

2015 LongPac Minimum Equipment Requirements (LPMER)

Note: This document contains all LongPac equipment requirements.
References to US Sailing Safety Equipment Requirements (USSER) are provided for comparison purposes **only**.
USSER may be viewed or downloaded at <http://www.ussailing.org/wp-content/uploads/2014/05/US-SER-Categories-2014-3.pdf>

Section Name	LPMER Rule #	Requirement	USSER Reference
Overall	1.0	The Minimum Equipment Requirements establish uniform minimum equipment and training standards for a variety of boats racing in differing conditions. These regulations do not replace, but rather supplement, the requirements of the US Coast Guard, the Racing Rules of Sailing (RRS), the rules of Class Associations and all applicable rating rules.	1.1
Overall: Responsibility	1.1	The safety of a boat and her crew is the sole and inescapable responsibility of the "person in charge", as per RRS 46, who shall ensure that the boat is seaworthy and manned by an experienced crew with sufficient ability and experience to face bad weather. S/he shall be satisfied as to the soundness of hull, spars, rigging, sails and all gear. S/he shall ensure that all safety equipment is at all times properly maintained and safely stowed and that the crew knows where it is kept and how it is to be used.	1.2
Overall: Inspections	1.2.1	A boat shall be inspected prior to the start of the Race for compliance with these Minimum Equipment Requirements, with particular attention to LPMER Rule 1.5 (general seaworthiness).	1.3
	1.2.2	It is the responsibility of the boat's skipper to contact the Race Committee and make arrangements for the boat's inspection. The Race Committee shall appoint an inspector for each boat. Skippers are urged to arrange for inspection at their earliest convenience. The inspection shall take place no later than June 28, 2015, and any discrepancies shall be corrected prior to the start of the Race. The inspector is authorized to require a new or recent survey from a licensed marine surveyor.	
	1.2.3	The Race Committee reserves the right to re-inspect any boat after the finish. A boat found to be out of compliance with the Minimum Equipment Requirements at that time will be protested and may be excluded from future participation in the LongPac or Singlehanded TransPac.	
Overall: Equipment and Knowledge	1.3	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, who shall have practiced with the use of the equipment. This equipment shall be readily accessible while underway and, when not in use, stored in such a way that deterioration is minimized.	1.4
Overall: Secure Storage	1.4	A boat's heavy items such as batteries, stoves, toolboxes, anchors, chain and internal ballast shall be secured.	1.5
Overall: Strength of Build	1.5	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.	1.6
Overall: Watertight Integrity	1.6	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. Storm coverings are required for all windows more than 2 square feet in area, unless the windows are constructed of material at least as strong as the surrounding superstructure.	1.7
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.	2.1.1
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.	2.1.2
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.	2.1.3
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 of effective drain per eight square feet of cockpit sole will meet this requirement.	2.1.4

Hull and Structure: Through Hulls	2.1.5.1	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.	2.1.6
Safety Equipment: Damage Control	2.1.5.2	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.	3.22
Hull and Structure: Stability	2.2.1	Boats may be fitted with transferable water ballast [this modifies RRS 51]. Such transferable water ballast shall have a density no greater than that of sea water. No form of solid or granular transferable internal ballast may be used. No ballast may be carried above the level of the working deck with the yacht in normal laden trim. All tanks for transferable ballast shall be inside the hull(s) and below decks.	2.2.3
	2.2.2	Competitors shall be able to demonstrate an efficient and safe manual method of discharging, transferring, or taking on liquid ballast with the yacht at up to 50 degrees angle of heel to port or starboard of the normal laden trim.	
	2.2.3	Competitors shall be able to demonstrate that, with all such ballast transferred to one side to its maximum possible extent, the static angle of heel of the yacht will not exceed 10 degrees to port or starboard of the normal laden trim.	
	2.2.4	If yachts are fitted with fresh water or fuel tanks to port or starboard, such tanks will be considered part of the transferable ballast system and must be completely full and empty on the appropriate sides during any inclining test.	
	2.2.5	Competitors intending to use other forms of transferable ballast not covered by these rules should clear the project for eligibility with the Race Committee.	
Hull and Structure: Accommodations	2.3.1	A boat shall be equipped with a head or a fitted bucket.	2.3.1
Hull and Structure: Accommodations	2.3.2	A boat shall have at least one fixed bunk sufficient to accommodate the off-watch crew.	2.3.2
Hull and Structure: Accommodations	2.3.3	A boat shall have a stove with a fuel shutoff.	2.3.3
Hull and Structure: Accommodations	2.3.4	A boat shall start the race with at least 7 gallons of drinking water per crewmember, in two or more containers. If any one container is disregarded, the remaining container(s) shall contain at least 50% of the required minimum. Containers shall be secured in place.	2.3.4
Supplies: Water	2.3.5	A boat shall carry 1 gallon 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.	3.37
Supplies: Rations	2.3.6	A boat shall carry adequate food to maintain crew stamina for 7 days.	3.38
Hull and Structure:	2.3.7	A boat shall have adequate hand holds below decks.	2.3.5
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.	2.4.1
Hull and Structure: Lifelines	2.4.2	A boat's stanchion and pulpit bases shall be within the working deck. Stanchions used with HMPE shall have rounded openings to reduce chafe.	2.4.2
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".	2.4.3
Hull and Structure: Lifelines	2.4.4	Lifelines may be either 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.	2.4.4
Hull and Structure: Lifelines	2.4.5	The maximum spacing between the bases of lifeline supports (e.g. stanchions and pulpits) shall be 87".	2.4.5
Hull and Structure: Lifelines	2.4.6	Boats under 30 feet shall have at least one lifeline with 18" minimum height above deck, and a maximum vertical gap of 18". Taller heights will require a second lifeline. The minimum diameter shall be 1/8".	2.4.6
Hull and Structure: Lifelines	2.4.7	Boats 30 feet and over shall have at least two lifelines with 24" minimum height above deck, and a maximum vertical gap of 15". The minimum diameter will be 5/32" for boats to 43' and 3/16" for boats over 43'.	2.4.7

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" for boats under 30'. An additional installed lifeline that is 1-2" above the deck will satisfy this requirement for boats without toerails.	2.4.8
Hull and Structure: Lifelines	2.4.9	Trimarans are 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. Catamarans with trampoline nets between the hulls are exempted from the lifeline requirement. All catamarans are exempted from the need for pulpits and lifelines across the bow.	2.4.9
Hull and Structure: Dewatering pumps	2.5.1	A boat shall have a permanently installed manual bilge pump of at least 10 gallons per minute (GPM) 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.	2.5.1
Hull and Structure: Dewatering pumps	2.5.2	A boat shall have a second permanently installed manual or electric bilge pump of at least 10 GPM capacity, operable from below deck, meeting the same criteria as 2.5.1.	2.5.2
Hull and Structure: Mast and Rigging	2.6	The heel of a keel-stepped mast shall be securely fastened or lashed vertically to the mast step or adjoining structure.	2.6
Hull and Structure: Mechanical Propulsion	2.7.1	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 4 hours.	2.7.1
	2.7.2	Shutoff valves shall be fitted on all fuel tanks.	
Safety Equipment: Personal	3.1.1	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 specifications or ISO standard 12402-3. 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 Type I 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.	3.1.1
Safety Equipment: Personal	3.1.2	Each crewmember shall have a safety harness and compatible safety tether not more than 7 feet long with a minimum tensile strength of 4500 lb. The tether shall have a snap hook at its far end and a means to quickly disconnect the tether at the chest end.	3.1.4
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. Jacklines shall terminate short of the transom a distance equal to the length of the safety tether.	3.2.1
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 unclip after going below.	3.2.2
Safety Equipment: Deck Safety	3.2.3	Multihulls must have jacklines or attachment points that are accessible when the vessel is inverted.	3.2.3
Safety Equipment: Navigation Lights	3.3.1	A boat racing between sunset and sunrise shall carry navigation lights that meet U. S. Coast Guard requirements, mounted so that they will not be obscured by the sails nor be located below deck level.	3.3.1
	3.3.2	A boat shall have one or more batteries with a total capacity of at least 80 amp-hours, and a means of charging the battery(s) at sea at a rate that will allow the running lights to be used during the period of darkness each day. Multiple batteries in separate banks are recommended.	
Safety Equipment: Fire Extinguishers	3.4	A boat shall carry fire extinguisher(s) meeting U.S. Coast Guard requirements.	3.4
Safety Equipment: Sound Producing Equipment	3.5	A boat shall carry a sound-making device that meets U.S. Coast Guard requirements.	3.5
Safety Equipment: Visual Distress Signals	3.6.1	A boat shall carry 2 SOLAS orange smoke flares with an expiration date no earlier than July 15, 2015.	3.6.1
Safety Equipment: Visual Distress Signals	3.6.2	A boat shall carry 4 SOLAS red parachute flares with an expiration date no earlier than July 15, 2015.	3.6.2
Safety Equipment: Visual Distress Signals	3.6.3	A boat shall carry 4 SOLAS red hand flares with an expiration date no earlier than July 15, 2015.	3.6.3

Safety Equipment: Visual Distress Signals	3.6.4	Boat flares stored inside of life rafts may not be used to satisfy the flare requirement.	3.6.5
Safety Equipment: Man Overboard	3.7.1	A doublehanded 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.	3.7.1
Safety Equipment: Man Overboard	3.7.2	A doublehanded 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".	3.7.2
Safety Equipment: Man Overboard	3.7.3	A boat shall have a throwing sock-type heaving line of 50' or greater of floating polypropylene line readily accessible to the cockpit.	3.7.3
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. The radio shall have DSC capability, have an antenna of at least 15" in length, be connected to or have an internal GPS, and have the assigned MMSI number (unique to the boat) programmed into the VHF.	3.8.1
Safety Equipment: Emergency Communications	3.8.2	A boat shall have a watertight handheld VHF radio or a handheld VHF radio with waterproof cover. This radio shall have DSC/GPS capability.	3.8.2
Safety Equipment: Emergency Communications	3.8.3	A boat shall have an emergency VHF antenna. This antenna shall have a minimum length of 15" <u>OR</u> be specifically designed for marine emergency use such as the Shakespeare 5911. It shall be equipped with sufficient coax to reach the deck.	3.8.3
Safety Equipment: Emergency Communications	3.9	All boats shall have an AIS Receiver, 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 35" long, mounted with its base at least 6 feet above the water, and fed with coax that has a maximum 40% power loss.	3.9
Safety Equipment: Emergency Communications	3.10	A boat shall carry two waterproof Global Positioning System (GPS) receivers, at least one of which must be operable independent of the yacht's main electrical system.	3.14
Safety Equipment: Emergency Communications	3.11	A doublehanded 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 3.10.	3.15
Safety Equipment: Emergency Communications	3.12	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. In addition, PLBs worn on lifejackets or harnesses are highly recommended.	3.16.1
Safety Equipment: Navigation	3.13	A boat shall have a knotmeter and/or distance-measuring instrument.	3.17
Safety Equipment: Navigation	3.14	A boat shall have a permanently installed depth sounder that can measure to depths of at least 200 ft.	3.18
Safety Equipment: Navigation	3.15.1	A boat shall have a permanently mounted magnetic compass independent of electrical power suitable for steering at sea, with a deviation card.	3.19.1
Safety Equipment: Navigation	3.15.2	A boat shall have a second magnetic compass independent of electrical power suitable for steering at sea, which may be handheld.	3.19.2
Safety Equipment: Navigation	3.16	A boat shall carry plotting instruments and current charts, or charts corrected to the latest Notice to Mariners, that are appropriate for the race area, including NOAA Chart Numbers 18020, 18645 & 18649.	3.20
Gear: Anchoring	3.17	A boat shall carry at least one anchor, meeting the anchor manufacturer's recommendations based on the yacht's size, and a rode of 200 feet minimum length that includes chain of at least 1/2 the boat's length.	3.23
Gear: Lights	3.18.1	A boat shall carry a watertight, high-powered searchlight, suitable for searching for a person overboard at night or for collision avoidance.	3.24.1
Gear: Lights	3.18.2	A boat shall carry at least two watertight flashlights with spare batteries, in addition to the requirement of 3.18.1.	3.24.2
Gear: Medical Kits	3.19	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.	3.25

Gear: Radar Reflectors	3.20	A boat shall carry an 11.5" diameter or greater octahedral radar reflector or one of equivalent performance, mounted a minimum of 13 feet above the waterline while racing. Note that small cylindrical units do not typically exhibit equivalent performance.	3.26
Gear: Dewatering	3.21	A boat shall carry two sturdy buckets, each of at least two gallons capacity, with lanyards attached.	3.27
Gear: Safety Diagram	3.22	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.	3.28
Gear: Emergency Steering	3.23	A boat shall have an emergency tiller, capable of being fitted to the rudder stock.	3.29.1
Gear: Spare Parts	3.24	A boat shall carry tools and spare parts, including an effective means to quickly disconnect or sever the standing rigging from the hull. A sail repair kit is recommended.	3.30
Gear: Identification	3.25	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 any new equipment.	3.31
Gear: Cockpit Knife	3.26	A boat shall carry a strong, sharp knife, sheathed and securely restrained which is readily accessible from the deck and/or cockpit.	3.32
Sails: Mainsail Reefing	3.27.1	A boat shall have mainsail reefing capable of reducing the luff length by at least 40% <u>OR</u> 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.	3.33.1, 3.33.2
Sails: Headsails	3.27.2	If the rig is such that a headsail is commonly used, then a storm jib shall be carried which can be attached to a stay by a strong and secure method, and is of an area not greater than 5% of the height of the foretriangle, squared, and has a luff of maximum length of 65% of the height of the foretriangle, <u>OR</u> a heavy weather jib of 85% LP or less shall be carried. In either case, the sail shall be of non-aramid fiber construction and shall not contain battens.	3.33.3, 3.33.4
Rigging: Halyards	3.28	A boat shall not be rigged with any halyard that requires a person to go aloft in order to lower a sail. A boat's mainmast shall have no fewer than two halyards, each capable of hoisting a sail, and it is recommended that halyards be long enough to reach the water.	3.35
Rigging: Boom Support	3.29	A boat over 30' LOA shall have a means to prevent the boom from dropping if support from the mainsail or halyard fails.	3.36
Gear: Life Rafts	3.30.1	A boat shall carry an inflatable life raft 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 can be brought to the lifelines within 15 seconds. The life raft may be stowed in a deck mounted rigid container, stowed in a watertight or self-draining purpose-built rigid compartment opening adjacent to the cockpit or the working deck, or stowed in a valise not weighing over 88 lbs. secured below deck and adjacent to the companionway. The life raft shall hold a current certificate of inspection.	3.39
Gear: Life Rafts	3.30.2	A boat shall have a grab bag with a lanyard and clip suitable for attaching it to the life raft. The grab bag shall have inherent flotation and be of a bright color. It shall either contain an EPIRB and a watertight handheld VHF radio, or be stowed in close proximity to those items.	3.40
Skills: Emergency Steering	4.1	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.	4.1.1
Skills: Man Overboard	3.32	All members of the boat's racing crew shall have practiced, within the year preceding the race, 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.	4.2
Skills: Safety at Sea Training	3.33	All participants shall have attended a half-day, one-day, or two-day US Sailing Safety at Sea Seminar within the last 5 years.	4.3.1