INDIAN REGISTER OF SHIPPING

CLASSIFICATION NOTES

Requirements for Small Crafts

Revision 01
December 2020

IRCLASS
Indian Register of Shipping

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TABLE 1 – AMENDMENTS INCORPORATED IN THIS VERSION

These amendments will come into force as indicated in the Table

Clause	**Subject/ Amendments**
Section 5 : Stability, Subdivision Watertight and Weather-tight Integrity *The amendments are applicable to crafts contracted for construction on or after 1 January 2021*	
5.3.3.1.2 & 5.3.3.1.3	Editorial amendments are made.
5.3.3.1.4 & 5.3.3.1.5	Bow height requirements are deleted.
5.8.2.3.3 (a) & (b)	Requirements for ventilators including ventilation opening heights and ventilators for machinery spaces are amended.
Section 8 : Fire Safety *The amendments are applicable to crafts contracted for construction on or after 1 January 2021*	
8.6.1.1.1	It is clarified that automatic fire detection and alarm system need not be provided for machinery spaces which are continuously manned.
8.7.7.1.2	It is stipulated that machinery spaces with total installed engine power greater than 750 kW are to be provided with two portable fire extinguishers of 4.5 kg or equivalent suitable for oil fire.
8.7.7.3.1.1	Threshold total installed power, at which the machinery spaces are to be fitted with fixed fire-extinguishing system is amended from 750 kw to **1500kW**.

Classification Notes

Requirements for Small Crafts

2020

Contents

Sections

Section 1

General Information

1.1 General

1.1.1 The objective of this Classification Note is to provide requirements for Small Crafts (see definition in 1.6.1.1). Due consideration is to be given to the specific requirements of the flag Administration, noting that statutory requirements for such crafts are not harmonized across various flag Administrations as these crafts are non-convention vessels.

1.1.2 This Section describes the scope of classification and relevant procedural requirements. Sections 2 to 13 indicate class requirements regarding arrangement, strength, machinery, electrical systems, control and monitoring systems and requirements in relation to specific type of crafts.

1.2 Application

1.2.1 These Classification Notes apply to design, construction and surveys of Small Crafts, as defined in 1.6.1.1.

1.2.2 The following are excluded from the scope of these Notes:

a) Vessels carrying more than 12 passengers
b) Vessels carrying more than 60 special Personnel
c) Vessels carrying more than 60 Industrial Personnel
d) Craft intended solely for racing
e) Canoes and kayaks
f) Surf boards, powered surfboards, and Sailing surfboards
g) Submersibles
h) SWATH Crafts
i) Air cushion vehicles
j) Hydrofoils
k) Steam powered craft
l) Personal watercraft (like jet skis, water scooters)
m) Inflatable boat
n) Pleasure Crafts and Yachts
o) Open crafts

1.3 Classification Regulations

1.3.1 When a craft is assigned a specific Character of Class by Indian Register of Shipping, it implies that IRS is satisfied that the said craft complies, for this particular class, with these Rules and Regulations or requirements equivalent thereto. The craft will continue to be classed with IRS so long as it is found, upon examination at the prescribed annual and periodical surveys, to be maintained in a fit and efficient condition and in accordance with the Periodical Survey requirements of these Rules.

1.3.2 The Rules are framed on the understanding that the crafts will be properly loaded and handled and that, crafts will not be operated in environmental conditions more severe than those agreed for design basis and approval.

1.3.3 Compliance with the applicable statutory requirements of the National Authority, addressing the following aspects, is a prerequisite for classification:

- Intact/Damage stability
- Load-line and Conditions of Assignment, as applicable
- Fire Safety

- Life Saving Appliances
- Safety of Navigation
- Radio-communications
- Environmental protection

1.3.4 The correct interpretation of the requirements contained in this Classification Note is the sole responsibility and at the sole discretion of IRS.

1.3.5 It is the responsibility of the Builders or Owners, as applicable, to inform the Surveyors of IRS of the location where the surveys for supervision during new construction, or Crafts in service, are to be undertaken, and to ensure that all surveys for issue of class certificate for new construction, and maintenance of class for Crafts in service are carried out.

1.3.6 Any repairs to the Craft either as a result of damage or wear and tear which are required for the maintenance of Craft's class are to be carried out under the inspection of and to the satisfaction of the Surveyors.

1.3.7 No alterations which may affect classification are to be made to the hull or machinery of a classed unit unless plans of proposed alterations are submitted and approved by IRS before the work of alterations is commenced. Such work is to be carried out in accordance with approved plans and tested on completion as required by the Rules and to the satisfaction of the Surveyor(s).

1.3.8 The date of completion of the special survey during construction will normally be taken as the date of build to be entered in the Register Book.

Where there is a substantial delay between completion of initial survey and the Craft commencing service, the date of commissioning may also be specified on the Classification certificate.

When modifications are carried out on a Craft, the initial date of build remains assigned to the Craft.

1.3.9 If the recommendations of the Surveyors are considered, in any case, to be unnecessary or unreasonable, appeal may be made to IRS, who may direct a special examination to be held.

1.4 Requirements for service suppliers

1.4.1 The requirements of service suppliers are as indicated in Part 1, Chapter 1, Cl. 1.9 of *IRS Rules and Regulations for the Construction and Classification of Steel Ships*.

1.5 Responding to Port State Control

1.5.1 When requested by Port State and upon concurrence by the vessel's owner/master IRS Surveyors would attend onboard a craft in order to assist in the rectification of reported deficiencies or other discrepancies that affect or may affect classification, or the statutory certificates issued by IRS. The owner and the vessel's flag state will be notified of such attendance and survey. IRS Surveyors will also cooperate with Port States by providing inspectors with background information.

1.6 Definitions

1.6.1 The following definitions are applicable for these Rules:

Note: Where it is not required to assign summer load waterline according to the statutory regulations, the maximum load waterline is to be used instead in various definitions.

.1 **Small Craft** refers to mechanically propelled decked seagoing vessels, of less than 24 m in length and less than 400 GT, other than the types of vessels excluded in 1.2.2.

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.2 **Fishing Crafts**: the term 'fishing Crafts' as used in these Rules, refers to mechanically propelled decked fishing crafts which are less than 24 m in length and GT less than 400, equipped and used commercially for catching fish or other living resources of the sea.

.3 **Industrial personnel**: Industrial Personnel (IP) means all persons who are transported or accommodated on board for the purpose of offshore industrial activities performed on board other vessels and/or [other] offshore facilities.

.4 **Safe Haven**: means a port or a harbour.

.5 **Special personnel** – refers to all persons who are not passengers or members of the crew or children of under one year of age and who are carried on board in connection with the special purpose of that ship or because of special work being carried out aboard that ship. Wherever in this Note, the number of special personnel appears as a parameter, it should include the number of passengers carried on board which may not exceed 12.

.6 **Freeboard Deck***:* The freeboard deck is normally the uppermost complete deck exposed to weather and sea, which has permanent means of closing for all openings, exposed to weather, and below which all openings on the sides of the craft are fitted with means for watertight closing.

.7 **The forward perpendicular, F.P.**, is the perpendicular drawn at the intersection of the summer load water line with the fore side of the stem. In crafts with unusual bow arrangement the position of the F.P. will be specially considered.

.8 The **after perpendicular, A.P**., is the perpendicular drawn at the intersection of the summer load waterline with the after side of the rudder post or the centreline of the rudder stock if there is no rudder post.
In crafts with unusual stern arrangement the position of the A.P. will be specially considered.

.9 **Rule length, L**, The Rule length of L is the distance, in metres, measured on the summer load waterline from the fore side of the stem to the after side of the rudder post, or the centre of the rudder stock if there is no rudder post. L is not to be less than 96%, and need not be greater than 97%, of the extreme length on the summer load waterline.
In ships without rudder stock (e.g. ships fitted with azimuth thrusters), the Rule length L is to be taken equal to 97% of the extreme length on the summer load waterline.

.10 Amidships is at 0.5L aft of the F.P.

.11 **Breadth, B**, is the greatest moulded breadth [m]

.12 **Depth**, D, is the moulded depth [m], measured amidships from top of the keel to the moulded deck line of the uppermost continuous deck at side. When a rounded gunwale is arranged the depth is to be measured to the continuation of the moulded deck line.

.13 **Draught, T**, is the moulded draught amidships corresponding to the summer load waterline, [m].

.14 **Decked craft:** Craft with a deck that can be closed weather tight from stem to stern uninterrupted by other than a strong superstructure or a cockpit so designed that shipping of water will not fill spaces below deck.

.15 **Open craft** Craft that is not a decked craft.

.16 **Passenger:** every person on board the craft other than the master and the members of the crew, special personnel, industrial personnel or a child under one year of age.

.17 **High speed regime:** mode of operation of craft which satisfies the criteria, V in knots > 7.16 $\Delta^{1/6}$

1.8 Scope

1.8.1 All crafts under class are to be subjected to periodical surveys for the purpose of maintenance of class. Crafts classed with IRS are to be subjected to annual, intermediate and special surveys for continuation of the Classification.

1.8.2 The Classification of a Craft does not exempt the stakeholders (craft owner, building yard or designer) from compliance with any requirements issued by Flag Administrations and/or local port authority.

1.9 Character of Classification

1.9.1 The following Characters and symbols are assigned by IRS to indicate classification of crafts:

a) Character **SUL** assigned to Small Crafts indicates that the hull and its appendages and equipment (i.e. anchors, chain cable and hawsers) meet the Rule requirements for assignment of this Character of Class.

b) Character **SU (-)** assigned to Small Crafts indicates that the hull and its appendages meet the Rule requirements but equipment (i.e. anchors, chain cable and hawsers) is not supplied or maintained as per IRS Rules but is considered by IRS to be acceptable for their particular service.

c) Character **SU** assigned to Small Crafts indicates that the hull and its appendages meet the Rule requirements but in respect of the equipment, IRS has agreed that normal equipment is not necessary in view of their particular service.

> Guidance Note: Appendages to the hull referred to in 3.5.1 a), b) and c) means the rudder & rudder stock, rudder horn, sole pieces, propeller nozzles, shaft brackets, skeg etc. which are covered by the rule requirements.

1.9.2 Character **IY** assigned to self-propelled Small Crafts indicates that the machinery meets the rule requirements for assignment of this Character of Class.

1.9.3 The distinguishing mark 卐 inserted before Characters of Class or Class Notation(s) is assigned to new Craft constructed under special survey of IRS in compliance with the Rules to the satisfaction of IRS

1.9.4 When requested by an owner and agreed to by IRS or when considered necessary by IRS, relevant Class notation (s) as detailed below will be appended to the Small Craft e.g.

卐 SUL, SC,"RS3", CREW BOAT, MAT(S), MOTOR (D-I).

1.10 Class Notations

1.10.1 Craft Type Notation

SC - Denotes that the vessel is a small Sea-going craft built in accordance with IRS Rules for Construction and Classification of Small Crafts.

1.10.2 Craft Service Notation

CREWBOAT - Crafts dedicatedly employed for the carriage of more than 12 but not more than 60 industrial personnel.

FISHING CRAFT – For fishing vessels as defined in 1.6.1.2.

PILOT CRAFT – Small Sea-going crafts dedicatedly employed in pilotage services.

1.10.3 Design Type Notation

RS0 or RS1 or RS2 or RS3 – Crafts that have been verified for structural integrity according to '*IRS Rules and Regulations for Construction and Classification of High Speed Crafts and Light Crafts*' will be assigned this design type notation to indicate service restrictions stipulated in the above mentioned Rules.

In addition to the above, crafts may be assigned a service range notation limiting the distance in nautical miles from the place of refuge or coast, if requested: for example 'for operation within 20 Nm from place of refuge' or 'for operation within 20 Nm from the coast'

Sheltered Water Service or -Restricted Water Service or Coastal Service– Crafts that have been verified for structural integrity according to '*IRS Rules and Regulations for the Construction and Classification of Steel Ships*' will be assigned this additional design type notation to indicate the service restrictions stipulated in the above mentioned Rules

1.10.4 Hull Type

Crafts of multi-hull type of construction would be assigned notation "**MULTIHULL**".

1.10.5 Material

Depending upon the material of hull construction, additional notation **MAT ( )** is to be assigned to the crafts, with letters within parentheses indicating the material used:

(a) **A** – Aluminium
(b) **S** – Steel
(c) **F** – FRP/ GRP

1.10.6 Engine Type Notation

The type of engine provided for the craft is indicated by this notation. The following classifications of motor crafts are currently envisaged in the Rules.

MOTOR (D-I) – A craft propelled by an inboard diesel engine.

MOTOR (D-O) – A craft propelled by an outboard diesel engine.

MOTOR (P-O) - A craft propelled by an outboard petrol engine.

In the case of gas fuelled or methanol fuelled crafts, IRS Classification Notes for Natural Gas Fuelled Vessels and Guidelines for Methanol fuelled vessels would apply as appropriate for such fuels.

Similarly, the IRS Guidelines on Battery Powered Vessels may be referred for requirements of battery powered crafts.

1.11 Materials, components, equipment and machinery

1.11.1 The materials used in the construction of Crafts, or in the repair of Crafts already classed, are to be of good quality and free from defects and are to be tested in accordance with this Classification Note (Section 3). When the construction material is steel, the same is to be manufactured by an approved process at works recognized by IRS. Alternatively, for other materials, tests to the satisfaction of IRS will be required to be carried out.

1.11.2 Chapter 1, Cl. 3.8 of the *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts,* may also be referred.

1.12 Certificate of Class

1.12.1 Certificate of Class will be issued to Builders or Owners in accordance with Chapter 1, Cl. 3.15 of the *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts.*

1.13 Classification of Crafts

1.13.1 Classification of Crafts built under the survey of IRS and, or crafts not built under the survey of IRS is to be in accordance with the provisions included in Ch.1, Section 4 and Ch. 1, Section 5, respectively, of the *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts*.

1.14 Suspension, withdrawal and deletion of class

1.41.1 Suspension, withdrawal and deletion of Class of these crafts is to be in accordance with Chapter 1, Cl 3.16 of the *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts*.

1.15 Liability

1.15.1 Whilst Indian Register of Shipping, a Classification Society, along with its subsidiaries and associates (hereinafter referred to as the Society) and its Board/Committees use their best endeavors to ensure that the functions of the Society are properly carried out, in providing services, information or advice, neither the Society nor any of its servants or agents warrants the accuracy of any information or advice supplied. Details of the liability clause may be further referred in Part 1, Chapter 1, Cl. 1.6 of the *Rules and Regulations for the Construction and Classification of Steel Ships*.

Section 2

Surveys

2.1 General

2.1.1 All Small Crafts are to be subjected to periodical surveys for the purpose of maintenance of Class generally in accordance with Chapter 2 of the *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts*.

Section 3

Materials

3.1 Scope

3.1.1 In general, materials used for the construction of Crafts are to be manufactured, tested and inspected according to the requirements of *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts* and/ or *Rules and Regulations for the Construction and Classification of Steel Ships*, as applicable.

3.1.2 The choice of materials is to take into account the manufacturing conditions in the yard, environmental limitations, the anticipated manufacturing process, competence of the welders/ craftsmen, etc.

3.1.3 Materials complying with recognized national or international standards, and having properties which are equivalent to the materials prescribed in these rules may be specially considered by IRS.

3.1.4 The Craft builder is to provide information regarding the following:

- Possible reduction of mechanical properties by the induction of heat for crafts having structural elements constructed out of FRP or Aluminium;

- Use of chemicals and anti-fouling paints that are incompatible with aluminium, for crafts having structural elements constructed out of aluminium.

3.2 Identification, Storage and Handling

3.2.1 The Craft builder is to establish and maintain a procedure to ensure that materials and consumables used in the construction process are identified (by colour coding and/ or marking or any other means, as appropriate) from arrival in the yard through to fabrication in such a way as to ensure that the type and grade are easily recognized.

3.2.2 The Craft builder is to maintain purchase documents containing a clear description of the material ordered for construction referring to the appropriate standards or specifications, in order to ensure traceability.

3.2.3 Materials are to be stored in accordance with the material manufacturer’s requirements. Storage arrangements are to be such as to prevent deterioration through adverse environmental conditions and poor handling.

3.2.4 Welding consumables are to be stored in suitable conditions to maintain them in accordance with the material manufacturer’s recommendations.

3.2.5 Defective/sub-standard materials are to be disposed-off in accordance with the builder’s conformity assurance procedures.

Section 4

Design Loads and Structural Scantlings

4.1 Scope

4.1.1 In general, design load estimation and scantling calculations, as well as testing requirements, are to be in accordance with the requirements of *Rules and Regulations for the Construction of High Speed Crafts and Light Crafts*. In cases of vessels of other than light construction such as Barges, vehicle ferries, etc. which are of slow speed (V in knots < 4.8 $\Delta^{1/6}$), the design loads and scantlings are to be determined in accordance with *Rules and Regulations for Construction and Classification of Steel Ships*. For vessels of light construction and slow speed (V in knots < 4.8 $\Delta^{1/6}$), requirements for loads and scantlings of IRS HSC &LC Rules may be applied regardless of the speed of the vessel excluding high speed bottom slamming.

4.2 Alternative Standards

4.2.1 Construction of Crafts in accordance with recognized national/international standards (for example, ISO Standards for small Crafts- ISO 12215) may be accepted by IRS on a case to case basis.

4.3 Principles of Scantling Calculations

4.3.1 Design Requirements

4.3.1.1 The scantlings of various hull members are to be based on the environmental conditions applicable to the type of service for which the Craft is designed.

4.3.1.2 The provisions for structural calculations apply, in particular, to the scantlings of the main structure, closed superstructures and means of closure of openings therein, and the arrangement and construction of openings in the freeboard decks and superstructures, their means of closing, especially enclosures for machinery spaces, hatch covers, doorways, ventilators, and openings in the side of the ship. The construction details of masts and rigging would be specially considered by IRS.

4.3.1.3 In general, longitudinal strength is to be checked for all crafts where L/D >12.

4.4 Additional requirements for Crafts with outboard engines

4.4.1 General

4.4.1.1 This Section outlines the general requirements for structural arrangements for crafts which use outboard engines as their primary means of propulsion.

4.4.1.2 Arrangements deviating from the general principles outlined in this Section will be specially considered on a case to case basis.

4.4.2 Structural Arrangement of aft and transom structure

4.4.2.1 Crafts with outboard engines are to be provided with a watertight and self-draining motor well for installation of the engine.

4.4.2.2 The strength and rigidity of the transom is to be adequate to withstand the forces developed due to the thrust imposed by the propeller and its resultant moment imposed upon the transom. Calculations are to consider all static and dynamic loads anticipated and ensure safe operation in the course of the Craft’s intended service.

4.4.2.3 Outboard engines are to be capable of being fastened to the hull with belts, chains or other safety dispositions.

4.4.2.4 Protective plates are to be fitted in way of engine fixing clamps.

4.4.3 Steering Forces

4.4.3.1 The strength of the engine foundation and its integrity with the hull structure is to be adequate to withstand the forces developed during steering.

4.4.3.2 The steering force F on an outboard engine is not to be taken smaller than:

F = 10 P (N)

Where P is the engine power [kW].

4.4.3.3 The engine foundation is to be designed to withstand the forces calculated in 4.4.3.2, and resultant moments due to the same, in all anticipated directions of steering.

4.4.3.4 All components of the steering system are to be built, stiffened and secured in such a way that they can absorb all static and dynamic forces to which they are exposed.

4.4.3.5 Crafts equipped with outboard engines with a power exceeding 15 [kW] are to be equipped with permanent wheel steering. Permanent wheel steering may be required for other crafts if found necessary for safety reasons. Rudder stops are to be fitted when wheel steering is fitted.

4.4.4 Requirements for Crafts built in composite materials

4.4.4.1 In general, the transom is to be of sandwich construction having a core of waterproof plywood or of equivalent strength. The thickness of the internal skin of the sandwich is to be at least equal to the craft's side skin, and the thickness of the outer skin is to be at least equal to that of the craft's bottom shell.

4.4.4.2 The internal skin of the sandwich is to be carried forward along the sides and bottom of the craft and gradually tapered in thickness towards its edges.

4.4.4.3 For crafts with total engine power greater than 100 [kW], the scantlings of the transom structure would be specially considered in each individual case. In such cases, the required scantlings may exceed the requirements in 4.4.4.1 and 4.4.4.2

Section 5

Stability, Subdivision, Watertight and Weather-tight Integrity

5.1 General

5.1.1 The requirements of this Section are applicable to all Crafts, subject to modifications to any clause, as indicated in Section 13, for specific type of crafts.

5.1.2 All Crafts will be assigned Class only after it has been demonstrated that their intact stability and damage stability (where applicable) are in compliance with the requirements of this Chapter, and where applicable, any other standards or criteria laid down by the Administration.

5.1.3 All Crafts are to be provided with approved stability information booklets, which are to be always kept onboard, for the reference of the master and crew.

5.2 Inclining Experiment and Stability information

5.2.1 All Crafts of 6 [m] length and above are to undergo an inclining test on completion of construction to determine the actual displacement of the light craft and the coordinates of its centre of gravity. For sister vessels, the conducting of an inclining experiment may be waived in accordance with the requirements laid down by the Administration. For vessels of less than 6 [m] in length offset-load test may be accepted according to recognized standards such as ISO 12217.

5.2.2 The inclining test is to be carried out and its results evaluated by a qualified person, specifically designated by the shipyard or the ship-owner. In each case, an inclining experiment procedure is to be prepared and forwarded to IRS for its approval.

The test is to be carried out in the presence of an IRS Surveyor, who is to verify that the test is carried out properly.

5.2.3 After the completion of the test, the builder is to evaluate the results obtained and prepare a report, which is to be sent to IRS for approval.

5.2.4 After approval of the inclining test report, the provisional/ preliminary stability booklet is to be updated and a final stability booklet is to be prepared, based on the revised values of displacement and centre of gravity, as obtained from the test.

5.2.5 The final stability booklet is to be forwarded to IRS for approval. Any change in stability parameters of the craft, which may lead to subsequent revisions to this booklet needs to be brought to IRS' notice, and may require re-approval of the booklet.

5.3 Intact Stability and Freeboard

5.3.1 General

5.3.1.1 Intact Stability criteria are to be in accordance with Annex 5 for multihulls and Annex 6 for mono hulls of the IRS *Rules for the Construction and Classification of High Speed Crafts and Light Crafts*.

5.3.1.2 Where permanent ballast is provided to ensure compliance with the stability criteria, its nature and arrangement is not to impair the safety of the vessel. Ballast is to be secured in the vessel in such a way that it will not move even if the vessel is inclined to 90°.

5.3.2 Additional Stability Checks

5.3.2.1 For any craft which is provided with specialized equipment which may adversely impact the stability, additional stability checks have to be performed as indicated in 5.3.2.2.

5.3.2.2 Any Craft fitted with onboard equipment (such as lifting gear, cranes, towing gear etc), the operation of which will have a bearing on the stability characteristics of the craft, is to be subject to appropriate additional stability checks, as determined by IRS, in order to establish that the operation of such equipment does not pose a stability hazard to the craft.

5.3.3 Freeboard and Loadline

5.3.3.1 General

.1 In general, all Crafts are to have sufficient freeboard in all anticipated service conditions.

.2 The requirements of the Flag Administration/ Statutory Authority, where the Craft is being registered are to be taken cognizance of.

.3 The freeboard amidships is decided having regard to stability, trim and hull strength, etc. but is not in any case and condition to be less than 200 [mm] measured from the upper side of the deck at side to the waterline.

5.4 Additional Intact Stability Requirements for Crafts operating in the high speed regime

5.4.1 General

5.4.1.1 This sub-section is applicable to vessels fulfilling the criteria V in knots ≥ 7.16 $\Delta^{1/6}$.

5.4.2 Intact stability in non-displacement mode

5.4.2.1 For the requirements in this sub-section, it is assumed that the stabilization systems fitted are fully operational.

5.4.2.2 The roll and the pitch stability on the first and/or any other Craft of a series is to be qualitatively assessed during operational safety trials.

The result of such trials may indicate the need to impose operational limitations.

5.4.2.3 Where Crafts are fitted with surface piercing structure or appendages, precautions are to be taken against dangerous attitudes or inclinations and loss of stability subsequent to a collision with a submerged or floating object.

5.5.3 Intact stability in the transitional mode

5.5.3.1 For all weather conditions up to the worst intended conditions, the time to pass from the displacement mode to the non-displacement mode and vice versa is to be minimal unless it is demonstrated that no substantial reduction of stability occurs during this transition.

5.6 Damage Stability

5.6.1 Applicability

5.6.1.1 This sub-section is applicable to Crafts assigned with class notation "**CREWBOAT**" (as indicated in Section 1) and for Crafts which carry more than 12 special personnel.

5.6.1.2 Damage stability for other type of Crafts needs to be evaluated only if required by 5.6.1.3.

5.6.1.3 The crafts may additionally require compliance with damage stability requirements imposed by national/ international regulations, in which case the damage stability analysis will need to be assessed as prescribed in those regulations.

5.6.2 General

5.6.2.1 For crafts to which damage stability is applicable, the approved damage stability information is to be made available to the master for his ready reference, in order to assist him in mitigating the effects of flooding or undertaking appropriate damage control measures.

5.6.2.2 In considering the stability after damage (if applicable), flooding is to be assumed to occur until limited by

a) Watertight boundaries in the equilibrium condition and

b) Weather tight boundaries in intermediate stages of flooding and within the range of positive righting lever required to satisfy the residual stability requirements.

5.6.2.3 Where a buoyant space is subjected to increased fluid pressure in the equilibrium position after damage, the boundaries and associated openings and penetrations of that space are to be designed and constructed to prevent the passage of fluid under that pressure.

5.6.3 Stability Criteria

5.6.3.1 For assignment of the class notation "**CREWBOAT**', damage stability is to be demonstrated in accordance with the requirements specified in the "Interim Recommendations on the safe carriage of more than 12 Industrial Personnel onboard vessels engaged on International Voyages" Resolution MSC 418(97), as amended; taking due cognizance of any exemptions that the Administration may permit, based on size of the craft, or restricted area of operation.

5.6.3.2 For Crafts assigned with the notation '**WORKBOAT**', which carry more than 12 special personnel, damage stability is to be demonstrated in accordance with the requirements specified in the "Code of Safety for Special Purpose Ships", Resolution MSC 266(84), as amended; taking due cognizance of any exemptions that the Administration may permit, based on size of the craft, or restricted area of operation.

5.7 Subdivision, Watertight and Weather tight Integrity

5.7.1 Applicability

5.7.1.1 The requirements of this sub-section apply to all Small Crafts, unless specified otherwise in individual sub-sections or paragraphs.

5.7.1.2 In addition, relevant statutory regulations may need to be complied with.

5.7.2 Subdivision and Arrangement

5.7.2.1 Transverse subdivision bulkheads

a) For the purpose of this sub-section, the expressions freeboard deck, length of ship and perpendiculars (forward and after) have the meanings as defined in Section 1.

b) In general, the following transverse watertight bulkheads are to be fitted in all crafts:

- A collision bulkhead
- An aft-peak bulkhead (not applicable to vessels with stern drive, unusual stern arrangements)
- A bulkhead at each end of the machinery space.

[b) Craft with length 6 [m] < L < 15 [m] are to be normally arranged with at least 2 watertight bulkheads. Craft with length L exceeding 15 [m] are to be arranged with at least 3 watertight bulkheads, of which one is to be a collision bulkhead in accordance with 5.7.2.1 d).]

Additional bulkheads, as necessary to satisfy any applicable damage stability requirements are to be fitted at suitable locations.

c) The watertight bulkheads are in general to extend to the freeboard deck. The aft peak bulkhead may terminate at the first deck above the load water line provided that the deck is made watertight to the stern or to a watertight transom floor.

d) All Crafts are to be fitted with a collision bulkhead which is to be watertight up to the freeboard deck. This bulkhead is to be located, at a distance from the forward perpendicular of not less than 5% of the length (L) of the ship but not more than 8% of the length (L) of the ship. Consideration will however be given to proposals to locate the collision bulkhead aft 0.08L from the forward perpendicular, provided that the application is accompanied by calculations showing that with the ship fully loaded to summer draught on even keel, flooding of space forward of the collision bulkhead will not result in any part of the freeboard deck becoming submerged, nor result in any unacceptable loss of stability.

e) The collision bulkhead may have steps or recesses provided they are within the limits indicated in 5.7.2.1 d)

f) The number of pipes piercing the collision bulkhead is to be as small as possible. Such pipes are to be fitted with suitable valves operable from above the freeboard deck. Materials of valves are to comply with the relevant requirements of Part 2 of *IRS Rules and Regulations for the Construction and Classification of Steel Ships*.

g) No manhole, door, hatchway, ventilation duct or any other opening is permitted in the collision bulkhead below the freeboard deck.

5.7.2.2 Doors, Hatchways and Windows

.1 Weather tight hatchways

a) Coamings of hatchways on exposed freeboard decks are to have a height above deck of at least 380 [mm]. Similar hatchways on first deck above freeboard deck, and all decks above are to have a coaming height of at least 300 [mm]. Consideration may be given for reduced coaming heights for vessels operating only in fair weather.

.2 Doors

a) Openings which from an exposed freeboard deck lead to a space below deck or a superstructure which is part of the buoyancy of the craft for stability are to have doors which cannot be opened inwards. The door is to be stiffened and constructed in such a way that the whole construction is of equal strength as the bulkhead otherwise. Devices for weathertight closing of such doors are to be gaskets and at least two securing devices in addition to the hinges.

b) Doors are to be capable of being opened and closed from both sides of the bulkhead.

c) The sill height of such doors on the freeboard deck is to be at least 380 [mm]. Similar doors on the first deck above freeboard deck are to have a sill height of at least 300 [mm]. Consideration may be given for reduced sill heights for vessels operating only in fair weather

.3 Windows

a) Windows are defined as being rectangular in shape generally having a radius at each corner (depending on the window size in accordance with recognised national or international standards) and also those associated with round or oval shapes where the area of openings exceeds 0.16 [m^2].

b) Windows are not to be fitted below the freeboard deck, in the first tier end bulkheads or sides of enclosed superstructures and in first tier deckhouses considered buoyant in the stability calculations or protecting openings leading below.

c) Construction details of windows, including glass thickness provided, are to be in accordance with acceptable National/International Standards.

.4 Scuttles

a) Side scuttles are defined as being round or oval in shape and where the area of openings does not exceed 0.16 [m^2].

b) Side scuttles together with their glasses, deadlights and storm covers, if fitted, are to be of approved design and substantial construction in accordance with, or equivalent to, recognized national or international standards. Non-metallic frames are not acceptable.

c) Side scuttles to the following spaces are to be fitted with efficient hinged inside deadlights:

- spaces below the freeboard deck
- first tier deckhouses and superstructures on the freeboard deck protecting openings leading below
- first tier deckhouses and superstructures on the freeboard deck considered buoyant in stability calculations.

The deadlights are to be capable of being effectively closed and secured watertight if fitted below the freeboard deck and weather tight if fitted above.

d) No side-scuttles are to be fitted in a position so that its sill is below a line drawn parallel to and one metre above the design waterline.

e) Side scuttles are to be of the non-opening type in crafts subject to damage stability regulations, if the calculations indicate that they would become immersed by any intermediate stage of flooding or the final equilibrium waterplane in any required damage case.

f) Side scuttles in the engine casings are to be provided with fireproof glass.

5.8.2.3 Freeing ports and hull penetrations

.1 Drainage of Decks

a) Freeing ports are to be distributed along the deck in such a way that the locations are concentrated to the areas where the collection of water on deck will be the greatest having regard to sheer, probable trim, etc.

b) On crafts where the bulwark, end bulkheads of closed superstructures, deckhouses, etc. constitute wells, the minimum effective freeing port area at each side of the craft is to be:

$A = 0.02 * V\ m^2$

Where V is the volume of well in cubic metres.

c) The volume of the well is calculated as deck area times bulwark height minus volume of hatchways, deckhouses, etc. up to the bulwark height.

d) Large freeing ports are to be fitted with bars, spaced with a maximum distance of 330 [mm] apart, the distance below the lowest bar is to be, however, not greater than 230 [mm].

.2 Scuppers and Discharges

a) Hull penetrations with the opening less than 300 [mm] above the deepest water line are to be provided with a non-return valve, a positive means of closure, operable from a readily accessible position and provided with an indicator showing whether the valve is open or closed.

Hull penetrations having openings between 300 [mm] and 500 [mm] above the deepest waterline are to be provided with two automatic non-return valves in series.

b) Valves on hull penetrations are to be suitable for use in Crafts and be installed in such a way that they are easily accessible under all conditions.

c) Pipe systems connected to a hull penetration are to be so arranged that water will not enter the craft if valves are open.

.3 Ventilators

a) Ventilation openings are to have a height of at least 600 [mm] above deck. Ventilators are to be fitted with permanently attached weather tight closing appliances

b) Ventilators for Machinery spaces which are required to remain open at sea for the safety and comfort of personnel and the continuous operation of the machinery would be specially considered. Such ventilation openings are not to be immersed at heel angle smaller than 50°.The height requirements for such ventilators are to be in accordance with applicable statutory regulations. However, in no case is the height to be less than 2.3 [m] above the waterline.

.4 Air Pipes

a) Air pipes are to have a height to the upper edge of the bulwark, however, at least 450 [mm] above the deck and are to be so located that they are protected against damages in connection with work on deck.

b) All air pipes are to be provided with an approved automatic type of closing appliance.

c) The air pipes to fuel tanks are to terminate outside the craft on open crafts and above deck on decked crafts.

5.9 Protection of Personnel

5.9.1 Non-Slip arrangements on deck

5.9.1.1 Open decks, the space around winches and windlasses and spaces where persons can be expected to walk or stay are to be provided with non-slip surfaces in order to get a safe foothold.

5.9.2 Rails and hand-holds

5.9.2.1 Open decks intended to be used by persons are to be equipped with a bulwark or fixed rail. The rail may be portable if necessary for the operation of the craft.

5.9.2.2 The height of bulwark and rail is to be at least 1000 [mm]. A rail must not have an opening greater than 230 [mm] below the lowest bar. The distance between the bars otherwise must not be more than 330 [mm].

5.9.2.3 All crafts are to be provided with the necessary hand holds or other arrangements for persons to keep a firm hold to protect themselves from being injured.

5.9.3 Non-slip arrangements in engine spaces

5.9.3.1 Surfaces where persons can walk are to be non-slip and must not absorb oil. Floorings are to be firmly mounted.

5.9.4 Safety at moving and hot items

5.9.4.1 If persons stay or move near machines and apparatus with hot or moving parts, these are to be arranged so that risk for injuries is avoided. Exhaust pipes with a surface temperature of more than 80°C are not to be easily accessible for touching. Rotating parts are to be shielded so that clothes or the like are not entrapped.

Section 6

Hull Appendages, Rudders and Steering Arrangement

6.1 Scope

6.1.1 This Section applies, in general, to Crafts equipped with inboard engines. Requirements are given for stem, stern frame, shaft brackets, rudders and steering gears.

6.1.2 Further, the requirements include hull foundations of above items and appended propulsion units such as water-jets.

6.1.3 The details of any other appendages, if fitted, will be specially considered.

6.1.4 The requirements for steering arrangements of Crafts powered by outboard engines are indicated in Section 4 of these Notes.

6.2 Materials

6.2.1 All plates and sections, castings and forgings used in the constructions are to be tested and approved in accordance with the requirements of Section 3 of this Classification Note.

6.2.2 Use of other materials not covered above will be specially considered.

6.3 Bar Keel, Stem and Stern Frames

6.3.1 General

6.3.1.1 Bar keel, stem and stern frames are to be designed such that they are effectively integrated into the Craft's structure.

6.3.1.2 It is recommended that the after body of the Craft be so shaped as to ensure adequate flow of water to the propeller so as to prevent uneven formation of eddies, as far as possible.

6.3.1.3 The scantlings are indicated based on steel as per Part 3 of the '*Rules and Regulations for the Construction and Classification of Steel Ships'*. Aluminium stern frames and stems will be specially considered based on the proposed material grades. For vessels of composite construction, scantlings are to be in accordance with Chapter 7 of the '*Rules and Regulations for Construction and Classification of High Speed crafts and Light Crafts'*.

6.3.2 Bar keel and stem

6.3.2.1 Details and scantlings of bar keel and stem are to be as per Section 2 and Section 3 respectively of Part 3, Chapter 6 of the '*Rules and Regulations for the Construction and Classification of Steel Ships*'.

6.3.2.2 The thickness of the plate stem is not to be lower than the rule side shell plate thickness in way. However, the thickness 't' of the plate stem below the summer load water line need not be more than:

$$t = (0.1L + 3)\, k^{0.5}$$

6.3.2.3 The thickness of the plate stem may be gradually reduced to that of the side shell at the stem head.

6.3.2.4 Plate stems are to be adequately supported by horizontal diaphragms. When the stem plate radius is large, a centerline stiffener or web is to be provided.

6.3.3 Stern frames

6.3.3.1 For a moderately cavitating propeller the minimum values of propeller-hull clearances may be as per Part 3, Chapter 6, Section 4 of the '*Rules and Regulations for the Construction and Classification of Steel Ships'*. For propellers that are heavily loaded, the propeller-hull clearances will be specially considered individually based on detailed analysis.

6.3.3.2 The scantlings and details of the stern frames and rudder posts are to be as per Part 3, Chapter 6, Section 4 of the *Rules and Regulations for the Construction and Classification of Steel Ships'*.

6.3.4 Sole piece

6.3.4.1 The details and scantlings of sole-pieces if fitted are to be as per Part 3, Chapter 6, Section 4 of the *Rules and Regulations for the Construction and Classification of Steel Ships'*.

6.3.5 Shaft Brackets

6.3.5.1 Details of shaft bracket struts and reinforcements in way are to be as per Part 3, Chapter 6, and Section 4 of the *Rules and Regulations for the Construction and Classification of Steel Ships'*.

6.3.5.2 For the shaft and the shaft bracket boss made of the same material the length and thickness [mm] of the shaft bracket boss are to be not less than (4dp) and (dp/4), respectively, where dp is the tail shaft diameter [mm]. For shaft and shaft bracket boss made of different materials dp [mm] is to be based on bracket boss material. For calculating dp, Chapter 12, Section 2 of the *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts* may be referred.

6.4 Rudder and steering arrangements

6.4.1 General

6.4.1.1 The design of rudder and steering arrangements is to be in accordance with Chapter 8 of the 'Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts'.

6.4.1.2 For vessels of less than 15 [m] in length, a means of auxiliary steering is not required if the vessel is fitted with a main steering arrangement that is

(a) a rudder and hand tiller;
(b)outboard engines or stern-drive;
(c) the craft has two rudders, each with separate steering system, and can be steered even if either on of the systems is out of order;
(d) the craft has at least two propulsion units, enabling the craft to be steered even if the main steering system is out of order; or
(e) the craft can be steered in some other way, for example with a both thruster.

In case the steering system is electrical, emergency steering is always required.

The emergency steering is to be assessed in connection with sea trials.

6.5 Rudder and Rudder Stocks

6.5.1 The details and scantlings of rudder blade, rudder stock, pintles and rudder couplings are to be as per Part 3, Chapter 14 of the '*Rules and Regulations for the Construction and Classification of Steel Ships*'.

Section 7

Anchoring and Mooring Equipment

7.1 General

7.1.1 The character of classification 'L' would be assigned to a Small Craft, whose anchoring, mooring and towing equipment is provided in accordance with the requirements of this Section.

7.1.2 In general, anchoring and mooring equipment for vessels are to be provided in accordance with *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts*. However, Vehicle ferries are to be fitted with equipment in accordance with '*Rules and Regulations for Construction and Classification of Steel Ships'*.

7.1.3 Attention is also drawn to relevant requirements of the flag Administration/ statutory authorities, where the ship is to be registered.

Section 8

Fire Safety

8.1 Application

8.1.1 The requirements in this Section apply to all Small Crafts subject to any requirements in Section 13, as applicable to specific type of Crafts. Alternatively fire safety measures adopted in accordance with ISO 9094, as may be amended, may be applied.

8.1.2 Sub-section 8.10 addresses fire extinguishing requirements for Crafts with outboard engines.

8.1.3 Fuel with a flashpoint below 43^{o}C is not to be used, except for outboard engines.

8.1.4 In addition, due regard is to be given to any additional statutory requirements/ regulations of the Administration.

8.2 General Requirements

8.2.1 The requirements in this Section are based on the following principles:

a) In the event of fire in any one compartment on board, maintenance of the main functions and safety systems of the Craft, including propulsion and control, fire detection, alarms and extinguishing capability of unaffected spaces.

b) Sub-division of the Craft by fire resisting boundaries;

c) Restricted use of combustible materials and materials generating smoke and toxic gases in a fire;

d) Detection, containment and extinction of any fire in the space of origin;

e) Protection of means of escape and access for firefighting; and

f) Immediate availability of fire-extinguishing appliances.

8.3 Definitions

8.3.1 ***'A' class divisions*** A-60, A-30, A-15 and A-0 class divisions have the same meaning as in Chapter II-2 of SOLAS.

8.3.2 ***Accommodation spaces*** means the spaces that are used for public spaces, corridors, lavatories, cabins, offices, games or hobby rooms, or pantries that do not contain cooking appliances, and similar spaces.

8.3.3 ***'B' class divisions*** B-15 and B-0 class divisions have the same meaning as in Chapter II-2 of SOLAS.

8.3.4 ***"F" class divisions*** means divisions that are formed by bulkheads, decks, ceilings or linings and that meet the fire-test requirements for "F" class divisions set out in Annex 1 to the FTP Code.

8.3.5 ***Machinery spaces*** means spaces containing propulsion machinery, boilers, oil fuel units, internal combustion engines, generators and major electrical machinery, or ventilation and air conditioning machinery, and similar spaces, as well as trunks to such spaces.

8.3.6 ***Non-combustible***, in respect of a material, means

a) that the material does not burn or give off inflammable vapours in sufficient quantity for self-ignition when heated to 750°C;

(b) that the material meets the non- combustibility test requirements set out in Annex 1 to the FTP Code.

8.3.7 ***Service spaces*** means the spaces that are used for galleys, pantries that contain cooking appliances, lockers, storerooms, or workshops other than those forming part of the machinery spaces, and similar spaces, as well as trunks to such spaces.

8.3.8 ***Fire Test Procedures Code***

Fire Test Procedures Code (FTP Code) means the "International Code for Application of Fire Test Procedures", as adopted by Resolution MSC.307 (88), as may be amended.

8.4 Approval of fire protection materials and equipment

8.4.1 The following materials, equipment, systems or products in general used for fire protection are to be of approved type.

a) Fire-resisting and fire-retarding divisions (bulkheads or decks) and associated doors

b) Materials with low flame spread characteristics when they are required to have such characteristics

c) Non-combustible materials

d) Non-readily igniting materials for primary deck coverings

e) Automatic sprinkler systems

f) Fixed pressure water-spraying fire- extinguishing systems for machinery spaces,

g) Fixed fire detection and fire alarm systems

h) Fire dampers

i) Fixed gas fire extinguishing systems

IRS may request approval for other materials, equipment, systems or products required by the applicable provisions for ships or installations of special types.

8.5 Fire Prevention

8.5.1 Application

8.5.1.1 This sub-section applies to all Small Crafts unless specified otherwise in individual sub-sections or paragraphs.

8.5.2 Probability of ignition

8.5.2.1 Machinery Spaces

.1 Machinery spaces and their casings are to be separated from accommodation spaces and store rooms containing combustible materials and liquids. Their enclosure is not to be permeable to oil fuel and oil fuel vapours.

.2 Machinery spaces are to be ventilated under all conditions to prevent the build-up of flammable and/or toxic gases and vapours.

8.5.2.2 Other ignition sources

.1 Arrangement of Galleys

Deep fat frying equipment or open flame appliances are to be fitted only in galleys.

.2 Miscellaneous items in accommodation spaces.

Curtains or other suspended textiles must not be installed within 600 [mm] of any heating appliance or any similar appliance.

8.5.3 Fire growth potential

8.5.3.1 Material of hull, superstructures, structural bulkheads, decks and deckhouses

a) The hull, superstructure, structural bulkheads and decks other than fire divisions, deckhouses and pillars are to be constructed of approved non-combustible materials having adequate structural properties. Use of combustible materials will be specially considered by IRS, where the arrangements provided ensure an equivalent level of Safety, as envisaged by these Notes.

8.5.3.2 Machinery Space boundaries

.1 Steel

a) Crafts that have the machinery space boundaries constructed of steel (rated A- 0 in accordance with the FTP code) require no additional fire protection. However, surfaces on the opposite side of the machinery space are to be coated with finishes which have a Class 1 surface spread of flame rating when tested in accordance with FTP Code.

.2 Aluminium and composite structures

a) The exposed surfaces within a machinery space, including supporting structures and engine seats, must be coated with a final layer of fire retardant coating or fire retardant resin.

8.5.3.3 Fire divisions

.1 Fire divisions, where required, are to be constructed in accordance with the following requirements:

a) Fire divisions are to be constructed of steel.

b) Use of materials other than steel may be permitted if it can be demonstrated by means of a type test that the material by itself, or due to non-combustible insulation provided, has fire resistance properties equivalent to the properties of the A-class or B-class fire divisions, as required by this Classification Note. Insulation provided in such cases is to be such that the temperature of the structural core does not rise above the point at which the structure would begin to lose its strength at any time during the exposure to the standard fire test (60 minutes for A-class equivalence, 30 minutes for B-class equivalence). The following is applicable to such materials.

i) *Aluminium alloy structures*

The insulation is to be such that the temperature of the structural core does not rise more than 200°C above the ambient temperature at any time during the applicable fire exposure.

ii) *Composite structures*

The insulation is to be such that the temperature of the laminate does not rise more than the minimum temperature of deflection under load of the resin at any time during the applicable fire exposure. The temperature of deflection under load is to be determined in accordance with a recognized international standard.

8.5.3.4 A fire-resisting bulkhead may be considered to be equivalent to A class without testing, if its composition is as described in Annex 2 of the FTP Code.

8.5.3.5 Insulation materials

.1 Except in cargo spaces or refrigerated compartments of service spaces, insulating materials are to be non-combustible.

.2 Vapour barriers and adhesives used in conjunction with insulation, need not be of non-combustible materials, but they are to be kept to the minimum quantity practicable and their exposed surfaces are to have low flame-spread characteristics (in accordance with the FTP code).

,3 Insulation materials are to be free of asbestos.

8.5.3.6 Primary deck coverings

.1 Primary deck coverings, if applied within accommodation and service spaces and control stations are to be of approved material which will not readily ignite, this being determined in accordance with the FTP Code.

8.5.3.7 Surface materials and adhesives

.1 Surface materials and adhesives used in conjunction with fire insulation are to have low flame spread characteristics (in accordance with FTP Code).

8.6 Suppression of Fire: Fire Detection and Alarms and Communications

8.6.1 Automatic Fire Detection and Alarm Systems

8.6.1.1 General

.1 An approved automatic fire detection and alarm system is to be installed where the total installed power (propulsion and electrical generation) is greater than 750 [kW]. However automatic fire detection system need not be provided for machinery spaces which are continuously manned.

.2 The detection system is to initiate suitable audible and visual alarms distinct in both respects from the alarms of any other system not indicating fire. Such alarms are to be replicated at the navigation bridge/control position for the information of the master or a responsible member of the crew.

8.6.1.2 Design and installation

.1 The system is to be designed such that

(a) a loss of power or a fault condition initiates a visual and audible fault signal at the control panel that is distinct from a fire signal;

(b) there are at least two sources of power supply for the system, one of which is the reserve source (or the emergency source, if provided) of power;

(c) if the Craft has a public address system, the audio signal to indicate the presence of a fire is automatically interrupted during communication from the system;

(d) the control panel is located at the main control position ;

8.7 Suppression of Fire: Containment

8.7.1 Insulation, Fire Retardant Coatings and Fire Retardant Resins

.1 The exposed surface of insulating materials fitted on the internal boundaries of machinery spaces is to be impervious to oil and oil vapours.

.2 All thermal insulation and acoustic insulation, including pipe and ventilation lagging, are to be non-combustible.

.3 Polyurethane foam or other organic foam insulation is not to be used unless specifically authorized by IRS for use in areas with very low fire risk

.4 The insulation, fire retardant coating or fire retardant resin used on a deck or bulkhead is to be installed on the side on which the fire risk is higher, unless it is not possible to do so Such insulation is to be carried past the penetration, intersection or terminal point of the deck or bulkhead for a distance of at least 380 [mm];

8.7.2 Galleys

8.7.2.1 The boundaries of a galley that contains cooking appliances having a heating surface that can exceed 120 degree Celsius is to consist of “F” class divisions or “B-15” class divisions. The fire protection is to cover the entire boundaries of the galleys except that structures in contact with seawater (ship sides 300 [mm] below lightweight waterline) can be left un-insulated.

8.7.3 Machinery Spaces and Lockers for Flammable or Combustible Materials

8.7.3.1 Every locker for storing flammable or combustible liquids

(a) is to be of a construction that retards the propagation of flame on the inside of the locker by means of fire retardant coating of the intumescent type;

(b) is not to permit the escape of gas within an enclosed space; and

(c) is to be vented outside independently of the ventilation from any other space.]

8.7.4 Machinery Spaces

8.7.4.1 Surfaces on the opposite side of the machinery spaces are to be coated with fire-retardant coating or fire-retardant resin.

8.7.4.2 Steel Crafts

.1 Crafts that have the machinery space boundaries constructed of steel (rated A- 0 in accordance with the FTP code) require no additional fire protection.

8.7.4.3 Aluminium Crafts

.1 Every deck or bulkhead that separates a machinery space from an accommodation space, galley, wheelhouse, space containing fixed gas fire-extinguishing equipment, or compartment to store gas containers is to consist of “B-15” class divisions.

8.7.4.4 Composite Crafts

.1 The exposed surfaces within a machinery space, including supporting structures and engine seats, are to be coated with a final layer of fire retardant coating or fire retardant resin.

.2 Every deck or bulkhead that separates a machinery space from an accommodation space, galley, wheelhouse, space containing a fixed gas fire-extinguishing system, or compartment to store gas containers is to consist of boundaries which provide a performance equivalent to “F” Class divisions or “B-15” Class divisions. A sample specimen of such construction is to be type tested at an approved laboratory to ascertain compliance with the criteria stipulated in 8.5.3.3.1 (b).

8.7.4.5 Engine space boundaries are to be arranged to contain the fire-extinguishing medium, i.e. the engine space is to be capable of being closed down in order that the fire extinguishing medium cannot escape. Such arrangements are to cater for the fire flaps provided. Fans located within or feeding a machinery space are to be capable of being stopped from outside the space in the event of a fire. Systems comprising automatic stopping of fans in the event of a fire are to be supplemented with a manual override.

8.7.4.6 Where it is not practical to have a machinery space, the engine is to be enclosed in a box. The box is to perform the same function as the machinery space boundaries in Cl. 8.7.4.4 above.

8.7.5 Openings in Boundaries, Decks, Bulkheads

.1 Passage of electrical cables, pipes, trunks, ducts or other transit devices through the divisions is not to impair its fire integrity.

.2 Means of closure of openings in boundaries are to have fire-resistant properties equivalent to those of the class divisions of the structures in which they are fitted.

8.7.6 Ventilation Systems

.1 In general, the construction and arrangements of ventilation ducts passing through fire boundaries, are to be in accordance with national/international standards, acceptable to the Administration.

.2 A ventilation duct that serves an accommodation space, service space or wheelhouse is not to pass through a machinery space unless the duct is gastight, made of steel or aluminium alloy and appropriately insulated.

.3 Every exhaust ventilation duct from a galley range hood is to have a grease trap and be made of steel.

.4 Means are to be provided for closing the main inlets and outlets of every ventilation system from a position outside the space served by the system. The means of closing are to be positioned in a readily accessible space. The means of closing are to clearly indicate their purpose, as well as indicate whether the inlets and outlets are open or closed.

.5 Means of control are to be provided for stopping the ventilation fans that serve an accommodation space, service space, cargo space, control station or machinery space. The means are to be in a readily accessible position outside the space or the station but, in the case of a ventilation fan serving a machinery space, must be located as required by 8.7.6.4.

.6 A ventilation duct that serves a machinery space or galley is not to pass through an accommodation space, service space or wheelhouse.

.7 On a composite Craft, a ventilation duct that serves a machinery space or a galley space is to be suitably insulated to prevent transmission of heat into adjacent composite structures.

8.7.7 Fire fighting

8.7.7.1 Portable Fire-fighting Equipment

.1 All spaces containing potential fire hazards are to be provided with a readily accessible portable fire extinguisher suitable for use against the type of fire likely to originate in that space.

.2 A Craft of not more than 15 [m] in length is to have one 2.5 kg or equivalent portable fire extinguisher each suitable for oil fire for every machinery space, as well as for spaces fitted with other fuel-burning appliances. Machinery spaces with total installed engine power greater than 750[kW] are to be provided with two portable fire extinguishers of 4.5 kg or equivalent suitable for oil fire.

.3 A Craft of more than 15 [m] in length is to have one 4.5 kg or equivalent portable fire extinguisher each
a) suitable for oil fire for every space fitted with a fuel-burning, cooking, heating or refrigerating appliance.

b) each accommodation space of less than 70 [sq.m] area. For accommodation spaces of more than 70 [sq.m] area, each additional 70 [sq.m] of area (or a fraction thereof) will require an additional fire portable fire extinguisher.

c) suitable for oil fire for each machinery space with engine power less than 750 kW. One additional portable fire extinguisher for every additional 750 kW (or a fraction thereof) of engine power.

d) for every flammable material locker, stowed close to the locker.

.4 One of the portable fire extinguishers that is required for a space is to be stored near the entrance to the space. In individual spaces requiring more than one portable fire extinguisher, they are to be placed in readily accessible locations close to the possible sources of ignition.

.5 A portable fire extinguisher that contains a gas extinguishing agent is not to be used in an accommodation space or stored in that space.

.6 A portable fire extinguisher that is required by this sub section is to be certified for marine use.

.7 Crafts are to be provided with a fire axe and a fire bucket. Crafts of more than 12 [m] in length are to have one additional fire bucket.

8.7.7.2 Water Fire-fighting Systems

8.7.7.2.1 Fire Pumps

.1 Every craft is to be provided with fixed fire pumps as follows.

a) For Crafts not more than 15 [m] in length, one power driven pump with water capacity 4 m^3/ hr .

c) For Crafts of more than 15 [m] in length, one power driven fire pump with water capacity 8 m^3/hr and an additional manually operated pump.

.2 For use with each power driven fire pump, a fire main of the following minimum diameter is to be provided.

a) 25 [mm] for Crafts of not more than 15 [m] in length.

b) 38 [mm] for Crafts of more than 15 [m] in length.

.3 A power-driven fire pump is not to be powered by main engine unless the engine can be operated independently of the propeller shafting.

.4 Relief valves are to be provided for every fire pump that is capable of developing a pressure exceeding the design pressure of the fire piping, the fire hydrants or the fire hoses. The valves are to be placed and adjusted to prevent excessive pressure in any part of the fire-fighting system.

.5 The power driven fire pump is to be located outside the machinery space and provided with a source of power outside the space.

.6 Every fire pump is to be

(a) self-priming; and

(b) capable of delivering a jet of water of at least 6 [m] from the nozzle.

.7 Every fire pump is to be made of non-combustible materials.

8.7.7.2.2 Fire Piping and Fire Hydrants

.1 The number and position of fire hydrants on a Craft are to be such that, when they are fitted with hoses of not more than 18 [m] in length, the jet of water required by 8.7.7.2.1.6 (b) can reach any part of the Craft.

.2 Every fire hydrant is to be equipped with a hose and with a dual-purpose nozzle that

(a) has an internal diameter of at least 12 [mm];
(b) is capable of spray action and jet action; and
(c) has a means to shut it off.

.3 The branch fire piping and fire hydrants on a Craft is to be of a standard size and have a diameter that is not less than the minimum diameter required by 8.7.7.2.1.2 for fire main on the Craft.

.4 It is recommended that the fire piping be installed with a gradient that allows drainage under all normal operating conditions. Drain valves are to be provided where necessary for effective drainage.

.5 The fire piping and the valves and fittings of the water firefighting system are to be made of galvanized steel or another material of equivalent mechanical strength and equivalent corrosion and fire-resistance.

.6 Every fire hydrant is to be fitted with a valve so that any fire hose attached to the hydrant can be detached while the fire pumps are in operation.

8.7.7.3 Fixed Gas Fire-extinguishing Systems

8.7.7.3.1 General

.1 Machinery spaces with total installed power of more than 1500 [kW] is to be served by

(a) a fixed gas fire-extinguishing system; or
(b) a fixed aerosol fire-extinguishing system.

.2 The fixed fire-extinguishing system is to be of a type which is approved by IRS.,

.3 When a fixed fire-extinguishing system is activated, a complete charge is to be released simultaneously.

.4 On a composite Craft with total installed power of more than 375kW:

(a) a fixed gas or aerosol fire-extinguishing system is to be fitted having two independent complete charges of gas or aerosol. The quantity of gas or aerosol for each charge is to meet the requirements of (b) or (c), as the case may be, with respect to the quantity of gas or aerosol for the system.
(b) The quantity of gas in a fixed gas fire-extinguishing system that uses a gas other than carbon dioxide and that serves a machinery space is to be sufficient to protect the space. The required quantity of gas is to be calculated using the minimum expected ambient temperature in the space, the minimum design concentration of the gas and the net volume of the space.
(c) The quantity of aerosol in a fixed aerosol fire-extinguishing system that serves a machinery space is to be sufficient to protect the space. The required quantity of aerosol is to be calculated using the minimum expected ambient temperature in the space, the design application density of the aerosol, the net volume of the space and, if the system uses a condensed aerosol, the efficiency of the system's generator.

.5 For crafts with total installed power not more than 375 kW a machinery space is to be provided with:

(a) in addition to the portable fire extinguishers required by 8.7.7.1, the space is provided with a portable gas fire extinguisher that

(i) does not weigh more than 23 [kg], and

(ii) meets the requirements of 8.7.7..3.1.4 (a) or equivalent requirements of 8.7.7.3.1.4(b), as the case may be;

(b) the space is provided with a readily accessible port that permits the additional portable gas fire extinguisher to be discharged directly into the space without the need to open the primary access to the space, and that is

(i) labelled to clearly indicate its firefighting purpose and how to use it,

(ii) capable of accommodating the discharge nozzle of the extinguisher, and

(iii) arranged so that the extinguisher may be discharged in accordance with the manufacturer's instructions;
and

(c) the additional portable gas fire extinguisher is located outside the space and close to the port.

8.7.7.3.2 Components

.1 The piping, valves and fittings of a fixed fire-extinguishing system are to be made of galvanized steel or another material of equivalent corrosion and fire-resistance, and are to be securely connected to one another and securely supported.

.2 The relief valves of the fixed fire-extinguishing system are to be safely vented.

8.7.7.3.3 Controls and Alarms

.1 Every fixed gas fire-extinguishing system that serves a machinery space is to have a means of control that can be operated manually from a position that is outside the space and that is not likely to be cut off by a fire in the space;

At least two steps are to be required to activate the system.

.2 If the machinery space is normally occupied, the fixed fire-extinguishing system is not to have an automatic means to release the extinguishing agent.

.3 the fixed fire-extinguishing system is to have a distinct audible alarm to warn of any impending release of the extinguishing agent. This alarm should be set off automatically when the system is activated and stay on for at least 20 seconds.

.4 The openings that can admit air to, or allow the extinguishing agent to escape from a machinery space are to be capable of being closed from outside the space.

8.7.7.3.4 Containers

.1 Means are to be provided to indicate whether the container has been discharged.

.2 Means are to be provided for the crew to safely check the quantity of extinguishing agent and the pressure in the container.

.3 If the fixed fire-extinguishing system serves a machinery space, the container is to be kept in a location that is

(a) readily accessible from outside the machinery space and, if feasible, from an open deck;
(b) safely vented to outside the Craft; and
(c) outside the accommodation spaces and the machinery space.

.4 Notwithstanding the requirement in 8.7.7.3.4.3(c), unless the container contains carbon dioxide, the container may be kept in the machinery space and is not normally occupied.

8.7.7.4 Fixed Carbon Dioxide Fire-extinguishing Systems

.1 The quantity of carbon dioxide in a fixed carbon dioxide fire-extinguishing system that serves a machinery space is to be sufficient to achieve, at a specific volume of 0.56 m^3 per kilogram, a volume of free gas equal to

(a) 60% of the gross volume of the space, if that gross volume is not more than 14 [m^3];

(b) 40% of the gross volume of the space, if that gross volume is more than 136 [m^3]; and

(c) the percentage obtained by linear interpolation between the percentages set out in paragraphs (a) and (b), if the gross volume of the space is more than 14 [m^3] but not more than 136 [m^3].

.2 The fixed fire-extinguishing system must release a sufficient quantity of carbon dioxide to allow 85% of the quantity required by subsection 8.7.7.4.1 to be reached in 120 seconds or less in the machinery space.

8.8 Escape

8.8.1 Number of means of escape

8.8.1.1 Unless expressly provided otherwise in this section, at least two widely separated and ready means of escape are to be provided from all spaces or groups of spaces. A single escape route may be accepted for spaces where the maximum travel distance to the door from any point within that space is less than 5 [m], and the escape route does not pass through the cooking area nor the engine space.

8.8.2 Accessibility and arrangement of escape routes

8.8.2.1 Escape routes are to be maintained in a safe condition, clear of obstacles. Any furniture fitted along the escape routes is to be secured in place to prevent shifting.

8.8.2.2 Any hatch that is required for egress is to have a means of being operated from both sides. All hinged hatches are to have a means or method to support the hatch in an open position.

8.8.2.3 Every ladder or stairway is to be constructed of non-combustible material, and is to be equipped with anti-skid rungs or stairs.

8.8.2.4 On a Craft carrying passengers or industrial personnel,

(a) vertical ladders and deck scuttles are not to be provided except

(i) in areas occupied only by crew members, and

(ii) in areas where it is not feasible to install a stairway; and

(b) portable ladders are not to be provided except in areas occupied only by crew members.

8.8.2.5 On a Craft carrying passengers or industrial personnel, the stairways and inclined ladders are to be arranged so that

(a) handrails are fitted on both sides of every flight of stairs, at a suitable height

(b) at the top and bottom of every flight of stairs there is a clear landing of sufficient area.

(c) the clear width of every door opening to a stairway or inclined ladder is at least equal to the width of the stair closest to the opening;

(d) every stairway or inclined ladder has a minimum width of 760 mm.; and

(e) the maximum angle of inclination from the horizontal of every stairway or inclined ladder is recommended to be 45°, but is in no case to be greater than 55°.

8.9 Display of fire safety information

8.9.1 Requirements in this sub-section are applicable to Small Crafts of 15 [m] in length and over.

8.9.2 Plans and information

8.9.2.1 The following information is to be displayed at an appropriate location, for the guidance of the Crafts operators/officers:

a) a plan showing the arrangement and location of fire detection and fire-alarm systems, fixed fire-fighting system fire-extinguishing appliances;

b) means of access to different compartments, decks, etc.

c) position of the fireman's outfits;

d) ventilation system, including particulars of the fan control positions, the position of dampers and identification numbers of the ventilating fans serving each section; and

e) location and arrangement of the emergency stop for the oil fuel unit pumps and for closing the valves on the pipes from oil fuel tanks.

8.9.2.2 Plans and booklets are to be kept up to date; any alterations thereto are to be recorded as soon as practicable.

8.10 Fire Safety Requirements for Crafts with Outboard Engines

8.10.1. General

8.10.1 In Crafts with outboard engines, the general fire safety principles and requirements indicated in sub-sections 8.1 to 8.9 are to be complied with, giving due consideration to the requirements which are not applicable due to the absence of a dedicated enclosed propulsion machinery space.

8.10.2 Fire-fighting appliances for outboard engines

8.10.2.1 On crafts fitted with outboard engines, the fire-fighting arrangements for engines are to be related to the size and engine power of the outboard engine and are to at least meet the minimum requirements stipulated in Table 8.10.1, for each outboard engine fitted on the craft.

Table 8.10.1 Minimum fire-fighting appliances for Crafts with Outboard Engines

Engine Power [kW]	**Required Fire Fighting Appliance**
P < 25	No extinguisher required
25 < P ≤ 220	1 portable extinguisher 34 B
P > 220	Portable extinguisher(s) total B capacity = 0.3 P

NOTE
a) In the usage '34 B', B indicates the class of the fire, and 34 indicates its size. For eg. 34 in case of 34 B indicates the size of fire produced by 34 l of burning fuel.
b) *P* is the power rating in [kW] of the engine or engines in the space combined.
c) Example: For 1 × 400 [kW] outboard engine the required minimum rating is 400 × 0.3 = 120B which corresponds to four 34B extinguishers.

Section 9

Piping and Ventilation Systems

9.1 Application

9.1.1 In general, all small crafts are to comply with the requirements of Chapter 11 of the *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts.*

9.2 Special requirements for fuel oil systems on crafts fitted with petrol fuelled outboard engines

9.2.1 Fuel lines

9.2.1.1 When the outboard engine fuel hose is designed to be disconnected, all permanent fuel lines in outboard motor vessels are to terminate aft of the stern or are to be provided with means so that any leakage will not enter the vessel.

9.2.1.2 Quick disconnect fittings used between fuel distribution lines and outboard motors are to automatically shut off fuel flow when disconnected.

9.2.2 Metallic Lines

9.2.2.1 In case of aluminium hull, metallic fuel lines are to be galvanically protected.

9.2.3 Fittings

9.2.3.1 A petrol fuel system is not to have a fitting for draining fuel other than a plug that is used to service the fuel filter or strainer.

9.2.4 Electrical Grounding

9.2.4.1 Each metal or metallic plated component of the fuel fill system and fuel tank that is in contact with the fuel must be grounded.

9.2.5 Fuel tanks

9.2.5.1 A petrol fuel tank is not to be made integral with the hull. Portable petrol tanks are to be designed as per an acceptable national/international standard.

9.2.5.2 In general, all electrical equipment installed in the vicinity of petrol tanks, its related piping, or inside enclosed spaces used for storage of petrol tanks, are to be type approved for use in a potentially explosive atmosphere.

9.3 Bilge System

9.3.1 Application

9.3.1.1 The requirements in this sub-section are applicable only to small crafts less than 15 [m] in length.

The bilge system requirements of crafts with length greater than 15 [m] are to be provided in accordance with *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts*, as applicable to classification notation '**HSLC**' and '**LC**'.

9.3.2 Engine Spaces

9.3.2.1 The bottom space in engine compartments is to be capable of being drained with the aid of a fixed bilge pumping system to a bilge water tank. The system is not to have a connection to the bilge system otherwise or a connection for discharge into the sea.

9.3.2.2 The bilge water tank is to be a permanently installed tank.

9.3.2.3 A permanently installed bilge water tank is to have air pipes to the open deck. The contents of the tank are to be capable of being discharged to a reception facility ashore via a connection on deck.

9.3.3 Main bilge system

9.3.3.1 The main bilge system is to be capable of pumping from and draining all watertight compartments. Watertight compartments of limited size may be drained to an adjacent space. The drainage hole in such cases, is to be tightened with a firmly fitted plug.

9.3.3.2 A fixed motor driven or electrically engine driven bilge pump is to be installed which via a fixed piping system with a non-return-valve mounted to each suction pipeline is capable of draining all watertight compartments.

Alternatively each compartment can be drained with a separate pump.

9.3.3.3 Each pump is to have at least the following capacity:

Loa (m)	Litres per minute
5.5 – 8.00	60
8.00-9.99	80
10.00-11.99	120
12.00- 15.00	180

9.3.3.4 The arrangement of the bilge pumping system is to be such that water cannot flow from one watertight compartment to another via the bilge pumping system.

9.4 Ventilation Systems

9.4.1 Ventilation of Battery rooms and battery Storage spaces

9.4.1.1 Spaces containing batteries are to be provided with ventilation for the removal of hydrogen gas released by the battery.

9.4.1.2 Ventilation of spaces used for storage of batteries is to be in accordance with Chapter 13, Section 11 of the *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts*.

9.5 Ventilation of Fire-extinguishing Stations

9.5.1 Fire-extinguishing stations of foam and carbon dioxide systems are to be provided with effective ventilation.

9.5.2 Fire-extinguishing stations of carbon dioxide systems are to be fitted with natural exhaust ventilation from the lower parts of the compartment and with supply ventilation in the upper parts of the compartment.

9.5.3 Where the fire-extinguishing station of carbon dioxide system is situated below the open deck, exhaust ventilation system is to be mechanical and is to ensure at least 6 air changes per hour and the fans are to be started automatically as the door of the station is opened. During operation of the fan, a light signal, visible after the door is opened, is to be provided.

Section 10

Machinery Installations

10.1 Application

10.1.1 In general, machinery installations onboard small crafts are to comply with the requirements in Chapter 12 of *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts*, as applicable to class notation "**HSLC**" or "**LC**".

10.1.2 Other requirements to be complied with for small crafts of length less than 15 [m] are given in this Section.

10.2 General

10.2.1 Where elastic mounting of a propulsion engine is used, the propeller shaft is to be longer than 40 times the diameter of the shaft when an elastic shaft coupling is not arranged.

10.3 Exhaust systems

10.3.1 Material in the seawater cooling system for exhaust is to be corrosion resistant. The parts of the system are not to be combined in such a way that galvanic corrosion will arise.

10.3.2 In the case of a multiple engine installation each engine is to have its separate exhaust system.

10.3.3 Exhaust pipes are to be mounted so that mechanical wear is avoided. Moulding in of an exhaust line is not to be undertaken. Drainage is not to be carried out in a part of the line which passes through enclosed accommodation spaces.

10.4 Controls

10.4.1 The propulsion engine is to be capable of easy manoeuvring from the navigation compartment and the control devices for inboard engines are to be arranged so that the following information is available at the navigation compartment :

- the revolution of the propulsion machinery;
- lubrication oil pressure of the propulsion engine;
- lubrication oil pressure of the gear and hydraulic pressure, if applicable;
- cooling water temperature;
- cooling water failure in the exhaust system.

The control instruments are to be marked with abnormal operational conditions and fitted with adjustable lighting. The functions listed above except the revolution of the propulsion machinery are to be fitted with alarms.

10.5 Installation of Outboard Motors

10.5.1 A watertight and self-draining motor well is to be designed into the transom of all outboard engine craft.

10.5.2 Outboard motors with a power greater than 15 [kW] are to be fastened to the stern using through bolts with nuts.

10.5.3 The strength and rigidity of the transom should be related to the thrust imposed by the propeller and its resultant moment imposed upon the transom under dynamic loads. For craft built in composite materials and except for engines of very low power, the transom is to be, as a general rule, of sandwich construction having a core of waterproof plywood or of equivalent strength. The internal skin of the sandwich must be of thickness not less than that of the craft's side skin, and the outer skin not less than that of the bottom. The internal skin is to be carried well forward along the sides and bottom of the craft and gradually tapered in thickness towards its edges. Protective plates should be fitted in way of engine fixing clamps.

Section 11

Electrical Installations

11.1 General

11.1.1 Small Crafts with electrical systems having an operating voltage lower than 50 [V] are to comply with acceptable National/International standards (such as ISO 10133- Small Craft - Electrical Systems - Extra Low- Voltage D.C. Installations and ISO 13297 - Small Craft-Electrical Systems-Alternating Current Installations), which provide a level of safety equivalent with the requirements of these Rules, for the operational profile of the Craft.

11.1.2 Small crafts with electrical systems having an operating voltage higher than 50 [V] are to comply with the requirements in Chapter 13, Section 18 of *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts*, as applicable to **HSLC** and **LC** crafts.

11.1.3 Crafts which carry more than 12 special personnel are to comply with the relevant requirements of the "*Code of Safety for Special Purpose Ships*", Resolution MSC 266(84), as amended, taking due cognizance of any exemptions that the Administration may permit, for a craft with a restricted area of operation.

For Crew Boats carrying more than 12 industrial personnel, the requirements of the following Codes/recommendations are to be followed, taking due cognizance of any exemptions that the Administration may permit, for a craft with a restricted area of operation.

a) the "*Interim Recommendations on the safe carriage of more than 12 Industrial Personnel onboard vessels engaged on International Voyages*" Resolution MSC 418(97), as amended.

11.1.4 Acceptance of alternative arrangements will be given special consideration.

Section 12

Remote Control and Safety Systems

12.1 Scope

12.1.1 Small Crafts with electrical systems having an operating voltage lower than 50 [V] are to comply with acceptable National/International standards (such as ISO 25197 - Small Craft -- Electrical/Electronic Control Systems for Steering, Shift and Throttle), which provide a level of safety equivalent with the requirements of these Rules, for the operational profile of the Craft.

12.1.2 In general, small crafts with electrical systems having an operating voltage higher than 50[V] are to comply with the requirements of Chapter 12, Section 5 (except 5.4) of the *Rules and Regulations for the Construction and Classification of High Speed Crafts and Light Crafts*, as applicable to **HSLC** and **LC** crafts.

Section 13

Requirements for Specific Craft Types

13.1 Application

13.1.1 The requirements of this Section apply to specific craft types as indicated in each sub-section, and are to be complied with in addition to those given in other sections.

13.2 Crew Boats

13.2.1 Application

13.2.1.1The requirements of this section are applicable to crafts assigned with the notation "**CREW BOAT"**.

13.2.1.2 In addition to the requirements in this sub-section, any additional requirements of the relevant statutory authority would apply.

13.2.2 General

13.2.2.1 For Crafts carrying more than 12 industrial personnel, the requirements of the following Codes/recommendations are to be followed, taking due cognizance of any exemptions that the Administration may permit, for a craft with a restricted area of operation :

- The "*Interim Recommendations on the safe carriage of more than 12 Industrial Personnel on board vessels engaged on International Voyages*" Resolution MSC 418(97), as amended.

13.2.3 Accommodation

13.2.3.1 Accommodation arrangements for carriage of industrial personnel are to be in compliance with the relevant national/international regulations.

13.2.3.2 Where a craft operating in the high speed regime is used to carry industrial personnel, all seating accommodation is to be provided with seatbelts.

13.2.4 Safety Instructions and training

13.2.4.1 The Craft is to carry an operation manual which contains information to ensure that, prior to boarding the Craft, all industrial personnel are to

a) have received on-board ship specific safety familiarization that includes, but is not limited to, the layout of the ship, and handling of the safety equipment, as appropriate;

b) be familiarized with specific procedures, e.g. transfer procedures on and off the ship while at sea, as appropriate;

c) be accounted for in the ship's life-saving equipment;

d) be equipped with personal protective clothing and equipment suitable for the safety risks to be encountered both while on board the ship and being transferred at sea;

13.2.4.2 The operation manual mentioned in 13.2.4.1 is to be submitted to IRS for information.

13.3 Pilot Crafts

13.3.1 Application

.1 The requirements of this sub-section are applicable to crafts assigned with the notation "**PILOT CRAFT".**

.2 In addition to the requirements in this section, the relevant requirements of the statutory authority would apply.

13.3.2 General

.1 A pilot craft is not to be fitted with a petrol engine.

.2 Seating is to be provided for all members of the crew and the pilots to be carried.

.3 For Crafts operating in the high speed regime, all seating accommodation is to be provided with seatbelts.

.4 Pilot boarding activities are to be visible from the pilot craft helmsman's position. Visibility should be adequate in both the vertical and horizontal planes.

13.3.3 Safety Arrangement and fall protection

.1 The normal means of access from the open deck to accommodation space provided for the use of pilots is not to be a forward facing weather tight door.

.2 For the safe access of personnel, the minimum width of side deck inboard of the bulwark or rails or toe-rail is to be 400 [mm]. Side decks are to be illuminated.

.3 An efficient uninterrupted/ continuous safety rail system for clip-on safety harnesses is to be provided. The system is to allow the harness traveller to move freely and without adjustment over the full length of the safety rail. The rail system, its attachment to the vessel structure and the clip-on safety harnesses is to be designed, constructed, installed, tested and maintained to appropriate personal protective equipment standards.

13.4 Fishing Craft

13.4.1 Application

.1 The requirements of this sub-section are applicable to crafts assigned with the notation "**FISHING CRAFT".**

.2 In addition to the requirements in this section, the relevant requirements of the statutory authority would apply.

.3 It is recommended that fishing vessels fulfil the relevant requirements specified in the *Safety Recommendations for Decked Fishing Vessels of less than 12m in length and Undecked Fishing Vessels and Voluntary guidelines for Construction and Equipment of Small fishing vessels, 2005* to the extent practicable, in addition to the requirements specified in these Notes.

13.4.2 General

.1 The draught T, used for determination of scantlings is not to be taken less than 0.9D.

.2 All fishing vessels and trawlers are to have pronounced sheer on the forebody or a forecastle.

.3 It is recommended that fixed arrangements be installed for cutting wires and fishing nets, which can twist round the propeller and propeller shaft. Construction of such arrangements is subject to IRS' consideration in each particular case.

13.4.3 Deck Structure

.1 The deck structure under the trawl winch, windlass, mast, bollards and gallows are to be adequately reinforced to withstand all operational loads.

.2 Adequate scarphing is to be arranged in way of raised decks.

13.4.4 Hull openings and their closing appliances

.1 Hatchways are to be fitted with steel coamings, complete with all necessary fittings and covers to ensure weather tight closure. Covers made of materials other than mild steel are to be of equivalent strength. Construction and arrangement are also to meet the requirements of Section 5 of these Notes.

.2 Access, loading and discharge hatches on the freeboard deck are to be located along the ship's centreline as far as practicable. Other small flush type hatches may however, be located away from the centreline, subject to satisfactory means of weather tight closing.

.3 Stern trawlers are to be provided with suitable protection such as doors, gates or nets at the top of the stern ramp up to the same height as the adjacent bulwark or guard rail. Where such protection is not in position, a chain or other means of protection are to be fitted across the ramp.