Information Booklet (after inclining experiment)

Table 5-1 No.	PLANS AND DATA
(7a)	Permanent Ballast Weights Arrangement (if designed) <sup>(*)2</sup> (Added G.N. 6489 of 2018)
(8)	Damage Stability Calculation (after inclining experiment) (Ch. IV/2 refers)
(9)	Draft Marks
(10)	Arrangements relating to Watertightness, Weathertightness, Bulkheads, Hatchways, Coamings, Side Scuttles, Air Vents, Freeing Ports, Scuppers, Inlets and Discharges, etc.
<b>(D)</b>	<b>STRUCTURES AND SCANTLINGS</b>
(1)	Midship Sections
(2)	Scantling Calculation
(3)	Profile, Decks and Bulkheads (incl. hull and superstructure decks)
(4)	Shell Expansion
(5)	Rudder/Kort Nozzle, Rudder Stock, Skeg and Sole Piece
(6)	Materials and Paints Specifications (for floating restaurant)
<b>(E)</b>	<b>FUEL, MACHINERY, SHAFTING</b>
(1)	Engine Room Arrangement
(2)	Propeller Shafting, Stern Tube and Coupling
(3)	Main engine and Gear Box Certificates <sup>(*)3</sup>
(4)	Aux. diesel engine Certificates <sup>(*)3</sup>
(5)	Fuel Oil System (incl. tanks, piping
(6)	Fire-fighting Piping Arrangement (incl. fire main, fixed fire extinguishing system, etc)
(7)	Bilge Pumping Arrangement
(8)	Compressed Air Piping System (for pressure $\geq 10$ bar)
(9)	Air Receiver (Ch. IIIA/15 refers)
(10)	Filling, Sounding and Air Vent System
<b>(F)</b>	<b>ELECTRICAL SYSTEMS (including Emergency Power System)</b>
(1)	Electrical System Line diagram
(2)	Wiring Diagram of Main Switchboard
(3)	Layout of Main Switchboard
(4)	Electrical Arrangement
(5)	Wiring Diagram of Distribution Boxes
<b>(G)</b>	<b>PREVENTION AND CONTROL OF POLLUTION</b>



Table 5-1 No.	<b>PLANS AND DATA</b>
(1)	Prevention of Oil Pollution Installation (Ch. IIIA/19.2 refers)
(2)	Prevention of Air Pollution Installation (refer to Annex I-10, etc)
<b>(H)</b>	<b>NAVIGATIONAL AND COMMUNICATION EQUIPMENT</b>
(1)	Radio Communication equipment and arrangement

#### **Remarks in Table 5-1**

- \*1 Amended plan to be submitted should there be any change from the arrangement of vessel shown on the original General Arrangement Plan.
- \*2 Applicable to new vessels <sup>Note 1</sup> after the enforcement of this Code. The plan shall include information on the positions, quantity, materials, unit weights and serial number markings (which can be colour painted) as well as relevant photos (12 megapixels or above and hard copy prints in 1200 x 1200 dpi or above) of the permanent ballast weights.
- \*3 For diesel engine of new vessels, engine maker or classification societies approved certificates/information and document as appropriate required in Ch. IIIA or IIIB and Annex I-10 of this Code or MARPOL Annex VI.

## **6 Plans to be retained onboard**

- <6.1 Every vessel shall be provided onboard one copy of the plan(s) approved by Marine Department:
- (a) general arrangement of vessel with seating arrangement and escape routes;
  - (b) types and dispositions of life saving appliance, fire-fighting appliance, light, shape, sound signals and radiocommunication equipment (if fitted).
- 6.2 For every vessel which has been modified or altered in a way that would change the seating arrangement, escape routes or dispositions of life saving appliance or fire-fighting appliance, all plans and documentation carried or displayed on board shall be modified to reflect those changes and approved by Marine Department.
- 6.3 For every Class I vessel carrying more than 100 passengers, safety plan showing arrangement of life saving appliances, fire-fighting apparatus, light and sound signals and means of escape, escape installation and arrangement shall be exhibited in conspicuous places throughout the vessel.>
- 6.4 All ferries and launches carrying more than 100 passengers should have on board the muster list as stated in item (B)(3) of Table 5-1.
- 6.5 An emergency drill shall be practiced by crewmembers at least once every two months. Records of emergency drills are to be kept onboard for at least one year for inspections by a MD officer.

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

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<sup>Note1</sup> Applicable to a vessel which is a new vessel under section 2 of the Survey Regulation when the reference to “the commencement date” in the definition of “new vessel” is substituted by “31.8.2018”

**Table 7-1 Initial Survey**

“√”means applicable

Table 7-1 No.	Survey Item	A	B
<b>(A)</b>	<b>CONSTRUCTION – GENERAL, SHIP STABILITY</b>		
(1)	Draft Marks – verification	✓	✓
(2)	Measurement of Principal Dimensions	✓ (*9)	✓ (*9)
(3)	Inclining Experiment (*1)	✓	
(4)	Lightship Verification (*2)	✓	
(5)	Simple Inclining Test (for Kaito with $C_{np} \geq 0.35$ )		✓
<b>(B)</b>	<b>FIRE-FIGHTING APPARATUS, STRUCTURAL FIRE PROTECTION, APPLIANCES FOR PREVENTION OF COLLISION</b>		
(1)	CO <sub>2</sub> Pipe - inspection, hydraulic test and blowing test	✓	✓ (*8)
(2)	Fire Main - inspection and hydraulic test	✓	✓ (*8)
(3)	Structural Fire Protection (Ch. VI/12 refers) - inspection	✓	
(4)	Position of Navigational Light and its Foundation – verification	✓	✓
<b>(C)</b>	<b>CARRIAGE OF PASSENGERS</b>		
(1)	Measurement of Noise Level in Passenger Space	✓	--
(2)	Measurement of Passenger Space / Seating	✓	✓
(3)	Minimum headroom in Accommodation Space - confirmation	✓	✓
(4)	Means of Escape in Accommodation Space and Machinery Spaces - inspection	✓	✓
<b>(D)</b>	<b>CONSTRUCTION – HULL; CONDITIONS OF ASSIGNMENT</b>		
(1)	Material test - Steel Plate(*3)/Aluminium Plate(*3)/GRP Polyester Resin	✓	
(2)	- Propeller Shaft, Coupling, Rudder Stock (*4)	✓	✓ (*8)
(3)	Hull Scantlings - verification	✓	
(4)	Welding / GRP Lamination and Finishing - inspection	✓	
(5)	Below Main Deck W.T. bulkhead and W.T. door fitted thereon - Hose test(*5)	✓	
(6)	Structural Tanks - internal inspection	✓	
(7)	- hydraulic test/air test(*5)	✓	
(8)	Watertight / Weathertight Appliances - inspection	✓	
(9)	- hose test(*5)	✓	

Table 7-1 No.	Category of Vessel		A	B
	Survey Item			
(10)	Permanent Ballast Weights - inspection <sup>(*10)</sup> (Added G.N. 6489 of 2018)		✓	✓
<b>(E)</b>	<b>CONSTRUCTION - FUEL, MACHINERY, SHAFTING</b>			
(1)	Main Engine <sup>(*6) (*7)</sup> , Gear Box - Type Approval Certificate /inspection		✓	✓ <sup>(*8)</sup>
(2)	Generator Diesel Engine - Certificate <sup>(*6)</sup> / inspection		✓	✓ <sup>(*8)</sup>
(3)	Tail Shafts and Coupling - verification of dimensions		✓	✓ <sup>(*8)</sup>
(4)	- taper bedding test		✓	✓ <sup>(*8)</sup>
(5)	Stern Tube - verification of dimension and hydraulic test		✓	✓ <sup>(*8)</sup>
(6)	Independent Fuel Oil Tanks - internal inspection and hydraulic test		✓	✓ <sup>(*8)</sup>
(7)	Verification of No. and Volume of Structural and Independent Fuel Oil Tanks		✓	✓ <sup>(*8)</sup>
(8)	Bilge Line - inspection and hydraulic test		✓	✓ <sup>(*8)</sup>
(9)	Sea Suction valve – inspection and hydraulic test		✓	✓ <sup>(*8)</sup>
(10)	Steering System Hydraulic Line - inspection and hydraulic test		✓	✓ <sup>(*8)</sup>
(11)	Fuel Oil Line - inspection and hydraulic test		✓	✓ <sup>(*8)</sup>
(12)	Compressed Air Pipe - hydraulic test (for P > 17.2 bar)		✓	✓
(13)	Air Receiver - verification of wall thickness/ dimensions		✓	✓
(14)	- hydraulic test		✓	✓
(15)	Main Engine Alarm System and FMEA items - function test (Applicable to vessels of the type stated in Ch. I/4.2)		MD	MD
<b>(F)</b>	<b>CONSTRUCTION - ELECTRICAL SYSTEMS</b>			
(1)	Electrical Wiring/installation - inspection		✓	✓
(2)	Generator circuit breaker load test (vessels with GenSet power > 50 kW)		✓	--
<b>(G)</b>	<b>PREVENTION AND CONTROL OF POLLUTION</b>			
(1)	Prevention of Oil Pollution Installation (MD/AO) - Inspection (Amended G.N. 7604 of 2021)		MD/AO/CS <sup>*11</sup>	MD/AO/CS <sup>*11</sup>
(2)	- hydraulic test of independent bilge water / sludge holding tank		✓	✓

#### Remarks in Table 7-1

- \*1 Applicable to the 1st vessel of a series of four vessels.
- \*2 Applicable to the 2nd, 3rd and 4th of a series of four vessels.
- \*3 In lieu of the material test, mill sheet issued/endorsed by a classification society is acceptable.
- \*4 Ch. IIIA/9 and IIIA/17.4 refer.
- \*5 Annex M/3, 4 refer. Hose test for door fitted on watertight bulkhead may be replaced by a chalk test if

a prototype test (with pressure corresponding at least to the head required for the intended location) has been carried out and certificated.

- \*6 Ch. IIIA/7.1 refers. For engine of new vessel, engine maker or classification societies approved certificates/information and document as appropriate required in Ch. IIIA or IIIB and Annex I-10 of this Code or MARPOL Annex VI.
- \*7 With effect from 1 March 2016, each brand new main engine to be fitted on board newbuilding and existing locally licensed Class I vessels shall be engraved with an unique official mark.
- \*8 For visual inspection and operational test at either initial or final inspection only.
- \*9 The measurement record shall be submitted to Marine Department for verification.
- \*10 Applicable to new vessels <sup>Note 2</sup> after the enforcement of this Code. The inspection shall be carried out in the vessel’s initial survey; or when alterations or repairs resulting in the removal/modification of permanent ballast weights (PBWs) have been made. The inspection shall be carried out in accordance with the requirements set out in the table below:

Tasks Shipowner/Shipyard Responsible for		Tasks Inspecting Personnel Responsible for
Documents Submission	Inspection Arrangement	
<p>(1) Declaration (refer to Annex Y of this Code) - which shall include the PBWs information (positions, quantity, materials, unit weights, serial number markings, etc.) designated in the stability booklet of the vessel.</p> <p>(2) Photo records (12 megapixels or above and hard copy prints in 1200 x 1200 dpi or above)- which shall clearly show the following conditions of PBWs stowage:</p> <ul style="list-style-type: none"> <li>(a) ship structure prior to PBWs being stowed;</li> <li>(b) 50% of PBWs stowed;</li> <li>(c) 100% of PBWs stowed; and</li> <li>(d) fittings used for securing the PBWs.</li> </ul>	<p>Stow PBWs according to the information given in item (1) in the left-hand column and carry out the inspection described in the right-hand column in coordination with attending inspecting personnel.</p>	<p>(1) Inspect vessel’s structure with regard to PBWs stowage;</p> <p>(2) verify all PBWs; and</p> <p>(3) randomly select at least 10% of PBWs (but no less than one PBW) for inspection. The inspection shall include the PBWs’ appearance, markings, weight confirmation, etc.</p>

- \*11 Applicable to vessels holding International Oil Pollution Prevention Certificate only.  
(Added G.N. 7604 of 2021)

<sup>Note2</sup> Applicable to a vessel which is a new vessel under section 2 of the Survey Regulation when the reference to “the commencement date” in the definition of “new vessel” is substituted by “31.8.2018”

**Table 7-2.1 Periodical Survey - Vessels Classed with AO**

Table 7-2.1 No.	Survey Item	Survey Intervals (year) <sup>(*1)</sup>		Survey Requirement
		> 60	≤ 60	
<b>(A) LIFE-SAVING APPLIANCES, FIRE-FIGHTING APPARATUS</b>				
(1)	Fixed Fire Ext. Installation CO <sub>2</sub> system - blowing test Sprinkler System - spraying test	2.5	2.5	Aerosol installation – in accordance with manufacturer requirements. Other types of installations - in accordance with AO requirements
(2)	- hydraulic test	10	10	in accordance with AO requirements
(3)	Fire Extinguisher, CO <sub>2</sub> Bottle - refill and hydraulic test	10	10	in accordance with AO requirements
(4)	Buoyant Apparatus - submerging test			in accordance with this Code
<b>(B) CONSTRUCTION – HULL; CONDITIONS OF ASSIGNMENT</b>				
(1)	Hull - external (incl. ship bottom) inspection	A	2.5 <sup>▲</sup>	Pax > 60: in accordance with this Code Pax ≤ 60: in accordance with AO requirements <b>▲</b> Hull external inspection: the intervals are not to exceed 36 months (survey window is not applicable); and to be performed within 15 months prior to the expiry date of the classification certificate
(2)	- internal (excl. oil, water tanks and void spaces) visual inspection	5	5	in accordance with AO requirements
(3)	- internal (incl. oil, water tanks and void spaces) inspection	5	5	in accordance with AO requirements
(4)	- gauging thickness of deck, shell and bulkhead plating	5 <sup>▲</sup>	5 <sup>▲</sup>	in accordance with AO requirements <b>▲</b> Start from the 10 <sup>th</sup> year after first licensing. Gauging of shell plating shall be performed along with item (B)(1)
(5)	Sea Suctions, Discharging Valves - stripped down inspection	2.5 <sup>▲</sup>	5 <sup>▲</sup>	in accordance with AO requirements <b>▲</b> be performed along with item (B)(1)
(6)	Anchors, Cables, Wire Ropes - ranged out for inspection	2.5 <sup>▲</sup>	2.5 <sup>▲</sup>	in accordance with AO requirements <b>▲</b> be performed along with item (B)(1)
(7)	Permanent Ballast Weights - inspection <sup>(*16)</sup> (Added G.N. 6489 of 2018)	A	A	in accordance with this Code
<b>(C) CONSTRUCTION - FUEL, MACHINERY, SHAFTING, ELECTRICAL SYSTEMS</b>				
(1)	Main Engine hydraulic test of coolers (incl. air, lub. oil, cooling water), cylinder head and water jacket	2.5	5	Inspection intervals in accordance with engine manufacturer requirements. Engine running hour report shall be furnished to AO annually.

Table 7-2.1 No.	Survey Item	No. of Passengers (Pax)	Survey Intervals (year) <sup>(*1)</sup>		Survey Requirement
			> 60	≤ 60	
(2)	overhaul of fuel oil pump, fuel nozzles		2.5	5	Inspection intervals in accordance with engine manufacturer requirements. Engine running hour report shall be furnished to AO annually.
(3)	Main Engine and Gear Box - stripped down for inspection		2.5 <sup>▲</sup>	2.5 <sup>▲</sup>	Engine running hour report shall be furnished to AO annually.
(4)	Generator engine, auxiliary machinery engine - stripped down for inspection		2.5 <sup>▲</sup>	2.5 <sup>▲</sup>	▲ May be extended once within a 5-yearly cycle determined by AO surveyor according to the engine's inspection interval, running hours or condition of maintenance
(5)	Main fire pump, emergency fire pump, bilge pump, windlass - stripped down for inspection		5	5	in accordance with AO requirements
(6)	Air Receiver (P<17.2 bar) - internal inspection		5	5	in accordance with AO requirements
(7)	- hydraulic test <sup>(*6)</sup>				hydraulic test to be carried out if rust/wear is found during inspection
(8)	Air Receiver (P≥17.2 bar) - internal inspection		5	5	in accordance with AO requirements
(9)	- hydraulic test <sup>(*6)</sup>				hydraulic test to be carried out if rust/wear is found during inspection
(10)	Tail Shaft, Propeller, Rudder, Rudder Stock - drawn out for inspection		5	5	in accordance with AO requirements
(11)	Independent Fuel Oil Tank – internal inspection & hydraulic test		5	5	in accordance with AO requirements
(12)	AC electrical circuit – main circuit breaker load test		5	5	in accordance with AO requirements
<b>(D)</b>	<b>PREVENTION AND CONTROL OF POLLUTION</b>				
(1)	Oil Pollution Prevention Installation - vessel with HKOPP certificate		5	5	in accordance with prevention of oil pollution regulation
(2)	- vessel without HKOPP certificate: hydraulic test of independent bilge water/sludge holding tank		5	5	in accordance with prevention of oil pollution regulation

(Added G.N. 7604 of 2021)

**Table 7-2.2 Periodical Survey - Vessels Not Classed with AO**

Table 7-2.2 No.	Survey Item	Class/Category/Type of Vessel	Class IA >60 Passengers Vessel			Class IA ≤60 Passengers Vessel			Class I B Vessel		
			1	2	4 (full survey)	1	2	4 (full survey)	1	2	4 (full survey)
(A)	<b>LIFE-SAVING APPLIANCES, FIRE-FIGHTING APPARATUS</b>										
(1)	Fixed Fire Ext. Installation CO <sub>2</sub> system - blowing test Sprinkler System - spraying test		✓				✓				
(2)	- hydraulic test		(*2)								
(3)	Fire Extinguisher, CO <sub>2</sub> Bottle - refill and hydraulic test	✓ (*3)				✓ (*3)					
(4)	Buoyant Apparatus - submerging test (*4)			✓			✓				
(B)	<b>CONSTRUCTION – HULL; CONDITIONS OF ASSIGNMENT</b>										
(1)	Hull - external (incl. ship bottom) inspection	✓				✓				✓ (*5)	
(2)	- internal (excl. oil, water tanks and void spaces) visual inspection					✓					
(3)	- internal (incl. oil, water tanks and void spaces) inspection (*6)		✓				✓			✓ (*5)	
(4)	- gauging thickness of deck, shell and bulkhead plating (*6) (*7)			✓			✓			✓ (*5)	
(5)	Sea Suctions, Discharging Valves - stripped down inspection		✓			✓ (*14)	✓			✓ (*5)	
(6)	Anchors, Cables, Wire Ropes - ranged out for inspection (*6) (*15)		✓				✓				
(7)	Permanent Ballast Weights - inspection (*16) (Added G.N. 6489 of 2018)	✓				✓			✓		
(C)	<b>CONSTRUCTION - FUEL, MACHINERY, SHAFTING, ELECTRICAL SYSTEMS</b>										
(1)	Main Engine - hydraulic test of coolers (incl. air, lub. oil, cooling water), cylinder head and water jacket		✓				✓				
						(by engine workshop) (*8)					
(2)	- overhaul of fuel oil pump, fuel nozzles		✓				✓				
			(by engine workshop) (*8)								
(3)	Main Engine and Gear Box - stripped down for inspection (*9) (*10)	✓ (*11)					✓				
						(by engine workshop) (*8)					
(4)	Generator engine, auxiliary machinery engine - stripped down for inspection			✓			✓				
						(by engine workshop) (*8)					
(5)	Main fire pump, emergency fire pump, bilge pump, windlass - stripped down for inspection		✓				✓				

Table 7-2.2 No.	Survey Item	Class/Category/Type of Vessel	Class IA >60 Passengers Vessel			Class IA ≤60 Passengers Vessel			Class I B Vessel		
			1	2	4 (full survey)	1	2	4 (full survey)	1	2	4 (full survey)
(6)	Air Receiver (P<17.2 bar)				✓			✓			✓
	- internal inspection										
(7)	- hydraulic test (*6)				✓			✓			✓
(8)	Air Receiver (P≥17.2 bar)			✓			✓			✓	
	- internal inspection										
(9)	- hydraulic test (*6)			✓			✓			✓	
(10)	Tail Shaft, Propeller, Rudder, Rudder Stock (*6) - drawn out for inspection			✓ (*11)				✓			
(11)	Independent Fuel Oil Tank – internal inspection & hydraulic test							✓			
(11A)	Independent Bilge Water Tank - hydraulic test (vessel without HKOPP certificate) (Added G.N. 7604 of 2021)							✓			✓
(12)	AC electrical circuit – main circuit breaker load test							✓ (*13)			
<b>(D)</b>	<b>PREVENTION AND CONTROL OF POLLUTION</b>										
(1)	Oil Pollution Prevention Installation - vessel with HKOPP certificate	(*12)									
(2)	(Deleted, G.N. 7604 of 2021)										

**Remarks in Table 7-2.1 and 7-2.2**

- \*1 Survey Intervals: “A” means such item to be subjected to survey annually; “2” biennially, “4” quadrennially (“full survey”), etc. The periodical survey shall be carried out in subsequent order; i.e. a 1st year survey shall be followed by a 2-yearly survey, a 3rd year survey shall be followed by a 4-yearly survey, etc. With the exception of hull external inspection (item ((B)(1)) and associated inspections, “2.5” means the intermediate survey, which may be carried out during the 2<sup>nd</sup> or 3<sup>rd</sup> annual survey; or the period between (i.e. the 18 months period from the start of the 2<sup>nd</sup> survey window to the end of 3<sup>rd</sup> survey window). (Amended G.N. 7604 of 2021)
- \*2 Hydraulic test for CO<sub>2</sub> and sprinkler systems shall begin from the 10th anniversary the system is in service, and thereafter at intervals of 10 years. The hydraulic testing pressure for the CO<sub>2</sub> system high pressure manifold shall not be less than 125 bar.
- \*3 Inspection for portable and non-portable type fire extinguishers and CO<sub>2</sub> bottles shall be in accordance with the following table. The inspection record shall be retained on board for examination; or each fire extinguisher to be marked by paint or attached with a tag indicating the date and type of test.

ITEM	Water/Foam/Dry Powder Fire Extinguisher		CO <sub>2</sub> Fire Extinguisher, CO <sub>2</sub> Fixed Installation Bottle		
	Refill / Weighting (*a)	Hydraulic (*b)	Weighting	Refill	Hydraulic (*b)
INSPECTION BODY	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 shall be in accordance with the instruction of manufacturer of fire extinguisher.
- (\*b) Intervals of hydraulic test:

Portable Fire Extinguishers	- 5 years
CO <sub>2</sub> bottles/propellant cartridges	- 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.
- \*4 Air case not filled with buoyant materials shall be tested for air tightness by submerging in water.
- \*5 Applicable to ceremonial boat only.
- \*6 For guidance on machinery and hull wear down or corrosion tolerance limits and other inspection items, Annex M refers.
- \*7 Applicable to vessels of age exceeding 8 years.
- \*8 Inspection record issued by engine workshop shall be submitted for reference.
- \*9 For a brand new gear box, the strip down inspection shall begin from the fourth anniversary the gear box is in service.
- \*10 The survey schedule for medium speed engines (of 300~1400 rpm), Annex K-1 refers.
- \*11 Vessels carrying more than 60 passengers may apply for extension of subject items' survey interval from 2 years to 3 years if meeting the conditions set out in Annex K-2.
- \*12 For the renewal of HKOPP certificates, oil pollution prevention installation shall be stripped down for inspection. Independent bilge water holding/sludge tank shall be hydraulic tested.
- \*13 Applicable to Class I Category A vessels fitted with generator of each capacity exceeding 50kW.
- \*14 Applicable to sea water suction valves only.
- \*15 The length required to be ranged out for inspection: for anchor chains (or classification society accepted alternatives fitting) – whole length; for steel wire ropes – the whole length or a minimum length of 50m, whichever is the less. More or the whole length to be ranged out for inspection should there be major defect is found.
- \*16 Applicable to the first full survey of vessels one year after the enforcement of this Code (i.e. on or after 31.8.2019). The PBWs inspection may be carried out during the final inspection (Table 7-3 items). The inspection shall be carried out in accordance with the requirements set out in the table below:

Item	Survey Year	Tasks Shipowner Responsible for		Tasks Inspecting Personnel Responsible for
		Documents Submission	Inspection/Maintenance Arrangement	
(A)	Full Survey <sup>Note</sup>	<p>Note: The PBWs inspections described below shall be carried out in the quadrennial full survey when a vessel has reached 8 years of age, and in every quadrennial full survey thereafter (for a classed vessel, in the special survey when the vessel has reached 10 years of age, and in every special survey thereafter), commencing one year after the enforcement of this code (i.e. on or after 31.8.2019). The first one will be a Grade A inspection, followed by a Grade B inspection, alternating at 4-year intervals (for classed vessels, 5-year intervals, i.e. the special survey). If it is found during a Grade B inspection that the vessel's bottom and internal structural members with regard to PBWs stowage show no excessive corrosion (not exceeding 1/2 or more of the limit set down in Annex M of this Code) and the coating is in good condition with no significant deterioration, MD may consider the shipowner's application for having a Grade B inspection in the subsequent full survey, followed by a Grade A inspection in the next quadrennial full survey (for classed vessels, the next 5-yearly special survey).</p>		
	Grade A Inspection	Submit the same declaration and photo records required for the PBWs inspection in the initial survey (remark *10 of Table 7-1).	<p>(1) Clear the whole area (100%) of vessel bottom used for PBWs stowage.</p> <p>(2) Assist inspecting personnel and provide necessary ventilation, lighting, etc. to facilitate the inspection described in the right-hand column.</p> <p>(3) Carry out repairs when directed by inspecting personnel.</p>	<p>(1) Confirm the area at vessel bottom used for PBWs stowage is clear, and carry out PBWs inspection items (1)~(3) of remark *10 of Table 7-1 of the initial survey.</p> <p>(2) Confirm the following during hull inspection:</p> <p>(i) steel vessel – no large area of damage or heavy rusting of hull material, no abnormal accumulation of water, etc.; protective coating (if any) in good condition.</p> <p>(ii) Aluminium, GRP and wooden vessel - no large area of damage or abnormalities of hull material, no abnormal accumulation of water, etc.; protective coating (if any) in good condition.</p> <p>(iii) gauge plating thickness (if applicable) and submit to MD a copy of the record.</p> <p>(3) If the results of the abovementioned inspection items (2)(i)~(iii) fall short of requirements, the owner shall be instructed to carry out repairs, and re-inspection shall be carried out until satisfactory results are obtained.</p> <p>(4) If the wastage of hull material has reached 3/4 or more of the corrosion limit set down in Annex M of this Code,</p>

Item	Survey Year	Tasks Shipowner Responsible for		Tasks Inspecting Personnel Responsible for
		Documents Submission	Inspection/Maintenance Arrangement	
				<p>the owner shall be instructed to renew the hull material concerned. If it cannot be done, the hull of the part concerned shall be subject to inspection annually thereafter.</p> <p>(5) If heavy wastage of hull material is found, the adjoining cement PBWs (if any) shall be removed to facilitate the hull inspection.</p>
	Grade B Inspection	<p>(1) Declaration</p> <p>(2) Upon the completion of inspection and repair (if applicable), submit to MD a copy of the photo records which shall include:</p> <p>(i) photos showing the condition of the hull structure with PBWs removed to expose at least 25% of the total area of the hull structure covered by PBWs; and</p> <p>(ii) the condition of the PBWs after they are restored to their original positions.</p> <p>(3) If all the PBWs have to be removed, the records required in items (1) and (2) of remark *10 of Table 7-1 for the initial survey shall be re-submitted.</p>	<p>(1) Follow inspecting personnel's instruction (as described in the right-hand column) and remove PBWs to expose at least 25% of the total area of the hull structure covered by PBWs to facilitate inspection.</p> <p>(2) carry out task items (2) and (3) of Grade A inspection.</p>	<p>(1) Instruct the owner to remove PBWs for hull structure inspection. At least 25% <sup>Notes (i), (ii)</sup> of the total area of hull structure covered by PBWs in each compartment shall be inspected.</p> <p>Note:</p> <p>(i) The quantity of the randomly checked PBWs shall be based on the number of PBWs removed for inspection.</p> <p>(ii) The positions subject to inspection are normally the parts of the hull that are more vulnerable to corrosion (such as the bottom of the aft part of the vessel for the stowage of PBWs). If individual PBWs cannot be removed for safety reason, the owner shall be instructed to remove all the PBWs to facilitate hull inspection. In such case, the inspection items (1)-(3) of remark *10 of Table 7-1 of the initial survey shall be carried out.</p> <p>(2) Carry out task items (2)-(5) of Grade A inspection.</p> <p>(3) Randomly select at least 10% of PBWs (but no less than one PBWs) for inspection. The inspection shall include the PBWs' appearance, markings, weight confirmation, etc.</p>

Item	Survey Year	Tasks Shipowner Responsible for		Tasks Inspecting Personnel Responsible for
		Documents Submission	Inspection/Maintenance Arrangement	
(B)	Years other than the full survey year	Declaration required in item (1) of Grade B inspection in (A), or a copy of an endorsed declaration.	Carry out task items (2) and (3) of Grade A inspection in (A) upon receipt of special instructions.	Conduct a visual inspection of the PBWs according to the documents submitted by the owner as mentioned in the left-hand column as and when necessary.

**Table 7-3 Final Inspection** <sup>(\*)1</sup>

Table 7-3 No.	Survey Item <sup>(*)2</sup>
<b>(A)</b>	<b>LIFE-SAVING APPLIANCES, FIRE-FIGHTING APPARATUS, APPLIANCES FOR PREVENTION OF COLLISION</b>
(1)	Life Saving Appliances - inspection and function test <sup>(*)3</sup>
(2)	Fire Fighting apparatus (incl. CO <sub>2</sub> fixed fire extinguishing installation, emergency fire pump, etc) - inspection and function test
(3)	Navigation Lights and Sound Signals - inspection and function test
(4)	Fire Drill, Abandon Ship Drill <sup>(*)10</sup>
<b>(B)</b>	<b>CARRIAGE OF PASSENGERS</b>
(1)	Passenger Space, Crew Space, Cabin Escape Arrangement, Bulwarks and Rails - general inspection
(2)	Passenger seats and their attachment - inspection <sup>(*)4</sup>
(3)	Signage within Passenger Space, incl. Exits Signage, Lifejacket Donning Instructions, Plan on Escape Arrangement and Fire-fighting Plan - general inspection
<b>(C)</b>	<b>CONSTRUCTION – HULL, CONDITIONS OF ASSIGNMENT</b>
(1)	Watertight / Weathertight Closing Appliances (incl. Door, Ventilator, Air Pipe, etc.) - inspection
(2)	Permanent ballast - confirmation of amount and position <sup>(*)9</sup>
(3)	General condition in Machinery Space (including fuel oil installation) <ul style="list-style-type: none"> <li>(a) protection from injury of personnel</li> <li>(b) prevention of fire hazard</li> <li>(c) prevention of oil pollution hazard</li> </ul>
(4)	Principal Dimensions, Engine and major machinery particulars - verification
<b>(D)</b>	<b>CONSTRUCTION - FUEL, MACHINERY, SHAFTING, ELECTRICAL SYSTEMS</b>
(1)	Main Engines, Generator Engines, Steering Gears - running test
(2)	Unattended Machinery Space Installation (Ch. IIIA/18 and Ch. IIIB/13 refer) - function test
(3)	Air Receiver Safety Valves - function test

Table 7-3 No.	Survey Item <sup>(*2)</sup>
(4)	Bilge and Oily Water Pumping System - function test
(5)	Electrical Circuit - earthing test
(6)	- insulation resistance test <sup>(*6)</sup>
(7)	- Main circuit breaker function test <sup>(*7)</sup>
(8)	Location of emergency source of electrical power shall be outside machinery space and above waterline – verification <sup>(*8)</sup>
(9)	Meters on Switchboard - function test
<b>(E)</b>	<b>PREVENTION AND CONTROL OF POLLUTION</b>
(1)	Air Emission Assessment <sup>(*5)</sup>
(2)	Prevention of Oil Pollution Installation - function test
<b>(F)</b>	<b>NAVIGATIONAL, COMMUNICATION EQUIPMENT AND OTHERS</b>
(1)	Radio Communication Equipment
(2)	Navigational Equipment
(3)	Certificates of Competency of Master and Engineer (if manoeuvring trial required) - verification
(4)	Ship Manoeuvring Trial <sup>(*11)</sup>
(5)	Operational and Safety Trial (FMEA items) <sup>(*12) (*13)</sup>
(6)	Plans and data required to be retained onboard (section 6.1 refers) - confirmation of numbers and contents
(7)	Survey report issued by MD/AS/AO/RA - verification
(8)	Inspection of remedial deficiency items in Initial / Periodical Survey
(9)	Supplementary information/data and list of inspection, testing & trial requirements relating to the type of vessel
(10)	Domestic L.P.G. Installation - inspection

### Remarks in Table 7-3

- \*1 The final inspection shall be carried out annually for every vessel.  
(Amended G.N. 6256 of 2020)
- \*2 Where practicable the listed items may be presented for inspection prior to the final inspection.
- \*3 Random check on the condition of lifejackets is to be according to the following proportions:

Statutorily Required No. of Adult Lifejackets	Random Check	Statutorily Required No. of Children Lifejackets	Random Check
1-10	100%	1-10	100%
11-100	10 pieces	11-50	10 pieces
		51-100	20 pieces
101-1 000	10%	> 100	20%
> 1 000	100 pieces		

The counting of the number is to be 100%.

- \*4 Strength test to be carried out when necessary.
- \*5 Air emission requirements to be conducted as per Annex I-10.
- \*6 Applicable to all vessels other than Cat. B primitive vessels (kaito). For vessels other than ferries and floating restaurants, a valid EMSD registered electrical contractor (REC) issued electrical system insulation test report (with the test being conducted by an EMSD registered electrical worker (REW) within 2 weeks prior to the final inspection) is acceptable in lieu of the insulation resistance test inspection responsible by MD officer or authorized inspection personnels. A valid electrical system insulation test report shall include the relevant necessary information. A valid electrical system insulation test report issued by an authorized inspection personnel is acceptable.
- \*7 Applicable to any vessel fitted with generator of each capacity exceeding 50 kW.
- \*8 Applicable to only a vessel which is still a new vessel when the reference to “the commencement date of the Survey Regulation” in the definition of “new vessel” under Ch. I/3.1 is substituted by “29 November 2014”.
- \*9 Refer to the requirements of remark \*10 of Table 7-1 or remark \*16 of Table 7-2.1 or 7-2.2. (Amended G.N. 6489 of 2018, 7604 of 2021)
- \*10 Applicable to launches, ferries and floating restaurants. The exact crew number indicated on the muster list shall participate in the drill.
- \*11 Applicable to ferry vessels only. The trial shall include crash ahead and astern running, turning and windlass operation test.
- \*12 Applicable to vessels of the type stated in Ch. I/4.2.
- \*13 For vessels of the type stated in Ch. I/4.2, the certificate of competence or an eyesight certificate (issued by a registered medical practitioner or registered optometrist) of the designated look-out (Ch. XII/11.1 refers) also to be verified.

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

**PART 1 GENERAL REQUIREMENTS**

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

**PART 2 HULL CONSTRUCTION**

**1 Main Deck Construction**

- 1.1 Every vessel shall be fully decked. Sunken deck intended to be used for passenger cabin shall have scantlings equivalent to those of main deck, and shall be at least 300 mm above the deepest loaded waterline. The sunken deck is not necessarily of watertight construction unless it also serves as a double bottom.
- 1.2 For a new vessel<sup>Note1</sup>, if opening is fitted on main deck leading to spaces below deck the first tier of superstructure on main deck shall be of weathertight construction for the purpose of maintaining the integrity and stability of vessel. The closing appliances fitted on such position shall meet the requirements of section 3.

**2 Bulkheads**

- 2.1 Every launch or ferry vessel shall be fitted with the following watertight bulkheads:
  - (a) collision bulkhead;
  - (b) fore and after bulkhead of engine room;
  - (c) when any compartment exceeds 2/5ths of the length(see definition in section 2 of Survey Regulation), an additional bulkhead at an intermediate position unless it meets the relevant damage stability requirements;
  - (d) if the vessel exceeds 24 metres in length, an aft peak bulkhead unless the engine room is situated at aft end of the vessel.

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<sup>Note1</sup> Applicable to a vessel which is a new vessel when the reference to “the commencement date” in the definition of “new vessel” under section 2 of the Survey Regulation is substituted by “3 March 2017”.

- 2.2 In double-ended vessels, collision bulkheads shall be fitted at both ends.
- 2.3 On a motor vessel other than launch and ferry vessel, the dispositions and construction of watertight bulkheads shall meet the relevant requirements of classification societies.
- 2.4 On all vessels other than wooden vessels, and as far as practicable on wooden vessels, bulkheads shall be of watertight construction.
- 2.5 Access openings fitted in watertight bulkheads shall be equipped with effective watertight closing appliances and shall meet the requirements of section 2.6.
- 2.6 The design of the watertight doors shall comply with the following requirements:
  - (a) The dimension of the watertight doors shall suit the design of the vessels;
  - (b) The warning “Door must be kept closed when underway” shall be marked on both sides of the watertight door;
  - (c) For hinged type watertight door, they shall be opened outward except those doors in high flooding risk spaces shall be opened into the space; and
  - (d) Watertight doors to be fitted with visual and audio alarms in the wheelhouse to give alerts when watertight doors are open.

### 3 Closing Appliances, Freeing Ports

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

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

No coaming is required for watertight manholes.

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



## **4 Protection of Passengers and Crew**

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

## **5 Flooring**

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

## **6 Marking of Hull**

- 6.1 The certificate of ownership number of a vessel must be marked in accordance with section 38 of the Merchant Shipping (Local Vessels) (Certification and Licensing) Regulation.
- 6.2 On every launch and ferry vessel, the name of vessel (if any, as that shown on vessel's Certificate of Survey) and the total number of persons (passenger and crew) shall be painted on vessel's bows and stern. The minimum size of lettering is 100 mm in height.
- 6.3 Permanent draft marks shall be provided on port and starboard side of stem and stern of a vessel. The marks shall be measured from the bottom of the keel, with letters and figures being in decimetric heights and at two decimetric intervals.

## **PART 3 MACHINERY INSTALLATION**

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

- 7.1 In any launch or ferry vessel carrying more than 60 passengers; which is not classed with a classification society and has main engine power output exceeding 130 kW, such main engine and its associated gear box shall be of a type approved by a classification society or maritime administration.
- 7.2 The main engine and the associated gearbox shall be matched at the maximum continuous rating condition. Alternative rating may be accepted subject to proper justification is given.
- 7.3 New main engines and gear boxes are required to be fitted on new vessels stated in section 7.1. For vessels other than those stated in section 7.1, if used engine is intended to be installed, it shall be properly stripped down and overhauled for examination. To

facilitate the confirmation of the source of origin and/or the quality of reconditioning of the engines, proper document from the original engine maker or purchase document from the engine workshop shall be submitted. The data on engine model, type and identification number shall be clear and adequate for accurate assessment of the engine power. The reconditioning reports shall give adequate details similar or same as the items and format given on checklist of engine and gearbox inspection in Annex I-2 and I-3.

For new engine requirements, owners are drawn attention to the recommendation in Annex I-10.

Vessels built on or after 1 June 2008 but before 1 July 2016 may be fitted with Tier I engine; vessels built on or after 1 July 2016 must be fitted with Tier II engine.

- 7.4 For main engine and gear box fitted on vessel other than that stated in section 7.1, documentation provided by manufacturer indicating that the main engines are of marine type is sufficient.
- 7.5 Auxiliary engine(s) on new mechanically propelled vessel shall be 'marine type'; auxiliary engine(s) on existing mechanically propelled vessel shall also be 'marine type' if they are being replaced/renewed.
- 7.6. Any engine fitted on a vessel shall be properly maintained at all times free from dark smoke emission. In this regard, during the final inspection for initial and periodic survey, engine performance condition check would include smoke emission test using Ringelmann Chart. Shade 2 of the Ringelmann Chart and a continuous period of 3 minutes are the upper limits. The emission beyond this limit is considered as a contravention of the law.
- 7.7 Any vessel if found or reported emitting excessive dark smoke, owners would be requested to present vessel's engine(s) for special inspection and smoke test to ensure compliance. Any non-compliance will be pursued in accordance with relevant legislation requirement.
- 7.8 If replacement of main engine, generator set, etc. are required, owner shall refer to the requirements as indicated in Annex I-5A, I-5B and I-5C.

## **8 Engine Fittings**

- 8.1 Main engine and generator engine shall be provided with effective means of control and indication.
- 8.2 If remote control of main engine is provided from the wheelhouse, local control shall also be provided at engine side.
- < 8.3 Emergency stopping device for main engine shall be provided in wheelhouse. >
- 8.4 Main engine installed on any <launch or ferry vessel carrying more than 60 passengers> shall be provided with means of protection due to engine faults as follows:

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

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

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

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

## 9 Propeller Shafting

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

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

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

MD : Marine Department

CS : classification society

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

## 10 Engine Room

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

10.2 Adequate ventilation shall be provided in engine room. If only natural ventilation is provided, at least two cowl ventilators of adequate size shall be fitted. One of the cowl vents shall be led well down into the space to vent out the accumulated vapour in the

lower part of the space. Ventilation trunk if passing through other compartments shall be of watertight or gastight construction and structurally protected<sup>Note 1</sup>, as appropriate. The ventilator shall be fitted with a fire damper or other means of closing. If a fire damper is fitted, an indicator shall be provided to show whether the damper is in the open or close position. The fire damper may be of manual type and the indicator which could be in written form or other physical means, and be installed locally in the vicinity of fire damper.

- 10.3 If the vessel is constructed of wooden or GRP of non-oil resistant material, a suitable metal tray which can readily be cleaned shall be fitted under the engine to protect the bilges against saturation by oil.
- 10.4 Two means of escape including suitable ladders and exits shall be provided for the engine room. One of these means of escape may be waived with regard to the size and disposition of the space. Any vessel permitted to be operated by combined coxswain and engine operator (Ch. XII/3 refers) and of length less than 24 metres, one means of escape can be waived.

If such means of escape is led to passenger space, it shall be clear of any seating.

- 10.5 Every machinery spaces shall be at all times kept clean and free from unnecessary combustible materials and that waste oil is not allowed to accumulate in the bilges.

## **11 Nature of Fuel**

Except otherwise permitted by the Director, marine fuel oil of flash point of less than 60°C (closed cup test) must not be used for engine.

## **12 Tanks**

- 12.1 The arrangements for filling fuel tanks shall be such that oil will not spill or overflow into any compartment of the vessel. Woodwork surrounding the deck filling mouth shall be covered with metal piece. No loose can/barrel of fuel oil shall be carried on board.
- 12.2 Fuel tanks shall be substantially constructed of suitable material and securely fixed in position. The tanks and their connections shall be tested per the requirements of Annex M/3.1.

## **13 Pumping and Piping Arrangement**

- 13.1 All fuel oil tank, lubrication oil tank and spaces where flammable gas may collect shall be fitted with venting pipes leading to the weather deck. The open end of any oil tank's venting pipe shall be fitted with properly secured metallic wire-gauze.

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<sup>Note 1</sup> Applicable to a vessel which is when the reference to “the commencement date” of the Survey Regulation in the definition of “new vessel” under section 2 of the Survey Regulation is substituted by “3 March 2017”.

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

#### **14 Bilge Pumping Arrangement**

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

## 15 Compressed Air System

- 15.1 Suitable pressure-relief arrangements shall be provided to prevent excess pressure in any part of the compressed air systems.
- 15.2 The starting air arrangements for main engine of a cylinder diameter exceeding 300 mm shall be adequately protected against the effects of back firing and internal explosion in the starting air pipes.
- 15.3 The discharge pipes from starting air compressor shall be led directly to the starting air receiver. Starting air pipes from air receivers serving main or generator engines shall be entirely separate from other services.
- 15.4 Provision shall be made to avoid or minimize the entry of oil into the air pressure systems and to drain the oil from the systems.
- 15.5 (a) Construction of air receivers shall meet the standard of a maritime administration's national standard or a classification society, and be subject to the approval of the Director. The air receivers are classified according to the following table (Note: The highest class prevails if there are different classes worked out from P, S and T):

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

where P = maximum design or working pressure (bar)

S = shell thickness (mm)

T = working temperature (°C)

- (b) Air receivers fitted on new vessel<sup>Note 1</sup> shall be built under the survey of one of the abovementioned maritime institutions, and issued with appropriate certificates.
- (c) Each air receiver shall be provided with the following fittings:
- (i) Stop valve and pressure gauge
  - (ii) Drain valve
  - (iii) Safety valve
- (d) The following information shall be submitted in duplicate for approval:
- (i) Air receiver construction (including details of welded connections, attachments, dimensions and supports etc.)
  - (ii) Construction of pressure parts (cylindrical shell, end plates, etc.)
  - (iii) Arrangement of mountings and fittings
  - (iv) Mechanical properties of material
  - (v) Test pressure.

<sup>Note 1</sup> Applicable to a vessel which is when the reference to “the commencement date” of the Survey Regulation in the definition of “new vessel” under section 2 of the Survey Regulation is substituted by “3 March 2017”.

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

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

## 16 Anchors, Cables and Windlass

16.1 The sizes of chain cables and anchors shall be in accordance with classification society rule requirements prescribed for vessels operating in sheltered waters. Where ropes are proposed instead of chain cables, the ropes sizes and strengths shall be equivalent to that of chain cables.

16.2 A windlass for recovering the cables and anchors is recommended.

## 17 Steering System

17.1 Every motored vessel shall be provided with a main steering gear and an emergency means for actuating the rudder. The main steering gear shall be capable of turning the rudder over from  $35^\circ$  on either side to  $30^\circ$  on the other side in not more than 28 seconds, at vessel's maximum service speed. The emergency means may be of powered or manually operated.

17.2 Pressure relief valve shall be fitted at the hydraulic line.

17.3 The position of rudder, if power operated, shall be indicated in the wheelhouse. The rudder angle indication for power-operated steering gear shall be independent of the steering gear control system.

17.4 Material tests for rudder stocks shall be carried out as that for propeller shafts. Rudder stock assembly shall be enclosed with efficient watertight glands and packing. Suitable stopping devices are to be provided for the rudder to prevent it from excessive angular motion and vertical jumping.

17.5 The steering system of vessels of the type stated in Ch. I/4.2 shall comply with the relevant requirements specified in Ch. XI.

## 18 Wheelhouse - Engine Room Communication

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

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

(a) Vessel of  $L \leq 37 \text{ m}$  or total propulsion power  $\leq 1500 \text{ kW}$  (2,010HP)

- (i) for main engine-
  - (1) means of start, stop and control of speed
  - (2) control of gearbox or clutch
  - (3) lubricating oil pressure gauges
  - (4) < lubricating oil low pressure alarm>
  - (5) cooling water pressure gauges (if fitted on the engine)
  - (6) cooling water temperature gauges
  - (7) < cooling water high temperature alarm>
  - (8) exhaust temperature gauges (if fitted on the engine)
  - (9) a fixed fire detection (operated by fire detectors) and fire alarm system for engine room
- (ii) for generator engine-
  - means to stop
- (iii) for bilge water in engine room-
  - high level audible alarm.

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

## 19 Installation for Prevention of Oil Pollution

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

Type of vessel	Category of vessel	A		B	
	Propulsion	with Main Engine	No Main Engine	with Main Engine	No Main Engine
		Gross Tonnage	Gross Tonnage	Gross Tonnage	Gross Tonnage
Class I vessel					
ferry vessel		$\geq 80$	-	-	-
floating restaurant		-	$\geq 80$	-	-
launch		$\geq 80$	-	-	-
multi-purposes vessel		$\geq 80$	-	-	-
primitive vessel (kaito)		$\geq 80$	-	$\geq 400$	-

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



Gross Tonnage (GT)	80≤GT<400	GT≥400
Required Installation and Documentation	(c),(f)	(a),(b), (c),(d),(e)
Information to be submitted	(i)	(g),(h),(j)

**Legend**

(a) An approved type oily water separator designed to produce effluent not more than 15 ppm of oil.

(b) Tank (sludge tank) for oil residue in engine room.

The minimum sludge tank capacity ( $V_1$ ) shall be determined by the following formula:

$$V_1 = 0.005CD \text{ (m}^3\text{)}$$

where

$C$  = daily fuel oil consumption ( $\text{m}^3$ ); and

$D$  = maximum no. of days when sludge can be discharged ashore.

Oil residue (sludge) may be disposed of directly from the oil residue (sludge) tank(s) through the standard discharge connection, or any other approved means of disposal. The oil residue (sludge) tank(s) shall be provided with a designated pump for disposal that is capable of taking suction from the oil residue (sludge) tank(s); and shall have no discharge connections to the bilge system, oily bilge water holding tank(s), tank top or oily water separators except that the tank(s) may be fitted with drains, with manually operated self-closing valves and arrangements for subsequent visual monitoring of the settled water, that lead to an oily bilge water holding tank or bilge well, or an alternative arrangement, provided such arrangement does not connect directly to the bilge piping system.

(c) Standard discharge connection.

(d) For vessels of  $\text{GRT} \geq 400$ , HKOPP Certificate and Supplement issued/endorsed by the Director or International Oil Pollution Prevention Certificate and Supplement issued/endorsed by a classification society.

(e) Oil record book (Part I and Part II); Vessels other than oil carriers require Part I.

(f) Bilge water holding tank.

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

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

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

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

(g) Installation plans for oily-water separator consist of:

(i) piping arrangements, and

(ii) wiring diagram of electrical installation.

(h) Sludge tank and discharge arrangement plans include:

(i) construction, size and location of sludge tank; and

(ii) piping diagram of sludge tank from machinery spaces to reception facility via standard discharge connection.

- (i) Bilge water holding tank and discharge arrangement plans include:
    - (i) construction, size and location of bilge holding tank; and
    - (ii) piping diagram of bilge water holding tank from machinery spaces to reception facility via standard discharge connection.
  - (j) Shipboard oil pollution emergency plan (not required for sludge oil carriers).
- 19.3 Vessels shall maintain a valid certificate relevant to prevention of oil pollution as required by Merchant Shipping (Prevention of Oil Pollution) Regulations (Cap 413 sub. leg A) for the intended purpose of the vessel.
- 19.4 Provisions for discharge prohibition for oil pollution prevention as stipulated in Cap 313, Cap 413 and Cap 548 must be complied with for all vessels, including those vessels not mandatory required to provide with the physical arrangements/ equipment/document on board as indicated in sections 19.1 and 19.2.

## **PART 4 ELECTRICAL INSTALLATION**

### **20 Electrical Power Source**

- 20.1 Nominal voltage of electrical system is recommended to be 380V for generation and power circuits, 220V for lighting and distribution circuits and 24V D.C. for low voltage circuits.
- 20.2 The hull return system shall not be used for power or lighting.
- 20.3 Where electrical power constitutes the only means of driving the lubrication oil pump and cooling water pump for the main engine, a main source of electrical power shall be provided which shall include at least two generating sets, one of which shall be driven by internal combustion engine.
- 20.4 The vessel's emergency lighting, fixed fire extinguishing system, fire detection and alarm system, public address system; and navigation lights for vessels of length exceeding 24 metres shall be provided with emergency power supply of sufficient capacity.
- 20.5 For vessels built on or after 29 November 2014 the emergency source of power shall be located outside engine room and above the full-load waterline of the vessel.
- 20.6 Ventilation fans serving machinery or cargo spaces, engines' oil fuel pumps and other similar oil pumps shall be capable to be stopped outside of the space where the appliance is situated.
- 20.7 Each navigation light shall be connected separately to the distribution board served for this purpose.
- <20.8 In every electric or electro-hydraulic power steering gear system on vessel:
- (a) the steering gear shall have two independent sets of supply cables connecting direct to main switchboard;
  - (b) the supply circuits of steering gear control system shall be provided with short circuit protection only;
  - (c) the steering gear motors shall have an overload alarm instead of overload protection. The short circuit protection shall be not less than twice the total rated current of the motor in the circuit protected.

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

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

- 21.1 (a) Exposed permanently fixed metal parts of electrical machines or equipment which are not intended to be "live", but which are liable under fault conditions to become "live" shall be earthed unless they are supplied at a voltage not exceeding 50 volts.
- (b) Electrical apparatus shall be so constructed and so installed that it shall not cause injury to person when handled or touched in the normal manner.
- 21.2 Main and emergency switchboards shall be so arranged as to give easy access as may be needed to apparatus and equipment, without danger to attendants. The sides and backs and, where necessary, the fronts of switchboards, shall be suitably guarded. Exposed "live" parts having voltages exceeding 50 volts shall not be installed on the front of such switchboards. There shall be non-conducting mats or gratings at the front and rear, where necessary.
- 21.3 The distribution system if exceeds 50V, whether primary or secondary, for power or lighting, with no connection to earth is used, a device capable of monitoring the insulation level to earth shall be provided.
- 21.4 (a) The voltage rating of any cable shall not be less than the nominal voltage.
- (b) Every conductor of a cable, flexible cable or flexible cord shall be capable of carrying the maximum current which will normally flow through it without exceeding the appropriate current rating as specified by manufacturer of the cable.
- (c) Cable runs shall be selected so as to avoid action from condensed moisture or drip. Cables shall, as far as possible, be remote from sources of heat, such as hot pipes, resistors, etc.
- (d) Cables shall be prevented from mechanical damage. When necessary cables shall be enclosed in suitable conduits or casings, or armoured cables shall be used.
- 21.5 (a) Circuits shall be protected against short circuit and overload.
- (b) The current rating of circuit breaker shall not exceed the current rating of the smallest size of cable in the circuit protected by the circuit breaker.
- 21.6 Lighting fittings shall be arranged to prevent temperature rises which could damage the wiring and to prevent surrounding material from becoming excessively hot.
- 21.7 In spaces where flammable gas mixtures are liable to collect and in any compartment assigned principally to the containment of an accumulator battery, the electrical fittings shall be of explosionproof type.
- 21.8 (a) The housing of accumulator batteries shall be properly stowed in a locker which shall be well ventilated.
- (b) Accumulator batteries shall not be located in the crew or passenger spaces.
- <21.9 A lightning conductor is recommended to be fitted for a vessel which hull or mast is constructed of nonconductive materials. The lightning conductor might be connected to a copper plate fixed to the vessel's hull well below the lightship waterline. >

- 21.10 When any work to be carried out on electrical appliances a signboard showing “Work in Progress” shall be displayed at prominent position of the electrical panel to prohibit anyone from operating the panel.

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

**PART 1 GENERAL REQUIREMENTS**

- (1) Any replacement kaito carrying not more than 60 passengers shall be built in a shipyard having been certified competent for the construction by Marine Department or RA in the mainland, with regard to its facilities, organization and capability. A copy of the certification, if issued by the mainland authority, shall be furnished to Marine Department for consideration/record.
- (2) Suitable means or device shall be provided to machinery, equipment, lifting gear and winch, etc. so as to reduce to a minimum any danger to persons on board. Special attention shall be paid to moving parts, hot surfaces and other potential dangers.

**PART 2 HULL CONSTRUCTION**

**1 Hull and Bulkheads**

1.1 Any motor vessel shall be fitted with:

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

1.2 For vessels of other than wooden construction, the bulkheads shall be of watertight construction. Bulkheads in vessels of wooden construction shall be as far as practicable of watertight construction. Openings fitted on bulkhead for the passing of pipes, cables, etc. shall be accordingly constructed.

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

**2 Closing Appliances, Freeing Ports**

2.1 The air pipes, ventilators, cargo hatchways, small hatchways, manholes and doors which are leading to a space below main deck shall be fitted with weathertight closing appliance and have a minimum coaming height of 230 or <300> mm on any vessel of other than wooden vessel.

2.2 No coaming is required for watertight manholes.

2.3 If bulwark is fitted at the shipside on vessels operating outside the Specified Sheltered Waters, freeing ports shall be provided in both sides of the bulwark with the minimum aggregate area (in m<sup>2</sup>) indicated in the following table. For vessels operating beyond Hong Kong Waters, the aggregate area shall be twice of that indicated in the tables.

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

### 3 Protection of Passengers and Crew

Ch.IIIA/4 refer.

### 4 Flooring

Ch.IIIA/5 refers.

### 5 Marking of Hull

For vessels of all kinds of construction, Ch.IIIA/6.1 refers.

## PART 3 MACHINERY INSTALLATION

### 6 Main Engine and Engine Fitting

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

### 7 Engine Room

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

### 8 Nature of Fuel

Ch.IIIA/11 refers.

### 9 Tanks

- 9.1 The arrangements for filling fuel tanks are to be such that oil will not spill or overflow into any compartment of the vessel. Woodwork surrounding deck-filling mouth shall be covered with sheet metal. No loose can/barrel of fuel oil is to be carried on board.
- 9.2 Fuel tanks shall be substantially constructed of suitable material and securely fixed in position.

### 10 Pumping and Piping Arrangement

Ch.IIIA/13 refers.

**11 Bilge Pumping Arrangement**

A hand or electrical operated bilge pump of sufficient capacity shall be fitted for pumping out water in the bilge.

**12 Compressed Air System**

Ch.IIIA/15 refers.

**13 Wheelhouse - Engine room Communication**

Ch.IIIA/18 refers

**Note**

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

**14 Installation for Prevention of Oil Pollution**

Ch.IIIA/19 refers.

**PART 4 ELECTRICAL INSTALLATION**

**15 Electrical Installations**

Ch.IIIA/Part 4 refers.

## CHAPTER IV

### FREEBOARD AND STABILITY

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

1.1 The freeboard assignment, certification and intact stability requirements for a vessel shall be according to the following table

Vessel Type and Plying Limits	Length (L)	L ≥ 24 m		L < 24 m	
	Requirement	Freeboard, Certification	Intact Stability	Freeboard, Certification	Intact Stability
<b>Class I Vessel (plying solely within Hong Kong waters)</b>					
Launch, Ferry					
Conventional Type <sup>Note 1</sup>		L&FV	IMO Crowding Turning Wind Mt	L&FV	IMO Crowding Turning Wind Mt
High Speed Vessel		Ch. XI	Ch. XI	Ch. XI	Ch. XI
<Primitive Vessel (kaito) 0.35 < C <sub>np</sub> ≤ 0.85 vessel >		L&FV	GM ≥ 0.3m + Crowding + Turning	L&FV <sup>(*1)</sup>	Simple Inclining Test <sup>(*1)(*2)</sup>

#### Remark

\*1 Applicable to any replacement kaito carrying not more than 60 passengers (which is Category B vessel)

\*2 Annex E, Part 1 refers.

#### Legend

#### 1.2 Freeboard Requirements

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

Length (L) (m)	L ≤ 6	L = 19	L ≥ 50
Freeboard (mm)	380	760	1100

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

Ch. XI Vessels of the type stated in Ch. I/4.2 shall comply with the relevant requirements specified in Ch. XI.

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

GM ≥ 0.3m the initial transverse metacentric height (GM<sub>T</sub>) shall not be less than 300 mm.

<sup>Note 1</sup> Applicable to a vessel which is when the reference to “the commencement date” of the Survey Regulation in the definition of “new vessel” under section 2 of the Survey Regulation is substituted by “3 March 2017”.



Crowding Crowding of passengers –

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

Turning Turning moment of vessel - the angle of heel due to the effect of turning the vessel shall not exceed 10°.

The heeling moment developed due to the effect of turning of the vessel may be derived from the following formula:-

$$M_R = 0.2 V_o^2 \Delta (KG - d/2) / L_{wl}$$

where

$M_R$  = heeling moment (kN-m)

$V_o$  = speed of the vessel in the turn (m/sec)

$L_{wl}$  = length of vessel on the waterline (m)

$\Delta$  = displacement (tonnie)

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

$d$  = mean draft (m)

Wind Mt Wind moment –

as calculated according to section 2.3 Severe Wind and Rolling Criterion (weather criterion) of 2008 IS Code (International Code on Intact Stability, 2008)<sup>Note1</sup> published by IMO in respect of wind moment effect. The wind pressure factor shall be taken to be 250 Pa <500 Pa>.

IMO IMO Recommended Stability Criteria

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

Launch and ferry vessel<sup>Note 1</sup> carrying more than 12 passengers shall meet the abovementioned criteria.

Vessels of the type stated in Ch. I/4.2 shall comply with the relevant requirements specified in Chapter XI.

#### 1.4 Determination of minimum freeboard

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

#### 1.5 Equivalent freeboard and stability criteria

1.5.1 Where it is not practical for any particular vessel, due to its geometric characteristics (e.g. the ratio of beam / depth is exceeding 2.5) or operating condition, to fully comply with the stipulated freeboard or stability criteria, the Department may permit the application of equivalent criteria which are at least as effective as that so specified.

1.5.2 For vessels of  $L < 20\text{m}$  carrying  $\leq 100$  passengers, the Department accepts the standard applicable to vessels operating within sheltered waters, as stipulated in the Technical Regulation for the Survey of Coastal Boats promulgated by Maritime Safety Administration of the People's Republic of China (MSA), or the equivalent. For vessels of  $L \geq 20\text{m}$  carrying  $\leq 100$  passengers, the Department accepts the standard appropriate for vessels operating in Hong Kong waters, as promulgated by the MSA.

## 2 Damage Stability

### 2.1 Every -

- (a) launch and ferry vessel<sup>Note 1</sup> carrying more than 12 passengers;
- (b) replacement kaito<sup>Note 1</sup> carrying not more than 60 passengers

shall meet a damaged stability standard as prescribed in Annex F of this Code.

2.2 Vessels of the type stated in Ch. I/4.2 shall comply with the relevant requirements specified in Chapter XI.

## 3 Inclining Test

3.1 With the exception of a vessel which stability is to be determined by a rolling period test, every vessel which stability information is required as stated in section 1 shall be inclined to confirm the vessel's displacement, vertical centre of gravity (VCG) and longitudinal centre of gravity (LCG) in lightship condition when on completion or close to completion of construction (new vessels) or modification (existing vessels). Inclining test report shall be submitted for approval.

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

- (a) a vessel being similar in all respects to the sister ship for which a satisfactory inclining experiment report is available; and having been carried out a lightweight survey (see section 4 below) the result of which indicates that the deviations from –
  - (i) lightship displacement is not exceeding 2% for ships of  $L \leq 50\text{ m}$ ; 1% for ships of  $L > 160\text{ m}$  (for intermediate  $L$ , by linear interpolation), and

- (ii) lightship LCG is not exceeding 0.5% L.
- (b) a vessel in which an accurate result cannot be obtained due to the particular design of hull form (e.g. a dumb lighter with extreme beam or multi-hulled vessel), provided a detailed assessment of vessel's displacement and VCG in lightship condition to be submitted.
- (c) the addition/replacement of engine(s) and/or minor modification, Annex I-5C refers.

#### **4 Lightweight Survey**

- 4.1 A lightweight survey report including the calculation of the lightship displacement and LCG of the vessel shall be submitted for approval.
- 4.2 If the results of the lightweight survey are found not acceptable, an inclining test shall be conducted.

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

- 5.1 The deadweight shall comprise the following items:
  - (a) full number of passengers and crew;
  - (b) full load of cargo;
  - (c) fuel tanks (96% full) and fresh water tanks (100% full); and
  - (d) consumable stores.
- 5.2 The following information shall be used for the consideration of the effects of passenger and crew weight:
  - (a) the distribution of passengers is 4 persons per square metre;
  - (b) each person has a mass of 68 kg or <75 kg>;
  - (c) VCG of seated persons is 0.3 m above seat;
  - (d) VCG of standing persons is 1.0 m above deck;
  - (e) persons and luggage shall be considered to be in the space normally at their disposal.

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

- 6.1 After inclining test or lightweight survey, a stability information booklet (for each vessel) shall be submitted to the authority, person or organisation specified under Ch. II/2.1 or 2.2 for approval.
- 6.2 The booklet shall include the vessel's following particulars:
  - (a) vessel's name, principal dimensions, fully loaded displacement;
  - (b) general arrangement showing names of all compartments, tanks, machinery spaces, storerooms, crew and passenger accommodation spaces;

- (c) the capacity and the VCG and LCG of every compartment available for the carriage of cargo, fuel, water, water ballast, etc.;
- (d) the effect on stability of free surface in each tank in which liquids may be carried;
- (e) the estimated total weight of (i) passengers and their effects and (ii) crew and their effects, and the VCG and LCG of each such total weight. In assessing such centres of gravity passengers and crew shall be assumed to be distributed about the ship in the spaces they will normally occupy, including the highest decks to which either or both have access.
- (f) the estimated weight and the disposition and centre of gravity of deck cargo;
- (g) hydrostatic particulars, cross curves particulars;
- (h) calculation of loading and righting levers (GZ) curves of -
  - (i) light condition,
  - (ii) fully loaded (to the assigned freeboard) condition,
  - (iii) service loaded conditions,
  - (iv) probable worst conditions.

Conditions (ii)~(iv) shall be calculated on both departure and arrival condition.

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

## **7 Permanent Ballast**

- 7.1 When ballast is required to improve stability of the vessel, the correct quantity of ballast shall at all times be fixed (or so stowed as not allowing movable when at sea) at the specified position. Such quantity and position of permanent ballast shall be endorsed in the Certificate of Survey.

- 7.2 The permanent ballast shall be of regular shapes (such as cuboid or of other recognized shapes), the materials shall be of the types not vulnerable to damage (such as cast iron or cement block), and every piece of permanent ballast shall have its weight and serial number engraved or permanently painted on its surface. The weight shall be in kg.

(Added G.N. 6489 of 2018)

## **8 Modification onboard**

- 8.1 Before a vessel is to undergo any modification, application shall be submitted specifying the nature of the proposed modification. Estimates of the effects of the modification, i.e. the changes in vessel's lightweight weight, VCG and LCG shall be submitted to the Marine Department for approval.
- 8.2 If the change due to modification, or the finding of lightweight survey is exceeding 2%, an inclining test is to be conducted. The vessel's intact stability information, and damage stability information if applicable, shall be revised and submitted for approval.
- 8.3 No vessel is allowed to construct or alter to have false bottom or secret compartment.

## **CHAPTER V**

### **PASSENGER AND CREW ACCOMMODATION**

#### **Note**

- (a) This chapter shall apply to Category A Class I vessels in all.
- (b) Replacement Category B vessels carrying not more than 60 passengers shall comply with sections 1.1, 1.4, 2.1, 2.2, 3.4, 3.5, 4.3, 5.1.1, 5.2, 5.3, 5.4, 6.1 and 7.1(b) of this Chapter.

#### **1 General Requirements**

- 1.1 In every vessel the spaces allocated for passengers and crew shall 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, shall be of gastight construction. There shall not be manhole or air pipe opening of oil fuel bunker fitted in the passenger spaces.
- 1.3 Toughened safety glass shall be used for window, the thickness shall meet the requirements of a classification society rules.
- 1.4 Glass or mirror shall be made of materials which will not break into dangerous fragments if fractured (such as BS6206 or equivalent).

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

- 2.1 The following spaces shall not be used as passenger space:
  - (a) any compartment below main deck except on a sunken deck meeting the requirements of Ch. IIIA/1;
  - (b) the areas on main deck forward of collision bulkhead Bulwark or guardrails meeting the requirements of Ch. IIIA/1 shall be installed near the periphery of weather decks if the area abaft rudder stock is used as passenger space;
  - (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 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 85dB(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

The maximum number of passengers and crew which may be carried in any vessel shall be determined having regard to the clear space properly available in such vessels and to the scales as stated in the following paragraphs. In the context L is vessel's length overall, B is extreme breadth; both of which are defined in Ch. I/3.1 and in metres unit; the measurement of passenger seating should be guided by the method given on the plan at Annex G:

3.1 <(a) Launch, Ferry Vessel

Passengers no. = the number of fixed passenger seats provided onboard and the number of non-fixed passenger seats allowed under section 3.3.

The measurement of passenger seating should be guided by the method given on the plan at Annex G; >

(b) Floating Restaurant

Passengers no. = the total areas of clear space (m<sup>2</sup>) divided by 1.1.

(c) Multi-purpose Vessel

Passengers no. = the number of fixed passenger seats provided onboard.

**Note**

Refer to the record format in Annex P for determination of maximum number of persons to be carried and / or Survey Certification on installation suitable for "combined coxswain" operation of a Class I vessel.

3.2 Without limiting section 3.3, the maximum number of passengers on each deck of existing launches and ferry vessels shall be 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.

3.3 A launch or ferry vessel which meets the conditions below may be allowed to take into account the number of non-fixed passenger seats on board in calculating their maximum passenger capacity:

- (a) The maximum design speed for the vessel shall not exceed 15 knots;
- (b) The vessel shall have a length overall of 55 metres or more and a full-load displacement of 650 tonnes or more;
- (c) Every non-fixed passenger seat shall be a single-person seat;
- (d) Each non-fixed passenger seat shall weigh no more than 6 kg;
- (e) The seating arrangement of non-fixed passenger seats shall be in accordance with Annex G of the CoP (except for the requirement in Annex G that seats shall be attached);
- (f) Sufficient handrails shall be provided in areas where non-fixed passenger seats are placed;
- (g) Effective measures are in place to prevent non-fixed passenger seats from blocking the routes of escape; and
- (h) If the vessel plies outside the Victoria port, it shall meet the requirement of damage stability for two-compartment flooding:

Provided that the Marine Department may, having regard to the individual circumstances of a vessel, attach conditions or restrictions to the licence and the certificate of survey of the vessel in respect of the location, maximum number and use of the non-fixed passenger seats allowed on board under sections 18 and 20 of the Merchant Shipping (Local Vessels) (Certification and Licensing) Regulation (Cap 548, sub leg D) and section 24(2) of the Survey Regulation.

(Added G.N. 6640 of 2014)

<3.4 The maximum carrying capacity (including passengers and crew) in any primitive vessel (kaito) of single deck shall be determined by the following:

Maximum carrying capacity (including passenger and crew) for Kaito of single deck	
Total number of persons = $L \times B \times C_{np}$	
(a) if no simple inclining test is carried  $C_{np} = 0.35$	(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 = $L \times B \times C_{np}$

>

Kaitos with more than one deck shall be specially considered depending on the situation.

The passenger number for existing kaito remains unchanged. If the vessel is altered or replaced, the passenger number shall be determined according to the above scale as a new vessel.

For existing kaitos which have replaced their main engines on board with ones with an increase in output by 10% or more, they may operate with the number of persons originally permitted to carry provided that the following conditions are met:

- (1) they only operate under favourable weather (see the definition in Ch. I/3.1 of this Code);
- (2) they only operate in specified sheltered waters S3, S4 (refer to Annex W) and

3.5 The form, design and attachments to the deck of passenger seats shall be adequate for the intended service. The seating construction and safety belts on vessels of the type stated in Ch. I/4.2 shall comply with the relevant requirements specified in Ch. XI/4.

3.6 Any one of the following shall be conclusive proof that the attachment of passenger seats fitted on launches and ferry vessels is able to withstand a tensile force no less than 2250 newtons –

- (a) A type approval certificate issued by a classification society to certify that the attachment of passenger seats is able to withstand a tensile force no less than 2250 newtons;
- (b) A tensile force test with a result showing that the attachment of passenger seats is able to withstand a tensile force no less than 2250 newtons as verified by the Marine Department; or
- (c) The screws used for the attachment of passenger seats shall be no less than the value(s) calculated in accordance with the formula(e) below, and if passenger seats are attached to a wooden deck, the specific gravity of the wooden deck shall be no less than 0.7:

- (i) The shank area of the screws shall be no less than the value calculated in accordance with the formula below:

$$S.A = \frac{16,500 * \text{no. of seat}}{\sigma * \text{no. of bolt}}$$

S.A Shank area of screw (mm<sup>2</sup>)

σ Yield strength of screw ; and

- (ii) If passenger seats are attached to a wooden deck, the length of the screws shall be no less than the value calculated in accordance with the formula below:

$$L = \frac{73}{D}$$

L Length of screw (mm)

D Diameter of screw (mm)

3.7 In this section –

“fixed passenger seat” means a passenger seat which is attached to a deck and the attachment of which is able to withstand a tensile force no less than 2250 newtons, but vessels of the type stated in Ch. I/4.2 shall comply with the relevant requirements specified in Ch. XI;

“non-fixed passenger seat” means a passenger seat which is not a fixed passenger seat.

#### 4 Stairway, Passageway, Door and Exit in Passenger Spaces

4.1 Stairways shall -

- (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 shall be less than 600 mm or <800 mm> in width. A smaller width may be acceptable for a short stairway. The width shall be measured on a tread and within the sides unless the



handrails encroach on the tread, in such case, the width of the stairway shall 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 shall 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 shall 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 shall be at least as wide as the stairway and the length shall 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 shall be at least as wide as the required width of the stairway.

4.2.2 Where passenger seating are arranged transversely in rows, there shall be at least a longitudinal passageway of width not less than 600 mm <800 mm>. In longitudinally arranged seating (i.e. seats are facing each other with passageway at between), the width of the clear passageway between two columns of longitudinal seats; or longitudinal seats and transverse seats shall not be less than 600 mm or <850 mm><sup>Note1</sup>. Refer to Annex G for the illustration.

#### 4.3 Doors and exits

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

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

### 5 Ventilation, Lighting, Deck Sheathing and Insulation in Passenger Spaces

#### 5.1 Ventilation

5.1.1 Every enclosed space shall be provided with sufficient ventilation. The ventilation system can be of mechanical or natural system.

5.1.2 An emergency stop shall be provided and fitted in the wheelhouse if an air conditioning system is fitted in order to stop all ventilators served for the spaces.

5.2 All accommodation spaces shall be sufficiently lighted by day and night.

5.3 Every deck in any part of the accommodation space shall have a surface which provides a

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<sup>Note1</sup> Applicable to a vessel which is when the reference to “the commencement date” of the Survey Regulation in the definition of “new vessel” under section 2 of the Survey Regulation is substituted by “3 March 2017”.

good foothold and can be easily kept clean. Any deck covering and wooden deck shall be impervious to water and, if the deck is directly over an oil tank, impervious to oil.

- 5.4 Every deck except wooden deck, which forms the crown of any part of enclosed accommodation spaces and is exposed to the weather shall 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 shall be provided on vessels for the use of passengers where space is available.
- 6.2 Launches and ferry vessels carrying more than 60 passengers shall be provided with sanitary space solely for the use of passengers. Such sanitary spaces shall conform to the following requirements –
- (a) it shall 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 shall be constructed of steel or other suitable materials, and shall be of weathertight construction. Interior bulkheads which separate from other part of the vessel shall be of gastight construction. Self-closing door shall be fitted;
  - (c) floor deck shall be covered with terrazzo, tiles or other hard materials impervious to liquids and shall provide a good foothold;
  - (d) a hand rail or grip shall be provided for each water closet and urinal;
  - (e) it shall be sufficiently lighted and be adequately ventilated to remove odour to open air;
  - (f) efficient means shall 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 shall be provided on a Class I vessel which –
- (a) is licensed to carry more than 100 passengers; or
  - (b) accommodates passengers on more than one deck.
- 7.2 A portable loudspeaker or a public address system shall be provided on a ferry vessel or launch which –
- (a) is licensed to carry not more than 100 passengers; and
  - (b) accommodates passengers on only one deck.
- 7.3 The public address system required in sections 7.1 and 7.2 shall cover areas where passengers and crew have access and escape routes; and shall not render other parts of the system inoperable if there is flooding or fire in any compartment. < If the vessel accommodates passengers on more than one deck, the public address system shall be fitted with 'talk-back' facility.>

7.4 The emergency power supply for the public address system as required in sections 7.1 and 7.2 shall be fitted outside engine room and meets the requirement of Chapter IIIA/20.5.

7.5 For any vessel built before 29 November 2014, instead of meeting the requirement of 7.4, a battery-powered portable loudspeaker fitted in the wheelhouse and on each passenger deck other than the wheel house deck is acceptable.

(Added G.N. 1314 of 2022)

**8 Boarding Facility on Ferry Vessel**

8.1 A proper gangplank shall 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 shall be indicated, in a conspicuous location at all places where passengers will be embarking, in Chinese and English:-

Upper Deck	XXX
Main Deck	XXX
Others	<u>XXX</u>
Maximum Number of Passengers	XXX

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

# CHAPTER VI

## FIRE PROTECTION AND FIRE-FIGHTING APPARATUS

### 1 Definitions

““A” Class division” means a division formed by bulkhead or 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 140°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;

"accommodation spaces" means public spaces; passageways and lobbies; stairways; lavatories; passenger or crew cabins; offices; pantries not containing cooking appliances; lockers and spaces similar to any of the foregoing and trunks to such spaces allocated to passengers or crew;

“control stations” are spaces in which radio or main navigating equipment, or the emergency source of power, or the central fire recording equipment, or fire control equipment, or fire extinguishing installations are located or a control room located outside a propulsion machinery space;

“engine room” means a space which contains propulsion machinery and generators;

“machinery space” means a space which contains internal combustion engines, electrical machinery, ventilation and air conditioning machinery and similar spaces;

“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;

“service spaces” include galleys, pantries containing cooking appliances, lockers and store rooms, workshops (other than those forming part of machinery spaces) and similar spaces and trunks to such spaces.

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

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

2.2 Fire-fighting apparatus, type and quantity of Class I vessels shall comply with Table 1 and 2– in Schedule 4 of the Survey Regulation. The electronic version is available at URL -

<https://www.elegislation.gov.hk/hk/cap548G!en-zh-Hant-HK.assist.pdf?FROMCAPINDEX=Y>

- 2.3 For vessels that are required to install an automatic sprinkler system, fixed CO<sub>2</sub> fire extinguishing system or fire detection system; refer to Schedule 7, 10 and 11 respectively of Merchant Shipping (Safety) (Fire Protection) (Ships Built on or after 1 September 1984) Regulations, which is available at URL:

[https://www.elegislation.gov.hk/hk/cap369Y!en.assist.pdf?FILENAME=Assisted%20Monolingual%20PDF%20\(English\).pdf&DOC\\_TYPE=K&PUBLISHED=true](https://www.elegislation.gov.hk/hk/cap369Y!en.assist.pdf?FILENAME=Assisted%20Monolingual%20PDF%20(English).pdf&DOC_TYPE=K&PUBLISHED=true)

- 2.4 Any vessel (irrespective of year of built and length) which is licensed to carry more than 100 passengers and not fitted with a fire detection and alarm system covering engine room shall be fitted with at least one set of smoke detector in each engine room. The installation shall be capable to give visual and audio alarms in the wheelhouse in the event of a fire in the engine room. (Added G.N. 1314 of 2022)
- 2.5 Aerosol System meeting the requirements set out in Part B, MDN 49 of 2019 is accepted as an alternative to the fixed CO<sub>2</sub> fire-extinguishing system stipulated in Schedule 4 of the Survey Regulation.

### 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 not less than that obtained from the following formula -

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

where

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

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

$d = 1 + 0.066 \sqrt{[L(B+D)]}$  to the nearest 0.25

L, B and D are 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 unless specified in the Survey Regulation. Fire pumps may be sanitary, ballast, bilge or general service pumps.
- 3.3 In a vessel required to be provided with fire pumps operated by power, arrangements shall be made to ensure immediate availability of a water supply from the fire main at the required pressure by suitably placed remote starting of the fire pumps, unless the machinery space is continually manned.
- 3.4 In a vessel which is required to be provided with more than one fire pump operated by power (other than any emergency pump) every such fire pump shall have a capacity of not less than 80% of the total capacity of the fire pumps required in section 3.1 divided by the number of fire pumps to be provided in the vessel provided that each pump has a capacity of not less than 25 m<sup>3</sup>/hour. When more fire pumps are provided in any vessel, the Director may permit the capacity of any such additional fire pumps to be less than 80%.
- 3.5 A fire pump required which is operated by power shall be capable of producing from any fire hydrant one jet of water, while maintaining the pressure required in section 4.2.

- 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 shall be capable of producing a jet of water having a throw of not less than 6 m from nozzle.

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

- 4.1 In a vessel which is required to be provided with fire pumps operated by power, the diameter of the fire main and of the water service pipes connecting the hydrants thereto shall be sufficient for the effective distribution of the maximum discharge from -
  - (a) where only one pump is required; or
  - (b) where 2 such pumps are so required, both pumps operating simultaneously.
- 4.2 Any fire pump shall, when discharging the quantity of water required in section 3.1 through adjacent fire hydrants in any part of the vessel from nozzles of sizes specified in section 5, be capable of maintaining the following pressure at any hydrant –
  - (a) of vessel's gross tonnage 1000 or vessel's length 60 metres, whichever is the smaller, and upwards : 2.7 bar (0.27N/mm<sup>2</sup>);
  - (b) of vessel's gross tonnage under 1000 tons or vessel's length under 60 metres, whichever is the smaller : 2.1 bar (0.21N/mm<sup>2</sup>)provided that the maximum pressure at any hydrant shall not exceed that at which the effective control of a fire hose can be demonstrated.
- 4.3 Where any vessel is required to be provided with appliances capable of producing one jet of water, hydrants sufficient in number shall be so positioned as to enable one jet of water from a single length of hose to reach any part of the vessel.
- 4.4
  - (a) The fire main shall have no connections other than those necessary for fire-fighting and washing down. However, fire main may be permitted to have connection to ballast lines, cooling water lines and bilge ejector etc., provided that shut-off valves to these lines are fitted and kept closed at all times when not in use.
  - (b) Materials readily rendered ineffective by heat shall not be used for fire mains unless adequately protected.
  - (c) The fire hydrants shall be so placed that the fire hoses may be easily coupled to them except where hoses and nozzles are permanently attached to the fire hydrant.
  - (d) 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.
  - (e) 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.
  - (f) 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.

- (g) Hydrants shall 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 shall be located outside of the space and near the entrance.
- (h) Except otherwise specified, at least one hose and one nozzle shall be provided for every hydrant.

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

- 5.1 Fire hoses provided shall not exceed 20 metres in length. Such hose shall be made of closely woven flax, canvas or other suitable material; and every other such hose shall be made of non-perishable material.
- 5.2 Every fire hose together with the tools and fittings necessary for its use, shall be kept in a conspicuous position near the hydrants or connections with which it is intended to be used. Hose diameters shall be not less than 65 mm if unlined or 45 mm if lined.
- 5.3 Fire hoses so provided shall not be used for any purpose other than for fire-fighting or testing the fire-fighting apparatus.
- 5.4
  - (a) A vessel which is required to be provided with fire pumps operated by power shall be provided with nozzles of 12 mm in diameter or as near thereto in diameter as possible.
  - (b) A vessel provided with manual fire pumps shall be provided with nozzles of 9 mm in diameter or as near thereto in diameter as possible.
- 5.5 Dual purpose nozzle incorporating a shut-off meeting the requirements set out in Appendix I of MDN 49 of 2019 is accepted as an alternative to the requirements of jet nozzles and spray nozzles stipulated in Schedule 4 of the Survey Regulation.

## **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 Fire Protection and Fire-Fighting Apparatus/Installation not required by the Survey Regulation**

Where fire-fighting apparatus/installation of the type not required by the Survey Regulation (e.g. fire detection system, fixed extinguishing system, etc.) is provided, such apparatus/installation shall be so arranged that a fire in the space or spaces protected will not put any such apparatus/installation out of function; and the owner, agent and coxswain of the vessel shall ensure that the apparatus/installation is properly maintained in good and serviceable condition and be fit for the function intended.

## 8 Fire Extinguishers

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

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

8.2 Fire extinguishers to be used for switchboard, control panels, batteries, etc. shall be of the type suitable for electrical fires, e.g. dry powder or CO<sub>2</sub> fire extinguisher.

8.3 Fire extinguishers to be used for machinery spaces shall be of the type suitable for oil fires, e.g. foam, dry powder or CO<sub>2</sub> fire extinguisher.

8.4 Portable extinguishers are to be suitably distributed throughout the protected spaces. Normally at least one shall be stowed near the entrance inside that space.

8.5 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.

8.6 The use of CO<sub>2</sub> fire extinguisher in a confined space is not recommended.

8.7 Portable CO<sub>2</sub> extinguishers shall not be located in accommodation spaces. Where such extinguishers are provided in wheel house or any other control station, 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 CO<sub>2</sub> shall be calculated at 0.56 m<sup>3</sup>/ kg.

8.8 Fire extinguishers provided for use in any vessel shall not contain any extinguishing medium which has not been approved by the Director.

8.9 The capacity of a CO<sub>2</sub> extinguisher shall be taken to be the greatest weight of CO<sub>2</sub> which it can safely contain in a tropical climate.

8.10 The capacity of any fire extinguisher, other than a CO<sub>2</sub> 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.

8.11 Every fire extinguisher shall be kept fully charged at all times.

8.12 Portable and non-portable fire extinguishers shall be periodically examined and subject to such tests as prescribed in Ch. II/Table 7-2.

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

9.1 In every vessel there shall be provided -

- (a) means for stopping ventilation fans serving machinery, accommodation and cargo spaces;
- (a) without limiting Ch. IIIA/20.6, 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.

- 9.2 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 section 9.1 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.
- 9.3 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.

## **10 Fire Control Plans**

- 10.1 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, using graphical symbols marked on general arrangement plans showing clearly for each deck –
- (a) the position of control stations;
  - (b) the sections of the vessel which are enclosed by “A” class divisions together with particulars of -
    - (i) fire alarm systems;
    - (ii) fire detection systems;
    - (iii) automatic sprinkler systems;
    - (iv) fixed and portable fire extinguishing apparatus and
  - (c) the means of access to various compartments and decks in vessel;
  - (d) the ventilating system including particulars of master fan controls and position of dampers; and
  - (e) position of all means of control referred to in section 9.

Descriptions in such plans shall be in either Chinese or English.

- 10.2 The general arrangement plans required by this section shall be kept up-to-date, any alterations to general arrangements being recorded thereon without delay.

## **11 Availability of Fire-fighting Apparatus**

- 11.1 Fire-fighting apparatus carried in any vessel shall be maintained in good order and shall be kept available for immediate use at all times. All movable fire-fighting apparatus 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.
- 11.2 Non-portable fire extinguishers required to be fitted in engine room which is limited in space, may be stowed in vicinity of the engine room entrance provided that the jet of the fire

extinguishing media can reach any part of the engine room.

## **12 Structural Fire Protection**

### **12.1 Application**

This section shall apply to new vessels.

### **12.2 Requirements for All Vessels**

#### **12.2.1 In all spaces –**

- (a) paints, varnishes and other finishes used on exposed surfaces shall not contain nitrocellulose or other highly flammable base products and shall not be capable of producing toxic gases or excessive quantities of smoke;
- (b) insulating materials shall be of non-combustible materials;
- (c) stairways, includes interior stairway, lifts and escalators (other than those wholly contained within the machinery spaces and enclosures) thereto, shall be constructed of steel or insulated with material of equivalent fire resistance, and as far as practicable arranged in fore and aft direction;
- (d) any means of escape shall be led to open deck.

#### **12.2.2 In accommodation, service spaces and control stations –**

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

12.2.3 <sup>Note<sup>1</sup></sup> Without limiting section 12.3.2, in vessels constructed of reinforced glass fibre plastic (GRP), fire retarding material shall be applied in the hull, deck and bulkhead structures of engine room boundaries, and is capable to maintain its required strength for a period of 30 min. For hull structures below waterline the insulation shall extend to at least 300 mm below the lightest waterline. In vessels constructed of wood, the engine room boundaries shall be applied with certificated type fire retardant coating or mineral wool insulation.

### **12.3 Additional Requirements for Category A Vessels**

12.3.1 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.

12.3.2 In Class I vessels the hull, deck and bulkheads 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

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<sup>Note<sup>1</sup></sup> Section 12.2.3 applies to any vessel which is when the reference to “the commencement date” of the Survey Regulation in the definition of “new vessel” under section 2 of the Survey Regulation is substituted by “3 March 2017”.

construction insulated with non-combustible fire resisting materials.

- 12.3.3 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.
- 12.3.4 The requirement of Class I floating restaurant shall be specially specified by the Director.

## **Chapter VII**

### **Life-Saving Appliances and Arrangements**

#### **1 Definitions**

1.1 “Survival craft” means lifeboat and liferaft.

“LSA Code” means the International Life-Saving Appliance (“LSA”) Code adopted by the Maritime Safety Committee of the International Maritime Organization by its resolution MSC.48(66) or its amended version.

“SOLAS A Pack Liferafts” are the liferafts provided with normal equipment prescribed by the abovementioned LSA Code.

“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 tackle;
- (d) food ration;
- (e) water tank; and
- (f) graduated drinking vessels.

#### **2 General Requirements**

2.1 Life-saving appliances (other than lifejackets) shall be of the approved types. Appliances conforming to the LSA Code and approved by a maritime administration of a jurisdiction to which the International Convention for the Safety of Life at Sea, 1974 is applicable or a classification society are acceptable.

2.1A Lifejacket

2.1A.1 *(Repealed)*

2.1A.2 Under the Survey Regulation, unless otherwise specified<sup>1</sup>, a Class I vessel shall provide every person (regardless of whether he/she is a child or an adult) on board with a suitable lifejacket (refer to 2.1A.4), the total number of which must be not less than the maximum number of persons to be carried (i.e. including crew members) as specified in the operating licence. Also, Class I vessels shall provide infant lifejackets, the total number of which must be not less than 2.5% of the maximum number of passengers licensed to be carried (excluding crew members) as specified in the operating licence.

2.1A.3 Lifejacket Standards

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<sup>1</sup> With respect to Class I vessels, this covers local vessels restricted to operate within specified sheltered waters or typhoon shelters and floating restaurants meeting specific criteria.

The lifejackets required to be provided on board a local vessel which is permitted to ply solely in the waters of Hong Kong under section 32 of and Schedule 3 to the Survey Regulation must –

- (a) at least comply with the performance standards and requirements set out in –
  - (A) section 2.2.1 or 2.2.2 of the LSA Code; or
  - (B) ISO 12402-4:2006 (Personal floatation devices – Part 4: Lifejackets, performance level 100 – Safety requirements) issued by the International Organization for Standardization (ISO); and
- (b) be of a type approved by a maritime administration of a jurisdiction to which the International Convention for the Safety of Life at Sea, 1974 is applicable or a classification society or the European Union.

#### 2.1A.4 Suitable Lifejacket

A suitable lifejacket means a lifejacket that is designed and manufactured in accordance with 2.1A.3 above, and fit for the intended wearer. A lifejacket complying with such standard is designed with a normal size range, differentiated by the weight and/or height of the intended wearer. Such a range of sizes would be marked on the label of lifejacket for reference:

	SOLAS	ISO
Adult	≥43kg, ≥155cm	≥40kg
Child	15-43kg, 100-155cm	15-40kg
Infant	<15kg, <100cm	<15kg
“Common Lifejacket” (refer to <2.1A.6>)	N.A.	15-120kg

2.1A.5 To avoid confusion, the lifejackets (except infant lifejackets) placed on board should as far as practicable not of mixed standards.

#### 2.1A.6 “Common Lifejacket”

A lifejacket suitable for both adults and children (Common Lifejacket) complies with ISO performance level 100. It is only suitable to be used by vessels sailing within the Hong Kong waters. For details of the Common Lifejacket accepted by the Marine Department and the information of the manufacturers, refer to Marine Department Notice No. 69 of 2019.

The Common Lifejacket should have a Radio Frequency Identification (RFID) electronic tag attached with a unique identification serial number. The electronic tag should fulfill the following specification requirements:

1	Material	Silicon (or equivalent).
2	Dimension	56 x 12 x 1.8 mm (+/- 10% on each dimension).
3	Frequency band	Within the 860 to 960 MHz band of the UHF spectrum, and shall be readable within the frequency range 865 – 868MHz and/or 920 – 925MHz allocated by the Office of the Communications Authority (OFCA) of the Hong Kong Special Administrative Region.
4	Protocol	EPC global ISO 18000-6C (or equivalent).
5	IC	Higgs 3 (or equivalent).
6	EPC memory	96 bits (or above).
7	User memory	512 bits (or above).
8	Write cycles	100 000 (or above).
9	Storage environment	-40°C to +90°C (or wider range).
10	Wet clean	85°C (up to 60 minutes) (or equivalent). 120°C (up to 10 minutes) (or equivalent).
11	Iron	200°C (up to 10 seconds with press cloth) (or equivalent).
12	Security features	(a) The tags shall be compatible with the security scheme for product authentication. (b) Each tag shall be assigned a unique ID in EPC memory bank. Structure of the encoding and numbering scheme shall make reference to Item 13 below with details to be provided and confirmed by the Marine Department. (c) Each tag shall be protected by a locked access password to avoid unauthorised access (32 bits). (d) Each tag shall be protected by a locked kill password to avoid unauthorised access (32 bits). (e) Each tag shall be assigned an authentication code (96 bits) in user memory bank which will be updated during authentication process. (f) Data content of the security scheme for tag initialization.
13	Structure of the encoding in the UHF RFID tag (for reference)	(a) The code is AA99-999999, of which each “A” represents an alphabetic character from A to Z and each “9” represents a digit from 0 to 9. (b) The hyphen is fixed. (c) The prefix “MD” will be used in the RFID provided by the Marine Department. The RFID of other Common Lifejackets shall not use “MD” in the encoding.

#### 2.1A7 Oversized or Overweight Passengers/Personnel on Board

With reference to the LSA Code, restraining straps should be provided on board to assist overweight or oversized passengers/personnel to secure their lifejackets as they are

unable to don the standard-compliant lifejackets.

- 2.1A.8 The life-saving appliances including their types and quantity for class I vessels shall be provided according to the Survey Regulation Schedule 3. The electronic version is available at the URL below:

<https://www.elegislation.gov.hk/hk/cap548G!en-zh-Hant-HK/sch3>

In determining the number of lifejackets required to be provided on board according to the regulation, the number of lifejackets shall be rounded up if the calculation results are decimal numbers.

- 2.1A.9 *(Repealed)*

- 2.1.A.10 *(Repealed)*

- 2.2 Radiocommunications equipment shall have a licence issued by the Communications Authority (CA), Hong Kong.

- 2.3 One lifebuoy must be able to support two adult persons.

- 2.4 Each of the buoyant lifeline, self-igniting light and self-activating smoke signal required by the Survey Regulation shall be attached to a lifebuoy and be placed in proximity of the vessel's both sides.

- 2.5 Lifebuoys shall be marked on both sides with the name (as that shown on the hull of vessel) or Certificate of Ownership number of the vessel on which they are carried.

- 2.6 *(Repealed)*

- 2.7 Donning instructions shall be posted in the appropriate areas in the vessel.

### **3 Replacement of Life-Saving Appliances**

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

### **4 Operational Readiness, Maintenance, Inspections and Servicing**

- 4.1 Whenever a local vessel is being used or operated, every life-saving appliance carried on board the vessel shall be –

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

- 4.2 Every inflatable liferaft and hydrostatic release unit shall be serviced at a service station accepted by the Director at intervals not exceeding 12 months or a period as permitted by the Director.

## **5 Survival Craft Muster and Embarkation Arrangements**

- 5.1 Survival craft shall be stowed as close to accommodation and service areas as possible.
- 5.2 Muster and embarkation stations of survival craft shall be readily accessible from accommodation and work areas.
- 5.3 Alleyways, internal and external stairways and exits giving access to the muster and embarkation stations of survival craft shall be lighted.

## **6 Stowage of Survival Craft and Buoyant Apparatus**

- 6.1 Each survival craft shall be stowed –
  - (a) in a way 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 to the water surface as possible provided that it is safe and practicable; in serious situations where a fully loaded survival craft has an angle of trim or heel up to 20° or the weather deck starts to be flooded, etc., the embarkation point should be at least 2 m above the waterline;
  - (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) in a fully-equipped manner;
  - (e) in a secure and sheltered area as far as practicable to prevent any damages that may be caused by fire and explosions.
- 6.2 Liferafts shall be so stowed as to permit manual release from their securing arrangements.
- 6.3 Liferafts shall be so stowed as to be readily transferable for launching on either side of the vessel unless liferafts are stowed on each side of the vessel.
- 6.4 Every liferaft shall be stowed with its painter permanently attached to the vessel and with a float-free arrangement so that the liferaft can float free and, if inflatable, can inflate automatically when the vessel sinks.
- 6.5 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 can float free when the vessel sinks.

## **7 Launching Stations**

Launching stations shall be in such positions as to ensure safe launching having particular regard to the clearance from the propeller and steeply overhanging portions



of the hull with the object of ensuring that so far as practicable, the survival craft can be launched down on the straight side of the vessel.

## **8 Survival Craft Launching Arrangements**

Means shall be available to prevent any discharge of water onto the survival craft during abandonment.

## **9 Stowage of Lifebuoys**

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

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

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

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

## **10 Stowage of Lifejackets**

10.1 Lifejackets shall be so placed as to be readily accessible and their positions shall be plainly indicated.

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

10.3 If a lifejacket is individually stored in a plastic bag, and –

(a) where the plastic bag is completely transparent, the plastic bag shall be easily ripped open; and

(b) where the plastic bag is opaque or is not completely transparent –

(i) the plastic bag shall be easily ripped open; and

(ii) there shall be clear indication at a conspicuous place on the outside of the plastic bag that the plastic bag contains a lifejacket.

10.4 If one or more lifejackets are stored in an enclosed space (for example: a cabinet, a bag) which is opaque or is not completely transparent, there shall be a clear indication at a conspicuous place on the outside of the enclosed space that the enclosed space contains a lifejacket.

## **11 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.

## **12 Manning of Survival Craft**

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

## **13 Lifejackets of Class I Vessels**

Apart from the other lifejacket requirements in the Code, lifejackets shall comply with the following requirements:

- (i) The name of the vessel (in Chinese or English, as that shown on the hull of the vessel) or the Certificate of Ownership number shall be printed on each of the lifejackets on board. For lifejackets of the minimum sizes, the Chinese characters shall be 12 mm in height and 8 mm in width, while the English letters and numerals shall be 8 mm in height and 5 mm in width. A Common Lifejacket having a Radio Frequency Identification (RFID) electronic tag attached with a unique identification serial number is regarded as complying with this requirement. For adult lifejackets, children lifejackets and infant lifejackets without RFID electronic tags and unique identification serial numbers, the vessel name (in Chinese or English, as shown on the hull) or the Ownership Certificate number must be marked on every one of them.
- (ii) Sufficient signs indicating the locations of lifejackets should be displayed on board;
- (iii) Demonstration (by crew or through video or posters displayed on board) of how lifejackets are donned should be given;
- (iv) At the piers used for passenger embarkation and disembarkation, videos or posters demonstrating the donning of lifejackets should be played or put up (applicable only to operators with designated piers for passenger embarkation and disembarkation); and
- (v) It is not required to print the vessel's name or its Certificate of Ownership number on spare children lifejackets provided for use under special circumstances.

## CHAPTER VIII

### LIGHTS, SHAPES AND SOUND SIGNALS

#### 1 General

- 1.1 Unless indicated otherwise, this chapter (including amendments made therein) applies to all vessels with effect from 1 July 2016.
- 1.2 Lights, shapes and sound signals provided for navigational purpose must be in accordance with the provisions of the Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations, Cap. 369 sub. leg. N, which gives effect to the International Regulations for Preventing Collisions at Sea 1972 (COLREG), as amended.
- 1.3 All lanterns and sound signals must be of the type approved/certified by the Marine Department, or the Maritime Administration of a convention country.
- All lanterns and sound signals fitted on new vessel<sup>Note 1</sup>; or replacement of these lights/signals on existing vessel must be of the type approved/certified by the Marine Department, or the Maritime Administration of a convention country or an authorized organization (definition in Ch. I/3.1 refers). Each navigation light must be accompanied by a type-approval certificate with unique serial number.
- 1.4 Where applicable special signals as required in the International Code of Signals published by the International Maritime Organization must be exhibited.
- 1.5 For ease of reference for meeting relevant provisions of the Regulations mentioned in section 1.1, the following sections, tables or diagrams indicate the signal appliances a vessel must exhibit when underway/towing/being towed, of type and length as indicated.

#### 2 Definitions

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

- (a) The words "length (L)" and "breadth" of a vessel mean her length overall and extreme breadth (as defined in Ch. I/3.1).
- (b) The term "height above the hull" means height above the uppermost continuous deck. This height must be measured from the position vertically beneath the location of the light.

#### 3 Alternative Lights

- 3.1 All vessels of  $L \geq 24.4$  metres must carry a complete set of alternative (standby) lanterns for the masthead lights, side lights (P. and S.) and stern light. The alternative lanterns may be either electric or oil type.
- 3.2 One set of spare bulbs (one per light) must be carried for the electric lanterns. A set of spare chimneys (one per light) must be carried for the oil lanterns.

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<sup>Note 1</sup> Applicable to a vessel which is when the reference to "the commencement date" of the Survey Regulation in the definition of "new vessel" under section 2 of the Survey Regulation is substituted by "3 March 2017".

## 4 Lights and Sound Signals

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

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

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

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

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

Item	No. Reqd	Intensity/Size	Remark
Masthead Light	1	visibility 3 n. miles	
Side Light (P&S)	1 set	" 2 n. miles	may be combined lantern
Stern Light	1	" 2 n. miles	
Anchor Light	1	" 2 n. miles	all round white
N.U.C. Light	2	" 2 n. miles	all round red
Black Ball	2	dimensions commensurate with size of vessel	
Black Diamond	1	ditto	
Whistle	1	audibility range 0.5 n. miles	
Sound Signal	1	means of making efficient sound signal	

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

Item	No. Reqd	Intensity/Size	Remark
Masthead Light	1	visibility 2 n. miles	may exhibit an all-round white
Stern Light	1	" 2 n. miles	light instead <sup>Note A</sup>
Side Light (P&S)	1 set	" 1 n. miles	may be combined lantern
Anchor Light	1	" 2 n. miles	all round white
N.U.C. Light <sup>Note B</sup>	2	" 2 n. miles	all round red
Black Ball <sup>Note B</sup>	2	dimensions commensurate with size of vessel	
Black Diamond <sup>Note B</sup>	1	ditto	
Sound Signal	1	means of making efficient sound signal	

#### Note

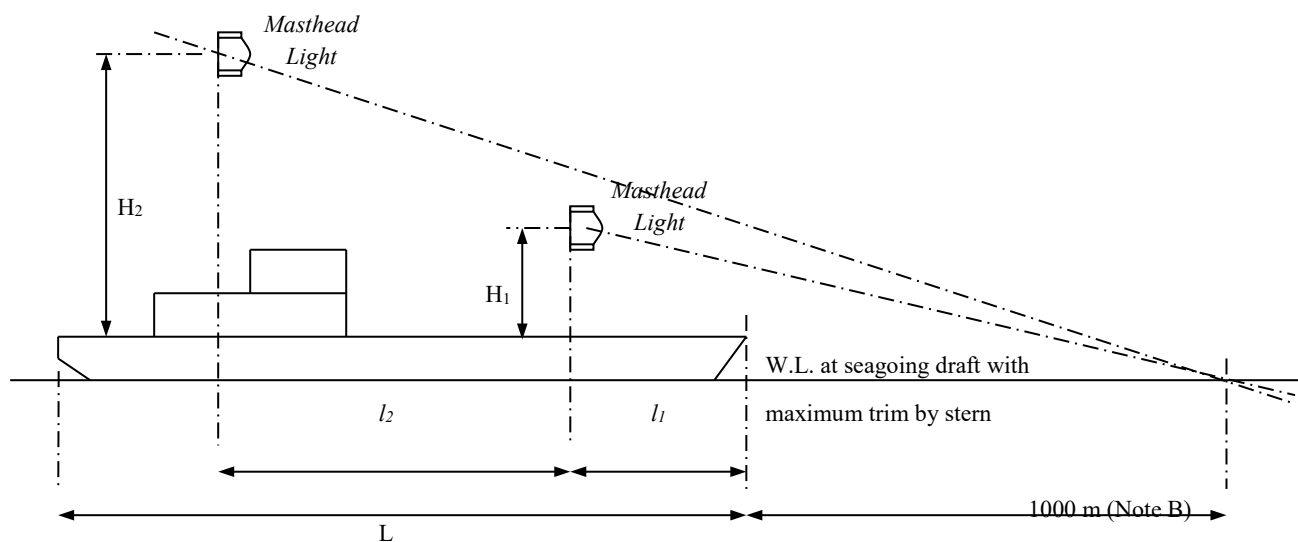
- (A) The masthead light or all-round white light may be displaced from the fore and aft centreline of the vessel if centreline fitting is not practicable, provided that the sidelights are combined in one lantern which must be carried on the fore and aft centreline of the vessel or located as nearly as practicable in the same fore and aft line as the masthead light or the all-round white light.
- (B) Except those engaged in diving operations, the subject lights and shapes must not be required.

- 4.5 Power driven vessel with  $L < 7$  m and maximum speed not exceeding 7 knots may in lieu of the lights prescribed in 4.4 above, exhibit an all round white light and must, if practicable, also exhibit sidelights.

### 5 Positioning of Light Signals

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

#### 5.1 Masthead Light



Ship Length L (m)	L < 12 (Note A)	12 ≤ L < 20 (Note A)	20 ≤ L < 50 (Note A)	L ≥ 50
$l_1$	As far forward as is practicable	As far forward as is practicable	≤ 0.5L	≤ 0.25L
$l_2$	--	--	--	≥ 0.5 L
$H_1$	may be < 2.5 m (Note D,F)	≥ 2.5 m (Note C,F)	≥ 6 m or ship's breadth (whichever is greater), but need not > 12 m (Note F)	
$H_2$	--	--	--	≥ ( $H_1+4.5$ ) (Note E,F)

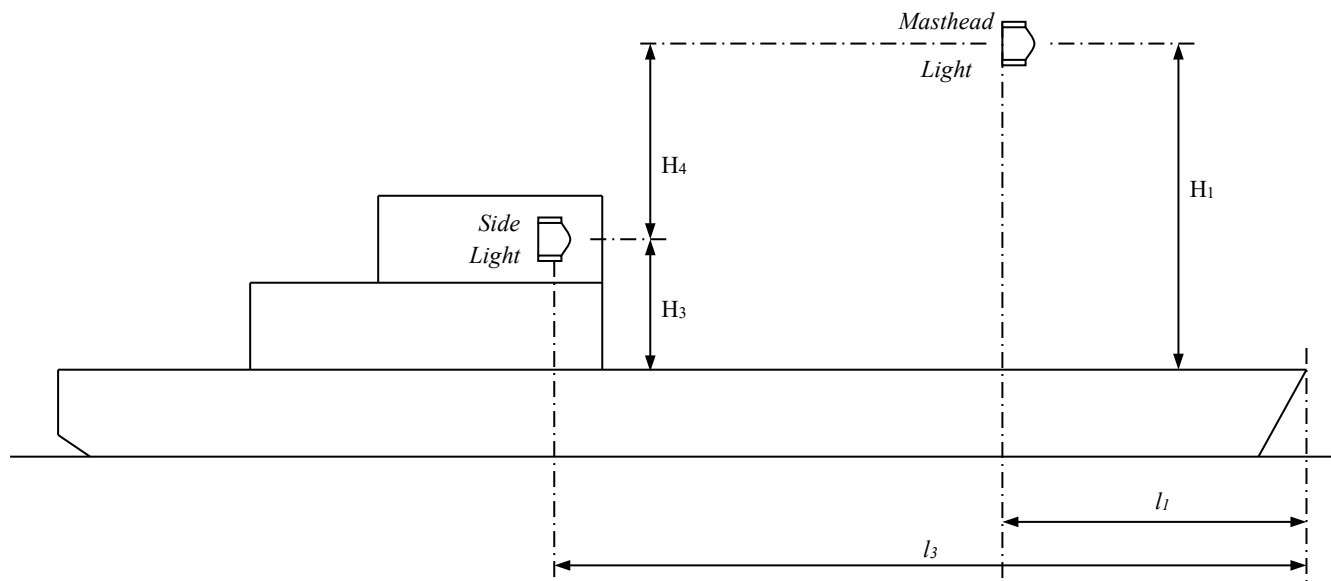
**Note**

- (A) On vessels of L < 50 m only one masthead light is required.
- (B) The vertical separation of masthead lights of power-driven vessels must be such that in all normal conditions of trim the after light will be seen over and separate from the forward light at a distance of 1000 m from the stem when viewed from sea level.
- (C) On vessels of 12 m ≤ L < 20 m the height is measured from gunwale.
- (D) Vessels of L < 12 m may carry the uppermost light at a height of less than 2.5 m above the gunwale. When however a masthead light is carried in addition to side lights and a stern light or the all-round lights prescribed in the regulation is carried in addition to side lights, then such masthead light or all-round light must be carried at least 1 m higher than the side lights.
- (E) One of the two or three masthead lights prescribed for a vessel when engaged in towing or pushing another vessel must be placed in the same position as either the forward masthead light or the after masthead light; provided that, if carried on the after mast, the lowest after masthead light must be at least 4.5 m vertically higher than the forward masthead light.
- (F) The masthead light of a high speed vessel may be placed at a height related to the breadth of the vessel lower than that prescribed for  $H_1$ , provided that the base angle of the isosceles triangles formed by the sidelights and masthead light, when seen in end elevation, is not less than 27°. For the dimension of vertical separation between foremast and mainmast light on a high speed vessel of L ≥ 50m, paragraph 13 in Annex I of the Schedule to Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations refers.

5.2 Side Light

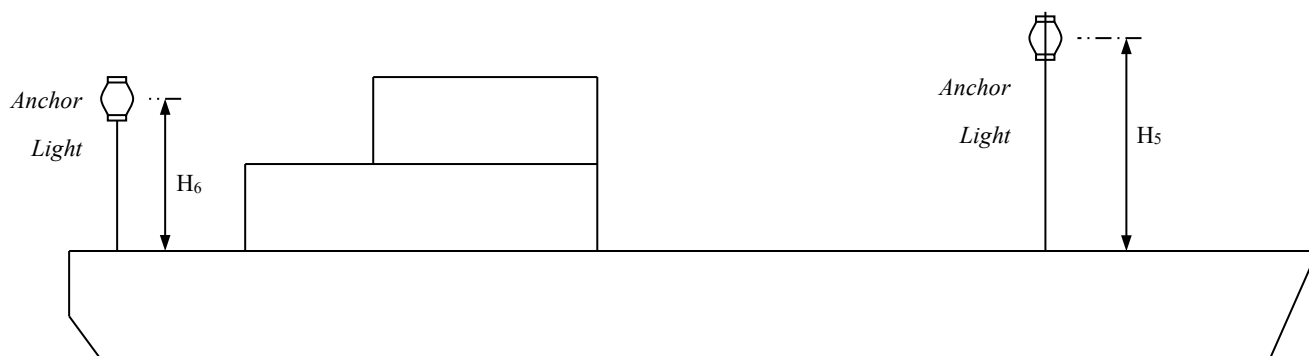
- 5.2.1 The side lights of vessels of L ≥ 20 m must be fitted with inboard screens painted matt black and meet the requirements with respect to horizontal sectors. On vessels of L < 20 m the side lights, if necessary to provide with horizontal sectors, must be fitted with inboard matt black screens. With a combined lantern, using a single vertical filament and a very narrow division between the green and red sections, external screens need not be fitted.
- 5.2.2 Side lights must not be so low as to be interfered with by deck lights. They must be placed at or near the side of the vessel (recommended not more than 0.1 ship's breadth from shipside).
- 5.2.3 The sidelights, if in a combined lantern and carried on a power-driven vessel of less than

20 m in length, must be placed not less than 1 m below the masthead light.



Length (m)	$L < 20$	$20 \leq L < 50$	$L \geq 50$
$l_3$	no requirement	$> l_1$ (i.e. side light not to be in front of masthead light)	$> l_1$ (i.e. side light not to be in front of forward masthead light)
$H_3$	$\leq 0.75 H_1$		
$H_4$	in the case of combined lantern, $\geq 1\text{m}$	--	--

### 5.3 Anchor Light

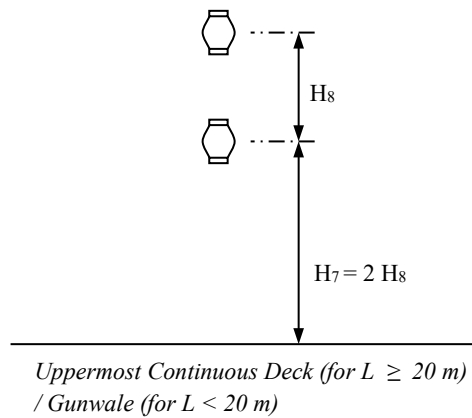


Length (m)	$L < 50$ (Note)	$L \geq 50$
$H_5$	Position can best be seen	$\geq 6\text{ m}$
$H_6$		$\leq (H_5 - 4.5)$

#### Note

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

## 5.4 Vertical Spacing of Lights fitted in a Vertical Line



Length (m)	$L < 20$	$L \geq 20$
$H_7$	$\geq 2$ m (except where a towing light is fitted) <sup>Note A</sup>	$\geq 4$ m (except where a towing light is fitted) <sup>Note A</sup>
$H_8$ <sup>Note B</sup>	$\geq 1$ m	$\geq 2$ m

### Note

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

## 5.5 Electric Light Vertical Sectors

The lights must be so positioned such that:

- (i) at least the required minimum intensity is maintained at all angles from  $5^0$  above to  $5^0$  below the horizontal; and
- (ii) at least 60% of the required minimum intensity is maintained from  $7.5^0$  above to  $7.5^0$  below the horizontal.



# CHAPTER IX

## TONNAGE MEASUREMENT

### PART 1 General

#### 1 Application

- 1.1 Subject to section 1.2, this chapter shall apply to –
- (a) new vessel (see definition in Ch. I/3.1); and
  - (b) at the request of the owner for re-measurement of tonnage, an existing vessel<sup>Note 1</sup>
- 1.2 The following vessels are not required to be measured in accordance with this chapter –
- (a) any vessel the tonnage of which has been measured in accordance with the Merchant Shipping (Registration)(Tonnage) Regulations and is issued with the relevant tonnage certificate; or
  - (b) any vessel in possession of International Tonnage Certificate issued in accordance with the International Convention on Tonnage Measurement of Ships, 1969.

#### 2 Method of Tonnage Measurement

- 2.1 The gross and net tonnages shall be determined in accordance with Part 2 of this chapter provided that in the case of novel types of vessel with constructional features which render the application of the provisions of Part 2 unreasonable or impracticable, the gross and net tonnages shall be determined as required by the Director.
- 2.2 All measurements used in the calculations of volumes shall be taken and expressed in metres to the nearest centimetre.
- 2.3 Gross and net tonnages shall be expressed as whole numbers, decimals being rounded off downwards.
- 2.4 All volumes included in the calculation of gross and net tonnages shall be measured, irrespective of the fitting of insulation or the like, to the inner side of the shell (below Main deck) or structural boundary plating (above Main deck) in ships constructed of metal, and to the outer surface of the shell (below Main deck) or to the inner side of the structural boundary surfaces (above Main deck) in ships constructed of any other material.
- 2.5 The total volume shall include volumes of appendages (e.g. rudder, kort nozzle, skeg, propeller shaft bossings, etc.) but exclude the volumes of spaces open to sea. Volumes within the hulls of ship, such as split-hull barges and dredgers, shall be retained in  $V$  and  $V_c$  notwithstanding that the space within the hull is temporarily open to the sea when discharging cargo.

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Note<sup>1</sup>: Existing vessels which are not to be re-measured, their previous methods of tonnage are still applied and tonnage expression may be in decimals.

- 2.6 Enclosed spaces above the main deck not exceeding 1 m<sup>3</sup>, air trunks having a cross-sectional area not exceeding 1 m<sup>2</sup> are not to be measured.
- 2.7 Masts, cranes and container support structures, which are completely inaccessible and above the main deck, separated on all their sides from other enclosed spaces are not to be included in the total volume of all enclosed spaces. All mobile cranes are exempted.

## **PART 2 Ascertainment of Tonnage**

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

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

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

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

#### **4.2 Gross tonnage**

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

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

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

$V_1 = V_H$ , total volume of all enclosed spaces under the main deck, in m<sup>3</sup>; which shall be obtained from section 4.2.2 (in catamaran,  $V_1 = 2 \times V_H$ ).

$V_2$  = total volume of all enclosed spaces above the main deck, in m<sup>3</sup>; which shall be obtained from section 4.2.3.

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

$$V_1 = L_m B D C \quad m^3$$

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

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

$D$  = moulded depth, m;

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

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

Vessel and Type of Vessel	Propulsion	Basic Hull Form	Hull Form Factor (C)
<b>Class I Vessel</b>			
Launch Ferry Vessel	with Propulsion engine	ship	monohull 0.55
			catamaran 0.50
Primitive vessel (Kaito)		junk	0.60

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

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

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

#### 4.3 Net Tonnage

The net tonnage (NT) shall be determined by the following formula (for all types of vessels):

$$NT = 0.5 \times GT$$

where: GT = gross tonnage calculated by section 4.2.1 above.

# CHAPTER XI

## HIGH SPEED CRAFT

(Added G.N. 7604 of 2021)

### PART A GENERAL

#### 1 Definition

"dynamically supported craft (DSC)" means a craft which is operable on or above water and which complies with either of the following characteristics:

- (a) the weight, or a significant part thereof, is balanced in one mode of operation by other than hydrostatic forces;
- (b) the craft is able to operate at speeds such that the function  $v / \sqrt{(gL)}$  is equal to, or greater than 0.9. Where "v" is maximum speed (m/s), "L" is the waterline length (m) and "g" is the acceleration due to gravity ( $m/s^2$ );

"high speed craft (HSC)" means a craft capable of a maximum speed equal to or exceeding -

$3.7 \nabla^{0.1667}$  (m/s); or

$7.19 \nabla^{0.1667}$  (knot)

where  $\nabla$  is the volume in  $m^3$  of the craft's maximum operational weight;

"maximum speed (v)" means the speed (m/s) achieved at the maximum continuous propulsion power for which the craft is certified at maximum operational weight and in smooth water;

"maximum operational weight" means the overall weight (metric ton) up to which operation in the intended mode is permitted;

"HSC Code" means the International Code of Safety for High Speed Craft adopted by the Maritime Safety Committee of the International Maritime Organization by resolution MSC. 97(73) (2000 HSC Code), as may be amended by the Organization from time to time.

#### 2 Application

2.1 This chapter shall apply to any new DSC <sup>Note 1</sup> and HSC <sup>Note 1</sup> operating solely within the waters of Hong Kong.

2.2 Any HSC shall, according to its passenger carrying capacity and maximum speed, meet the following requirements and the applicable requirements relating to construction of vessel stipulated in the other chapters of this Code:

- (a) newly built vessel having normal operating speed of 20 knots or above and carrying more than 200 passengers shall meet the requirements of 2000 HSC Code in full, except items under exemptible clauses (refer to Annex AB);
- (b) newly licensed existing vessel (i.e. a "new vessel" in the definition under section 2 of the Survey Regulation) disregarding speed and carrying capacity, passengers shall meet the requirements of 2000 HSC Code in full, except items under exemptible clauses (refer to Annex AB);

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<sup>Note1</sup> Applicable to a DSC / HSC which is a new vessel when the reference to "the commencement date" in the definition of "new vessel" under section 2 of the Survey Regulation is substituted by "3.12.2021".

- (c) vessel referred in subparagraph (b) above having age over 15 years shall in addition be classed to a recognized classification society;
- (d) vessel other than subparagraph (a)~(c) shall be assessed on case by case basis.

2.3 Construction of DSC will be specially considered.

**Example figures for the determination of a HSC:**

$$v_{\text{maximum}} = 3.7 \nabla^{0.1667}$$

<b>Maximum Operational Weight (metric ton)</b>	<b>Demarcation Speed (knot)</b>
10	10.51
20	11.80
30	12.62
40	13.24
50	13.75
70	14.54
100	15.43

A vessel with weight 47.5 ton capable of a speed of 13.63 knot is deemed to be a HSC.

## CHAPTER XII

### VESSEL SAFE OPERATION AND OPERATOR REQUIREMENTS

#### 1 General

Every vessel that is fitted with propulsion engine shall be controlled by the following appropriate complement when underway -

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

#### 2 Certificate Classes and Validity

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

Certificates issued before the commencement of Local Certificates of Competency Rules	Certificates issued under Local Certificates of Competency Rules	Vessels Applicable
Local Certificate of Competency as Master of a vessel of 300 tons and under; Local Certificate of Competency as Trawling Master	Coxswain Grade 1	Up to and including 1600 gross ton <sup>Note 1</sup>
Local Certificate of Competency as Master of a vessel of 60 tons and under	Coxswain Grade 2	Up to and including 24 m length <sup>Note 2</sup> , and 26.4 m length overall <sup>Note 3</sup>
Local Certificate of Competency as Master of a Fishing Vessel;	Coxswain Grade 3	Up to and including 15 m length <sup>Note 2</sup> , and 16.5 m length overall <sup>Note 3</sup>
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 aggregate power <sup>Note 4</sup>
	Engine Operator Grade 2	Up to and including 1500 kW aggregate power <sup>Note 4</sup>
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 aggregate power <sup>Note 4</sup>

#### Note

- 1 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 "Length", as defined in Ch. I/3.1.
- 3 "Length overall", as defined in Ch. I/3.1.

4 “Aggregate power” (總功率), according to Merchant Shipping (Local Vessels) (Local Certificates Of Competency) Rules, means the total power of all the vessel’ s propulsion engines as specified in the certificate of survey or certificate of inspection issued to the vessel in accordance with the provisions of the Survey Regulation.

2.2 Local certificate of competency as master restricted to operate a craft of not more than 10 metres in length and fitted with either a petrol outboard engine of not more than 12 kW power or a diesel engine of not more than 38kW power within limits of permitted areas issued before the commencement of the Local Certificates of Competency Rules shall, unless earlier suspended or cancelled-

- (a) continue in force until the date of its expiry;
- (b) valid for operation within the limits of the permitted areas as shown shaded on the map in Schedule 3 of the Local Certificates of Competency Rules; and
- (c) subject to the conditions except the geographic operational limits as endorsed in the original certificate.

2.3 Local certificate of competency as master restricted to operate in typhoon shelters only issued before the commencement of the Local Certificates of Competency Rules shall, unless earlier suspended or cancelled-

- (a) continue in force until the date of its expiry;
- (b) valid for operation in typhoon shelters only; and
- (c) subject to the conditions as endorsed on the original certificate.

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

3.1 Except the types of vessels stated in section 3.2, and subject to the condition stated in section 3.3, vessels equipped for unattended machinery space operation as required in Ch. IIIA/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 underway are not allowed to be controlled by only a combined coxswain:

- (a) vessel permitted to carry more than 100 passengers;
- (b) vessel of length exceeding 24 metres;
- (c) vessel of total propulsion engine horsepower exceeding 1,000 kW (1,340 BHP);
- (d) 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 shall be at least one crew member with common engineering knowledge on board to assist the combined coxswain while the vessel is underway.

### **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 underway, 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**

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

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

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

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

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

## **8 Duties Relating to Owner and Agent of Vessel**

- 8.1 It is the responsibility of the owner and agent of any 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 Ch. XII/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 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 vessel specified under sections 46 to 50 of the latter Regulation.

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

- 9.1 The owner of a 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 vessel shall 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.



## **10 Minimum Safe Number of Crew for Ferry Vessels and Launches**

- 10.1 Annex U-6 sets out the guideline on the minimum safe number of crew for ferry vessels and launches. The indicative minimum safe number shall be derived, depending on its own circumstances, a total score from the factors and corresponding scores set out in Part A of Annex U-6. On the basis of the total score, Part B of Annex U-6 indicates the corresponding indicative minimum safe number of crew.
- 10.2 When an emergency drill (including situations of collision, grounding, fire and abandonment of vessel) is carried out during a survey of the vessel (Ch. II/Table 7-3 refers), the number of crew participating in the emergency drill –
- (a) shall not be less than the indicative minimum safe number derived from the above section 10.1;
  - (b) shall be the minimum safe number should it be equal or more than that derived under the above section 10.1.
- 10.3 The Marine Department specifies the minimum safe number of crew of a ferry vessel or launch on the operating licence and the certificate of survey of the vessel in accordance with the above sections 10.1 or 10.2(b), as appropriate. Such number of crew with specified duties shall be indicated on the muster list prepared under item (B)(3) of Ch. II/Table 5-1.

## **11 Assistance in Look-out**

- 11.1 A vessel licensed to carry more than 100 passengers shall have a crew to assist look-out in addition to the coxswain during the hours of darkness or in reduced visibility. A high speed craft<sup>Note</sup> shall have a crew to assist look-out in addition to the coxswain at all times during normal navigation. The coxswain of the above vessel or craft shall deploy a crew member to carry out such look-out. If the crew is deployed to assist look-out outside the wheelhouse, appropriate communication device shall be provided to maintain effective communication between the coxswain and the crew.

### **Note**

“High speed craft” means a craft capable of a maximum speed in metres per second equal to or exceeding  $3.7\Delta^{0.1667}$ , where  $\Delta$  = displacement corresponding to the design waterline ( $m^3$ ); and is constructed and operated in accordance with the requirements in Ch. XI of the Code of Practice.

- 11.2 If a crew who is assigned to assist look-out is not the holder of a valid certificate of competency as a coxswain on a local vessel, the crew shall meet the eyesight standards as that for coxswain (refer to the Examination Rules for Local Certificates of Competency) and hold a certificate issued by a registered medical practitioner or registered optometrist attesting that the eyesight standards have been attained by the crew. Eyesight test shall be conducted at intervals not exceeding five years.

## **12 First Aid Kit**

Every vessel shall be provided onboard first aid kit. Refer to the following table for the complement of each kit.

	Name	Description	Quantity required
1	Triangular of Calico	110cm x 110 cm x 127 cm	8 offs
2	Conforming bandage	5cm x 2m	2 rolls
3	Bandage (ordinary or elastic type)	5cm x 5.5m	2 rolls
4	Bandage (ordinary or elastic type)	7.5cm x 5.5m	2 rolls
5	Tape	Assorted, sterile, adhesive	20 offs
6	Dressings	Sterile paraffin gauze	10 offs
7	Dressing strip	2.5cm x 5m	2 rolls
8	Absorbent cotton wool	35 gm	2 packs
9	Safety pins	Rustless, size 5cm	1 dozen
10	Scissors	Stainless steel throughout	1 pair
11	Disinfectant		0.2 Litre

**Notes:**

- (1) The first aid kit shall be regularly replenished as and when it is used up.
- (2) At least the following numbers of first aid kits shall be carried on each vessel:-
  - (i) not less than 1 first aid kit for passenger capacity of not more than 100 .
  - (ii) not less than 2 first aid kits for passenger capacity of more than 100.
- (3) The first aid kit(s) shall be placed in conspicuously marked and easily accessible container(s)
- (4) Ship owner/coxswain may add more contents to first aid kit to meet the need of their operations.

## **RULES AND REGULATIONS FOR CLASSIFICATION OF VESSELS APPLICABLE TO LOCAL VESSELS**

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

- (i) Rules for Building and Classing Steel Vessels under 90 metres in Length
- (ii) Rules for Building and Classing High Speed Craft
- (iii) Rules for Building and Classing Steel Barges
- (iv) Steel Vessels for Service on Rivers and Intracoastal Waterways (for vessels operating within smooth waters)

### **2 Bureau Veritas (BV)**

- (i) Rules for the Classification of Steel Ships
- (ii) Hull Structure and Arrangement for the Classification of Cargo Ships less than 65 m and Non Cargo Ships less than 90 m
- (iii) Hull Arrangement, Stability and Systems for Ships less than 500 GT
- (iv) Hull in Composite Materials and Plywood, Material Approval, Design Principles, Construction and Survey
- (v) Hull in Aluminium Alloys, Design Principles, Construction and Survey
- (vi) Rules for the classification of high speed craft

### **3 China Classification Society (CCS)**

- (i) Rules for Classification of Sea-going Steel Ships  
國內航行海船建造規範
- (ii) Rules for the Construction and Classification of Coastal Boats (applicable to vessels of length not exceeding 20 metres)  
沿海小船入級與建造規範
- (iii) Rules for the Construction and Classification of Sea-Going High Speed Craft  
海上高速船入級與建造規範
- (iv) Rules for Classification of Inland Waterways Steel Ships (applicable to vessels of length equal to or greater than 20 metres, operating in waters of Hong Kong or River Trade Limits not exceeding 5 km from coast)  
鋼質內河船舶建造規範

### **4 DNV - AS**

- (i) DNV Rules for Classification of Ships
- (ii) DNV Rules for Classification of High Speed, Light Craft and Naval Surface Craft

## **5 Lloyd's Register of Shipping (LR)**

- (i) Rules and Regulations for the Classification of Ships
- (ii) Rules and Regulations for the Classification of Special Service Craft  
(applicable to high speed craft, light displacement craft, multi-hull craft, yachts of overall length 24 m or greater and craft with draught to depth ratio less than or equal to 0.55)

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

- (i) Rules and Guidance for the Survey and Construction of Steel Ships
- (ii) Rules and Guidance for the Survey and Construction of Passenger Ships
- (iii) Rules and Guidance for the Survey and Construction of Inland Waterway Ships
- (iv) Rules and Guidance for the Survey and Construction of Ships of Fibreglass Reinforced Plastics
- (v) Rules and Guidance for High Speed Craft

## **7 Register of Fishing Vessel of the People's Republic of China (RFV)**

The following are applicable to fishing vessel/fishing sampan

- (i) Regulation for Statutory Surveys of Fishing Vessels of the PRC – River Trade, GRP, Wooden Sea-going and Small Steel Fishing Vessels Statutory Surveys and Technical Regulations  
《漁業船舶法定檢驗規則——內河、玻璃鋼、海洋木質及小型鋼質漁業船舶法定檢驗技術規則》
- (ii) Rules and Regulations for Construction of Sea-going Steel Fishing Vessel  
《鋼質海洋漁船建造規範》
- (iii) Rules and Regulations for Statutory Inspection of Fishing Vessel  
《漁業船舶法定檢驗規則》
- (iv) Rules and Regulations for Construction of Glass Reinforced Fibre Fishing Vessel (applicable to fishing sampan only)  
《玻璃纖維增強塑料漁業船舶建造規範》

### **Note**

- (1) The lists include the current rules and regulations applicable to local vessels issued by 7 classification societies/recognized authority and are not exhaustive. Rules and regulations issued by other authorized organizations; and alternative standards may be considered.
- (2) Hull scantlings and engine shafting calculations shall be verified and stamped by the respective Classification Society/Recognized Authority.

## APPROXIMATE DETERMINATION OF STABILITY

### Part 1 Simple Inclining Test

#### 1 General

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

#### 2 Test Procedure

- 2.1 The vessel should be tested with weights to represent the fully laden service condition.
- 2.2 The weights should be disposed, as far as practicable, with their centres of gravity in the correct vertical and lateral positions having regard also to those vessels where persons should be taken as congregated at 0.3 m<sup>2</sup> each on the uppermost deck or decks to which they have access.
- 2.3 The test should be carried out in the following manner: -
- (a) the vessel is to be loaded with weights as described above,
  - (b) calculate a heeling moment equal to 1/12<sup>th</sup> the weight of the persons (W) multiplied by the extreme breadth (B) of the vessel (WB/12),
  - (c) transfer weights from one side of the vessel to the other side in 3 equal increments such that the final heeling moment is equal to WB/12, the same vertical CG of the whole being maintained.  

The weights and the distance that are moved together with the angle of heel should be recorded for each of the 3 moves.
  - (d) restore all the weights to their original positions and record angle of heel when they are restored,
  - (e) repeat (c) moving weights from opposite side,
  - (f) repeat (d),
  - (g) if the angle of heel exceeds 7° during the test, the owner might add ballast weight and to repeat the test procedures (c), (d), (e) and (f). The weight and position of such ballast should be recorded.

#### 3 Acceptance of Stability

- 3.1 As a general rule, no vessel will be accepted where the angle of heel exceeds 7° as a result of a heeling moment of WB/12 or any greater heeling moment that could be expected to arise in service.
- 3.2 In any case where an angle of heel exceeding 4° has arisen as a result of a heeling

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

## **Part 2 Rolling Period Test**

### **4 General**

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

### **5 Test Procedure**

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

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

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

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

where

B = extreme breadth of vessel in metres

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

## DAMAGED STABILITY REQUIREMENTS for LAUNCHES, FERRY VESSELS

### PART 1 Damaged Stability Requirements

(1) (a) Every vessel to which sub-section (1)(b) or (c) applies shall be subdivided by bulkheads, which shall be watertight up to the bulkhead deck, into compartments the maximum length of which shall not exceed the length permitted by the required freeboard and stability as calculated in accordance with parts 2 and 3 of this Annex.

(b) Every vessel shall comply with the following subdivision standard:

No. of Passengers Carried	Subdivision Standard (Refer to para. (6) for the assumed extent and character of damage)
≤ 400	Any one main compartment
> 400 <sup>Note1</sup>	Any two adjacent main compartments

(c) Any launch or ferry vessel which meets the conditions required in Ch. V/3.3 and plies outside the Victoria port, shall meet the requirement of damage stability for two-compartment flooding.

(2) Every vessel shall be so constructed as to keep asymmetrical flooding, when the vessel is in a damaged condition, at the minimum consistent with efficient arrangements.

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

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

(3) Applicable vessel size and arrangement:

- (a) no passenger is carried underdeck;
- (b) the vessel is fitted with plane bulkheads and no stepped bulkhead between main compartment is fitted;
- (c) no partial subdivision above margin line is provided; and
- (d) no cross-flooding fitting is provided.

(4) The vessel shall be assumed to be in the worst service conditions as regards stability which is likely to be experienced having regard to the intended service of the vessel, or damage calculations shall be made over the operational draught range as a basis for curves of required metacentric height (GM) values or permissible vertical centre of gravity (KG) values.

<sup>Note1</sup> Applicable to any vessel which is when the reference to “the commencement date of the Survey Regulation” in the definition of “new vessel” under section 2 of the Survey Regulation is substituted by “3 March 2017”.

(5) The permeabilities shall be assumed to be as follows-

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

(6) The extent and character of damage shall be assumed as follows-

(a) longitudinal extent: 3 metres plus 3% of the length of the vessel, or 11 metres or 10% of the length of the vessel, whichever is the least, including the following spaces;

(A) one compartment subdivision standard,

- (i) fore peak space (irrespective of the longitudinal extent prescribed above);
- (ii) space between aft end of vessel and adjacent watertight transverse bulkhead;
- (iii) anywhere in the vessel's length between adjacent watertight transverse bulkheads;

(B) two compartments subdivision standard,  
anywhere in the vessel's length.

Where the damage envisaged would involve transverse watertight bulkheads, such bulkheads shall not be considered effective unless they are spaced at a distance at least equal to the longitudinal extent of the assumed damage specified in sub-paragraph (a). Where such bulkheads are spaced at a lesser distance, one or more of these bulkheads within such extent of damage shall be assumed to be non-existent for the purpose of determining which compartments are flooded.

(b) transverse extent: 20% of the breadth of the vessel, measured inboard from the vessel's side at right angles to the centre line at the level of the deepest subdivision load waterline taken parallel to the keel;

(c) vertical extent: from the base line upwards to main deck;

(d) if any damage of lesser extent than that indicated in sub-subparagraphs (a) or (b) and (c) would result in a more severe condition regarding heel or loss of metacentric height, such damage shall be assumed for the purposes of the calculation.

(7) Where the vessel is fitted with decks, inner skins or longitudinal bulkheads of sufficient tightness to restrict the flow of water, regard shall be had to such restrictions in the calculation.



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

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

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

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

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

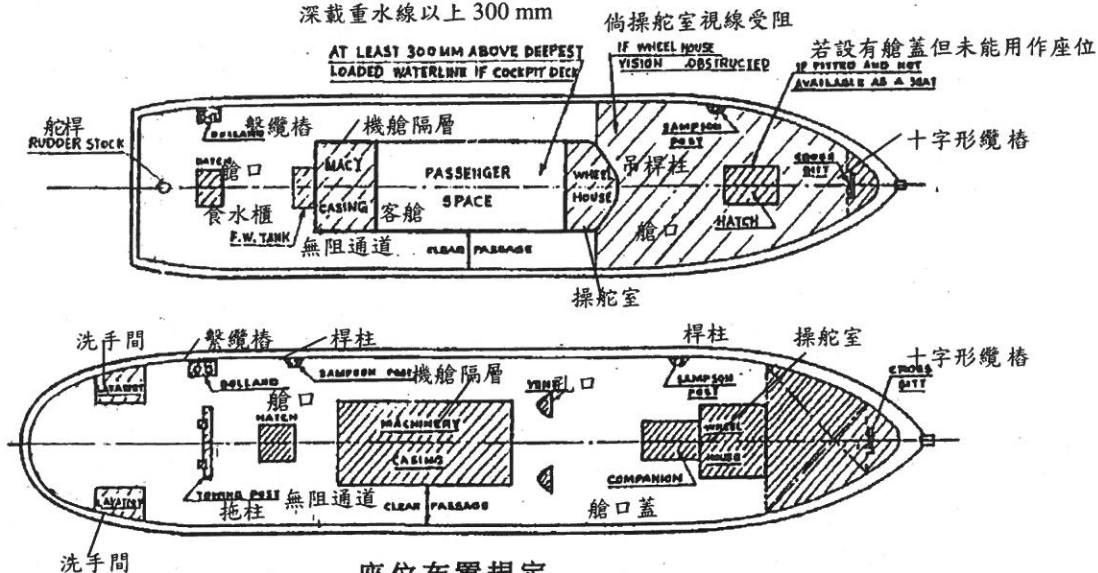
- (d) for the purpose of calculating the heeling moments in sub-subparagraph (c), the following assumptions shall be made-
  - (i) moments due to crowding of passengers-
    - (aa) 4 persons per square metre;
    - (bb) a mass of 75 kg for each passenger;
    - (cc) passengers shall be distributed on available deck areas towards one side of the vessel on the decks where muster stations are located and in such a way that they produce the most adverse heeling moment;
  - (ii) moments due to wind pressure-
    - (aa) a wind pressure of 120N/m<sup>2</sup> to be applied;
    - (bb) the area applicable shall be the projected lateral area of the vessel above the waterline corresponding to the intact condition;
    - (cc) the moment arm shall be the vertical distance from a point at one half of the mean draught corresponding to the intact condition to the centre of gravity of the lateral area;
- (e) in intermediate stages of flooding the maximum righting lever shall be at least

- 0.05 metre and the range of positive righting levers shall be at least 7°. In all cases only one breach in the hull and only one free surface need to be assumed.
- (9) The final condition of the vessel after damage shall be as follows-
- (a) in the case of symmetrical flooding there shall be a positive residual metacentric height of at least 50 mm as calculated by the constant displacement method;
  - (b) in the case of asymmetrical flooding the angle of heel for one-compartment flooding shall not exceed 7°. For the simultaneous flooding of two or more adjacent compartments a heel of 12° shall not be exceeded.
  - (c) in no case shall the margin line be submerged in the intermediate stages or final stage of flooding.
- (10) Other than the requirements prescribed in above sections (8) and (9), Marine Department accepts the standard applicable to vessels operating within sheltered waters, as stipulated in the Technical Regulation for the Survey of Coastal Boats promulgated by Maritime Safety Administration of the People's Republic of China (MSA); or the equivalent. For vessels of  $L \geq 20\text{m}$  carrying  $\leq 100$  passengers, the Department accepts the standard appropriate for vessels operating in Hong Kong waters, as promulgated by the MSA.

# 釐定第 I 及 II 類別船隻 乘客艙間的指引圖

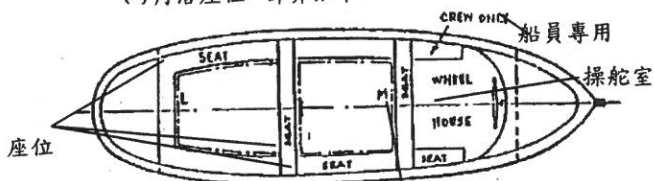
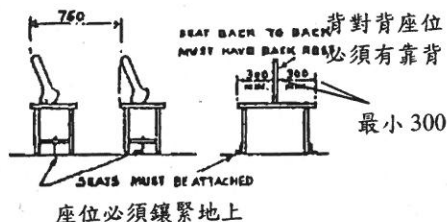
(圖示  的範圍不包括在內)

若為座艙甲板，須最少在最  
深載重水線以上 300 mm

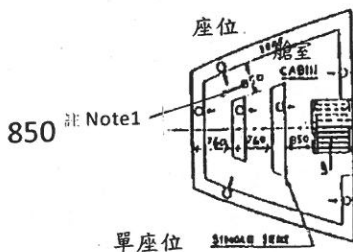
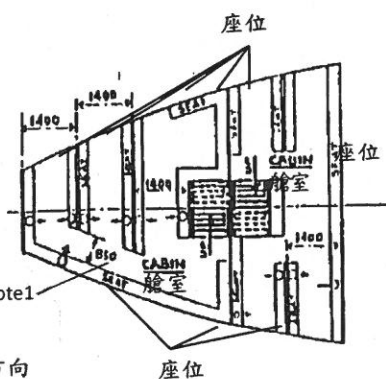


## 座位布置規定 (以 mm 為量度單位)

- (a) 最小闊度 460
- (b) 最小距離
  - (i) 面對面的座位 1400
  - (ii) 面向同一方向的座位 760
- (c) 最小伸腳空間
  - (i) 一行不超過 6 個座位 250
  - (ii) 一行超過 6 個座位 300
- (d) 角落座位，計算如下：



EXAMPLES  
舉例 L-460, PASSENGERS 460 乘客  
M-LESS 4 @ 930 少於  
M-920, PASSENGERS 460 乘客



箭嘴所示為乘客在座位上面對的方向  
MARKED SHOWING THE DIRECTION OF PASSENGERS ON THE SEAT.

<sup>1</sup> 適用於在《檢驗規例》第 2 條“新船隻”的釋義中，對於《檢驗規例》“生效日期”的提述，以“2017 年 3 月 3 日”替代的船隻。

Note<sup>1</sup> Applicable to a vessel which is under the reference to “the commencement date” of the Survey Regulation in the definition of “new vessel” under section 2 of the Survey Regulation is substituted by “3 March 2017”.

## VISIBILITY REQUIREMENT FOR WHEELHOUSE

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

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

1. The view of the sea surface from the conning position (it is defined in this Code of Practice as the main steering position controlled by the coxswain in wheelhouse) shall not be obscured by more than two ship lengths, or 500 m, whichever is the less, forward of the bow to 10 degrees on either side under all conditions of draught, trim, deck weight and cargo handling gear. Attention should be drawn on the blind sector created on tankers whilst in lightweight condition.
2. No blind sector caused by cargo, cargo handling gear or other obstructions (e.g. securing bars fitted on window) outside of the wheelhouse forward of the beam which obstructs the view of the sea surface as seen from the conning position, shall exceed 10 degrees. The total arc of blind sectors shall not exceed 20 degrees. The clear sectors between blind sectors shall be at least 5 degrees. However, in the view described in para. 1, each individual blind sector shall not exceed 5 degrees;
3. The horizontal field of vision from the conning position shall extend over an arc of not less than 225 degrees, that is from right ahead to not less than 22.5 degrees abaft the beam on either side of the ship.
4. From each bridge wing the horizontal field of vision of vision shall extend over an arc of at least 225 degrees, that is from at least 45 degrees on the opposite bow through right ahead and then from right ahead to right astern through 180 degrees on the same side of the ship.
5. From the main steering position the horizontal field of vision shall extend over an arc from right ahead to at least 60 degrees on each side of the ship.
6. The ship's side shall be visible from bridge wing.
7. The height of the lower edge of the wheelhouse front windows above bridge deck should be kept as low as possible. In no case shall the lower edge present an obstruction to the forward view.
8. The upper edge of the wheelhouse front windows shall allow a forward view of the horizon, for a person with a height of eye of not less than 1600 mm above the deck at the conning position, when the ship is pitching in seas.
9. Framing between the wheelhouse windows shall be kept to a minimum and not be installed immediately forward of any workstation.

10. To help avoid reflections, the bridge front windows shall be inclined from the vertical plane top out, at an angle of not less than 10 degrees and not more than 25 degrees.
11. Polarized and tinted windows shall not be fitted.
12. At all time, regardless of weather conditions, at least two of the forward windows shall provide a clear view, and in addition depending on the wheelhouse configuration, an additional number of windows shall provide a clear view.
13. On ships of unconventional design which, in the opinion of the Director, cannot comply with this Annex, arrangements shall be provided to achieve a level of visibility that is as near as practical to that prescribed in this Annex.

### **Requirement for existing vessels**

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

# Checklist for Engine Inspection

# Annex I-2

( to be completed by Engine Workshop except Part 3 )

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

Name of Vessel : \_\_\_\_\_ C.O.O. No.: \_\_\_\_\_

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

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

Engine Serial No.: \_\_\_\_\_ Engine Mark Code: \_\_\_\_\_

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

## Part 2 : Maintenance Workshop Particulars

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

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

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

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

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

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

## Part 3: Vessel Owner Declaration

I have inspected the open up and overhaul of engine on

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

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

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

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

## Checklist for Gearbox Inspection

( to be completed by Maintenance Workshop except Part 3 )  
 [ Note : This form is applicable to mechanized vessels installed with gearboxes for propulsion ]

Name of Vessel : \_\_\_\_\_ C.O.O. No.: \_\_\_\_\_  
 Type of Gearbox : \_\_\_\_\_  
 Gearbox Model : \_\_\_\_\_  
 Gearbox Serial No.: \_\_\_\_\_

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

### Part 2 : Maintenance Workshop Particulars

Name of Responsible Person : \_\_\_\_\_ Tel.: \_\_\_\_\_  
 Position / Rank : \_\_\_\_\_ Date : \_\_\_\_\_  
 Responsible Person's Signature : \_\_\_\_\_ Tel : \_\_\_\_\_  
 Name of Maintenance Workshop : \_\_\_\_\_ Company Chop : \_\_\_\_\_  
 Company Address : \_\_\_\_\_  
 Business Registration No. : \_\_\_\_\_

### Part 3: Vessel Owner Declaration

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

Actual Completion date: \_\_\_\_\_ Signature/Chop:  
 Name of Owner/Coxswain/Engine Operator \_\_\_\_\_  
 Telephone No. : \_\_\_\_\_

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

**PERFORMANCE SPECIFICATIONS FOR RADAR**

The radar should:

1. Have a display of the raster scan type and may be either in colour or monochrome. The display should be capable of being viewed in either daylight or darkness without the use of hoods.
2. Have at least the display modes of “Head-up” and “Course-Up” in addition to any other modes which may be available.
3. Be stabilized by a compass input from either a gyro compass, a transmitting magnetic compass, or a fluxgate compass.
4. Have a screen display of not less than 280 millimetres (11 inches diagonal).
5. Have means for suppressing precipitation returns, which may be of the FTC type or of the video processor type and the control of which may be either progressive or on-off type.
6. Have means suppressing sea clutter returns, the control of which must be progressive and which may be of swept gain type or the video processor type.
7. Have a clearly identifiable heading marker capable of being suppressed temporarily by a spring loaded switch or similar device.
8. Have at least one variable range marker with a clearly displayed digit readout of range.
9. Be equipped with a switchable fixed range rings of an accuracy such that the range of an object on a range ring may be determined to within 1.5% of the range scale in use or 75 metres whichever is the greater.
10. Be equipped with either a rotating cursor with parallel lines marked on it or with an electronic bearing marker having an adjustable origin.
11. Have a facility for displaying the historical relative tracks of all echoes. The echo tracks must be capable of being removed and restarted afresh on demand.
12. Have a horizontal beam width of not more than 2.5 degrees measured between the half power points (-3dB).
13. Have a pulse length on range scales up to 1.5 miles of not greater than 0.08µsec.
14. Have a power output not less than 3 kilowatt.
15. Have an antenna system capable of sustained operation in relative wind speeds of 50 knots or greater.
16. Be equipped with a means of ascertaining that the receiver is correctly tuned.



17. Be capable of determining whether any risk of collision exists, as required by section 80(2) of the Survey Regulation.

## REQUIREMENTS FOR THE REPLACEMENT OF MAIN ENGINE

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

- 1.1 Proof of sales of the new / used engine;
- 1.2 Type Approval Certificate / Maker Certificate certified Marine Type of the new/used engine;
- 1.3 The added weight, vertical centre of gravity (VCG) and longitudinal centre of gravity (LCG) of new new/used main engine and its accessories;
- 1.4 The percentage of the added weight based on the lightship weight;
- 1.5 Engine Seating Arrangement for approval (if any modification);
- 1.6 Piping Arrangement for approval (if any modification);
- 1.7 When replacing engine power output is more than 130kW, it shall comply with requirements in Annex I-10.

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

- 2.1 Main engine automatic shut-off and alarm arrangements (chapter IIIA / 8.4 refers; applicable to new vessels carrying more than 60 passengers of launches or ferry vessels);
- 2.2 Main engine emergency stopping device in the wheelhouse (all vessels);
- 2.3 A silencer or expansion chamber should be fitted on the exhaust pipe (all vessels);
- 2.4 Existing gearbox and shafting system should be in acceptable condition (all vessels).

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

- 3.1 Appropriate fees are to be paid in advance and surveys are to be arranged at appropriate stages;
- 3.2 "Form Survey 6B" is to be completed and returned to this office for further action.

### **4 Inspection/Measurement to be Taken**

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

## **REQUIREMENTS FOR THE REPLACEMENT OF GENERATOR SET**

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

- 1.1 Proof of sales of the new generator set;
- 1.2 Maker Certificate certifying that the new/used generator set is of Marine Type;
- 1.3 The added weight, vertical centre of gravity (VCG) and longitudinal centre of gravity (LCG) of new new/used main engine and its accessories;
- 1.4 The percentage of the added weight based on the lightship weight;
- 1.5 Engine Seating Arrangement for approval; (if any modification);
- 1.6 Piping Arrangement for approval; (if any modification);
- 1.7 Electrical Arrangement / Revised Electrical Arrangement; (if any modification);
- 1.8 Main Switchboard Wiring Diagram; (if any modification);
- 1.9 A.C. Electrical System Diagram. (if any modification);
- 1.10 When replacing engine power output is more than 130kW, it shall comply requirements in Annex I-10.

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

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

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

- 3.1 Appropriate fees are to be paid in advance and surveys are to be arranged at appropriate stages;
- 3.2 "Form Survey 6B" is to be completed and returned to this office for further action.

### **4. Inspection/Measurement to be Taken**

- 4.1 Inspection of device 2.1 and noise level measurement at passenger accommodation should not exceed 85 dB(A) for all Class I Category A vessels.
- 4.2 Lightship weight verification (inclining experiment if required).
- 4.3 Inspection of modified items.
- 4.4 The engine should be stripped down and inspected by MD officer/authorized inspecting personnel (used engine only).

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

**1 Technical Requirements**

In general speaking, the Inclining Experiment can be waived subject to the total increased/decreased weight of the engine and its accessories or minor modification do not exceed 2% of lightship weight (which was measured in the last inclining test) and the following conditions:

- (a) Heel is not more than 5 degree;
- (b) Ship's trim in any probable loading condition does not make the passenger deck less than 300mm above deepest loaded waterline;
- (c) The intact and damage stability (where applicable) comply with the requirements of Ch. IV/1.3 and 2 respectively;
- (d) Minimum freeboard complies with the requirements of Ch. IV/1.2.
- (e) Comply with the applicable requirements of this Code.

**2 Information to be Submitted**

- (a) The added/decreased weight, vertical centre of gravity (VCG) and longitudinal centre of gravity (LCG) of engine and its accessories or proposed modification.
- (b) The lightship weight and longitudinal centre of gravity (LCG) calculation with the percentage change.

## HARMFUL ANTI-FOULING SYSTEMS

The Merchant Shipping (Control of Harmful Anti-Fouling Systems on Ships) Regulation (Cap. 413N) which comes into effect on 1 January 2017 is to implement the International Convention on Control of Harmful Anti-Fouling Systems on Ships, 2001. The requirements of the Regulation are highlighted as follows:

- (1) Any vessel must not, on or after the commencement date of the regulation, bear any organotin compounds that act as biocides in the anti-fouling system of the vessel. If a vessel bore any organotin compounds that act as biocides in its anti-fouling system before the commencement date, it must, as from that date, bear a coating that forms a barrier to the compounds.
- (2) Any vessel of 400 gross tonnage or above and engaged in international voyages must be subject to survey for the issue / endorsement of International Anti-Fouling System Certificates.
- (3) Any vessel of 24 meters or more in length, less than 400 gross tonnage and engaged in international voyages, the owner and the master of which must ensure that a declaration that is made in respect of anti-fouling system of the vessel is kept on board the vessel.

**Implementation of the Requirements of  
Annex VI of MARPOL 73/78 to Locally Licensed Vessels**

The new Merchant Shipping (Prevention of Air Pollution) Regulation, CAP 413P has entered into force on 1 July 2016. The regulation is to implement the requirements of MARPOL Annex VI in Hong Kong. The Marine Department Notice (MDN) No. 39 of 2016 promulgated on 6 April 2016 gives details of the relevant requirements applicable to local vessels under the regulation. The MDN 39 of 2016 is available at the following URL:  
<http://www.mardep.gov.hk/en/notices/pdf/mdn16039.pdf>

**SPECIAL REQUIREMENTS OF INITIAL SURVEY FOR  
LICENSING OF NEWLY BUILT WOODEN VESSELS**

**1. General Requirement**

Due to the difference in hull form and the structure pattern, if the arrangement of main longitudinal structural component and the section scantling satisfy the total section area of the various components in the midship region, it is allowed to adequately adjust the section scantling of various components in the deck and the ship's bottom part (below bilge keel).

**2. Inspection before Commencement of Work**

2.1. Examination of raw material

2.1.1. Examine whether the material quality, strength and performance of primary structural components for the construction of ship are conformed to the requirements of drawings, rules and standards.

2.1.2. Besides the natural contorted material used in the curving shape structure, the timber wood used on ship should be fully exsiccated.

2.1.3. According to the toughness of different types of tree, it may be divided into hard wood (如坤甸、紅稠、柞、櫟、榆、水曲柳、黃菠蘿、樟、槐、柚、柯、梢等) and soft wood (如紅松、落葉松、馬尾松、杉柏、桉等) two major types.

The components of bulkhead base, stem, stern frame, rudder post, stern centre girder, stern side girder, bracket, bulkhead stiffeners etc should used hard wood. Keel plate, side planking and engine bed plate should used hard wood or high quality pine wood

2.1.4. Whether it is planking or batten, the front side should be facing outward when installed. And the reverse side (tree ring side)should be facing inward

2.1.5. Defects and limitation of usage of timber material can refer to the relevant requirements of recognized classification societies or flag administrations.

2.2 Building yard should submit the important construction workmanship to Marine Department for approval.

2.3 Examine the workshop for pre-fabrication of frames and ensure the workshop is neat and solid.

**3. Hull Inspection**

3.1. According to approved drawing, inspect whether the material and dimensions of all

components and shell plate are conformed to the approved drawing or the relevant requirements of recognized classification societies or flag administrations. Keel plate, engine bed and rubbing strake should use hard wood. If good quality pine wood is to be used, permission from Marine Department to be obtained.

- 3.2. When laying the keel, surveyor should check the size and type of the joint. Also check whether two hard wood treenails are effectively piled at the centre line of the joint.
- 3.3. To inspect the structural style of stem, stern frame structural style, and whether the connections of other components are fasten and reliable.
- 3.4. Spot check the quality of the constitution of frames, the deviation of the half breadth of the frames at waterline should not be greater than 3mm. The quality of the joint should conform to the relevant requirement.

To survey the position of the frame installed on the keel and the deviation of the level of left and right, the deviation should not be greater than 4mm. If distortion appeared after the installation, corresponding corrective process should be carried out before the construction can continue.

- 3.5. The end of the joints of longitudinal structure, side shell and deck plating, except there is limitation in the structure, should fit in the transverse aggregate and fastened by bolts. The contact face must be closely fitted. The shifted distance between planks in way of the joints should satisfy the relevant requirements of recognized classification societies or flag administrations.
- 3.6. The side shell plating and frame should be closely fitted; the contact area should not be less than 90% of the total contact area. The contact face should be spread with putty. The gap of plank seam between every plate should meet the requirements of recognized classification societies or flag administrations.
- 3.7. The joints of garboard plate and sub-garboard plate should avoid placing under the engine base, the connection to the two sides of the keel plate should be suitably process and closely fitted.
- 3.8. Deck plating and beams should be closely fitted. The contact face should be spread with putty. The gap of plank seam between every plate should meet the requirements of recognized classification societies or flag administrations.
- 3.9. According to the approved drawings, inspect the installation position of the engine bed plate. The deviation should not be greater than 5mm. If the installation position changed, permission must be obtained from surveyor.

The lower surface of engine bed plate and the upper surface of side shell frame should be closely fitted. The un-contact face of each side shell frame should not be more than 30% of the total contact face. The thickness of the outside engine base plate should not be less than 60mm.



#### **4. The Installation and Process of Hull Components**

- 4.1. Inspect the condition of the process of the surface of the hull main components, the smooth finish of the surface should conform to the relevant requirement.
- 4.2. Mast post, rudder stock and others round shape components should be fine processed.
- 4.3. The adjoining plane of stern frame and stern tube, mutual adjoining plane of parts of combination stern tube should be precise processed, the surface can be rough machining.
- 4.4. Engine bed plate surface should be precise processed, other surface allow fine processed.
- 4.5. Measurement of main components of hull dimensions, the tolerances should not be more than the following required value:
  - a) The allowable deviation of material of keel, keelson, stem, stern frame, rudder stock, stern tube: length is  $\pm 0.3\%$ ; wide is  $\pm 1\%$ ; thickness (height) is  $\pm 1\%$
  - b) The allowable deviation of material of garboard plating, ship side planking, deck planking, longitudinal girder, beam stringer: width is  $\pm 5$  mm; thickness is  $\pm 4$ mm.
  - c) The allowable deviation of deck beam, hatch end beam, half beam, hatch side girder, hatch coaming, engine base plate, deck plate, side planking: width is  $\pm 4$ mm, thickness is  $\pm 2$ mm.
  - d) The allowable deviation of the height of side frame is  $\pm 3\%$
- 4.6. The allowable deviation of the hull principal dimensions:
  - a) The allowable deviation of ship length (L) is  $\pm 0.3\%$
  - b) The allowable deviation of ship breadth (B) is  $\pm 0.3\%$
  - c) The allowable deviation of ship depth (D) is  $\pm 0.4\%$
  - d) The allowable deviation of stem, centre line of stern frame and centre line of keel should not be greater than 5mm
  - e) The allowable deviation of centre line of tailshaft and centre line of rudder stock should not be greater than 3mm
  - f) The width of side frame at waterline level should not be greater than 0.3% of the width of waterline

#### **5. Inspection of Nails, Screws and Bolts**

- 5.1. Examine the strength performance test report of the connection of material, verify the whether the machined dimension of the connecting piece conform to the requirements.
- 5.2. Check whether the number and arrangement of nails, screws and bolts for connection of each component are conforming to the relevant requirements.

- 5.3. Check whether the size of the hole drilled for nails and bolts during fabrication with diameter 1mm less than the diameter of the nails and bolts to be fitted. Check whether the nails and bolts inserted into each component are fastened.
- 5.4. When using nails and bolts, gasket (rove) should be added. Before insert, the head should wrap with 2 to 3 layer of yarn (or rattan) soaked with putty. The nut of the bolts should be in the inboard of the hull.
- 5.5. The end of the joints of longitudinal structure, side shell and deck plating, except there is limitation in the structure, should fit in the transverse aggregate and fastened by bolts. The contact face must be closely fitted.
- 5.6. Except due to special condition in the structure, all nails, ends of bolts and the top surface of screws installed on board should be embedded 3mm to 10mm under the surface of components, and plastered by putty.

## **6. Caulk and Watertight**

- 6.1. General requirement of caulking of hull
  - 6.1.1. Caulking must not be carried out on any components when nails, screws and bolts are not in fasten condition or the timber is in wet condition.
  - 6.1.2. The seam of all components such as hull plating, deck plating, deck house, bulkhead of superstructure and watertight transverse bulkhead, etc after caulking and all nails, screw and bolts should be plastered to ensure the watertightness and surface smoothness of the hull.
  - 6.1.3. In the important watertight position, such as side planking, deck plating, watertight transverse bulkhead and water tank, etc, “clinch” and “spike nail” for connection of seam should be applied at suitable distance (about 100mm).
  - 6.1.4. When the depth of crackle on the hull surface components exceeds 1/10 the thickness of the material, repair by caulking should be carried out. When there is decay, borer or other defects on components, patch should be applied (remove all the defected timber and inert the filler material of the caulk) to bridge and fill up. For larger area, should gouge and clinching, and then patch to increase the adhesive strength.
  - 6.1.5. The edge of the seam of the two plank should be beveled, the seam should be in “V” shape when place in position together.
  - 6.1.6. The seam between two planks should be as close as possible. If the thickness of plank is less than 60mm, the outside gap of the seam should not be greater than 5mm, the inside gap of the seam should not be greater than 3mm. If the thickness of the plank is greater than 60mm, the outside gap of the seam should not be greater than 8mm, the inside gap of the seam should not be greater than 3mm.

6.1.7. The gap of the seam of hull plating, deck plating cannot meet the about requirement, it is allowed to use clinching to process.

6.2. The requirements of caulking technique

6.2.1. Caulking layer included bottom putty, filling material and top putty three parts. The bottom putty should be a smaller amount and evenly spread, do not put excessive putty. The filing material should be shredded into small piece and squeezed into the seam. After squeezed into the seam should have a recess of 2 ~ 5 mm. After the external area of the filler about 30% ~ 35% desiccated, the seam should be plastered by putty. The putty should be leveled with the surface of the plank.

6.2.2. The overlapping of the same putty connection should not be less than 100mm and should be repeatedly kneaded.

6.2.3. For double side caulk, caulking to be carried out in the inboard side before the outboard side. The depth of the caulk of the seam in the inboard side should be 10% ~ 20% of the plank thickness. The depth of the caulk of the seam in the outboard side should be 50% ~ 60% of the plank thickness. For single side caulk, the depth of the caulk should be 60% ~ 70% of the plank thickness.

6.2.4. If the putty is not congealed 15 days after the completion of the caulking of the hull, the reason to be find out and take necessary action.

6.3. Inspection of caulking material

6.3.1. Examine whether the yarn, gauze, rattan and putty are conforming the requirements of recognized classification societies or flag administrations.

6.3.2. Examine the certificate of the product of wood oil, whether the physical properties are conforming the requirements of recognized classification societies or flag administrations. The following simple testing methods can be used during survey to verify:

a) Smell: Whether there is a special odour of the wood oil;

b) Colour: Whether the oil is clear. The colour of good oil is pure and no impurity;

c) Viscosity: Use a rod to soak some oil and drop into still and clear water. Check whether the oil will congregate into a circular droplet and not diffuse. If the oil quickly diffused into the water, it means water content is high and it fake oil;

d) Boil: Put a spoon of wood oil into an iron pan, heat to 250°C ~ 290°C temperature. If the oil can form a honeycomb shape solid, the wood oil is pass.

6.4. Hull Tightness Test

6.4.1. After all the putty of the vessel dried up, tightness test is to be carried out before launching of the vessel. Surveyor can deem necessary the condition of the vessel to decide which part to be tested. During the test, no leakage occur in the part tested is

considered acceptable.

6.4.2. There are three types of tightness test, flood test, hose test and spray test:

- a) Flood test: the height of the flooding to be up to maximum loaded draught for not less than 1 hour;
- b) Hose test: The nozzle diameter for the test should not be less than 16mm. During the test, the height of the water jet should not be less than 10m and the distance between the nozzle and the testing area should not be greater than 3m;
- c) Spray test: Use water spray to testing area and simulate the windy and rainy weather condition.

6.4.3. Flood test is applicable for the hull shell plate and water tank bulkhead; hose test is applicable for deck plate, deck house bulkhead and hatch cover; spray test is suitable for skylight of engine room, windows and doors of bridge and other windows and doors to open area.

6.4.4. When it is difficult to carry out tightness test when the vessel is on slipway, the tightness test can be carried out after the launching of the vessel with the approval from the surveyor.

## **7. Special Requirements and Inspection of Machinery and Electrical Installation**

7.1. Inspection of main engine and gearbox installation

7.1.1. Main engine and gear box seating should have adequate strength and rigidity. The roughness of upper and lower contact area of seating should not exceed  $6.3 \mu\text{m}$ , and the tolerance of the total length of plane should not exceed 0.10mm. The holding down fitted bolts of engine should not be less than 15% of the total bolts and minimum should have 4 fitted bolts. At least 2 fitted bolts are to be fitted for gearbox.

7.1.2. The foundation and the engine bed plate should be uniformly contact, the contact area should not be less than 75%.

7.1.3. One to three layer of metallic liners may be used for adjusting the space between the engine bed plate and foundation, and preventive measure is to be provided to avoid loosen of fitted bolts.

7.1.4. The gap between side frame and the casing of main engine and gear box shall not be less than 25 mm.

7.1.5. If the main engine has been installed on the slipway, the main engine and the shafting system to be re-examined after 48 hours of the launching of the vessel.

7.2. Inspection of lightning protection system

7.2.1. All wooden fishing vessels should be fitted with lightning protection.

- 7.2.2. Air terminals should be made from copper rod of not less than 12mm diameter or iron rod of not less than 25mm diameter, and project at least 150mm above the top of the vessel (or fittings).
- 7.2.3. Down conductors should have a minimum cross sectional area of 70mm<sup>2</sup> for copper tape or 100mm<sup>2</sup> for iron tape. The tape shall be solidly connected between air terminal and earth plate.
- 7.2.4. Down conductors should be securely connected between air terminal and earth plate. The earth plate shall be installed on exterior of hull shell plate and ensure the plate remain immersed when the vessel is rolling. The earth plate shall be of copper and the area shall not be less than 0.2m<sup>2</sup>. The earth plate shall not be painted.
- 7.3. Inspection of earthing of electrical appliance

All electrical appliances should be earthed. The requirements of main earth plate and lightning earth plate are the same. However, the two systems shall not be connected to the same earth plate.

Note: The above are made reference to the relevant requirements of “The ‘Ocean Fishing Vessels Statutory Survey Standard 2003’ of Register of Fishing Vessels of the People’s Republic of China”

## HULL INSPECTION REQUIREMENTS (OPERATION INSPECTION) OF WOODEN VESSEL

### 1. General Requirements

- 1.1. If the components or parts of the hull of wooden vessel under operation, exceed the required erosion (decay) limitation as specified in the following Table. The repair or renewal shall be carried out according to the requirements of original building.

**Limitation of erosion (decay) of main components of hull**

Serial No.	Components	Type of erosion, decay	Allowable erosion limit
1	Keel, keelson	Normal borer, decay	Depth exceeding 20% of the thickness; Partial depth exceeding 30% of the thickness
2	Hull shell plate	Borer, decay, wear down	Depth exceeding 25% of the thickness
3	Deck plate	Wear down, decay	Depth exceeding 25% of the thickness
4	Stem, rudder stock, deck beam, hatch side girder	Rotten	Depth exceeding 35% of the thickness
5	Side frame and its stiffeners	Erosion	Partial depth exceeding 25% of the thickness; Area of erosion more than 25% of the surface

- 1.2. On hull shell plate, main deck and other external and internal longitudinal components. If the depth and area of the wear and tear or decay affect the fastening function of the nails and bolts or cannot carry out caulking and there is leakage. The repair or renewal shall be carried out according to the requirements of original building.
- 1.3. Before docking of the vessel, the fuel tank, cargo hold, fish hold, refrigerating hold and water tank, etc should be emptied. Blocking should be properly arranged to avoid local concentration of loading.
- 1.4. Inspect of hull of wooden vessel also need to conform the relevant requirements of Chapter II of this Code.

### 2. Annual Survey

- 2.1. In general external inspection of each part of the hull is to be carried out. Particular attention will be paid on the main structural components of amidship and forward side planking (planking), rubbing strake, bulwark stay, bulwark stringer, fwd and aft handrail, deck longitudinal, etc. Also the technical condition of the caulk will be checked.

- 2.2. All opening and hatch arrangement to be inspected and tested. The relevant requirements of Load Line survey shall refer to Chapter IV of this Code.

### **3. Intermediate Survey**

- 3.1. The inspection items, contents and requirements of intermediate survey shall include the annual survey items. In addition, the survey of hull bottom is to be carried out.
- 3.2. Intermediate survey shall normally carry out on slipway. External inspection of keel, garboard plate, bottom plate, bilge keel, stem, stern frame, rudder stock and keel band shall be carried out. The caulk of the underwater hull part to be carefully examined. When crack appear on caulk of seam, the caulk to be partially gouged out for inspection if necessary. Inspection shall also include the effectiveness of the coating for the prevention of borer, decay and anti-fouling.
- 3.3. The underwater hull inspection shall also include the examination of propeller, rudder, oil sealing arrangement of tail shaft and the examination and measurement of the rudder pintle clearance and tail shaft bearing clearance.

### **4. Renewal Survey**

- 4.1. Renewal survey shall be carried out on slipway together with the repair works of the vessel if possible. Surveyor shall carry out survey together with the ship owner and the shipyard. According to the results of the survey and the requirements of Table at para. 1.1 of this Annex, verify the repair items of the vessel.
- 4.2. After docking of the vessel, the bottom sheathing and any sundries inside the fish hold, refrigerating hold and water tank etc. shall be removed. The paneling, insulation and other obstacle shall be partially removed, if necessary, to facilitate the inspection of the technical condition of the covered hull structure.
- 4.3. For vessel less than 10 years of age, inspection shall concentrate on the hull shell plate, keel band, deck plate, bulwark, cargo hold or fish hold, including the components near the insulation and the condition of the joints, tabled-scarf, caulk and coating, etc.
- 4.4. For vessel more than 10 years of age, more thorough inspection shall be carried out on main components of the vessels such as keel, stem, stern frame, side frame, deck beam, internal longitudinal girder, bulkhead, etc. To check the level of borer, decay, wear and tear and contact damage. If the damages exceeding the required limit, repair or renewal shall be carried out.
- 4.5. Full inspection shall be carried out for all the caulk below waterline. For vessels more than 8 years old, all caulk of the hull shall be gouged and renewed. In general the outer gap of the seam should not be greater than 15mm; the inner gap of the seam shall be closely fitted. Otherwise, it shall not carry out caulking. If the width of the seam is large and not suitable for caulking, the plank shall be replaced to reduce the width of the seam.

All caulk shall be subject to tightness test after repair or renewal.

- 4.6. When examine the condition of the stern structure, pay attention to distortion in the joints of components, leakage in seam, variation in shaft line of tailshaft, increase in vibration, etc. If abnormality find, repair shall be carried out. If the variation of the shaft line of tailshaft is due to insufficient hull strength, repairs shall combine with partial reinforcement of the strength and rigidity of the hull.

## **5. Hull Repair Requirements**

- 5.1. When the main components of the hull exceeding the erosion (decay) limit prescribed in the Table at para. 1.1, the component shall be replaced. If the limit is not excess, the borer and decay part shall be removed. Use patch method to gouge and fill up. For wider area, rabbet shall be bored or clinching and patch to increase the adhesive strength.
- 5.2. If transverse cracks or broken damages appear in the components of the hull, the component shall be renewed.
- 5.3. If the joint in side shell, longitudinal components, strengthened deck plate, transverse framing of amidship area find loosen or crack or distortion appear in the seam. Repair and reinforcement of the structure shall be carried out.
- 5.4. In the seam and tabled-scarf area at the end face of the important components. If cross crack appear and the colour of the component near the crack changed to black, the component shall be replaced. Under the condition that the strength and watertightness are not affected, the main plank can be partially renewed.
- 5.5. The requirements for the precision of machining, tolerance after machining, connection method, the shifted distance between planks, choice of nails, screw or bolts, etc shall follow the relevant requirements of recognized classification societies or flag administrations.
- 5.6. The old caulking material shall be removed and re-filled with new caulking material in caulk required for repair. The bevel edge of the plank shall not be damage during the removed of old caulking material. The caulk shall be smooth, clean and grease free.
- 5.7. For scattered worm holes with diameter less than 5mm. The worm shall be removed and fill up with putty and gauze. For diameter less than 10mm, bore hole in way of the worm hole and remove the worm. Plug the hole with treenail and interlace the surrounding gap with gauze and cover with putty.
- 5.8. For exposed nuts, depend on the condition of the surrounding timber. Interlace with gauze and plaster with putty, if necessary. Not caulking shall be carried out if the bolt is not fastened.



## **6. Prevention of Worm and Decay**

6.1. The periodical requirements of worm and decay preventive measure on main structural components:

- a) The wooden structural components below fully loaded waterline shall carry out a worm prevention process every four years (in line with renewal survey).
- b) The surface of all steel components below fully loaded waterline and weather exposed area shall be coated every year, can be in line with annual survey.
- c) Anti-fouling coating for the vessel bottom shall be re-coated every year.
- d) Asphalt type coating for under water hull below the fully loaded waterline and coating for the hull surface above fully loaded waterline and components inside accommodation. Shall be re-coated every two years together with renewal survey or intermediate survey.

Note: The above are made reference to the relevant requirements of “The ‘Ocean Fishing Vessels Statutory Survey Standard 2003’ of Register of Fishing Vessels of the People’s Republic of China”

**SURVEY SCHEDULE FOR MEDIUM SPEED ENGINES**  
**(for the extension to 3 year interval)**

1. This requirement may apply to ferries and launches carrying not less than 100 passengers fitted with medium speed engines (i.e. engines with 300~1400 rpm (according to definition given in IACS Unified Requirements No. M71). Vessels other than the above should comply with the survey schedule prescribed in chapter II.
2. The medium speed engine survey interval may be extended from 2 years to 3 years on owners request provided with documentary information of Maker's recommended maintenance practices for the fully opened up overhaul to be carried out at period exceeding 3 years and that owner undertakes the following conditions :-
  - (a) the running hours of each year and the total accumulated running hours will be recorded continuously and that the engine will be maintained and inspected in full compliance with Maker's recommended practice in respect to accumulative running hours or period with proper record.
  - (b) the engine will be opened up for inspection and overhauling per para. (c), (d) and (e) below after 2 years running is due.
  - (c) a 25% (or more, at the discretion of the inspection officer) of total cylinder number are to be opened up for inspection. Wear down of these components will be measured and confirmed to be within the tolerance based on the criteria given by the engine maker for comparison.
  - (d) photographs are taken to record condition of major components;
  - (e) when the condition of the engine is found to be satisfactory from the above inspection, an inspection report (issued by the concerned engine workshop) attached with a confirmation of safe operation for further year of operation will be issued by owner;
  - (f) after 3 years running the engine will be fully opened up, inspected and overhauled.

During the inspection as mentioned in para. 2.(f), if the wear-down of all key components are found within the tolerances recommended by the maker, a 3 year inspection and overhaul interval shall apply and no further request for extension is required thereafter. The relevant inspection and maintenance items are mentioned in para. 2.(a) to 2.(f).

**Extension of Survey Intervals for Main Engines, Gear Boxes, Tail Shafts, etc.  
of Class IA Vessels carrying more than 60 Passengers**

1. Owners of Class IA vessels carrying more than 60 passengers may apply for a 12-month extension of the survey interval for the main engine, gear box, tail shaft, propeller, rudder and rudder stock which are listed under items 1, 2, 3 and 10 of No. C&D in Table 2 under paragraph 7 of Chapter II of the current “Code of Practice - Safety Standards for Class I, II and III Vessels”, provided that:
  - (a) the running hours of the main engine and gear box, when they are due for a survey, have not reached the time for overhaul recommended by the manufacturers or in other materials;
  - (b) the main engine and gear box have been overhauled within the 24 months preceding the survey due date; or
  - (c) the main engine and gear box have been completely renewed within the 24 months preceding the survey due date.
  
2. An extension will only be granted provided that the following conditions are met:

**A. Main Engine and Gear Box**

- (A1) In the case that the running hours of the main engine and gear box, when they are due for a survey, have not reached the time for overhaul recommended by the manufacturers or in other materials
  - (a) the shipowner shall submit to MD a written application at least one week before the survey due date;
  - (b) the shipowner shall submit to MD information on overhaul intervals provided by the manufacturer or other sources;
  - (c) the shipowner shall provide the repair and maintenance records kept in accordance with the recommendations of the manufacturer or the maintenance manual for at least the past 24 months, including the date and report of last overhaul;
  - (d) the shipowner shall provide records on running hours in respect of the main engine and gear box for the past 24 months;
  - (e) the shipowner shall provide the estimations which show that the remaining running hours of the main engine and gear box can last for 12 months and the time between overhaul period recommended by the manufacturer or in other materials will not be exceeded;
  - (f) the main engine and gear box shall pass the visual inspection and running test conducted by MD during the periodical survey;

- (g) the shipowner shall sign a declaration to confirm the following:
  - (i) the main engine and gear box, which are working properly, have been repaired and maintained in accordance with the recommendations of the manufacturer or the maintenance manual, and no broke-down has occurred in the past 24 months;
  - (ii) the running hours (including those to be accumulated in the following 12 months) of the main engine and gear box are estimated to be within the limits of the time between overhaul period recommended by the manufacturer or in other materials; and
  - (iii) the main engine and gear box shall be stripped down for overhaul and inspection when they are due for the next survey (i.e. 12 months later).

**(A2) In the case that the main engine and gear box have been overhauled within the 24 months preceding the survey due date**

- (a) the requirements set out in (A1) above, with the exception of item (A1) (g), are applicable;
- (b) the shipowner shall provide the following documents:
  - (i) a report on the inspection and overhaul of the main engine and gear box after they have been stripped down, which shall include results of the hydraulic test of coolers (including air, lubricating oil and cooling water), main engine cylinder heads and water jackets; and a report on the inspection and repair of fuel oil pumps and fuel nozzles;
  - (ii) photos (with dates) showing, inter alia, the hydraulic test of coolers (including air, lubricating oil and cooling water), main engine cylinder heads and water jackets; and components of the main engine after it has been stripped down for overhaul and inspection; and
  - (iii) relevant delivery notes and/or invoices issued by contractors;
- (c) the shipowner shall sign a declaration to confirm the following:
  - (i) the main engine and gear box have been overhauled in accordance with the recommendations of the manufacturer or the maintenance manual with satisfactory results;
  - (ii) the main engine and gear box have been working properly and no broke down has occurred subsequent to the overhaul;
  - (iii) the running hours (including those to be accumulated in the coming 12 months) of the main engine and gear box are estimated to be within the limits of the time between overhaul period recommended by the

manufacturer or in other materials; and

- (iv) the main engine and gear box shall be stripped down for overhaul and inspection when they are due for the next survey (i.e. 12 months later).

**(A3) In the case that the main engine and gear box have been completely renewed within the 24 months preceding the survey due date**

- (a) the requirements set out in (A1) above, with the exception of item (A1) (g), are applicable;
- (b) the shipowner shall provide the following documents:
  - (i) a copy of the manufacturer's product certificate and the type approval certificate acceptable to MD; and
  - (ii) relevant delivery notes and/or invoices issued by the manufacturer or supplier;
- (c) the shipowner shall sign a declaration to confirm the following:
  - (i) the main engine and gear box after renewal have been repaired and maintained in accordance with the recommendations of the manufacturer or the maintenance manual and have been working properly, and no broke down has occurred in the past 24 months;
  - (ii) the running hours (including those to be accumulated in the following 12 months) of the main engine and gear box are estimated to be within the limits of the time between overhaul period recommended by the manufacturer or in other materials; and
  - (iii) the main engine and gear box shall be stripped down for overhaul and inspection when they are due for the next survey (i.e. 12 months later).

**B. Tail Shaft, Propeller, Rudder and Rudder Stock**

- (a) An application for a 12-month extension of the survey interval for survey items relating to the tail shaft, propeller, rudder and rudder stock may be made together with that for the main engine and gear box, provided that the last survey and past maintenance records are submitted by the shipowner, and that a pass has been obtained for the visual inspection and running test conducted by MD during the periodical survey.
- (b) MD inspectors will, as appropriate, take photos of the components of the main engine, gear box, tail shaft, propeller, rudder and rudder stock for filing purposes. Shipowners are required to notify MD immediately if an accident relating to the above components happens during the extension period, and a report detailing the circumstances and causes of the incident and subsequent corrective actions shall be submitted. The survey interval will not be allowed to be further extended upon the expiry of the extension period and the main engine, gear box, tail shaft, propeller, rudder and rudder stock must be stripped down for overhaul and inspection

according to the requirements currently applicable to surveys conducted at two-year intervals.

- (c) Shipowners must concurrently apply for a 12-month extension of the survey interval for both the main engine and gear box. If the survey interval for either of them (i.e. the main engine or gear box) cannot be extended, the main engine and gear box are to be surveyed once every two years as currently required.
- (d) Shipowners should note that the above proposal on extension of survey intervals may incur extra work and disrupt the arrangements for other mandatory survey items not covered by the proposal. However, they cannot for this reason request for a deferral of the survey schedule, simplification of procedures, or exemption from the survey or procedures regarding other mandatory survey items.
- (e) If some of the survey items regarding the internal hull which are subject to a two-year survey interval have not been thoroughly surveyed (e.g. the survey of the engine and steering compartments of the internal hull) due to the above proposed extension, a re-survey of those items should be conducted together with other periodical survey items upon the expiry of the extended survey interval for the engine, gear box, etc. (i.e. 12 months later).

**GUIDANCE ON MACHINERY AND HULL WEAR DOWN OR CORROSION  
TOLERANCE LIMITS AND OTHER INSPECTION ITEMS**

**Note:** If a vessel is classed with a recognized classification society (AO), the corresponding technical guidance of the classification society may be applied to such vessel.

**(A) Hull**

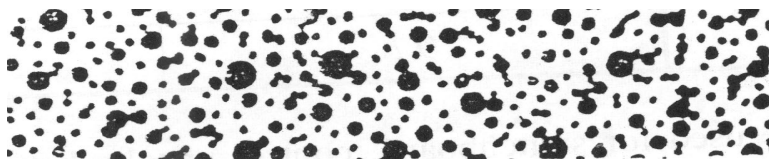
**1. Repairing of Corroded Hull and Structural Member**

1.1 The thickness reduction of hull envelope plating and internal structural members caused by corrosion shall not be more than the specified percentage of the original built thickness as shown in the following table (in the case of increased thickness from minimum requirement will be separately considered):

Material	Corrosion Limit (%)	
	Steel	Aluminium
Structural Member		
Deck Plating Shell Plating	30	15
Internal Structural Member	30	20
Seating for Main Engine, Crane, Windlass, etc.	25	15

When the corrosion exceeds the above limit, the relevant plate or structural member shall be cropped and renewed.

- 1.2 Local scar corrosion: the corroded member shall 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 shall 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 shall be a minimum dimension of 150mm x150mm and the structural member shall be minimum 150mm in length.

- 1.5 Scattered pitting: pitting, which diameter between 15mm to 50mm and depth exceeds 50% of the fabricated thickness, generally may be repaired by welding. Prior to the repair the surface shall be properly cleaned; and 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 test or other equivalent method may be required.

## 2. Other Requirement for Inspection of Structural Member

### 2.1 Buckling of plating(deformation of plating between framing)

Maximum allowable deflection =  $0.06s$ ;

Where  $s$  = frame spacing at indents area (mm)

### 2.2 Indent of framing structure (deflection of combined framing and plating)

Maximum allowable deflection =  $6l + 10mm$ ;

Where  $l$  = span (m)

- 2.3 Buckling of plating and indent of framing structure are generally to be rectified by hot work; and if failed to return to original to be cropped and renewed.
- 2.4 Crack is not allowed in any case on hull envelope plating and structural members below main deck.
- 2.5 No buckling is allowed at bracket. Mis-alignment between beams and frames shall not exceed the frame thickness.

## 3. Water Tank & Oil Tank Tightness Test Pressure

### 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 or to the height of the overflow whichever is the higher

### 3.2 Periodical Inspection

For all tanks, pressure test, which may be carried out using liquid of the tank carries, 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 shall not be less than  $2 kgf/cm^2$



4.2 Nozzle shall not be more than 1.5m from the test item

4.3 Nozzle diameter shall not be less than 13mm for vessels of length below 90 m.

## 5. Mooring Equipment

5.1 Wear down of chain cable and related parts shall not exceed 85% of the original diameter.

5.2 Loss of anchor weight shall not exceeds 20 % of original weight.

## 6. Wear Down Limit of Steering System and Tightness Test

6.1 Wear down tolerance for rudder

No.	Items	Wear Limit
(a)	Rudder stock	7 % of rule diameter
(b)	Kort nozzle, Rudder	30 % of design thickness
(c)	Flange	10 % of design thickness
(d)	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 -  $0.25 \text{ kg/cm}^2$

(ii) Air test -  $0.20 \text{ kg/cm}^2$

## (B) Machinery & Electrical

### 7. Air Receiver

7.1 Corrosion limit of plating for air receiver shall not exceed 10% of original thickness.

7.2 Air receiver and piping system shall be hydraulic tested to the pressure specified in the IIIA/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 shall not be 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 shall not be less than 1.0 MΩ.

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

第 I 或 II 類別船隻的最高可運載人數的計算及/或檢驗證明裝置是適合由一名“兼任輪機員船長”操控

**Determination of maximum number of persons to be carried and / or Survey Certification on installation suitable for “combined coxswain” operation of a Class I or II vessel**

Name of Vessel.....Certificate of Ownership No:.....Class/ Cat Vsl:.....	
船名 :.....擁有權證明書編號 :.....船隻類別/分類:.....	
Type of vessel 船隻類型:.....	
<b>1 (a) 最高可運載量和座椅 Maximum Carrying Capacity and Seating</b>	
船隻的最高可運載量(包括乘客和船員在內)的計算方法如下:(參照第 V 章相關的要求) The maximum carrying capacity (including passengers and crew) are determined as follows:(Chapter V refers)	
[ ] (i) 第二類別機動船隻在特定遮蔽水域 Mechanized Class II vessel operating in specified sheltered water	
0.35 x L x B passenger numeral	所得乘客人數 ( ) ≤ 10
Minimum number of crew	最少船員名額 ( ) ≤ 4
Determined Total No. of Persons	計算總人數 ( )
[ ] (ii) 圍蔽式甲板船隻 enclosed deck vessel	
總人數 total number of persons = L x B x Cnp	(Cnp : 0.35~ 0.85 )
計算總人數 Determined Total No. of Persons	( )
及/and 船東指示要求最少船員名額 Owner's indicated the requested minimum number of crew	= ( )
式中 where L : 船隻(甲板)的總長(米) vessel's (deck) length overall in metres	= ( )
B : 船隻的最大寬度(米) vessel's maximum breadth in metres	= ( )
<b>(b) 乘客坐椅的形狀、設計與固定在甲板的狀況須足以應付所需服務。第 I/4.2 節所述高速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/3 及 4.2.2 節的相關規定。</b> The form, design and attachments to the deck of passenger seats should be adequate for the intended service. The seating construction and safety belts on high speed vessels as stated in Ch. I/4.2 should comply with the relevant requirements specified in Ch. XI. Seating arrangement and requirements should be as per Ch V/3 and 4.2.2 as relevant.	不適用 Not applicable
<b>(c) 運載乘客的船隻之乘客空間的標記</b> <b>Marking in Passenger Space for vessel carrying passengers</b>	
須在乘客上船的顯眼位置，以中、英文註明每層甲板可載運的乘客人數，如以下所示 The number of passengers in which each deck can accommodate should be indicated, in a conspicuous location, at all spaces where passengers will be embarking, in Chinese and English :-	
上層甲板 Upper level ( )	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 ( )	
最高運載量 Maximum carrying capacity ( )	
<b>2. 證明這船隻裝置是適合由一名“兼任輪機員船長”操控</b> Certification on installation suitable for “Combined Coxswain” operation for this vessel	不適用 Not applicable
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 IIIA/18 節及第 XII 章相關的要求) This is to certify that this vessel has appropriately equipped, inspected and tested satisfactory, including fittings of bilge alarm, essential main engine controls, indicators and main / generator engines abnormal warning alarms, remote shutdown of main / generator engines and ventilation fans, and a fire or smoke detection system etc., as appropriate, for unattended machinery space requirements suitable for “combined coxswain” operation. (Refers to relevant requirements in Ch. IIIA/18 and Chapter XII)	
- 裝置 / 額外詳細資料 Installation / Additional Details: -	

備註 Remark : (如有需要可另加頁數 additional sheet if required)

.....  
特許驗船師姓名 / 特許機構名稱 / 獲承認的當局及其驗船師姓名  
Name of Authorized Surveyor / Authorized Organization / Recognized Authority and name of surveyor

.....  
簽署 Signature .....日期 Date .....

**For use on new wooden kaito / fishing sampan / GRP or wooden small boat or sampan etc.**

適用於新船木殼街渡 / 漁船舢舨 / 玻璃纖維或木質小船或舢舨等

(Vessel length less than 15 m / 船隻長度小於 15 米)

**Simple Plans Required Approval for Initial Licensing of Local Vessels**

本地船隻首次牌照 需要審批的簡單圖則

* Delete where not appropriate / 刪去不需要處	File No. / 檔案號碼	
Licence No./ Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	Vessel Class / Type / Category 船隻類別 / 類型 / 種類	
Approval Plans / 審批圖則		Remark / 備註
<b>(A) General Plans / 一般圖則</b>		
1. 簡單圖則 <i>Plan(Simp)-G-01</i> <b>General Arrangement Plan</b> (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 <i>Plan(Simp)-G-02 / 11</i> ( Only applicable to vessel carrying more than 4 passengers / 只適用載乘客 4 人以上 ) <b>Passenger Space (shelter)/ Seating Arrangement &amp; Position / Freeboard Mark Diagram</b> 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 <i>Plan(Simp)-G-01+ HS-01/ 09</i> (equiv to <i>Plan-G-01</i> and <i>Plan-H-09</i> ) (Only applicable to vessel length less than 8 m / 只適用於船隻長度小於 8 米) <b>Vessel Particulars , General Arrangement and Basic Hull and Deck Plate Thickness Diagram</b> 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>(B) Hull and Safety Equipment Plans / 船殼及安全設備圖則</b>		
4. 簡單圖則 <i>Plan(Simp)-HS-01/ 09</i> (equiv to <i>Plan- HS-03, H-09</i> ) <b>Vessel Particulars , and Basic Hull and Deck Plate Thickness Diagram</b> 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 <i>Plan(Simp)-HS-07</i> <b>Inclining Experiment Report/Rolling Period / Simple Inclining - Test Report</b> 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 <i>Plan(Simp)-HS-10A&amp;B (HS-10C)</i> <b>LSA &amp; FFA Installation and Arrangement Diagram</b> 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 <i>Plan(Simp)-HS-10C</i> (Not applicable to open boat / 開敞船隻不需要) <b>Escape Installation and Arrangement Diagram</b> 逃生設備及佈置示意圖則		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
8. 簡單圖則 <i>Plan(Simp)-HS-10D</i> <b>Lights, Shapes &amp; Sound Signals Installation and Arrangement Diagram</b> 號燈、號型、聲號備及佈置示意圖則		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
<b>(C) Machinery Installation Plans 機器及其系統設備圖則</b>		
9. 簡單圖則 <i>Plan(Simp)-M-01/ to / 10 etc.</i>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
<b>(D) Electrical Installation Plans 電器及其系統設備圖則</b>		
10. 簡單圖則 <i>Plan(Simp)-E-01 / to / 05 etc.</i>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
<b>(C/D) Machinery / Electrical Installation Plans 機器/電器及其系統設備圖則</b>		
11. 簡單圖則 <i>Plan(Simp)- M-01/ to / 10 + E-01 / to / 05 etc.</i>		Yes / No / Not Applicable * 有 / 沒有 / 不需 *
Note : If required, owner shall submit additional plans to supplement for deficient information (please refer to relevant Code of Practice or regulation).		
註 : 如有需要, 船東須另加圖則以補充不足的資料 (參考本有關工作守則或規例)。		

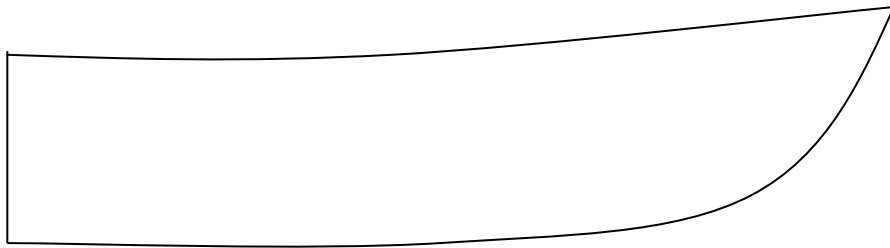
簡單圖則/Plan(Simp)-G -01

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

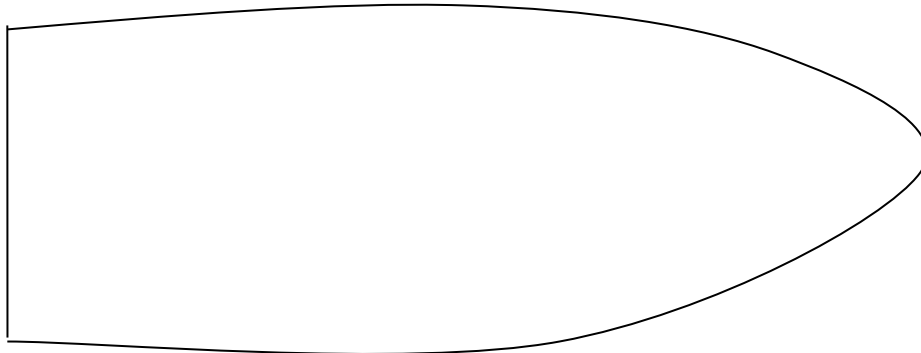
**一般佈置圖則** (船東提供所需資料如外形、甲板層數等)

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

(註 : 一份此圖則須放置在船上)



**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.  
詳細可以相片補充或另加紙張
3. Not to proportion/scale.  
不按比例/標尺

<b>Vessel information</b> <b>船隻資料</b>	<b>Content</b> <b>資料內容</b>
1. File No. 檔案號碼	
2. Licence No./ Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻 類別 / 類型 / 種類	
4. Length 長度	
5. Width 闊度	
6. Depth 深度	
7. No. of decks 甲板層數 (Please Show Location / 請顯示位置)	
Approved by 經辦審批 :	Date 日期 :

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

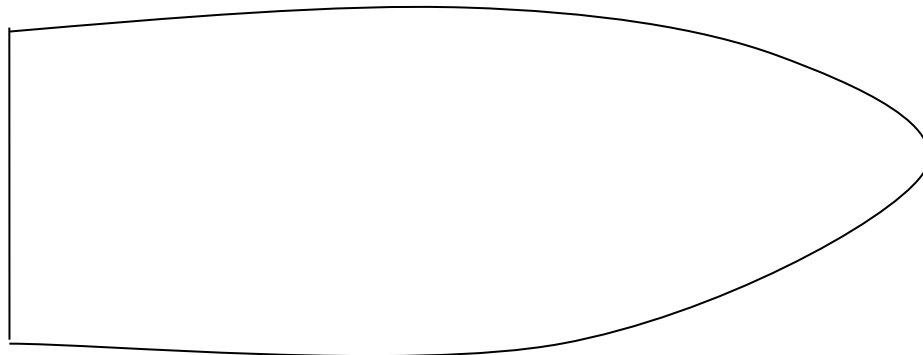
乘客艙(遮閉安排) / 座位佈置及座位設置 / 吃水標 示意圖則

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

( 註 : 一份此圖則須放置在船上 )



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.  
詳細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. 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 :

(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

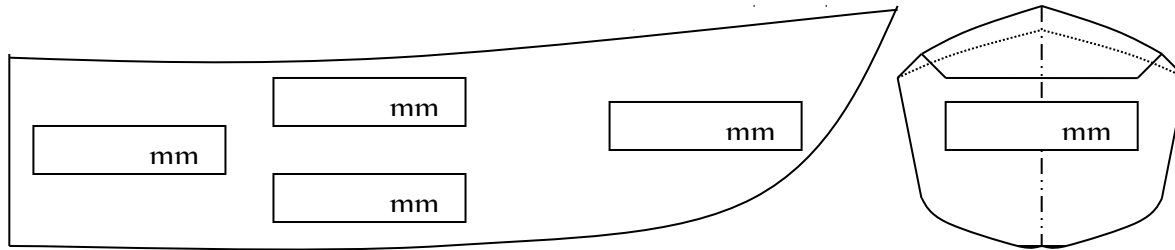
船隻特別資料/一般佈置/及基本船殼和甲板之板厚示意圖則

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

(註 : 一份此圖則須放置在船上)

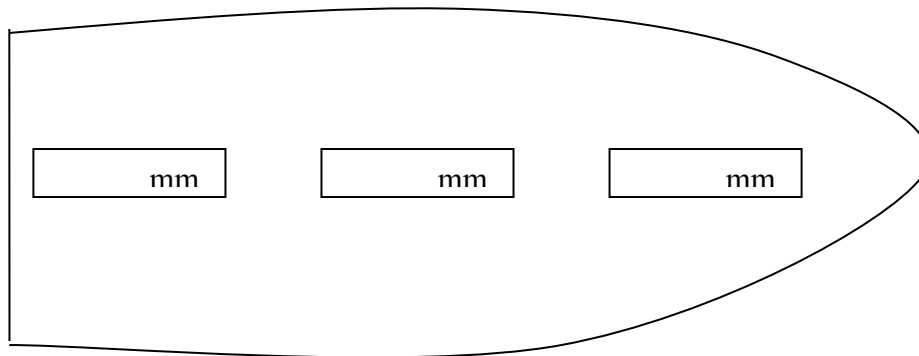
### Remarks 備註:

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.  
詳細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

簡單圖則 Plan(Simp)-HS-01/09

## Vessel Particulars and Basic Hull and Deck Plate Thickness Diagram

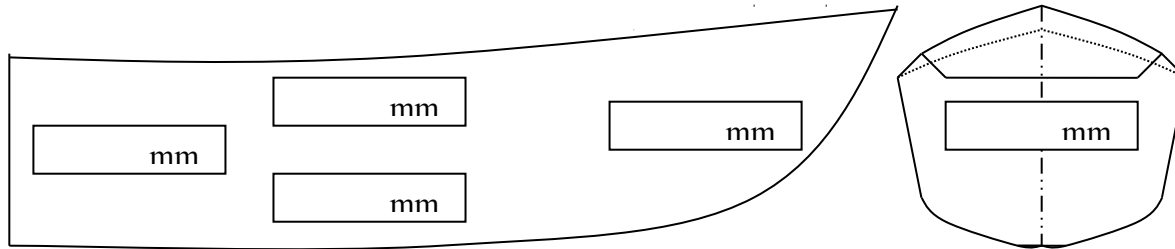
船隻特別資料及基本船殼和甲板之板厚示意圖則

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

(註 : 一份此圖則須放置在船上)

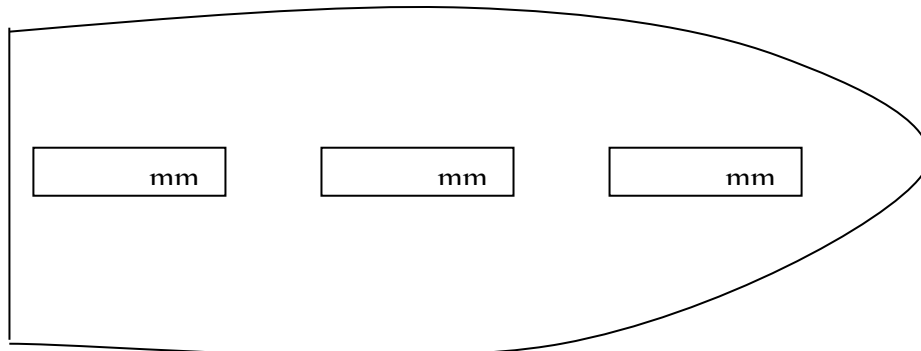
### Remarks 備註:

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.  
詳細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



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.  
詳細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
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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

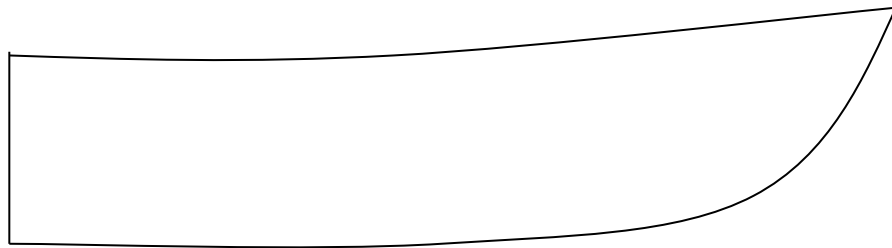
簡單圖則 Plan(Simp)-HS-10A&B (HS-10C)

## LSA & FFA Installation and Arrangement Diagram

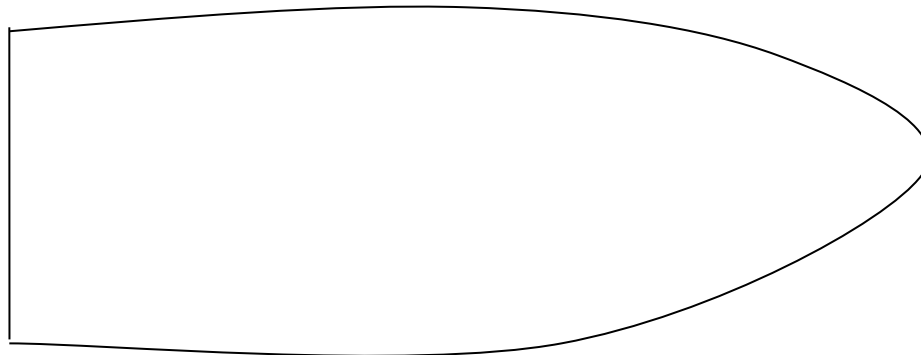
### 救生及救火設備及佈置示意圖則

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

( 註 : 一份此圖則須放置在船上 )



**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.  
詳細可以相片補充或另加紙張
5. 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. LSA & FFA installation 救生及救火設備		(Please show location/ 請顯示位置)	
Item	No		
(a)			
(b)			
(c)			
(d)			
(e)			
(f)			
Approved by 經辦審批		Date 日期	

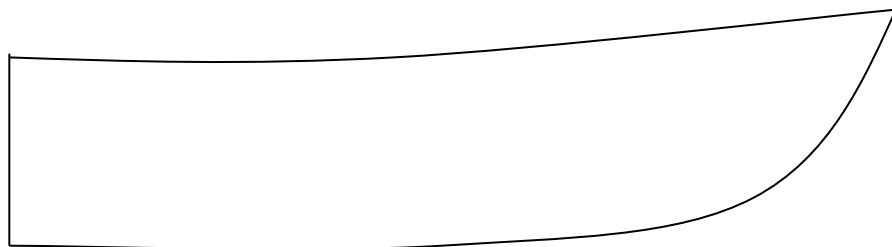
簡單圖則 Plan(Simp)-HS-10C (Not applicable to open boat / 開敞船隻不需要)

## Escape Installation and Arrangement Diagram

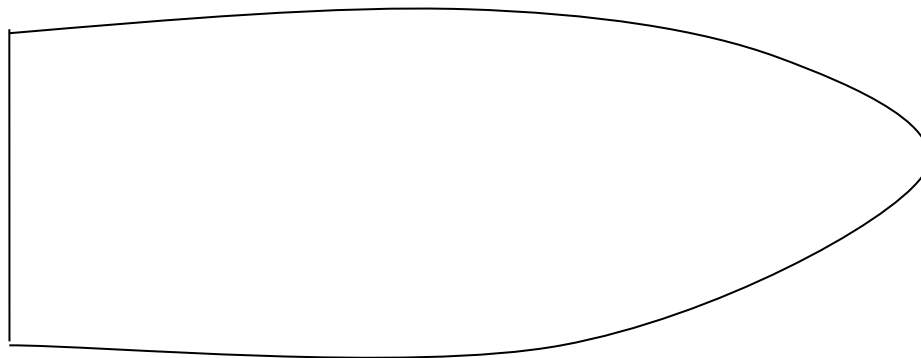
### 逃生設備及佈置示意圖則

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

(註 : 一份此圖則須放置在船上 )



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.  
詳細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. Escape Installation 逃生及設備 (Please show location/ 請顯示位置)	
Approved by 經辦審批	Date 日期

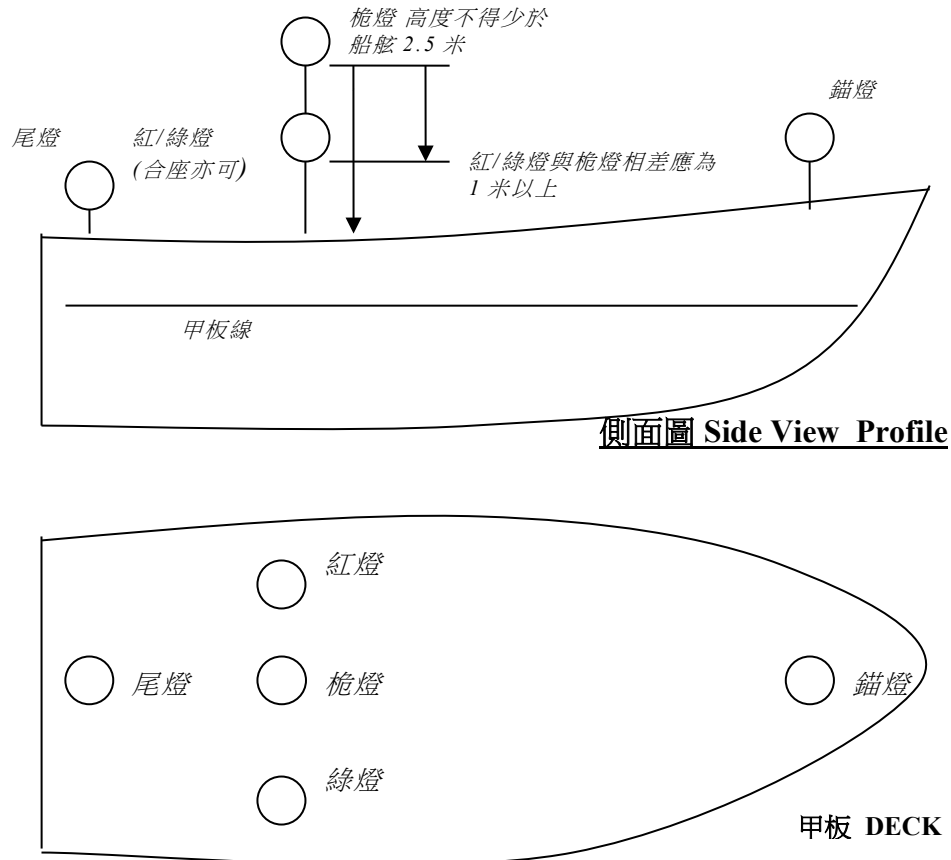
簡單圖則 Plan(Simp)-HS -10D

## 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 shall be kept onboard)

(註 : 一份此圖則須放置在船上)



- 註: 1) 長度未滿 7 米, 最大航速不超過 7 節, 只需環照白(錨燈)一盞。如條件許可, 亦需裝設紅及綠燈。  
 2) 長度滿 7 米至小於 12 米, 需加 3 個黑色球體, 1 個黑色菱形體及一個能發出有效聲號器具。  
 3) 長度滿 12 米至小於 20 米, 需加 2 支環照紅(失控燈), 1 個黑色菱形體及 3 個黑色球體, 號笛及號鐘各一個。

#### Remarks 備註:

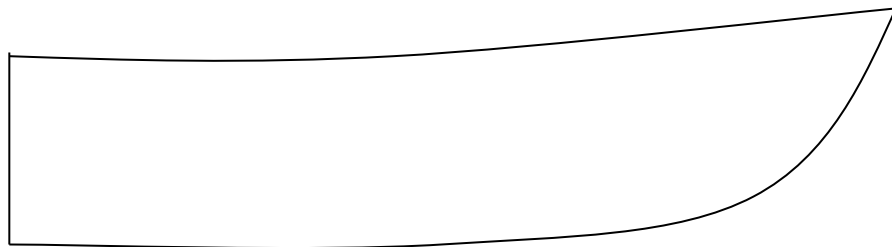
1. If there is superstructure, please indicate.  
如設有上層建築, 請標示
2. Details can be supplemented by photos or separate sheets.  
詳細可以相片補充或另加紙張
3. Not to proportion/scale.  
不按比例/標尺

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. 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

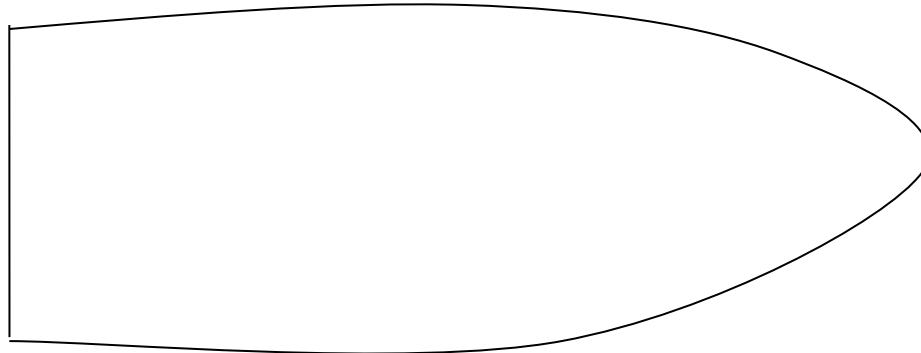
## Machinery Installation Plans 機器及其系統設備圖則

( Note : A copy of this diagram shall be kept onboard )  
( 註 : 一份此圖則須放置在船上 )

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.  
詳細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

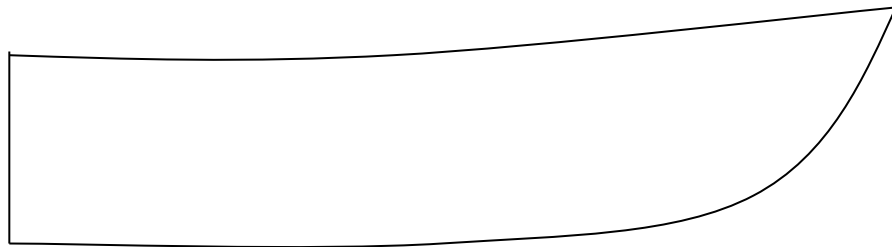
## Electrical Installation Plans

### 電器及其系統設備圖則

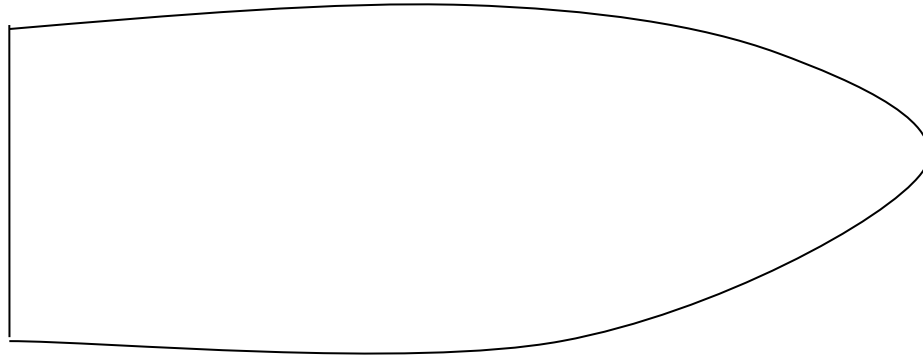
( Note : A copy of this diagram shall be kept onboard )

( 註 : 一份此圖則須放置在船上 )

簡單圖則 *Plan(Simp)-E 01/ /05 etc*



**側面圖**  
**Side View Profile**



**甲板**  
**DECK**

#### 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.  
詳細可以相片補充或另加紙張
3. Not to proportion/scale.  
不按比例/標尺

Vessel information 船隻資料	Content 資料內容
1. File No. 檔案號碼	
2. Licence No./ Cert of Ownership no. 牌照號碼 / 船隻擁有權證明書號碼	
3. Vessel Class / Type / Category 船隻 類別 / 類型 / 種類	
4. Generator maker /type. 發電機製造商/型類	
5. No. of Generator / serial no.. 發電機數目 / 號碼	
6. Total engine power (kW)/ RPM. 發電總功率 (千瓦) / 轉速(每分)	
7. Voltage (V) / Frequency (Hz) 電壓 (伏特) / 週頻 (轉數/每秒)	
(Please show location/ 請顯示位置)	
Approved by 經辦審批	Date 日期

## Machinery & Electrical Installation Plans

### 機器與電器及其系統設備圖則

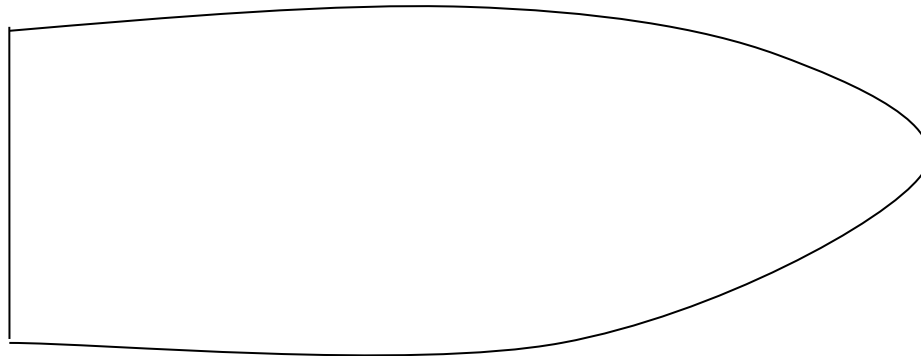
( Note : A copy of this diagram shall be kept onboard )

( 註 : 一份此圖則須放置在船上 )

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:

1. If there is superstructure, please indicate.  
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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 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

## **DOMESTIC LIQUEFIED PETROLEUM GAS INSTALLATION**

### **1 Marking**

- 1.1 Liquefied petroleum gas (LPG) cylinders shall be clearly marked of the name of their contents.

### **2 Properties of LPG**

- 2.1 Possible dangers arising from the use of LPG appliances include fire, explosion and asphyxiation due to leakage of gas from the installation, etc.
- 2.2 LPG is heavier than air and, if released in a space with coaming, may travel some distance whilst seeking the lowest part of that space and its adjoining spaces. The accumulation of LPG probably poses dangerous consequence and fatality when triggered by inadvertent spark or ignition.

### **3 Storage**

- 3.1 No more than 50 kg (or combined water capacity 130 litres) of LPG shall be carried on board.
- 3.2 LPG cylinders and expended cylinders shall as far as practicable be stowed on open decks. The cylinders and all valves, pressure regulators and pipes leading from such cylinders shall be properly secured, protected against mechanical damage, and excessive variations in temperature and direct rays of the sun. The cylinders shall be installed upright to prevent liquid from flowing into the pipes.
- 3.3 The LPG cylinder storage locker, and associated pipes and joints shall be readily accessible for the check of suspected leaks; and shall be as far away from any air pipes, ventilators, hatchways, etc. and close to the cooking appliances as practicable.
- 3.4 Except as necessary for service within the space, electrical wiring and fittings shall not be permitted within compartments used for the storage of LPG. Where such electrical fittings are installed, they shall be to the satisfaction of the Department for use in a flammable atmosphere. Sources of heat shall be kept clear of such spaces and "不准吸煙 No Smoking" and "不准明火 No naked light" notices shall be displayed in a prominent position.
- 3.5 Compartments used for the storage of LPG shall not be used for storage of other combustible products nor for tools or objects nor part of the gas distribution system. The LPG locker shall be marked with "LPG" on the door of the locker.



## 4 Installation

### 4.1 LPG pipes-

- (a) LPG pipes shall be of solid drawn copper alloy or stainless steel pipes, with appropriate compression or screwed fittings.
- (b) Flexible connections shall be avoided. Should they be used, an approved type of synthetic rubber hose connection shall be fitted. When used with flexible connections, appliances shall be controlled from the nearest isolating valve fitted on metallic pipe.

### 4.2 LPG cylinder storage locker

- (a) For storage above main deck-
  - (i) ventilation openings shall be provided on top and bottom of locker;
  - (ii) when LPG pipe is arranged to pass through bulkhead, the opening on bulkhead shall be of suitable size and height, to avoid the gas being leaked into the accommodation. If the LPG pipe is a synthetic rubber hose, precaution shall be taken to prevent the hose being chafed. A protecting conduit shall be fitted when necessary.
- (b) For storage below main deck-
  - (i) the locker bulkhead shall be of gastight construction. Bulkhead piece shall be fitted when LPG pipe is arranged to pass through bulkhead;
  - (ii) adequate ventilation shall be provided at top and bottom of locker and be led overboard;
  - (iii) gas detectors shall be fitted to detect any accumulation of LPG in the bilge.

4.3 Newly fitted or replaced gas consuming appliances shall be of type approved by Gas Authority, EMSD and marked with “GU” on them. Existing Gas consuming appliances (e.g. stove, water heater etc.) are recommended to be fitted with automatic gas shut-off device to stop the gas supply in the event of flame failure.



批准氣體用具GU標誌

## **5 Maintenance**

- 5.1 Changing cylinders shall be done according to instructions of gas dealers. If it is suspected that either a cylinder or valve is faulty, put it ashore as quickly as possible, and in the meantime keep it in the open air, clear of any gratings, hatches or other openings leading below decks.
- 5.2 Sufficient ventilation shall be provided at the cooking space to displace the products of combustion and respiration.

## **6 Inspection**

- 6.1 The vessel's crew or operator shall regularly examine joints of the LPG installation. If a leakage is suspected, the cylinder stop valve shall be turned off immediately; the vessel's engine shall be stopped, no switch on/off of electrical appliances and no other means of ignition allowed until it is certain that the vessel is clear of gas. Never put an appliance back into use without the leak having been found and rectified.

**[Table-1] Minimum Safe Manning Requirements for Hong Kong Licensed Vessels  
operating in Hong Kong Waters and River Trade Limits [Remark (1), (2) and (3)]**

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

Minimum Safe Manning Standards			Mechanically Propelled Class II Vessels - Types and Length Limits						
Persons onboard	Trading Area/ Vessel Length (L)	No. of Persons	Tug		Dry Cargo Vessel <sup>(c)</sup> and Oil Carrier/Tanker <sup>(f)</sup>				
			L < 24m	24m ≤ L < 35m	L < 24m	24m ≤ L < 35m	35m ≤ L < 50m	50m ≤ L < 75m	75m ≤ L < 100m
Coxswain (a) (h)	Hong Kong Waters	1	1	1	1	1	1	1	1
	River Trade Limits <sup>(b)</sup>	2 <sup>(g)</sup>	2	2	2	2	2	2	2
Engine Operator <sup>(a)</sup>	Hong Kong Waters or River Trade Limits	1 <sup>(e)</sup>	1	1	1	1	1	1	1
Deck crew <sup>(d)</sup>	Hong Kong Waters or River Trade Limits	as below							
	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: (1) These requirements are made under section 11 of Merchant Shipping (Local Vessels) (General) Regulation. The minimum safe manning scales are prescribed for practical guidance of owners and coxswains to ensure sufficient crew onboard with appropriate skills and experience, having regard to vessel size, speed, power, duration and nature of voyage or trade area, equipment and machinery commonly adopted for different types of vessels, for the purpose of maintaining general surveillance and safe navigation, mooring and unmooring operation safety, safe of carriage of cargo during transit, measures on prevention of fire and pollution of environment and the handling of general emergency situation. For vessel types or operation condition or situation outside the above basic scope would require consideration or assessment on case by case basis by Marine Department. In general, the manning crew number would be expected higher for additional work or tasks to be taken by crewmember on repair maintenance and business/cargo handling etc. The requirements in this Annex should be complied together with those specified in Ch. XII of this Code.
- (2) For Class I vessels including passenger ferries or high speed ferries operating in Hong Kong waters, the manning requirements would depend on their operational needs. Marine Department will prescribe the minimum safe manning requirement individually through making reference to necessary assessment including fire and emergency drills etc. during final inspection of the vessel. Refer to Annex U-6 for “Guideline on the Minimum Safe Number of Crew for Ferry Vessels and Launches”.
- (3) On HK licensed fishing vessels operating in mainland waters, all crewmembers (including coxswain & engine operator) shall carry “four mini certificates” and maintain necessary watchkeeping duties and minimum manning as required by mainland authority. In Hong Kong waters, owner and Master / Coxswain should observe the practice indicated in Note (h) below with particular consideration of safe navigation and the size and length of the vessel.
- Notes: (a) Crew of Vessels should hold relevant basic maritime safety training certificates (see Remark (3) above and Note (d) below). Types of Local Certificates of Competency as required under statutory requirements are indicated in Table-2 of this Annex.
- (b) River Trade Limits is defined in section 2 of the Survey Regulation.
- (c) Also applicable to Class II vessel types: edible oil carrier, water boat, work boat and pilot boat. The minimum manning of these are treated same as dry cargo vessel.
- (d) Deck and engine crew (other than certificated coxswain and engine operator) of mechanically propelled Class II vessels operating in mainland waters should hold the basic maritime safety training certificates issued by Hong Kong Maritime Services Training Institute- Basic Safety Training for Local Vessels’ Crew Certificate (Yellow Card), or “Fire fighting Certificate” plus “Personal Survival Techniques Certificates”.
- (e) If the navigation time of the vessel is exceeding 12 hours within any 24 hours operation and the vessel does not meet unmanned engine room requirements, one additional engine operator is required for vessels of length exceeding 24 metres.
- (f) Coxswain, engine operator and crewmembers working onboard oil tankers/carriers should hold relevant oil tanker/carrier safety training certificates. For oil tankers/carriers, noxious liquid substance carriers and dangerous goods carriers, one extra deck crew is required to assist with deck operational and emergency measures.
- (g) (i) Alternative, the arrangement of one coxswain and one assistant coxswain are acceptable provided that the assistant coxswain must hold a Certificate of Competency of one grade lower than the coxswain relevant to the type of vessel and have gained not less than 12 months practical experience relating to River Trade Limits / mainland waters operation and have familiar with watchkeeping duties to assist the Coxswain.  
(ii) For those vessels trading to close limits to neighbouring ports of Hong Kong, including Macau, Zhuhai, Shenshen Yantian in Mirs Bay and Shenzhen Shekou in Deep Bay, one assistant coxswain could be waived.
- (h) Master /Coxswain should ensure adequate hands of ship’s crew available for mooring and unmooring /berthing and unberthing operations as required.

**[Table-2] Statutory Requirements on Local Certificates of Competency for  
Hong Kong Licensed Vessels operating in Hong Kong Waters or River Trade Limits**

Post onboard	Before LVO <sup>(i)</sup> being in force		After LVO <sup>(i)</sup> being in force	
	Size of Vessel - Tonnage (NT) or Main Engine Power (HP)/ (kW)	Local Certificate of Competency required (see Remarks (v))	Size of Vessel - Gross Tonnage (GT)/ Length (m) or Total Main Engine Power (kW)	Local Certificate of Competency required
Master/ Coxswain	Vessel Tonnage: 60 NT and under	Master [60 NT and under]	Vessel Length: not more than 15m and 16.5 m length overall	Coxswain <b>Grade 3</b>
	Vessel Tonnage: Exceeded 60 NT But vessel length < 24m and Tonnage < 300 NT	Master [60 NT and under] + Exemption or Master [300 NT and under]	Vessel Length: not more than 24m and 26.4 m length overall	Coxswain <b>Grade 2</b>
	Vessel Tonnage: More than 300 NT But not more than 1600 NT	Master [up to 300 NT] <sup>(ii)</sup> + Tonnage Endorsement	Vessel Tonnage: Not more than 1600 GT	Coxswain <b>Grade 1</b> <sup>(iv)</sup>
Engineer/ Engine Operator	Power of one single engine: Up to 150 HP	Engineer [for engine power up to 150 HP]	Main engine total power: Up to 750kW	Engine Operator <b>Grade 3</b>
	Power of one single engine: Over 150 HP, but total main engine power not more than 750 kW	Engineer [for engine power up to 150 HP] + Exemption		
			Main engine total power: Not exceeded 1500kW	Engine Operator <b>Grade 2</b>
	Power of one single engine: Over 150 HP	Engineer [for engine power over 150 HP] <sup>(iii)</sup>	Main engine total power: Up to 3000kW	Engine Operator <b>Grade 1</b> <sup>(iv)</sup>

**Remarks**

- (i) LVO means [Merchant Shipping (Local Vessels) Ordinance]. Local Certificates of Competency issued under LVO, except those endorsed with restrictions, would be valid for use on relevant size of Class I, II or III vessels.
- (ii) After the enforcement of LVO, holder of the Local Certificate of Competency as Master – [up to 300 NT] issued before LVO with Tonnage Endorsement could operate vessels not exceeded 1600 GT.
- (iii) After the enforcement of LVO, the Local Certificate of Competency as Engineer – [for engine power over 150 HP] issued before LVO would be applicable to vessels with main engine total power not more than 3000kW.
- (iv) Based on experience and/or oral/practical assessment, Director may consider application for endorsement to relevant Grade 1 Local Certificate of Competency to allow the holder to operate vessels more than 1600 GT or main engine total power more than 3000kW.
- (v) Local Certificates of Competency issued before LVO mentioned in above table, including Local Certificates of Competency as Ferry Engineer, would continue to be valid for use on relevant size or type of Class I or II vessels. Local Certificates of Competency as Master of a Fishing Vessel, “Restricted Master” Certificates of Competency and Local Certificates of Competency as Engineer of a Fishing Vessel would continue to be valid for use on the relevant size/type of Class III vessels. If a Local Certificate of Competency is obtained through examination held by Marine Department, the holder of:
  - (1) a Local Certificate of Competency as Master of a Fishing Vessel issued before LVO may apply with prescribed fee paid for the issue of a Local Certificate of Competency as Coxswain Grade 3. If the holder has more than 1 year experience as the master of a fishing vessel or vessels other than pleasure vessel within 3 years before application, he may apply, within 2 years after the commencement date of the new legislation, for a Grade 2 Certificate that is endorsed to the effect that the holder may also act as the coxswain on a fishing vessel of more than 24 metres in length overall.
  - (2) A Local Certificate of Competency as Engineer of a Fishing Vessel issued before LVO may apply with prescribed fee paid for the issue of a Local Certificate of Competency as Engineer Operator Grade 3 or for examination of Grade 2 certificate under LVO.
  - (3) a Local Certificate of Competency as Ferry Engineer issued before LVO may apply with prescribed fee paid for the issue of a Local Certificate of Competency as Engineer Operator Grade 1 under LVO.

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

1. The coxswain shall brief at least one other crew or assistant who will be sailing with the vessel regarding the following: -
  - (a) Procedures for the recovery of a person from the sea;
  - (b) Location of first aid kit, if any;
  - (c) Procedures and operation of radios carried on board, if any;
  - (d) Location of navigation light switches and other light switches;
  - (e) Location and use of fire-fighting equipment;
  - (f) Method of starting, stopping, and controlling the main engine; and
  - (g) Handling emergency situations and communication arrangements.
2. Safety guide plates or cards will be considered to be an acceptable way of providing the information required in paragraph 1 above.

**Guideline on the Minimum Safe Number of Crew  
for Ferry Vessels and Launches**

**Part A: Factors and Scores**

			<b>Weighting</b>	<b>Score</b>
Design	Designed number of allowable damaged compartments	2	high	6
		1		12
	Number of deck	1	middle	4
		2		8
		≥3		12
	Maximum number of passengers permitted on board	≤100	high	6
		101-200		12
		201-300		18
		301-425		24
		426-500		30
		501-1000		36
		≥1001		42
	Number of access points for the concurrent embarkation and disembarkation of passengers while the vessel is at berth	1 access point	high	6
2 access points		12		
Size	Length overall	≤16.5m	middle	4
		>16.5m, but ≤26.4m		8
		>26.4m		12
Speed	Maximum operation speed	≤15 knots (kt)	middle	4
		>15kt, but ≤20kt		8
		>20kt		12
Total power	Total power of engine	≤750kW	middle	4
		>750kW, but ≤1500 kW		8
		>1500kW, but ≤2050 kW		12
		>2050kW		16

			<b>Weighting</b>	<b>Score</b>
Machinery and control mechanism	Location of engine control mechanism for propulsion engine	Bridge (more than 2 propulsion engines)	low	2
		Bridge (not more than 2 propulsion engines), or next to engine (more than 2 propulsion engines)		4
		Next to engine (not more than 2 propulsion engines)		6
Equipment	Fire-fighting equipment	Equipped with fixed fire-fighting system	middle	4
		Equipped with power-driven fire pump only		8
		Equipped with manual fire pump only		12

Weighting :    high    – with an initial score of 6, which is increased by 6 for each increment.  
                   middle – with an initial score of 4, which is increased by 4 for each increment.  
                   low     – with an initial score of 2, which is increased by 2 for each increment.

**Part B: Total Score and the Corresponding Indicative Minimum Safe Number of Crew**

Total Score	Indicative Minimum Safe Number of Crew
≤ 80	2
81 - 86	3
87 - 91	4
92 - 108	5
109 - 113	6
114 - 119	7
> 119	8

### **Certificates Relevant to Local Vessels**

1. Apart from the certificates listed in Chapter II, the following plan approval, surveys and/or issuance of certificates or record document, which may be for operational purpose or requirements specified under legislations outside the Ordinance, Cap 548, are also relevant to local vessels if applicable:
  - (1) Minimum Safe Manning document;
  - (2) International Tonnage Certificate;
  - (3) International Load Line Certificate;
  - (4) International Oil Pollution Prevention Certificate;
  - (5) International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;
  - (6) International Air Pollution Prevention Certificate or HKAPP Certificate.
2. For the issuance of items 1.(1) and (5) of the above, owners shall apply to Marine Department directly. For initial certificate, application must be enclosed with relevant application details/plans for assessment.
3. For items 1.(2), (3), (4) and (6), the indicated International Convention certificates may be issued by recognized classification societies directly to the owner, together with survey records in accordance with the requirements of the relevant Convention. A copy of such certificate and record is required to be submitted to Marine Department.

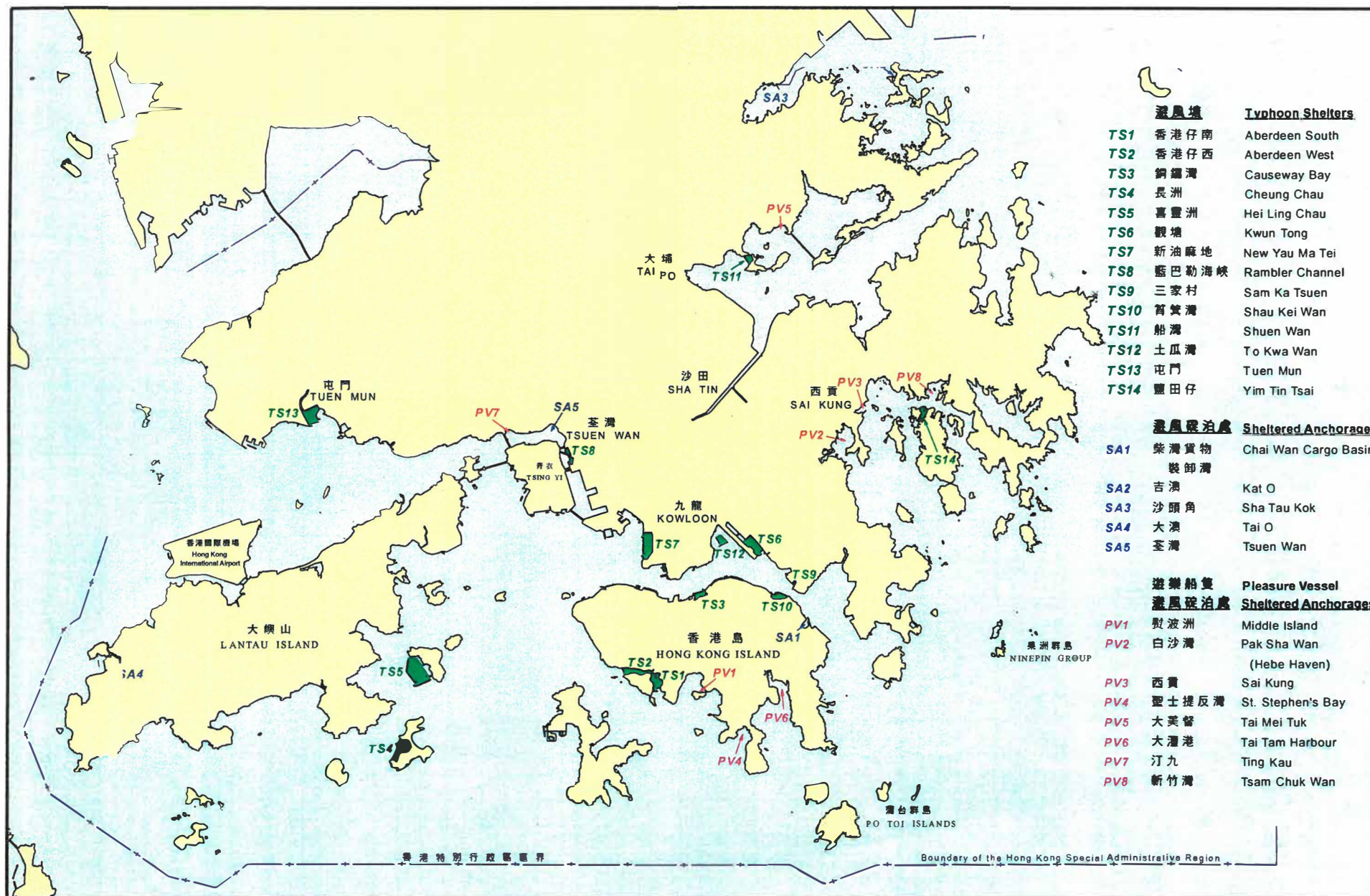






避風塘及避風碇泊處位置圖

Location Plan of Typhoon Shelters and Sheltered Anchorages



- | <b>避風塘</b>       |         | <b>Typhoon Shelters</b>                     |  |
|------------------|---------|---|--|
| TS1              | 香港仔南    | Aberdeen South                              |  |
| TS2              | 香港仔西    | Aberdeen West                               |  |
| TS3              | 銅鑼灣     | Causeway Bay                                |  |
| TS4              | 長洲      | Cheung Chau                                 |  |
| TS5              | 喜靈洲     | Hei Ling Chau                               |  |
| TS6              | 觀塘      | Kwun Tong                                   |  |
| TS7              | 新油麻地    | New Yau Ma Tei                              |  |
| TS8              | 藍巴勒海峽   | Rambler Channel                             |  |
| TS9              | 三家村     | Sam Ka Tsuen                                |  |
| TS10             | 筲箕灣     | Shau Kei Wan                                |  |
| TS11             | 船灣      | Shuen Wan                                   |  |
| TS12             | 土瓜灣     | To Kwa Wan                                  |  |
| TS13             | 屯門      | Tuen Mun                                    |  |
| TS14             | 鹽田仔     | Yim Tin Tsai                                |  |
| <b>避風碇泊處</b>     |         | <b>Sheltered Anchorages</b>                 |  |
| SA1              | 柴灣貨物裝卸灣 | Chai Wan Cargo Basin                        |  |
| SA2              | 吉澳      | Kat O                                       |  |
| SA3              | 沙頭角     | Sha Tau Kok                                 |  |
| SA4              | 大澳      | Tai O                                       |  |
| SA5              | 荃灣      | Tsuen Wan                                   |  |
| <b>遊樂船隻避風碇泊處</b> |         | <b>Pleasure Vessel Sheltered Anchorages</b> |  |
| PV1              | 對波洲     | Middle Island                               |  |
| PV2              | 白沙灣     | Pak Sha Wan (Hebe Haven)                    |  |
| PV3              | 西貢      | Sai Kung                                    |  |
| PV4              | 聖士提反灣   | St. Stephen's Bay                           |  |
| PV5              | 大美督     | Tai Mei Tuk                                 |  |
| PV6              | 大潭港     | Tai Tam Harbour                             |  |
| PV7              | 汀九      | Ting Kau                                    |  |
| PV8              | 新竹灣     | Tsam Chuk Wan                               |  |

## Owner's Declaration of Permanent Ballast

**Annex Y**

Note: You must fill in the information required and sign the owner's declaration below the table.

COO/AIP No.		Vessel Class	*I	*II	*III	*IV	Vessel Name	
			* Please delete as appropriate					

This is to certify that the positions of all permanent ballast installed on board this vessel are:

- as shown in the table below and the sketch on a separate sheet.  
 as shown in the approved permanent ballast plan enclosed.

Note: ① The positions, quantity, materials, unit weight, etc. of permanent ballast should be the same as the information stated in the stability information booklet (the owner may seek advice or assistance from the Marine Department). Inclining experiment or other methods for confirming the installation positions and quantity of permanent ballast may be required.

② The positions of permanent ballast should be the same as those shown in the photos submitted earlier.

No.	Position				Material	Unit Weight (kg)	Quantity (Pcs)	Total Weight (kg)	Serial Number	Remarks
	Longitudinal: The frame number or forward bulkhead frame number of the position of the front point of the ballast	Transverse: Distance between the outer edge of the ballast and the shipside (m)	Vertical: Distance between the bottom of the ballast and the bottom of the vessel (m)	Tier						
1										
2										
3										
4										
5										

The owner should ensure that the correct quantity of ballast is fixed (or stowed in a way that it is not movable while at sea) at the positions specified above at all times.

### Owner's Declaration

	Signature of the owner/ owner's representative	Grade of survey	Date
1st year		A/B/Others	
2nd year		A/B/Others	
3rd year		A/B/Others	
4th year		A/B/Others	
5th year		A/B/Others	
(Endorsement in the 5th year is only applicable to classed vessels)			

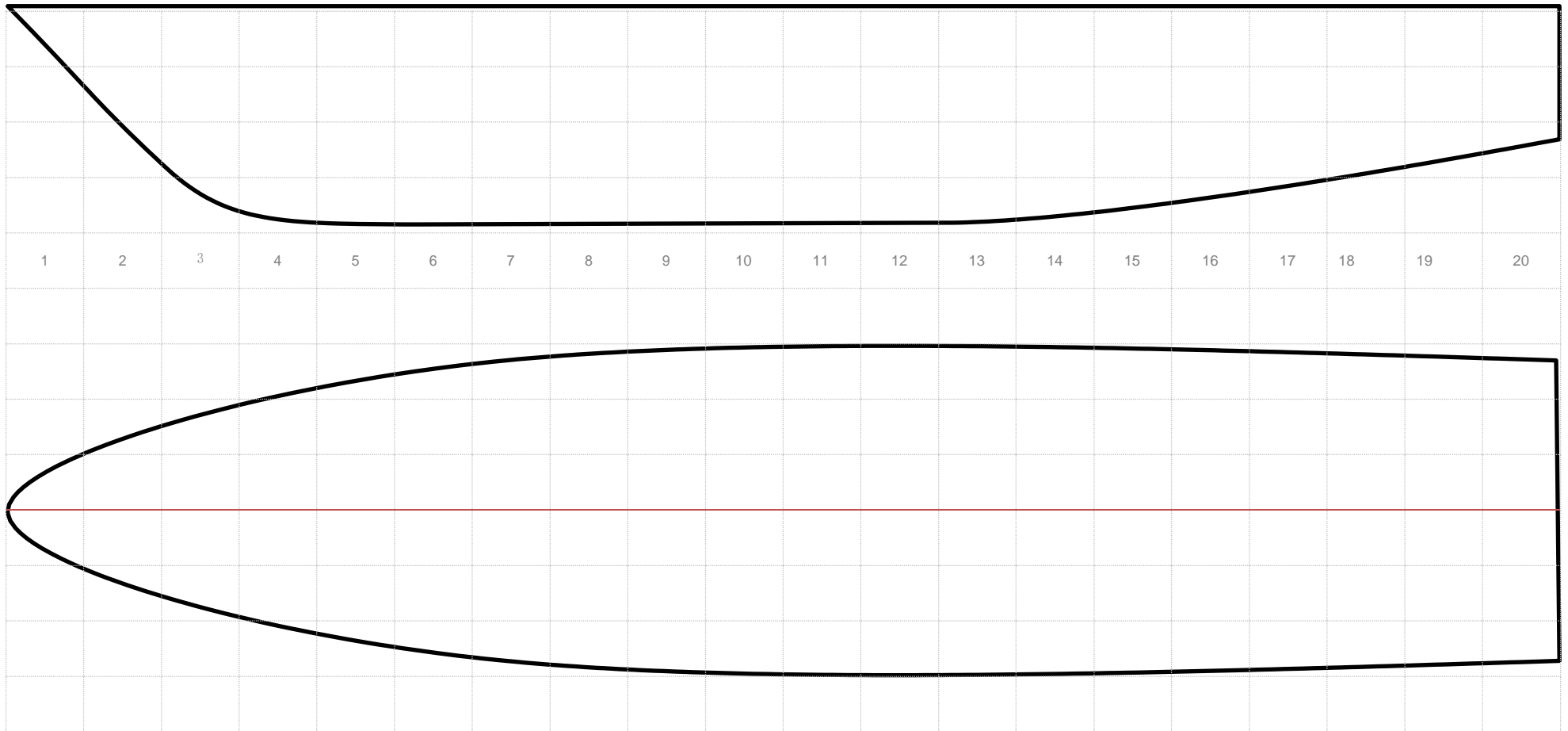
### Application for Grade B survey for the vessel's next full survey (if applicable)

This is to certify that in the Grade B survey of this vessel, no excessive corrosion (1/2 or above of the corrosion limit stated in Annex M of the Code of Practice) was found at the bottom of the hull where the ballast was stowed and on the internal structural members, etc., and the coating was in good condition with no obvious damage.
Signature of the owner/owner's representative and date
[This part is applicable to vessels surveyed by competent surveyors]
Name of the surveying officer and his/her organisation/company
Signature and date <span style="float: right;">confirm that the above is true</span>
Comments of the Marine Department [Approve/Not Approve]
Signature and date

COO/AIP No.

## Owner's Declaration of Permanent Ballast

Annex Y



Please mark the positions of permanent ballast on the sketch

**Exemptible Clauses in accordance with the International Code of Safety for High Speed Craft, 2000 applicable to Local High Speed Craft**

(Added G.N. 7604 of 2021)

<b>Clauses</b>	<b>Provision</b>	<b>Condition of Exemption</b>
2.6.9.2.1 .1&.2	Extent of bottom damage in areas vulnerable to raking damage: two different longitudinal extents shall be considered separately	The longitudinal extent of bottom damage in areas vulnerable to raking damage shall be considered in accordance with 2.6.10.2.1
2.6.12.1	For craft other than amphibious air-cushion vehicles, after flooding has ceased and a state of equilibrium has been reached, the final waterline is below the level of any opening by at least 50% of the significant wave height corresponding to the worst intended conditions	The final waterline shall be below the level of any opening by 300mm
2.6.12.2	For amphibious air-cushion vehicles, after flooding has ceased and a state of equilibrium has been reached, the final waterline is below the level of any opening by at least 25% of the significant wave height corresponding to the worst intended conditions	The final waterline shall be below the level of any opening by 300mm
7.4.4.4	In public spaces, crew accommodation, services spaces, control stations, corridors and stairways, air spaces enclosed behind ceilings, paneling or linings shall be suitably divided by close-fitting draught stops not more than 14 m apart.	A single public space to be arranged
7.7.3.3.1	The quantity of gas used for fire extinguishing shall be sufficient to provide two independent discharges. The second discharge into the space shall only be activated manually from a position outside the space being protected.	One discharge of sufficient quantity of gas for the fixed fire extinguishing installation shall be provided.
7.9.2	A duplicate set of fire control plans or a booklet containing such plans shall be permanently stored in a prominently marked weathertight enclosure outside the deckhouse	--
7.9.3.3 .1 ~.10	Requirements with respect to fire doors bounding areas of major of hazard and stairway enclosures	The design and arrangement of the fire doors shall be of simple, open and manually operated type

<b>Clauses</b>	<b>Provision</b>	<b>Condition of Exemption</b>
7.10.1, 7.10.1.1 & .2	The requirements with respect to firefighter's outfits, personal equipment and water fog applicator	--
7.13	Fixed sprinkler system	--
8.2.1.2	Radar transponder	--
8.2.3.1	Portable daylight signaling lamp	--
8.2.3.2	Rocket parachute flares (12 pieces)	--
8.3.1	Lifebuoy with self-activating smoke signal	Lifebuoy with buoyant lines of at least 30 m in length shall be provided.
8.3.8	Immersion suit or anti-exposure suit	--
8.7.8	Two sources of power supply for the davit or crane of launching systems for rescue boats on category B craft	--
8.8	Line-throwing appliance	--
8.10.1.2	Additional survival craft with sufficient aggregate capacity to accommodate not less than 10% of the total number of persons the craft is certified to carry	Open reversible inflatable liferafts in association with the slide set-up per 8.10.1.1; and lifebuoys per Survey Regulation shall be provided
8.10.1.3	Sufficient survival craft to accommodate the total number of persons the craft is certified to carry, even in the event that all the survival craft to one side of the craft centerline and within the longitudinal extent of damage defined in 2.6.7.1 are considered lost or rendered unserviceable	open reversible inflatable liferafts of sufficient aggregate capacity to accommodate the total number of persons the craft is certified to carry to be provided
8.10.1.4	Rescue boat	--
12.2.9	Any craft which is certified to carry more than 450 passengers, each part of the main busbars with its associated generators shall be arranged in separate compartments	sufficient emergency power supply to essential services shall be provided
12.7.3	In category A craft emergency power supply of the following specified durations shall be provided - <ul style="list-style-type: none"> <li>● 5 hours - for the following services: all emergency lighting, navigation lights, public address, craft radio facilities,</li> </ul>	Emergency power supply of 2 hours and 3 hours to be provided for all services and "not under command" light respectively.

Clauses	Provision	Condition of Exemption
	essential electrically power instruments/ controls for propulsion machinery and fire alarm and detection system; <ul style="list-style-type: none"> <li>● 4 hours – for daylight signaling lamps and craft’s whistle;</li> <li>● 12 hours – for “not under command” lights</li> </ul>	
12.7.4	In category B craft emergency power supply of the following specified durations shall be provided - <ul style="list-style-type: none"> <li>● 12 hours - for the following services: all emergency lighting, navigation lights, “not under command” lights, public address, craft radio facilities, essential electrically power instruments/ controls for propulsion machinery and fire alarm and detection system;</li> <li>● 4 hours – for daylight signaling lamps and craft’s whistle;</li> </ul>	Emergency power supply of 2 hours and 3 hours to be provided for all services and “not under command” light respectively.
13.2.6	Passenger craft certified to carry more than 100 passengers shall in addition be provided with a gyro-compass	A GPS satellite compass or equivalent is to be provided
13.3.1	Craft shall be provided with a device capable of indicating speed and distance.	A Differential Global Positioning System (DGPS) that conforms to standard not inferior to those of IMO Res. A. 824(18) for measuring speed could be accepted as an equivalent.  A distance measurement device is not required.
13.4.1	Echo sounder	--
13.7.1	Rate of turn indicator	--
13.8.1	Nautical charts and nautical publications or an electronic chart display and information system (ECDIS)	A chart-plotter or equivalent is to be provided
13.8.2	An electronic chart display and information system (ECDIS)	--
13.8.3	Back-up arrangements shall be provided to meet the functional requirements of 13.8.1, if	--

<b>Clauses</b>	<b>Provision</b>	<b>Condition of Exemption</b>
	this function is partly or fully fulfilled by electronic means.	
13.9.2	Portable daylight signaling lamp	--
13.10.1	When operational conditions justify the provision of night vision equipment, such equipment shall be provided.	--
13.11.3	Arrangements for supplying visual compass readings to the emergency steering position	Rudder angle indicator and intercom with operating compartment shall be provided at emergency steering position
13.12.1	Automatic pilot equipment	--
13.14	A sound reception system, or other means, shall be provided for totally enclosed bridge	--
13.15.2	Long-range identification and tracking system	--
13.16	Voyage data recorder	--
14.7.1.4	A receiver capable of receiving International NAVTEX service broadcasts	--
14.7.1.5	A radio facility for reception of maritime safety information by the INMARSAT enhanced group calling system	--
14.7.1.6	Satellite emergency position-indicating radio beacon (satellite EPIRB)	DSC and GPS installations shall be provided
14.7.2	Means for two-way on scene radiocommunications for search and rescue purposes using the aeronautical frequencies 121.5 MHz and 123.1 MHz	--
14.8.3	An EPIRB capable of transmitting a distress alert using DSC on VHF channel 70 and providing for locating by means of a radar transponder operating in the 9 GHz band.	DSC and GPS installations shall be provided



Clauses	Provision	Condition of Exemption
Chapter 14	All radiocommunication equipment other than that listed in the right handed column.	<p>To be provided with the following installation per 14.7.1 -</p> <p>.1 a VHF radio installation capable of transmitting and receiving:</p> <p>1.1 DSC on the frequency 156.525 MHz (channel 70). It shall be possible to initiate the transmission of distress alerts on channel 70; and</p> <p>.2 radiotelephony on the frequencies 156.300 MHz (channel 6), 156.650 MHz (channel 13) and 156.800 MHz (channel 16)</p>
18.2.5.3	Record of name and gender of all persons on board	--
Annex 11 2.10	<p>The number of persons which an open reversible liferaft shall be permitted to accommodate shall be equal to the lesser of -</p> <p>.1. the greatest whole number obtained by dividing by 0.096 the volume (m<sup>3</sup>) of the main buoyancy tubes when inflated; or</p> <p>.2. the greatest whole number obtained by dividing by 0.372 the inner horizontal cross-sectional area of the open reversible liferaft (m<sup>2</sup>) measured to the innermost edge of the buoyancy tubes.</p>	<p>The number of persons shall be determined by the lesser of the greatest whole number obtained by dividing by -</p> <p>1) 0.075 the volume (m<sup>3</sup>) of the main buoyancy tubes; or</p> <p>2) 0.304 the inner horizontal cross-sectional area (m<sup>2</sup>) of the open reversible liferaft</p>