

# Safety Equipment Requirements (SER)



Revision 1: 5/02/2017JT

Section Name	#	Requirement	Vessel Compliance Y/N	
			Y	N
Definition	1.0.2	Races of extended duration along or not far removed from shorelines or in large unprotected bays or lakes, where a high degree of self-sufficiency is required of the boats	Y	N
Overall	1.1	The rules do not replace, but rather supplement, the requirements of governmental authority, Classification Society certification, the Racing Rules of Sailing (RRS), Equipment Rules of Sailing (ERS), class rules and Rating Systems. Use of these rules does not guarantee total safety of the boat and her crew. Particular attention is drawn to the description of equipment requirements for inshore racing which includes that adequate shelter and or effective rescue is available all along the course. This is not included in more onerous requirement categories.		
Overall: Responsibility	1.2	Under RRS 4 the responsibility for a boat's decision to participate in a race or continue racing is hers alone. The safety of a boat and her crew is the sole and inescapable responsibility of the Person in Charge who shall do his best to ensure that the boat is fully found, thoroughly seaworthy and manned by an experienced and appropriately trained crew who are physically fit to face bad weather. The person in charge shall also assign a person to take over his responsibilities in the event of his incapacitation.		
Overall: Inspections	1.3	A boat may be inspected at any time by an equipment inspector or measurer appointed for the event. If she does not comply with these regulations, her entry may be rejected or she will be subject to a protest filed by the RC. A Violation of the Safety Equipment Regulations may result in a penalty other than disqualification.		
Overall: Equipment and Knowledge	1.4	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 minimised		
Overall: Secure Storage	1.5	Heavy items shall be permanently installed or securely fastened		
Overall: Strength of Build	1.6	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 ballasted, 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.		
Overall: Watertight Integrity	1.7	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.		
Hull and Structure: Hull Openings	2.1.1	A boat's companionway(s) shall be capable of being blocked off to main deck level. The method of blocking should be solid, watertight and rigidly secured, if not permanent.		
Hull and Structure: Hull Openings	2.1.2	A boat's hatch boards, whether or not in position in the hatchway, shall be secured to the boat (e.g. by a lanyard) for the duration of the race to prevent their being lost overboard.		
Hull and Structure: Cockpit	2.1.3	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.		

Hull and Structure: Cockpit	2.1.4	A boat's cockpit drains shall be capable of draining six inches of water in 5 minutes. One square inch (645mm <sup>2</sup> ) of effective drain per eight square feet (0.743m <sup>2</sup> ) of cockpit sole will meet this requirement.		
Hull and Structure: Cockpit	2.1.5.1	A boat's maximum cockpit volume for cockpits not open to the sea, including any compartments capable of flooding, to lowest points of coaming over which water can adequately escape, shall not exceed 0.06 x LOA x Max. Beam x Freeboard aft. The cockpit sole shall be at least 0.02 x L above LWL.		
Hull and Structure: Through Hulls	2.1.6	A boat's through-hull openings below the waterline shall be equipped with sea cocks or valves, except for speed transducers, depth finder transducers and the like; however a means of closing such openings shall be provided.		
Hull and Structure: Stability	2.2.2	The boat shall comply with at least one of the following: demonstrate compliance with ISO 12217-2 design category A or higher, either by EC Recreational Craft Directive certification (having obtained the CE mark) or the designer's declaration a minimum STIX value of 32 and AVS not less than $130 - 0.002 * m$ (Where "m" is the mass of the boat in the minimum operating condition as defined by ISO 12217-2.); the stability index/AVS in ORC Rating System of not less than 110; or IRC SSS Base value of not less than 28		
Hull and Structure: Stability	2.2.3	The boat shall comply with at least one of the following: demonstrate compliance with ISO 12217-2 design category A or higher, either by EC Recreational Craft Directive certification (having obtained the CE mark) or the designer's declaration a minimum STIX value of 32 and AVS not less than $130 - 0.005 * m$ (Where "m" is the mass of the boat in the minimum operating condition as defined by ISO 12217-2.); the stability index/AVS in ORC Rating System of not less than 103; or IRC SSS Base value of not less than 15		
Hull and Structure: Accommodations	2.3.1	A boat shall be equipped with a head or a fitted bucket.		
Hull and Structure: Accommodations	2.3.2	A boat shall have bunks sufficient to accommodate the off-watch crew.		
Hull and Structure: Accommodations	2.3.3	A boat shall have a stove with a fuel shutoff.		
Hull and Structure: Accommodations	2.3.5	A boat shall have adequate hand holds below decks.		
Hull and Structure: Lifelines	2.4.1	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.		
Hull and Structure: Lifelines	2.4.2	A boat's stanchion and pulpit bases shall be within the working deck. Stanchions used with HMPE lifelines shall have rounded openings to reduce chafe.		
Hull and Structure: Lifelines	2.4.3	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).		
Hull and Structure: Lifelines	2.4.4.1	Lifelines SHALL be uncoated stainless steel wire. A multipart-lashing not to exceed 4" per end termination for the purpose of attaching lifelines to pulpits is allowed. Lifelines shall be taut (see appendix- Lifelines for requirements).		
Hull and Structure: Lifelines	2.4.5	The maximum spacing between the bases of lifeline supports (e.g. stanchions and pulpits) shall be 87" (2.2m).		
Hull and Structure: Lifelines	2.4.6	Boats under 28 feet (8.5m) shall have at least one lifeline with 18" (457mm) minimum height above deck, and a maximum vertical gap of 18" (457mm). Taller heights will require a second lifeline. The minimum diameter shall be as per Appendix- Lifelines		

Hull and Structure: Lifelines	2.4.7	Boats 28 feet and over (8.50m) shall have at least two lifelines with 24" (762mm) minimum height above deck, and a maximum vertical gap of 15" (381mm). The minimum diameter shall be as per Appendix- Lifelines		
Hull and Structure: Lifelines	2.4.8	Toe rails shall be fitted around the foredeck from the base of the mast with a minimum height of 3/4" (18mm) for boats under 30' (9.14m) and 1" (25mm) for boats over 30'. An additional installed lifeline that is 1-2" (25-51mm) above the deck will satisfy this requirement for boats without toerails.		
Hull and Structure: Dewatering pumps	2.5.1	A boat shall have a permanently installed manual bilge pump of at least a 10 gallons per minute (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.		
Hull and Structure: Dewatering pumps	2.5.2	A boat shall have a second permanently installed manual bilge pump of at least 10 GPM (37.8 liter per minute) capacity, operable from below deck, meeting the same criteria as above.		
Hull and Structure: Mast and Rigging	2.6	The heel of a keel-stepped mast shall be securely fastened to the mast step or adjoining structure.		
Hull and Structure: Mechanical Propulsion	2.7.1	A boat shall have a mechanical propulsion system that is ready for immediate use 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 at least 10 hours.		
Hull and Structure: Mechanical Propulsion	2.7.3	The boat's engine and generator installation (if so equipped) must conform to ABYC, ISO or the standards of the national safety authority where the boat is registered.		
Safety Equipment: Personal	3.1.1	Each crewmember shall have a life jacket that provides at least 33.7lbs (150N) of buoyancy, 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, 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. Alternatively, each crewmember shall have a U.S. Coast Guard approved inherently buoyant off-shore life jacket /National Safety Authority of the OA approved inherently buoyant off-shore life jacket 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.		
Safety Equipment: Personal	3.1.4	Any personal flotation worn by crewmembers must comply with the category under which that yacht is racing		
Safety Equipment: Personal	3.1.5	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.		
Safety Equipment: Deck Safety	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.		
Safety Equipment: Deck Safety	3.2.2	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.		
Safety Equipment: Navigation Lights	3.3.1	A boat racing between sunset and sunrise shall carry navigation lights that meet Coast Guard/National Safety Authority of the OA requirements mounted so that they will not be obscured by the sails nor be located below deck level.		

Safety Equipment: Navigation Lights	3.3.2	A boat shall have a second set of navigation lights that comply with Coast Guard/National Safety Authority of the OA requirements and which can be connected to a different power source than the primary lights.		
Safety Equipment: Fire Extinguishers	3.4	A boat shall carry fire extinguisher(s) that meets Coast Guard/National Safety Authority of the OA requirements, when applicable.		
Safety Equipment: Sound Producing Equipment	3.5	A boat shall carry a sound-making device that meets Coast Guard/National Safety Authority of the OA requirements, when applicable.		
Safety Equipment: Visual Distress Signals	3.6.1	A boat shall carry minimum 2 SOLAS orange smoke flare not older than the expiration date.		
Safety Equipment: Visual Distress Signals	3.6.2	A boat shall carry minimum 4 SOLAS red parachute flares not older than the expiration date.		
Safety Equipment: Visual Distress Signals	3.6.3	A boat shall carry minimum 4 SOLAS red hand flares not older than the expiration date.		
Safety Equipment: Visual Distress Signals	3.6.5	Boat flares stored inside of life rafts may not be used to satisfy the flare requirement.		
Safety Equipment: Man Overboard	3.7.1	A boat shall carry a recovery sling 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		
Safety Equipment: Man Overboard	3.7.2	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 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".		
Gear: Man Overboard	3.7.3	A boat shall have a heaving line, no less than 6 mm (1/4") diameter, and 15 m (50') long, readily accessible to cockpit		
Safety Equipment: Emergency Communications	3.8.1	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. Radios manufactured after 01/01/2015 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) programed into the VHF.		
Safety Equipment: Emergency Communications	3.8.2	A boat shall have the listed number of watertight handheld VHF radios or handheld VHF radios with waterproof cover. Radios manufactured after 01/01/2015, shall have DSC/GPS capability.		
Safety Equipment: Emergency Communications	3.8.3	A boat shall have an emergency VHF antenna. The emergency antenna shall be equipped with sufficient coax to reach the deck, and have a minimum antenna length of 10" (254mm).		
Safety Equipment: Emergency	3.14	A boat shall carry a GPS receiver.		
Safety Equipment: Emergency	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.		
Safety Equipment: Emergency Communications	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. After 01/01/2016, this device shall be equipped with an internal GPS.		
Safety Equipment: Emergency	3.17	A boat shall have a knotmeter and/or distance-measuring instrument.		

Safety Equipment: Emergency	3.18	A boat shall have a permanently installed depth sounder that can measure to depths of at least 200 ft. (61m).		
Safety Equipment: Navigation	3.19.1	A boat shall have a permanently mounted magnetic compass independent of the boat's electrical system suitable for steering at sea.		
Safety Equipment: Navigation	3.19.2	A boat shall have a second magnetic compass suitable for steering at sea which may be handheld.		
Safety Equipment: Navigation	3.20	A boat shall have non-electronic charts that are appropriate for the race area.		
Safety Equipment: Damage Control	3.21	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.		
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.		
Gear: Anchoring	3.23.2	A boat shall carry one commercially made anchor, meeting the anchor manufacturers' recommendations based on the yacht's size, with a suitable combination of chain and line.		
Gear: Lights	3.24.1	A boat shall carry a watertight, high-powered searchlight, suitable for searching for a person overboard at night or for collision avoidance.		
Gear: Lights	3.24.2	A boat shall carry a watertight flashlight for each crewmember with spare batteries in addition to the above.		
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.		
Gear: Radar Reflectors	3.26.1	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 m2		
Gear: Radar Reflectors	3.26.2	A radar reflector shall be displayed at all times at least 13 feet (4 meters) above the waterline.		
Gear: Dewatering	3.27	A boat shall carry 2 sturdy buckets of at least two gallons (8 liters) capacity each, with lanyards attached.		
Gear: Safety Diagram	3.28	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.		
Gear: Emergency Steering	3.29.1	A boat 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		
Gear: Spare Parts	3.30	A boat shall carry tools and spare parts, including an effective means to quickly disconnect or sever the standing rigging from the hull.		
Gear: Identification	3.31	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 stenciled on during the first servicing of		
Gear: Cockpit Knife	3.32	A strong, sharp knife, sheathed and securely restrained shall be provided readily accessible from the deck or a cockpit.		
Sails: Mainsail Reefing	3.33.1	The maximum area of storm sails shall be lesser of the areas below or as specified by the boat designer or sailmaker		
Sails: Heavy weather Jib	3.33.2	a) A heavy-weather jib (or heavy-weather sail in a boat with no forestay) with: i. area of 13.5% height of the foretriangle (IG) squared ii. readily available means, independent of a luff groove, to attach to the stay		
Sails: Headsails/ Mainsail reefing	3.33.3	mainsail reefing to reduce the luff by 12.5% or a heavy-weather jib (or heavy-weather sail in a boat with no forestay)		

Rigging: Halyards	3.35	A boat shall not be rigged with any halyard that requires a person to go aloft in order to lower a sail.		
Rigging: Boom Support	3.36	A boat shall have a means to prevent the boom from dropping if support from the mainsail or halyard fails.		
Gear: Life Rafts	3.39	A boat shall have adequate life raft(s) designed for life saving with designed capacity for containing the entire crew. The raft shall be capable of being carried to the lifelines within 15 seconds, and must be equipped with drogue and painter. If inflatable, it is recommended that it have two parallel buoyancy compartments. The raft shall hold a current certificate of inspection, and must be equipped for both manual and automatic inflation. If the raft does not provide capacity for the entire crew, a boat may be equipped with survival suits for each person aboard for whom life raft capacity is not provided. The suit shall be a universal size suitable for donning over regular clothing for keeping the wearer dry and afloat, shall be coverall type and shall include in its construction closed cell foam insulation designed to ensure survival from hypothermia of the wearer for a minimum of three hours when floating in 54F water. The suit(s) may be stowed below decks but must be readily accessible to the companionway. Suit(s) shall be government approved for survival usage.		
Gear: Life Rafts	3.40	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.		
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.		
Skills: Man Overboard	4.2	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 reboarding the crewmember.		
Skills: Safety at Sea Training	4.3.1	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.		

I acknowledge that my boat meets the standards as outlined in this Safety Equipment Requirements document, and I understand my responsibility for the safety of my boat and crew as outlined in requirement 1.2. I agree to resolve any issues identified during the demonstration of compliance before the start of the race.

\_\_\_\_\_  
 Skipper's Signature

\_\_\_\_\_  
 Skipper's Name

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 Compliance Officer's Signature

\_\_\_\_\_  
 Compliance Officer's Name

\_\_\_\_\_  
 Date