

## LOCAL VESSELS ADVISORY COMMITTEE

### Transition from HSC Code 1994 to HSC Code 2000 for Locally Licensed HSC Ferries

#### Purpose

This paper sets out the Marine Department (MD)'s proposed amendments to the design and construction requirements for local vessels – high speed craft specified in the Code of Practice – Safety Standards for Class I Vessels (“CoP”).

#### Background

2. Following the commencement of marine works and major infrastructure projects in Hong Kong, more and more new passenger-carrying vessels have been built by local vessel owners to meet the needs for the vessels and quite a number of them have been built according to the rules and regulations for high speed craft set by classification societies. The requirements for high speed craft<sup>Note<sup>1</sup></sup> specified in Chapter XI of the existing CoP were based on HSC Code 1994. These were established many years ago and had fallen far behind the recent development of international standards.

3. Meanwhile, according to the Vessel Subsidy Scheme proposed in the policy address delivered in 2019, the Government will replace the entire fleet of 11 ferry routes within around 10 years from 2021 onwards in two phases, so as to enhance service quality and promote environmental protection. The new fleet includes vessels that can carry 200 to 1 000 passengers with most of them falling within the definition of “high speed craft” in terms of their speed. As these vessels carry a large number of passengers and navigate at high speed, an inter-departmental working group has decided that vessels within the definition of “high speed craft” should be constructed with reference to the current worldwide specifications and standards for high speed passenger craft to be in

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<sup>Note<sup>1</sup></sup> The definition of “high speed craft”, which according to Merchant Shipping (Local Vessels) (General) Regulation (Cap. 548F) item 9(8) is equivalent to that of the HSC Code: A craft with a maximum speed  $V \geq 3.7 \nabla^{0.1667}$  (m/s) achieved at the maximum continuous propulsion power for which the craft is certified at maximum operational weight and in smooth water.

compliance with the 2000 HSC Code <sup>Note2</sup>.

4. On the premise of ensuring the safety of vessels and passengers while not hindering the development of the trade, the MD considers that Chapter XI of the CoP should be amended in response to the development of the trade. The MD has referred to the Hong Kong Merchant Shipping Notice No. 24/2018, regarding “The exemptible clauses in accordance with the International Code of Safety for High Speed Craft for Hong Kong registered high speed craft engaged in cross-boundary voyages” <sup>Note 3</sup>. Also, having considered the operational environment of the Hong Kong waters, MD has incorporated into the exemptible clauses those requirements of equipment for long-distance navigation not applicable to local vessels. With the above considerations, MD has finalized a list of items under the exemptible clauses applicable to the fleet of local ferries and the future newly-licensed high speed passenger craft (see **Annex 1**) and made the following proposal.

## **The Proposal**

5. The MD recommends that the following standards should be applicable to high speed passenger craft newly constructed in the future or applying for license for the first time:

- (1) For first-time application for license, high speed craft that normally operate at a speed more than or equal to 20 knots and carry more than 200 passengers should be designed and constructed in full compliance with the 2000 HSC Code, except for those covered by the exemptible clauses listed at **Annex 1**; and
- (2) For high speed passenger craft aged over 15 years that apply for license for the first time, regardless of their passenger capacity and speed, as they have been defined by other maritime authorities as relatively high-risk vessels that need to retire from service, the MD recommends, after conducting risk assessment, that this type of vessels should comply with the construction standards of the 2000 HSC Code, except for those covered by the clauses listed at **Annex 1**; and they should continue to be classed

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<sup>Note 2</sup> The 2000 HSC Code has been widely adopted internationally for high speed craft constructed after 1 July 2002.

<sup>Note3</sup> Please use the following link to visit the website for the document:  
<https://www.mardep.gov.hk/en/msnote/pdf/msin1824.pdf>.

with a recognized classification society during their operation.

### **Amendments to the CoP**

6. With reference to the proposal in paragraph 5 above, the MD has made amendments to Chapter XI of the CoP and incorporated Annex AB (i.e. **Annex 1** mentioned in paragraphs 4 and 5(1) above). The amended Chapter XI of CoP is in **Annex 2** of this paper for members' perusal.

### **Consultation**

7. The amendments to the CoP as suggested in paragraph 6 above were discussed with the trade in 2019 and endorsed by the Sub-committee on Class I and Class II Vessels at its meeting held on 31 May 2021. It was agreed at the meeting that such amendments would be submitted to the Local Vessels Advisory Committee (the Committee) for deliberation.

8. The MD will continue to examine and discuss with the trade the respective standards of high speed craft with a speed of less than 20 knots, with a speed of more than and equal to 20 knots and a passenger carrying capacity of less than 200. A consensus on the standards concerned will be submitted to the Committee for discussion.

### **Way Forward**

9. Members are invited to comment on the above proposal. If it is supported by members, the MD will publish the implementation date of the amended CoP in the Gazette.

Marine Department  
Local Vessels Safety Section  
June 2021

**Code of Practice – Safety Standards for Class I Vessels**

Excerpt

Annex AB

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

<b>Clauses</b>	<b>Provisio</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	Requirements with respect to fire doors	The design and arrangement of

<b>Clauses</b>	<b>Provisio</b>	<b>Condition of Exemption</b>
.1 ~.10	bounding areas of major of hazard and stairway enclosures	the fire doors shall be of simple, open and manually operated type
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	Emergency power supply of 2 hours and 3 hours to be

Clauses	Provisio	Condition of Exemption
	<p>provided -</p> <ul style="list-style-type: none"> <li>● 5 hours - for the following services: all emergency lighting, navigation 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> <li>● 12 hours – for “not under command” lights</li> </ul>	<p>provided for all services and “not under command” light respectively.</p>
12.7.4	<p>In category B craft emergency power supply of the following specified durations shall be provided -</p> <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>	<p>Emergency power supply of 2 hours and 3 hours to be provided for all services and “not under command” light respectively.</p>
13.2.6	<p>Passenger craft certified to carry more than 100 passengers shall in addition be provided with a gyro-compass</p>	<p>A GPS satellite compass or equivalent is to be provided</p>
13.3.1	<p>Craft shall be provided with a device capable of indicating speed and distance.</p>	<p>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.</p>
13.4.1	<p>Echo sounder</p>	<p>--</p>
13.7.1	<p>Rate of turn indicator</p>	<p>--</p>
13.8.1	<p>Nautical charts and nautical publications or an electronic chart display and information system (ECDIS)</p>	<p>A chart-plotter or equivalent is to be provided</p>

<b>Clauses</b>	<b>Provisio</b>	<b>Condition of Exemption</b>
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 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	Provisio	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>



(Class I Vessel)

**CHAPTER XI****HIGH SPEED CRAFT****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 -

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

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

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

<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 "xx. xx. 2021".

clauses (refer to Annex AB);

- (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 meet the requirements set out in Annex XX.

2.3 Construction of DSC will be specially considered.

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

$$v = 3.7 \nabla^{0.1667}$$

<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.