Background

MicroCODE Regatta RC™ is web-based solution for organizing, controlling, monitoring, and scoring sailboat racing events.

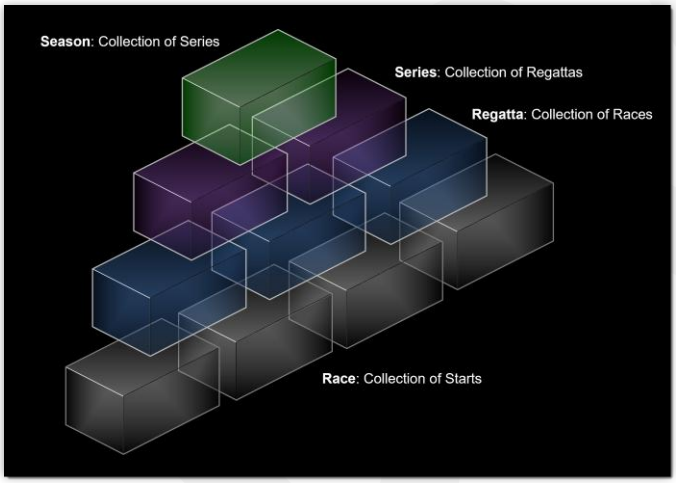
The mother of invention… the Detroit Regional Yacht-Racing Association (DRYA) was ready to move to cloud-based race scoring but discovered two problems…

1) Most of the existing solutions have become very expensive.
2) They do not support all the features DRYA requires to run the annual program.

DRYA's annual program consists of:

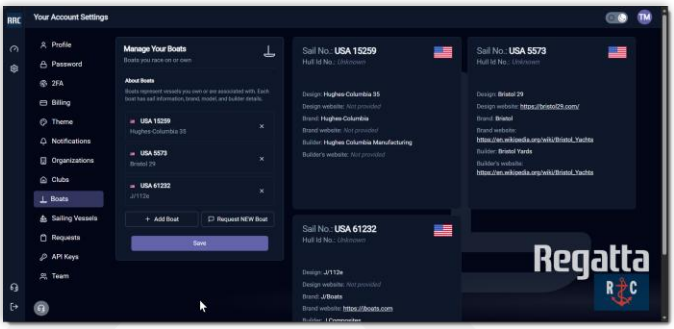
- Multiple **Season Overalls**
- Multiple **Series**
- Multiple **Regattas**
- Multiple **Races**
- Multiple **Starts**
- Multiple **Classes**

Regatta RC was designed from a blank piece of paper to support this, and yet keep enough flexibility to handle simple programs just as easily.

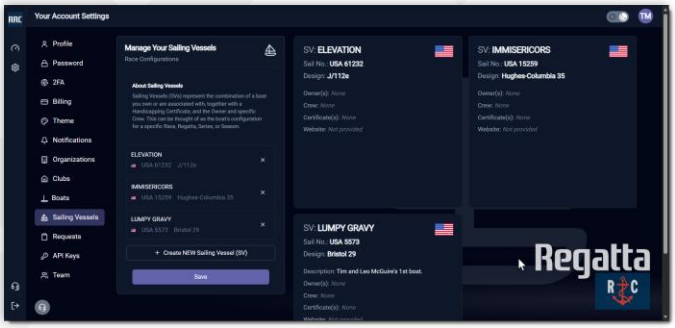


The platform's flexibility does stop there, it also supports…

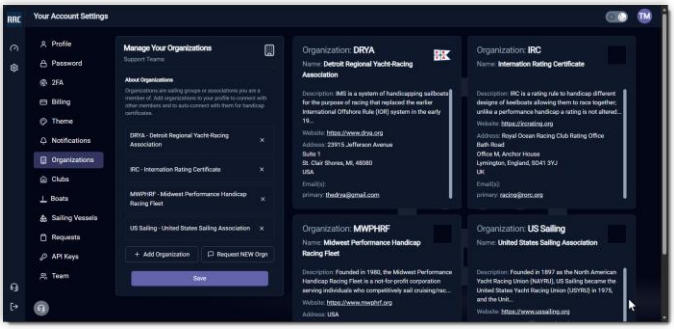
- Owners with multiple **boats**
- Boats with multiple **owners**



- Boats with multiple handicapped **configurations**



- Boats with multiple **handicaps** from different scoring systems: PHRF, ORC, IRC, etc.

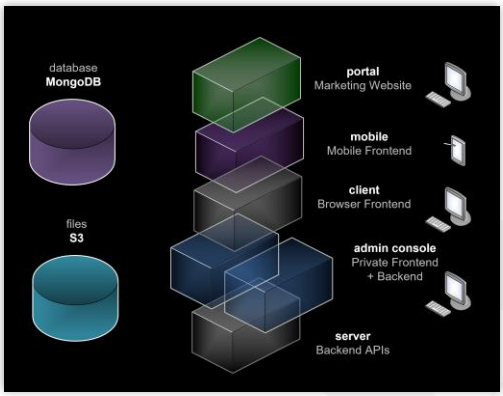


Regatta RC Software

Application Framework

Regatta RC is a modern Web Software-as-a-Service (SaaS) Platform. It is made up of seven (7) components:

- **Database** – the storage of all race-related information.
- **Files** – the storage of external information: NORs, SIs, Handicap Certificates, photos, videos, etc.
- **Server** – the application 'Backend'.
- **Client** – the normal user interface for racing, the App 'Frontend'.
- **Mobile** – the mobile phone app (iOS and Android) for access the system.
- **Portal** – a static marketing, documentation, and support site for the App.
- **Admin Console** – special private access to for Club, OA, and App Admin for system configuration, monitoring, and control.

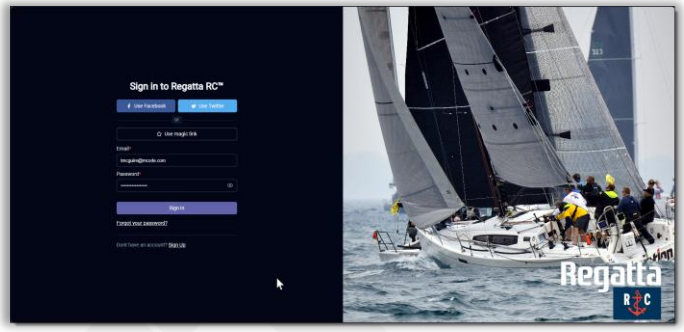


Portal – The entry into the Regatta RC Platform

This is our landing page, it answers basic questions, explains our pricing, data sharing, privacy policies, and provides access to our documentation.

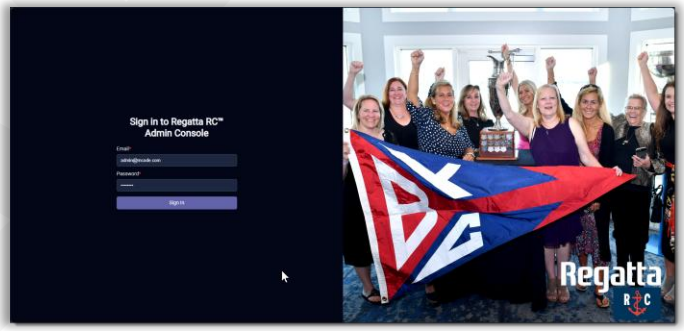
Application Security

Secure, Two-Factor Authentication with integral email and text messaged verification.



Application Control

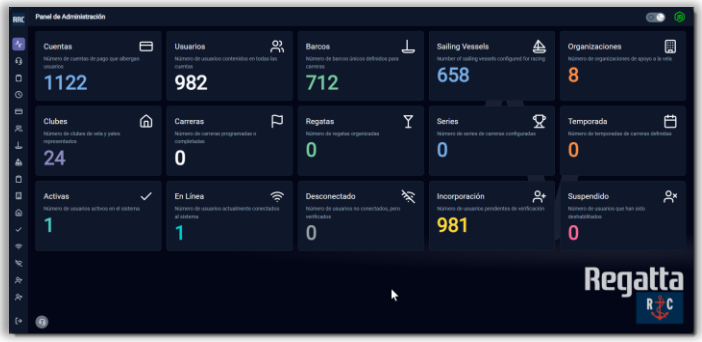
Private access to **Clubs** and **Organizing Authorities** for event definitions, registration and monitoring.



International Support

Built from the ground up with the international racing community in mind the platform is organized by:

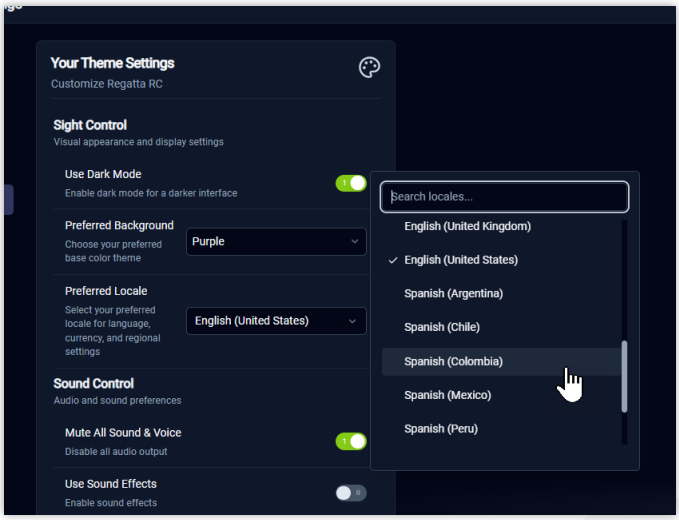
- World Sailing **Federations**
- World Sailing Sail No. Country Codes
- International **Classes**
- National Organizing Authorities (**Regions**)
- Local Organizing Authorities (**Zones**)

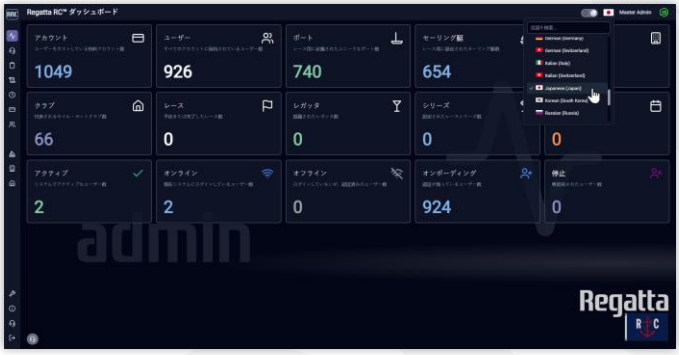


Modern App Features

The latest UI elements have been used to construct the App's Frontend, supporting…

- Multi-Language

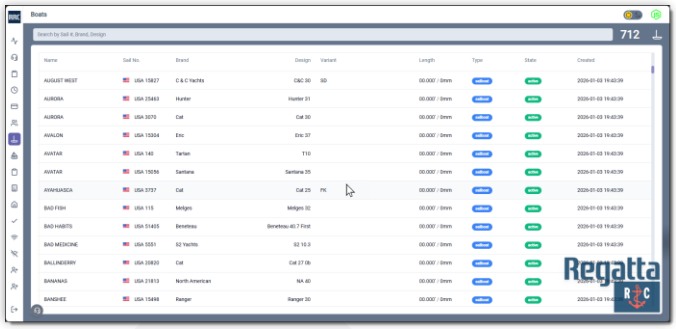


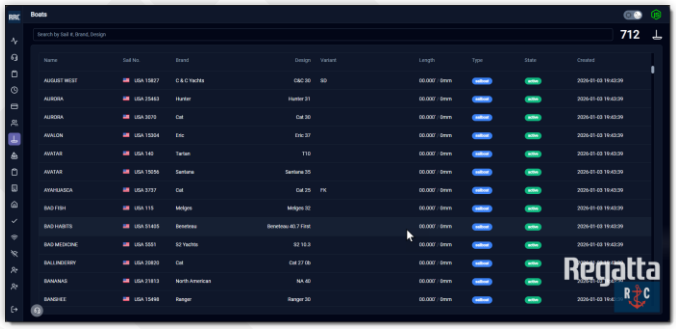


Current languages supported:

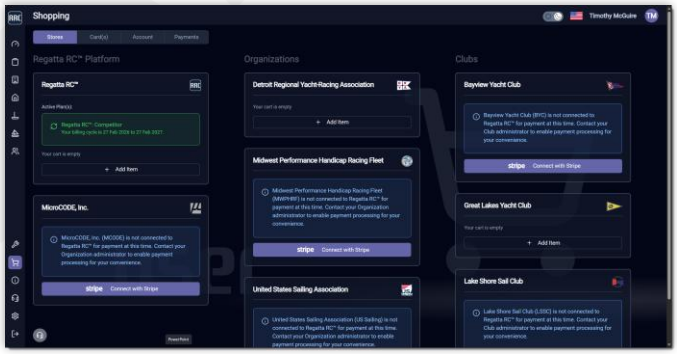
- English
- French
- Spanish
- German
- Italian
- Russian
- Japanese
- Korean
- Chinese (Simplified)
- Chinses (Traditional)

- Light/Dark Modes

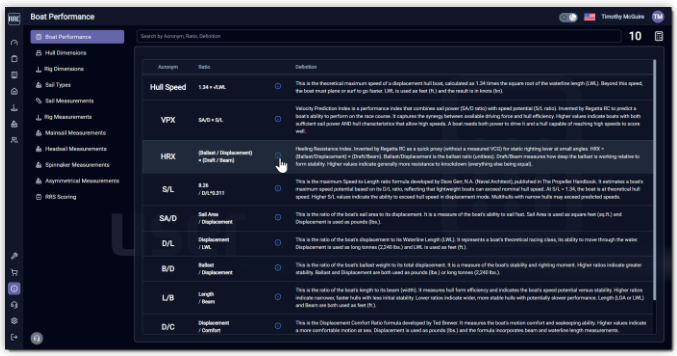




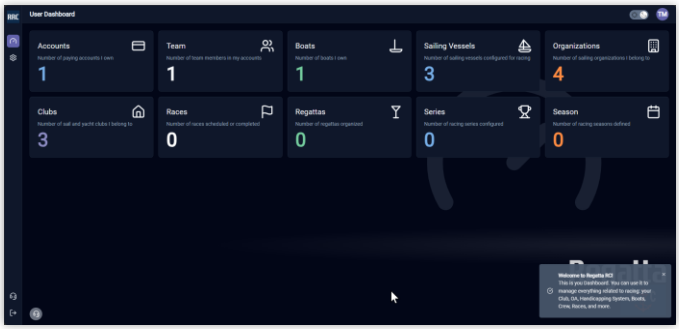
- Club and Org Integration (Shopping)



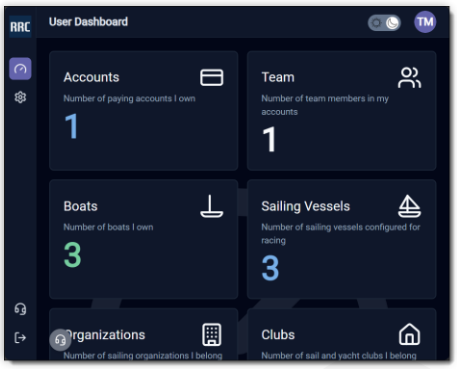
- Extensive Help and Information



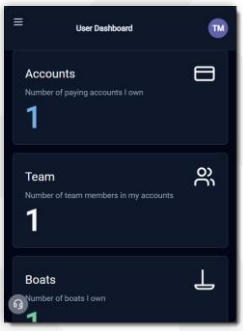
- Desktop Browser



- Tablet



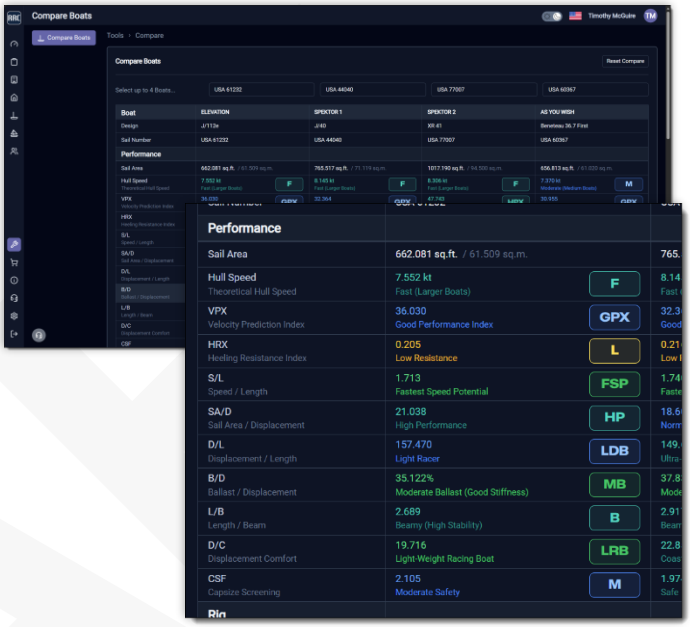
- Mobile Browser



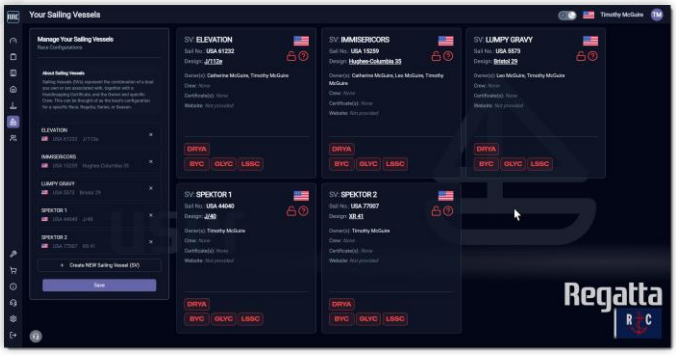
Competitive Sailor Features

Tools we all try to make in Excel with various levels of success, now gathered together here against a database of boat designs and race results…

- Boat Compare



- Multiple Boats, and Configurations for Scoring in different Series, Regattas…



Persona Based Onboarding & App Views

Regatta RC supports all the different 'personas' a user can take on, that is to say "the different hats they wear" in the sailing community.

The App adjusts what you see based on this, e.g., if you are a Spectator and you don't own a Boat then you don't see 'Boats', 'SVs', and 'Companies'.

Spectator: Anyone interested in watching live race data, viewing race results, or just supporting a team in a race, regatta, or series

Sailor: Any person who enjoys being on a boat in peace and quiet. Until racing

Member: Any person holding membership in a Yacht Club or Sail Club, e.g. LSSC, BYC.

Associate: Any person belonging to an Organization of Clubs, e.g. DRYA, I-LYA.

Boat Owner: The person who pays the bills.

Shore Crew: Anyone who makes it all happen other than being aboard the boat during a race.

Skipper: Typically the Person-in-Charge (PIC), often the Boat Owner as well as a Driver.

Crew: Anyone who races a boat other than the Skipper.

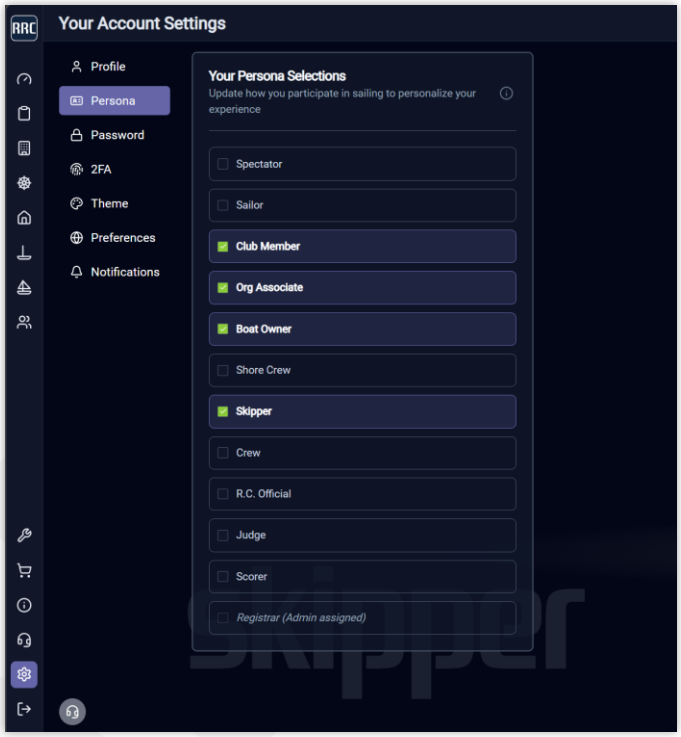
R.C. Official: Primary Race Official (PRO), and any staff that assists on the R.C. Boat, Stake Boats, Mark Set Boats, or handles MarkSetBots®.

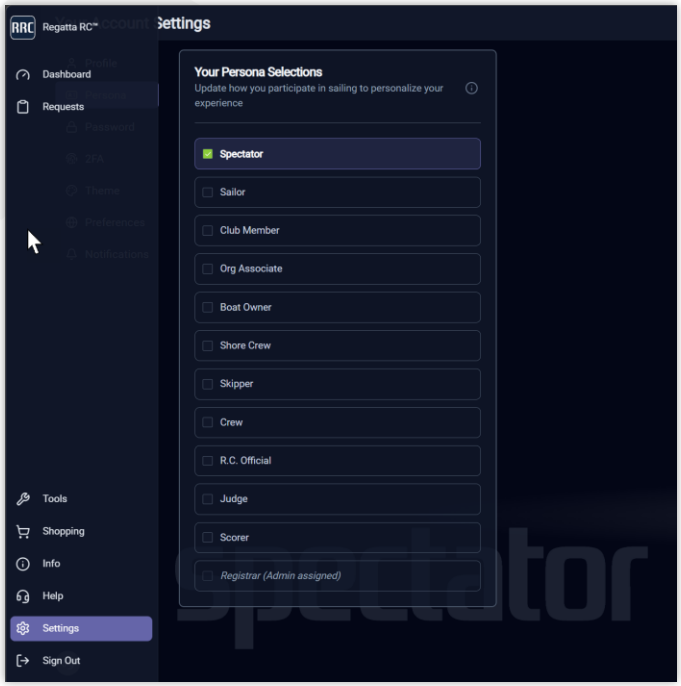
Judge: A World Sailing or US Sailing certified Judge for hearing Protests.

Scorer: Race management staff authorized to enter data into Regatta RC: Start Times, Boat started, Finish Times, and approving final Race Results in the RRC Platform.

Registrar: Assigned by the Regatta RC staff only. This is a person acting as the registration and race schedule coordinator for a Club or Organization.

- Dynamic App Adjustment to 'Persona'





Correction Methods for Races

Regatta RC supports all common Handicapping Systems, as well as Multi-Handicap Systems for an event, including single scored, dual scored, triple scored…

Method	Type	Accuracy	Used by
Time-on-Distance*	Simple handicap	Low	PHRF
Time-on-Time*	Factor handicap	Medium	PHRF, IRC, ORR, ORC
Triple Number *	Wind-dependent	Medium-High	ORC
5-Band *	Wind-dependent	High	ORC
PCS *	Full VPP	Very High	ORC Worlds
Portsmouth *	Yardstick	Medium	Dinghies
ORR VPP *	Full model	Very High	US Offshore

* Available for 2026 Season
* Available for 2027 Season

Scoring Systems for Series

Regatta RC supports all common Series Scoring Systems…

System	Type	Winner
Low Point*	Modern Standard	Lowest points
High Point*	Historical	Highest points
Cox–Sprague*	Offshore historical	Highest score
Bonus Point *	Modified low point	Lowest
Olympic *	Modified low point	Lowest
Average *	Points Adjustment method	Lowest
Percentage *	Normalized scoring	Highest
Medal *	Race Weighted final race	Lowest

* Available for 2026 Season
* Available for 2027 Season

The Regatta RC Sailing Vessel (SV)

How do you properly announce yourself on the water to a Harbor Master… "*This is the Sailing Vessel…*" because the Harbor Master needs that information, are you a Power Boat or a Sailboat?

Our application introduces the idea of a sailboat's complete configuration as a unique entity that exists in the real world, and we're using and name **Sailing Vessel (SV)** to represent this idea.

What's included in this configuration?

- The **Boat** (Measured or Known Design)
- The **Sails** Aboard (Types/Sizes)
- The **Crew** Aboard (Weight and Contact info.)
- Valid Handicap **Certificate**(s) for the Season

How long is this SV Valid?

A Sailing Vessel (SV) is valid for one Racing **Series**. It is locked into Race Results and cannot be changed after scoring is finalized.

A new SV can be created for future Races.

How many SVs can I have in a Season?

This is only limited by your Organizing Authority's (**OA**'s) Notice of Race (**NOR**) and Sailing Instructions (**SIs**).

Regatta RC supports the creating as many SVs (configurations) of your boat as required throughout the Season for your **Series**, **Regattas**, and individual **Races**.

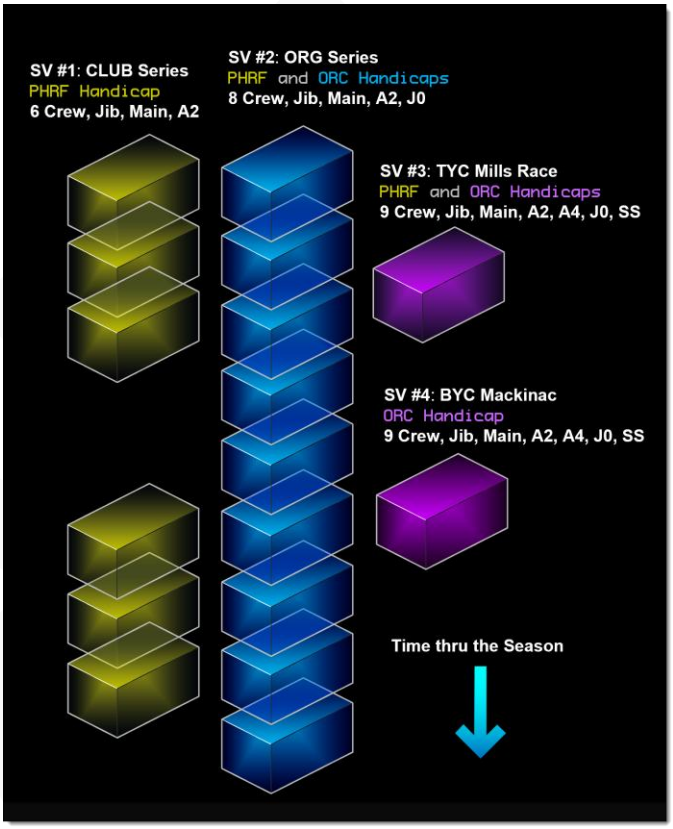
Example of Typical Use

The Skipper enters his boat in four (4) events for the year:

- CLUB Weeknight Series (e.g. LSSC Sunset)
- ORG Weekend Series (e.g. DRYA Saturdays)
- CLUB Major Race (e.g. TYC Mills Race)
- CLUB Major Race (e.g. BYC Mackinac Race)

The illustration to the right best explains the use of our SVs in a normal racing season.

Continuous use of SV #1 and SV #2
This example shows how two different SVs, one CLUB and one ORG live on thru the entire Season, even though a two more Race specific SVs are created for offshore events with more crew and a larger sail inventory.



An important point from the **ORC** perspective, in this example there are only two (**2**) ORC Certificates* pulled for the entire Season…

1) The ORG (DRYA) Saturday Certificate for the **Inshore** configuration: 8 Crew, Jib, Main, A2, J0.

2) The TYC Mills Race and BYC Mackinac Certificate for the **Offshore** configuration: 9 Crew, Jib, Main, A2 A4, J0, SS.

Pulling a new ORC Certificate for the TYC Mills Race does not invalidate your DRYA Season ORC Certificate for Saturdays in the Regatta RC scoring system.

* See our document: **orc-certificate-handling.pdf**

ORC Compliance – by design

ORC Certificate & Boat Configuration Management

Regatta RC uses the idea of **Sailing Vessels (SVs)** to define a boat configuration and its certificate.

Certificate Enforcement

- Each boat is associated with a single SV per event which can only carry one valid ORC certificate.
- Certificates within an SV include:
  - Certificate ID
  - Rule year (e.g., 2024, 2025)
  - Issue date
  - Measurement data hash (for integrity validation)

Multiple Configurations

- Multiple configurations per boat are permitted only as separate SVs.
- An SV configuration must be explicitly selected and locked prior to the first warning signal.
- SV Configuration changes during an event are prohibited unless allowed by NOR/SI.

Certificate Import *

- The system supports import of ORC certificates (XML/JSON format).
- Validation rules ensure:
  - Certificate authenticity
  - Matching sail inventory (owner verified)
  - Consistency with declared division/class

Scoring System

Regatta RC uses ORC defined scoring methods for determining ORC results.

Supported Scoring Methods

- Performance Curve Scoring (**PCS**) *
- Time-on-Time (**ToT**)
- Time-on-Distance (**ToD**)
- Triple Number Scoring *

PCS Implementation

- Wind input per race (R.C. measured)
- Use of full polar data from certificate *
- Course model selection:
  - Windward/Leeward
  - Point-to-Point (Coastal)
  - Offshore

Race Parameters

- Course Type (**W/L**, **P2P**, **DST**)
- Distance (**NM**)
- Wind Speed (**TWS**)
- Wind Direction (optional for advanced PCS)

Result Calculation

- Corrected times are calculated according to selected scoring method.
- All intermediate values (elapsed time, corrected time, factors) are stored and auditable.

Sail & Equipment Declaration

Regatta RC complies with Rule 206.

Sail Inventory *

- Boats declare sail selection in SV prior to racing.
- Each sail in the SV stores:
  - Match certificate data
  - Measurement stamp reference (owner verified)

Sail Limits *

- The SV enforces maximum sail limits per ORC rules.
- Violations trigger blocks preventing scoring.

Equipment Compliance *

- Mandatory equipment (AIS, safety gear, etc.) may be tracked by an O.A. using your Regatta RC SV.
- Inspection status can be recorded per Regatta RC SV by the R.C..

Race Management Workflow

Regatta RC supports the ORC recommended R.C. Tools, Time Limits, and Communication.

Race Committee Tools *

- Start sequence management.
- Recording of all RRS outcomes: OCS, DNS, DNF, RET, DSQ, etc.
- Finish time capture with timestamp precision.

Time Limits *

- Time limits are configurable per Race.
- Boats exceeding limits are automatically scored per SI rules.
- R.C. overrides enable the correction of mistakes.

Race Management Workflow (cont'd)

R.C. Communication

- Official Notice Board (ONB) is integrated in the App.
- All notices, amendments, and results are timestamped and archived.
- All notices, amendments, and results are communicated to all Skipper, Crew, and Shore Crew who subscribed to them within their RRC Profile.

Protests, Redress & Penalties

Regatta RC supports Protest submissions, redress adjustments and scoring penalties.

Protest Handling *

- System shall allow submission of protests.
- Each protest shall include:
  - Parties involved
  - Rule references
  - Time of incident

Jury Workflow *

- Assignment to jury panel
- Hearing scheduling
- Decision recording

Penalties *

- Penalties shall be applied to scoring results.
- Types include:
  - Time penalties
  - Scoring penalties
  - Disqualification

NOR & SI Integration

Regatta RC integrates NOR, SI, and amendments into its Race, Regatta, Series, and Season tracking and scoring.

Rule Binding

- Each event is linked to its **NOR** and **SI**.
- Regatta RC enforces:
  - Selected scoring method
  - Sail limitations
  - Equipment requirements

Configuration Control

- Event rules override default system behavior.
- Changes are logged and version controlled.

Measurement & IMS Data Integration

Regatta RC supports Boat Designs, Boat Variants, and Boat Modifications as a complete picture of a particular Boat's measurements.

Measurement Data

- Regatta RC stores:
  - Hull data
  - Stability data
  - Rig Data
  - Sail Data

Validation *

- Data must match certificate values for scoring to proceed.
- Any discrepancy triggers a warning or scoring block.

Championship-Level Features *

Regatta RC supports Technical Committee, Jury, and R.C. Official tasks.

Technical Committee

- Measurement checks tracking
- Equipment inspections
- Compliance status per boat

Jury & Officials

- Role management (RC, Jury, TC)
- Accreditation tracking

Facilities & Logistics

- Moorings (RRC supports Boat Transient Location)
- Offices (RRC supports R.C. Location)
- Media management (RRC supports Press Info.)

Data Integrity & Audit

Regatta RC supports Audit Trails and versioning.

Audit Trail

- All actions (results, changes, penalties) are logged with permanent database records.

Versioning

- Results and scoring recalculations are maintained with version history.
- Protests, Penalties, and Redress decisions all generate new historical records.

Compliance Summary

With regards to all these requirements and features, Regatta RC:

- Will fully support ORC scoring methodologies.
- Will enforce IMS-based measurement integrity.
- Align with ORC Race Management best practices.
- Will be suitable for ORC-sanctioned championships and events.

Regatta RC Rollout Plan

Regatta RC is being launched in phases, tracking the Racing Season in Detroit, Michigan USA.

*** Phase 1: v0.8.0 – April 2025**

- Boat and User Registration
- NOR, SI, and Amendment Handling
- Season, Course, Class, Start Configuration

*** Phase 2: v0.9.0 – April 2025**

- PHRF and ORC Certificate Handling
- Sail Inventory
- Series, Regatta, and Race Configuration
- Skipper Communication Tools (SMS, Email to Team Members)

*** Phase 3: v1.0.0 – May 2025**

- PHRF Scoring
- ORC Scoring
- Protest Workflow
- R.C. Communication Tools (SMS, Email to Competitors)

*** Phase 4: v2.0.0 – October 2025**

- Race Analysis Tools
- API Integration to Handicapping System – the sharing of Race Results

*** Phase 5: v3.0.0 – January 2026**

- Measurement Integration
- Championship Workflows

Regatta RC Software Version Numbers

The application software version numbers follow this convention…

`xM.F.C`

x = Development Cycle as in:

'**a**' ALPHA – Development
'**b**' BETA – Initial testing and Demos.
'**v**' PRODUCTION – Customer code.

M = Major software version; represents new application architecture, or underlying technology. Incrementing this number is associated with a '**Major Release**'.

F = Features; represents new components or features within the application. Incrementing this number is associated with a '**Feature Release**'.

C = Change #. This is a commit that corrects a specific defect in version **`xM.F.0`**.

`vM.F.`*`H`* – In **Production** this is a **Hotfix**.
`bM.F.`*`B`* – In **Beta** Testing this is a **Bugfix.**
`aM.F.`*`C`* – In **Alpha** Development this is a **Commit.**

Current MicroCODE Regatta RC™ App Version

This is the highest currently released version of the MicroCODE Regatta RC™ application:

`b0.8.8` *BETA*

RegattaRC

For More Information

See the Regatta RC System documentation on the software distribution **MicroCODE** Site:

https://www.regatta-rc.com

Hardware Requirements

Any recent model computer, laptop, tablet or phone with modern web browser support.

Software Requirements

Any modern web browser that supports…

JS2022: All above receive continuous ECMAScript updates and support ES2022 features (like class fields, top-level await, etc.).

HTML5 & **CSS3**: Fully supported in all modern stable channels.

React 19: React runs in any modern browser with the above standards support; these browsers exceed requirements.

Desktop Browsers

- **Google Chrome** (latest stable)
- **Microsoft Edge** (Chromium-based, latest stable)
- **Mozilla Firefox** (latest stable)
- **Apple Safari** (latest stable on macOS & iOS)
- **Opera** (latest stable)

Mobile Browsers

- **Chrome for Android**
- **Safari on iOS**
- **Firefox for Android**
- **Samsung Internet**

This **application** was designed, developed, and is owned by:

MICROCODE INC

Software Development / Controls Engineering – since 1987

