



## CHICAGO MACKINAC SAFETY REGULATIONS (“CMSR”)

### MONOHULL

January 15, 2016

#### General Requirements

1. *Purpose of CMSR* – CMSR - Monohull establishes uniform minimum equipment, accommodation and training standards for monohull boats racing offshore. The CMSR do not replace, but rather supplement, the requirements of governmental authorities, the Racing Rules of Sailing (RRS), the rules of Class Associations and all applicable rating rules.
2. *Responsibility of Person-In-Charge* – The safety of a boat and her crew is the sole and inescapable responsibility of the Person-In-Charge. The Person-In-Charge shall ensure that the boat is fully found, thoroughly seaworthy and manned by an experienced crew who have undergone appropriate training and are physically fit to face bad weather. The Person-In-Charge must be satisfied as to the soundness of hull, spars, rigging, sails, and gear. The Person-In-Charge must ensure that all safety equipment is properly maintained and stowed, and that the crew knows where it is kept, and how it is to be used. Neither the CMSR, their use in connection with the Chicago Yacht Club Race to Mackinac (the “Race”), nor any inspection under these CMSR in any way limits or reduces the complete and unlimited responsibility of the Person-In-Charge.
3. *Functions and Maintenance of Equipment* -- All equipment required by the CMSR shall function properly, be checked regularly, cleaned and serviced, be readily accessible, and be of a type, size and capacity suitable and adequate for the intended use and size of the boat.

A Chicago Yacht Club Racing Event

4. *Heavy Items* – Ballast, ballast tanks and associated equipment shall be permanently installed. Heavy movable items including e.g., batteries, stoves, gas bottles, toolboxes and anchors and chain shall be permanently installed or securely fastened, as appropriate.
5. Intentionally omitted
6. Intentionally omitted

## Structural Features and Fixed Equipment

7. *Strength of Build* – Boats shall be strongly built, watertight and, with regard to hulls, decks and cabin trunks, capable of withstanding solid water and knockdowns. They must be properly rigged and ballasted, be fully seaworthy, be built to resist capsize, and must meet the standards set forth in these CMSR.
8. Intentionally omitted
9. *Shrouds* – A boat's shrouds shall never be disconnected while racing.
10. *Hulls* – A hull, including decks, coach roofs, windows, hatches and all other parts, shall form an integral, essentially watertight unit and any openings in it shall be capable of being immediately secured to maintain this integrity.
11. *Centerboard/Daggerboard Trunks* – Centerboard and daggerboard trunks, and the like, shall not open into the interior of a hull except via a watertight inspection/maintenance hatch of which the opening shall be entirely above the waterline of the boat when floating level in normal trim.
12. *Canting Keel* – A canting keel pivot shall be completely contained within a watertight enclosure, which shall comply with CMSR item 10. Access points in the watertight enclosure for control and actuation systems or any other purpose shall comply with CMSR item 7.
13. *Movable Ballast* – Movable ballast systems shall be fitted with a manual control and secondary actuation system, which shall be capable of controlling the full sailing load of the keel in the event of a failure of the primary system. Such failures may include electrical and hydraulic failure and mechanical failure of the components and the structure to which it mounts. The system must be quickly operated, and shall be operated at any angle of heel. It would be desirable if this system was capable of securing the keel on the centerline.
14. *Exits* – Boats shall have at least two (2) exits. At least one exit shall be located forward of the foremost mast except where structural features prevent its installation in this location.
15. *Sea Cocks and Valves* – Sea cocks or valves shall be permanently installed on all through-hull openings below the boat's loaded length of the waterline (LWL)

except integral deck scuppers, speed indicators, depth finders, and the like; however a means of closing such openings shall be provided.

16. *Bow Pulpits* – Boats shall have a bow pulpit.
17. *Stern Pulpits* – Boats shall have a stern pulpit, or lifelines, complying with the requirements of CMSR 18, arranged as an adequate substitute.
18. *Lifelines* – Boats must have taut double lifelines made of stainless steel wire and/or single braided High Modulus Polyethylene (HMPE) (Dyneema® / Spectra®, or equivalent) rope, supported by permanently installed stanchions. Upper lifelines shall be no less than twenty-three (23) inches above the working deck. No vertical opening shall exceed twenty-two (22) inches. Lifelines, stanchions, and pulpits shall effectively form a continuous barrier around the working deck for man-overboard prevention. However, bow pulpits may be open to allow access to a spinnaker pole or a bowsprit. A multipart-lashing segment not to exceed 4" per end termination for the purpose of attaching lifelines to pulpits is allowed.
19. *Stanchions* – Boats must have permanently installed stanchions. Stanchions shall be straight and vertical except that:
  1. within the first two (2) inches from the deck, stanchions shall not be displaced horizontally from the point at which they emerge from the deck or stanchion base by more than 3/8 inch and,
  2. stanchions may be angled to not more than ten (10) degrees from vertical at any point above two (2) inches from the deck.
20. *Toe Rail* – A toe rail of minimum height 3/4 inches shall be permanently installed around the foredeck from abreast the mast, except in way of fittings and not further inboard from the edge of the working deck than one third of the local half-beam. An additional lifeline of minimum height one (1) inch and maximum height two (2) inches is acceptable in lieu of a toe rail (but shall not count as an intermediate lifeline as required by CMSR 18).
21. *Toilet* – Boats shall have a permanently installed operable toilet, or a portable toilet, properly secured.
22. *Bunks* – Boats shall have bunks, permanently installed.
23. *Cooking facilities* – Boats shall have a cooking stove permanently installed or securely fastened with safe, accessible fuel shutoff capable of being safely operated in a seaway.
24. *Hand Holds* – Boats shall have adequate hand holds fitted below deck so that crew members may move about safely while at sea.
25. *Bilge Pump(s)* – Boats shall have at least one (1) permanently installed manual bilge pump operable with all cockpit seats, hatches and companionways shut. Unless permanently installed, each bilge pump handle shall be provided with a lanyard or catch or similar device to prevent accidental loss. Bilge pumps shall not be connected to cockpit drains unless the combined system has sufficient

capacity to handle the maximum combined volume. Bilge pumps may not discharge into a cockpit unless that cockpit opens aft to the sea.

26. *Permanently Installed Compass* – Boats shall have a permanently installed marine magnetic compass.
27. *Halyards* – No mast shall have less than two (2) halyards, each capable of hoisting a sail.
28. *Boom Support* – Boats shall have some means to prevent the boom from dropping independent of the mainsail or the main halyard. Topping lifts or supporting vang are acceptable for this purpose.
29. *Navigation Lights* – Boats shall carry navigation lights that are permanently installed, such that they may not be masked by sails or the heeling of the boat.
30. *Reserve Navigation Lights* – Boats must carry reserve navigation lights with a power and/or wiring system separate from that used for the Navigation Lights required by CMSR 29. Boats may, in order to satisfy this requirement, carry portable battery-powered navigation lights with sufficient luminosity for the conditions of the Race.
31. *Spare Bulbs for Navigation Lights* – Boats shall carry spare bulbs for navigation lights. However, spares are not required for navigation lights using LEDs.
32. *Display of Navigation Lights* – Boats shall display navigation lights between sunset and sunrise, and at any other time deemed appropriate by the Person-In-Charge.
33. *Propulsion Engine and Fuel Tanks* – A propulsion engine shall be provided, capable of powering the boat at a speed in knots equal to the square root of its LWL in feet. Such engine shall be either:
  1. a securely covered inboard engine together with permanently installed exhaust and fuel supply systems and fuel tanks; or
  2. an outboard engine with associated tanks and fuel supply systems, all securely fastened. The outboard must be ready for immediate use as a source of propulsion.
34. *Boat Batteries* – When an electric starter is the only method for starting the engine, boats shall carry a separate battery, the primary purpose of which is to start the engine.
35. *Engine Fuel* – Boats shall, at a minimum, finish with fuel sufficient to motor at a speed of five (5) knots for ten (10) hours. Fuel tanks must be provided with shutoff valves or in the case of a portable fuel tank, a quick disconnect of the fuel line.
36. *Permanently Installed Marine Radio Transceiver*– A yacht 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 a suitable antenna, be continuously connected to a functioning external GPS data source, or have an internal GPS, and be programmed with an MMSI number properly registered to the yacht.

37. *Emergency Antenna* – Boats shall carry an emergency antenna that does not depend on the mast.
38. *Global Positioning System (GPS)* – Boats shall carry (2) functioning GPS, at least one shall be battery powered.

## Portable Equipment and Supplies for the Boat

39. *Reflective Sailboard* – Boats shall carry a reflective sailboard displaying its sail number. The sailboard shall be constructed to be displayed easily as prescribed by the Race's Sailing Instructions. Each character shall be at least ten (10) inches high and made of contrasting marine-grade reflective material mounted on a black background.
40. *Buckets* – Boats shall have two (2) buckets of stout construction, each with at least two (2) gallons (US) capacity. Each bucket shall have a lanyard.
41. *Portable Marine Radio Transceiver* – In addition to the permanently installed VHF marine radio transceiver required under CMSR 36, boats shall carry a hand-held watertight VHF marine transceiver, or a hand-held VHF marine transceiver with a waterproof cover. While not currently required, it is recommended that the radio have DSC/GPS capability and an assigned MMSI number (unique to the yacht), and that persons in charge confirm the implementation of this capability when commissioning new equipment.
42. *Cellular Phone* – Boats shall carry a working cellular telephone, and shall provide the cellular number to the Race Committee on the entry form.
43. *Soft Wood Plugs* – Boats shall carry soft wood plugs, tapered and of the appropriate size, to be stowed or attached adjacent to the appropriate fitting for every through-hull opening.
44. *Jackstays* – Boats shall be fitted with jackstays attached to through-bolted or welded deck plates or other suitable and strong anchorage fitted on deck, port and starboard of the boat's center line to provide secure attachments for safety harnesses/tethers. Stainless steel 1x19 wire, webbing or composite line with a minimum breaking strength of 4,500 lbf (foot pounds) is recommended.
45. *Fire Extinguishers* – Boats shall carry at least two (2) operable fire extinguishers, readily accessible in different parts of the boat.
46. *Anchors* – Boats shall carry at least two (2) anchors attached to a suitable combination of chain and rope, assembled, and ready for immediate use.

47. *High-Powered Flashlight or Searchlight* – Boats shall carry a watertight, high-powered flashlight or searchlight.
48. *Flashlights* – In addition to the high-powered flashlight or searchlight required by CMSR 47, boats shall carry at least two (2) watertight flashlights.
49. *First Aid Kit* – Boats shall carry a first-aid kit suitable for the likely conditions of the passage and the number of crew aboard.
50. *First Aid Manual* – Boats shall carry a suitable first aid manual.
51. *Foghorn* – Boats shall carry a foghorn.
52. *Radar reflector* – Boats shall carry a radar reflector, functioning independent of any power source.
53. *Charts* – Boats must carry the non-electronic editions of U.S. Chart #14901 - Lake Michigan and either Chart #14880 Straits of Mackinac or #14881 Mackinac Island and surrounding area, or their paper equivalents.
54. *Safety Equipment Location Diagram* – A durable, waterproof diagram or chart locating the principal items of safety equipment shall be provided, and displayed in the main accommodation area where it is easily seen.
55. *Depth Sounder* – Boats shall carry a depth sounder capable of sounding depths up to one hundred (100) feet.
56. *Spare Tiller* – Boats shall carry an emergency tiller, capable of being fitted to the rudder stock. Boats using an unbreakable metal tiller are exempt from this requirement.
57. *Emergency Steering Methods* – Crews must be aware of alternative methods of steering the boat in any sea condition in the event of rudder loss. At least one method must have been proven to work on board the boat. An inspector may require that this method be demonstrated.
58. *Tools and Spare Parts* – Boats shall carry tools and spare parts, including effective means to quickly disconnect or sever the standing rigging from the hull.
59. *Boat's Name* – Each boat's name shall be on buoyant safety equipment.
60. *Retro-Reflective Material* – Marine-grade retro-reflective material shall be fitted to buoyant safety equipment.
61. *EPIRBs* – Boats shall carry an EPIRB. The EPIRB shall be a 406 MHz EPIRB that is either:
  1. connected to a continuously functioning *external* GPS or,
  2. fitted with an *internal* GPS.

The EPIRB shall be properly registered with the appropriate authority and should be tested in accordance with the manufacturer's instructions when first commissioned and then at least annually. A personal locator beacon (PLB), that is registered to the owner with a notation in the registration that it is aboard the yacht, that meets the above criteria, shall satisfy the EPIRB requirement above.

62. *Liferaft(s)* -- Boats are strongly recommended to carry a life raft(s) suitable for the number of crew onboard and the conditions of the race.
63. *Lifesling* – Boats shall carry a Lifesling®, or functional equivalent ready for instant use. Lifeslings inflated with compressed gas should be tested and serviced at intervals in accordance with manufacturer's instructions.
64. *Man Overboard Pole* – Boats shall carry a man overboard pole and flag, with a lifebuoy, a self-igniting light, a whistle, and a drogue attached. These items shall be stored on deck, and ready for instant use, and affixed in a manner that allows for a “quick release”. A boat may carry a self-inflating MOB module to satisfy this requirement. Self –inflating MOB modules shall be tested and serviced in accordance with its manufacturer's specifications.
65. *Pyrotechnic Signals* – Pyrotechnic signals shall be provided conforming to Safety of Life At Sea (SOLAS) LSA Code Chapter III - visual signals shall not be older than the stamped expiry date. Each boat shall carry:
  1. 4 red parachute flares, and
  2. 4 red hand flares

Flares shall be stored in a readily accessible location, such that they can be located and fired within sixty (60) seconds. Flares stored inside of liferafts may not be used to satisfy this requirement.
66. *Heaving Line* – Boats shall carry a heaving line, at least 1/4 inch in diameter and at least fifty (50) feet in length, readily accessible to the cockpit.
67. *Cockpit Knife* – Boats shall carry a strong, sharp knife, sheathed and securely restrained readily accessible from the deck or cockpit.
68. *Storm Jib* – Boats shall carry a storm jib made of suitable weight sail cloth, and of area not greater than 5% height of the foretriangle squared, with luff maximum length 65% height of the foretriangle. This sail shall have means to attach the luff to the stay independent of any luff-groove device. Boats shall have sheeting positions on the deck for this sail.
69. *Mainsail Reefing Equipment* – Boats shall have mainsail reefing equipment that will allow the luff of the mainsail to be reduced by 25%. 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.

## Personal Equipment

70. *Personal Flotation Devices (PFDs)* – Each crew member 16 years of age or older shall have either:

1. a Type 1 U.S. Coast Guard approved PFD or,
2. an inflatable PFD having at least thirty-two (32) pounds buoyancy and designed to securely suspend an unconscious person face upwards at approximately forty-five (45) degrees to the water surface. All inflatable PFDs shall have a compressed gas inflation system. Inflatable PFDs need not have a water-activated auto-inflate system in order to satisfy this requirement. Belt pack PFDs are not acceptable under this requirement. PFD shall be appropriately sized to the individual.
3. If the PFD is inflatable, crotch strap or leg straps shall be fitted and attached.

Each crew member under sixteen (16) years of age shall have a U.S. Coast Guard approved PFD appropriate for the crew member's age and weight and suitable for offshore sailing conditions, as determined by the Person-In-Charge.

71. *PFD Equipment* – Each PFD must be equipped with 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 PFD is inflatable, it must be regularly checked for air retention.

72. *Wearing of PFDs* – Each crew member shall wear PFDs complying with CMSR 70 and CMSR 71:

1. while on deck between sunset and sunrise; and
2. at all other times, unless the Person-In-Charge directs they may be put aside.

73. *Safety Harnesses and Tethers* – Each crew member shall have a harness, and a safety line (tether) not more than seven (7) feet long with a snap hook at one end and a quick release shackle on the harness end that is releasable under heavy load.

74. *Personal Safety Knife* – A knife, straight blade or, if folding, able to be opened with one hand, to be attached to or carried on each crew member at all times. The Personal Safety Knife must be readily accessible at all times including while wearing foul weather gear and PFD/Harnesses.

## Training

75. *Annual Man Overboard Practice* – Man-overboard procedures appropriate for the boat's size and speed shall be practiced aboard the boat within six months prior to the race. At least two-thirds of all crew members racing on the boat during the Race must participate in this practice. A Crew Overboard Drill Certificate of such practice shall be signed by participating crew members and kept aboard the boat. The certificate shall be downloaded from the "Race



Documents” section of the Mac website. [www.cycracetomackinac.com](http://www.cycracetomackinac.com). Practice of the "Quick Stop" man-overboard procedure is strongly recommended

76. *Safety at Sea and First Aid Training*

1. It is strongly recommended that at least 30% of the crew (including the skipper) have completed a one-day or two-day US Sailing- approved offshore “Safety at Sea Seminar” within the 5 year period preceding the start of the race. The half-day ‘coastal’ Safety at Sea Seminar shall not be deemed to fulfill this recommendation.
2. It is strongly recommended that at least (2) members of the crew sailing on the boat have a current certification for First Aid and CPR. For a list of recognized courses visit - <http://www.ussailing.org/safety/equipment-and-requirements/>

Double Handed Requirements (applicable to Double Handed Division entrants only)

77. *Autopilot* – Boats must carry an autopilot or tillerpilot, installed and ready for immediate use, which may be used while racing. This modifies RRS 52.
78. *Wearing of PFDs* – Each crew member shall wear a PFD complying with CMSR 70 and CMSR 71, at all times when on deck.
79. *Wearing of Safety Harnesses and Tethers* – Each crew member shall wear a safety harness and tether complying with CMSR 73 at all times when out of the cabin, which shall be attached to the boat.

END