ISAF OFFSHORE SPECIAL REGULATIONS

JANUARY 2014 - DECEMBER 2015
www.sailing.org/specialregs

Extract for Race Category 2 Monohulls

Version 1_2 - 2014

Because this is an extract not all paragraph numbers will be present

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Language & Abbreviations Used

Mo - Monohull
Mu - Multihull
" ** " means the item applies to all types of yacht in all Categories except 5 for which see Appendix J or 6 for which see Appendix L.

RED TYPE indicates a significant changes in 2014
Guidance notes and recommendations are in italics

The use of the masculine gender shall be taken to mean either gender

Administration

The Offshore Special Regulation are administered by the ISAF Special Regulation Sub-Committee whose terms of reference are as follows:
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ISAF Regulation 6.8.8.3 - The Special Regulations Sub-Committee shall:
(a) be responsible for the maintenance, revision and changes to the ISAF Offshore Special Regulations governing offshore racing, under licence from ORC Ltd. Such changes shall be biennial with revised editions published in January of each even year, except that matters of an urgent nature affecting safety may be dealt with by changes to the Regulations on a shorter time scale;
(b) monitor developments in offshore racing relative to the standards of safety and seaworthiness.
Any queries please E-Mail: technical@isaf.co.uk

SECTION 1 - FUNDAMENTAL AND DEFINITIONS

1.01 Purpose and Use

1.01.1 It is the purpose of these Special Regulations to establish uniform minimum equipment, accommodation and training standards for monohull and multihull yachts racing offshore. A Proa is excluded from these regulations. **

1.01.2 These Special Regulations do not replace, but rather supplement, the requirements of governmental authority, the Racing Rules and the rules of Class Associations and Rating Systems. The attention of persons in charge is called to restrictions in the Rules on the location and movement of equipment. **

1.01.3 These Special Regulations, adopted internationally, are strongly recommended for use by all organizers of offshore races. Race Committees may select the category deemed most suitable for the type of race to be sailed. **

1.02 Responsibility of Person in Charge

1.02.1 The safety of a yacht and her crew is the sole and inescapable responsibility of the person in charge who must do his best to ensure that the yacht is fully found, thoroughly seaworthy and manned by an experienced crew who have undergone appropriate training and are physically fit to face bad weather. He must be satisfied as to the soundness of hull, spars, rigging, sails and all gear. He must ensure that all safety equipment is properly maintained and stowed and that the crew know where it is kept and how it is to be used. He shall also nominate a person to take over the responsibilities of the Person in Charge in the event of his incapacitation. **

1.02.2 Neither the establishment of these Special Regulations, their use by race organizers, nor the inspection of a yacht under these Special Regulations in any way limits or reduces the complete and unlimited responsibility of the person in charge. **

1.02.3 Decision to race -The responsibility for a yacht's decision to participate in a race or to continue racing is hers alone - RRS Fundamental Rule 4. **

1.03 Definitions, Abbreviations, Word Usage

1.03.1 Definitions of Terms used in this document **

TABLE 1

Age Date	Month/year of first launch
AIS	Automatic Identification Systems
CEN	Comité Européen de Normalisation
CPR	Cardio-Pulmonary Resuscitation
Coaming	Includes the transverse after limit of the cockpit over which water would run in the event that when the yacht is floating level the cockpit is flooded or filled to overflowing.
DSC	Digital Selective Calling
EN	European Norm
EPFS	Electronic Position-Fixing System
EPIRB	Emergency Position-Indicating Radio Beacon
FA Station	The transverse station at which the upper corner of the transom meets the sheerline.
Foul-Weather Suit	A foul weather suit is clothing designed to keep the wearer dry and maybe either a jacket and trousers worn together, or a single garment comprising jacket and trousers.
GMDSS	Global Maritime Distress & Safety System
GNSS	Global Navigation Satellite System
GPIRB	EPIRB, with integral GPS position-fixing
ITU	International Telecommunications Union
GPS	Global Positioning System
Hatch	The term hatch includes the entire hatch assembly and also the lid or cover as part of that assembly (the part itself may be described as a hatch).
INMARSAT	This is Inmarsat Global Limited, the private company that

	provides GMDSS satellite distress and safety communications, plus general communications via voice, fax and data
IMO	International Maritime Organisation
IMSO	The International Mobile Satellite Organisation, the independent, intergovernmental organisation that oversees Inmarsat's performance of its Public Service Obligations for the GMDSS and reports on these to IMO
ISAF	International Sailing Federation.
ISO	International Standard or International Organization for Standardization.
Lifeline	Rope or wire line rigged as guardrail / guardline around the deck
LOA	Length overall not including pulpits, bowsprits, boomkins etc.
LWL	(Length of) loaded waterline
Monohull	Yacht in which the hull depth in any section does not decrease towards the centre-line.
Moveable Ballast	Lead or other material including water which has no practical function in the boat other than to increase weight and/or to influence stability and/or trim and which may be moved transversely but not varied in weight while a boat is racing.
ORC	Offshore Racing Congress (formerly Offshore Racing Council)
OSR	Offshore Special Regulation(s)
Permanently Installed	Means the item is effectively built-in by e.g. bolting, welding, glassing etc. and may not be removed for or during racing.
PLB	Personal Locator Beacon
Proa	Asymmetric Catamaran
RRS	ISAF - Racing Rules of Sailing
SAR	Search and Rescue
SART	Search and Rescue Transponder
Series Date	Month & Year of first launch of the first yacht of the production series
SOLAS	Safety of Life at Sea Convention
Safety Line	A tether used to connect a safety harness to a strong point
Securely Fastened	Held strongly in place by a method (e.g. rope lashings, wing-nuts) which will safely retain the fastened object in severe conditions including a 180 degree capsize and allows for the item to be removed and replaced during racing
Static Ballast	Lead or other material including water which has no practical function in the boat other than to increase weight and/or to influence stability and/or trim and which may not be moved or varied in weight while a boat is racing.
Static Safety Line	A safety line (usually shorter than a safety line carried with a harness) kept clipped on at a work-station
Variable Ballast	Water carried for the sole purpose of influencing stability and/or trim and which may be varied in weight and/or moved while a boat is racing.

1.03.2 The words "shall" and "must" are mandatory, and "should" and "may" are permissive. **

1.03.3 The word "yacht" shall be taken as fully interchangeable with the word "boat". **

SECTION 2 - APPLICATION & GENERAL REQUIREMENTS

2.01 Categories of Events

In many types of race, ranging from trans-oceanic sailed under adverse conditions to short-course day races sailed in protected waters, seven categories are established, to provide for differences in the minimum standards of safety and accommodation required for such varying circumstances: **

2.01.3 Category 2

Races of extended duration along or not far removed from shorelines or in large unprotected bays or lakes, where a high degree of self-sufficiency is required of the yachts. MoMu,2

2.02 Inspection

A yacht may be inspected at any time. If she does not comply with these Special Regulations her entry may be rejected, or she will be liable to disqualification or such other penalty as may be prescribed by the national authority or the race organizers. **

2.03 General Requirements

2.03.1 All equipment required by Special Regulations shall:-

a) function properly **

b) be regularly checked, cleaned and serviced **

c) when not in use be stowed in conditions in which deterioration is minimised **

d) be readily accessible **

e) be of a type, size and capacity suitable and adequate for the intended use and size of the yacht. **

2.03.2 Heavy items:

a) ballast, ballast tanks and associated equipment shall be permanently installed **

b) heavy movable items including e.g. batteries, stoves, gas bottles, tanks, toolboxes and anchors and chain shall be securely fastened **

c) heavy items for which fixing is not specified in Special Regulations shall be permanently installed or securely fastened, as appropriate **

2.03.3 When to show navigation lights **

a) navigation lights (OSR 3.27) shall be shown as required by the International Regulations for Preventing Collision at Sea, (Part C and Technical Annex 1). All yachts shall exhibit sidelights and a sternlight at the required times. **

SECTION 3 - STRUCTURAL FEATURES, STABILITY, FIXED EQUIPMENT

3.01 Strength of Build, Ballast and Rig

Yachts shall be strongly built, watertight and, particularly with regard to hulls, decks and cabin trunks capable of withstanding solid water and knockdowns. They must be properly rigged and ballasted, be fully seaworthy and must meet the standards set forth herein. Shrouds shall never be disconnected. **

3.02 Watertight Integrity of a Hull

3.02.1 A hull, including, deck, coach roof, windows, hatches and all other parts, shall form an integral, essentially watertight unit and any openings in it shall be capable of being immediately secured to maintain this integrity. **

3.02.2 Centreboard and daggerboard trunks and the like shall not open into the interior of a hull except via a watertight inspection/maintenance hatch of which the opening shall be entirely above the waterline of the yacht floating level in normal trim. **

3.02.3 A canting keel pivot shall be completely contained within a watertight enclosure which shall comply with OSR 3.02.2. Access points in the watertight enclosure for control and actuation systems or any other purpose shall comply with OSR 3.02.1. **

3.02.4 Moveable ballast systems shall be fitted with a manual control and actuation secondary system which shall be capable of controlling the full sailing load of the keel in the event of failure of the primary system. Such failures would include electrical and hydraulic failure and mechanical failure of the components and the structure to which it mounts. The system must be capable of being operational quickly and shall be operable at any angle of heel. It would be desirable if this **

system was capable of securing the keel on the centreline.

3.03	**Hull Construction Standards (Scantlings)**	**MoMu0,1,2**
3.03.1		Mo0,1,2
a)	A yacht of less than 24m in hull length (measured in accordance with ISO 8666) with the earliest of Age or Series Date on or after 1 January 2010 shall have: • been designed, built and maintained in accordance with the requirements of ISO 12215 Category A * • on board a certificate of building plan review from a notified body recognized by ISAF. • on board a declaration signed and dated by the builder to confirm the yacht is built in accordance with the plans reviewed by the Notified Body.	Mo0,1,2
b)	A yacht of 24m in hull length and over (measured in accordance with ISO 8666) with the earliest of Age or Series Date on or after 1 January 2010 shall have: • been designed, built and maintained in accordance with the requirements of a Classification Society recognized by ISAF • on board a certificate of building plan review from a Classification Society recognized by ISAF • on board a declaration signed and dated by the builder to confirm the yacht is built in accordance with the plans reviewed by the Classification Society .	Mo0,1,2
3.03.2		Mo0,1,2
a)	A yacht of less than 24m in hull length (measured in accordance with ISO 8666), with the earliest of Age or Series Date on or after 1 January 2010, if subject to any significant repair or modification to the hull, deck, coachroof, keel or appendages on or after the 1 January 2010, shall have • the repair or modification designed and built in accordance with ISO 12215 Category A* • on board a certificate of building plan review for the repair or modification from a notified body recognized by ISAF • on board a declaration signed and dated by the builder to confirm that the repair or modification is in accordance with the requirements of ISO 12215 Category A *	Mo0,1,2
b)	A yacht of 24m in hull length and over (measured in accordance with ISO 8666), with the earliest of Age or Series Date on or after 1 January 2010, if subject to any significant repair or modification to the hull, deck, coachroof, keel or appendages on or after the 1 January 2010, shall have • the repair or modification designed and built in accordance with the requirements of a Classification Society recognized by ISAF • on board a certificate of building plan review for the repair or modification from a Classification Society recognized by ISAF • on board a declaration signed and dated by the builder to confirm that the repair or modification is in accordance with the plans reviewed by the Classification Society.	Mo0,1,2
3.03.3	In cases when a builder no longer exists a race organizer or class rules may accept a signed statement by a naval architect or other person familiar with the requirements of 3.031 and 3.03.2 above and in lieu of the builders declaration required by 3.031 and 3.03.2 above.	Mo0,1,2
3.03.4	A monohull with the earliest of Age or Series Date before the 1 January 2010 shall comply with 3.03.1, 3.03.2 and 3.03.3 above or with appendix M to these OSR. A multihull shall comply with appendix M to these OSR. * or as from time to time specified by ISAF	Extract Mo0,1,2
3.03.5	*Regular inspection of the keel and keel/hull attachment structure are strongly recommended*	*Mo0,1,2,3,4*
3.04	**Stability - Monohulls**	**Mo0,1,2,3,4**
3.04.2	A yacht shall be designed and built to resist capsize.	Mo0,1,2,3,4
3.04.3	Yachts shall demonstrate compliance with ISO 12217-2*, either by EC Recreational Craft Directive certification (having obtained the CE mark) or the designer's declaration, for the race categories as follows:	Mo0,1,2,3
3.04.3	Yachts shall demonstrate compliance with ISO 12217-2* Design Category A or higher, either by EC Recreational Craft Directive certification (having obtained the	Extract Mo0,1,2

CE mark) or the designer's declaration.
* The latest effective version of ISO 12217-2 should be used unless the yacht was already designed to a previous version

3.04.4	For yachts which cannot demonstrate compliance in accordance with 3.04.3, a yacht shall provide, as specified by the race organiser, either:	Mo0,1,2,3
a)	the stability index/AVS in ORC Rating System of not less than 110; or	Extract Mo2
b)	IRC SSS Base value of not less than 28; or	Extract Mo2
c)	a minimum STIX value of 32 and AVS not less than 130 - 0.002*m (Where "m" is the mass of the boat in the minimum operating condition as defined by ISO 12217-2.)	Extract Mo0,1,2
3.04.6	*Use of the ISO or any other index does not guarantee total safety or total freedom of risk from capsize or sinking.*	*Mo0,1,2,3,4*
3.04.7	For boats with moveable or variable ballast the method in OSR 3.04.4 shall apply plus the relevant additional requirement of OSR Appendix K.	Mo0,1,2,3,4
3.04.8	Tanks for variable ballast shall be permanently installed and shall be provided with a system of isolating valves and pump(s) capable of manual operation at any angle of heel. A plan of the plumbing system shall be displayed aboard the boat.	Mo0,1,2,3,4
3.04.9	A boat fitted with moveable and/or variable ballast shall have a maximum static heel angle in the condition of Light Craft Condition (see ISO 12217-2) with moveable ballast moved fully to one side and variable ballast in the condition that produces maximum angle of heel of not greater than 35 degrees.	Mo0,1,2,3,4
3.06	**Exits - Monohulls**	**Mo0,1,2,3,4**
3.06.1	Yachts of LOA of 8.5 m (28 ft) and over with age or series date after January 1995 and after shall have at least two exits. At least one exit shall be located forward of the foremost mast except where structural features prevent its installation.	Mo0,1,2,3,4
3.06.2	Yachts first launched on or after January 2014 have a hatch with the following minimum clear openings in compliance with ISO 9094: - Circular shape: diameter 450mm; - Any other shape: minimum dimension of 380mm and minimum area of 0.18m2. The dimension must be large enough to allow for a 380mm diameter circle to be inscribed. The measurement of the minimum clear opening is illustrated in Figure 1.	Mo0,1,2,3,4

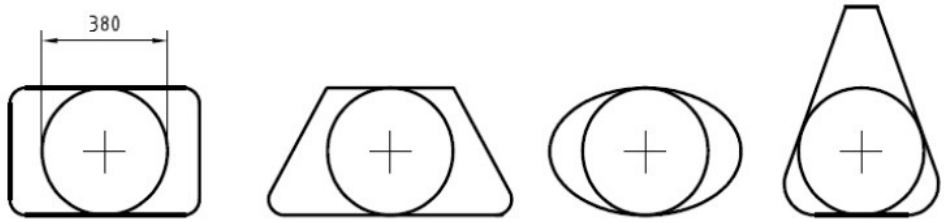

Figure 1 - Measurements of Minimum Clear Opening

3.06.3	*when first launched prior to January 2014, if possible have each escape hatch in compliance with the dimensions in OSR 3.07.2(a)(ii);*	*Mo0,1,2,3,4*
3.08	**Hatches & Companionways**	
3.08.1	No hatch forward of the maximum beam station, other than a hatch in the side of a coachroof, shall open in such a way that the lid or cover moves into the open position towards the interior of the hull (excepting ports having an area of less than 0.071m2 (110 sq in)).	**
3.08.2	A hatch fitted forward of the maximum beam station, located on the side of the coachroof, opening into the interior of the boat ,and of area greater than 0.071m2 shall comply with ISO12216 design category A and be clearly labelled and used in accordance with the following instruction: "NOT TO BE OPENED AT SEA" Attention is drawn to SR 3.02.1	**
3.08.3	A hatch shall be:	
a)	so arranged as to be above the water when the hull is heeled 90 degrees. Hatches over lockers that open to the interior of the vessel shall be included in this requirement. A yacht may have a maximum of four (two on each side of centerline) hatches that do not conform to this requirement, provided that the	Mo0,1,2,3,4

	opening of each is less than 0.071 sq m (110 sq in). Effective for boats of a series begun after January 1, 2009, a written statement signed by the designer or other person who performed the downflooding analysis shall be carried on board. For purposes of this rule the vessel's displacement condition for the analysis shall be the Light Craft Condition LCC (in conformity with 6.3 of the EN ISO 8666 standard and 3.5.1 of the EN ISO12217-2 standard).	
b)	permanently attached	**
c)	capable of being firmly shut immediately and remaining firmly shut in a 180 degree capsize (inversion)	**
3.08.4	A companionway hatch shall:	
a)	be fitted with a strong securing arrangement which shall be operable from the exterior and interior including when the yacht is inverted	**
b)	have any blocking devices:	**
i	capable of being retained in position with the hatch open or shut	**
ii	whether or not in position in the hatchway, secured to the yacht (e.g. by lanyard) for the duration of the race, to prevent their being lost overboard	**
iii	permit exit in the event of inversion	**
3.08.5	If the companionway extends below the local sheerline and the boat has a cockpit opening aft to the sea the boat shall comply with one of the following:	Mo0,1,2,3,4
a)	the companionway sill shall not extend below the local sheerline. Or	Mo0,1,2,3,4
b)	be in full compliance with all aspects of ISO 11812 to design category A	Mo0,1,2,3,4
3.08.6	For boats with a cockpit closed aft to the sea where the companionway hatch extends below the local sheerline, the companionway shall be capable of being blocked off up to the level of the local sheerline, provided that the companionway hatch shall continue to give access to the interior with the blocking devices (e.g. washboards) in place	Mo0,1,2,3,4
3.09	**Cockpits - Attention is Drawn to ISO 11812**	
3.09.1	Cockpits shall be structurally strong, self-draining quickly by gravity at all angles of heel and permanently incorporated as an integral part of the hull.	**
3.09.2	Cockpits must be essentially watertight, that is, all openings to the hull must be capable of being strongly and rigidly secured	**
3.09.3	A bilge pump outlet pipe shall not be connected to a cockpit drain. See OSR 3.09.8 for cockpit drain minimum sizes	**
3.09.4	A cockpit sole shall be at least 2% LWL above LWL (or in IMS yachts first launched before 1/03, at least 2% L above LWL)	**
3.09.5	A bow, lateral, central or stern well shall be considered a cockpit for the purposes of OSR 3.09	**
3.09.6	In cockpits opening aft to the sea structural openings aft shall be not less in area than 50% maximum cockpit depth x maximum cockpit width.	**
3.09.7	**Cockpit Volume**	
i)	earliest of age or series date before April 1992 the total volume of all cockpits below lowest coamings shall not exceed 9% (LWL x maximum beam x freeboard abreast the cockpit).	Extract MoMu2,3,4
ii)	earliest of age or series date April 1992 and after as above for the appropriate category except that "lowest coamings" shall not include any aft of the FA station and no extension of a cockpit aft of the working deck shall be included in calculation of cockpit volume	Extract **
	IMS-rated boats may instead of the terms LWL, maximum beam, freeboard abreast the cockpit, use the IMS terms L, B and FA.	*Extract ** *
3.09.8	**Cockpit Drains**	
	See OSR 3.09.1. Cockpit drain cross section area (after allowance for screens if fitted) shall be:-	
a)	in yachts with earliest of age or series date before 1/72 or in any yacht under 8.5m (28ft) LOA - at least that of 2 x 25mm diameter (one inch) unobstructed openings or equivalent	**
b)	in yachts with earliest of age or series date 1/72 and later - at least that of 4 x 20mm diameter (3/4 inch) unobstructed openings or equivalent	**
3.10	**Sea Cocks or Valves**	
	Sea cocks or valves shall be permanently installed on all through-hull openings	**

below the waterline except integral deck scuppers, speed indicators, depth finders and the like, however a means of closing such openings shall be provided.

3.11 Sheet Winches

Sheet winches shall be mounted in such a way that an operator is not required to be substantially below deck. **

3.12 Mast Step

The heel of a keel stepped mast shall be securely fastened to the mast step or adjoining structure. **

3.14 Pulpits, Stanchions, Lifelines

3.14.2 Lifeline deflection shall not exceed the following: **

a) When a deflecting force of 4 kg/f (39.2 N) is applied to a lifeline midway between supports of an upper or single lifeline, the lifeline shall not deflect more than 50mm. This measurement shall be taken at the widest span between supports that are aft of the mast. **

b) When a deflecting force of 4 kg/f (39.2 N) is applied midway between supports of an intermediate lifeline of all spans that are aft of the mast, deflection shall not exceed 120mm from a straight line between the stanchions. **

3.14.3 The following shall be provided: **

a) a bow pulpit with vertical height and openings essentially conforming to Table 7. Bow pulpits may be open but the opening between the pulpit and any part of the boat shall never be greater than 360mm (14.2") (this requirement shall be checked by presenting a 360mm (14.2") circle inside the opening) Mo0,1,2,3,4

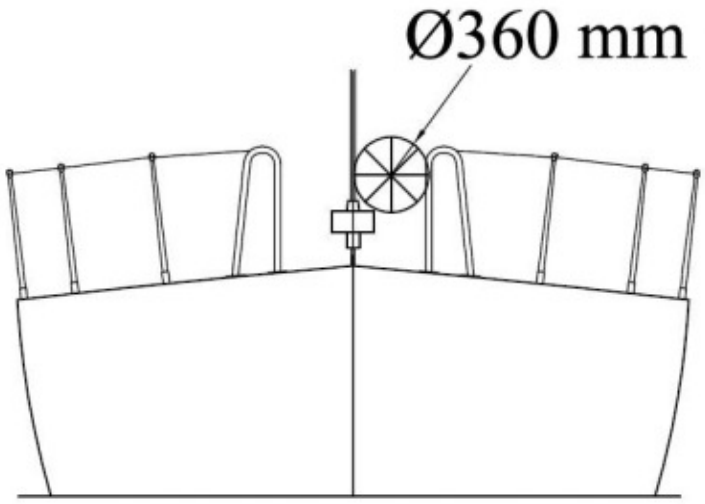

Figure 2 - Diagram Showing Pulpit Opening

b) a stern pulpit, or lifelines arranged as an adequate substitute, with vertical openings conforming to Table 7 Mo0,1,2,3,4

c) lifelines (guardlines) supported on stanchions, which, with pulpits, shall form an effectively continuous barrier around a working deck for man-overboard prevention. Lifelines shall be permanently supported at intervals of not more than 2.20m (86.6") and shall not pass outboard of supporting stanchions **

d) upper rails of pulpits at no less height above the working deck than the upper lifelines as in Table 7. **

e) Openable upper rails in bow pulpits shall be secured shut whilst racing **

f) Pulpits and stanchions shall be permanently installed. When there are sockets or studs, these shall be through-bolted, bonded or welded. The pulpit(s) and/or stanchions fitted to these shall be mechanically retained without the help of the life-lines. Without sockets or studs, pulpits and/or stanchions shall be through-bolted, bonded or welded. **

g) The bases of pulpits and stanchions shall not be further inboard from the edge of the appropriate working deck than 5% of maximum beam or 150 mm (6 in), whichever is greater. **

h) Stanchion or pulpit or pushpit bases shall not be situated outboard of a working deck. For the purpose of this rule the base shall be taken to include a sleeve or socket into which the tube is fitted but shall exclude a baseplate which carries **

fixings into the deck or hull.

i) Provided the complete lifeline enclosure is supported by stanchions and pulpit bases effectively within the working deck, lifeline terminals and support struts may be fixed to a hull aft of the working deck **

j) Lifelines need not be fixed to a bow pulpit if they terminate at, or pass through, adequately braced stanchions set inside and overlapping the bow pulpit, provided that the gap between the upper lifeline and the bow pulpit does not exceed 150 mm (6 in). **

k) Lifelines shall be continuous and fixed only at (or near) the bow and stern. However a bona fide gate shall be permitted in the lifelines on each side of a yacht. Except at its end fittings, the movement of a lifeline in a fore-and-aft direction shall not be constrained. Temporary sleeving in 3.14.6 (c) shall not modify tension in the lifeline. **

l) Stanchions shall be straight and vertical except that:- **

i within the first 50 mm (2 in) from the deck, stanchions shall not be displaced horizontally from the point at which they emerge from the deck or stanchion base by more than 10 mm (3/8 in),and **

ii stanchions may be angled to not more than 10 degrees from vertical at any point above 50 mm (2 in) from the deck. **

m) It is strongly recommended that designs also comply to ISO 15085 ***

3.14.5 Lifeline Height, Vertical Openings, Number of Lifelines

TABLE 7 **

LOA	earliest of age/seriesdate	minimum requirements	Category
under 8.5 m(28 ft)	before January 1992	single lifeline at a height of no less than 450 mm (18 in) above the working deck. No vertical opening shall exceed 560 mm (22 in).	**
under 8.5 m(28 ft)	January 1992 and after	as for under 8.5 m(28 ft) in table 7 above, except that when an intermediate lifeline is fitted no vertical opening shall exceed 380 mm (15 in).	**
8.5 m (28 ft) and over	before January 1993	double lifeline with upper lifeline at a height of no less than 600 mm (24 in) above the working deck. No vertical opening shall exceed 560 mm (22 in)	**
8.5 m (28 ft)and over	January 1993 and after	as 8.5 m (28 ft) and over in Table 7 above, except that no vertical opening shall exceed 380 mm (15 in).	**
all	all	on yachts with intermediate lifelines the intermediate line shall be not less than 230 mm (9 in) above the working deck.	**

3.14.6 Lifeline Minimum Diameters, Required Materials, Specifications

a) Lifelines shall be of : **

- stranded stainless steel wire or **
- High Modulus Polyethylene (HMPE) (Dyneema®/Spectra® or equivalent) rope (Braid on braid is recommended) **

b) The minimum diameter is specified in table 8 below. **

c) Stainless steel lifelines shall be uncoated and used without close-fitting sleeving, however, temporary sleeving may be fitted provided it is regularly removed for inspection. **

d) When stainless wire is used, Grade 316 is recommended. **

e) When HMPE (Dyneema®/Spectra®) is used, it shall be spliced in accordance with the manufacturer's recommended procedures. **

f) A taut lanyard of synthetic rope may be used to secure lifelines provided the gap it closes does not exceed 100 mm (4 in). This lanyard shall be replaced annually at a minimum. **

g) All wire, fittings, anchorage points, fixtures and lanyards shall comprise a lifeline enclosure system which has at all points at least the breaking strength of the required lifeline wire. **

TABLE 8 - Minimum Diameters **

LOA	wire	HMPE rope (Single braid)	HMPE Core (Braid on braid)
under 8.5m (28ft)	3mm (1/8 in)	4mm (5/32 in)	4mm (5/32 in)
8.5m - 13m	4mm (5/32 in)	5mm (3/16 in)	5mm (3/16 in)
over 13m (43 ft)	5mm (3/16in)	5mm (3/16in)	5mm (3/16in)

3.17 Toe Rail or Foot - Stop **Mo0,1,2,3**

3.17.1 A toe rail of minimum height 25 mm (1 in) shall be permanently installed around the foredeck from abreast the mast, except in way of fittings and not further inboard from the edge of the working deck than one third of the local half-beam. Mo0,1,2,3

3.17.2 The following variations shall apply:- Mo0,1,2,3

TABLE 10 Mo0,1,2,3

LOA	Earliest of Age or Series Date	minimum requirements
any	before January 1981	a toe rail minimum height of 20 mm (3/4 in) is acceptable.
any	before January 1994	an additional lifeline of minimum height 25 mm (1 in) and maximum height 50 mm (2 in) is acceptable in lieu of a toe rail (but shall not count as an intermediate lifeline).
any	January 1994 and after	the toe rail shall be fitted as close as practicable to the vertical axis of stanchion bases but not further inboard than 1/3 the local half-beam.

3.18 Toilet

3.18.1 A toilet, permanently installed MoMu0,1,2

3.19 Bunks

3.19.2 Bunks, permanently installed **

3.20 Cooking Facilities

3.20.1 A cooking stove, permanently installed or securely fastened with safe accessible fuel shutoff control and capable of being safely operated in a seaway. MoMu0,1,2,3

3.21 Drinking Water Tanks & Drinking Water **MoMu0,1,2,3**

3.21.1 Drinking Water Tanks **MoMu0,1,2,3**

a) A yacht shall have a permanently installed delivery pump and water tank(s): MoMu0,1,2,3

3.21.3 Emergency Drinking Water **MoMu0,1,2,3**

a) At least 9 litres (2 UK gallons, 2.4 US gallons) of drinking water for emergency use shall be provided in a dedicated and sealed container or container(s) MoMu1,2,3

3.22 Hand Holds

Adequate hand holds shall be fitted below deck so that crew members may move about safely at sea. **

A hand hold should be capable of withstanding without rupture a side force of 1500N - attention is drawn to ISO 15085.

3.23 Bilge Pumps and Buckets

3.23.1 No bilge pump may discharge into a cockpit unless that cockpit opens aft to the sea. **

3.23.2 Bilge pumps shall not be connected to cockpit drains. (OSR 3.09) **

3.23.3 Bilge pumps and strum boxes shall be readily accessible for maintenance and for clearing out debris **

3.23.4 Unless permanently installed, each bilge pump handle shall be provided with a lanyard or catch or similar device to prevent accidental loss **

3.23.5 The following shall be provided:

a) two permanently installed manual bilge pumps, one operable from above, the other from below deck. Each pump shall be operable with all cockpit seats, hatches and companionways shut and shall have permanently installed discharge pipe(s) of sufficient capacity to accommodate simultaneously both pumps Mo0,1,2

f) two buckets of stout construction each with at least 9 litres (2 UK gallons, 2.4 US gallons) capacity. Each bucket to have a lanyard. **

3.24 Compass

3.24.1 The following shall be provided:-

a) a marine magnetic compass, independent of any power supply, permanently installed and correctly adjusted with deviation card, and **

b) a magnetic compass independent of any power supply, capable of being used as MoMu0,1,2,3

a steering compass which may be hand-held

3.25 Halyards.

No mast shall have less than two halyards, each capable of hoisting a sail. **

3.27 Navigation Lights (see OSR 2.03.3)

3.27.1 Navigation lights shall be mounted so that they will not be masked by sails or the heeling of the yacht. **

3.27.2 Navigation lights shall not be mounted below deck level and should be at no less height than immediately under the upper lifeline. **

3.27.3 Navigation light intensity

TABLE 11

LOA	*Guide to required minimum power rating for an electric bulb in a navigation light*
under 12 m (39.4 ft)	*10 W*
12 m (39.4 ft) and above	*25 W*

3.27.4 Reserve navigation lights shall be carried having the same minimum specifications as the navigation lights above, with a separable power source, and wiring or supply system essentially separate from that used for the normal navigation lights MoMu0,1,2,3

3.27.5 spare bulbs for navigation lights shall be carried, or for lights not dependent on bulbs, appropriate spares. **

3.28 Engines, Generators, Fuel

3.28.1 Propulsion Engines **

a) Engines and associated systems shall be installed in accordance with their manufacturers' guidelines and shall be of a type, strength, capacity, and installation suitable for the size and intended use of the yacht. **

b) An inboard propulsion engine when fitted shall: be provided with a permanently installed exhaust, coolant, and fuel supply systems and fuel tank(s); be securely covered; and have adequate protection from the effects of heavy weather. **

c) A propulsion engine required by Special Regulations shall provide a minimum speed in knots of (1.8 x square root of LWL in metres) or (square root of LWL in feet) MoMu0,1,2,3

e) An inboard propulsion engine shall be provided for yachts Mo0,1,2Mu0

3.28.2 Generator

A separate generator for electricity is optional. However, when a separate generator is carried it shall be permanently installed, securely covered, and shall have permanently installed exhaust, cooling and fuel supply systems and fuel tank(s), and have adequate protection from the effects of heavy weather. **

3.28.3 Fuel Systems

a) Each fuel tank provided with a shutoff valve. Except for permanently installed linings or liners, a flexible tank is not permitted as a fuel tank. MoMu0,1,2,3

b) The propulsion engine shall have a minimum amount of fuel which may be specified in the Notice of Race but if not, shall be sufficient to be able to meet charging requirements for the duration of the race and to motor at the above minimum speed for at least 8 hours MoMu0,1,2,3

3.28.4 Battery Systems

a) When an electric starter is the only method for starting the engine, the yacht shall have a separate battery, the primary purpose of which is to start the engine MoMu0,1,2,3

b) All rechargeable batteries on board shall be of the sealed type from which liquid electrolyte cannot escape. Other types of battery installed on board at 1/12 may continue in use for the remainder of their service lives. MoMu0,1,2,3

3.29 Communications Equipment, EPFS (Electronic Position-Fixing System), Radar, AIS **

Provision of GMDSS is unlikely to be mandatory for small craft during the term of the present Special Regulations. *MoMu0,1,2,3*

3.29.1 The following shall be provided: **

a) A marine radio transceiver (or if stated in the Notice of Race, an installed satcom terminal), and MoMu0,1,2,3

i an emergency antenna when the regular antenna depends upon the mast. MoMu0,1,2,3

b)	When the marine radio transceiver is VHF:	MoMu0,1,2,2
i	it shall have a rated output power of 25W	MoMu0,1,2,3
ii	it shall have a masthead antenna, and co-axial feeder cable with not more than 40% power loss	MoMu0,1,2,3
iii	*the following types and lengths of co-axial feeder cable will meet the requirements of OSR 3.29.1 (b)(ii): (a) up to 15m (50ft) - type RG8X ("mini 8"); (b) 15-28m (50-90ft) - type RG8U; (c) 28-43m (90-140ft) - type 9913F (uses conventional connectors, available from US supplier Belden); (d) 43-70m) 140-230ft - type LMR600 (uses special connectors, available from US supplier Times Microwave).*	*MoMu0,1,2,3*
iv	*it should include channel 72 (an international ship-ship channel which, by common use, has become widely accepted as primary choice for ocean racing yachts anywhere in the world)*	*MoMu0,1,2,3*
v	VHF transceivers installed after 31 December 2015 shall be DSC capable	MoMu1,2,3
vi	DSC capable VHF transceivers shall be programmed with an assigned MMSI (unique to the boat), be connected to a GPS receiver and be capable of making distress alert calls as well as sending and receiving a DSC position report with another DSC equipped station	MoMu1,2,3
e)	A hand-held marine VHF transceiver, watertight or with a waterproof cover. When not in use to be stowed in a grab bag or emergency container (see OSR 4.21) The handheld receiver should have Digital Selective Calling (DSC) and be equipped with GPS.	MoMu1,2,3,4
f)	Independent of a main radio transceiver, a radio receiver capable of receiving weather bulletins	**
i)	An EPFS (Electronic Position-Fixing System) (e.g. GPS)	MoMu0,1,2,3
n)	An AIS Transponder	MoMu1,2
p)	An AIS antenna shall be mounted on top of the main mast.	MoMu0,1,2
3.29.2	*Yachts are reminded that no reflector, active or passive, is a guarantee of detection or tracking by a vessel using radar.*	***
a)	*The attention of persons in charge is drawn to legislation in force or imminent affecting the territorial seas of some countries in which the carriage of an AIS set is or will be mandatory for certain vessels including relatively small craft.*	***

SECTION 4 - PORTABLE EQUIPMENT & SUPPLIES for the yacht

(for water & fuel see OSR 3.21 and OSR 3.28)

4.01	**Sail Letters & Numbers**	
4.01.1	Yachts which are not in an ISAF International Class or Recognized Class shall comply with RRS 77 and Appendix G as closely as possible, except that sail numbers allotted by a State authority are acceptable.	**
4.01.2	Sail numbers and letters of the size carried on the mainsail must be displayed by alternative means when none of the numbered sails is set.	**
4.03	**Soft Wood Plugs**	
	Soft wood plugs, tapered and of the appropriate size, shall be attached or stowed adjacent to the appropriate fitting for every through-hull opening.	**
4.04	**Jackstays, Clipping Points and Static Safety Lines**	
4.04.1	Jackstays shall be provided-	MoMu0,1,2,3
a)	attached to through-bolted or welded deck plates or other suitable and strong anchorage fitted on deck, port and starboard of the yacht's centre line to provide secure attachments for safety harness:-	MoMu0,1,2,3
b)	comprising stainless steel 1 x 19 wire of minimum diameter 5 mm (3/16 in), high modulus polyethylene (such as Dyneema/Spectra) rope or webbing of equivalent strength;	MoMu0,1,2,3
c)	which, when made from stainless steel wire shall be uncoated and used without any sleeving;	MoMu0,1,2,3
d)	*20kN (2,040 kgf or 4,500 lbf) min breaking strain webbing is recommended;*	*MoMu0,1,2,3*
4.04.2	**Clipping Points:-** shall be provided-	
a)	attached to through-bolted or welded deck plates or other suitable and strong	MoMu0,1,2,3

	anchorage points adjacent to stations such as the helm, sheet winches and masts, where crew members work for long periods:-	
b)	which, together with jackstays and static safety lines shall enable a crew member-	MoMu0,1,2,3
i	to clip on before coming on deck and unclip after going below;	MoMu0,1,2,3
ii	whilst continuously clipped on, to move readily between the working areas on deck and the cockpit(s) with the minimum of clipping and unclipping operations.	MoMu0,1,2,3
c)	The provision of clipping points shall enable two-thirds of the crew to be simultaneously clipped on without depending on jackstays	MoMu0,1,2,3
e)	*Warning - U-bolts as clipping points - see OSR 5.02.1(a)*	*MoMu0,1,2,3*
4.05	**Fire Extinguishers**	
	Shall be provided as follows:	
4.05.1	Fire extinguishers, at least two, readily accessible in suitable and different parts of the yacht	**
4.05.2	Fire Extinguishers, at least two, of minimum 2kgs each of dry powder or equivalent	MoMu0,1,2,3
4.05.4	A fire blanket adjacent to every cooking device with an open flame	**
4.06	**Anchor(s)**	
4.06.1	An anchor or anchors shall be carried according to the table below:	**
a)	The following anchors shall be provided	
i	For yachts of 8.5 m LOA (28 ft) and over there shall be 2 anchors together with a suitable combination of chain and rope, all ready for immediate use	MoMu1,2,3
ii	For yachts under 8.5 m LOA (28 ft) there shall be 1 anchor together with a suitable combination of chain and rope, all ready for immediate use	MoMu1,2,3
4.07	**Flashlight(s) and Searchlight(s)**	
4.07.1	The following shall be provided:-	
a)	A watertight, high-powered searchlight, suitable for searching for a person overboard at night and for collision avoidance with spare batteries and bulbs, and	**
b)	a watertight flashlight with spare batteries and bulb	**
4.08	**First Aid Manual and First Aid Kit**	**
4.08.1	A suitable First Aid Manual shall be provided	**
	In the absence of a National Authority's requirement, the latest edition of one of the following is recommended:-	***
b)	*First Aid at Sea, by Douglas Justins and Colin Berry, published by Adlard Coles Nautical,London*	*MoMu2,3,4*
c)	*Le Guide de la medecine a distance, by Docteur J Y Chauve, published by Distance Assistance BP33 F-La Baule, cedex, France.*	***
d)	*'PAN-PAN medico a bordo' in Italian edited by Umberto Verna. www.panpan.it*	*MoMu2,3,4*
e)	*Skipper's Medical Emergency Handbook by Dr Spike Briggs and Dr Campbell Mackenzie www.msos.org.uk*	***
4.08.2	A First Aid Kit shall be provided	**
4.08.3	*The contents and storage of the First Aid Kit should reflect the guidelines of the Manual carried, the likely conditions and duration of the passage, and the number of people aboard the yacht.*	***
4.09	**Foghorn**	
	A foghorn shall be provided	**
4.10	**Radar Reflector**	
4.10.1	An octahedral passive radar reflector shall be carried with circular sector plates of minimum diameter 30 cm (12") or a reflector with a documented minimum Radar Cross Section (RCS) area of 2 m2	**
4.11	**Navigation Equipment**	
4.11.1	Charts	
	Navigational charts (not solely electronic), light list and chart plotting equipment shall be provided	**
4.12	**Safety Equipment Location Chart**	
	A safety equipment location chart in durable waterproof material shall be displayed in the main accommodation where it can best be seen, clearly marked with the location of principal items of safety equipment.	**
4.13	**Echo Sounder or Lead Line**	

4.13.1	An echo sounder or lead line shall be provided	MoMu1,2,3,4
4.14	**Speedometer or Distance Measuring Instrument (log)**	
	A speedometer or distance measuring instrument (log) shall be provided	MoMu0,1,2,3
4.15	**Emergency Steering**	
4.15.1	Emergency steering shall be provided as follows:	
a)	except when the principal method of steering is by means of an unbreakable metal tiller, an emergency tiller capable of being fitted to the rudder stock;	MoMu0,1,2,3
b)	crews must be aware of alternative methods of steering the yacht in any sea condition in the event of rudder loss. At least one method must have been proven to work on board the yacht. An inspector may require that this method be demonstrated.	MoMu0,1,2,3
4.16	**Tools and Spare Parts**	
	Tools and spare parts, including effective means to quickly disconnect or sever the standing rigging from the hull shall be provided.	**
4.17	**Yacht's name**	
	Yacht's name shall be on miscellaneous buoyant equipment, such as lifejackets, cushions, lifebuoys, lifeslings, grab bags etc.	**
4.18	**Marine grade retro-reflective material**	
	Marine grade retro-reflective material shall be fitted to lifebuoys, lifeslings, liferafts and lifejackets. See OSRs 5.04, 5.08.	**
4.19	**EPIRBs**	
4.19.1	A 406 MHz EPIRB shall be provided	MoMu1,2
b)	*It is recommended that a 406 MHz EPIRB should include an internal GPS, and also a 121.5MHz transmitter for local homing.*	*MoMu0,1,2*
c)	Every EPIRB shall be registered with the appropriate authority associated with the country code in the hexadecimal identification (15 Hex ID) of the beacon. A beacon can be registered online with the Cospas-Sarsat IBRD if the country does not provide a registration facility and the country has allowed direct registration in the IBRD	MoMu0,1,2
d)	Every ship's 406 MHz EPIRB shall be water and manually activated.	MoMu0,1,2
e)	*A list of registration numbers of 406 EPIRBs should be notified to event organizers and kept available for immediate use.*	*MoMu0,1,2*
f)	*Consideration should be given to the provision of a locator device (e.g. an "Argos" beacon) operating on non - SAR frequencies, to aid salvage if a yacht is abandoned.*	*MoMu0,1,2*
4.20	**Liferafts**	**MoMu0,1,2**
4.20.1	**Liferaft Construction and Packed Equipment**	
4.20.2	Liferaft(s) shall be provided capable of carrying the whole crew when each liferaft shall comply with either:-	MoMu1,2
a)	Liferafts shall comply with SOLAS LSA code 1997 Chapter IV or later version except that they are acceptable with a capacity of 4 persons and may be packed in a valise. A SOLAS liferaft shall contain at least a SOLAS "A" pack or	Extract File MoMu1,2
b)	for liferafts manufactured prior to January 2003, OSR Appendix A part I (ORC), or	MoMu1,2
c)	OSR Appendix A part II (ISAF) when, unless otherwise specified by a race organizer, the floor shall include thermal insulation, or	MoMu1,2
d)	ISO 9650 Part I Type I Group A (ISO) when each liferaft shall contain at least a Pack 2 (<24h) and-	MoMu1,2
i	shall have a semi-rigid boarding ramp, and	MoMu1,2
ii	shall be so arranged that any high-pressure hose shall not impede the boarding process, and	MoMu1,2
iii	shall have a topping-up means provided for any inflatable boarding ramp, and	MoMu1,2
iv	when the liferaft is designed with a single ballast pocket this shall be accepted provided the liferaft otherwise complies with ISO 9650 and meets a suitable test of ballast pocket strength devised by the manufacturer and	MoMu1,2
v	compliance with OSR 4.20.2 (d) i-iv shall be indicated on the liferaft certificate.	MoMu1,2
4.20.3	**Liferaft Packing and Stowage**	**MoMu0,1,2**
	A Liferaft shall be either:-	MoMu0,1,2
a)	packed in a transportable rigid container or canister and stowed on the working deck or in the cockpit, or:-	MoMu0,1,2

b)	packed in a transportable rigid container or canister or in a valise and stowed in a purpose-built rigid compartment containing liferaft(s) only and opening into or adjacent to the cockpit or working deck, or through a transom, provided that:-	MoMu0,1,2
i	each compartment is watertight or self-draining (self-draining compartments will be counted as part of the cockpit volume except when entirely above working deck level or when draining independently overboard from a transom stowage - see OSR 3.09) and-	MoMu0,1,2
ii	the cover of each compartment is capable of being easily opened under water pressure, and-	MoMu0,1,2
iii	the compartment is designed and built to allow a liferaft to be removed and launched quickly and easily, or-	MoMu0,1,2
iv	in a yacht with age or series date before June 2001, a liferaft may be packed in a valise not exceeding 40kg securely stowed below deck adjacent to a companionway.	MoMu1,2
v	Liferaft stowage on a multihull and a monohull with moveable ballast shall be such that each liferaft may be readily removed and launched whether or not the yacht is inverted.	MoMu0,1,2
c)	The end of each liferaft painter should be permanently made fast to a strong point on board the yacht.	MoMu0,1,2
4.20.4	**Liferaft Launching**	**MoMu0,1,2**
a)	Each raft shall be capable of being got to the lifelines or launched within 15 seconds.	MoMu0,1,2
b)	*Each liferaft of more than 40kg weight should be stowed in such a way that the liferaft can be dragged or slid into the sea without significant lifting*	*MoMu0,1,2*
4.20.5	**Liferaft Servicing and Inspection**	**MoMu0,1,2**
	IMPORTANT NOTICE Recent evidence has shown that packaged liferafts are vulnerable to serious damage when dropped (e.g. from a boat onto a marina pontoon) or when subjected to the weight of a crew member or heavy object (e.g. an anchor). Damage can be caused internally by the weight of the heavy steel CO2 bottle abrading or splitting neighbouring layers of buoyancy tube material. ISAF has instituted an investigation into this effect and as an interim measure requires that every valise-packed liferaft shall have an annual certificate of servicing. A liferaft should be taken for servicing if there is any sign of damage or deterioration (including on the underside of the pack). Persons in charge should insist on great care in handling liferafts and apply the rules NO STEP and DO NOT DROP UNLESS LAUNCHING INTO THE SEA.	*MoMu0,1,2*
a)	Certificates or copies, of servicing and/or inspection shall be kept on board the yacht. Every SOLAS liferaft and every valise-packed liferaft shall have a valid annual certificate of new or serviced status from the manufacturer or his approved service station.	MoMu0,1,2
b)	A liferaft built to OSR Appendix A part I ("ORC") packed in a rigid container or canister shall either be serviced annually or may, when the manufacturer so specifies, be inspected annually (not necessarily unpacked) provided the yacht has on board written confirmation from the manufacturer's approved service station stating that the inspection was satisfactory.	MoMu0,1,2
c)	A liferaft built to OSR Appendix A part II ("ISAF") packed in a rigid container or canister shall either be serviced annually or may, when the manufacturer so specifies, have its first service no longer than 3 years after commissioning and its second service no longer than 2 years after the first. Subsequent services shall be at intervals of not more than 12 months.	MoMu1,2
d)	A liferaft built to ISO 9650 Part 1 Type Group A, packed in a rigid container or canister shall be serviced in accordance with the manufacturer's instructions but NOT less frequently than every three years	MoMu1,2
e)	A liferaft built to ISO 9650 Part 1 Type Group A packed in a valise shall be inspected annually by an approved manufacturer's agent and serviced in accordance with the manufacturer's instructions but NOT less frequently than every three years.	MoMu1,2
f)	Liferaft servicing certificates shall state the specification that the liferaft was built to. See OSR 4.20.2	MoMu1,2

4.21.2	**Grab Bags to Accompany Liferafts**	
a)	*A yacht is recommended to have for each liferaft, a grab bag with the following minimum contents. A grab bag should have inherent flotation, at least 0.1 m^2 area of fluorescent orange colour on the outside, should be marked with the name of the yacht, and should have a lanyard and clip.*	*MoMu0,1,2*
b)	*Note: it is not intended to duplicate in a grab bag items required by other OSRs to be on board the yacht - these recommendations cover only the stowage of those items*	*MoMu0,1,2*
4.21.3	**Grab Bag Recommended Contents**	
a)	*2 red parachute and 2 red hand flares and cyalume-type chemical light sticks (red flares compliant with SOLAS)*	*MoMu1,2*
b)	*watertight hand-held EPFS (Electronic Position-Fixing System) (eg GPS) in at least one of the grab bags carried by a yacht*	*MoMu1,2*
c)	*SART (Search and Rescue Transponder) in at least one of the grab bags carried by a yacht*	*MoMu1,2*
d)	*a combined 406MHz/121.5MHz EPIRB registered to the boat (see OSR 4.19.1) in at least one of the grab bags*	*MoMu1,2*
e)	*water in re-sealable containers or a hand-operated desalinator plus containers for water*	*MoMu1,2*
f)	*a watertight hand-held marine VHF transceiver plus a spare set of batteries*	*MoMu0,1,2*
g)	*a watertight flashlight with spare batteries and bulb*	*MoMu0,1,2*
h)	*dry suits or thermal protective aids or survival bags*	
i)	*second sea anchor for the liferaft (not required if the liferaft has already a spare sea anchor in its pack) (recommended standard ISO 17339) with swivel and >30m line diameter >9.5 mm*	*MoMu0,1,2*
j)	*two safety tin openers (if appropriate)*	*MoMu0,1,2*
k)	*first-aid kit including at least 2 tubes of sunscreen. All dressings should be capable of being effectively used in wet conditions. The first-aid kit should be clearly marked and re-sealable.*	*MoMu0,1,2*
l)	*signalling mirror*	*MoMu0,1,2*
m)	*high-energy food (min 10 000kJ per person recommended for Cat Zero)*	*MoMu0,1,2*
n)	*nylon string, polythene bags, seasickness tablets (min 6 per person recommended)*	*MoMu0,1,2*
o)	*watertight hand-held aviation VHF transceiver (if race area warrants)*	*MoMu0,1,2*
4.22	**Lifebuoys**	
4.22.1	The following shall be provided within reach of the helmsman and ready for instant use:	**
a)	a lifebuoy with a self-igniting light and a drogue	**
b)	In addition to a) above, one lifebuoy within reach of the helmsman and ready for instant use, equipped with:	MoMu0,1,2
i	a whistle, a drogue, a self-igniting light and	MoMu0,1,2
ii	a pole and flag. The pole shall be either permanently extended or be capable of being fully automatically extended (not extendable by hand) in less than 20 seconds. It shall be attached to the lifebuoy with 3 m (10 ft) of floating line and is to be of a length and so ballasted that the flag will fly at least 1.8 m (6 ft) off the water.	MoMu0,1,2
4.22.2	When at least two lifebuoys (and/or Lifeslings) are carried, at least one of them shall depend entirely on permanent (e.g. foam) buoyancy.	MoMu0,1,2
4.22.3	Each inflatable lifebuoy and any automatic device (e.g. pole and flag extended by compressed gas) shall be tested and serviced at intervals in accordance with its manufacturer's instructions.	**
4.22.4	Each lifebuoy or lifesling shall be fitted with marine grade retro-reflective material (4.18).	**
4.22.5	*It is recommended that the colour of each lifebuoy be a safety colour in the yellow-red range.*	***
4.23	**Pyrotechnic and Light Signals**	
4.23.1	Pyrotechnic signals shall be provided conforming to SOLAS LSA Code Chapter III Visual Signals and not older than the stamped expiry date (if any) or if no expiry date stamped , not older than 4 years.	**

red parachute flares LSA III 3.1	red hand flares LSA III 3.2	orange smoke LSA III 3.3	race category
6	4	2	MoMu0,1
4	4	2	MoMu2,3
	4	2	Mo4
2	4	2	Mu4

TABLE 13

4.24 Heaving Line **

a) a heaving line shall be provided 15 m - 25 m (50 ft - 75 ft) length readily accessible to cockpit. **

b) the "throwing sock" type is recommended - see Appendix D **

c) A lifesling shall be provided MoMu0,1,2,3

4.25 Cockpit Knife

A strong, sharp knife, sheathed and securely restrained shall be provided readily accessible from the deck or a cockpit. **

4.26 Storm & Heavy Weather Sails

4.26.1 Design

a) it is strongly recommended that persons in charge consult their designer and sailmaker to decide the most effective size for storm and heavy weather sails. The purpose of these sails is to provide safe propulsion for the yacht in severe weather -they are not intended as part of the racing inventory. The areas below are maxima. Smaller areas are likely to suit some yachts according to their stability and other characteristics. **

4.26.2 High Visibility

a) Every storm jib shall either be of highly-visible coloured material (e.g. dayglo pink, orange or yellow) or have a highly-visible coloured patch at least 50% of the area of the sail (up to a maximum diameter of 3m) added on each side; and also that a rotating wing mast should have a highly-visible coloured patch on each side. A storm sail purchased after January 2014 shall have the material of the body of the sail a highly-visible colour. **

b) it is strongly recommended that the storm trysail should either be made of or have a patch of highly visible colour. **

4.26.3 Materials

a) aromatic polyamides, carbon and similar fibres shall not be used in a trysail or storm jib but spectra/dyneema and similar materials are permitted. **

b) it is strongly recommended that a heavy-weather jib does not contain aromatic polyamides, carbon and similar fibres other than spectra/dyneema. **

4.26.4 The following shall be provided:-

a) sheeting positions on deck for each storm and heavy-weather sail; **

b) for each storm or heavy-weather jib, a means to attach the luff to the stay, independent of any luff-groove device. A heavy weather jib shall have the means of attachment readily available. A storm jib shall have the means of attachment permanently attached; **
Storm and heavy weather jib areas shall be calculated as:
(0.255 x luff length x (luff perpendicular + 2 x half width))* To apply to sails made in January 2012 and after.

c) a storm trysail which shall be capable of being sheeted independently of the boom with trysail area not greater than 17.5% mainsail hoist (P) x mainsail foot length (E). The storm trysail area shall be measured as (0.5 x leech length x shortest distance between tack point and leech). The storm trysail shall have neither headboard nor battens, however a storm trysail is not required in a yacht with a rotating wing mast which can adequately substitute for a trysail. The method of calculating area applies to sails made in January 2012 and after. MoMu 0,1,2

d) the storm trysail as required by OSR 4.26.4 (c) shall have the yacht's sail number and letter(s) shall be placed on both sides of the trysail (or on a rotating wing mast as substitute for a trysail) in as large a size as practicable; Extract MoMu 0,1,2

e) a storm jib of area not greater than 5% height of the foretriangle squared, with MoMu0,1,2

	luff maximum length 65% height of the foretriangle;	
f)	a heavy-weather jib (or heavy-weather sail in a yacht with no forestay) of area not greater than 13.5% height of the foretriangle squared;	**
h)	in the case of a yacht with an in-mast furling mainsail, the storm trysail must be capable of being set while the mainsail is furled.	MoMu0,1,2
i)	*A trysail track should allow for the trysail to be hoisted quickly when the mainsail is lowered whether or not the mainsail is stowed on the main boom.* *It is strongly recommended that a boat has either a dedicated trysail track permanently installed with the entry point accessible to a person standing on the main deck or coachroof, or a permanently installed stay on which to hank the trysail.*	*MoMu0,1,2*
k)	*It is strongly recommended that an inner forestay is provided either permanently installed or readily set up, on which to set the storm jib.*	*MoMu0,1,2*

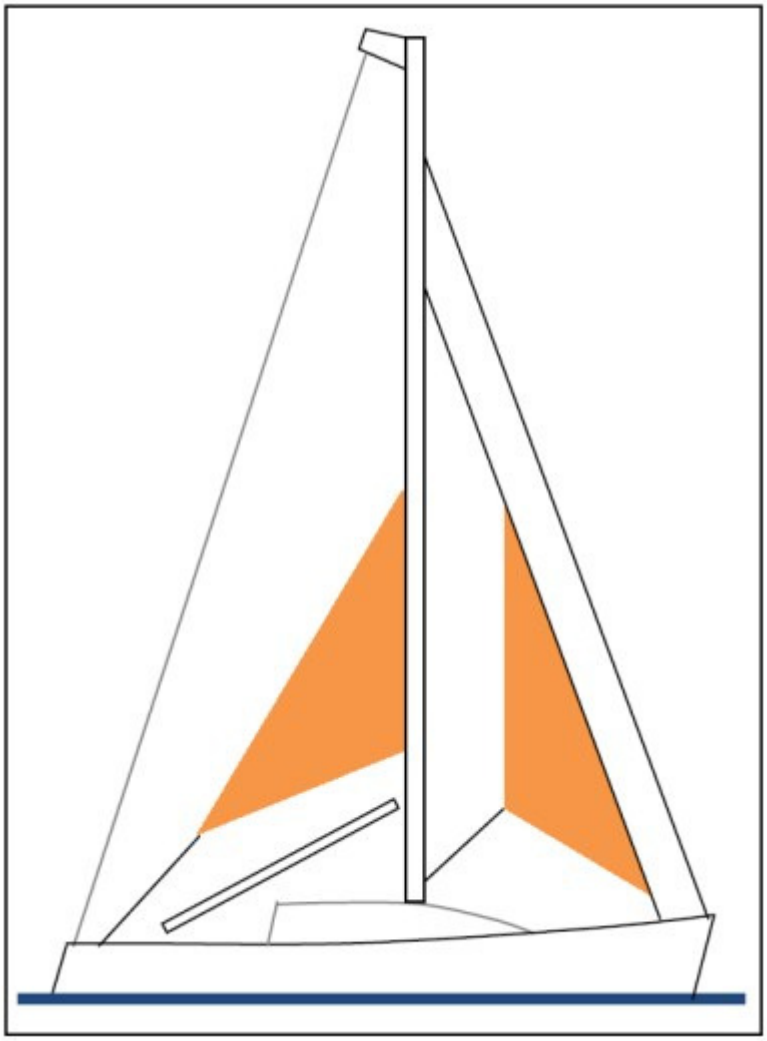

Figure 3

4.28	**Man Overboard Alarm**	**MoMu0**
4.28.2	A yacht shall be equipped with an EPFS (e.g. GPS) capable of recording a man overboard position within 10 seconds and monitoring that position.	MoMu1,2

SECTION 5 - PERSONAL EQUIPMENT

5.01	**Lifejacket**	
5.01.1	Each crew member shall have a lifejacket as follows:-	**
a)		**
i	In accordance with ISO 12402 – 3 (Level 150) or equivalent, including EN 396 or UL 1180	**
ii	Lifejackets manufactured after 1 January 2012 shall be in accordance with ISO 12402–3 (Level 150) and shall be fitted with:- • an emergency light in accordance with either ISO 12402-8 or SOLAS LSA code 2.2.3.	**

	• a sprayhood in accordance with ISO 12402-8. • a full deck safety harness in accordance with ISO 12401 (ISO 1095) including a crotch or thigh strap (holding down device) as specified in ISO 12401 (ISO 1095). • If of an inflatable type either (a) automatic, manual and oral inflation or (b) manual and oral inflation Notes: ISO 12402 requires Level 150 lifejackets to be fitted with a mandatory whistle and retro-reflective material. Also, when fitted with a safety harness, ISO 12402 requires that this shall be the full safety harness in accordance with ISO 12401. Any equivalent lifejacket shall have equal requirements. Persons of larger than average build are generally more buoyant than those of average build and so do not require a lifejacket with greater levels of flotation. Wearing a Level 275 lifejacket may hamper entry into liferafts.	
b)	fitted with either a crotch strap(s) / thigh straps or a full safety harness in accordance with ISO 12401, Note: The function of lifejacket crotch/thigh straps is to hold the buoyancy element down. A crew member before a race should adjust a lifejacket to fit then retain that lifejacket for the duration of the race. Correct adjustment is fundamental to the lifejacket functioning correctly.	**
c)	fitted with a lifejacket light in accordance with SOLAS LSA code 2.2.3 (white, >0.75 candelas, >8 hours),	**
d)	if inflatable have a compressed gas inflation system,	**
e)	if inflatable, regularly checked for gas retention,	**
f)	compatible with the wearer's safety harness,	**
g)	clearly marked with the yacht's or wearer's name,	**
j)	*It is strongly recommended that a lifejacket has a splashguard / sprayhood See ISO 12402 – 8,*	*MoMu1,2,3,4*
5.01.4	The person in charge shall personally check each lifejacket at least once annually.	**
5.02	**Safety Harness and Safety Lines (Tethers)**	**MoMu0,1,2,3**
5.02.1	Each crew member shall have a harness and safety line that complies with ISO 12401 or equivalent with a safety line not more than 2m in length. Harnesses and safety lines manufactured prior to Jan 2010 shall comply with either ISO 12401 or EN 1095. Harnesses and safety lines manufactured prior to Jan 2001 are not permitted.	MoMu0,1,2,3
a)	**Warning it is possible for a plain snaphook to disengage from a U bolt if the hook is rotated under load at right-angles to the axis of the U-bolt. For this reason the use of snaphooks with positive locking devices is strongly recommended.**	**MoMu0,1,2,3**
5.02.2	At least 30% of the crew shall each, in addition to the above be provided with either:-	MoMu0,1,2,3
a)	a safety line not more than 1m long, or	MoMu0,1,2,3
b)	a mid-point snaphook on a 2m safety line	MoMu0,1,2,3
5.02.3	A safety line purchased in January 2001 or later shall have a coloured flag embedded in the stitching, to indicate an overload. A line which has been overloaded shall be replaced as a matter of urgency.	MoMu0,1,2,3
5.02.4	A crew member's lifejacket and harness shall be compatible	MoMu0,1,2,3
5.02.5	*It is strongly recommended that:-*	*MoMu0,1,2,3*
a)	*static safety lines should be securely fastened at work stations;*	*MoMu0,1,2,3*
b)	*A harness should be fitted with a crotch strap or thigh straps.*	*MoMu0,1,2,3*
c)	*to draw attention to wear and damage, stitching on harness and safety lines should be of a colour contrasting strongly with the surrounding material;*	*MoMu0,1,2,3*
d)	*snaphooks should be of a type which will not self-release from a U-bolt (see OSR 5.02.1(a)) and which can be easily released under load (crew members are reminded that a personal knife may free them from a safety line in emergency);*	*MoMu0,1,2,3*
e)	*a crew member before a race should adjust a harness to fit then retain that harness for the duration of the race.*	*MoMu0,1,2,3*
5.02.6	*Warning - a safety line and safety harness are not designed to tow a person in the water and it is important that the shortest safety line length possible be used*	***

	with a harness to minimise or eliminate the risk of a person's torso becoming immersed in water outside the boat, especially when working on the foredeck. 1m safety lines or the midpoint snaphook on a 2m line should be used for this purpose. The diligent use of a properly adjusted safety harness and the shortest safety line practicable is regarded as by far the most effective way of preventing man overboard incidents.	
5.04	**Foul Weather Suits**	
b)	*it is recommended that a foul weather suit should be fitted with marine-grade retro-reflective material, and should have high-visibility colours on its upper parts and sleeve cuffs.See OSR 4.18*	****
5.07	**Survival Equipment**	**MoMu0,1,2**
d)	*Attention is drawn to the value of keeping on the person a combined 406MHz/121.5MHz PLB when on deck: this may aid location in a man overboard incident independent of the equipment carried by the parent vessel*	*MoMu0,1,2*
e)	Where possible every PLB shall be registered with the appropriate authority associated with the country code in the hexadecimal identification (15 Hex ID) of the beacon. A beacon can be registered online with the Cospas-Sarsat IBRD if the country does not provide a registration facility and the country has allowed direct registration in the IBRD.	MoMu0,1,2

SECTION 6 - TRAINING

6.01	**At least 30% but not fewer than two members of a crew, including the skipper shall have undertaken training within the five years before the start of the race in both 6.02 topics for theoretical sessions, and 6.03 topics which include practical, hands-on sessions.**	**MoMu1,2**
6.01.3	*It is strongly recommended that all crew members should undertake training as in OSR 6.01 at least once every five years*	*MoMu1,2*
6.01.4	Except as otherwise provided in the Notice of Race, an in-date certificate gained at an ISAF Approved Offshore Personal Survival Training course shall be accepted by a race organizing authority as evidence of compliance with Special Regulation 6.01. See Appendix G - Model Training Course, for further details.	MoMu0,1,2
6.02	**Training Topics for Theoretical Sessions**	
6.02.1	care and maintenance of safety equipment	MoMu0,1,2
6.02.2	storm sails	MoMu0,1,2
6.02.3	damage control and repair	MoMu0,1,2
6.02.4	heavy weather - crew routines, boat handling, drogues	MoMu0,1,2
6.02.5	man overboard prevention and recovery	MoMu0,1,2
6.02.6	giving assistance to other craft	MoMu0,1,2
6.02.7	hypothermia	MoMu0,1,2
6.02.8	SAR organisation and methods	MoMu0,1,2
6.02.9	weather forecasting	MoMu0,1,2
6.03	**Training Topics for Practical, Hands-On Sessions**	**MoMu0,1,2**
6.03.1	liferafts and lifejackets	MoMu0,1,2
6.03.2	fire precautions and use of fire extinguishers	MoMu0,1,2
6.03.3	communications equipment (VHF, GMDSS, satcomms, etc.)	MoMu0,1,2
6.03.4	pyrotechnics and EPIRBs	MoMu0,1,2
6.04	**Routine Training On-Board**	******
6.04.1	*It is recommended that crews should practice safety routines at reasonable intervals including the drill for man-overboard recovery*	****
	At least one member of the crew shall have a first aid certificate completed within the last five years meeting any of the following requirements:	MoMu2
i	A certificate listed on the ISAF website www.sailing.org/specialregs of MNA recognised courses	
ii	STCW 95 First Aid Training complying with A-VI/1-3 – Elementary First Aid or higher STCW level	
6.05.4	*An example model first aid training course is included in Appendix N.*	****

APPENDICES TO SPECIAL REGULATIONS

APPENDIX M - Hull Construction Standards (Scantlings)

(Monohulls pre-2010 and Multihulls)

m1 A monohull with the earliest of Age or Series Date before the 1 January 2010 shall comply with OSR 3.03.1, 3.03.2 and 3.03.3 or with this appendix. A multihull shall comply with this appendix. — MoMu0,1,2

TABLE 2 — MoMu0,1,2

LOA	earliest of age or series date	race category
all	January 1986 and after	MoMu0,1
12m (39.4 feet) and over	January 1987 and after	MoMu2
under 12m (39.4 feet)	January 1988 and after	MoMu2

m2 A yacht defined in the table above shall have been designed built, maintained, modified and repaired in accordance with the requirements of either: — MoMu0,1,2

a) the EC Recreational Craft Directive for Category A (having obtained the CE mark), or — MoMu0,1,2

b) the ABS Guide for Building and Classing Offshore Yachts in which case the yacht shall have on board either a certificate of plan approval issued by ABS, or written statements signed by the designer and builder which confirm that they have respectively designed and built the yacht in accordance with the ABS Guide, — MoMu0,1,2

c) ISO 12215 Category A, with written statements signed by the designer and builder which confirm that they have respectively designed and built the yacht in accordance with the ISO standard, — MoMu0,1,2

d) except that a race organizer or class rules may accept when that described in (a), (b), or (c) above is not available, the signed statement by a naval architect or other person familiar with the standards listed above that the yacht fulfills the requirements of (a), (b), or (c). — MoMu0,1,2

m3 Any significant repairs or modifications to the hull, deck, coachroof, keel or appendages, on a yacht defined in table 2 shall be certified by one of the methods above and an appropriate written statement or statements shall be on board. — MoMu0,1,2

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