## US Multihull Safety Equipment Requirements

**Note:** Organizing Authorities may add or delete items based on the conditions of their specific races.

**Effective Date:** February 8, 2021, revision 2021.0

<table>
<thead>
<tr>
<th>Section Name</th>
<th>Requirement</th>
<th>Ocean</th>
<th>Coastal</th>
<th>Nearshore</th>
<th>Meets Req.</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hull and Structure: Nets or Openings</td>
<td>2.1.2</td>
<td>A boat’s hatch boards or doors, whether or not in position in the hatchway, shall be secured in a way</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Hull and Structure: Hull</td>
<td>2.1.3</td>
<td>A boat’s hulls and amas, including, deck, cockpit roof, windows, hatches and all other parts, shall</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Hull and Structure: Hull</td>
<td>2.1.4</td>
<td>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.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Hull and Structure: Escape Hatches</td>
<td>2.1.5</td>
<td>A boat shall have either an escape hatch in each hull that contains accommodation for access to and from the hull in the event of an inversion or appropriate tools for cutting an escape opening stowed securely in a location accessible from both inside and outside the boat in the event of capsizing.</td>
<td>X</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>Hull and Structure: Hull Construction Standards - scantlings with plan review approval - (See Appendix)</td>
<td>1.8</td>
<td>Hull Construction Standards - Scantlings with plan review approval - (See Appendix)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Hull and Structure: Watertight Integrity</td>
<td>1.7</td>
<td>A boat’s hulls and amas, including, deck, cockpit roof, windows, hatches and all other parts, shall</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 4 hours.</td>
<td>1.8</td>
<td>Hull Construction Standards - square root of the waterline in meters) for 4 hours.</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Hull and Structure: Hull Construction Standards - full weight of the crew either in normal working conditions at sea or when the boat is inverted.</td>
<td>1.9</td>
<td>Hull and Structure: Hull Construction Standards - full weight of the crew either in normal working conditions at sea or when the boat is inverted.</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Hull and Structure: Hull Construction Standards - all times properly maintained and safely stowed and that the crew knows where it is kept and how it is to be used.</td>
<td>1.5</td>
<td>Hull and Structure: Hull Construction Standards - all times properly maintained and safely stowed and that the crew knows where it is kept and how it is to be used.</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 6 hours.</td>
<td>1.6</td>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 6 hours.</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 10 hours.</td>
<td>1.8</td>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 10 hours.</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 12 hours.</td>
<td>2.0</td>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 12 hours.</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Hull and Structure: Hull Construction Standards - all times properly maintained and safely stowed and that the crew knows where it is kept and how it is to be used.</td>
<td>2.1</td>
<td>Hull and Structure: Hull Construction Standards - all times properly maintained and safely stowed and that the crew knows where it is kept and how it is to be used.</td>
<td>X</td>
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<tr>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 14 hours.</td>
<td>2.2</td>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 14 hours.</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Hull and Structure: Hull Construction Standards - all times properly maintained and safely stowed and that the crew knows where it is kept and how it is to be used.</td>
<td>2.3</td>
<td>Hull and Structure: Hull Construction Standards - all times properly maintained and safely stowed and that the crew knows where it is kept and how it is to be used.</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 16 hours.</td>
<td>2.4</td>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 16 hours.</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Hull and Structure: Hull Construction Standards - all times properly maintained and safely stowed and that the crew knows where it is kept and how it is to be used.</td>
<td>2.5</td>
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<td>X</td>
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<tr>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 18 hours.</td>
<td>2.6</td>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 18 hours.</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<td>X</td>
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<tr>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 20 hours.</td>
<td>2.8</td>
<td>Hull and Structure: Hull Construction Standards - square root of the waterline in meters) for 20 hours.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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</tbody>
</table>
Safety Equipment: Personal

3.1 Each crewmember shall have a life jacket intended for small boat sailing or other active boating. Each such life jacket shall be USCG, ISO, or applicable government approved or shall meet the ocean requirement of 3.1.1.

Safety Equipment: Deck

3.1 A boat shall carry 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 the regulations for a trimaran.

3.1.1 Each crewmember shall have a self-inflating life jacket that provides at least 35.76k (100N) of buoyancy, intended to be worn over the shoulders (no belt pack), either U.S. Coast Guard or ISO specifications. Alternatively, each crewmember shall have an inherently buoyant offshore life jacket that provides at least 28k (100N) of buoyancy meeting either U.S. Coast Guard or ISO specifications.

3.1.2 All jackets shall be equipped with北约 or leg straps, a whistle, a waterproof light, be filled 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 latch attaching the knife to the life jacket.

3.1.3 Each crewmember shall have a life jacket intended for small boat sailing or other active boating. Each such life jacket shall be USCG, ISO, or applicable government approved or shall meet the ocean requirement of 3.1.1.

3.1.4 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 end and a means to quickly disconnect the tether at the chest end.

3.1.5 A boat shall carry jacklines with a breaking strength of at least 4500 lb (20kN) which allow the crew to reach all points on deck, connected to similarly strong attachment points, in place while racing.

3.2 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 the regulations for a trimaran.

3.2.1 A boat shall carry jacklines with a breaking strength of at least 4500 lb (20kN) which allow the crew to reach all points on deck, connected to similarly strong attachment points, in place while racing.

3.2.2 A trimaran with a rudder on the outrigger must have clipping points available for a crewmember to access safety equipment while clipped in.

3.2.3 A trimaran with a rubber on the outrigger must have clipping points available for a crewmember to access safety equipment while clipped in.

3.3.1 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 not located below deck level.

3.3.2 A boat shall have a second set of navigation lights that comply with U.S. Coast Guard or applicable government requirements and which can be connected to a different power source than the primary lights.

3.4 A boat shall carry fire extinguisher(s) that meets U.S. Coast Guard or applicable government requirements, when applicable.

3.4.1 A boat shall carry fire extinguisher(s) that meets U.S. Coast Guard or applicable government requirements, when applicable.

3.5 A boat shall carry sound-making devices that meets U.S. Coast Guard or applicable government requirements, when applicable.

3.6.1 A boat shall carry two SOLAS orange smoke flares not older than the expiration date.

3.6.2 A boat shall carry one SOLAS orange smoke flares not older than the expiration date.

3.6.3 A boat shall carry four SOLAS red hand flares not older than the expiration date.

3.6.4 A boat shall carry three SOLAS red hand flares not older than the expiration date.

3.6.5 A boat shall carry three SOLAS red hand flares not older than the expiration date.

3.6.6 A boat shall carry four SOLAS red hand flares not older than the expiration date.

3.6.7 A boat shall carry U.S. Coast Guard or applicable government entity flares meeting day-night requirements not older than the expiration date.

3.6.8 A boat shall carry U.S. Coast Guard or applicable government entity flares meeting day-night requirements not older than the expiration date.

3.6.9 A boat shall carry U.S. Coast Guard or applicable government entity flares meeting day-night requirements not older than the expiration date.

3.7.1 A boat shall have a man overboard pole and flag, with a lifebuoy, a self-igniting light, and a drogue attached. A self-inflating Man Overboard Module, Dan Buoy or similar device will satisfy the 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 stowed in a manner that allows for a “quick-release”.

3.7.2 A boat shall have a man overboard pole and flag, 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 the 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 stowed in a manner that allows for a “quick-release”.

3.7.3 A boat shall have a man overboard pole and flag, 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 the 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 stowed in a manner that allows for a “quick-release”.

3.7.4 A boat shall have a throwing sock-type heaving line of 50’ (15m) or greater of floating polypropylene line readily accessible to the cockpit.

3.8 A boat shall have a permanently installed 25-watt VHF radio connected to a masthead antenna by a coaxial 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.

3.9 A boat shall have an emergency VHF antenna with sufficient cox to reach the deck and have a minimum antenna length of 15” (381mm).

3.9.1 Effective January 1, 2001, a boat shall have either an AIS transponder or an AIS receiver, properly installed and permanently connected to a suitable antenna. If a transponder is installed, it shall meet the requirements of 3.9.

3.10 A boat shall have a permanently installed 25-watt VHF radio connected to a masthead antenna by a coaxial 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.

3.11 Each crew member shall have a dedicated AIS personal crew overboard beacon. This shall be on the crew member's person at all times on deck.

3.12 Effective January 1, 2001, 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.

3.13 A boat shall have a method of receiving weather information in addition to the fixed mount and handheld VHF radio.

3.14 A boat shall carry a GPS receiver.
Safety Equipment: Emergency Communications 3.15 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. X X

Safety Equipment: Emergency Communications 3.16.1 A boat shall carry a 406MHz EPIRB that is properly registered to the boat. This device shall be equipped with an internal GPS. X

Safety Equipment: Navigation 3.16.2 A boat shall carry either a 406MHz EPIRB which is properly registered to the boat, or a floating 406MHz Personal Locator Beacon, registered to the owner with a notation in the registration that it is aboard the boat. This device shall be equipped with an internal GPS. X

Safety Equipment: Navigation 3.17 A boat shall have aknowable or alternatively a handheld GPS, in addition to the primary GPS referenced in 3.14 X X

Safety Equipment: Navigation 3.18 A boat shall have a permanently installed deep sounder that can measure to depths of at least 200 ft (-61m) X X

Safety Equipment: Emergency Communications 3.19.1 A boat shall have a permanently mounted magnetic compass independent of the boat's electrical system suitable for steering at sea. X X X

Safety Equipment: Navigation 3.19.2 A boat shall have a second magnetic compass suitable for steering at sea which may be hand held. X

Safety Equipment: Navigation 3.2 A boat shall have non-electronic charts that are appropriate for the race area. X X

Safety Equipment: Damage Control 3.21 A boat shall have the ability to display sail numbers and tellers of the size carried on the mainsail by an alternative means when none of the numbered sails is set. X

Safety Equipment: Damage Control 3.22 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. X X

Gear: Anchoring 3.23 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. X X X

Gear: Lights 3.24.1 A boat shall carry a watertight flashlight, suitable for searching for a person overboard at night or for collision avoidance. X X

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

Gear: Lights 3.24.3 A boat shall carry at least two watertight flashlights with spare batteries in addition to the equipment of 3.24.1. X X

Gear: Medical Kits 3.25 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. X X X

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

Gear: Baskets 3.27.1 A boat shall carry two sturdy baskets of at least two gallons (8 liters) capacity with lanyards attached X X

Gear: Baskets 3.27.2 A boat shall carry one sturdy bucket of at least two gallons (8 liters) capacity with lanyards attached X

Gear: Identification 3.31 All identifying equipment shall bear non-reflective material and be marked with the yacht's or owner'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. X X

Gear: Cockpit Knife 3.32 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. X X X

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

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

Sails: Tripsail 3.33.2 A boat shall carry a tripsail, with the boat's sail number displayed on both sides (or rotating wing mast sailbags), 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 to the mast. Storm sails manufactured after 01/01/2014 shall be constructed from a highly visible material. x

Sails: Headsails 3.33.4 A boat shall carry a storm (three no exceeding 5%) of the yacht's dimension square and equipped with an alternative means of attachment to the headstay in the event of a failure of the headstay. Storm sails manufactured after 01/01/2014 shall be constructed from a highly visible material. x

Sails: Mainsail Release 3.33.5 The crew of a boat must be able to manually release sufficient mainsheet to allow the crew to recover the mainsail or headsail in the event of its being jammed or stuck. x

Sails: Beach & Rescue Visibility 3.34 A boat must display a single square meter area of highly visible pink, orange or yellow shining if the boat is inverted. X

Rigging: Halyards 3.35 A single roller-furling headstay of no larger than 125% LP may be lashed to the swivel at the top of the forestay, thus requiring a person to go aloft to hoist or drop this sail. No other sail, either headsail, foresail, or genoa, may be rigged so that someone has to go aloft to hoist or drop it. x X

Supply: Water 3.37 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. x

Gear: Life Rafts 3.39 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, 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-drawing 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 life raft may be alternately stowed on the life raft, in a valse or calling water over 88 lbs. securely below deck adjacent to the escape hatch(es) so long as the valse fits through the escape hatch without force. The life raft shall be readily stowable in an existing or newly acquired compartment. x

Gear: Life Rafts 3.4 A boat shall have a grab bag with a lantern and clip for each life raft. The grab bag shall have special flotation, a bright fluorescent color, and contain at least an EPIRB or PLB, a VHF radio, a waterproof flashlight, and cutting tools if required per 2.1.1.2. The VHF radio or PLB are in addition to the prior requirements and shall be properly registered to the boat in the case of the EPIRB, or to the owner with a notation that it is carried on the boat in the case of a PLB. x

Skills: Emergency Steering 4.1.1 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. x

Skills: Emergency Steering 4.1.2 Crews must be aware of methods of steering the yacht with the rudder disabled. x X

Skills: Man Overboard 4.2 Additionally, two-thirds 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 crewmember back on deck, or other consistent means of recovering the crewmember. X X X

Skills: Safety at Sea Training 4.3.1 At least 30% of those aboard the boat, but no fewer than two members of the crew, unless racing single-handed, including the person in charge, shall have a valid Offshore or International Offshore Certificate from US Sailing, or the equivalent from another national authority. x
| Skills: Crew Training | 4.4 | 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. | x | x | x |