

Safety Equipment Requirements (SERs) for Multihulls for the 2019 Swiftsure International Yacht Race

"X" beside a requirement in the column 'Coastal' means this is a mandatory requirement for the Four Long Courses (4th column)

"NR" beside a requirement means it is not a mandatory requirement

"Recommend" beside a requirement means it is not mandatory but is highly recommended

#	Section Name	Requirement	Coastal
1.1	Overall	These SERs do not replace, but rather supplement, the requirements of governmental authorities, classification society certification, the Racing Rules of Sailing (RRS), Equipment Rules of Sailing (ERS), class rules, and Rating Systems. Use of these rules does not guarantee total safety of the boat and her crew.	X
1.2	Overall: Responsibility	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 assign a person to take over his responsibilities in the event of his incapacitation.	X
1.3	Overall: Inspections	A boat may be inspected at any time, by an inspector or measurer appointed for the event. If she does not comply with these requirements, her entry may be rejected or she will be subject to a protest filed by the RC.	X

1.4	Overall: Equipment and Knowledge	All equipment required by these SERs shall: a) function properly b) be regularly checked, cleaned and serviced c) when not in use be stowed in conditions in which deterioration is minimized d) be readily accessible e) be of a type, size and capacity suitable and adequate for the intended use and size of the boat.	X
1.5	Overall: Secure Storage	Heavy items such as batteries, stoves, toolboxes, anchors, chain and internal ballast shall be permanently installed or securely fastened.	X
1.6	Overall: Strength of Build	A boat shall be strongly built, watertight and, particularly with regard to hulls, decks and cabin trunks, capable of withstanding solid water and knockdowns. A boat shall be properly rigged and be fully seaworthy.	X
1.7	Overall: Watertight Integrity	A boat's hull, 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.	X
2.1.1	Hull and Structure: Hull Openings	A boat's companionway(s) shall be capable of being blocked off to the main deck level. The method of blocking should be solid, water tight and rigidly secured, if not permanent.	X
2.1.2	Hull and Structure: Hull Openings	Trunks and cases for centerboards, daggerboards and other movable appendages shall not open into the interior of a hull except via a watertight inspection/maintenance hatch, the opening of which shall be entirely above the waterline of the boat floating level in normal trim.	X
2.1.3	Hull and Structure: 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.	X
2.1.4	Hull and Structure: Cockpit	A boat's cockpit drains shall be capable of draining	X

		six inches of water in 5 minutes. One square inch (645mm ²) of effective drain per eight square feet (0.743m ²) of cockpit sole will meet this requirement.	
2.1.5	Hull and Structure: Cockpit	The cockpit sole shall be at least .02 times LWL above WL. .	NR
2.1.6	Hull and Structure: 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 openings shall be provided.	X
2.2.1	Hull and Structure: Stability	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.	X
2.2.2	Hull and Structure: Stability	The Organizing Authority shall have the right, but not the obligation to reject the entry of any boat which it regards as presenting an unreasonable risk of capsizing, whether by reason of extreme sail area to beam ratios, a history of capsizing, or otherwise. In no event shall the Organizing Authority have any liability for permitting any entrant to race.	X
2.2.3	Inverted Escape	Multihulls shall have either: - an escape hatch for access to and from each hull with accommodation in the event of an inversion; or -an axe, hatchet, or other appropriate tool, for cutting an escape opening stowed securely in a location accessible from outside of the boat in the event of a capsizing.	X
2.3.1	Hull and Structure: Accommodations	A boat shall be equipped with a head or a fitted bucket.	NR

2.3.2	Hull and Structure: Accommodations	A boat shall have bunks sufficient to accommodate the off-watch crew.	NR
2.3.3	Hull and Structure: Accommodations	If a boat has a stove it shall be fitted with a fuel shutoff.	X
2.3.4	Hull and Structure: Accommodations	A boat shall have an installed water tank and delivery system.	NR
2.3.5	Hull and Structure: Accommodations	A boat shall have adequate hand holds below decks.	NR
2.4.1	Hull and Structure: Lifelines	A boat's deck, including the headstay, shall be surrounded by a suitably strong enclosure, typically consisting of lifelines and pulpits, meeting the requirements in 2.4.2 to 2.4.8.	NR
2.4.2	Hull and Structure: Lifelines	Stanchions used with HMPE lifelines shall have rounded openings to reduce chafe.	NR
2.4.3	Hull and Structure: Lifelines	Bow pulpits may be open, but the opening between the vertical portion of stanchion pulpit and any part of the boat shall not exceed 14.2" (360mm). All catamarans are exempted from the need for pulpits and lifelines across the bow.	NR
2.4.4	Hull and Structure: Lifelines	Lifelines shall be uncoated stainless steel wire or high molecular weight polyethylene (HMPE) line with spliced terminations or terminals specifically intended for the purpose. A multipart-lashing segment not to exceed 4" per end termination for the purpose of attaching lifelines to pulpits is allowed. Lifelines shall be taut (see appendix for requirements). When HMPE is used, the load-bearing portion (core) shall meet or exceed minimum diameter requirements.	NR

2.4.5	Hull and Structure: Lifelines	The maximum spacing between the bases of lifeline supports (e.g. stanchions and pulpits) shall be 87" (2.2m).	NR
2.4.6	Hull and Structure: Bow Pulpit- Trimaran	Bow Pulpits – A trimaran shall have a bow pulpit on the main hull. Bow pulpits may be open. Catamarans are exempt from this requirement.	NR
2.4.7	Hull and Structure: Stern Pulpit- Trimaran	A trimaran 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. Catamarans are exempt from this requirement.	NR
2.4.7.1	Nets, in General	Nets and trampolines shall be made from durable woven webbing, water permeable fabric or mesh with openings not larger than 2.5 inches in any dimension. Attachment points shall be planned to avoid chafe and foot trapping, solidly fixed at regular intervals on transverse and longitudinal support lines and shall be 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.	X
2.4.7.2	Nets, Trimaran	A trimaran with double crossbeams shall have nets on each side covering the rectangles formed by the crossbeams, central hull and floats. In addition, the triangles defined by the aft end of the central bow pulpit, the mid-point of each forward crossbeam, and the intersection of the crossbeam and the central hull, and 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, shall be covered by netting, except when rails, cockpit coamings and/or lifelines are present that adequately protect these areas. A trimaran is exempted from the lifeline requirement where there is a trampoline outboard of the main hull, except that a lifeline must run from the top of a bow pulpit to the forward crossbeam at the outboard edge of the bow net or foredeck.	NR

2.4.7.3	Nets Catamaran	Catamarans shall have nets in the entire area between the beams and the hulls, and in that area described by the intersection of the hulls and the forward beam and the forestay. Catamarans with trampoline nets between the hulls are exempted from the lifeline requirement.	X
2.4.7.4	Hiking racks and Trapezes	Hiking racks are permitted. Trapezes are not permitted.	X
2.4.8	Hull and Structure: Lifelines	Lifelines or jacklines, and safety harness attachment points shall protect all crew working areas.	X
2.5.3	Hull and Structure: Dewatering pumps	A boat shall have at least two manual bilge pumps of at least a 10 GPM capacity.	X
2.6	Hull and Structure: Mast and Rigging	A boat shall have the heel of a keel-stepped mast securely fastened to the mast step or adjoining structure.	X
2.7.1	Hull and Structure: 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 (1.81 times the square root of the waterline in meters) for 10 hours.	X
2.7.3	Hull and Structure: Mechanical Propulsion	The boat's engine and generator installation (if so equipped) must conform to ABYC, ISO and/or Coast Guard/National Safety Authority of the OA standards.	X

3.1	Safety Equipment in Calamity Pack	<p>A multihull shall have either in a pack or compartment accessible from outside of the boat when inverted containing the following items:</p> <ul style="list-style-type: none"> a. pyrotechnic signals per section 3.64; b. handheld VHF marine transceiver with DSC and a MMSI number programed into the unit, in addition to the fixed mount transceiver required by section 3.8.2; c. handheld global positioning system (GPS) in a waterproof container, which may be integrated into the handheld radio per section 3.8.2; d. waterproof flashlight; e. cutting tools if required per section 2.2.3. 	X
3.1.1	Safety Equipment: Personal	<p>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 Coast Guard/National Safety Authority of the OA or ISO specifications. Life jackets shall be equipped with crotch or leg straps, a whistle, a waterproof light, be fitted with marine-grade retro-reflective material, 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.</p>	X
3.1.2	Safety Equipment: Personal	<p>Alternatively, each crewmember shall have a US Coast Guard or Transport Canada approved Type V life jacket equivalent equipped with crotch or leg straps, a whistle, a waterproof light, retro-reflective material, marked with the boat or owner's name, which is compatible with a safety harness.</p>	NR
3.1.3	Safety Equipment: Personal	<p>Each crewmember shall have a safety harness and compatible safety tether not more than 7 feet (2.13m) long with a minimum tensile strength of 4500 lb. (20kN). The tether shall have a snap hook at its far end and a means to quickly disconnect the tether at the chest end while under load.</p>	X
3.2.1	Safety Equipment: Deck Safety	<p>Unless the person in charge of the boat has an effective alternative deck safety plan, a boat shall carry jacklines with a breaking strength of at least 4500 lb. (20kN) which allow the crew to reach all</p>	X

		points on deck, connected to similarly strong attachment points.	
3.2.2	Safety Equipment: Deck Safety	A boat shall have adequate clipping points or jacklines that allow the crew to clip on before coming on deck and to unclip after going below.	X
3.2.3	Safety Equipment	Multihulls must have jacklines or attachment points that are accessible when the vessel is inverted.	X
3.3.1	Safety Equipment: Navigation Lights	A boat shall have navigation lights that meet Coast Guard/National Safety Authority of the OA requirements and mounted so that they will not be obscured by the sails nor be located below deck level.	X
3.3.2	Safety Equipment: Navigation Lights	A boat shall have spare running lights with separate power for night races.	X
3.4	Safety Equipment: Fire Extinguishers	A boat shall carry fire extinguisher(s) that meets Coast Guard/National Safety Authority of the OA requirements, when applicable.	X
3.5	Safety Equipment: Sound Producing Equipment	A boat shall carry a sound-making device that meets Coast Guard/National Safety Authority of the OA requirements, when applicable.	X
3.6.1	Safety Equipment: Visual Distress Signals	A boat shall carry SOLAS orange smoke flares not older than the expiration date.	NR
3.6.2	Safety Equipment: Visual Distress Signals	A boat shall carry SOLAS red parachute flares not older than the expiration date.	NR
3.6.3	Safety Equipment: Visual Distress Signals	A boat shall carry SOLAS red hand flares not older than the expiration date. Any boat which carries a laser rescue flare in its	NR

		calamity pack, shall not be required to carry more than 4 pyrotechnic devices in total (which may be of any of the varieties described above) notwithstanding the requirements of sections 3.6.1-3.6.3 inclusive.	
3.6.4	Safety Equipment: Visual Distress Signals	A boat shall carry either Coast Guard/National Safety Authority of the OA approved flares or Coast Guard/National Safety Authority of the OA approved S.O.S. Distress light meeting day-night requirement; in either case, not older than the expiration date.	X
3.6.5	Safety Equipment: Visual Distress Signals	Boat flares stored inside of life rafts may not be used to satisfy the flare requirement. (Note: a life raft is not required)	X
3.7.1	Safety Equipment: Man Overboard	A boat shall carry a recovery Lifesling or equivalent MOB rescue device stored on deck and ready for immediate use, and which includes: a) buoyant line of length no less than the shorter of 4 times LH or 36m (120') b) buoyancy section (horseshoe) with no less than 90 N (20#) buoyancy c) minimum strength capable to hoist a crewmember aboard The recovery sling shall bear retro-reflective material and be marked with the boat's name.	X
3.7.2	Safety Equipment: 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 MOB 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". The lifebuoy shall bear retro-reflective material and be marked with the boat's name.	X
3.7.3	Gear: Man Overboard	A boat shall have a heaving line of no less than 6 millimeters (1/4") diameter, at least 50' (15.3	X

		meters) in length of floating line readily accessible to the cockpit.	
3.8.1	Safety Equipment: Emergency Communications	A boat shall have a permanently installed 25-watt VHF radio connected to a masthead antenna, or to a deck or rail mounted antenna at least 6 feet in length, by a co-axial feeder cable with no more than a 40% power loss. Radios manufactured after 01/01/2015 shall have DSC capability, be connected to or have an internal GPS, and have the assigned MMSI number (unique to the boat) programmed into the VHF.	X
3.8.2	Safety Equipment: Emergency Communications	A boat shall have a watertight handheld VHF radio or a handheld VHF radio with waterproof cover. Radios manufactured after 01/01/2015, shall have DSC/GPS capability and a Maritime Identity or MMSI number programmed into it.	X
3.8.3	Safety Equipment: Emergency Communications	A boat shall have an emergency VHF antenna. The emergency antenna shall be equipped with sufficient coaxial cable to reach the deck, and have a minimum antenna length of 10" (25.4 cm).	X
3.9	Safety Equipment: Emergency Communications	A boat shall have an AIS Class B transponder with a masthead-mounted antenna of at least 15" (381mm) in length. The AIS may use the boat's VHF antenna if a low loss AIS antenna splitter is used.	NR
3.10	Safety Equipment: Emergency Communications	A boat shall carry either a cellular phone or satellite phone in a waterproof container.	X
3.11	Safety Equipment: Emergency Communications	A boat shall carry a satellite telephone in a waterproof container.	NR
3.12	Safety Equipment: Emergency Communications	A boat shall carry man overboard alarms for each crewmember based on AIS or other method.	NR

3.13	Safety Equipment: Emergency Communications	A boat shall have a method of receiving weather information in addition to the fixed mount and hand held VHF radio.	NR
3.14	Safety Equipment: Emergency Communications	A boat shall carry a GPS receiver.	X
3.15	Safety Equipment: 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.	X
3.16.1	Safety Equipment: Emergency Communications	A boat shall carry a 406MHz EPIRB that is properly registered to the boat. This device shall either have an internal GPS (self-locating) or be connected to a continuously functioning external GPS. After 01/01/2016, this device shall be equipped with an internal GPS.	NR
3.16.2	Safety Equipment: Emergency Communications	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. After 01/01/2016, this device shall be equipped with an internal GPS.	NR
3.17	Safety Equipment: Emergency Communications	A boat shall have a knotmeter and/or distance-measuring instrument (this requirement may be satisfied by compliance with section 3.14.).	X
3.18	Safety Equipment: Emergency Communications	A boat shall have a permanently installed depth sounder that can measure to depths of at least 200 ft. (61m).	X
3.19.1	Safety Equipment: Navigation	A boat shall have a permanently mounted magnetic compass independent of the boat's electrical system suitable for steering at sea.	X

3.19.2	Safety Equipment: Navigation	A boat shall have a second magnetic compass suitable for steering at sea, which may be handheld.	X
3.20	Safety Equipment: Navigation	A boat shall have non-electronic charts that are appropriate for the race area. (See Notice of Race)	X
3.21		This line intentionally left blank.	
3.22	Safety Equipment: 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 except for speed transducers, depth finder transducers and the like which have manufacturer's blank plugs attached or stored adjacent to them. Alternatively, some soft plugs (e.g., Forespar Tru Plug) and/or Stay Afloat Instant Leak Plug & Sealant may be stored in an easy-to-obtain place and the location identified on the Safety Equipment Chart per SER #3.28	X
3.23	Gear: Anchoring	A boat shall carry one commercially made anchor, meeting the anchor manufacturer's recommendations based on the yacht's size, with a suitable combination of chain and line.	X
3.24.1	Gear: Lights	A boat shall carry a watertight, high-powered searchlight, suitable for searching for a person overboard at night or for collision avoidance.	X
3.24.2	Gear: Lights	A boat shall carry a watertight flashlight for each crewmember with spare batteries in addition to the above.	NR
3.24.3	Gear: Lights	A boat shall carry at least two watertight flashlights with spare batteries in addition to the requirement of 3.24.1.	X
3.25	Gear: 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.	X

3.26.1	Gear: Radar Reflectors	A boat shall carry an octahedral passive radar reflector with circular sector plates of minimum diameter 30 cm (12") or a reflector with a documented minimum Radar Cross Section (RCS) of area of 2 m ² .	X
3.26.2	Gear: Radar Reflectors	A radar reflector shall be displayed at all times at least 13 feet (4 meters) above the waterline.	X
3.27	Gear: Dewatering	A boat shall carry a sturdy bucket of at least two gallons (8 liters) capacity with lanyard attached.	X
3.28	Gear: 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.	X
3.29.1	Gear: Emergency Steering	Boats shall have an emergency tiller, capable of being fitted to the rudder stock. Boats with twin rudders and twin tillers connected directly to the rudders are exempt from this requirement. All boats must have a secondary steering mechanism. A sea drogue system is acceptable.	X
3.29.2	Gear: Emergency Steering	Wheel steered boats shall have an emergency tiller, capable of being fitted to the rudder stock.	X
3.30	Gear: 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.	X
3.31	Gear: Identification	All lifesaving equipment shall bear retro-reflective material and be marked with the boat'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 stenciled on during the first servicing of any new equipment.	X

3.32	Gear: Cockpit Knife	A boat shall carry a strong, sharp knife; sheathed, and securely restrained which is readily accessible from the deck and/or cockpit.	X
3.33.1	Sails: Mainsail Reefing	Unless the person in charge of the boat has an alternative sail plan for dealing with heavy weather, a boat shall have a mainsail reefing capable of reducing the luff length for the expected race conditions.	X
3.33.2	Sails: Trysail	A boat shall carry a trysail, with the boat's sail number displayed on both sides, 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.	NR
3.33.3	Sails: Headsails	Unless the person in charge of the boat has an alternative sail plan for dealing with heavy weather, a boat shall carry a heavy-weather jib (or heavy-weather sail in a yacht with no forestay) of area not greater than 13.5% height of the foretriangle squared.	X
3.33.4	Sails: 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.	NR
3.34	Rigging: Halyards	A boat shall not be rigged with any halyard that requires a person to go aloft in order to lower a sail.	X
3.35	Rigging: Boom Support	A boat shall have a means to prevent the boom from dropping if support from the mainsail or halyard fails.	X

3.36	Supplies: 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.	Recommend
3.37	Supplies: Rations	A boat shall carry adequate food energy bars and snacks to maintain crew stamina	Recommend
3.38	Gear: Hypothermia Protection	A boat shall carry means to protect the crew from hypothermia in the event of capsizing, in the form of a life raft or anti-exposure suit meeting the following requirements: <ol style="list-style-type: none"> 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, and 6. each suit must be equipped with a whistle. 	Recommend
3.39	Gear: Life Rafts	A boat shall have for each life raft, a grab bag with a lanyard and clip. The grab bag shall have inherent flotation and be of a bright fluorescent color containing at least an EPIRB, and a watertight handheld VHF radio. The VHF Radio and EPIRB need not be in addition to the prior requirements.	NR
4.1	Skills: Emergency Steering	A boat's crew shall be aware of 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	X
4.2	Skills: Man Overboard	Annually, two-thirds of the 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 re-boarding the crewmember.	X
4.3.1	Skills: Safety at Sea Training	At least 30% of those aboard the boat, but not fewer than two members of the crew, unless racing single-handed, including the person in charge, shall have attended a one-day or two-day Safety at Sea Seminar within the last 5 years, or other courses as accepted by their National Authority.	Recommend