

INTRO

This solar boat race is aimed at all levels and has various categories. It also provides an open 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.

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 open 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 shining on solar cells. The objective is to develop a boat that will most effectively travel along the water guided by a 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 only when required.

REGULATIONS

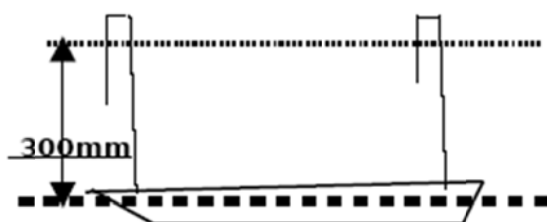
These regulations do not cover the open category. You will need to see the National web site for the open rules: <http://www.nationals.modelsolar.org.au/regulations>

Boat Size

The Maximum length of the boat, including any front or rear projections shall be 550mm. The minimum width of the boat will be 120mm while the maximum width shall not exceed 300mm

Guides

To ensure the boat steers in a straight line, it must be fitted with two wire loops (one at each end of the boat) which can be placed over a nylon fishing line which will be stretched as near as possible to 300mm above the water. The guideline must not be used to propel the boat. See the diagram below.



Boats - 10m pond

Rules and regulations

Solar cells

The boat is to be powered by solar cells up to a maximum of 350sq cm of active photovoltaic cells in area. Only commercially available silicon photovoltaic cells are allowed. No storage devices or batteries can be used.

The solar cells must be able to be removed to reveal the inside of the boat and then secured firmly again.

Hulls

No commercially built hulls will be allowed.

Motors

Novice division the motor must be under \$7 in value.

Intermediate division can use a motor to the value of \$20

Cargo

This year your boat will be required to carry an empty drink can during the race but it must be able to support a full can in a "float test" before the race.

Basically during scrutineering your boat will be loaded with a full can and it must float. This will be done without the solar panel on the boat.

A drink can is 66mm in diameter and 130mm long

Propulsion

There is no restriction on the number or size of underwater propellers

There is no restriction on the number or size of paddle wheels

There is no restriction on the number or size of air propellers

The use of oars for propulsion is permitted

HOWEVER

The whole boat including propulsion system must not exceed the Boat Size.

Divisions

At a state level we will have two divisions, Novice and Intermediate. The type of motor you use will set your division and the following will also apply.

Primary school students can elect to enter either Division.

First year High school students can enter Novice as long as the motor used is under \$7 and it is your first year of being in the event.

Depending on the interest we can also hold a third race division called Open. The Open Division is available to any student but you will need to run by the National Rules. Please notify Michael Richards 4 weeks prior to our event if you wish to be in this division.

Boats - 10m pond

Rules and regulations

SCRUTINEERING

Prior to racing all boats need to be checked to establish if they comply with these rules. It is important that you read these rules carefully and take special note of the regulations listed above. You may need to fill out a registration form but this will be handed out on the day.

Boats will be checked and then given a race number. This number will then be used to call Boats to the start line for racing. You will need to be alert so when your number is called we can get races started.

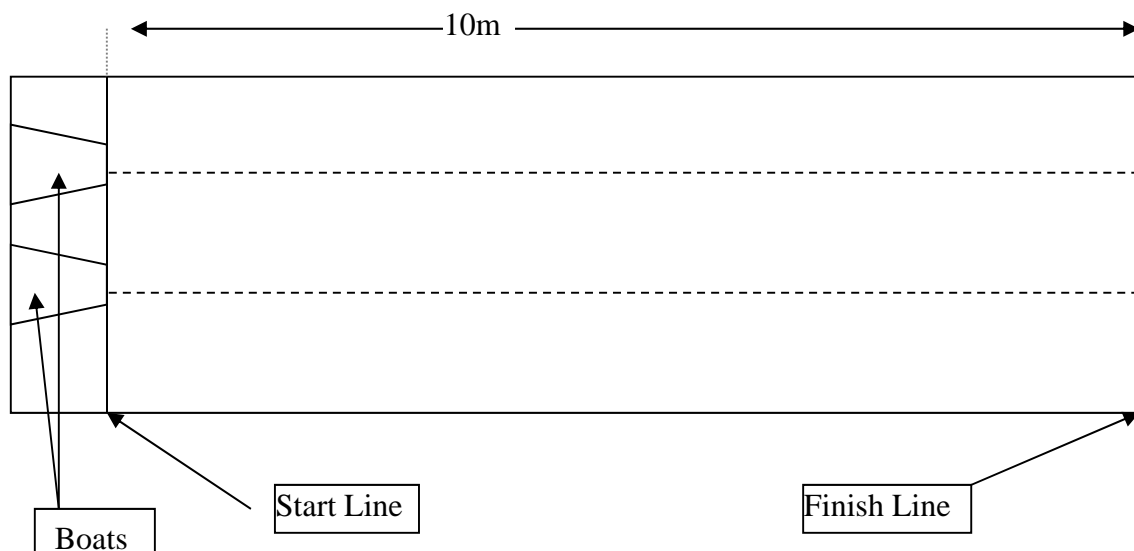
The Race

There will be a start line 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 line. You will hold the boat and test the propulsion method works. You will then cover the solar panel to stop the boat moving and await the starter. The starter will call out "ready" "set" "GO". On the "Go" you will remove the cover and allow the boat to move. First boat to touch the end will win or the boat to go the longest distance along the guideline. 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.

Layout of the Boat Pond



Boats - 10m pond

Rules and regulations

This is a great event with lots of fun. The **imagination of student** to build boats is always fantastic.

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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