

Consultation Responses - The Hovercraft Code

| Respondee | Comment | MCA response |
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| Mike Pinder in discussion with Asrai Marine and their associates | Is the Code voluntary or mandatory? | The Hovercraft Code has been developed for Light and Small hovercraft which are used for reward. Hovercraft surveyed and certified in accordance with the Code are exempt from relevant sections of the High Speed Craft (HSC) Regulations and Hovercraft (General) Order. As such this Code is voluntary. Operators may continue to comply with existing regulations, the HSC and British Hovercraft Safety Requirements where they wish to do so. |
| | The Code should not be more onerous than that for inflatable, rigid/inflatable or rigid boats. I am concerned about the proposed limit on power and consequently the performance. | The Hovercraft Code has been developed broadly in line with the 2014 Workboat Code utilising many of the rigid/inflatable boat requirements. The Code enables small hovercraft to be constructed without the need to apply the full requirements of the HSC regulations, in this regard it is not deemed more onerous. It is confirmed that there is not a limit on power or performance provided that the appropriate safety requirements are met. |
| | Title: should state that it covers only small hovercraft | The title has been agreed by the working group. |
| | Definitions, Section 2: "Freeboard" - definition not clear enough "Plough In" - delete the word 'reduction' | The definition of "Plough in" has been amended in line with your comments and the word reduction has been removed. |

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| <p>Application</p> <p>Section 3.1: What are navigable waters?</p> <p>Section 3.2: 24 metres seems too big to be called small</p> <p>Section 3.3: A Light Hovercraft can be capable of carrying 12 persons (e.g. Skima 12)</p> | <p>Navigable waters are defined in the Hovercraft (General) Order as any water which is navigable by ships or vessels, whether or not the tide ebbs and flows there, and whether or not there is a public right of navigations in that water.</p> <p>The 24m limit for a small craft aligns with the requirements of UK and International legislation and is in line with the Workboat Code. For the purposes of this Code, a hovercraft carrying 12 passengers would be deemed a Small hovercraft. The terms “Light” and “Small” are defined in terms of number of passengers and total persons on board not just length and weight.</p> |
| <p>Construction and Structural Strength, section 4: There should be something about planing surfaces</p> | <p>The construction and structural strength requirements are written to be high level and not to define individual design features, rather to define overall safety factors. For this reason planing surfaces are not individually defined.</p> |
| <p>Lift and Propulsion Machinery</p> <p>Section 6.3: Does this mean that petrol engines are prohibited from small hovercraft? This seems to be a restrictive practice written by those who prefer diesels.</p> <p>Section 6.3.1: Why limit the power and performance of hovercraft to petrol engines? this seems to be unreasonable when petrol engines are lighter than diesel. Many power boats are fitted with petrol engines with unlimited power. In light of recent developments regarding diesel engines it seems wrong to restrict the power and therefore the use of petrol engines which have now been proven to be less polluting than diesels.</p> | <p>Section 6.3: Petrol engines are permitted on Ultra-light and Light hovercraft only and as such are limited to area category 3. It should be further noted that where the engine is fully enclosed in a compartment only a fuel injected engine is permitted.</p> <p>The power for petrol engines has been limited to 130kW due to the inherent fire risk posed, this is in line with other Codes. With regards to the comments on pollution. All engines over 130kW are required to comply with The Merchant Shipping (Prevention of Air Pollution from Ships) Regulations hence this limit being imposed.</p> |

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| <p>Loose Water Removal, section 10: A hovercraft (e.g. an inflatable one) can have the deck above the waterline. If loose water can exit through the transom or fan it can be self-bailing.</p> | <p>Although the cockpit may be deemed self-bailing the requirements of section 10 have been included to cover enclosed spaces/compartments hence the inclusion of 10.7 for light and ultra-light craft, which may not have enclosed compartments.</p> |
| <p>Stability, section 11.6: This section needs a complete rewrite. It seems to be discriminating against inflatable buoyancy when this is well proven in boats.</p> <p>There is no section on the type of rigid or flexible buoyancy fitted. The number and size of separate buoyancy compartments should depend upon the size of the hovercraft and the number of passengers and crew. It is unreasonable for 50% of all buoyancy to be damaged or deflated.</p> <p>A distinction should be made between:</p> <ul style="list-style-type: none"> a) an inflatable hovercraft (the tubes form the main structure and buoyancy) b) a rigid/inflatable hovercraft (the tubes are used for additional buoyancy) c) a rigid hovercraft with some inflatable tubes for buoyancy or fenders | <p>The inflatable hovercraft damage stability requirements contained within section 11.6 align directly with the inflatable boat damage stability requirements in the 2014 Workboat Code, 11.5.3. In this regard the section does not discriminate against inflatable buoyancy and aligns the Hovercraft Code with the requirements in the Work Boat Code.</p> |
| <p>Compliance Examination and Issue of Permits and Certificate of Compliance, Section 28: Who is a competent person?</p> | <p>A Competent person with regards to compliance examinations for an Ultra-light and Light hovercraft is someone with sufficient training and experience or knowledge as defined in the relevant health and safety regulations such as the Provision and Use of Work Equipment Regulations 1998 .</p> |

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| <p>Hovercraft Manufacturers Association</p> | <p>1) The 12m length that is used within the Code needs redefining in three places to make the Code consistent in its length definitions as follows. The words "12m length and over" should be replaced with "longer than 12m" in 4.6.1, 6.1.2 and 8.1, and 4.6.2 should now say "All hovercraft over 12m in length shall....."</p> | <p>The definitions within the Code have been amended for consistency.</p> |
| | <p>2) Construction and Structural Strength</p> <p>Section 4.4.1: we suggest the para reads "ISO 12215-5+6 using the full method as a motor planning boat or the Simplified Scantling method (annex A) or, if the hovercraft is less than 6m, the drop test". This will cover all the loads mentioned in 4.1.3. This would clarify the use of the Simplified Scantling Assessment.</p> <p>Section 4.6.1: In addition to the change in 1) it should say " comply with ISO 12215-5+6 using the full method, or for vessels under 9m, the Simplified Scantling system. This will cover all the loads mentioned in 4.1.3. Alternatively UK Authorised Classification Society Rules can be used." Again this addition is to clarify the use of ISO.</p> | <p>The Code has been amended to reference annex A. Further amendments have been made to clarify the use of the defined load cases in conjunction with Classification Society Rules and the ISO standards.</p> |
| | <p>3) Fire Safety, section 14.2.1: we would like to propose the addition of a second paragraph as follows</p> <p>"On small hovercraft up to 12m long with lift or thrust fans contained fully or partially within the engine bay gas tight enclosed space is not mandatory. if such a space exists then an increase in fire extinguisher capacity will be required."</p> <p>this change is proposed because it is very difficult to have enough space in the smaller craft to have separate engine bays.</p> | <p>The requirement for the Small Hovercraft gas tight engine enclosure has been amended however further limitations have been placed on Small Hovercraft where a gas tight engine enclosure is not fitted to ensure that safety standards are maintained.</p> |

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| <p>4) Radio Equipment, table 16.1: In table 16.1 under the words "portable VHF" we suggest the following "(this is not in addition to the portable VHF mentioned in table 13.1)". We are proposing this to avoid confusion.</p> | <p>We have removed the requirement for portable radios from the LSA requirements and retained them in table 16.1 for consistency.</p> |
| <p>5) Fire Safety, section 14: we have realised there is no mention of number of escape routes, and suggest that the relevant para in the Workboat code is inserted after para 14.4.2 in the Hovercraft Code starting "Small Hovercraft means of escape." and then adding 14.8.1 from the Workboat code.</p> | <p>We agree with the need for escape routes to be added into the Code. The Code has been amended to reflect this and section 14.5- Means of escape (Small Hovercraft) has been added.</p> |
| <p>6) Navigational Equipment, Section 18.4: we suggest that the following is added "Small hovercraft when operating in Area 2 should be equipped with the following" and leave 18.4.1, 18.4.2 and 18.4.3 as before. This would then bring the Code in line with the Workboat code.</p> | <p>Section 18.4 has been amended to read "Small Hovercraft certified to operate in area category 2 should be provided with". This aligns better with the relevant requirements of the Work Boat Code.</p> |

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| <p>7) Construction and Structural Strength, section 4.8.3: we suggest that this is expanded as follows:</p> <p>"Attachments of the skirt to the hull shall be of sufficient strength so that no damage is caused to the hull attachment if the skirt material is ripped or snagged with sufficient force to break the skirt connecting device. This can be proven by one of the following:</p> <ul style="list-style-type: none"> (a) the use of a proven in service system if cushion pressure and craft speed are the same or lower than the original system; (b) carrying out a minimum of 50 hours full load sea trials if it is a new system/design; or (c) by calculation based on the maximum static cushion or bag pressure with a safety factor of 6 on segment/finger attachments and a safety factor of 4.2 on the distributed load generated by bag/loop attachments." <p>The reason for suggesting this is we need to propose a system of meeting the requirement as it is outside general engineering experience, the two safety factors given have been used as a basis for strength calculations for more than 20 years by more than one manufacturer.</p> <p>As a result of the above we suggest that 4.8.5 could be removed.</p> | <p>The high level requirement of 4.8 is deemed sufficient at this stage however it is intended that we will discuss this matter further, separately to the publication of the Code.</p> |
| <p>8. Add the name Norfolk Hovercraft into the list of contributors as they have been involved in the process.</p> | <p>Thank you for noting this. Norfolk Hovercraft has been added to the contributors list in section 1.5.</p> |

Simon Milne has agreed to set up a meeting with us and the CAA to discuss propeller approval for non EASA approved manufactures and whether it is possible to add this to appendix 4 of the code, also maybe we need to add lift fans to this that are not covered by the World Hovercraft Federation Approvals. We understand that this will follow the acceptance of the code and will not hold it up.

The certification of hovercraft propellers and lift fans is an ongoing discussion with the industry and certifying authorities and will not delay the publication of the Code. However it is intended that we will discuss this matter separately to the publication of the Code.

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| Lloyds Register | <p>Construction and Structural Strength, section 4.6.1: ISO standard 12215-5 Simplified Scantling Assessment is referenced as an appropriate standard for hull construction. This should be referred to by its correct section title of 'Simplified method for scantling determination in Annex A' for the avoidance of doubt. How the use of this standard dovetails with the loading cases presented in section 4.1.3 is very unclear. Is the intention that the use of the ISO standard covers all the load cases mentioned in 4.1.3? If not, which load cases does it cover and are the remaining loading cases to comply with Classification Society Rules?</p> <p>Additionally the ISO 12215-5 Simplified Scantling Assessment only gives panel thicknesses. Stiffeners still need to be calculated using the full ISO method which we would presume would be the same as for a motor planing craft in design Category C and D, but this also needs to be clarified to avoid confusion.</p> <p>ISO 12215-5 does not include requirements for welding or bonding of the structure, nor structural arrangements and details. How is the design assessment of these aspects to be addressed?</p> <p>Where the ISO standard is applied how can the proof and ultimate factors of 1.0 and 1.5 given in 4.1.3 to be applied to the ISO standard? If the standard is applied it must use its own loads and allowable strength values.</p> | Section 4 of the Code has been reworded to clarify the standards to be used. |
| | <p>Sections 4.6.1 and 4.6.2: Where Class Society Rules are applied how can the proof and ultimate factors of 1.0 and 1.5 given in 4.1.3 to be applied to Class Society Rules? If Class Rules are applied they must use their own loads and allowable strength values.</p> | Section 4 of the Code has been amended to further define the required standards. |

Lift and Propulsion Machinery, section 6.2.1: Could consideration could be given to allowing an appropriate/equivalent air pollution standard to that stated in para 6.2.1, as most hovercraft are fitted with industrial engines for which compliance with MSN 1819 may be difficult. For example, a standard such as Euro 5 or Euro 6, used for motor vehicle engines, may be appropriate.

As specified in 6.2.1 of the Code all engines of 130kW or more should comply with Merchant Shipping (Prevention of Air Pollution from ships) Regulations 2008 and Merchant Shipping Notice 1819 (M+F). Engines of less than 130kW need not be certified. The MCA is pursuing alternative means of certifying the environmental performance regime of certain unusual vessels which may extend to hovercraft. Guidance on this matter will be issued separately in due course.