

# Multihulls

MARION TO BERMUDA



## Equipment Inspection Checklist

YACHT \_\_\_\_\_

SKIPPER \_\_\_\_\_

INSPECTOR #1 \_\_\_\_\_

INSPECTOR #2 \_\_\_\_\_

*Second Inspection (if required)*

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### Overall

- |  | Skipper                  | Inspector #1             | Inspector #2             |
|--|--------------------------|--------------------------|--------------------------|
| 1.4 <u>Equipment and Knowledge:</u> All equipment required shall function properly, be regularly checked, cleaned and serviced, and be of a type, size and capacity suitable for the intended use and size of the boat and the size of the crew. This equipment shall be readily accessible while underway and, when not in use, stored in such a way that deterioration is minimized.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.5 <u>Secure Storage:</u> A boat's heavy items such as floorboards, batteries, stoves, toolboxes, anchors, chain and internal ballast shall be secured.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.6 <u>Strength of Build:</u> A boat shall be strongly built, watertight and, particularly with regard to hulls, decks and cabin trunks, capable of withstanding solid water. A boat shall be properly rigged, be fully seaworthy and shall meet the standards set forth herein. A boat's shrouds and at least one forestay shall remain attached at all times.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1.7 <u>Watertight Integrity:</u> A boat's hulls and amas, including, deck, coach roof, windows, hatches and all other parts, shall form an integral watertight unit, and any openings in it shall be capable of being immediately secured to maintain this integrity. Centerboard and daggerboard trunks and the like shall not open to the interior of the hull unless the opening is watertight and situated entirely above the waterline floating level in normal trim. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Hull and Structure

- |  | Skipper                  | Inspector #1             | Inspector #2             |
|--|--------------------------|--------------------------|--------------------------|
| 2.1.1.1 <u>Exits:</u> A boat shall have at least 2 exits in each hull which contains accommodation.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.1.1.2 <u>Escape hatches:</u> <b>A boat shall have an escape hatch in each hull that contains accommodation for access to and from the hull in the event of an inversion.</b>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.1.1.3 <u>Escape hatches:</u> Escape Hatches shall be on the side nearest the vessel's centerline if first launch after 2002.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.1.1.4 <u>Escape hatches:</u> Escape hatches shall be above the waterline when the boat is inverted.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.1.1.5 <u>Escape hatches:</u> Escape Hatches shall have sufficient minimum clearance of 450mm (approximately 18") in diameter or when an escape hatch is not circular, sufficient clearance to allow a crew member to pass through fully clothed. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.1.1.6 <u>Escape hatches:</u> Each Escape Hatch shall have been opened both from the inside and outside within six (6) months prior to the race. Hatches should need minimal effort to open.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.1.2 <u>Hull Openings:</u> A boat's hatch boards or doors, whether or not in position in the hatchway, shall be secured in a way that prevents their being lost overboard.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- 2.1.3 Cockpit: A boat's entire cockpit shall be solid, watertight, strongly fastened and/or sealed. Weather-tight seat hatches are acceptable only if capable of being secured when closed.
- 2.1.4 Cockpit: ***It is strongly recommended that a boat's cockpit drains be capable of draining six inches of water in 5 minutes. One square inch (645 mm<sup>2</sup>) of effective drain per eight square feet (0.743m<sup>2</sup>) of cockpit sole will meet this requirement.***
- 2.1.6 Through Hulls: A boat's through-hull openings below the waterline shall be equipped with sea cocks or valves, except for integral deck scuppers, speed transducers, depth finder transducers and the like; however, a means of closing such **transducer** openings shall be provided.
- 2.1.7 Floatation: A boat shall be designed to ensure that the boat is effectively unsinkable.
- 2.2.1 Stability: A boat must meet the requirements of ISO 12217-2A
- 2.3.1 Accommodations: A boat shall be equipped with **an enclosed head**.
- 2.3.2 Accommodations: A boat shall have bunks sufficient to accommodate the off-watch crew.
- 2.3.3 Accommodations: A boat shall have a stove with a fuel shutoff.
- 2.3.4 Accommodations: ***A boat shall have an installed water tank and delivery system and shall carry at least ten (10) gallons of water per person. Care should be taken to ensure potable water is accessible to the crew in the event of a failure of the primary water delivery system.***
- 2.3.5 Accommodations: A boat shall have adequate hand holds below decks.
- 2.5.1 Dewatering pumps: A boat shall have a permanently installed manual bilge pump of at least a 10 GPM (37.8 liter per minute) capacity and which is operable from on deck with the cabin closed with the discharge not dependent on an open hatch. Unless permanently attached to the pump, the bilge pump handle shall be securely attached to the boat in its vicinity via a lanyard or catch. A bilge pump discharge shall not be connected to a cockpit drain. The bilge pump shall not discharge into a cockpit unless that cockpit opens aft to the sea.
- 2.5.2 Dewatering pumps: A boat shall have a portable manual bilge pump of at least 10 GPM capacity capable of dewatering any part of the boat. When not in use, the pump shall be attached to the boat. ***The pump may be mounted on a board.***
- 2.5.3 Dewatering pumps: Each ama of a trimaran shall have a minimum of three independent compartments of significant volume, completely separated by watertight bulkheads, such that flooding of one section does not jeopardize flooding in the others. Alternatively, a trimaran shall have plumbing permanently installed in each ama allowing provision to pump out all compartments in the ama without having to open an access hatch in the ama.
- 2.7.1 Mechanical Propulsion: A boat shall have a mechanical propulsion system that is quickly available and capable of driving the boat at a minimum speed in knots equivalent to the square root of LWL in feet (1.8 times the square root of the waterline in meters) **and a boat must carry enough fuel to motor for 250 miles.**
- 2.7.3 Mechanical Propulsion: ***It is recommended that a boat's engine and generator installation (if so equipped) must conform to ABYC, ISO, or U.S. Coast Guard standards.***
- 2.7.4 Batteries: ***A boat's onboard rechargeable batteries shall be of the sealed type or be installed in such a way that electrolyte cannot escape in the event of inversion.***
- 2.8 Nets or Trampolines: All trampolines shall be (a) essentially horizontal; (b) Made from durable woven webbing, water permeable fabric or mesh. Attachment points shall avoid chafe and the junction between net and boat shall present no risk of foot trapping; (c) Solidly fixed at

regular intervals on transverse and longitudinal support lines and (d) Able to carry the full weight of the crew either in normal working conditions at sea or when the boat is inverted.

- 2.9 Nets or Trampolines: Each multihull shall have one or a combination of netting, coamings, bulwarks, railings, lifelines or jacklines, extending from the aft most part of the cockpit or steering station to the aft most part of the central pulpit or forestay, to keep the crew aboard while sailing and sail handling in conditions expected for Offshore racing. If lifelines are used, they shall be stainless steel wire with a minimum diameter of 3/16" (5mm), they must be taut, supported at distances of no greater than 87" (2.2 m), and be a minimum of 24" (762 mm) above the deck with a maximum vertical gap of 15" (381mm). The inspector may cut away covering if the wire is coated.
- 2.10. Nets or Trampolines: 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).
- 2.10.1 Nets or Trampolines: A trimaran with double crossbeams shall have nets on each side covering (a) the area formed by the crossbeams, central hull and outriggers, (b) the triangles formed by the aft end of the central pulpit, the midpoint of each forward crossbeam, and the intersection of the crossbeam and the central hull, and (c) 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.
- 2.11 Nets or Trampolines: A catamaran shall have nets covering at least the area bounded: (a) laterally between the hulls and (b) Longitudinally between transverse stations through the forward beam 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.

### Safety Equipment

- 3.1.1 Personal: Each crewmember shall have a life jacket that provides at least 33.7lbs (150N) of buoyancy, intended to be worn over the shoulders (no belt pack), meeting either U.S. Coast Guard or ISO specifications. Alternatively, each crewmember shall have an inherently buoyant off-shore life jacket that provides at least 22lbs (100N) of buoyancy meeting either U.S. Coast Guard or ISO specifications.
- 3.1.2 Personal: Life jackets shall be equipped with crotch or leg straps, a whistle, a waterproof light, be fitted with marine-grade retro-reflective material and be clearly marked with the boat's or wearer's name and be compatible with the wearer's safety harness. If the life jacket is inflatable, it shall be regularly checked for air retention. Life jackets shall be equipped with a knife suitable for cutting through the trampoline on the boat, with a tether attaching the knife to the life jacket.
- 3.1.4 Personal: Each crewmember shall have a safety harness and compatible safety tether not more than 6'7" (2m) long with a minimum tensile strength of 4500 lb. (20 kN). The tether shall have a snap hook at its far end and a means to quickly disconnect the tether at the chest end. ***It is strongly recommended that the connection at the chest end of the tether is able to be released with one hand while under load.***
- 3.2.1 Deck Safety: ***A boat shall carry at least two jacklines, one on each side of the boat, that are independent, that have a breaking strength of at least 4500 lb. (20 kN) and which allow the crew to reach all points on deck, connected to similarly strong attachment points, in place while racing.***

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- 3.2.2 Deck Safety: A trimaran with a rudder on the outrigger must have clipping points available for a crewmember to repair the steering mechanism while clipped in.
- 3.2.3 Deck Safety: A boat shall have jack lines with a breaking strength of at least 4,500 lbs. (20 kN), running the length of the underwing deck adjacent to the escape hatches, which allow the crew to clip in before exiting the hull. On a trimaran, these shall be around the central hull. In addition, the underwing deck shall (if there is one) be outfitted with nonskid pathways suitable for crew to cross between hulls and to access safety equipment while remaining clipped in.
- 3.3.1 Navigation Lights: A boat racing between sunset and sunrise shall carry navigation lights that meet U. S. Coast Guard or applicable government requirements mounted so that they will not be obscured by the sails nor be located below deck level.
- 3.3.2 Navigation Lights: A boat shall have a second set of navigation lights that comply with US Coast Guard or applicable government requirements and which can be connected to a different power source than the primary lights.
- 3.4 Fire Extinguishers: A boat shall carry fire extinguisher(s) that meets U.S. Coast Guard or applicable government requirements, when applicable.
- 3.5 Sound Producing Equipment: A boat shall carry sound-making devices that meets U.S. Coast Guard or applicable government requirements, when applicable.
- 3.6.1 Visual Distress Signals: A boat shall carry two SOLAS orange smoke flares not older than the expiration date.
- 3.6.1.1 Visual Distress Signals: ***It is strongly recommended that a boat carry six SOLAS red parachute flares not older than the expiration date.***
- 3.6.3 Visual Distress Signals: A boat shall carry four SOLAS red hand flares not older than the expiration date.
- 3.6.5 Visual Distress Signals: Boat flares stored inside of life rafts may not be used to satisfy the flare requirement.
- 3.7.1 Man Overboard: A boat shall carry a Lifesling or equivalent man overboard rescue device equipped with a self-igniting light stored on deck and ready for immediate use.
- 3.7.2 Man Overboard: A boat shall have a man overboard pole and flag, with a lifebuoy, a self-igniting light, a whistle, and a drogue attached. A self-inflating Man Overboard Module, Dan Buoy or similar device will satisfy this requirement. Self-inflating apparatus shall be tested and serviced in accordance with the manufacturer's specifications. These items shall be stored on deck, ready for immediate use, and affixed in a manner that allows for a "quick release".
- 3.7.3 Man Overboard: A boat shall have a throwing sock-type heaving line of 50' (15m) or greater of floating polypropylene line readily accessible to the cockpit.
- 3.7.4 Man Overboard: A boat shall carry a Coast Guard or applicable government approved "throwable device". If the device carried under 3.7.1 or 3.7.2 satisfies this requirement, then no additional device is needed.
- 3.8.1 Emergency Communications: A boat shall have a permanently installed 25-watt VHF radio connected to a masthead antenna by a co-axial feeder cable with no more than a 40% power loss. Such radio shall have DSC capability, have an antenna of at least 15" (381mm) in length, be connected to or have an internal GPS, and have the assigned MMSI number (unique to the boat) programmed into the VHF.

- 3.8.2 Emergency Communications: A boat shall have a watertight handheld VHF radio or a handheld VHF radio with waterproof cover. ***It is strongly recommended that this radio shall have DSC/GPS capability with an MMSI number properly registered to the vessel.***
- 3.8.4 Emergency Communications: A boat shall have an emergency VHF antenna with sufficient coax to reach the deck and have a minimum antenna length of 15" (381mm).
- 3.8.5 Emergency Communications: ***A boat shall be equipped with VHF transceivers that are operational in International and USA channel mode.***
- 3.9 Emergency Communications: A boat shall have an AIS Transponder, sharing a masthead VHF antenna via a low loss AIS antenna splitter. An acceptable alternative is a dedicated AIS antenna that is a minimum of 3 feet (0.9 meters) long, mounted with its base at least 9.8 feet (3 meters) above the water, and fed with coax that has a maximum 40% power loss. ***The AIS signal transmitted shall use the boat name provided on the boat's entry form rather than just an MMSI number.***
- 3.10. Emergency Communications: ***Each crew member shall have a dedicated AIS personal crew overboard beacon. This shall be on the crew member's person at all times while on deck.***
- 3.11 Emergency Communications: ***A boat shall carry a satellite voice and text communication system, with critical components in a waterproof container(s). The satellite voice and text communication system shall be operable from below decks (if needed via an external antenna). The system shall be on, capable of receiving incoming communication for the duration of the race. Its number shall be recorded as part of the boat's registration.***
- 3.12 Emergency Communications: ***A boat shall carry a cellular phone in a waterproof container. Its number should be recorded as part of the boat's registration.***
- 3.13 Emergency Communications: A boat shall have a method of receiving weather information in addition to the fixed mount and handheld VHF radio.
- 3.14 Emergency Communications: A boat shall carry a GPS receiver.
- 3.15 Emergency Communications: A boat shall carry an electronic means to record the position of a man overboard within ten seconds. This may be the same instrument listed in 3.14.
- 3.16.1 Emergency Communications: A boat shall carry a 406MHz EPIRB that is properly registered to the boat. This device shall be equipped with an internal GPS.
- 3.17 Navigation: A boat shall have a knotmeter ***and/or a distance measuring instrument.***
- 3.18 Navigation: A boat shall have a permanently installed depth sounder that can measure to depths of at least 200 ft. (61m).
- 3.19.1 Navigation: A boat shall have a permanently mounted magnetic compass independent of the boat's electrical system suitable for steering at sea.
- 3.19.2 Navigation: A boat shall have a second magnetic compass suitable for steering at sea which may be handheld.
- 3.20. Navigation: A boat shall have non-electronic charts that are appropriate for the race area.
- 3.21 Damage Control: A boat shall have the ability to display sail numbers and letters of the size carried on the mainsail by an alternative means when none of the numbered sails is set.

3.22 Damage Control: A boat shall carry soft plugs of an appropriate material, tapered and of the appropriate size, attached or stowed adjacent to every through-hull opening.

**Gear**

3.23 Anchoring: A boat shall carry one anchor, meeting the anchor manufacturer's recommendations based on the yacht's size, with a suitable combination of chain and line.

3.23.1 Anchoring: ***It is strongly recommended that a boat shall carry a second anchor, meeting the anchor manufacturer's recommendation based on the yacht's size, with a suitable combination of chain and line.***

3.24.1 Lights: A boat shall carry a watertight, high-powered searchlight, suitable for searching for a person overboard at night or for collision avoidance.

3.24.2 Lights: A boat shall carry a watertight flashlight for each crewmember with spare batteries in addition to the above.

3.25 Medical Kits: A boat shall carry a first aid kit and first aid manual suitable for the likely conditions of the passage and the number of crew aboard.

3.26 Radar Reflectors: A boat shall carry an 11.5" (292mm) diameter or greater octahedral radar reflector or one of equivalent performance.

3.27.1 Buckets: A boat shall carry two sturdy buckets of at least two gallons (8 liters) capacity with lanyards attached.

3.28 Safety Diagram: A boat shall post a durable, waterproof diagram or chart locating the principal items of safety equipment and through hulls in the main accommodation area where it can be easily seen.

3.29.1 Emergency Steering: A boat must be able to be steered after the failure of any one component in the steering system.

3.30. Spare Parts: A boat shall carry tools and spare parts, including an effective means to quickly disconnect or sever the standing rigging from the hull.

3.31 Identification: All lifesaving equipment shall bear retro-reflective material and be marked with the yacht's or wearer's name. The exception would be for new equipment or rented equipment (e.g. life rafts) that would require the unpacking of sealed equipment in order to meet this requirement. The boat name shall be added during the first servicing of any new equipment.

3.32 Cockpit Knife: A boat shall carry at least one strong, sharp knife, sheathed and securely restrained on deck which is readily accessible from each trampoline in the event of inversion. In addition, A boat shall carry a second knife meeting the requirements above which is accessible from the underside of the boat.

3.32.1 Cockpit Knife: A boat shall carry a strong, sharp knife, sheathed and securely restrained adjacent to each escape hatch.

**Sails**

3.33.1 Mainsail Reefing: A boat shall have a mainsail with reefing capable of reducing the luff length by at least 50%.

3.33.2 Trysail: It is strongly recommended that a boat shall carry a trysail, with the boat's sail number displayed on both sides (or rotating wing mast if suitable), which can be set independently of the main boom, has an area less than 17.5% of E x P, and which is capable of being attached

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to the mast. Storm sails manufactured after 01/01/2014 shall be constructed from a highly visible material.

3.33.3 Headsails: **A boat shall carry a heavy weather jib (or heavy weather sail in a yacht with no forestay) of an area not greater than 13.5% height of the foretriangle squared.**

3.33.4 Headsails: A boat shall carry a storm jib not exceeding 5% of the yacht's I dimension squared and equipped with an alternative means of attachment to the headstay in the event of a failure of the head foil. Storm sails manufactured after 01/01/2014 shall be constructed from a highly visible material.

3.33.5 Mainsheet Release: The crew of a boat must be able to manually release sufficient mainsheet or traveler to cause the end of the boom to move at least 15 degrees in arc in under two (2) seconds from all steering or consistently manned trimming station while racing. **Video documentation is acceptable compliance.**

3.34 Search & Rescue Visibility: A boat must display a one square meter area of highly visible pink, orange or yellow showing if the boat is inverted.

**Rigging**

3.35 Halyards: **A boat shall not be rigged with any halyard that requires a person to go aloft in order to lower a sail.**

3.36 Boom Support: **A boat shall have a means to prevent the boom from dropping if support from the mainsail or halyard fails.**

3.36.1 Boom Preventer: **A boat shall have a preventer or boom restraining device, shall practice rigging it and shall be prepared to demonstrate its use to the satisfaction of the MBR OA.**

**Supplies**

3.37 Water: A boat shall carry 1 gallon (3.785 liters) per crewmember of emergency drinking water in sealed containers in addition to any other water carried aboard the boat and it shall be aboard after finishing.

3.38 Food: **A boat shall have sufficient provisions on board at the start of the race to feed the crew for 14 days.**

**Gear**

3.39 Life Rafts: A boat shall carry adequate inflatable life raft(s) designed for saving life at sea with designed capacity for containing the entire crew. The raft shall be SOLAS, ISAF, ISO 9650-1 or ORC approved. The raft shall be stored in such a way that it is capable of being launched within 15 seconds. Boats shall have the life raft stowed in a deck mounted rigid container or stowed in watertight or self-draining purpose-built rigid compartment(s) opening adjacent to the cockpit or the working deck. The life raft(s) shall hold current certificate(s) of inspection. The boat may alternatively stow the life raft in a valise not weighing over 88 lbs. securely below deck adjacent to the escape hatch(es) so long as the valise fits through the escape hatch without force. The life raft(s) shall be readily deployable whether or not the boat is inverted.

3.40 Life Rafts: **A boat shall have a grab bag with a lanyard and clip for each life raft. The grab bag shall have inherent flotation, be of a bright fluorescent color, and contain at least an EPIRB and a watertight handheld VHF radio. The VHF radio and EPIRB need not be in addition to the prior requirements. The grab bag shall be readily accessible and retrievable whether or not the boat is inverted.**

**Skills**

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- 4.1.1 Emergency Steering: A boat's crew shall be aware of multiple methods of steering the boat with the rudder disabled and shall have chosen and practiced one method of steering the boat with the rudder disabled and be prepared to demonstrate said method of steering both upwind and downwind.
- 4.2 Person Overboard: Annually, **80%** of a boat's racing crew shall practice man-overboard procedures appropriate for the boat's size and speed. The practice shall consist of marking and returning to a position on the water and demonstrating a method of hoisting a crew member back on deck, or other consistent means of reboarding the crew member.
- 4.3.1 International Certificate: **At least 30% of those aboard the boat, but not fewer than two members of the crew, including the person-in-charge, must hold a World Sailing Approved Offshore Personal Survival Course certificate earned by attending either a two-day US Sailing approved "International Offshore Safety at Sea course with Hands-On Training" or a World Sailing approved "Offshore Personal Survival Course." Any certificate obtained more than five (5) years prior to the start of the race will not be acceptable for purposes of this paragraph.**
- 4.4 Crew Training: As required in 1.2 above the person in charge shall ensure that all crew members know where all emergency equipment is located and how to operate the equipment. In addition, the person in charge and crew shall discuss how to handle various emergency situations including Crew Overboard, Grounding, Loss of steering, Flooding, Fire, Dismasting, and Abandon Ship.
- 4.5 Crew Training: **It is strongly recommended that at least two crew members have current CPR and First Aid certifications.**

**Gear**

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- 5.1 Other Required Equipment: **A boat shall carry docking equipment for use in Bermuda including at least 5 fenders, 4 dock lines and a marine power cord(s) totaling at least 50 feet.**
- 5.2 Other Required Equipment: **The following documents are required to be on board: a federal VHF license, which is mandatory for international travel; a copy of the 2021-2024 Racing Rules of Sailing; a copy of the Marion Bermuda Race Safety Requirements, Multihulls; a copy of the International Regulations for Preventing Collisions at Sea 1972 (COLREGS).**



# Notice of Race Equipment Checklist

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14.1 Navigation, Communication and AiS Each yacht must keep a log in a logbook and make entries at least once each watch. The log should show courses, distance made good and dead-reckoning (DR) positions. The logbook must be on paper and have a traditional format. The logbook must remain on board and be available for inspection in Bermuda by the Compliance Committee.

14.2 Navigation, Communication and AiS Each yacht shall maintain a satellite communications system watch and log that shows the device was checked at least every two hours.