ISAF Offshore Special Regulations

January 2010 - December 2010

Notes

RED TYPE indicates a significant changes in 2010

BLUE TYPE indicates RORC Prescriptions

GREEN ITALIC TYPE indicates guidance notes and recommendations

Official interpretations shall take precedence over these Special Regulations and will be indexed, numbered, dated and displayed on the ISAF web site www.sailing.org/specialregs

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

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

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.	**
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	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, six categories are established, to provide for differences in the minimum standards of safety and accommodation required for such varying circumstances: **

2.01.1 Category 0

Trans-oceanic races, including races which pass through areas in which air or sea temperatures are likely to be less than 5 degrees Celsius other than temporarily, where yachts must be completely self-sufficient for very extended periods of time, capable of withstanding heavy storms and prepared to meet serious emergencies without the expectation of outside assistance. MoMu,0

2.01.2 Category 1

Races of long distance and well offshore, where yachts must be completely self-sufficient for extended periods of time, capable of withstanding heavy storms and prepared to meet serious emergencies without the expectation of outside assistance. MoMu,1

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

2.01.4 Category 3

Races across open water, most of which is relatively protected or close to shorelines. MoMu,3

2.01.5 Category 4

Short races, close to shore in relatively warm or protected waters normally held in daylight. MoMu,4

2.01.6 Category 5 - for inshore racing

Please refer to Appendix J where Special Regulations for Category 5 are given in full. The symbol " ** " does not include Category 5.

2.01.7 Category 6 - for inshore racing

Please refer to Appendix L where Special Regulations for Category 6 are given in full. The symbol " ** " does not include Category 6

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)

TABLE 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

3.03.1 a) A yacht of less than 24m in hull length (measured in accordance with ISO 8666) with Age or Series Date on or after 1 January 2010 shall have MoMu0,1,2
- Been designed and built in accordance with requirements of ISO 12215 Category A*
- On board a certificate of building plan review from a notified body recognised 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

b) A yacht of 24m in hull length and over (measured in accordance with ISO 8666) with Age or Series Date on or after 1 January 2010 shall have MoMu0,1,2
- Been designed and built in accordance with requirements as from time to time specified by ISAF.
- On board a certificate of building plan review from an organisation recognised by ISAF
- On board a declaration signed and dated by the builder to confirm the yacht in accordance with the requirements.

3.03.2 a) A yacht less than 24m in hull length (measured in accordance with ISO 8666), with 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 MoMu0,1,2
- 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 recognised 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*

b) A yacht of 24m in hull length or more (measured in accordance with ISO 8666), with 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 MoMu0,1,2
- The repair or modification designed and built in accordance with the requirements as from time to time specified by ISAF
- On board a certificate of building plan review for the repair or modification from an organisation recognised by ISAF
- On board a declaration signed and dated by the builder to confirm that the repair of modification is in accordance with the requirements.

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 3.03.1 and 3.03.2 above and in lieu of the builders declaration required by 3.03.1 and 3.03.2 above MoMu0,1,2

3.03.4 A monohull with Age or Series Date on or 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 of these OSR MoMu0,1,2

* or as from time to time specified by ISAF

3.04 Stability – Monohulls

3.04.1 Either with, or without, reasonable intervention from the crew a yacht shall be capable of self-righting from an inverted position. Self-righting shall be achievable whether or not the rig is intact. — Mo0

a) When there is a moveable or variable ballast system, written instructions on how to right the boat after a capsize shall be prominently and clearly displayed. All persons on board shall have a thorough knowledge of the righting procedures — Mo0

3.04.2 A yacht shall be designed and built to resist capsize. — Mo0,1,2,3,4

3.04.3 A race organizer should require compliance with a minimum stability or stability/buoyancy index. Attention is drawn to the stability index in the ORC Rules and Regulations — Mo0,1,2,3,4

3.04.4 ISO 12217-2 may be used as a guide to general suitability for competition in Special Regulations race categories as follows: — Mo0,1,2,3,4

TABLE 3

ISO Category	A	B	C
OSR Category	1-2	3	4

3.04.5 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

3.04.6 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

3.04.7 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

3.05 Stability and Flotation - Multihulls

Attention is drawn to ISO 12217-2. — Mu0,1,2,3,4

3.05.1 Adequate watertight bulkheads and compartments (which may include permanently installed flotation material) in each hull shall be provided to ensure that a multihull is effectively unsinkable and capable of floating in a stable position with at least half the length of one hull flooded. (see OSR 3.13.2). — Mu0,1,2,3,4

3.05.2 Multihulls built on or after January 1999 shall in every hull without accommodation be divided at intervals of not more than 4m (13ft 3") by one or more transverse watertight bulkheads — Mu0,1,2,3,4

3.05.3 A yacht shall be designed and built to resist capsize. — Mu0,1,2,3,4

3.06 Exits - Monohulls

TABLE 4 — Mo0,1,2,3,4

LOA	Earliest of Age or Series Date	Detail
8.5 m (28 ft) and over	January 1995 and after	Yachts 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.

3.07 Exits and Escape Hatches - Multihulls

3.07.1 Exits

a) In a multihull of 8m (26.2ft) LOA and greater, each hull which contains accommodation shall have at least two exits. — Mu0,1,2,3,4

b) In a multihull of less than 8m (26.2ft) LOA each hull which contains accommodation shall have at least two exits. — Mu0,1,2,3

3.07.2 Escape Hatches, Underside Clipping Points & Handholds

a) In a multihull of 12m (39.4ft) LOA and greater each hull which contains accommodation shall:-

i have an escape hatch for access to and from the hull in the event of an inversion; — Mu0,1,2,3,4

ii when first launched on or after January 2003 have a minimum clearance diameter through each escape hatch of 450mm or when an escape hatch is not circular, sufficient clearance to allow a crew member to pass through fully clothed; — Mu0,1,2,3,4

iii when first launched prior to January 2003, if possible have each escape hatch in compliance with the dimensions in OSR 3.07.2(a)(ii); — Mu0,1,2,3,4

iv when the yacht is inverted have each escape hatch above the waterline; — Mu0,1,2,3,4

v when first launched on or after January 2001 have each escape hatch at or near the midships station; — Mu0,1,2,3,4

vi in a catamaran first launched on or after January 2003 have each escape hatch on the side nearest the vessel's central axis. — Mu0,1,2,3,4

b) A trimaran of 12m (39.4ft) LOA and greater first launched on or after January 2003 shall have at least two escape hatches in compliance with the dimensions in OSR 3.07.2(a) (ii) — Mu0,1,2,3,4

c) Each escape hatch must have been opened both from inside and outside within 6 months prior to an intended race — Mu0,1,2,3,4

d) A multihull shall have on the underside appropriate handholds/clipping points sufficient for all crew (on a trimaran these shall be around the central hull). — Mu0,1,2,3,4

e) A catamaran first launched on or after January 2003 with a central nacelle shall have on the underside around the central nacelle, handholds of sufficient capacity to enable all persons on board to hold on and/or clip on securely — Mu0,1,2,3,4

f) In a catamaran with a central nacelle, it is recommended that each hull has an emergency refuge, accessible via a special hatch in the side of the hull nearest the vessel's central axis, which hatch may be opened and closed from the inside and outside — Mu0,1,2,3,4

3.07.3 A multihull of less than 12m (39.4ft) LOA shall either have escape hatches in compliance with OSR 3.07.2 (a)(b) and (c)or shall comply with OSR 3.07.3 (a) and (b): — Mu2,3,4

a) each hull which contains accommodation shall have, for the purpose of cutting an escape hatch, appropriate tools kept ready for instant use adjacent to the intended cutting site. Each tool shall be secured to the vessel by a line and a clip, and — Mu2,3,4

b) in each hull at a station where an emergency hatch may be cut, the cutting line shall be clearly marked both inside and outside with an outline and the words ESCAPE CUT HERE — Mu2,3,4

3.07.4 OSR 3.07.3 shall not apply. Multihulls shall have escape hatch(es) as detailed in OSR 3.07.2 — Mu2

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 0.071 square metres (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 ISO 12216 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 **
Attention is drawn to SR 3.02.1 "A hull, including deck, coachroof, windows, hatches, and all other parts, shall form an integral, essentially watertight unit and any opening in it shall be capable of being immediately secured to maintain this integrity."

3.08.3 A companionway hatch extending below the local sheerline, shall:
a) not be permitted in a yacht with a cockpit opening aft to the sea (OSR 3.09.6) **
b) 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 **

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 a companionway extends below the local sheerline and the boat has a cockpit opening aft to the sea, the boat shall comply to the following: Mo0,1,2,3,4
a) the companionway sill shall not extend below the local sheerline. Or
b) be in full compliance with all aspects of ISO 11812 to design category A

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 up to the level of the local sheerline, provided that the companionway hatch shall continue to provide access to the interior with the blocking devices (e.g. washboards) in place. Mo0,1,2,3,4

3.08.7 A companionway hatch extending below the local sheerline shall comply with either (a) or (b): Mu0,1,2,3,4
a) be capable of being blocked off up to the level of the local sheerline, whilst giving access to the interior with the blocking devices (e.g. washboards) in place with a minimum sill height of 300mm. Mu0,1,2,3,4
b) i) A companionway hatch shall be in compliance with ISO 11812 – Watertight cockpits and quick-draining cockpits to design category A Mu0,1,2,3
ii) A companionway hatch shall be in compliance with ISO 11812 – Watertight cockpits and quick-draining cockpits to design category B Mu4

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 January 2003, 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

TABLE 5

earliest of age or series date	detail	race category
before April 1992	the total volume of all cockpits below lowest coamings shall not exceed 6% (LWL x maximum beam x freeboard abreast the cockpit).	MoMu0,1
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).	MoMu2,3,4
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	**
Note	*IMS measured boats may instead of the terms LWL, maximum beam, freeboard abreast the cockpit, use the IMS terms L, B and FA.*	**

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 January 1972 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 January 1972 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. **

3.13	**Watertight Bulkheads**	
	multihulls also see OSR 3.05	Mu0,1,2,3,4
3.13.1	A hull shall have either a watertight "crash" bulkhead within 15% of LOA from the bow and abaft the forward end of LWL, or permanently installed closed-cell foam buoyancy effectively filling the forward 30% LOA of the hull.	Mo0Mu0,1,2,3,4
3.13.2	Any required watertight bulkhead shall be strongly built to take a full head of water pressure without allowing any leakage into the adjacent compartment.	Mo0Mu0,1,2,3,4
3.13.3	A yacht shall have at least two watertight transverse main bulkheads in addition to any bulkheads positioned within the forward and aft 15 percent of the boat's LOA.	Mo0
3.13.4	Outside deck access for inspection and pumping shall be provided to every watertight compartment terminated by a hull section bulkhead, except that deck access to extreme end "crash" compartments is not required.	Mo0
3.13.5	An access hatch shall be provided in every required watertight bulkhead (except a "crash" bulkhead). The access hatch shall have means of watertight closure permanently attached to the main panel, or lid, or cover of the hatch. The closure shall not require tools to operate.	Mo0
	a) An access hatch should be capable of being securely shut within 5 seconds	Mo0
3.13.6	*It is strongly recommended that:*	
	a) an extreme end "crash" bulkhead should be provided at the stern. If practicable the aft "crash" bulkhead should be forward of the rudder post.	Mo0
	b) after flooding any one major compartment, a yacht should be capable of providing shelter and sustenance for a full crew for 2 weeks in an essentially dry compartment having direct access to the deck	Mo0
	c) compartments between watertight bulkheads should be provided with a means of manually pumping out from within the hull from a position outside the compartment	Mo0
3.14	**Pulpits, Stanchions, Lifelines**	
3.14.1	When due to the particular design of a multihull it is impractical to precisely follow Special Regulations regarding pulpits, stanchions, lifelines, the regulations for monohulls shall be followed as closely as possible with the aim of minimising the risk of people falling overboard.	Mu0,1,2,3,4
3.14.2	Lifelines required in Special Regulations shall be "taut".	**
	a) As a guide, when a deflecting force of 50 N (5.1 kgf, 11.2 lbf) is applied to a lifeline midway between supports, the lifeline should not deflect more than 50 mm.	**
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
	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 base plate 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 is permitted in the lifelines on each side of a yacht. Except at its fittings, the movement of a lifeline in a fore-and-aft direction shall not be constrained. Temporary sleeving in 3.14.6 (a) shall not modify tension in the line.	**
	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	**
3.14.4	**Special Requirements for Pulpits, Stanchions, Lifelines on Multihulls**	
	The following shall be provided:-	
	a) on a trimaran – a bow pulpit on the main hull, with lifelines around the main hull supported on stanchions. The lifelines may be interrupted where there are nets or crossbeam wings outboard of the main hull	Mu0,1,2,3,4
	b) on a trimaran – where a net joins the base of a bow pulpit on the main hull, an additional lifeline from the top of the pulpit to the forward crossbeam at or outboard of the crossbeam mid-point.	Mu0,1,2,3,4
	c) on a trimaran – at a main or emergency steering position on an outrigger with or without a cockpit, lifelines protecting an arc of 3 meters diameter centred on the steering position. (When measuring between lifelines their taut, undeflected positions shall be taken for this purpose).	Mu0,1,2,3,4
	d) on a catamaran – lifelines from bow to stern on each hull and transverse lifelines to form an effectively continuous barrier around the working area for man-overboard prevention. The transverse lifelines shall be attached to bow and stern pulpits or superstructure. A webbing, strop or rope (minimum diameter 6mm) shall be rove zig-zag between the transverse lifelines and the net.	Mu0,1,2,3,4

3.14.5 Lifeline Height, Vertical Openings, Number of Lifelines **

TABLE 7

LOA	earliest of age/seriesdate	minimum requirements
under 8.5 m (28 ft)	before January 1992	taut 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	taut 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 stranded stainless steel wire of minimum diameter in table 8 below. Lifelines shall be uncoated and used without close-fitting sleeving. **
Notwithstanding 3.14.6 (a), temporary sleeving may be fitted provided it is regularly removed for inspection

b) Grade 316 stainless wire is recommended. **

c) 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. **

d) 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 **

LOA	minimum wire diameter
under 8.5 m (28ft)	3 mm (1/8 in)
8.5m – 13 m	4 mm (5/32 in)
over 13 m (43 ft)	5 mm (3/16 in)

3.14.7 Pulpits, Stanchions, Lifelines – Limitations on Materials

TABLE 9 **

Earliest of Age or Series Date	detail
before January 1987	carbon fibre is not recommended in stanchions pulpits and lifelines.
January 1987 and after	stanchions, pulpits and lifelines shall not be made of carbon fibre.

3.15 Multihull Nets or Trampolines

3.15.1 The word "net" is interchangeable with the word "trampoline" Mu0,1,2,3,4

A net shall be:-

a) essentially horizontal Mu0,1,2,3,4

b) made from durable woven webbing, water permeable fabric, or mesh with openings not larger than 5.08cm (2 inches) in any dimension. Attachment points shall be planned to avoid chafe. The junction between a net and a yacht shall present no risk of foot trapping Mu0,1,2,3,4

c) solidly fixed at regular intervals on transverse and longitudinal support lines and shall be fine-stitched to a bolt rope Mu0,1,2,3,4

d) able to carry the full weight of the crew either in normal working conditions at sea or in case of capsize when the yacht is inverted. Mu0,1,2,3,4

e) It is recommended that lines used to tie the nets should be individually tied and not continuously connected to more than four attachment points per connecting line Mu0,1,2,3,4

3.15.2 Trimarans with Double Crossbeams

a) A trimaran with double crossbeams shall have nets on each side covering:-

b) the rectangles formed by the crossbeams, central hull and outriggers Mu0,1,2,3,4

c) the triangles formed by the aft end of the central pulpit, the mid-point of each forward crossbeam, and the intersection of the crossbeam and the central hull Mu0,1,2,3,4

d) the triangles formed by the aftermost part of the cockpit or steering position (whichever is furthest aft), the mid-point of each after crossbeam, and the intersection of the crossbeam and the central hull; except that:- Mu0,1,2,3,4

e) the requirement in OSR 3.15.2(d) shall not apply when cockpit coamings and/or lifelines are present which comply with the minimum height requirements in Table 7 Mu0,1,2,3,4

3.15.3 Trimarans with Single Crossbeams

a) A trimaran with a single crossbeam shall have nets between the central hull and each outrigger:- Mu0,1,2,3,4

b) on each side between two straight lines from the intersection of the crossbeam and the outrigger, respectively to the aft end of the pulpit on the central hull, and to the aftermost point of the cockpit or steering position on the central hull (whichever is furthest aft) Mu0,1,2,3,4

3.16 Catamarans

a) On a catamaran the total net surface shall be limited:

b) laterally by the hulls Mu0,1,2,3,4

c) longitudinally by transverse stations through the forestay base, and the aftermost point of the boom lying fore and aft. However, a catamaran with a central nacelle (non-immersed) may satisfy the regulations for a trimaran Mu0,1,2,3,4

3.17 Toe Rail or Foot – Stop

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

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 1993	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

3.18.2 A toilet, permanently installed or fitted bucket MoMu3,4

3.19 Bunks

3.19.1 Bunks, permanently installed, one for each member of the declared crew MoMu0

3.19.2 Bunks, permanently installed MoMu1,2,3,4

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

3.21.1 Drinking Water Tanks

a) A yacht shall have a permanently installed delivery pump and water tank(s): MoMu0,1,2,3
   i dividing the water supply into at least three compartments MoMu0
   ii dividing the water supply into at least two compartments MoMu1

3.21.2 Drinking Water

a) Each yacht shall have the necessary equipment (which may include watermakers and tanks containing water) permanently installed to provide at least 3 litres of drinking water per person per day for at least the likely duration of the voyage MoMu0

3.21.3 Emergency Drinking Water

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

b) In the absence of a power driven watermaker, at least 1 litre per person per day in at least two separate containers shall be provided for the expected duration of the voyage MoMu0

c) When a power-driven watermaker is on board, at least 500ml per person per day in at least two separate containers shall be provided for the expected duration of the voyage MoMu0

d) Facilities shall be provided to collect rainwater for drinking purposes including when dismasted MoMu0

e) All drinking water and any desalination units should be so arranged that drinking water is readily accessible when the yacht is inverted. Mu0

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

b) one permanently installed manual bilge pump either above or below deck. The pump shall be operable with all cockpit seats, hatches and companionways shut and shall have a permanently installed discharge pipe. Mu0,1,2

c) multihulls shall have provision to pump out all watertight compartments (except those filled with impermeable buoyancy). Mu0,1,2,3,4

d) at least one permanently installed manual bilge pump operable with all cockpit seats, hatches and companionways shut Mo3

e) one manual bilge pump Mo4

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 compass which may be hand-held MoMu0,1,2,3

3.25 Halyards.

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

3.26 Bow Fairlead

A bow fairlead, closed or closable and a cleat or securing arrangement, suitable for towing shall be permanently installed. Mo0

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	**Propulsion Engines, Generators, Fuel, Batteries**	
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 permanently installed exhaust, coolant, and fuel supply systems and fuel tank(s); be securely covered; and 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
	d) A propulsion engine shall be provided either as an inboard propulsive engine or as an outboard engine with associated tanks and fuel supply systems, all securely fastened.	Mo3
	e) An inboard propulsion engine shall be provided for yachts.	Mo0,1,2 Mu0
	f) Boats of less then 12.0m hull length may be provided with an inboard propulsion engine, or an outboard engine together with permanently installed fuel systems and fuel tank(s) may be used as an alternative.	Mu1,2,3
3.28.2	**Generator**	
	A separate engine 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 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 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 1/06 may continue in use for the remainder of service lives, *although it is strongly recommended that they be changed for sealed batteries as soon as possible.*	MoMu0
	c) It is recommended that consideration be given to the installation of sealed batteries, noting however that a special charging device may be specified by the battery manufacturers.	MoMu1,2,3
3.29	**Communications Equipment, EPFS (Electronic Position-Fixing System), Radar, AIS**	
	Provision of GMDSS and DSC is unlikely to be mandatory for small craft during the term of the present Special Regulations However it is recommended that persons in charge include these facilities when installing new equipment.	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 Notwithstanding OSR 3.29.1 (b) a yacht in a Category Zero race shall have a marine VHF DSC radio in accordance with OSR 3.29.1 (b) (I) and (ii) covering all international and US marine channels and meeting the class D specification of the ITU.	MoMu0
	c) At least two hand-held satellite telephones, watertight or with waterproof covers and internal batteries. When not in use each to be stowed in a grab bag (see OSR 4.21)	MoMu0
	d) At least two hand-held marine VHF transceivers each with min 5w output power, watertight or with waterproof covers. When not in use to be stowed in a grab bag (see OSR 4.21)	MoMu0
	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)	MoMu1,2,3,4
	f) Independent of a main radio transceiver, a radio receiver capable of receiving weather bulletins	**
	g) It is strongly recommended that a hand-held watertight transceiver operating on one or more aviation frequencies including 121.5MHz should be provided. This will enable communications between the yacht and aircraft on SAR duties, not all of which have maritime VHF. When not in use to be stowed in a grab bag (see OSR 4.21.2)	MoMu0

	h) A D/F (direction-finding) radio receiver operating on 121.5MHz to take a bearing on a PLB or EPIRB, or an alternative device for man-overboard location when each crew member has an appropriate personal unit (see OSR 5.07);	MoMu0
	i) An EPFS (Electronic Position-Fixing System) (e.g. GPS)	MoMu0,1,2,3
	j) A Standard-C satellite terminal (GMDSS) shall be permanently installed and permanently powered up for the duration of the race and for which the race committee shall have polling authority.	MoMu0
	k) An MF/HF marine SSB transceiver (GMDSS/DSC) with at least 125 watts transmitter power and frequency range from at least 1.6 to 29.9 MHz with permanently installed antenna and earth.	MoMu0
	l) An active radar set permanently installed, with not less than 4 kW PEP with antenna mounted at least 7 metres above the water. The radar antenna unit shall have a maximum dimension not less than 533 mm. The radar shall be mounted so that the antenna unit remains essentially horizontal when the yacht is heeled. Installations in place before January 2006 shall comply as closely as possible with OSR 3.29.(L)	MoMu0
	m) A class A AIS	MoMu0
	n) An AIS Transponder	MoMu1,2
	o) A type B AIS Transponder is recommended	*MoMu3*
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.	**
	After the start when sail numbers are not displayed elsewhere (sails down) they shall be displayed on the port quarter. It is particularly important that all vessels can be identified so that they can be excluded from any search and rescue operation.	**
4.02	**Hull marking**	
4.02.1	To assist in SAR location:-	
	a) Each yacht shall show at least 4 square metres of fluorescent pink or orange or yellow colour as far as possible in a single area on the coachroof and/or deck where it can best be seen	MoMu0
	b) Each yacht is recommended to show at least 1 square metre of fluorescent pink or orange or yellow colour as far as possible in a single area on the coachroof and/or deck where it can best be seen	MoMu1
4.02.2	Multihulls shall show on the underside, where they can be seen when inverted, an solid area of highly-visible colour (e.g. Day-Glo pink, orange, or yellow) of at least 1 square metre	Mu0,1,2,3,4
4.02.3	*Each yacht is recommended to show on each underwater appendage an area of highly-visible colour*	MoMu0,1
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	The following shall be provided:	
	a) Jackstays:-	MoMu0,1,2,3
	shall be provided-	
	i 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
	ii comprising stainless steel 1 x 19 wire of minimum diameter 5 mm (3/16 in), or webbing of equivalent strength;	MoMu0,1,2,3
	iii which, when made from stainless steel wire shall be uncoated and used without any sleeving;	MoMu0,1,2,3
	iv 20kN (2,040 kgf or 4,500 lbf) min breaking strain webbing is recommended;	MoMu0,1,2,3
	v at least two of which should be fitted on the underside of a multihull in case of inversion.	Mu0,1,2,3
4.04.2	**Clipping Points:-**	
	shall be provided-	
	a) attached to through-bolted or welded deck plates or other suitable and strong anchorage points adjacent to stations such as the helm, sheet winches and masts, where crew members work for long periods:-	MoMu0,1,2,3
	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
	d) In a trimaran with a rudder on the outrigger, adequate clipping points shall be provided that are not part of the deck gear or the steering mechanism, in order that the steering mechanism can be reached by a crew member whilst clipped on.	Mu0,1,2,3
	e) Warning – U-bolts as clipping points – see OSR 5.02.1(a)	
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	MoMu1,2,3
4.05.3	Fire extinguishers, at least three of minimum 2 kgs each of dry powder or equivalent including at least one extinguisher or system suitable for dealing with fire in a machinery space	MoMu0
4.05.4	A fire blanket adjacent to every cooking device with an open flame	MoMu0

4.06 **Anchor(s)**

4.06.1 An anchor or anchors shall be carried according to the table below:

TABLE 12

LOA	detail	race category
any	The specification of anchor, chain and rope shall be in accordance with relevant class rules or the rules of a recognised Classification Society (e.g. Lloyd's, DNV, etc.)	MoMu0
8.5 m (28 ft) and over	2 anchors together with a suitable combination of chain and rope, all ready for immediate use	MoMu1,2,3
under 8.5 m (28 ft)	1 anchor together with a suitable combination of chain and rope, all ready for immediate use	MoMu1,2,3
any	1 anchor, readily accessible	MoMu4

4.07 **Flashlight(s)**

4.07.1 The following shall be provided:-

a) a watertight, high-powered flashlight or spotlight, with spare batteries and bulbs, and — MoMu0,1,2,3

b) a watertight flashlight with spare batteries and bulb — **

c) for Mu3,4 the watertight flashlight in OSR 4.07.1 (b) shall be stowed in the grab bag or emergency container — Mu3,4

d) **a watertight high-intensity heavy duty searchlight powered by the ships' batteries, instantly available for use on deck and in the cockpit, with spare bulbs. The searchlight shall be capable of continuous use. If rechargeable the searchlight shall be capable of operating whilst being charged.** — MoMu0,1,2,3,

RORC recommends: A floating torch is carried ready for immediate use in the event of man overboard at night, where the torch can be thrown in the sea and the beam will shine vertically upwards as an aid to finding the man in the dark — **

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:- — **

a) International Medical Guide for Ships, World Health Organisation, Geneva — MoMu0,1

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. An English translation may be available. — **

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 A passive Radar Reflector (that is, a Radar Reflector without any power) shall be provided — **

a) If a radar reflector is octahedral it must have a minimum diagonal measurement of 456 mm (18in), or if not octahedral must have a documented RCS (radar cross-section) of not less than 10 square metres. The minimum effective height above water is 4.0 m (13 ft). — **

b) The passive and active devices referred to in these notes and in 4.10.1 and 4.10.2 above are primarily intended for use in the X (9GHz) band — **

4.10.2 The most effective radar response from a yacht may be provided by an RTE (Radar Target Enhancer) which may be on board in addition to the required passive reflector. An RTE should conform to Recommendation ITU-R 1176. An RTE is strongly recommended. — MoMu1,2,3,4

a) An RTE shall be provided in compliance with ITU-R 1176 — MoMu0

b) The display of a passive reflector or the operation of an RTE is for the person in charge to decide according to prevailing conditions. — **

4.10.3 A passive reflector in compliance with revised ISO8729 (revision in progress at January 2006) offers improved performance over earlier models and has a size typified by a cylinder of not more than weight 5kg, height 750mm and dia 300mm. When revised ISO 8729 is published the Special Regulations regarding radar reflectors will be reviewed and may be changed. — **

4.10.4 S (3GHz) band radar is often used by ships to complement X (9GHz) band radar. On S (3GHz) band a conventional reflector or RTE offers about one tenth the response obtained on the X (9GHz) band. — **

4.11 **Navigation Equipment**

4.11.1 Charts

Navigational charts (not solely electronic), light list and chart plotting equipment shall be provided — **

4.11.2 Reserve Navigation System

Navigators are recommended to carry a sextant with suitable tables and a timepiece or an adequate reserve navigation system so that total reliance is not placed on dead-reckoning and a single form of EPFS (Electronic Position-Fixing System) (see Volpe Report at www.navcen.uscg.gov/archive/2001/Oct/FinalReport-v4.6.pdf) — MoMu0,1

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

4.13.2 Two independent echo sounders shall be provided — MoMu0

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
	a) At least two 406 MHz EPIRBs shall be provided	MoMu0
	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 406 MHz EPIRB shall be properly registered with the appropriate authority.	MoMu0,1,2
	d) EPIRBs should be tested in accordance with manufacturer's instructions when first commissioned and then at least annually.	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
	g) Beacons with only 121.5MHz are no longer recommended for distress alerting. Satellite processing of 121.5 MHz is being phased out. 121.5MHz will continue to be used for local homing by on-board D/F systems and for local homing by SAR units. Type "E" EPIRBs are no longer supported and should be replaced immediately.	MoMu0,1,2
	h) See OSR 3.29.1(e) for on-board D/F and OSR 5.07.1(b) for personal EPIRBs (PLBs)	MoMu0
4.20	**Liferafts**	
4.20.1	**Liferaft Construction and Packed Equipment**	
	a) A sufficient number of liferafts shall be provided so that in the event of any one liferaft being lost or rendered unserviceable, sufficient aggregate capacity remains for all persons on board	MoMu0
	b) 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.	MoMu0
4.20.2	Liferaft(s) shall be provided capable of carrying the whole crew when each liferaft shall comply with either:-	MoMu1,2
	a) OSR 4.20.1 (b) (SOLAS), or	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**	
	A Liferaft shall be either:-	
	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 shall be such that each liferaft may be readily removed and launched whether or not the yacht is inverted.	Mu0,1,2
	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**	
	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**	
	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	MoMu0,1,2

	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.	
	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) Liferaft servicing certificates shall state the specification that the liferaft was built to. See OSR 4.20.2	MoMu1,2
4.21	**Grab Bags**	
4.21.1	**Grab Bag or Emergency Container for Multihulls Without Liferafts**	
	a) A multihull without a liferaft shall have, readily accessible whether or not the yacht is inverted, either a watertight compartment or a grab bag with the following minimum contents. A grab bag shall have inherent flotation, at least 0.1 square metre area of fluorescent orange colour on the outside, shall be marked with the name of the yacht, and shall have a lanyard and clip.	Mu3,4
	b) Note: it is not intended to duplicate in a grab bag etc. items required by other OSRs to be on board the yacht - this regulation covers only the stowage of those items	Mu3,4
	c) a watertight hand-held marine VHF transceiver plus a spare set of batteries	Mu3,4
	d) a watertight flashlight with spare batteries and bulb	Mu3,4
	e) 2 red parachute and 3 red hand flares	Mu3,4
	f) a watertight strobe light with spare batteries	Mu3,4
	g) a knife	Mu3,4
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 square metre 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
	c) The RORC recommends that consideration be taken when stowing a Grab Bag to its accessibility in the event of a full inversion	Mo0,1,2
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) (e.g. 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 or type "E" EPIRB (see OSR 4.19.1) in at least one of the grab bags carried by a yacht	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
	p) water in re-sealable containers and a hand-operated desalinator	MoMu0
	q) hand-held satellite telephone with waterproof cover and internal batteries	MoMu0
	r) strobe light	MoMu0
	s) medical supplies including any for pre-existing medical conditions of any crew member	MoMu0
	t) spare unbreakable spectacles for any crew members needing them	MoMu0
	u) wet notebook with captive pencil	MoMu0
	v) powerful whistle (operated by mouth)	MoMu0
	w) 6 red SOLAS compliant parachute flares, 3 white parachute flares, 2 orange SOLAS compliant smoke flares, cyalume-type light sticks	MoMu0
	x) a watertight, high-powered torch (flashlight) with spare batteries and bulbs	MoMu0
	y) watertight hand-held EPFS (Electronic Position-Fixing System) (e.g. GPS)	MoMu0
	z) SART (Search and Rescue Transponder)	MoMu0
	aa) 406MHz or type "E" EPIRB registered to the yacht (see OSR 4.19.2)	MoMu0

4.21.4 **Swimmer of the Watch Bag**

a) It is recommended to keep a bag, stored ready for immediate use within reach of the main companionway hatch, to facilitate the recovery of a man overboard by a swimmer of the watch and containing- MoMu0

b) 50 metres of buoyant 8mm rope MoMu0

c) a pair of swim fins MoMu0

d) a semi-automatic life jacket MoMu0

e) suitable clothing to effect a man overboard recovery in cold water MoMu0

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 or a Lifesling with a self-igniting light and without 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

iii Each lifebuoy shall be equipped with a sachet of fluoresceine dye MoMu0

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). **

4.23 **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. **

TABLE 13

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

**Specifications of white flares (except colour and candela rating) should comply with the LSA Code Chapter III 3.3* **

Pyrotechnic Signals carried by Service Yachts in RORC races may comply with Service requirements instead of those detailed in Table 13. **

4.23.2 The following lights shall be provided and readily available for the purpose of collision avoidance:

a) a watertight white torch (flashlight) with spare batteries and bulb **

b) a watertight, high-powered white spotlight (searchlight) with spare batteries and bulbs **

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 **

The RORC recommends that yachts should carry a lifting strop to clip to a halyard, to aid MOB recovery from the water back onto the deck. The lifting strop or 'helicopter strop' should fit under the arms and have a toggle to help keep the casualty from slipping out when lifted. A second strop is advised to fit under the knees to lift the casualty horizontally when dealing with well developed hypothermia. **

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) it is strongly recommended that every storm sail should either be of highly-visible coloured material (e.g. dayglo pink, orange or yellow) or have a highly-visible coloured patch added on each side; and also that a rotating wing mast used in lieu of a trysail should have a highly-visible coloured patch on each side **

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; **

c) a storm trysail which shall be capable of being sheeted independently of the boom with area not greater than 17.5% mainsail luff length x mainsail foot length. 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 trysaill; MoMu 0,1,2

d) if a storm trysail is required by either OSR 4.26.4 (c) or OSR 4.26.4 (g) 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; **

	e) a storm jib of area not greater than 5% height of the foretriangle squared, with luff maximum length 65% height of the foretriangle;	MoMu0,1,2
	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 and without reef points;	**
	g) either a storm trysail as defined in OSR 4.26.4(c), or mainsail reefing to reduce the luff by at least 40%.	MoMu3,4
	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) It is strongly recommended that the heavy-weather jib does not contain aromatic polyamides, carbon fibres and other high modulus fibres.	**
	j) 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.	MoMu0,1,2
4.27	**Drogue, Sea Anchor**	
4.27.1	*A drogue for deployment over the stern, or alternatively a sea anchor or parachute anchor for deployment over the bow, complete with all gear needed to rig and deploy the sea anchor or drogue, is strongly recommended to withstand long periods in rough conditions (see Appendix F).*	MoMu1
4.27.2	A drogue for deployment over the stern, or alternatively a sea anchor or parachute anchor for deployment at the bow, shall be provided complete with all gear needed to rig and deploy the sea anchor or drogue to withstand long periods in rough conditions (see OSR Appendix F)	MoMu0
4.28	**Man Overboard Alarm**	
4.28.1	*Each yacht shall be equipped with a man overboard alarm including an emergency button immediately accessible to a helmsman which will sound an audible alarm in the accommodation and simultaneously send an appropriate signal to the ship's navigational software*	MoMu0
4.28.2	*A yacht is recommended to be equipped with an EPFS (e.g. GPS) capable of immediately recording a man overboard position from each helm station*	MoMu 1, 2
4.28.3	A yacht shall be equipped with an EPFS (e.g. GPS) capable of immediately recording a man overboard position from each helm station (From January 2012)	MoMu 1, 2
4.29	**Deck Bags**	
4.29.1	OSR 4.29 shall apply only when RRS 51 moveable ballast is changed in the Notice of Race, Sailing Instructions or Class Rules to permit deck bags	Mo0
	a) A deck bag or bags may be provided for the stowage of sails on deck	Mo0
	b) A deck bag shall be:-	Mo0
	i) so constructed to ensure rapid draining of water	Mo0
	ii) securely fastened in such a way that the integrity of deck fittings e.g. stanchions and lifelines, is not compromised	Mo0

SECTION 5 - PERSONAL EQUIPMENT

5.01	**Lifejacket**	
5.01.1	Each crew member shall have a lifejacket as follows:-	**
	a) In accordance with ISO 12402 – 3 (Level 150) or equivalent, 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. Note: 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 crotch strap(s) / thigh straps or full safety harness in accordance with ISO 12401, Crotch straps or thigh straps together with related fittings and fixtures should be strong enough to lift the wearer from the water.	**
	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 test for gas retention,	**
	f) Compatible with the wearer's safety harness,	**
	g) Clearly marked with the yacht's or wearer's name,	**
	h) Fitted with a splashguard / sprayhood in accordance with ISO 12402 – 8,	MoMu0
	i) Fitted with a PLB unit (as with other types of EPIRB, should be properly registered with the appropriate authority), It is strongly recommended that a lifejacket has:	MoMu0
	j) A splashguard / sprayhood See ISO 12402 – 8,	MoMu1,2,3,4
	k) a PLB unit (as with other types of EPIRB, should be properly registered with the appropriate authority),	MoMu1,2,3,4
	l) If of a gas inflatable type, a spare cylinder and if appropriate a spare activation head.	MoMu1,2,3,4
5.01.2	For every gas inflatable lifejacket a spare cylinder and if appropriate a spare activation head shall be carried.	MoMu0
5.01.3	Each yacht shall carry a spare lifejacket or lifejackets as required in OSR 5.01.1 sufficient for at least 10% of the total number of persons on board (minimum 1 spare lifejacket). At least one of the required spare lifejacket(s) shall be a semi – automatic for use in man overboard recovery.	MoMu0
5.01.4	The person in charge shall personally check each lifejacket at least once annually.	**
5.01.5	A harness and lifejacket shall be worn when on deck:	
	a) between the hours of sunset and sunrise	MoMu0,1,2,3
	b) when alone on deck	MoMu0,1,2,3
	c) when reefed	MoMu0,1,2,3
	d) when the true wind speed is 25 knots or above	MoMu0,1,2,3
	e) when the visibility is less than 1 nautical mile	MoMu0,1,2,3
5.02	**Safety Harness and Safety Lines (Tethers)**	
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 EN1095. 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:-	
	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
	c) Each yacht shall carry spare harness and safety line units as required in OSR 5.02.1 above sufficient for at least 10% of the total number of persons on board (minimum one unit).	Mo0
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:-*	
	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. Crotch or thigh straps together with related fittings and fixtures should be strong enough to lift the wearer from the water. Note: Before the end of 03/10 ISAF will publish recommended minimum breaking strains which for equipment purchased on or after 01/11 will be mandatory. Effective January 2011, a harness shall b e fitted with crotch or thigh straps.	MoMu0,1,2,3
	The RORC requires that	
	c) a harness shall be fitted with a crotch strap or thigh straps;	MoMu0,1,2,3
	It is strongly recommended that: -	
	d) 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
	e) 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
	f) 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 harness is not designed to tow a person in the water and it is important that a harness is used to minimise or eliminate the risk of a person's torso becoming immersed in water outside the boat. The diligent use of a properly adjusted safety harness is regarded as by far the most effective way of preventing man overboard incidents.*	**
5.03	**Personal Location Lights**	
	a) two packs of miniflares or two personal location lights (either SOLAS or strobe) shall be provided for each crew member: one should be attached to, or carried on, the person when on deck at night.	MoMu0
5.04	**Foul Weather Suits**	
	a) a foul weather suit with hood shall be supplied to each crew member.	MoMu0
	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	**
5.05	**Knife**	
	A knife, one shall be supplied to each crew member to be worn on the person at all times	MoMu0
5.06	**Watertight flashlight**	
5.06.1	A buoyant watertight flashlight, one shall be supplied to each crew member.	MoMu0
5.06.2	RORC recommends that each crewmember carries in a pocket a combination torch/strobe light, not only are these devices useful as a personal torch but they are also valuable in aiding location in a man overboard situation.	MoMu0,1,2,3
5.07	**Survival Equipment**	
5.07.1	One set of Survival Equipment shall be supplied to each crew member to include:-	MoMu0
	a) an immersion suit (attention is drawn to ISO 15027-1 constant wear suits, and ISO 15027-2 abandonment suits and the LSA Code Chapter II, 2,3);	MoMu0
	b) a PLB (Personal Locator Beacon) equipped with 406MHz and 121.5Mhz;	MoMu0
	c) a personal unit in addition to the PLB in OSR 4.07.1(b) if the location device carried by the yacht in accordance with OSR 3.29.1(h) requires it;	MoMu0
	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) All PLB units, as with other types of EPIRB, should be properly registered with the appropriate authority	MoMu0,1,2
5.07.2	*It is strongly recommended that an immersion suit should be supplied to each crew member in a multihull in conditions where there is a potential for hypothermia*	Mu1,2,3,4
5.08	**Diving Equipment**	
5.08.1	A yacht shall carry at least two diving suits each to cover the entire body and including gloves, fins and portable air supplies.	MoMu0

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
6.01.2	Every member of a crew including the skipper shall have undertaken training as in OSR 6.01	MoMu0
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**	
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*	**
6.05	**Medical Training**	
6.05.1	At least two members of the crew shall be able to apply simple strapping and plaster casts, undertake skin suturing, insert intravenous cannulae and give intravenous fluids, give both intra-muscular and intravenous injections and apply a temporary dental filling	MoMu0
6.05.2	First Aid Training	
6.05.2.1	At least two members of the crew	MoMu1
6.05.2.2	At least one member of the crew Shall hold a current Senior First Aid Certificate or equivalent and should be familiar with the management of medical emergencies that may occur at sea including Hypothermia, and radio communications operations for obtaining medical advice by radio. Each of these crew members shall also have undertaken the training required by OSR 6.01	MoMu2
6.05.3	At least one member of the crew shall be familiar with First Aid procedures, Hypothermia and relevant communication systems (see OSR 6.02.7, 6.03.3, 6.03.4)	**
6.06	**Diving Training**	
6.06.1	At least 30% of the crew shall have received appropriate diving training to enable them to carry out basic repairs underwater and to provide assistance if necessary in recovery of a man overboard	MoMu0

APPENDICES TO SPECIAL REGULATIONS

Available from the ISAF website: www.sailing.org/specialregulations.php

Appendix A - Minimum Specification for Yachtsmens Liferafts
Appendix B - A guide to ISO and other Standards
Appendix C - Standard Inspection Card
Appendix D - Quickstop & Lifesling
Appendix E - Hypothermia
Appendix F - Drogues and sea anchors
Appendix G - Model Training Course
Appendix H - ISAF Code for the organisation of Oceanic Races
Appendix J - Category 5
Appendix K - Moveable and Variable Ballast
Appendix L - Category 6
Appendix M - Hull Construction Standards (Scantlings)

APPENDIX M HULL CONSTRUCTION STANDARDS (SCANTLINGS) for Monohulls pre-2010 and Multihulls

M.1 A monohull with 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

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

M.2 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

M.3 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