



MULTIHULL SAFETY REGULATIONS (“MSR”) (JULY 8, 2010)

General Requirements

1. *Purpose of MSR* -- MSR - Multihull establishes uniform minimum equipment, accommodation and training standards for multihull boats racing offshore. The MSR do not replace, but rather supplement, the requirements of governmental authority, the Racing Rules of Sailing (RRS), the rules of Class Associations and all applicable rating rules.
2. *Responsibility of Person-In-Charge* -- The safety of a boat and her crew is the sole and inescapable responsibility of the Person-In-Charge. The Person-In-Charge shall do his or her best to ensure that the boat is fully found, thoroughly seaworthy and manned by an experienced crew who have undergone appropriate training and are physically fit to face bad weather. The Person-In-Charge must be satisfied as to the soundness of hull, spars, rigging, sails and gear. The Person-In-Charge must ensure that all safety equipment is properly maintained and stowed and that the crew knows where it is kept and how it is to be used. Neither the MSR, their use in connection with the LO300 Race, nor any review under these MSR in any way limits or reduces the complete and unlimited responsibility of the Person-In-Charge.
3. *Crew eligibility* – Minimum Crew for a multihull is two.
4. *Boat Eligibility* - All entries are subject to review and acceptance or rejection by the organizing authority.
5. *Functions and maintenance of equipment* -- All equipment required by the MSR shall function properly, be regularly checked, cleaned and serviced, be readily accessible, and be of a type, size and capacity suitable and adequate for the intended use and size of the boat.
6. *Heavy Items* -- Ballast, ballast tanks and associated equipment shall be permanently installed. Heavy movable items including e.g. batteries, stoves, gas bottles, toolboxes and anchors and chain shall be permanently installed or securely fastened, as appropriate.

Structural Features and Fixed Equipment

7. *Strength of Build* -- Boats 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, be fully seaworthy, be built to resist capsize, and must meet the standards set forth in these MSR.
8. *Stability and Flotation* – 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.
9. *Shrouds* -- A boat's shrouds shall never be disconnected while racing.
10. *Hulls* -- A hull, including decks, coach roofs, 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.
11. *Centerboard/Daggerboard Trunks* -- Centerboard 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 boat floating level in normal trim.
12. *Exits* – Each hull with accommodation 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 in this location.
13. *Inverted Escape* – Multihulls shall have an escape hatch for access to and from each hull with accommodation in the event of an inversion.
14. *Calamity Pack* – Multihulls shall have either in a pack or compartment accessible from outside of the boat when inverted the following items:
 1. pyrotechnic signals per MSR 67,
 2. a handheld VHF marine transceiver, in addition to that required by MSR 41,
 3. a handheld Global Positioning System (GPS) in a waterproof container, this is in addition to MSR 38,
 4. a waterproof flashlight.

15. *Sea Cocks and Valves* -- Sea cocks or valves shall be permanently installed on all through-hull openings below the boat's loaded length of the waterline (LWL) except integral deck scuppers, speed indicators, depth finders, and the like; however a means of closing such openings shall be provided.
16. *Bow Pulpits* – A trimaran shall have a bow pulpit forward of the headstay on the main hull with lifelines supported on stanchions. The lifelines may be interrupted where there are nets or crossbeam wings outboard of the main hull. Bow pulpits may be open to allow access to a spinnaker pole or a bowsprit.
17. *Stern Pulpits* -- Boats shall have a stern pulpit, or lifelines arranged as an adequate substitute. Boats with a cabin structure aft of the aftermost cockpit are exempt from this requirement.
18. *Lifelines/Jackstays* -- All crew working areas shall be protected by lifelines or jackstays and safety harness attachment points. Jackstays may be substituted for lifelines or pulpits.
19. *Nets and Trampolines* – Nets and trampolines shall be:
 1. essentially horizontal,
 2. made from durable woven webbing, water permeable fabric or mesh with openings not larger than 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,
 3. solidly fixed at regular intervals on transverse and longitudinal support lines and shall be fine stitched to a bolt rope,
 4. 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.

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.

Trimarans with double crossbeams shall have nets on each side covering:

1. the rectangles formed by the crossbeams, central hull and outriggers,
2. 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,

3. the triangles formed by the aftermost part of the cockpit or steering position whichever is furthest aft, the midpoint of each after crossbeam, and the intersection of the crossbeam and the central hull, except when cockpit coamings and/or lifelines are present that adequately protect this area.

Trimarans with single crossbeams 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.

Catamarans: on a catamaran the total net surface area shall be limited:

1. laterally by the hulls,
 2. longitudinally by transverse stations through the forestay base and the aftermost part of the boom lying fore and aft. However, a catamaran with a central nacelle (non-immersed) may satisfy the rules for a trimaran.
20. *Toilet* – Boats shall have a permanently installed toilet, or a portable toilet, properly secured.
 21. *Bunks* – Boats shall have bunks, permanently installed.
 22. *Cooking Facilities* -- Boats shall have a cooking stove permanently installed or securely fastened with safe accessible fuel shutoff control capable of being safely operated in a seaway.
 23. *Hand Holds* – Boats shall have adequate hand holds shall be fitted below deck so that crew members may move about safely at sea.
 24. *Bilge Pumps* – Boats shall have a portable or permanently installed bilge pump or pumps capable of pumping out all compartments in all hulls. Bilge pumps shall not be connected to cockpit drains unless the combined system has sufficient capacity to handle the maximum combined volume. Bilge pumps may not discharge into a cockpit unless that cockpit opens aft to the sea.
 25. *Permanently Installed Compass* -- Boats shall have a permanently installed marine magnetic compass.
 26. *Halyards* -- No mast shall have less than two halyards, each capable of hoisting a sail.

27. *Boom Support* -- Boats shall have some means to prevent the boom from dropping independent of the mainsail or the main halyard. Topping lifts or supporting vang are acceptable for this purpose.
28. *Navigation Lights* -- Boats shall carry navigation lights that are permanently installed, such that they will not be masked by sails or the heeling of the boat.
29. *Reserve Navigation Lights* -- Boats must carry reserve navigation lights with a power and/or wiring system separate from that used for the Navigation Lights required by MSR 28. Boats may, in order to satisfy this requirement, carry portable battery powered navigation lights with sufficient luminosity for the conditions of the race.
30. *Spare Bulbs for Navigation Lights* -- Boats shall carry spare bulbs for navigation lights. However, spares are not required for LED navigation lights.
31. *Display of Navigation Lights* -- Boats shall display navigation lights between sunset and sunrise, and at any other time deemed appropriate by the Person in Charge.
32. *Propulsion Engine and Fuel Tanks* -- A propulsion engine shall be provided, capable of powering the boat at a speed in knots equal to the square root of its LWL in feet. Such engines shall be either:
 1. a securely covered inboard engine together with permanently installed exhaust and fuel supply systems and fuel tanks; or
 2. an outboard engine with associated tanks and fuel supply systems, all securely fastened. The outboard must be ready for immediate use as a source of propulsion.
33. *Boat Batteries* -- When an electric starter is the only method for starting the engine, boats shall carry a separate battery, the primary purpose of which is starting the engine.
34. *Engine Fuel* -- Boats shall, at a minimum, carry fuel a minimum of 6 gallons. Fuel tanks must be provided with shutoff valves or in the case of a portable fuel tank, a quick disconnect of the fuel line.
35. *Permanently Installed Marine Radio Transceiver* -- Boats shall carry a permanently installed VHF marine radio transceiver, which shall have a rated output power of twenty-five (25) watts And shall be connected to the masthead antenna referenced in MSR 36

36. *Masthead Antenna* -- Boats shall have a functional masthead antenna, with coaxial feeder cable with not more than 40% power loss.
37. *Global Positioning System (GPS)* -- Boats shall carry a permanently installed or portable GPS.

Portable Equipment and Supplies for the Boat

38. *Buckets* -- Boats shall have two (2) buckets of stout construction, each with at least two (2) gallons (US) capacity. Each bucket shall have a lanyard.
39. *Portable Marine Radio Transceiver* -- In addition to the permanently installed radio transceiver required under MSR 35, boats shall carry a hand-held watertight VHF marine transceiver, or a hand-held VHF marine transceiver with a waterproof cover. This is in addition to the handheld VHF transceiver required by MSR 14.
40. *Cellular Phone* -- Boats shall carry a working cellular telephone, and shall provide the cellular number to the Race Committee on the entry form.
41. *Soft Wood Plugs* -- Boats shall carry soft wood plugs, tapered and of the appropriate size, to be stowed or attached adjacent to the appropriate fitting for every through-hull opening.
42. *Jackstays* -- Boats shall be fitted with jackstays attached to through-bolted or welded deck plates or other suitable and strong anchorage fitted on deck, port and starboard of the boat's center line to provide secure attachments for safety harnesses/tethers. Webbing of 4,500 pounds breaking strength is recommended.
43. *Anchors* -- Boats shall carry at least two (2) anchors attached to a suitable combination of chain and rope, assembled and ready for immediate use. 1 @ 200' min., 1 @ 100 min.
44. *High-Powered Flashlight or Searchlight* -- Boats shall carry a watertight, high-powered flashlight or searchlight. 12v accessory plug is recommended, find link.
45. *Flashlights* -- In addition to the flashlight or searchlight required by MSR 44, boats shall carry at least two (2) watertight flashlights.
46. *First Aid Kit* -- Boats shall carry a first aid kit suitable for the likely conditions of the passage and the number of crew aboard.

47. *First Aid Manual* -- Boats shall carry a suitable first aid manual.
48. *Foghorn* -- Boats shall carry a foghorn – if compressed air, also a spare can.
49. *Radar reflector* -- Boats shall carry a radar reflector, functioning independent of any power source min 13'.0" above deck.
50. *Charts* -- Navigational charts, not solely electronic, must be provided that cover the course being raced.
51. *Safety Equipment Location Diagram* -- A durable waterproof diagram locating the principal items of safety equipment shall be provided and displayed in the main accommodation area where it can best be seen.
52. *Depth Sounder* -- Boats shall carry a depth sounder capable of sounding depths up to one hundred (100) feet.
53. *Spare Tiller* -- Boats shall carry an emergency tiller, capable of being fitted to the rudder stock. Boats using an unbreakable metal tiller are exempt from this requirement. Boats with two interchangeable tillers attached to a common rudder system are exempt from this requirement.
54. *Emergency Steering Methods* -- Crews must be aware of alternative methods of steering the boat in any sea condition in the event of rudder loss. At least one method must have been proven to work on board the boat. An inspector may require that this method be demonstrated.
55. *Tools and spare parts* -- Boats shall carry appropriate tools and spare parts, including effective means to quickly disconnect or sever the standing rigging from the hull. Oversize bolt cutters are recommended.
56. *Boat's Name* -- Each boat's name shall be on buoyant safety equipment.
57. *Retro-Reflective Material* -- Marine-grade retro-reflective material shall be fitted to buoyant safety equipment.
58. *Anti-Exposure Suits* - shall meet all the following minimum requirements:
 1. minimum inherent buoyancy of 22 lbs.,
 2. minimum immersed CLO value of .40,
 3. suits must be a full body suit of one piece construction,
 4. one suit must be carried for each crew member on board,
 5. each suit must be equipped with a personal strobe light,
 6. each suit must be equipped with a whistle,
 7. diver's wet suits and/or dry suits are not allowed.

The following suits are known to meet the requirements specified in items 1, 2, and 3 and 7 above:

Mustang Models: MS2176, MS2700
MS2175, MS2075
MS2076, MS2195

Guy Cotton TPS

59. *Lifesling* -- Boats shall carry a Lifesling® or equivalent equipment ready for instant use. Lifeslings inflated with compressed gas should be tested and serviced at intervals in accordance with its manufacturer's instructions.
60. *Man Overboard Pole* -- Boats shall carry within reach of the helmsman and ready for instant use a man overboard pole and flag with a lifebuoy, a self igniting light, a whistle and a drogue attached. A boat may carry a self inflating MOB module to satisfy this requirement. Self -inflating MOB modules should be tested and serviced in accordance with its manufacturer's specifications.
61. *Heaving Line* -- Boats shall carry a heaving line at least fifty (50) feet in length, readily accessible to the cockpit.
62. 69. *Cockpit Knife* -- A strong, sharp knife, sheathed and securely restrained shall be provided readily accessible from the deck or cockpit.
63. *Storm Jib* – It is strongly recommended that Boats shall carry a storm jib of area not greater than 5% height of the foretriangle squared, with luff maximum length 65% height of the foretriangle. This sail shall have means to attach the luff to the stay independent of any luff-groove device. Boats shall have sheeting positions on the deck for this sail.
64. *Mainsail Reefing Equipment* -- Boats shall have mainsail reefing equipment that will allow the luff of the mainsail to be reduced by 10%.

Personal Equipment

65. *Wearing of PFDs* -- Each crew member shall wear PFDs complying with MSR 73:

66. while on deck between sunset and sunrise; and

The wearing of an Anti-Exposure Suit as defined in MSR 64 satisfies the requirements of MSR 74 1, above but does not replace the requirement for each crew member to also have a PFD available as defined in coastguard safety requirements.

67. *Safety Harnesses and Tethers* -- Each crew member shall have a harness, and a safety line (tether) not more than 7 feet long with a snap hook at each end.

Training

68. 76. *Annual Man Overboard Practice* -- Man-overboard procedures appropriate for the boat's size and speed shall be practiced aboard the boat at least annually. At least two-thirds of all crew members racing on the boat during the Race must participate in this practice. A Crew Overboard Drill Certificate of such practice shall be signed by a minimum of 50% of participating crew members or both if two crew, and kept aboard the boat:
http://www.byc.com/mack/pdf/2010_crew_overboard_cert.pdf

Practice of the "Quick Stop" man-overboard procedure is strongly recommended.

Double Handed Requirements (applicable only to multihulls sailing in a double handed configuration)

73. *Autopilot* – Boats must carry an autopilot or tillerpilot, installed and ready for immediate use, which may be used while racing. This modifies RRS 52.
74. *Wearing of PFDs* -- Each crew member shall wear a PFD complying with MSR 73, at all times when on deck.
75. *Wearing of Safety Harnesses and Tethers* – Each crew member shall wear a safety harness and tether complying with MSR 75 at all times when out of the cabin, which shall be attached to the boat.
76. *Personal Safety Knife* – A knife, straight blade or if folding, able to be opened with one hand, to be attached to or carried on each crew member at all times.