



# CASRA Safety Equipment Requirements

Effective Date: January 1, 2024, version 1b, Revised April 1, 2024

## Introduction

Dear Fellow Sailor,

In 2016, five of the Chicago area's largest yacht clubs formed the Chicago Area Sail Racing Association (CASRA) to promote and grow sailboat racing in Chicago. CASRA's intent was to lower the barriers and hassle of getting on the water by promoting coordinated schedules and rules to foster good, fun, and safe competitive sailboat racing.

CASRA sought to reconcile conflicting or inconsistent race documents enabling clubs to focus on excellent on-and-off the water events. Race participants in 2017 could look to a single set of race documents (Notices of Race and Sailing Instructions) and a single set of safety regulations for most of the Chicago offshore racing.

In 2017, the five clubs of CASRA adopted a single set of safety regulations, the CASRA Safety Equipment Requirements (SER), which apply to all CASRA sailing events. Consisting of separate equipment requirements for inshore and offshore races, this enabled the Clubs (the organizing authorities) to adopt a set of safety equipment requirements that would be consistent from one race to another, allowing boat owners to maintain one set of safety equipment that they know would be valid from race to race.

CASRA also adopted a single set of Safety Equipment Requirements (SER's) in 2017 for all inshore and offshore races. This provided the CASRA organizing authorities one set of consistent safety equipment requirements and allowed boat owners to maintain one set of safety equipment for all CASRA Races.

The 2017 SERs were largely based on the US Sailing Safety Equipment Requirements and the Chicago Mackinac Safety Requirements, developed in Chicago and familiar to many CASRA racers. Further SER enhancements have occurred in subsequent years based on CASRA yacht club OA's and Racers feedback to simplify the CASRA SER's as much as possible while maintaining a high standard of safety.

A summary of what's new in 2024 is provided to insure compliance with recent changes in the CASRA SER's. Changes for 2024 are primarily to better organize and provide specific recommendations. US Sailing's SER for 2024 is the basis for this document. CASRA specific SER's are more clearly at the end of each set. Inshore (dinghy) SER's have been removed as there are not any specific races as part of CASRA.

As always, we appreciate and encourage feedback from our racers. Please let us know your thoughts on the CASRA SER's via email at [info@chicagosailracing.org](mailto:info@chicagosailracing.org). Your feedback is important as we continue to further enhance these requirements.

**Please note the CASRA SER's are considered to be *minimum requirements*.** You are subject to protest by your race committee and competitors if you don't meet the requirements but, the person in charge has the sole responsibility to ensure that his or her craft complies with current race SER's, is safely built, maintained and equipped for the conditions you will encounter.

CASRA also encourages all crew to obtain proper Safety at Sea and First Aid training, and we encourage crew to practice for emergencies before they actually happen. It is up to all of us to make sure sailing remains a safe and enjoyable experience. Look out for yourself, your crew, your boat and your fellow competitors.

Chicago Area Sail Racing Association  
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### Safety Equipment Requirements

Section Name	#	Requirement	CASRA Recommendations	CASRA Nearshore	CASRA Offshore
CASRA Specific: Definition	5.0.1	Any boat fully compliant with the current version of the Chicago Mackinac Safety Requirements (CMSR) shall be deemed compliant with these rules		•	•
Overall	1.1	The 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 authority for boating, the Racing Rules of Sailing, the rules of Class Associations and any applicable rating rules. These regulations also require the adherence of USCG Federal Requirements.		•	•
Overall: Responsibility	1.2	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.		•	•
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 Requirements may result in a penalty other than disqualification.		•	•
Overall: Equipment and Knowledge	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.		•	•
Overall: Secure Storage	1.5	A boat's heavy items such as batteries, stoves, toolboxes, anchors, chain and internal ballast shall be secured.		•	•
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 (sheerline). 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 in a way that prevents 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: 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.		•	•
Hull and Structure: Stability	2.2.3	A boat with moveable or variable ballast (water or canting keel) shall comply with the requirements of Appendix K.		•	•

## CASRA SER Matrix

Section Name	#	Requirement	CASRA Recommendations	CASRA Nearshore	CASRA Offshore
Hull and Structure: Accommodations	2.3.1	A boat shall be equipped with a head or a fitted bucket.		•	•
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.		•	•
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	2.4.6	Boats under 30' (9.14m) 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 1/8" (3mm).			•
Hull and Structure: Lifelines	2.4.7	Boats 30' and over (9.14m) shall have at least two lifelines with 24" (762mm) minimum height above deck, and a maximum vertical gap of 15" (381mm). The minimum diameter will be 5/32" (4mm) for boats to 43' (13.1m) and 3/16" (5mm) for boats over 43' (13.1m).			•
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 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: 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.		•	•
Hull and Structure: Mechanical Propulsion	2.7.2	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 (1.8 times the square root of the waterline in meters) for 4 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 U.S. Coast Guard standards.		•	•
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 or ISO specifications. Alternatively, each crewmember shall have an inherently buoyant off-shore life jacket that provides at least 22lbs (100N) of buoyancy meeting either U.S. Coast Guard or ISO specifications.	Recommend for Nearshore		•
Safety Equipment: Personal	3.1.4	Each crewmember shall have a safety harness and compatible safety tether not more than 6'7" (2m) long with a minimum tensile strength of 4500 lb. (20kN). The tether shall have a snap hook at its far end and a means to quickly disconnect the tether at the chest end.	Recommend for Nearshore		•
Safety Equipment: Emergency Communications	3.14	A boat shall carry a GPS receiver.		•	•
Safety Equipment: Emergency Communications	3.15	A boat shall carry an electronic means to record the position of a man overboard within ten seconds. This may be the same instrument listed in 3.14.		•	•
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: 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.		•	•

Section Name	#	Requirement	CASRA Recommendations	CASRA Nearshore	CASRA Offshore
Gear: Anchoring	3.23	A boat shall carry one anchor, meeting the anchor manufacturer's recommendations based on the yacht's size, with a suitable combination of chain and line.		•	•
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	A boat shall carry an 11.5" (292mm) diameter or greater octahedral radar reflector or one of equivalent performance.			•
Safety Equipment: Damage Control	3.27.1	A boat shall carry two sturdy buckets of at least two gallons (8 liters) capacity with lanyards attached.			•
Safety Equipment: Damage Control	3.27.2	A boat shall carry one sturdy bucket of at least two gallons (8 liters) capacity with lanyards attached.		•	
CASRA SPECIFIC Safety Equipment: Damage Control	3.27.3	A boat shall carry one sturdy bucket and or bailing device.		•	•
Gear: Emergency Steering	3.29.1	A boat shall have an emergency tiller, capable of being fitted to the rudder stock.			•
Gear: Emergency Steering	3.29.2	Wheel steered boats shall have an emergency tiller, capable of being fitted to the rudder stock.			•
Gear: Spare Parts	3.3	A boat shall carry tools and spare parts, including an effective means to quickly disconnect or sever the standing rigging from the hull.		•	•
Safety Equipment: Navigation Lights	3.3.1	A boat racing between sunset and sunrise shall carry navigation lights that meet U. S. Coast Guard or applicable government requirements mounted so that they will not be obscured by the sails 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 US Coast Guard or applicable government requirements and which can be connected to a different power source than the primary lights.	Masthead or, Verify your deck-level lights meet USCG requirements		•
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 added during the first servicing of any new equipment.		•	•
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.			•
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.		•	•
Safety Equipment: Fire Extinguishers	3.4	A boat shall carry fire extinguisher(s) that meets U.S. Coast Guard or applicable government requirements, when applicable.		•	•
Safety Equipment: Sound Producing Equipment	3.5	A boat shall carry-sound-making devices that meets U.S. Coast Guard or applicable government requirements, when applicable.		•	•
Safety Equipment: Visual Distress Signals	3.6.4	A boat shall carry U.S. Coast Guard (or applicable government entity) flares meeting day-night requirements not older than the expiration date.	Recommend SOLAS or electronic flare	•	•
Safety Equipment: Man Overboard	3.7.1	A 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.		•	•
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 Man Overboard 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".			•
Safety Equipment: Man Overboard	3.7.3	A boat shall have a throwing sock-type heaving line of 50' (15m) or greater of floating polypropylene line readily accessible to the cockpit.		•	•

## CASRA SER Matrix

Section Name	#	Requirement	CASRA Recommendations	CASRA Nearshore	CASRA Offshore
Safety Equipment: Man Overboard	3.7.4	A boat shall carry a Coast Guard 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.		•	•
Skills: Emergency Steering	4.1.2	Crews must be aware of methods of steering the yacht with the rudder disabled.	Recommend practicing		•
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.	Recommend practicing		•
CASRA SPECIFIC Safety Equipment: Emergency Communications	5.1	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. Such radio shall have DSC capability, be connected to or have an internal GPS, and have the assigned MMSI number (unique to the boat) programed into the VHF.	Recommend MMSI registration + AIS receive capability		•
CASRA SPECIFIC Safety Equipment: Emergency Communications	5.2	A boat shall carry a VHF radio (minumium 5 watt transmit power). It is recommended that the radio be a permanently-installed VHF radio connected to a masthead antenna by a co-axial feeder cable . It is further recommended that such radio shall be connected to or have an internal GPS, and have the assigned MMSI number (unique to the boat) programmed into the VHF.	Recommend MMSI registration	•	
CASRA SPECIFIC Safety Equipment: Emergency Communication	5.3	A boat shall have a watertight handheld VHF radio or a handheld VHF radio with waterproof cover. This radio is not required to have DSC/GPS capability.	Recommend MMSI registration		•
CASRA SPECIFIC Safety Equipment: Personal	5.4	Each crewmember shall have a life jacket intended for small boat sailing or other active boating. Each such life jacket shall be USCG, ISO, or applicable government approved or shall meet the OFFSHORE requirement of 3.1.1.	Recommend all utilize type 5 offshore vest with at least 38 lbs./150 N of buoyancy (see OFFSHORE requirement 3.1.1)	•	
CASRA SPECIFIC Safety Equipment: Deck Safety	5.6	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. (This requirement only applies to the Chicago to Michigan City and return, and the Tri and Bi-State Races).			•
CASRA SPECIFIC Gear: Lights	5.71	A boat shall carry a watertight, high-powered searchlight, suitable for searching for a person overboard at night or for collision avoidance. (This requirement is only applied to the Chicago to Michigan City and return, and the Tri and Bi-State Races.)			•
CASRA SPECIFIC Gear: Lights	5.72	A boat shall carry a watertight flashlight for each crewmember with spare batteries in addition to the above. (This requirement is only applied to the Chicago to Michigan City and return, and the Tri and Bi-State Races.)			•
CASRA SPECIFIC Sails: Mainsail Reefing	5.74	Boats shall have mainsail reefing equipment that will allow the luff of the mainsail to be reduced by at least 10%. In lieu of this requirement, boat may carry a storm trysail that is capable of being attached to the mast and sheeted independently of the boom with area not greater than 17.5% of mainsail luff length multiplied by the mainsail foot length.			•
CASRA Specific: Definition	5.8	Multihull boats must be compliant with the Chicago Mac Safety Regulations (CMSR) for Multihulls for 2024.			•



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## Appendix K

### Moveable and Variable Ballast

Notwithstanding the maximum length limit of 24m in the standard, this Appendix invokes International Standard ISO 12217-2, Small craft – Stability and buoyancy assessment and categorization – Part 2: Sailing boats of hull length greater than or equal to 6m. The functions KFR (Knockdown Recovery Factor) and FIR (Inversion Recovery Factor) are defined in ISO 12217-2, except as modified by this Appendix.

This Appendix applies to Monohull Yachts only. Unless specifically stated, a requirement applies to Special Regulations Categories 0, 1, 2, 3 and 4. This Appendix does not apply to boats racing under Category 5.

1. Stability
- 1.1. Boat Condition

In the calculation of stability data:

(a) Deck and other enclosed volume above the sheerline and cockpit volume shall be taken into account.

(b) Mass shall be taken as Minimum Operating Mass as defined by ISO 12217-2, paragraph 3.5.3.

- 1.2. General Standards

In the assessment of ISO category for yachts fitted with moveable and/or variable ballast, ISO 12217-2, paragraph 6.1.4 b) shall not apply. Boats shall comply with paragraphs 6.2.3, 6.3.1 and 6.4. Calculations shall be for the ballast

## SER Appendices

condition that results in the most adverse result when considering each individual stability requirement. ISO 12217-2 Annex C, paragraph C.3.3, first sentence, the word 'may' is replaced with 'shall'. ISO 12217-2 Annex C, paragraph C.3.4 shall not be used in the calculation of righting lever.

### 1.3. Knockdown Recovery

Boats with moveable/variable ballast shall comply with the following minimum values of Knockdown Recovery Factor (FKR) calculated in accordance with ISO 12217-2 paragraph 6.4.4 with the modification that the reference to ISO 8666 paragraph 5.5.2 changed to incorporate actual mainsail area and center of effort. The lesser of FKR90 and FKR-90 shall be used:

<b>SR Category</b>	<b>Ocean</b>	<b>Costal</b>	<b>Nearshore</b>
<b>FKR</b>	0.9	0.8	0.7

Boats with age date prior to 11/04 may seek dispensation from this section 1.3 by application to ISAF.