

R2AK SER's — Multihulls — 2020

R2AK High Command may add or delete items based on real prudence of the moment, but we won't leave you hanging in your prep.

Effective Date: March 12, 2020.

Section Name	#	Requirement	Required
Overall	1.1	These Safety 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 applicable local or national authorities for boating, any additional rules we have created, like no motors, and common sense, which should tell you to always err on the side of caution.	X
Overall: Responsibility	1.2	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 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.	X
Overall: Responsibility	1.2.1	Should there be an incident during a race the Organizing Authority may conduct an investigation to determine the facts of the incident and provide recommendations. By participating in a race conducted under this SER, the person in charge, each competitor and boat owner agrees to reasonably cooperate with R2AK authority and governing bodies responsible for conducting maritime investigations.	x
Overall: Inspections	1.3	A boat may be inspected at any time by an equipment inspector for the event. If she does not comply with these regulations, her entry may be rejected. A Violation of the Safety Equipment Requirements may result in a penalty other than disqualification.	X
Overall: Inspections	1.4	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.	x
Overall: Secure Storage	1.5	A boat's heavy items such as batteries, stoves, toolboxes, anchors, chain and internal ballast shall be secured.	X
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.	X
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.	X
Hull and Structure: Hull Openings	2.1.1	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
Hull and Structure: Hull Openings	2.1.2	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
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.	X
Hull and Structure:	2.1.4	A boat's cockpit drains shall be capable of draining 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.	X

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 integral deck scuppers, speed transducers, depth finder transducers and the like; however a means of closing such openings shall be provided.	X
Hull and Structure: Stability	2.2.1	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
Hull and Structure: Stability	2.2.2	Race to Alaska shall have the right, but not the obligation to reject the entry of any boat which it regards as presenting an unreasonable risk of capsize, whether by reason of extreme sail area to beam ratios, a history of capsize, or otherwise. In no event shall the Race to Alaska have any liability for permitting any entrant to race.	X
Inverted Escape	2.2.3	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 capsize.	X
Hull and Structure: Accommodations	2.3.1	A boat shall be equipped with a head or a fitted bucket.	X
Hull & Structure	2.3.2	A boat shall have bunks sufficient to accommodate the off-watch crew	X
Hull and Structure: Accommodations	2.3.3	If a boat has a stove it shall be fitted with a fuel shutoff.	X
Hull and Structure: Accommodations	2.3.5	A boat shall have adequate hand holds below decks.	X
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). All catamarans are exempted from the need for pulpits and lifelines across the bow.	X
Hull and Structure: Bow Pulpit- Trimaran	2.4.6	Bow Pulpits – A trimaran shall have a bow pulpit on the main hull. Bow pulpits may be open. Catamarans are exempt from this requirement.	X
Hull and Structure: Stern Pulpit- Trimaran	2.4.7	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.	X
Nets, in General	2.4.7.1	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
Nets, Trimaran	2.4.7.2	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.	X
Nets Catamaran	2.4.7.3	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
Hiking racks and Trapezes	2.4.7.4	Hiking racks are permitted. Trapezes are not permitted..	X

Hull and Structure: Lifelines	2.4.8	Lifelines or jacklines, and safety harness attachment points shall protect all crew working areas.	X
Hull and Structure: Dewatering pumps	2.5.3	A boat shall have at least two manual bilge pumps of at least a 10 GPM capacity.	X
Hull and Structure: Mast and Rigging	2.6	A boat shall have the heel of a keel-stepped mast securely fastened to the mast step or adjoining structure.	X
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 1/2 the square root of LWL in feet (.9 times the square root of the waterline in meters) for 4 hours.	X
Hull and Structure: Mechanical Propulsion	2.7.3	The boat's generator installation (if so equipped) must conform to ABYC, ISO, or U.S. Coast Guard standards.	X
Safety Equipment in Calamity Pack	3.1	A multihull shall have either in a pack or compartment accessible from outside of the boat when inverted containing the following items: 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 3.8.1; 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
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/Transport Canada 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. Life jackets shall be equipped with a knife suitable for cutting through the trampoline on the boat, with a tether attaching the knife to the life jacket. Alternatively, each crew member shall have an inherently buoyant off-shore life jacket that provides at least 22lbs (100N) of buoyancy meeting either Coast Guard/Transport Canada or ISO specifications.	X
Safety Equipment: Personal	3.1.4	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.	X
Safety Equipment: Deck Safety	3.2.1	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 points on deck, connected to similarly strong attachment points.	X
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.	X
Safety Equipment	3.2.3	Multihulls must have jacklines or attachment points that are accessible when the vessel is inverted.	X
Safety Equipment: Navigation Lights	3.3.1	A boat shall carry navigation lights that meet International Standards and applicable government requirements mounted so that they will not be obscured by the sails nor be located below deck level.	X
Safety Equipment: Navigation Lights	3.3.2	A boat shall have a second set of navigation lights that comply with International Standards or applicable government requirements and which can be connected to a different power source than the primary lights.	X
Safety Equipment: Fire Extinguishers	3.4	A boat shall carry fire extinguisher(s) that meets International Standards and applicable government requirements, when applicable.	X
Safety Equipment: Sound Producing Equipment	3.5	A boat shall carry sound-making devices that meets International Standards and applicable government requirements, when applicable.	X

Safety Equipment: Visual Distress Signals	3.6.4	A boat shall carry flares and or S.O.S. Distress light meeting International Standards or applicable government entity, satisfying day-night requirements not older than the expiration date.	X
Safety Equipment: Visual Distress Signals	3.6.5	Boat flares stored inside of life rafts may not be used to satisfy the flare requirement. (Note: a life raft is not required)	X
Safety Equipment: Man Overboard	3.7.1	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
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". The lifebuoy shall bear retro-reflective material and be marked with the boat's name.	X
Gear: Man Overboard	3.7.3	A boat shall have a heaving line of no less than 6 millimeters (1/4") diameter, at least 50' (15.3 meters) in length of floating line readily accessible to the cockpit.	X
Safety Equipment: Man Overboard	3.7.4	A boat shall carry a International Standard or applicable government approved "throwable device". If the device carried under 3.7.1 or 3.7.2 satisfies this requirement, then no additional device is needed.	x
Safety Equipment: Emergency Communications	3.8.1	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
Safety Equipment: Emergency Communications	3.8.2	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
Safety Equipment: Emergency Communications	3.8.3	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
Safety Equipment: Emergency Communications	3.9	All boats shall have an AIS Transponder, sharing a masthead VHF antenna via a low loss AIS antenna splitter. An acceptable alternative is a dedicated AIS antenna that is a minimum of 0.9 meters long, mounted with its base at least 3 meters above the water, and fed with coax that has a maximum 40% power loss.	RECOMMENDED
Safety Equipment: Emergency Communications	3.10	A boat shall carry either a cellular phone or satellite phone in a waterproof container.	X
Safety Equipment: Emergency Communications	3.12	A boat shall carry man overboard alarms for each crewmember based on AIS or other method.	RECOMMENDED
Safety Equipment: Emergency	3.14	A boat shall carry a GPS receiver.	X
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
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.	RECOMMENDED
Safety Equipment: Emergency	3.17	A boat shall have a knotmeter and/or distance- measuring instrument (this requirement may be satisfied by compliance with section 3.14.).	X

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.	X
Safety Equipment: Navigation	3.19.2	A boat shall have a second magnetic compass suitable for steering at sea, which may be handheld.	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. [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
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.	X
Gear: Lights	3.24.2	A boat shall carry a watertight flashlight for each crewmember with spare batteries in addition to the above.	RECOMMENDED
Gear: Lights	3.24.3	A boat shall carry at least two watertight flashlights with spare batteries in addition to the requirement of 3.24.1.	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
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 m ² .	
Gear: Dewatering	3.27	A boat shall carry two sturdy bucket of at least two gallons (8 liters) capacity with lanyard attached.	X
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.	X
Gear: Emergency Steering	3.29.1	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
Gear: Emergency Steering	3.29.2	Wheel steered boats shall have an emergency tiller, capable of being fitted to the rudder stock.	X
Gear: Spare Parts	3.3	A boat shall carry tools and spare parts, suitable for duration & nature of event, including an effective means to quickly disconnect or sever the standing rigging from the hull.	X
Gear: Identification	3.31	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
Gear: Cockpit Knife	3.32	A boat shall carry a strong, sharp knife; sheathed, and securely restrained which is readily accessible from the deck and/or cockpit.	X
Sails: Mainsail Reefing	3.33.1	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
Sails: Headsails	3.33.3	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% of the height (I) of the foretriangle squared.	X
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.	X
Rigging: Boom Support	3.36	A boat over 30' LOA (9.14m) shall have a means to prevent the boom from dropping if support from the mainsail or halyard fails.	X
Supplies: 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.	RECOMMENDED
Supplies: Rations	3.38	A boat shall carry adequate food energy bars and snacks to maintain crew stamina	RECOMMENDED

Gear: Hypothermia Protection	3.39	A boat shall carry means to protect the crew from hypothermia in the event of capsize, in the form of a life raft or anti-exposure suit meeting the following requirements: 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.	RECOMMENDED
Skills: Emergency Steering	4.1	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
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 re-boarding the crewmember.	X
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.	RECOMMENDED
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 should discuss how to handle various emergency situations including Crew Overboard, Grounding, Loss of steering, Flooding, Fire, Dismasting, and Abandon Ship.	x
Skills: Crew Training	4.6	Lifejackets as described in 3.1.1 – 3.1.4 should be worn by all crew on deck in any conditions where recovery may be difficult. It is recommended that lifejackets be worn by all crew on deck unless the person in charge has indicated that they may be set aside.	RECOMMENDED