



NEWPORT BERMUDA RACE 2018

SAFETY REQUIREMENTS FOR MONOHULLS

Monohulls competing in the 2018 Newport Bermuda Race must comply with the safety standards outlined in this document. Every boat 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 ("NBRSR") are a version of US Sailing's United States Safety Equipment Requirements ("USSER"), which can be found on the US Sailing website (ussailing.org). The numbering system used below conforms to the USSER, and the absence of sequential numbers in this document indicates provisions not applicable to the Newport Bermuda Race.

1.0 GENERAL REQUIREMENTS

- 1.1 Purpose: The Newport Bermuda Race Safety Requirements for Monohulls establish uniform minimum equipment and training standards for Monohulls entered in 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. Use of the NBRSR does not guarantee total safety of the boat and her crew.
- 1.2 Responsibility of Person-In-Charge: The safety of a boat and her crew is the sole and inescapable responsibility of the "person in charge," as per RRS 4 and 46, who must ensure that the boat 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 these Newport Bermuda Race Safety

Inspection Checklist

Instructions: This checklist is intended to aid the Race Entrant and Inspector during the Newport Bermuda Race pre- and post- race inspections (NOR §6.2). Not all items listed in this NBRSR are subject to inspection but are listed as a reminder of NOR or other race requirements. Items not subject to inspection do not contain a space on this checklist.

Prior to the inspection, Captain should verify all items are ready for inspection and initial in the space provided.

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.

1.2.1 Neither the establishment of the NBRSR, nor their use by Bermuda Race Organizing Committee, nor the inspection of a boat under the NBRSR, in any way limits or reduces the complete and unlimited responsibility of the Person in Charge.

1.3 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 Technical Committee. A violation of the Safety Equipment Requirements may result in disqualification or a penalty other than disqualification.

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 boat 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 boat's heavy items – such as batteries, stoves, toolboxes, anchors and chain, and internal ballast – shall be secured.

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1.6 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. Boats must be properly rigged and ballasted, be fully seaworthy and must meet all standards set forth herein. A boat's shrouds and at least one forestay shall remain attached at all times.

1.7 Watertight: A boat'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.

<u>Captain</u>	<u>Inspector</u>

- 1.8 Hull Construction Standards: A boat shall meet the scantling requirements outlined in Appendix 1.
- 1.9 Sailing Without Power: The crew must demonstrate that normal sailing functions (including but not limited to: raising and lowering sails; trimming sails; steering; raising and lowering dagger boards; positioning canting keels and moveable ballast; operating bilge pumps; rotating masts (if applicable); and deploying safety gear) can be performed in the event of a loss of power.

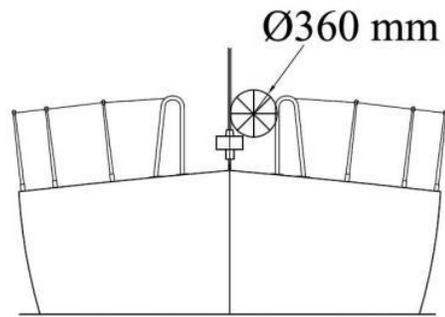
2.0 HULL AND STRUCTURE CONSTRUCTION AND DESIGN GUIDELINES

A boat shall meet or exceed the following construction and design guidelines:

- 2.1.1 Companionways: A boat'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 boat's hatch boards, whether or not in position in the hatchway, shall be secured to the boat (e.g. by a lanyard) for the duration of the race to prevent their being lost overboard.
- 2.1.3 Watertight 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 (6) inches (152mm) of water in five (5) minutes. One (1) square inch (645 mm²) of effective drain per eight (8) square feet (0.743m²) of cockpit sole will satisfy this requirement.
- 2.1.5.1 Cockpit Volume: A boat'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 Abreast the cockpit). The cockpit sole shall be at least (0.02 x LWL) above LWL.

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FAQ – indicates more information can be found about this requirement in the FAQ section of bermudarace.com.



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- 2.4.4 Lifelines must be uncoated stainless steel wire. A multipart lashing not to exceed 4" (101 mm) 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 9 lbs (40N) 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).
- 2.4.7 Boats shall have at least two lifelines with 24" (610 mm) minimum height above deck, and a maximum vertical gap of 15" (381 mm). The minimum diameter will be 5/32" (4 mm) for boats to 43' (13.1 m) and 3/16" (5 mm) for boats 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 boats without toe rails.
- 2.5.1 Bilge Pumps: A boat shall have a permanently installed manual bilge pump of at least 10 gallons per minute (GPM) (37.8 liters 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.

<u>Captain</u>	<u>Inspector</u>

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- 2.5.2 Second Bilge Pump: A boat 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 boat shall have the heel of a keel-stepped mast securely fastened to the mast step or adjoining structure.
- 2.7.1 Mechanical Propulsion: A boat shall have an engine that is quickly available and capable of propelling 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 length in meters).
 - 2.7.1(a) Fuel On Board: A boat 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 boat's engine and generator installation (if so equipped), shall conform to ABYC, ISO or U.S. Coast Guard standards or manufacturer's recommendations.

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 boat or wearer's name, and be compatible with the wearer's safety harness. **After 1/1/2018, each life jacket intended for regular use while racing (one per crewmember) shall be equipped with an AIS personal crew overboard beacon.** 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 inherently buoyant offshore life jacket that provides at least 22 lbs (100 N) of buoyancy equipped with crotch or leg straps, a whistle, a waterproof light, AIS personal crew overboard beacon and retro-reflective material, marked with the boat or wearer's name, which is compatible with a safety harness.

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<u>Captain</u>	<u>Inspector</u>
_____	_____
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FAQ – indicates more information can be found about this requirement in the FAQ section of bermudarace.com.

Vessel Name: _____

Captain or Designated Representative's Name: _____

Signature: _____

Date: _____

**THIS COMPLETED INSPECTION CHECKLIST MUST
REMAIN ON THE YACHT PER THE NOTICE OF RACE
AND MAY BE RE-EXAMINED IN BERMUDA.**

APPENDIX 1

HULL CONSTRUCTION STANDARDS (SCANTLINGS)

1.8.1

- a) A boat 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 boat 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.

- b) A boat 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 boat 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.

1.8.2

- a) A boat 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 boat 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 boat with the earliest of Age or Series Date before 1 January 2010 shall comply with NBR SR 1.8.1 or 1.8.2 above or with 1.8.4.

1.8.4

a) A boat with the earliest of Age or Series Date before the 1 January 2010 not complying with 1.8.1 or 1.8.2 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 boat 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 boat 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 boat 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 boat fulfills the above requirements.
- the EC Recreational Craft Directive for Category A (having obtained the CE mark).
- except that a race organizer, when that described above is not available, may permit a boat to compete if there is successful past race or passage making history for the boat.

At the sole discretion of the race organizer, a boat otherwise required to comply with 1.8.1 or 1.8.2 may be permitted to compete based on compliance with 1.8.4, except that successful past race or passage making history for the boat shall not be sufficient for consideration in such cases.

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 Monohulls 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 boats 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 a minimum Knockdown Recovery Factor (FKR) of 0.9, 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:

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