

Boats shall be measured by official measurers certified by **US Sailing**. Hulls and appendages are measured by either of two methods, both of which are accepted for “FULL MEASUREMENT” certificates:

- Survey using an HMI, Hull Measuring Instrument, or by using a laser scanning device approved by **ORA** and administered by US Sailing.
- Designer supplied lines, in an **ORA** approved format, that will be checked for validity by an **ORR** authorized measurer following procedures specified by **ORA** and **US Sailing**.

Rig dimensions shall be measured by an official measurer.

Sails can be measured by a **US Sailing** trained and certified employee of a sail loft. Standard certificates will be provided to **US Sailing** for all sails. These are subject to validation by an official measurer.

Boats will be measured in-water, subject to the conditions and requirements specified by ORR Measurement Trim. Accommodation may be made for boats that are set-up in trim conditions specified by other rules. Measurements will include port and starboard freeboards at fore and aft locations and an inclining measurement to determine the vertical center of gravity of the boat.

1. Scope of Rule

The ORR is intended to rate a broad diversity of sailing yachts but limits are imposed either to ensure reasonably close racing or because there is insufficient science. For example, at present ORR does not rate multi-hull yachts or kite sails.

2. Certificates

Valid certificates, issued by US Sailing, are required for racing under ORR. This guide and the rulebook (Click Here) will help owners through the process of measurement and certification.

3. Getting Started

The ORR requires a full description of the geometry of hull, rig, and sails; how the boat sits in the water (to get length, weight, wetted area, etc.) and the stability of the boat (resistance to heeling over.)

Owners should contact US Sailing who will provide necessary information and refer them to a trained and certified measurer for their geographic area. The owner should familiarize himself with this guide and contact the measurer to begin the measurement process.

For boats with a valid IMS or fully measured valid AMERICAP II™ certificate, that is sufficient information for a “Fully Measured” ORR certificate. For boats with a valid AMERICAP II™ certificate that was issued using less than full measurements or declared input data, this information is sufficient for a “Partial Measurement” ORR certificate. Reference: Rule 1.03

4. Hull Measurement Ashore

The owner is responsible for preparing the boat for measurement ashore. The surface of the hull will be surveyed with an instrument that provides the detailed description necessary for the calculations in the VPP. Reference: Rule 3.02.1

If the boat has a sister ship that has been fully measured, the chief measurer may waive the requirement for hull surveying. Hull surveying may also be waived if the designer of the boat supplies the “lines” in a suitable electronic format. In the latter case, measurement checks will be conducted. Reference: Rule 3.02.1.c

5. Measurement Afloat

The owner is responsible for preparing the boat for measurement afloat. This means following the instructions for Measurement Trim, basically a list of what shall and shall not be on board. See [ORR Appendix 2 Checklist](#) for the list of what should be on board. The measurer will measure the freeboards of the boat and conduct an inclining test to establish the stability. Reference: Rule 3.02.2

Fully measured boats bear the notation “FULL MEASUREMENT”. If the boat has a sister ship that was measured in-water, those measurements may be used, subject to a review by ORR administration. In such a case the resulting

ORR certificate will be labeled “PARTIAL MEASUREMENT”.

Reference: Rule 1.03

Please be aware that some regattas may require FULL MEASUREMENT certificates.

6. Rig and Sail Measurement

The owner is responsible for declaring to the measurer all spars and sails that he proposes to carry on the yacht and make them available for measurement. The dimensions of the principal elements of the rig: masts, booms, poles, sprits and sail attachment points shall be measured. The dimensions of the sails will be measured to derive the sail areas used for rating calculation.

Reference: Rule 3.02.3, Part IX – RIG, Part XX – SAILS

Download UMS-US Sailing Sail Certificate Spreadsheets: [Sail Measurement Certificates](#)

7. Configuration Changes

If there are changes to the canoe body, the appendages, the rig, the sails and/or equipment carried on board, or to anything that might change the boat’s rating the owner is responsible to declare these changes to the rating authority.

Reference: Rule 3.03.1

8. Stability Requirements

Participation in ORR races may be restricted on the basis of the Stability Index, derived from the boats LPS, maximum beam, displacement (weight) and sailing length. Reference: Rule 2.02.1

For boats with moveable ballast, participation in ORR races may be restricted on the basis of the Ballast Leeward Recovery Index (BLRI). The BLRI represents the ability of a boat to recover from a knockdown with the moveable ballast located to leeward. Reference: Rule 2.02.2

9. Restrictions While Racing

The purpose is to prevent boats being raced in hull, rig and/or sail configurations that are different from how the boat was measured and rated or are out of the scope of what the ORR rule permits.

Reference: PART IV

Specific examples include:

- Movement of ballast, fixtures and accommodation
- Running the engine for propulsion
- Changes in fuel and water tankage beyond normal use
- Use of stored energy in ways other than those explicitly permitted
- Rotating masts
- Altering the location of the mast step
- Trim and use of sails not consistent with how they were measured and rated
- Changes to standing rigging is not permitted while racing

- See more at: <http://www.ussailing.org/racing/offshore-big-boats/orr/orr-measurement-guidelines/#sthash.8Oj1IkQN.dpuf>