Introduction to ORR-Ez

What is a VPP-based rating system?

A **VPP rating system** (Velocity Prediction Program) for sailboats is a computational model used to predict a sailboat's speed and performance under various wind and sea conditions. The system takes into account the boat's design characteristics, such as hull shape, sail area, displacement, and rigging, as well as environmental factors like wind speed and direction.

Why did the GYA decide to move to a VPP-based rating system?

1. A single-number rating system has not way of representing the variety of courses and conditions the sailors experience.
2. PHRF handicaps require good data input from the clubs which has fallen off.
3. A number of rating requests have come in from boats that have no racing history making giving it a rating a big guess.
4. The performance of boats is much more diverse now than it was 40 years ago when PHRF was adopted.

The ratings for boats in the legacy PHRF system were mostly centered around windward/leeward courses with an average wind speed between 8-10 knots which reflects the majority of the "serious" racing happening in the GYA. Therefore these ratings can't be accurate for light or heavy breeze, non-square courses/distance races, or boats sailing without a spinnaker.

The adoption of rating system with course and wind speed sensitivity provides for a more accurate comparison of boats in a larger variety of events.

What is wind speed/course sensitivity?

These are the terms we use to describe a rating system that breaks down ratings based on the wind speed and/or course sailed. The default is the wind is broken into bands and courses are broken down into the more commonly sailed courses. We will dive into boat performance and more accurate ways to handling ratings (PCS) in the next webinar.

What is ORR and ORR-Ez?

Established in 2004 as a non-profit organization registered in Rhode Island, the Offshore Racing Association has a mission to promote the sport’s enjoyment for boat owners and sailors by improving current rating rules, both in their content and administrative processes and to make provisions for new high performance boats to compete in more events.

ORR ratings are the more expensive and detailed version of the certificates that require measurement and are typically only employed for large, offshore races.

ORR-Ez was developed as more simple version of these ratings with a focus on club-level events. ORR-Ez certificates provide a number of different ways of looking at the rating data allowing the organization to choose how detailed they want to handle the ratings. This scale goes from using a single number ToD (as we've done in the past) all the way to constructed courses with performance/polar curve scoring for the highest fidelity in the rating data.

Where do I see the ratings/certificates?

The certificates for ORR-Ez are managed by regattaman.com. They maintain a valid list of all current certificates and provide all the data on the boat and rating through their site.

You want to click on Certificates then ORR-Ez Valid List for the current year.

Don't get scared of all the numbers. What are the primary numbers to look at?

The two easiest numbers to look at for comparing boats is the IR# and the PHRF BM (benchmark). The IR# is based on a ratings blend that is close to how we would look at PHRF results and the PHRF BM is an "aligned" number based off of the IR#, and using the Farr 40 as the yardstick boat.

The GYA PHRF we used the J/105 as the yardstick boat for alignment of the ratings, so don't expect the numbers that say "PHRF" on the ORR-Ez certs to match up exactly to the legacy GYA PHRF numbers. These numbers should be used to relatively compare boats.

If you want to compare boats on a seconds-per-mile based for different courses and wind speeds, you'll want to look at the Polars or PHRF Ratings tab to find the Time-on-Distance numbers for the boats you are comparing. Both of these tabs give you numbers in seconds-per-mile, so the math is easy to look at two different boats.

One of the shifts we have to make when thinking about these numbers is boat performance is not linear, especially when comparing different designs. Some boats will be faster in light air and reaching, then get slower compared to other boats as the wind increases or are forced to do more upwind work.

How do my new ratings compare to my legacy PHRF number?

If you want to see a comparison of ORR-Ez numbers relative to legacy PHRF, the ORA-1 numbers that Tom worked so hard on are a good tool. In the average conditions, most of the ToD numbers are not dramatically different than the legacy numbers. Where will start to see the big changes in when the courses are not windward/leeward, or the boat designs have some significant differences and thus different performance in lighter or heavier winds.

ToT vs. ToD ratings

You'll start to hear the terms Time-on-Distance and Time-on-Time a lot more often as we talk about the new rating systems. Because the new rating systems were originally intended for more offshore style races, they tend to default to ToT ratings to absorb some of the variability of wind direction and velocity changes seen on longer distance races.

ToD are still 100% viable for inshore/shorter races that we're used to. If you use the Polar numbers for your ToD ratings, your corrected time should be 0 if you sailed perfectly to your rating. A negative corrected time means you actually sailed faster than your predicted performance.

ToT ratings are represented as a TCF (or time correction factor). This is expressed as a decimal percentage that is multiplied by your elapsed time. This means for slower boats, they will have a lower number since any number under 1 would shorten your corrected time and the fastest boats will have a TCF over 1 where their corrected times will actually be longer than the time they spent on the course.

You just have to think in opposites.

- ToD numbers - Lower is faster, higher is slower
- ToT numbers - TCF values mean lower is slower, higher is faster