IRSR

2014

Class Rules

Revised June 7, 2014

1) Overall length including hull, all spars and foils oriented in their fore and aft directions and at their maximum extensions if applicable, shall not exceed 2 meters measured parallel to the waterline. Sensors and their mountings are not included in the overall length measurement. Floating waterline must be clearly marked for use during measurement.

2) Beam shall not exceed 3 meters overall width at zero heel angle. .

3) Number of hulls, depth, mast height, number of masts, sail area, and number of sails are unrestricted subject to the following event limitations:
   a. The draft in normal sailing condition shall not exceed 1.5 meters.
   b. Total overall height from the lowest underwater point to the highest point on the largest rig shall not exceed 5 meters. Sensors and their mountings are not included in the height measurement.

4) Teams shall provide a suitable stand to support the boat in a vertical position while fully assembled for the purposes of judging.

5) Boats shall not have any direct human contact during on-the-water events except as permitted by the event Notice of Competition and Sailing Instructions

6) External control shall be limited as specified in the event Notice of Competition and Sailing Instructions, however a means for full remote radio control is required at all times during competition to allow avoidance of collisions with other boats.

7) Data transfer from the boat to shore is unlimited, but shall be on an approved frequency.

8) Radio frequencies used by each boat shall comply with host country regulations and are subject to approval before competition.

9) In each event, boats shall compete by sailing only (no alternate sources of propulsion).

10) Construction materials are not restricted provided they cannot cause environmental damage during operation. In particular, lead ballast must be completely sealed.

11) Power for onboard control systems may be provided by any source other than biological, and must be fully contained within the vessel.

12) The configuration of the boat shall not change during the course of any event. (i.e. components cannot be jettisoned or added during the race). Bilge pumps are permitted as long as they do not provide additional propulsion to the vessel.

13) Any parts may be replaced or repaired between events as necessary.

14) Sail configuration changes (hoisting/dousing) are allowed during a race provided such a change is initiated and executed only by the onboard systems.

15) In case of uncertainty about interpretation of these rules, please contact the event organizers for clarification.

Interpretations and Clarifications of Rules
Revised June 7, 2014

This section will be used to update rule interpretations and give responses to clarification requests. Amendments will be posted on the SailBot website so all teams will have access to the latest rules. Teams are encouraged to make early requests for rule interpretations.

Navigation Test:

Q: Will we be allowed to run the course before the event is held?
A: Yes, the course will be available for a minimum of 1 hour prior to the start of the event. Systems may be calibrated to the course during that time. This includes (but is not limited to) setting GPS waypoints, and setting camera tolerances. Direction of rounding will be announced prior to the start of the testing period.

Q: How will the event be started?
A: The boats will compete one at a time. The boats will enter the start area, and once given clearance, will sail toward the start line. At the time of crossing the starting line, the designated 'sailors' must transfer all control to the vessel. This will be indicated by setting down all controls.

Q: How do we transfer control to the boat?
A: For the navigation event, a signal may be sent to the boat at the start and end of the trial to switch the boat into the appropriate mode.

Fleet Race:

Q: Are we permitted to view data sent back by the boat?
A: Yes, a laptop or other display may be used to view data transmitted by the boat.

Q: Can we have separate buttons for changing sails or other on/off features?
A: No, the only controls are to the rudder and the sails. The position of the rudder can be used for internal calculations on the boat, but no additional information may be transmitted through the rudder signal (i.e. you can't have a system where three quick rudder turns to the left sets a spinnaker).

Q: Our boat can steer itself for most of the race, but we need to turn it around the marks, can we send a signal to switch modes?

A: No, the only controls are to the rudder and the sails. The operator must be able to control of the rudder position at all times for safety during the fleet races.

Long Distance Race

Q: Are we allowed to change the power supply during the event?

A Yes. But only by sailing the boat to a location designated in the sailing Instructions. A boat may be manually sailed off the course for recharging, but the "clock" does not stop. To resume the race and not incur the manual control penalty the boat must return to autonomous mode at the same location it switched to manual mode to leave the course.

Station Keeping

Q: (none received)
A.

Presentation:

Q: Is the presentation itself marked?

A: The judges will give a score of 0-10 points for the presentation, but the score is based on the team's technical achievements, not presentation skills. It must be clear to the judges what you did to design and build the boat. The more work you did, and the higher quality of that work, the higher your score will be. In addition, your control system logic will be judged, so try to make this as clear as possible. The intent is to have a conversation with the judges about your design as opposed to a formal presentation. All teams are invited to watch the presentations.

General:

Q: Are spinnakers permitted?

A: Yes, any number of sails and sail combinations is allowed. They must be hoisted, doused, furled etc. from the boat. No external control is allowed.

Q: Can we enter more than one boat?

A: Yes, a team may enter one or more boats in each class. Different components are allowed and can be changed between races/events. A boat is defined as the hull, a component is anything else.

Q: We have just established a team but it seems like a daunting task to get a boat and its systems designed and built. Will it be too much for a first-year team?

A: SailBots are challenging but very rewarding to develop! The competition is set-up so that the tasks have varying degrees of complexity, creating a natural development path for teams . The Fleet Races do not penalize manual control of the sails and rudder, so it is possible for a first-time team to do very well in that event as it is essentially a remote-control model yacht event. The Long Distance race stresses endurance and speed, while the Navigation and Station Keeping events stress control systems. Additionally, a number of off-the-shelf hulls are available for purchase or hulls taken from the mold of either the USNA's 2010 boat or UBC's 2011 boat are available..