



# NEWPORT BERMUDA RACE 2014

## SAFETY REQUIREMENTS

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Yachts competing in the 2014 Newport Bermuda Race must comply with the safety standards outlined in this document. Every yacht entered in the race is subject to inspection both before and after the race. Failure to be in compliance may result in invalidation of entry or protest. The Newport Bermuda Race Safety Requirements (NBRSRs) are a version of US Sailing's United States 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 Newport Bermuda Race.

Requirements unique to the Newport Bermuda Race are indicated by the use of *bold italic text*.

### 1.0 GENERAL REQUIREMENTS

- 1.1 Purpose: The Newport Bermuda Race Safety Requirements establish uniform minimum equipment and training standards for the Newport Bermuda Race. These Requirements do not replace, but rather supplement, the requirements of the US Coast Guard, the Racing Rules of Sailing (RRS), the rules of Class Associations and all applicable rating rules.
- 1.2 Responsibility of Person-In-Charge: The safety of a yacht and her crew is the sole and inescapable responsibility of the "person in charge," as per RRS 46, who must ensure that the yacht is seaworthy and manned by an experienced crew with sufficient ability and experience to face bad weather. S/he must be satisfied as to the soundness of hull, spars, rigging, sails, and all gear. S/he must ensure that all safety equipment meets the Newport Bermuda Race Safety Requirements; 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.

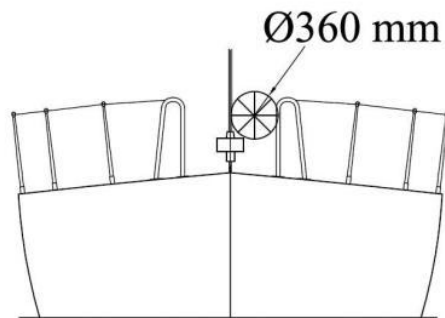
- 1.3 Inspections: A yacht may be inspected at any time by an inspector or measurer of the Organizing Authority (OA). *The Organizing Authority for the 2014 Newport Bermuda Race is the Bermuda Race Organizing Committee (BROC)*. If a yacht does not comply with these Requirements, the yacht's entry may be rejected, or the yacht will be liable to disqualification, or such other penalty as may be prescribed by the race protest committee or International Jury.
- 1.4 Equipment Maintenance and Performance: 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 yacht and number of crew. The crew shall have practiced with the equipment. This equipment shall be readily accessible while underway and, when not in use, stowed such that deterioration is minimized.
- 1.5 Heavy Items: A yacht's heavy items – such as batteries, stoves, toolboxes, anchors and chain, and internal ballast – shall be secured.
- 1.6 Strength of Build: A yacht shall be strongly built, watertight and, particularly with regard to hulls, decks, and cabin trunks, capable of withstanding solid water and knockdowns. Yachts must be properly rigged and ballasted, be fully seaworthy and must meet all standards set forth herein. A yacht's shrouds and at least one forestay shall remain attached at all times.
- 1.7 Watertight: A yacht's hull, including deck, coach roof, windows, hatches, and all other parts, shall form an integral watertight unit. Any openings in the hull shall be capable of being immediately secured to maintain this integrity.
- 1.8 Hull Construction Standards: All yachts shall meet the scantling requirements outlined in Appendix 1.

## **2.0 HULL AND STRUCTURE CONSTRUCTION AND DESIGN GUIDELINES**

A yacht shall meet the following construction and design guidelines:

- 2.1.1 Companionways: A yacht's companionway(s) shall be capable of being blocked off to main deck level. The method of blocking must be solid, watertight and rigidly secured, if not permanent.
- 2.1.2 Hatch Boards: A yacht's hatch boards, whether or not in position in the hatchway, shall be secured to the yacht (e.g. by a lanyard) for the duration of the race to prevent their being lost overboard.
- 2.1.3 Watertight Cockpit: A yacht'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 yacht's cockpit drains shall be capable of draining six (6) inches (152mm) of water in five (5) minutes. One (1) square inch (645 mm<sup>2</sup>) of effective drain per eight (8) square feet (0.743m<sup>2</sup>) of cockpit sole will satisfy this requirement.
- 2.1.5.1 Cockpit Volume: A yacht's maximum cockpit volume for cockpits not open to the sea, including any compartments capable of flooding, to the lowest points of coaming over which water can adequately escape, shall not exceed (.06 x LOA x Max. Beam x Freeboard Aft). The cockpit sole shall be at least (0.02 x LWL) above LWL.
- 2.1.6 Openings below the Waterline: A yacht'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. A means of closing all openings shall be provided.
- 2.2.1 Stability Index: (ORR SI = Limit of Positive Stability + Capsize Increment): must be **115 or greater** or meet ISO 12217-2A
- 2.2.3 Moveable and Variable Ballast: Yachts with movable ballast (water or canting keel) shall comply with Appendix 2.
- 2.3.1 Toilet: A yacht shall be equipped with a head or **a clearly labeled** fitted bucket.
- 2.3.2 Sleeping arrangements: A yacht shall have bunks sufficient to accommodate the off-watch crew.

- 2.3.3 Cooking: A yacht shall be equipped with a stove with a fuel shutoff.
- 2.3.4 Potable Water: A yacht shall have an installed water tank and delivery system. *A yacht shall carry 5 gallons of potable water per person, not including emergency water.*
- 2.3.5 Hand Holds: A yacht shall have adequate hand holds below deck.
- 2.4.1 Enclosed Deck: The deck, including the headstay, shall be surrounded by a suitably strong enclosure, typically consisting of lifelines and pulpits, meeting the following requirements:
- 2.4.2 A yacht's stanchion and pulpit bases must be within the working deck. Stanchions used with HMPE lifelines shall be rounded to prevent chafe.
- 2.4.3 Bow pulpits may be open, but the opening between the vertical portion of the pulpit and any part of the yacht shall not exceed 14.2" (360 mm). See diagram below.



- 2.4.4 Lifelines may be either uncoated stainless steel wire or high modulus polyethylene (HMPE) line with spliced terminations or terminals specifically intended for the purpose. A multipart lashing not to exceed 4" per end termination for the purpose of tying lifelines to pulpits and pushpits is allowed. Lifelines shall be taut (defined as a deflection of less than 2" (50mm) when a force of 11.24 lbs (50N) is applied midway between stanchions). When HMPE is used, the load-bearing portion (core) must meet or exceed minimum diameter requirements (as described below in 2.4.6).

- 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 Yachts shall have at least two lifelines with 24" (762 mm) minimum height above deck, and a maximum vertical gap of 15" (381 mm). The minimum diameter will be 5/32" (4 mm) for yachts to 43' (13.1 m) and 3/16" (5 mm) for yachts over 43' (13.1 m).
- 2.4.8 A toe rail shall be fitted around the foredeck from the base of the mast on each side with a minimum height of 1" (25 mm). An additional installed lifeline that is 1-2" (25 - 51 mm) above the deck will satisfy this requirement for yachts without toe rails.
- 2.5.1 Bilge Pumps: A yacht shall have a permanently installed manual bilge pump of at least 10 gallons per minute (GPM) capacity and which is operable from on deck with the cabin closed with the discharge not dependent on an open hatch. Unless permanently attached to the pump, the bilge pump handle shall be securely attached to the yacht 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 Second Bilge Pump: A yacht shall have a second permanently installed manual bilge pump of at least 10 GPM capacity, operable from below deck, meeting the same criteria as above.
- 2.6 Mast Step: A yacht shall have the heel of a keel-stepped mast securely fastened to the mast step or adjoining structure.
- 2.7.1 Mechanical Propulsion: A yacht shall have an engine that is quickly available and capable of driving the yacht at a minimum speed in knots equivalent to the square root of LWL in feet (1.81 times the square root of the waterline length in meters).
- 2.7.1(a) Fuel On Board: A Yacht shall carry sufficient fuel to provide a cruising range under power of at least 100 nautical miles after finishing.**

- 2.7.3 Engine Installation: A yacht's engine and generator installation (if so equipped), shall conform to ABYC, ISO and/or U.S. Coast Guard standards *or manufacturer's recommendations*.
- 2.7.4 Batteries: A yacht's onboard rechargeable batteries installed after 1/1/2012 shall be of the sealed type *or shall be installed in such a way that electrolyte cannot escape in the event of inversion*.

### 3.0 SAFETY EQUIPMENT:

Portable and affixed safety gear shall include:

- 3.1.1 Lifejackets: Each crew member shall have a life jacket that provides at least 33.7 lbs (150 N) of buoyancy, intended to be worn over the shoulders (no belt packs), 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 yacht or wearer's name, and be compatible with the wearer's safety harness. If the life jacket is inflatable, it shall be checked for air retention regularly. Alternatively, each crewmember shall have a U.S. Coast Guard approved Type I life jacket equipped with crotch or leg straps, a whistle, a waterproof light, retro-reflective material, marked with the yacht or wearer's name, which is compatible with a safety harness.
- 3.1.3 Knife: A yacht shall carry at least one strong, sharp knife, sheathed and securely restrained, which is readily accessible from the deck and/or cockpit.
- 3.1.4 Safety Harness: Each crew member shall have a safety harness and compatible safety tether not more than seven (7) feet (2.13m) long with a breaking strength of 4,500 lbs (20kN). The tether shall have a snap hook at its far end and a means to quickly disconnect the tether at the chest end.
- 3.2.1 Jack Lines: A yacht shall have jack lines with a breaking strength of at least 4,500 lbs (20 kN), that allow the crew to reach all points on deck and are connected to similarly strong attachment points.
- 3.2.2 Companionway Clipping Points: A yacht shall have adequate clipping points or jack lines which allow the crew

to clip on before coming on deck and unclip after going below.

**3.2.3 Lifejacket and Harness Use: Each crew member shall wear a safety harness and lifejacket while on deck**

**3.2.3.1 from sunset to sunrise;**

**3.2.3.2 when the mainsail is reefed or being reefed;**

**3.2.3.3 when otherwise required by the skipper.**

3.3.1 Navigation Lights: A yacht shall have navigation lights that meet U. S. Coast Guard requirements and are mounted above deck level in such a way that they will not be obscured by the sails.

3.3.2 Spare Navigation Lights: A yacht shall have a second set of navigation lights that comply with U.S. Coast Guard requirements and which can be connected to a different power source than the primary lights.

3.4 Fire Extinguishers: A yacht shall carry fire extinguisher(s) that meet U.S. Coast Guard requirements.

3.5 Horn: A yacht shall carry a sound making device that meets U.S. Coast Guard requirements.

3.6 Flares: A yacht shall carry:

3.6.1 Two (2) SOLAS orange smoke flares not older than the expiration date.

3.6.2 Six (6) SOLAS red parachute flares not older than the expiration date.

3.6.3 Four (4) SOLAS red hand flares not older than the expiration date.

3.6.5 Flares stored inside of life rafts may not be used to satisfy the flare requirement.

3.7.1 Lifesling: A yacht shall carry a Lifesling®, or equivalent man overboard rescue device, equipped with a self-igniting light and stored on deck ready for immediate use.

3.7.2 MOB Pole: A yacht shall carry 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 "quick release".

- 3.7.3 Heaving Line: A yacht shall have a throwing sock-type heaving line of 50' (15 m) or greater floating line readily accessible to the cockpit.
- 3.8.1 Installed VHF Radio and Antenna: 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. After 1/1/2015 all VHF radios shall have DSC capability, have an antenna of at least 15" (381 mm) in length, be connected to or have an internal GPS, and have the assigned MMSI number (unique to the yacht) programmed into the VHF.
- 3.8.2 Handheld VHF Radio: A yacht shall have *a watertight handheld VHF radio or a handheld VHF radio with a waterproof cover*. After 1/1/2015, this radio shall have DSC/GPS capability.
- 3.8.3 Emergency VHF Antenna: A yacht shall have an emergency VHF antenna. After 1/1/2015, the emergency antenna shall be equipped with sufficient coax to reach the deck, and have a minimum length of 15" (381 mm).
- 3.8.4 VHF Operational Modes: *A yacht shall be equipped with VHF transceivers that are operational in International and USA channel mode.*
- 3.9 AIS: A yacht shall have an AIS Class B transponder with a masthead mounted antenna at least 15" long (381 mm). The AIS may use the yacht's VHF antenna if a low-loss AIS antenna splitter is used. *AIS shall remain on from before the start until the vessel arrives at a port.*
- 3.11 Satellite Phone: *A yacht shall carry a satellite telephone that*
  - 3.11.1 *is programmed to operate with a satellite communications provider of continuous, uninterrupted signals for two-way voice communications on the Western North Atlantic Ocean;*



3.11.2 is powered by, or recharged from, the vessel's electrical system;

3.11.3 is operable below deck using a mounted external antenna;

3.11.4 shall remain "on" and ready to accept incoming voice calls, except when making necessary intermittent data connections, commencing on the day before the start until the vessel arrives at a port; and

3.11.5 shall have a telephone number filed with the BROC before close of Newport Check-in.

3.13 Supplemental Weather Radio: A yacht shall carry a shortwave receiver able to receive upper sideband transmissions on the frequencies listed below.

**SSB Frequencies (kilohertz)**

Use	Channel	Ship Tx	Ship Rx	Type
Bermuda Radio		2049.0	2582.0	Duplex
USCG Working		2670.0	2670.0	Simplex
Emergency/Watchkeeping	450	4125.0	4125.0	Simplex
Intership	452	4149.0	4149.0	Simplex
Offshore Weather	424	4134.0	4426.0	Duplex
Offshore Weather	601	6200.0	6501.0	Duplex
Watchkeeping	650	6215.0	6215.0	Simplex
Intership	652	6227.0	6227.0	Simplex
Watchkeeping	850	8291.0	8291.0	Simplex
Offshore Weather	816	8240.0	8764.0	Duplex
Offshore Weather	1205	12242.0	13089.0	Duplex
Watchkeeping	1250	12290.0	12290.0	Simplex
Offshore Weather	1625	16432.0	17314.0	Duplex
Working & Distress	1650	16420.0	16420.0	Simplex

- 3.14 Global Positioning System: A yacht shall carry a GPS receiver.
- 3.15 Man Overboard: A yacht shall be equipped with an electronic means to record the position of a man overboard within ten seconds. This may be the same instrument used to comply with 3.14.
- 3.16.1 Emergency Position Indicating Radio Beacon: A yacht shall carry a 406MHz EPIRB that is properly registered to the yacht. After 1/1/2016, this device must be equipped with an internal GPS.
- 3.17 Distance Measuring: A yacht shall be equipped with a knot meter and/or distance measuring instrument *separate from the GPS*.
- 3.18 Depth Sounder: A yacht shall be equipped with a permanently installed depth sounder that can register to a depth of at least 200 ft (61 m).
- 3.19.1 Steering Compass: A yacht shall have a permanently-mounted magnetic compass independent of the yacht's electrical system suitable for steering at sea.
- 3.19.2 Second Compass: A yacht shall have a second marine compass suitable for steering a yacht at sea which may be hand held.
- 3.20 Charts: A yacht shall have non-electronic charts that are appropriate for the race area.
- 3.21 Sail Numbers: A yacht 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.
- 3.22 Tapered Soft Plugs: A yacht shall have soft plugs of an appropriate material, tapered and of the appropriate size, attached or stowed adjacent to every through-hull opening.
- 3.23 Ground Tackle: A yacht shall carry one anchor, meeting the anchor manufacturer's suggested size for the yacht's size, with a suitable combination of chain and line. *NOTE: Yachts shall race with the anchor and chain combination(s) reflected in their measurement certificate as required by the applicable rating rule.*

- 3.24.1 Searchlight: A yacht shall have a watertight, high-powered searchlight, suitable for searching for a person overboard at night or for collision avoidance.
- 3.24.2 Flashlights: A yacht shall carry a watertight flashlight for each crewmember with spare batteries in addition to the above.
- 3.25 First Aid Gear: A yacht shall carry a first aid kit and first aid manual suitable for the likely conditions of the passage and the number of crew aboard.
- 3.26 Radar Reflector: A yacht shall have an 11.5" diameter or greater octahedral radar reflector or one of equivalent performance.
- 3.27 Buckets: A yacht shall carry two (2) stout buckets of at least two gallons (7.6 liters) capacity, each with a lanyard attached.
- 3.28 Safety Gear and Through Hull Diagram: A yacht shall post a durable, waterproof diagram or chart in the main accommodation area where it can be seen easily locating the principal items of safety equipment and through hulls.
- 3.29.1 Emergency Tiller: A yacht shall have an emergency tiller, capable of being fitted to the rudder stock.
- 3.30 Tools and Spare Parts: A yacht shall carry tools and spare parts, including an effective means to quickly disconnect or sever the standing rigging from the hull.
- 3.31 Marking of Safety Gear: 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 yacht's name shall be marked on such gear during the first servicing.
- 3.33.1 Reefing: *A yacht shall have mainsail reefing capable of reducing the area of the sail by an amount appropriate for the weather conditions possible on the race course.*
- 3.33.2 Storm Trysail: A yacht shall carry a trysail, with the yacht's sail number displayed on both sides, that can be set independently of the main boom, has an area less than 17.5%

of "E" x "P", and which is capable of being attached to the mast. Storm sails manufactured after 1/1/2014 must be constructed from a highly visible material.

- 3.33.3 Heavy Weather Jib: A yacht 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.
- 3.33.4 Storm Jib: A yacht shall carry a storm jib not exceeding 5% of the yacht's "I" dimension squared, and equipped with an alternative means of attachment to the headstay in the event of a failure of the head foil. Storm sails manufactured after 1/1/2014 must be constructed from a highly visible material.
- 3.35 Halyards: A yacht shall not be rigged with any halyard that requires a person to go aloft in order to lower a sail.
- 3.36.1 ***Preventer or Boom Restraining Device: A yacht shall have a preventer or boom restraining device, shall practice rigging it and shall be prepared to demonstrate its use to the satisfaction of BROCC.***
- 3.36.2 Boom Support: A yacht shall have a means to prevent the boom from dropping if support from the mainsail or halyard fails.
- 3.37 Emergency Drinking Water: A yacht 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 yacht, and it shall be aboard after finishing.
- 3.39 Inflatable Life Raft(s): A yacht shall carry adequate inflatable life raft(s) designed for saving life at sea with designed capacity for containing the entire crew. The raft(s) must be SOLAS, ISAF, ISO 9650, or ORC approved. Each raft shall be stored in such a way that it is capable of being launched within 15 seconds. Each life raft shall hold a current certificate of inspection. A yacht built after June 2001 shall have the life raft(s) 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 working deck.
- 3.40 Grab Bag(s): A yacht shall have for each life raft a grab bag with a lanyard and clip. Each grab bag shall have inherent flotation and be of a bright fluorescent color, ***and at least***

*one grab bag* shall contain a properly registered 406 MHz EPIRB and a *watertight* handheld VHF radio *or a handheld VHF radio with a waterproof cover*. The VHF radio and EPIRB need not be in addition to the other requirements contained herein. *After 1/1/2016, each grab bag will be required to have a 406 MHz EPIRB equipped with an internal GPS and a hand held VHF radio with DSC/GPS capability.*

#### 4.0 TRAINING AND SKILLS

- 4.1 Steering in an Emergency: A yacht's crew shall be aware of multiple methods of steering the yacht with the rudder disabled, and shall have chosen and practiced one method and be prepared to demonstrate it while sailing both upwind and downwind.
- 4.2 Annual Man Overboard Training: Annually, two-thirds of the yacht's racing crew shall practice man-overboard procedures appropriate for the yacht'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.
- 5.2 Safety At Sea Seminar Attendance: At least 30% of those aboard the yacht, but not fewer than two members of the crew, including the Captain and Navigator or a Watch Captain shall have attended a one-day or two-day US Sailing Safety at Sea Seminar within the last five (5) years, or other courses as approved by US Sailing.
- 5.3 Routine Training On Board: *The Captain and not less than 80% of each yacht's crew shall, prior to the start of the race, participate in on-board training, including man overboard practice, sailing with the storm trysail, 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.*

- 5.4 Safety Demonstration: *A yacht's crew shall be able to demonstrate, to the satisfaction of the BROCC, an ability to return to a man-overboard in reasonable amount of time.*
- 5.5 Digital Selective Calling (DSC): *If equipped, all crew shall review the emergency features of DSC, including the response to a DSC Distress Call.*
- 5.6 CPR and First Aid: *Two crew members must have current CPR and First Aid certifications.*

## APPENDIX 1

### 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, coach roof, 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 modification is in accordance with the requirements of ISO 12215 Category A.

b) A yacht of 24m (78.74 feet) in hull length and over, 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, coach roof, keel or appendages on or after the 1 January 2010, shall have

- the repair or modification designed and built in accordance with the requirements of a 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 yacht with the earliest of Age or Series Date before 1 January 2010 shall comply with ISAF 1.81 or 1.82 above or with 1.84.

#### 1.8.4

a) A yacht with the earliest of Age or Series Date before the 1 January 2010 not complying with 1.81 or 1.82 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 2

### ISAF OFFSHORE SPECIAL REGULATIONS 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 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 centre of effort. The lesser of FKR90 and FKR-90 shall be used:

SR Category	0	1,2	3	4
FKR	1	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.

#### 1.4 Capsize Recovery

For boats racing under Special Regulations Category 0, Regulation 3.04.1 is modified to read:

3.04.1 Either with, or without, reasonable intervention from the crew, a yacht shall be capable of self-righting from an inverted position. Self righting shall be achievable whether or not the rig is intact. Boats with moveable/variable ballast shall comply with this requirement in flat water using manual power only and shall demonstrate that any equipment to be used in re-righting the boat is ready for use at all times and will function and is useable by the crew with the boat inverted. Re-righting the boat shall not require flooding any part of the boat. Boats with moveable/variable ballast shall comply with the following minimum values of Inversion Recovery Factor (FIR) calculated in accordance with ISO 12217-2:

SR Category	0
FKR	0.9

Boats with age date prior to 11/04 may seek dispensation from this section 1.4 by application to the Organizing Authority.