



*All boats competing in the 2022 Annapolis to Bermuda Ocean Race must comply with the safety standards outlined in this document as set forth in the Notice of Race. Every yacht entered in the race is subject to inspection both before and after the race. Failure to comply may result in invalidation of entry or protest. These requirements are a version of US Sailing's Safety Equipment Requirements (USSERs), which can be found on the US Sailing website ([ussailing.org](http://ussailing.org)). The numbering system used below conforms with the USSERs, and the absence of sequential numbers in this document indicates provisions not applicable to the Annapolis to Bermuda Race.*

## **ANNAPOLIS TO BERMUDA OCEAN RACE SAFETY EQUIPMENT REQUIREMENTS**

***Dec 10, 2021***

### **1. Overall**

- 1.1. The 2022 A2B Safety Requirements ("2022 A2BSRs") 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 or other national authority for boating regulations, the Racing Rules of Sailing ("RRS"), the rules of Class Associations and all applicable rating rules.
- 1.2. Responsibility: 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.
- 1.3. Neither the establishment of these 2022 A2BSRs, their use by race organizers, nor the inspection of a boat under these regulations in any way limits or reduces the complete and unlimited responsibility of the person in charge.
- 1.4. Decision to race -The responsibility for a yacht's decision to participate in a race or to continue racing is hers alone -RRS Fundamental Rule 4.
- 1.5. Inspections: 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 Race Committee. A Violation of the 2022 A2BSRs may result in a penalty other than disqualification.
- 1.6. Equipment & Knowledge: 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.

- 1.7. Secure Storage: A boat's heavy items such as batteries, stoves, toolboxes, anchors, floorboards, chain and internal ballast shall be secured.
- 1.8. Strength of Build: 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.
- 1.9. Watertight Integrity: 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.
- 1.10. Scantlings: Hull Construction Standards - A boat shall meet the scantlings requirements outlined in Appendix A.

## 2. Hull & Structure

### 2.1. Hull Openings

- 2.1.1. Companionway: 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.
- 2.1.2. Hatchboards: A boat's hatch boards, whether or not in position in the companionway shall be secured to the boat (e.g. by a lanyard) for the duration of the race to prevent their being lost overboard. Hatchboards must be fitted with a strong securing arrangement which shall be operable from the exterior and interior including when the yacht is inverted.
- 2.1.3. Cockpit: 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.
- 2.1.4. Cockpit Drains: 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.
- 2.1.5. Cockpit Volume: 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.
- 2.1.6. Through Hulls: 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.

## 2.2. Stability

- 2.2.1. A stability index greater than or equal to 115, or satisfaction of the requirements of ISO 12217-2A is recommended (See attached Appendix A). The "person in charge" of a boat that does not meet this recommendation must carefully consider their decision to race pursuant to Section 1.2 and the suitability of the boat to compete.
- 2.2.2. A boat with moveable or variable ballast (water or canting keel) shall comply with the requirements of the attached Appendix B.

## 2.3. Accommodation

- 2.3.1. A boat shall be equipped with a head or a clearly labeled fitted bucket.
- 2.3.2. A boat shall have bunks sufficient to accommodate the off-watch crew.
- 2.3.3. A boat shall have a stove with a fuel shutoff.
- 2.3.4. A boat shall have a permanently installed water tank and delivery system. The tanks shall be capable of carrying a minimum of 5 gallons of potable water per crew person, in addition to the emergency drinking water required in 3.37
- 2.3.5. A boat shall have adequate hand holds below decks.

## 2.4. 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.
- 2.4.2. A boat's stanchion and pulpit bases shall be within the working deck.
- 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).
- 2.4.4. Lifelines shall be uncoated stainless-steel wire. 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 (meaning a deflection of less than 2" (50mm) when a force of 11.24 lbs. (50N) is applied midway between stanchions).
- 2.4.5. The maximum spacing between the bases of lifeline supports (e.g. stanchions and pulpits) shall be 87" (2.2m).
- 2.4.6. Boats 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).
- 2.4.7. Toe rails shall be fitted around the foredeck from the base of the mast with a minimum height of 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.

- 2.4.8. 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. 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.

## 2.5. 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.
- 2.5.2. A boat shall have a second manual bilge pump of at least 10 GPM (37.8 liter per minute) capacity, operable from below deck either permanently installed or board-mounted, meeting the same criteria as above.

- 2.6. Mast & Rigging: A boat shall have the heel of a keel-stepped mast securely fastened to the mast step or adjoining structure.

## 2.7. 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 10 hours.
- 2.7.2. The boat's engine and generator installation (if so equipped) must conform to ABYC, ISO, or U.S. Coast Guard standards.

## 3. Safety Equipment

- 3.1.1. Life Jacket: 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. 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 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. Regardless of the type of lifejackets carried, a yacht must carry life jackets that comply with U.S. Coast Guard requirements.

- 3.1.2. Harness: Each crewmember shall have a safety harness and compatible safety tether not more than 7' (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.
- 3.1.3. Jacklines: 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.
- 3.1.4. Clipping in points: A boat shall have adequate clipping in points or jacklines that allow the crew to clip on before coming on deck and unclip after going below.
- 3.1.5. Deck Safety: Multihulls must have jacklines or attachment points that are accessible when the vessel is inverted.
- 3.1.6. Navigation Lights: 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.
- 3.1.7. Navigation Lights: A boat shall have a second set of navigation lights that comply with US Coast Guard requirements, and which can be connected to a different power source than the primary lights.
- 3.1.8. Fire Extinguishers: A boat shall carry sufficient fire extinguisher(s) of the type and number that meet U.S. Coast Guard requirements, when applicable.
- 3.2. Sound Producing Equipment: A boat shall carry a sound-making device that meets U.S. Coast Guard requirements, when applicable.
- 3.3. Visual Distress Signals
  - 3.3.1. A boat shall carry two (2) SOLAS orange smoke flares not older than the expiration date.
  - 3.3.2. A boat shall carry four (4) SOLAS red hand flares not older than the expiration date
  - 3.3.3. Boat flares stored inside of life rafts may not be used to satisfy the flare requirement.
- 3.4. Man Overboard
  - 3.4.1. 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.
  - 3.4.2. 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".

3.4.3. A boat shall have a throwing sock-type heaving line of 50' (15m) or greater of floating polypropylene line readily accessible to the cockpit.

3.4.4. A boat shall carry a Coast Guard-approved "throwable device". If the device carried under 3.7.1 or 3.7.2 satisfies this requirement, then no additional device is needed.

### 3.5. Emergency Equipment

3.5.1. 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. All radios shall have DSC capability, have an antenna of at least 15"

3.5.2. (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.

3.5.3. A boat shall have a watertight handheld VHF radio or a handheld VHF radio with waterproof cover. It is recommended that this radio have DSC/GPS capability.

3.5.4. 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 15" (381mm).

3.6. AIS: It is recommended that boats have an AIS Transponder. While not required, AIS Transponders may share a masthead VHF antenna via a low loss AIS antenna splitter or use 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.

3.7. Satellite Telephone: A boat shall carry a satellite telephone that is programmed to operate with a satellite communications provider of continuous, uninterrupted signals for two-way voice communications on the Western North Atlantic Ocean. The satellite phone shall be powered by or re-charged from, the vessel's electrical system and carry a mounted external antenna if operated below deck. The satellite phone shall be used to call the A2B race committee at an appointed time and schedule. The person in charge shall file the telephone number with the A2B Race Committee before the close of race check-in.

3.8. MOB AIS: It is recommended that a boat carry a man overboard alarm for each crew member based on AIS or other method.

3.9. WX Radio: A boat shall have a method of receiving weather information in addition to the fixed mount and hand-held VHF radio.

3.10. GPS: A boat shall carry a GPS receiver.

3.11. MOB: 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.

3.12. EPIRB: 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. After 01/01/2018, this device shall be equipped with an internal GPS. Boats with more than one life raft will require one EPIRB per life raft.

- 3.13. Knotmeter: A boat shall have a knotmeter and/or distance-measuring instrument
- 3.14. Depth Sounder: A boat shall have a permanently installed depth sounder that can measure to depths of at least 200 ft. (61m).
- 3.15. Compass
  - 3.15.1. A boat shall have a permanently mounted magnetic compass independent of the boat's electrical system suitable for steering at sea.
  - 3.15.2. A boat shall have a second magnetic compass suitable for steering at sea which may be handheld.
- 3.16. Navigation: A boat shall have non-electronic charts that are appropriate for the race area.
- 3.17. Boat Identification: 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. Weather-cloths may be used for this purpose.
- 3.18. Damage Control: 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 below the maximum-heeled waterline.
- 3.19. Anchoring: A boat shall carry one anchor with appropriate rode, meeting the anchor manufacturer's recommendations based on the yacht's size.
- 3.20. Lights
  - 3.20.1. A boat shall carry a watertight, high-powered searchlight, suitable for searching for a person overboard at night or for collision avoidance.
  - 3.20.2. A boat shall carry a watertight flashlight or headlamp for each crew member with spare batteries in addition to the above.
  - 3.20.3. A boat shall carry at least two watertight flashlights with spare batteries in addition to the requirement of 3.24.1 and 3.24.2.
- 3.21. Medical Kits: 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.
- 3.22. Radar Reflectors: A boat shall carry an 11.5" (292mm) diameter or greater octahedral radar reflector or one of equivalent performance capable of a documented minimum reflecting area of 6 m<sup>2</sup>.
- 3.23. Dewatering: A boat shall carry a sturdy bucket(s) of at least two gallons (8 liters) capacity with lanyards attached.

- 3.24. Safety Diagram: 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.
- 3.25. Emergency Steering
- 3.26. A boat shall have an emergency tiller, capable of being fitted to the rudder stock.
- 3.27. Wheel-steered boats shall have an emergency tiller, capable of being fitted to the rudder stock.
- 3.28. Spare Parts: A boat shall carry tools and spare parts suitable for the likely conditions of the passage, including an effective means to quickly disconnect or sever the standing rigging from the hull.
- 3.29. Equipment Identification: 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.
- 3.30. Cockpit Knife: A boat shall carry a strong, sharp knife, sheathed and securely restrained, which is readily accessible from the deck and/or cockpit. A knife carried by each crew member is recommended.
- 3.31. Sails
- 3.31.1. A boat shall have a mainsail reefing system capable of reducing the area of the sail by an amount appropriate for the weather conditions possible on the race course.
- 3.31.2. Trysails: It is strongly recommended that a boat shall 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  $E \times P$ , 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.
- 3.31.3. Heavy Weather Jib: 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% height of the foretriangle squared
- 3.31.4. Storm Jib: A boat shall carry a storm jib not exceeding 5% of the yacht's I dimension squared, equipped with an alternative means of attachment to the headstay in the event of a failure of the head foil. Storm sails manufactured after 01/01/2014 shall be constructed from a highly visible material.
- 3.32. Rigging, Halyards: A boat shall not be rigged with any halyard that requires a person to go aloft in order to lower a sail.



3.32.1. Rigging: Boom Support: A boat shall have a means to prevent the boom from dropping if support from the mainsail or halyard fails.

3.32.2. Rigging: Boom Preventer: A yacht shall have a preventer or boom restraining device, shall practice rigging it and shall be prepared to demonstrate its use.

3.33. Supplies: Emergency Water: 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.

3.34. Supplies: Rations: A boat shall carry adequate food, energy bars, and snacks to maintain crew stamina as described in the Notice of Race.

3.35. Life Rafts

A boat shall carry adequate inflatable life raft(s) 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 is capable of being launched within 15 seconds. Boats built after 01/06/2001 shall have the life raft stowed in a deck mounted rigid container or stowed in watertight or self-draining purpose-built rigid compartment(s) opening adjacent to the cockpit or the working deck. Boats built prior to 01/06/2001 may alternatively stow the life raft in a valise not weighing over 88 lbs. securely below deck and adjacent to the companionway. The life raft(s) shall hold current certificate(s) of inspection.

3.36. Grab Bag: A boat shall have a grab bag with a lanyard and clip for each life raft. 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. It is recommended that the handheld VHF be DSC and GPS equipped.

#### 4. Skills

4.1. On-board Training: The captain and not less than 80% of the boat's racing crew shall, prior to the start of the race, participate in on-board training, including annual man-overboard procedures, operation of DSC radios and how to respond to DSC calls, AIS Transponder use, and GPS MOB activation (including personal MOB applications), sailing with heavy weather sails, use of the life raft, lifejackets, safety harnesses, main boom preventer, communications equipment, pyrotechnics, EPIRB(s), fire prevention, firefighting and the procedures for abandoning ship, dismasting and rudder/steering loss or failure. All participating crew shall sign and date the On Board Training Certificate.

4.2. Emergency Steering 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.

4.3. Annual Man Overboard Drill: Annual man overboard procedures shall be appropriate for the boat's size and speed and practiced by no less than 2/3 of the race crew. 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.

- 4.4. Safety at Sea Training: 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 US Sailing Offshore Safety at Sea Seminar within the past 5 years. Online training courses are acceptable.
- 4.5. CPR and First Aid: A minimum of two crew members must have current CPR and First Aid certification from a qualified STCW course or provider recognized by US Sailing. Online-only courses are not acceptable for this requirement.  
([http://www.sailing.org/classesandequipment/offshore/osr\\_recognized\\_first\\_aid\\_qualifications.php](http://www.sailing.org/classesandequipment/offshore/osr_recognized_first_aid_qualifications.php)).

## Appendix A

### Hull Construction Standards (Scantlings)

#### 1.8.1

a) A yacht of less than 24m (78.74 feet) in hull length with the earliest of Age or Series Date on or after 1 January 2010 shall have:

- been designed, built and maintained in accordance with the requirements of ISO 12215 Category A
- on board a certificate of building plan review from a Notified Body recognized by ISAF.  
on board a declaration signed and dated by the builder to confirm the yacht is built in accordance with the plans reviewed by the Notified Body.
- A list of Notified Bodies recognized by ISAF can be found at [http://www.sailing.org/classesandequipment/offshore/plan\\_review.php](http://www.sailing.org/classesandequipment/offshore/plan_review.php).

b) A yacht of 24m (78.74 feet) or greater in hull length with the earliest of Age or Series Date on or after 1 January 2010 shall have:

- been designed, built and maintained in accordance with the requirements of a Classification Society recognized by ISAF.
- on board a certificate of building plan review from a Classification Society recognized by ISAF.
- on board a declaration signed and dated by the builder to confirm the yacht is built in accordance with the plans reviewed by the Classification Society.
- A list of Classification Societies recognized by ISAF can be found at [http://www.sailing.org/classesandequipment/offshore/plan\\_review.php](http://www.sailing.org/classesandequipment/offshore/plan_review.php).

#### 1.8.2

a) A yacht of less than 24m (78.74 feet) in hull length, with the earliest of Age or Series

Date on or after 1 January 2010, if subject to any significant repair or modification to the hull, deck, coachroof, keel or appendages on or after the 1 January 2010, shall have:

- the repair or modification designed and built in accordance with ISO 12215 Category A
- on board a certificate of building plan review for the repair or modification from a Notified Body recognized by ISAF.
- on board a declaration signed and dated by the builder to confirm that the repair or Classification Society recognized by ISAF.
- on board a certificate of building plan review for the repair or modification from a Classification Society recognized by ISAF.
- on board a declaration signed and dated by the builder to confirm that the repair or modification is in accordance with the plans reviewed by the Classification Society.

#### 1.8.3

A monohull with the earliest of Age or Series Date before 1 January 2010 shall comply with ISAF OSR 3.03.1 and 3.03.2 and above or with 3.03.4.

#### 1.8.4

A monohull with the earliest of Age or Series Date before the 1 January 2010 not complying with ISAF OSR 3.03.1, 3.03.2 and 3.03.3 shall have been designed built, maintained, modified and repaired in accordance with the requirements of one of the following:

- the ABS Guide for Building and Classing Offshore Yachts in which case the yacht shall have on board either a certificate of plan approval issued by ABS, or written statements signed by the designer and builder which confirm that they have respectively designed and built the yacht in accordance with the ABS Guide.
- ISO 12215 Category A, with written statements signed by the designer and builder which confirm that they have respectively designed and built the yacht in accordance with the ISO standard, except that a race organizer or class rules may accept, when those standards described above is not available, the signed statement by a naval architect or other person familiar with the standards listed above that the yacht fulfills the above requirements.
- except that a race organizer, when that described above is not available, may permit a yacht to compete if there is successful past race or passage making history for the yacht.

## Appendix B

### 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

###### 1.1.1. In the calculation of stability data:

1.1.1.1. Deck and other enclosed volume above the sheerline and cockpit volume shall be considered.

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

##### 1.2. General Standards

1.2.1. 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 Calculations shall be for the ballast 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

1.3.1. 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:

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