



SOLAR CHALLENGE

10m Solar Boat Event Rules and regulations 2023

INTRO

This solar boat race is aimed at all levels and has two categories, Junior and Advanced. It also provides for a National category, which leads into a National competition. There is a wide range of designs you can create and so the event provides lots of fun with plenty of learning and innovation.

SPIRIT OF THE COMPETITION

We ask students to enter the “Spirit of the Competition”. We hope students will learn new skills and be prepared to be involved in fair and fun racing. We are encouraging ideas but not dollars. The National category however is a little more serious.

THE AIM

The aim of the challenge is to encourage exploration of solar energy through design and construction of working models powered by the sun using solar cells. The objective is to develop a boat that will most effectively travel along the water usually guided by a thin line suspended about the water to cover the distance of 10 meters in the shortest possible time. Two boats will race against each other with the winners moving on to determine an overall winner.

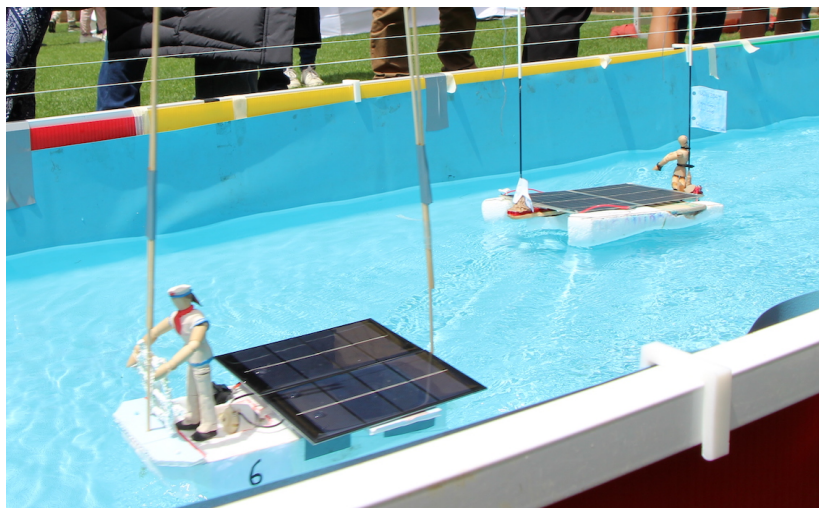
Design and constructions is to be carried out by the students with input from teachers and/or parents only when required for safety and education.

EVENTS

This year we will run two events at our State championship at the University of New South Wales. These events will be structured so they can lead into the National Championship which will be held later in the year.

There will be two divisions, Junior and Advanced. The National rules include a video presentation so it is good to be a where of this requirement if you would like to attend the nationals. Please see the full regulations for the Nationals on the web site www.modelsolarchallenge.com.au/regulations

Below are set out the rules for our State events for Junior and Advanced Boats.

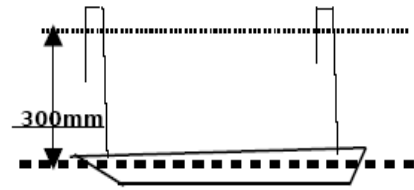


Junior Boat Regulations

Eligibility: The Junior Boat division is intended for primary school children, however, first year High school students can enter as long as the boat complies with the Junior rules and it is your first year of being in the event.

Boat Size: The boat shall be no more than 550mm long and 300mm wide.

Blunt Nose: The front of your boat should be blunt to avoid getting stuck in the 13mm holes in the starting gate mesh. If unsure about this, please ask.



Guides: A thin line will be suspended 300mm +/- 25mm above the water, to guide your boat down the pool. You will be disqualified from the current race if you are the cause of a collision with another boat. Your boat must stay on the guide

Solar cells: The boat is to be powered by commercially available silicon photovoltaic cells of up to 350 cm² active area. Boats will not share panels. No storage devices or batteries can be used.

Switch: An ON/OFF switch is to be included in the electrical circuit.

Inspection: The solar cells must be removable to reveal the inside of the boat.

Hulls: No commercially built or vacuum formed hulls will be allowed.

Motors: The total motor cost must be under \$10.

Propulsion: Any form of propulsion can be used however it must not exceed the size requirement.

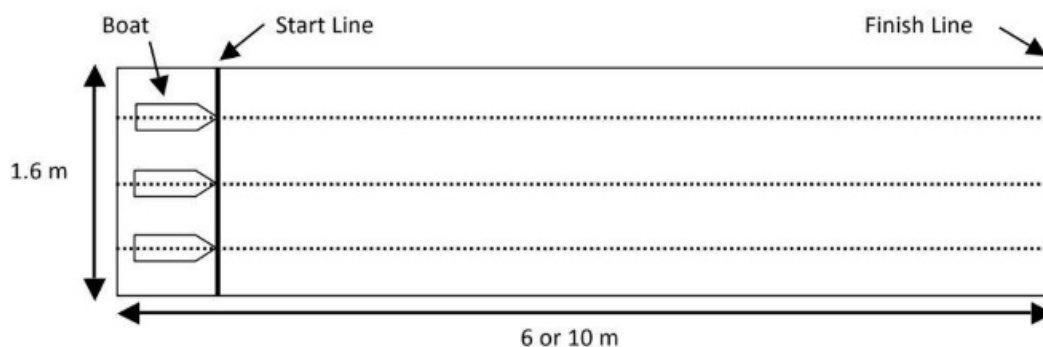
Cargo: All boats must carry a 12 cm (4.5 inch) wooden artist mannequin in a position as if it is in control of the boat. They are available from most craft shops and Officeworks. The stand need not be used. They can be constructed by the team but must be the same size and weigh a minimum of 20 grams. Prizes will be awarded for the best decorated or constructed mannequin.



Scrutineering: Prior to racing all boats need to be checked to establish if they comply with these regulations. Read these regulations carefully and make sure your boat complies. Boats will be given a race number. This number will be used to call boats to the starting line for racing. Stay alert so when your number is called we can get races started promptly.

Team Uniform: Prizes will be awarded for the best team uniforms. This is an optional competition.

Video: Students can, but not a must, submit a video as detailed in the National outline.

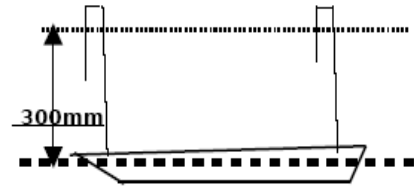


Advanced Boat Regulations

Eligibility: The Advanced Boat division is intended for primary and secondary school children.

Boat Size: The boat shall be no more than 550mm long and 300mm wide.

Blunt Nose: The front of your boat should be blunt to avoid getting stuck in the 13mm holes in the starting gate mesh. If unsure about this, please ask.



Guides: A thin line will be suspended 300mm +/- 25mm above the water, to guide your boat down the pool. You will be disqualified from the current race if you are the cause of a collision with another boat.

Solar cells: The boat is to be powered by commercially available silicon photovoltaic cells of up to 350 cm² active area. Boats will not share panels. No storage devices or batteries can be used.

Switch: An ON/OFF switch is to be included in the electrical circuit.

Inspection: The solar cells must be removable to reveal the inside of the boat.

Hulls: No commercially built hulls will be allowed.

Motors: any commercially available motor, gearbox and electronics of any kind can be used, however any storage devices such as capacitors etc. must be fully discharged at the start of the race.

Propulsion: Any form of propulsion can be used however it must not exceed the size requirement.

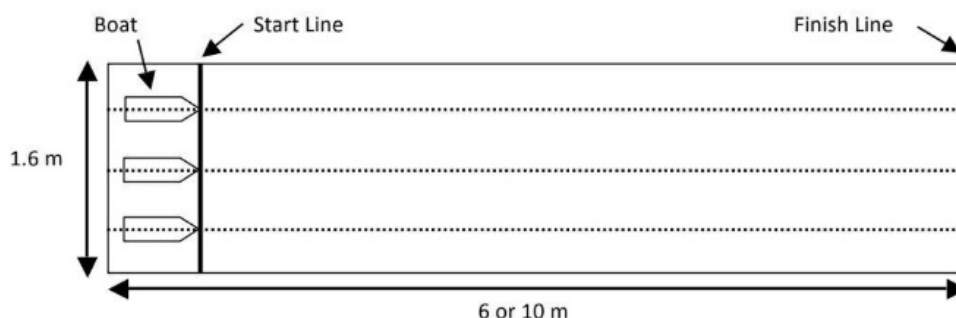
Cargo: All boats must carry two 12 cm (4.5 inch) wooden artist mannequin in a position as if they are in control of the boat and a passenger. Mannequins are available from most craft shops and Officeworks. The stand need not be used. They can be constructed by the team but must be the same size and weigh a minimum of 20 grams. Prizes will be awarded for the best decorated or constructed mannequin.



Scrutineering: Prior to racing all boats need to be checked to establish if they comply with these regulations. Read these regulations carefully and make sure your boat complies. Boats will be given a race number. This number will be used to call boats to the starting line for racing. Stay alert so when your number is called we can get races started promptly.



Video: Students can, but not a must, submit a video as detailed in the National outline.



The Race

There will be a starting gate and the finish will be when the boat touches the end of the pond. Boats will be set up on the guideline and positioned behind the start gate.

You will have the opportunity to test your boat behind the start gate and then cover the panel to stop the motor. The starter will then ask you to uncover the solar panel and your boat should then push against the start gate.

The starter will call out “ready” “set” “GO” on the go the start gate will be dropped. First boat to touch the end of the pond or the boat which travels the longest distance along the guideline will win the race. Your boat will need to withstand the impact of crashing into the end of the pond.

An alternative starting procedure is to hold the boat with the motor running and on the starters “Go” release the boat.

The starting procedure will be decided on the day.

This is a great event with lots of fun. The imagination of student to build boats is always fantastic. Also the challenge to build a fast boat involves many aspects and it will test your problem solving skills.

If you have any questions or are unsure of any aspect, please contact me before the day so we do not have troubles on the day.

Thanks.

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