World Sailing Offshore Special Regulations

Extract for Race Category 2 Multihulls
JANUARY 2016- DECEMBER 2017

Version 0.8 - 22 March 2016

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

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Language & Abbreviations Used

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

RED TYPE indicates significant changes in 2016

Guidance notes and recommendations have been removed from the Regulations and are available on www.sailing.org/documents/offshorespecialregs/index.php

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

Administration

The Offshore Special Regulation are administered by the World Sailing Special Regulation Sub-Committee whose terms of reference are as follows: (www.sailing.org/regulations)
World Sailing Regulation 6.9.8.3 - The Special Regulations Sub-Committee shall: (a) be responsible for the maintenance, revision and changes to the World Sailing Offshore Special Regulations governing offshore racing, under licence from ORC Ltd. Such changes shall be biennial with revised editions published in January of each even year, except that matters of an urgent nature affecting safety may be dealt with by changes to the Regulations on a shorter time scale; (b) monitor developments in offshore racing relative to the standards of safety and seaworthiness.
Any queries please E-Mail: technical@isaf.co.uk

SECTION 1 - FUNDAMENTAL AND DEFINITIONS

1.01 Purpose and Use

** 1.01.1 The purpose of the Offshore Special Regulations (OSR) is to establish uniform minimum equipment, accommodation and training standards for monohull and multihull (excluding proa) boats racing offshore.

** 1.01.2 The OSR do not replace, but rather supplement, the requirements of governmental authority, Classification Society certification, the Racing Rules of Sailing (RRS), Equipment Rules of Sailing(ERS), class rules and Rating Systems.

** 1.01.3 Use of the OSR does not guarantee total safety of the boat and her crew. Particular attention is drawn to the description of OSRs for inshore racing which includes that adequate shelter and or effective rescue is available all along the

course. This is not included in more onerous OSR categories.

1.02 Responsibility of Person in Charge

** **1.02.1 Under RRS 4 the responsibility for a boat's decision to participate in a race or continue racing is hers alone. The safety of a boat and her crew is the sole and inescapable responsibility of the Person in Charge who shall do his best to ensure that the boat is fully found, thoroughly seaworthy and manned by an experienced and appropriately trained crew who are physically fit to face bad weather. The person in charge shall also assign a person to take over his responsibilities in the event of his incapacitation.**

** 1.02.2 Neither the establishment of the OSR, nor their use by Organizing Authorities, nor the inspection of a boat under the OSR in any way limits or reduces the complete and unlimited responsibility of the Person in Charge.

1.03 Definitions, Abbreviations, Word Usage

** 1.03.1 Definitions of Terms used in this document

TABLE 1

#	Pound force (lbf)
ABS	American Bureau of Shipping
Age Date	Month/year of first launch
AIS	Automatic Identification Systems
CEN	Comité Européen de Normalisation
Coaming	Includes the transverse after limit of the cockpit over which water would run in the event that when the boat is floating level the cockpit is flooded or filled to overflowing.
COLREGS	International Regulations for Preventing Collisions at Sea
Contained Cockpit	A cockpit where the combined area open aft to the sea is less than 50% maximum cockpit depth x maximum cockpit width
CPR	Cardio-Pulmonary Resuscitation
Crewmember	Every person on board
DSC	Digital Selective Calling
EN	European Norm
EPIRB	Emergency Position-Indicating Radio Beacon
ERS	ISAF - Equipment Rules of Sailing
FA Station	The transverse station at which the upper corner of the transom meets the sheerline.
First Launch	Month & year of first launch of the individual boat
Foul-Weather Suit	Clothing designed to keep the wearer dry and may consist of one piece or several
GMDSS	Global Maritime Distress & Safety System
GNSS	Global Navigation Satellite System
GPIRB	EPIRB, with integral GPS position-fixing
GPS	Global Positioning System
Hatch	The term hatch includes the entire hatch assembly including the lid or cover as part of that assembly
HMPE	High Modulus Polyethylene (Dyneema®/Spectra® or equivalent)
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
INMARSAT	Inmarsat Global Limited is the private company that provides GMDSS satellite distress and safety communications, plus general communications via voice, fax and data
ISAF	International Sailing Federation- (now World Sailing)
ISO	International Standard Organization or International Organization for Standardization.
ITU	International Telecommunications Union

Jackstay	A securely fastened webbing or rope which permits a crewmember to move from one part of the boat to another without having to unclip a safety harness tether.
Lifeline	Rope or wire line rigged as guardrail / guardline around the deck
LH	Hull Length as defined by the ERS
LSA	IMO International Life-Saving Appliance Code
LWL	(Length of) loaded waterline
Monohull	A boat with one hull
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.
Multihull	A boat with more than one hull
Open Cockpit	A cockpit that is not a Contained Cockpit.
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
Primary Launch	Month & Year of first launch of the first boat of the production series or first launch of a non-series boat
Proa	Asymmetric Catamaran
Rode	Rope, chain, or a combination of both, which is used to connect an anchor to the boat.
RRS	ISAF - Racing Rules of Sailing
Safety Line	A tether used to connect a safety harness to a strong point
SAR	Search and Rescue
SART	Search and Rescue Transponder
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
SOLAS	Safety of Life at Sea Convention
SSS	The Safety and Stability Screening numeral
Static Ballast	Material carried for the sole purpose of increasing weight and/or to influencing stability and/or trim and which is not 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
STIX	ISO 12217-2 Stability Index
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.
Waterline	The water surface when the boat is floating in measurement trim
World Sailing	formerly the International Sailing Federation or ISAF

** 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

** Organizing Authorities shall select from one of the following categories and may modify the OSR to suit local conditions

2.01.3 Category 2

MoMu,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 boats

2.02 Inspection

**		A boat may be inspected at any time. If she fails to comply with the OSR her entry may be rejected or she will be subject to protest
	2.03	**General Requirements**
**	2.03.1	All equipment required by OSR 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 boat.
**	2.03.2	Heavy items shall be permanently installed or securely fastened
SECTION 3 - STRUCTURAL FEATURES, STABILITY, FIXED EQUIPMENT		
**		A boat shall be/have:
	3.01	**Strength of Build and Rig**
**	3.01.1	Properly rigged, fully seaworthy and shall meet the OSR
**	3.01.2	Equipped with shrouds and at least one forestay that shall remain connected to the mast and the boat while racing
	3.02	**Watertight Integrity of a Boat**
**	3.02.1	Essentially watertight and all openings shall be capable of being immediately secured. Centreboard, daggerboard trunks and the like shall not open into the interior of a hull except via a watertight maintenance hatch with the opening entirely above the Waterline
MoMu0,1,2	3.03.2	A multihull and a monohull with Primary Launch between 1987 and 2010 shall have been designed, built, maintained, modified or repaired in accordance with the requirements of:
MoMu0,1,2	c)	the EC Recreational Craft Directive for Category A having obtained the CE mark, or
MoMu0,1,2	d)	ISO 12215 Category A, with written statements signed by the designer and builder confirming that they have respectively designed and built the boat in accordance with the ISO standard, and
MoMu0,1,2	e)	have written statements or approvals in accordance with a), or b) or c) and d) above for all significant repairs or modifications to the hull, deck, coach roof, keel or appendages, on board, except
MoMu0,1,2	f)	that a race organizer or class rules may accept, when that described in (a), (b), (c), (d) or (e) above is not available, the signed statement by a naval architect or other person familiar with the standards listed above that the boat fulfils these requirements
Mu0,1,2,3,4	**3.05**	**Stability and Flotation - Multihulls**
Mu0,1,2,3,4	3.05.1	Watertight bulkheads and compartments (which may include permanently installed flotation material) in each hull, to ensure that the boat 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	Transverse watertight bulkheads at intervals of not more than 4 m (13'-3") in every hull without accommodation if with a First Launch after 1998
Mu0,1,2,3,4	3.05.3	Designed and built to resist capsize
Mu0,1,2,3,4	**3.07**	**Exits and Escape Hatches - Multihulls**
	3.07.1	**Exits**
Mu0,1,2,3		At least two exits in each hull which contains accommodations
	3.07.2	**Escape Hatches, Underside Clipping Points & Handholds**
Mu0,1,2,3,4	a)	If 12 m (39'-4") LH and greater each hull which contains accommodation:
Mu0,1,2,3,4	i	an escape hatch for access to and from the hull in the event of an inversion;
Mu0,1,2,3,4	ii	a minimum clearance diameter through each escape hatch of 450 mm (18") or when an escape hatch is not circular, sufficient clearance to allow a crewmember to pass through fully clothed on boats if First Launch after 2002
Mu0,1,2,3,4	iii	each escape hatch above the waterline when the boat is inverted;
Mu0,1,2,3,4	iv	each escape hatch at or near the midships station if First Launch after 2000
Mu0,1,2,3,4	v	each escape hatch on the side nearest the vessel's central axis for a catamaran

		if First Launch after 2002
Mu0,1,2,3,4	b)	if a trimaran at least two escape hatches in compliance with the dimensions in OSR 3.07.2 a) ii if 12 m (39'-4") LH and greater if First Launch after 2002
Mu0,1,2,3,4	c)	each escape hatch shall have been opened both from inside and outside within 6 months prior to the race
Mu0,1,2,3,4	d)	appropriate handholds/clipping points on the underside sufficient for all crew (on a trimaran these shall be around the central hull)
Mu0,1,2,3,4	e)	a catamaran with a central nacelle first launched after 2002 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
Mu2,3,4	3.07.3	if less than 12 m (39'-4") LH either escape hatches in compliance with OSR 3.07.2 a), b) and c) or:
Mu2,3,4	a)	in each hull which contains accommodation, 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", and
Mu2,3,4	b)	tools suitable for cutting the emergency hatch, ready for instant use, adjacent to the cutting site. Each tool shall be secured to the vessel by a lanyard.
	3.08	**Hatches & Companionways**
**	3.08.1	Hatch covers forward of the maximum beam station shall not open toward the interior of the boat, except hatches in the side of a coachroof or ports having an area of less than 0.071 m² (110 in²)
**	3.08.2	Hatches not conforming with 3.08.1 shall be clearly labelled and used in accordance with the following instruction "NOT TO BE OPENED AT SEA"
**	3.08.3	A hatch, including a hatch over a locker shall be:
**	a)	permanently attached and capable of being firmly shut immediately and remaining firmly shut in a 180° capsize
**	3.08.4	Companionway hatches:
**	a)	fitted with a strong securing arrangement which shall be operable from the exterior and interior even when the boat is inverted
**	b)	blocking devices:
**	i	capable of being retained in position with the hatch open or shut
**	ii	secured to the boat (e.g. by lanyard) for the duration of the race
**	iii	permit exit in the event of inversion
Mu0,1,2,3,4	3.08.7	if a multihull with a companionway hatch extending below the local sheerline either:
Mu0,1,2,3,4	a)	have a minimum sill height of 300 mm (12") and be capable of being blocked off up to the level of the local sheerline whilst giving access to the interior with the blocking device(s) in place; or
Mu0,1,2,3	b)	be in compliance with ISO 11812 to design category A
	3.09	**Cockpits**
**	3.09.1	Cockpits that self-drain quickly by gravity at all angles of heel and are permanently incorporated as an integral part of the boat
**	3.09.2	A cockpit sole at least 2% LWL above the waterline (or in IMS boats with First Launch before 2003, at least 2% L above the waterline)
**	3.09.3	A bow, lateral, central or stern well is a cockpit for the purposes of OSR 3.09
****	**3.09.7**	**Cockpit Volume**
**		The maximum combined volume below lowest coamings of all contained cockpits shall be:
Extract MoMu2,3,4		primary launch before April 1992: 9% (LWL x maximum beam x freeboard abreast the cockpit)
**	b)	primary launch after March 1992 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
	3.09.8	**Cockpit Drains**
**		Cockpit drain cross section area of unobstructed openings (after allowance for screens if fitted) shall be at least that of:

**	a)	2 x 25 mm (1″) diameter or equivalent for a boat less than 8.5 m (28′) LH
**	b)	4 x 20 mm (3/4″) diameter or equivalent for a boat 8.5 m (28′) LH or greater
	3.10	**Sea Cocks or Valves**
**		Permanently installed sea cocks or valves on all through-hull openings below the waterline except for integral deck scuppers and instrument through-hulls
	3.11	**Sheet Winches**
**		Sheet winches 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 securely fastened to the mast step or adjoining structure
	3.13	**Watertight Bulkheads**
Mo0Mu0,1,2,3,4	3.13.1	Either a watertight "crash" bulkhead within 15% of LH from the bow and abaft the forward end of LWL, or permanently installed closed-cell foam buoyancy effectively filling the forward 30% LH of the hull
Mo0Mu0,1,2,3,4	3.13.2	Any required watertight bulkhead to be strongly built to take a full head of water pressure without allowing any leakage into the adjacent compartment
	3.14	**Pulpits, Stanchions, Lifelines**
**	3.14.1	The perimeter of the deck surrounded by system of lifelines and pulpits as follows:
**	a)	Continuous lifelines fixed only at (or near) the bow and stern. However a gate on each side of a boat is permitted. Except at its end fittings and at gates, the movement of a lifeline in a fore-and-aft direction shall not be constrained. Temporary sleeving shall not modify tension in the lifeline.
**	b)	Minimum heights of lifelines and pulpit rails above the working deck and vertical openings:
**	i	upper: 600 mm (24″)
**	ii	intermediate: 230 mm (9″)
**	iii	vertical opening: no greater than 380 mm (15″) except that on a boat with a Primary Launch before 1993 where it shall be no greater than 560 mm (22″)
**	c)	Lifelines permanently supported at intervals of not more than 2.2 m (7'-2 1/2″) and shall not pass outboard of supporting stanchions
**	d)	Pulpit and stanchion bases permanently installed with pulpits and stanchions mechanically retained in their bases
**	e)	The outside of pulpit and stanchion base tubes no further inboard from the edge of the working deck than 5% of maximum beam or 150 mm (6″), whichever is greater, nor further outboard than the edge of the working deck
**	f)	Stanchions straight and vertical except that:
**	i	within the first 50 mm (2″) 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″)
**	ii	stanchions may be angled to not more than 10° from vertical at any point above 50 mm (2″) from the deck
**	g)	A bow pulpit may be open provided the opening between the pulpit and any part of the boat does not exceed 360 mm (14″)

**

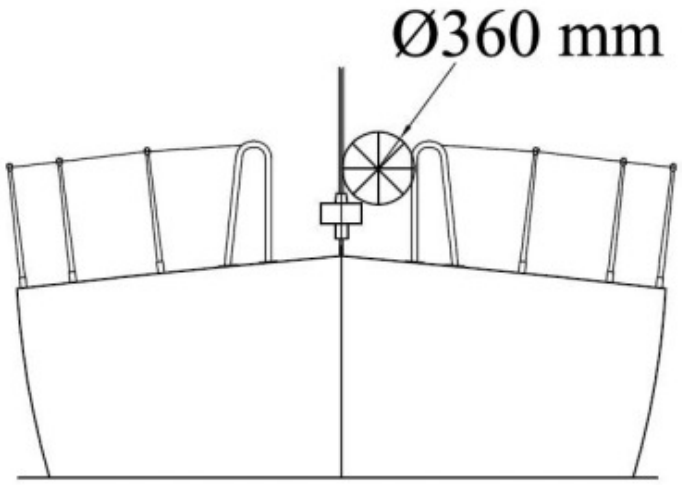


Figure 2 - Diagram Showing Pulpit Opening

**	h)	Lifelines may terminate at or pass through adequately braced stanchions set inside and overlapping the bow pulpit
**	i)	When a deflecting force of 4 kg (8.8 #) is applied to a lifeline at the mid-point of the longest span between supports that are aft of the mast, the deflection shall not exceed:
**	i	50 mm (2") for an upper or single lifeline
**	ii	120 mm (4 ¾") for an intermediate lifeline
Mu0,1,2,3,4	**3.14.2**	**Special Requirements for Pulpits, Stanchions, Lifelines on Multihulls**
Mu0,1,2,3,4		When on a boat it is impractical to precisely follow OSR regarding pulpits, stanchions, lifelines, the regulations for monohulls shall be followed as closely as possible
	3.14.3	Spare number
	3.14.4	Spare number
	3,14.5	Spare number
	3.14.6	**Lifeline Specifications**
**		Lifelines of either:
Mo4,Mu**	ii	High Modulus Polyethylene (HMPE) (Dyneema®/Spectra® or equivalent) rope
**	b)	The minimum diameter is specified in table 8 below
**	c)	Stainless steel lifelines shall be uncoated and used without close-fitting sleeving, however, temporary sleeving may be fitted provided it is regularly removed for inspection.
**	d)	A lanyard of synthetic rope may be used to secure lifelines provided the gap it closes does not exceed 100 mm (4"). This lanyard shall be replaced annually
**	e)	All components of the lifeline enclosure system shall have a breaking strength no less than the lifeline
Mo4,Mu**	f)	When HMPE is used, it shall be protected from chafe and spliced in accordance with the manufacturer's recommended procedures

** TABLE 8 - Minimum Diameters

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

Mu0,1,2,3,4	**3.15**	**Multihull Nets or Trampolines**
Mu0,1,2,3,4	3.15.1	The word "net" is interchangeable with the word "trampoline"
Mu0.1.2.3.4		A net shall be:-
Mu0,1,2,3,4	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 cm (2") in any dimension. Attachment points shall be planned to avoid chafe. The junction between a net and a boat 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 boat is inverted.
	3.15.2	**Trimarans with Double Crossbeams**
		A trimaran with double crossbeams shall have nets on each side covering:-
Mu0,1,2,3,4	a)	the area formed by the crossbeams, central hull and outriggers
Mu0,1,2,3,4	b)	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	c)	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	d)	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.
	3.15.3	**Trimarans with Single Crossbeams**
Mu0,1,2,3,4		A trimaran with a single crossbeam shall have nets between the central hull and each outrigger 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)
	3.16	**Catamarans**
Mu0,1,2,3,4		On a catamaran the total net surface shall be limited:
Mu0,1,2,3,4	a)	laterally by the hulls; and
Mu0,1,2,3,4	b)	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
	3.18	**Toilet**
MoMu0,1,2	3.18.1	Permanently installed toilet
	3.19	**Bunks**
MoMu1,2,3,4	3.19.2	Permanently installed bunks
	3.20	**Cooking Facilities**
MoMu0,1,2,3	3.20.1	Permanently installed cooking stove, capable of being operated safely at sea, with fuel shutoff control
	3.21	**Drinking Water Tanks & Drinking Water**
	3.21.1	**Drinking Water Tanks**
MoMu2,3		Permanently installed delivery pump and water tank(s)
	3.21.3	**Emergency Drinking Water**
MoMu1,2,3		At least 9 l (2.4 US Gal) of drinking water for emergency use in a dedicated and sealed container or container(s)
	3.22	**Hand Holds**
**		Adequate hand holds fitted below deck
	3.23	**Bilge Pumps and Buckets**
**	3.23.1 a)	two strong buckets, each with a lanyard and of at least 9 l (2.4 US Gal) capacity
Mo3Mu0,1,2		one permanently installed manual bilge pump
Mu0,1,2,3,4	c)	provision to pump out all watertight compartments (except those filled with impermeable buoyancy).
**	3.23.2	All required permanently installed bilge pumps shall be operable with all cockpit seats, hatches and companionways shut and with permanently installed discharge pipe(s) of sufficient capacity
**	3.23.3	Bilge pumps shall not be connected to cockpit drains and shall not discharge into a Closed Cockpit
**	3.23.4	Bilge pumps shall be readily accessible for maintenance and for clearing out debris

**	3.23.5	All removable bilge pump handles retained by a lanyard
	3.24	**Compass**
MoMu0,1,2,3		Marine magnetic compass capable of being used as a steering compass:
MoMu0,1,2,3,4	a)	Permanently installed marine magnetic steering compass, independent of any power supply, correctly adjusted with deviation card
MoMu0,1,2,3	b)	a second compass which may be hand-held and/or electronic
	3.25	**Halyards.**
**		A minimum of two halyards, each capable of hoisting a sail, on each mast
	3.27	**Navigation Lights**
**	3.27.1	mounted above sheerline and so that they will not be masked by sails or the heeling of the boat
**	3.27.2	having light intensity meeting COLREGS. When incandescent bulbs are used the minimum power rating shall be:
**	a)	For LH less than 12 m (39'-4"), 10 W
**	b)	For LH 12 m (39'-4") and greater, 25 W
MoMu0,1,2,3	3.27.3	reserve lights having the same specifications as above, and that can be powered independently
**	3.27.4	spare bulbs (not required for LED)
	3.28	**Engines, Generators, Fuel**
	3.28.1	**Propulsion Engines**
**	a)	engines and associated systems installed in accordance with their manufacturers' guidelines and suitable for the size and intended use of the boat
MoMu0,1,2,3	b)	an engine which provides a minimum speed in knots of (1.8 x √LWL in metres) or (√ LWL in feet)
Mu1.2.3		if less than 12.0 m (39'-4") LH either an inboard engine, or an outboard engine together with permanently installed fuel supply systems and fuel tank(s)
**	d)	an inboard engine shall have a permanently installed exhaust, cooling system, fuel supply, fuel tank(s) and shall have adequate heavy weather protection
	3.28.2	**Generator**
**		If an optional generator separate from the propulsion engine is carried, it shall be installed in accordance with the manufacturer's guidelines
	3.28.3	**Fuel Systems**
MoMu0,1,2,3	a)	All fuel tanks shall be rigid (but may have permanently installed flexible linings) and shall have a shutoff valve
MoMu0,1,2,3	b)	At the start a boat shall carry sufficient fuel to meet charging requirements for the duration of the race and to motor at the above minimum speed for at least 8 hours
	3.28.4	**Battery Systems**
MoMu0,1,2,3	a)	a dedicated engine starting battery when an electric starter is the only method for starting the engine
MoMu0,1,2,3	b)	batteries installed after 2011 shall be of the sealed type from which liquid electrolyte cannot escape
	3.29	**Communications Equipment, GPS, Radar, AIS**
MoMu0,1,2,3	3.29.01	a marine radio transceiver with an emergency antenna when the regular antenna depends upon the mast
MoMu0,1,2,3	3.29.02	if the marine radio transceiver is a VHF:
MoMu0,1,2,3	a)	a minimum rated output power of 25 W
MoMu0,1,2	b)	a masthead antenna not less than 38 cm (15") in length and co-axial feeder cable with not more than 40% power loss (Loss Estimator)
MoMu1,2,3	c)	be DSC capable if installed after 2015
MoMu1,2,3	d)	DSC capable VHF transceivers shall be programmed with an assigned MMSI (unique to the boat), be connected to a GPS receiver and be capable of making distress alert calls as well as sending and receiving a DSC position report with another DSC equipped station
MoMu1,2,3,4	3.29.05	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)

**	3.29.06	a second radio receiver, which may be the handheld VHF in 3.29.5 above, capable of receiving weather bulletins
MoMu1,2		a GPS capable of recording a crew overboard position, within 10 seconds, and monitoring that position
MoMu1,2	3.29.13	an AIS Transponder which either:
MoMu0,1,2	a)	shares the masthead VHF antenna via a low loss AIS antenna splitter; or
MoMu0,1,2	b)	has a dedicated AIS antenna not less than 38 cm (15") in length mounted with its base not less than 3 m (10') above the Waterline and co-axial feeder cable with not more than 40% power loss (Loss Estimator)

SECTION 4 - PORTABLE EQUIPMENT

A boat shall have:

	4.01	**Sail Letters & Numbers**
**	4.01.1	Identification on sails which complies with RRS 77 and RRS Appendix G
MoMu0,1,2,3	4.01.2	An alternative means of displaying identification as required under RRS Appendix G for a mainsail, to be displayed when none of the numbered sails are set
	4.02	**Search and Rescue Visibility**
Mo1,Mu1,2,3,4	4.02.1	A solid area of highly-visible pink, orange or yellow
Mu0,1,2,3,4	4.02.2	A 1 m² (11 ft²) area of highly-visible pink, orange or yellow showing when the boat is inverted
	4.03	**Soft Wood Plugs**
**		A tapered soft wood plug stowed adjacent to every through-hull opening
	4.04	**Jackstays and Clipping Points**
MoMu0,1,2,3		Permanently Installed fittings for jackstay ends and clipping points
MoMu0,1,2,3	4.04.1	Jackstays which shall:
MoMu0,1,2,3	a)	enable a crewmember 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	b)	have a breaking strength of 2040 kg (4500#) and be uncoated and non-sleeved stainless steel 1 x 19 wire of minimum diameter 5 mm (3/16"), webbing or HMPE rope
MoMu0,1,2,3	4.04.2	Clipping points which shall:
MoMu0,1,2,3	a)	be adjacent to stations such as the helm, sheet winches and masts, where crewmembers work
MoMu0,1,2,3	b)	enable a crewmember to clip on before coming on deck and unclip after going below
MoMu0,1,2,3	c)	enable two-thirds of the crew to be simultaneously clipped on without depending on jackstays
Mu0,1,2,3	d)	on a trimaran with a rudder on the outrigger, permit a crewmember to repair the steering mechanism whilst attached to a clipping point
	4.05	**Fire Fighting Equipment**
**	4.05.1	A fire blanket adjacent to every cooking device with an open flame
MoMu1,2,3		2 fire extinguishers, each with 2 kg each of dry powder or equivalent, in different parts of the boat
	4.06	**Anchors**
MoMu1,2,3		2 suitable anchors with suitable combination of chain and rope, ready for immediate use, except that for a boat less than 8.5 m (28') LH there shall be 1 suitable anchor with suitable combination of chain and rope
	4.07	**Flashlights and Searchlights**
**		Watertight lights with spare batteries and bulbs as follows:
MoMu0,1,2,3	a)	a searchlight, suitable for searching for a person overboard at night and for collision avoidance
MoMu0,1,2,3	b)	a flashlight in addition to 4.07 a)
	4.08	**First Aid Manual and First Aid Kit**
**		A First Aid Manual and First Aid Kit. The contents and storage of the First Aid Kit shall reflect the likely conditions and duration of the passage, and the number of crew
	4.09	**Foghorn**

**		A foghorn
	4.10	**Radar Reflector**
**	4.10.1	A passive radar reflector with:
**	a)	octahedral circular plates of minimum diameter 30 cm (12”), or
**	b)	octahedral rectangular plates of minimum diagonal dimension 40 cm (16”), or
**	c)	a non-octahedral reflector with a documented Root Mean Square minimum Radar Cross Section (RCS) area of 2 m² (22 ft²) from 0-360° of azimuth and ±20° of heel
	4.11	**Navigation Equipment**
**		Navigational charts (not solely electronic), light list and chart plotting equipment
	4.12	**Safety Equipment Location Chart**
**		A safety equipment location diagram in durable waterproof material, clearly displayed in the main accommodation, marked with the location of principal items of safety equipment
	4.13	**Depth, Speed and Distance Instruments**
MoMu0,1,2,3	4.13.1	A knotmeter or distance measuring instrument (log)
MoMu,1,2,3,4	4.13.2	A depth sounder
	4.14	**Spare Number**
	4.15	**Emergency Steering**
MoMu0,1,2,3	4.15.1	An emergency tiller capable of being fitted to the rudder stock except when the principal method of steering is by means of an unbreakable metal tiller
MoMu0,1,2,3	4.15.2	A proven method of emergency steering with the rudder disabled
	4.16	**Tools and Spare Parts**
**	4.16.1	Tools and spare parts, suitable for the duration and nature of the passage
**	4.16.2	An effective means to quickly disconnect or sever the standing rigging from the boat
	4.17	**Boat's name**
**		The boat’s name on miscellaneous buoyant equipment, such as lifejackets, cushions, lifebuoys, recovery slings, grab bags etc.
	4.18	**Retro-reflective material**
**		Marine grade retro-reflective material on lifebuoys, recovery slings, liferafts and lifejackets
	4.19	**EPIRBs**
MoMu1,2		A water and manually activated 406 MHz EPIRB
MoMu0,1,2	4.19.2	A 406 MHz EPIRB registered after 2015 shall include an internal GPS
MoMu0,1,2	4.19.3	All EPIRBs registered with the appropriate authority associated with the country code in the hexadecimal identification (15 Hex ID) of the beacon. A beacon can be registered online with the Cospas-Sarsat IBRD if the country does not provide a registration facility and the country has allowed direct registration in the IBRD
	4.20	**Liferafts**
	4.20.1	**Liferaft Construction**
MoMu1,2	a)	One or more inflatable liferafts with a total capacity to accommodate at least the total number of people on board which complies with:
MoMu1,2	i	SOLAS LSA Code 1997 Chapter IV or later version; or
MoMu1,2	ii	ISO 9650-1:2005, Type 1, Group A - Small Craft - Inflatable; or
MoMu1,2	iii	ISAF liferafts manufactured before 2016 until replacement is due at end of service life; or
MoMu1,2	iv	ORC liferafts manufactured before 2003 until replacement is due at end of service life
	4.20.2	**Minimum Liferaft Equipment**
MoMu0,1,2	a)	A SOLAS liferaft shall contain as a minimum a SOLAS A pack;
MuMo2	c)	An ISO 9650 liferaft shall contain as a minimum Pack 2 (less than 24 hour pack);
MoMu1,2	d)	The minimum contents of the ISO liferaft equipment packs are listed below. Not all items are necessarily packed within the liferaft. Some items are permitted to be carried within an accompanying waterproof grab bag which shall be in a

readily accessible location:

MoMu1,2 TABLE 14-Liferaft Equipment

Equipment	Pack 1 > 24h	Pack 2 < 24h	In liferaft	In liferaft or in grab bag
Portable buoyant baler easily operable by hand	1	1	X	
Sponge	2	2	X	
Pair of buoyant paddles with handles (not mitts) tied into raft adjacent to an entrance	1	1	X	
First-Aid Kit including at least 2 tubes of sunscreen. All dressings must be capable of being effectively used in wet conditions. The first aid kit shall be clearly marked and shall be re-sealable.	1	0		X
Whistle	1	1	X	
Waterproof torch with 6 h duration and separate battery and bulb or complementary torch	2	1	X	
Signalling mirror	1	1	X	
Anti-seasickness pills, per person	6	6		X
Seasickness bag with simple effective closure system, per person	1	1		X
Red hand flares in accordance with SOLAS LSA Code Chapter III, 3.2	6	3	3 min	X
Red parachute flares in accordance with SOLAS LSA Code Chapter III, 3.1	2	2	1 min	X
Thermal protective aids in accordance with SOLAS LSA Code Chapter III, 2.5	2	0		X
Repair outfit to enable survivors to repair leaks in any or all of the inflatable compartments. Repair systems must work when wet and be capable of being applied during violent motion.	1	1	X	
Air pump or bellows which shall be simple, robust and complete, with all necessary connections (loose parts shall be captive to the main apparatus) ready for instant use to enable air to be pumped into any or all of the inflatable compartments. The air pump or bellows shall be designed and built specifically for easy operation by hand	1	1	X	
Drinking water per person, in containers of each not more than 500mL	1.5 L	0	0.5 L	Xa
Food per person	10 000 kJ	0		X

* Drinking water in the grab bag (if any) may be replaced with a desalinator device

MoMu0,1,2 a) Each liferaft shall be packed either in:-

MoMu0,1,2 i a rigid container securely stowed on the working deck, in the cockpit or in an open space; or:-

MoMu0,1,2 ii a rigid container or valise securely stowed in a dedicated weather tight locker containing liferaft and abandon ship equipment only which is readily accessible and opens onto the cockpit or working deck, or transom

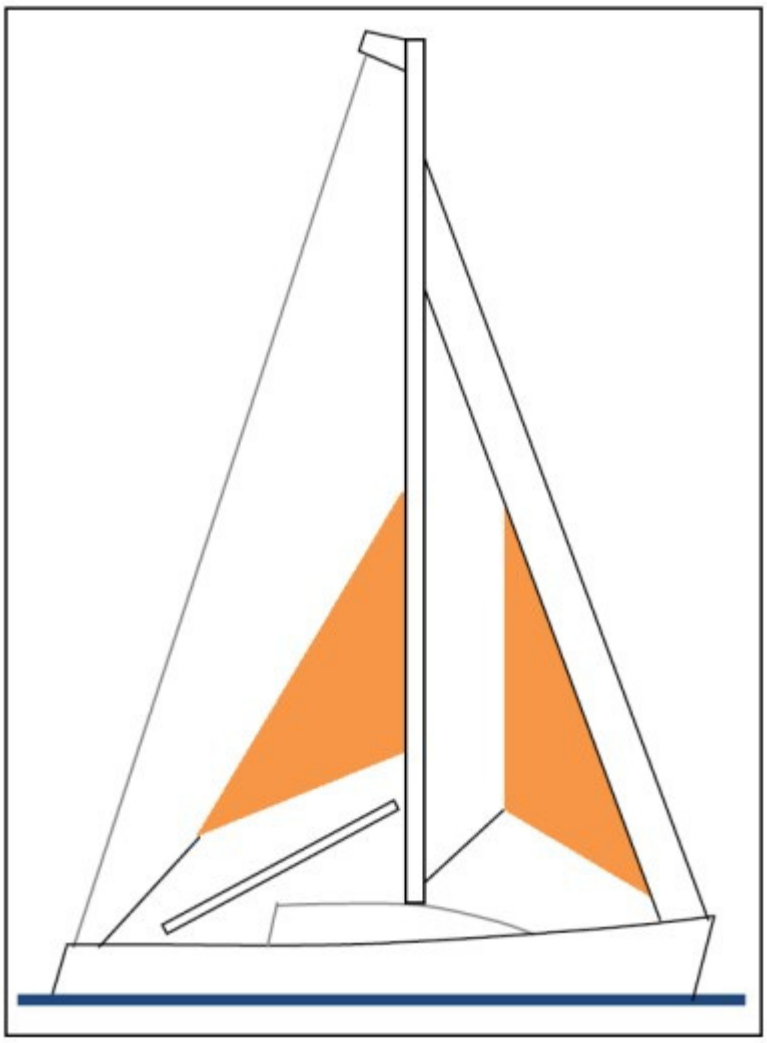
MoMu1,2 b) In a boat with primary launch before June 2001, a liferaft may be packed in a valise not exceeding 40 kg securely stowed below deck adjacent to a companionway

MoMu0,1,2 c) On a multihull or on a monohull with moveable ballast the liferaft shall be readily deployable whether or not the boat is inverted

MoMu0,1,2	d)	The end of each liferaft painter should be securely fastened to the boat
MoMu0,1,2	e)	Each raft shall be capable of being got to the lifelines or launched within 15 seconds
	4.20.3	**Spare Number**
	4.20.4	**Spare Number**
MoMu0,1,2	**4.20.5**	**Liferaft Servicing**
MoMu0,1,2	a)	A liferaft shall be serviced at a manufacturer authorized service station at the following maximum intervals:
MoMu0,1,2	i	SOLAS liferafts annually
MoMu0,1,2	ii	ISO 9650 canister packed liferafts every 3 years
MoMu0,1,2	iii	ISO 9650 valise packed liferafts every 3 years except that hired liferafts shall be serviced annually
MoMu0,1,2	iv	ISAF liferafts annually
MoMu0,1,2	v	ORC liferafts annually
MoMu0,1,2	b)	Servicing certificates (original or a copy) on board
	4.21	**Grab Bags**
**	f)	If a grab bag is provided it shall have inherent flotation, at least 0.1 m² (1 ft²) area of fluorescent orange colour on the outside, shall be marked with the name of the boat, and shall have a lanyard and clip
	4.22	**Crew Overboard Recovery**
**		Within reach of the helmsman and ready for instant use:
**	4.22.1	a lifebuoy with a self-igniting light and a drogue
MoMu0,1,2	4.22.2	In addition to 4.22.1 above, one lifebuoy equipped with:
MoMu0,1,2	a)	a whistle, a drogue, a self-igniting light and
MoMu0,1,2	b)	a pole and flag. The pole shall be either permanently extended or be capable of being fully automatically extended
MoMu0,1,2	4.22.3	At least one lifebuoy shall depend entirely on permanent buoyancy (e.g. foam)
**	4.22.4	Each inflatable lifebuoy and any automatic device shall be tested and serviced at intervals in accordance with its manufacturer's instructions
**	4.22.5	A heaving line, no less than 6 mm (1/4")diameter, 15 - 25 m (50 - 75') long, readily accessible to cockpit
MoMu0,1,2,3	4.22.6	A recovery sling which includes a:
MoMu0,1,2,3	a)	buoyant line of length no less than the shorter of 4 times LH or 36m (120')
MoMu0,1,2,3	b)	buoyancy section (horseshoe) with no less than 90 N (20#) buoyancy
MoMu0,1,2,3	c)	minimum strength capable to hoist a crewmember aboard
	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.

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

	4.24	Spare Number
	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**
		Figure 3



MoMu1,2		
**	a)	A storm sail purchased after 2013 shall have a highly-visible colour (e.g. dayglo pink, orange or yellow)
**	b)	Aromatic polyamides, carbon and similar fibres shall not be used in a trysail or storm jib but HMPE and similar materials are permitted
**	c)	Sheeting positions on deck for each storm and heavy-weather sail
**	d)	Sheeting positions for the trysail independent of the boom
**	e)	Storm and heavy weather jib areas calculated as: (0.255 x luff length x (luff perpendicular + 2 x half width)) *
MoMu0,1,2	f)	The storm trysail area calculated as (0.5 x leech length x shortest distance between tack point and leech) *
**		* Applies to sails made after 2011
	4.26.2	**Sails**
**		The maximum area of storm sails shall be lesser of the areas below or as specified by the boat designer or sailmaker
MoMu0,1,2,3	a)	A heavy-weather jib (or heavy-weather sail in a boat with no forestay) with:
**	i	area of 13.5% height of the foretriangle (IG) squared
**	ii	readily available means, independent of a luff groove, to attach to the stay
MoMu0,1,2	b)	A storm jib with:
MoMu0,1,2	i	area of 5% height of the foretriangle (IG) squared
MoMu0,1,2	ii	maximum luff length 65% of IG
MoMu0,1,2	iii	permanently attached means, independent of a luff groove, to attach to the stay
MoMu0,1,2	c)	A storm trysail (or rotating wing mast if suitable) with:
MoMu0,1,2	i	area of 17.5% mainsail hoist (P) x mainsail foot length (E)
MoMu0,1,2	ii	no headboard
MoMu0,1,2	iii	no battens

MoMu0,1,2	iv	sail number and letters on both sides, as large as practicable
MoMu0,1,2	v	in the case of a boat with an in-mast furling mainsail, the storm trysail shall be capable of being set while the mainsail is furled
	4.28	Spare Number
Deck Bags		
		SECTION 5 - PERSONAL EQUIPMENT
**		Each crew member shall have:
**	**5.01**	**Lifejacket**
**	5.01.1	A lifejacket which shall:
**	a)	
**	i)	if manufactured before 2012 comply with ISO 12402 - 3 (Level 150) or equivalent, including EN 396 or UL 1180 and:
**	.	if inflatable have a gas inflation system
**	.	have crotch/thigh straps (ride up prevention system (RUPS))
MoMu0,1,2	.	have an integral safety harness in compliance with OSR 5.02
**	ii	if manufactured after 2011 comply with ISO 12402-3 (Level 150) and be fitted with a whistle, lifting loop, reflective material automatic/manual gas inflation system
**		crotch/thigh straps (ride up prevention system (RUPS))
MoMu0,1,2		an integral safety harness in compliance with OSR 5.02
MoMu0,1,2,3	b)	have an emergency position indicating light in accordance with either ISO 12402-8 or SOLAS LSA code 2.2.3
**	c)	be clearly marked with the boat's or wearer's name
MoMu0,1,2,3	d)	have a sprayhood in accordance with ISO 12402-8
MoMu0,1,2,3	5.01.2	A boat shall carry at least one gas inflatable lifejacket spare cylinder and, if appropriate, a spare activation head.
MoMu0,1,2	5.01.3	A boat shall carry a spare at least one spare lifejacket as required in OSR 5.01.1
**	5.01.4	The person in charge shall personally check each lifejacket at least once annually.
MoMu0,1,2,3	**5.02**	**Safety Harness and Tethers**
MoMu0,1,2,3	5.02.1	A harness that complies with ISO 12401 or equivalent and a tether that:
MoMu0,1,2,3	a)	is not more than 2 m (6'-6") in length
MoMu0,1,2,3	b)	complies with ISO 12401 (or EN 1095 if manufactured prior to 2010)
MoMu0,1,2,3	c)	have overload indicator flag embedded in the stitching
MoMu0,1,2,3	d)	be manufactured after 2000
MoMu0,1,2,3	5.02.2	30% of the crew shall have either:
MoMu0,1,2,3	a)	a tether not more than 1 m (3'-3") long, or
MoMu0,1,2,3	b)	a mid-point snaphook on a 2 m (6'-6") tether
MoMu0,1,2,3	5.02.3	A tether which has been overloaded shall be replaced
	5.07	**Survival Equipment**
MoMu0,1,2	e)	where possible every PLB shall be registered with the appropriate authority associated with the country code in the hexadecimal identification (15 Hex ID) of the beacon. A beacon can be registered online with the Cospas-Sarsat IBRD if the country does not provide a registration facility and the country has allowed direct registration in the IBRD.
	5.08	**Diving Equipment**
		SECTION 6 - TRAINING
MoMu0,1,2	6.01	At least 30% but not fewer than two members of a crew, including the Person in Charge shall have undertaken training within the five years before the start of the race topics which include practical, hands-on sessions.
	6.01.3	Spare Number
MoMu0,1,2	6.01.4	Except as otherwise provided in the Notice of Race, an in-date certificate gained at a World Sailing / 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.
	6.02	Spare Number

	6.03	Spare Number
	6.04	**Routine Training On-Board**
**		Crews shall practice the drill for Crew-Overboard Recovery at least annually
	6.05	**Medical Training**
MoMu2		At least one crewmember shall have a valid first aid certificate completed within the last five years meeting:
MoMu0,1,2	a)	A certificate listed on the World Sailing website www.sailing.org/specialregs of MNA recognised courses
MoMu0,1,2	b)	STCW 95 First Aid Training complying with A-VI/1-3 - Elementary First Aid or higher STCW level
	6.06	**Diving Training**
		APPENDICES TO SPECIAL REGULATIONS
		Appendix A - Moveable and Variable Ballast
		Appendix B - For Inshore Racing
		Appendix C - For Inshore Dinghy Racing
		Appendix D - A guide to ISO and other Standards
		Appendix E - World Sailing Code for the organisation of Oceanic Races
		Appendix F - Standard Inspection Card
		Appendix G - Model Training Course
		Appendix H - Model First Aid Training Course
		Appendix J - Hypothermia
		Appendix K - Drogues and sea anchors

Tue 22 Mar 16 14:23:45

Version 0.8 Amendments to this extract file:

3.24 Compass reworded for clarity

4.06 Anchors delete: "rode" insert "chain and rope"

4.21 – Grab Bags delete : c) 2 red parachute and 3 red hand flares

6.Training 6.01.4 Amend reference to Appendix G