

AIMSCC

SYNOPSIS OF RACE RULES AND CAR SPECIFICATIONS, 2010.

12 February 2010

N.B. These are not the rules! They are for quick reference only. There are almost certainly lots of things missed out. Make sure you read all the regulations fully and carefully for the complete details.

Changes for this year are in bold type.

The location and the event coordinator for this year are yet to be decided.

Visit www.modelsolaraustralia.org for updates.

Any protests must be made immediately by the team leader to The Clerk of Course.

If you break the rules or don't like the decision then go home.

Everything to do with the car must be with the idea of seeking efficiency and excellence, not winning at all costs.

There must be a separate team member for each car and teams cannot enter more than one car.

Teams must prove that they built the car in 2010 and didn't bring back last year's car. If a school has several cars they must all be different.

Details of the track dimensions have been further altered to better refer to the UNSW track. If a different track is to be used details will be supplied before the event.

You can only get one panel scrutineered. If it becomes damaged or faulty you may be allowed to replace it but you must first get official permission and the replacement will be tested before you can use it. You are not allowed to change or modify solar panels after initial scrutineering for any other reason.

You are not allowed to use anything other than water ice to cool panels. Liquified gases and large quantities of solvents are totally prohibited.

You have to cover your solar panel at the start of races.

You can stop your car any way you like as long as it doesn't affect the other car in any way. If you do affect the other car you will forfeit that round. **You may only stop the car in the designated area or you may forfeit the race. Affect the other car in any way and you will forfeit the race.**

You cannot go and buy a commercial model car and race it.

The car cannot be any bigger than 550mm long, 320mm wide or 180mm high. **It must not extend more than 180mm from the centre of the guide rail and no part can ever stick out more than 190mm even on corners and including flapping caster wheels.**

You can only use commercial silicon solar cells. The solar cells and their mounting frame cannot form any other required part of the car and must be easily removable from the car. No part of the array and frame can extend below the level of the top of the cargo space. If your panel isn't flat you must be able to make it basically flat. All your panel wiring must be visible and it must use copper or tinned copper conductors. You must have a diagram and provide connections to allow easy measuring of the panel. You cannot have any switches or other devices on the panel. Don't exceed 25 volts or 2 amps. The

power will be measured at 50% Sun and then doubled. Do not artificially lower the Fill factor of your panel. The power of your panel will be corrected to 25 degrees. The maximum nominal panel power allowed is 12 watts.

The required total panel weight is worked out by the formula:

$$\text{Weight (gms)} = 200 \times [\text{Power (watts)} - 6] + 500$$

If your panel is too light you must carry the extra weight as ballast. You can't call any other part of the car ballast. **The minimum allowed weight is 500gms. If your panel comes out at more than 12 watts you have to carry extra ballast worked out by: Extra wt.(gms) = 100 x [Power(watts) - 12]**

If you do not use electronics of any sort on your car the required panel weight will be decreased by 30%.

You can chose to use electronics or not for each individual race but the car must carry the appropriate correct weight for each race. Get it wrong and you lose. Repeat and you are out.

You cannot use anything to store energy (batteries etc.)

You must have a proper switch marked ON and OFF in an accessible location. The switch cannot be on the solar array.

All your car wiring must be visible.

You can use any motor you like but you must tell the scrutineers what it is for their records.

You can use any number of wheels you like but they cannot be sharp edged.

You must use a pair of guides at the front of the car that go outside the guide channel.

Your car must have a frame or a chassis independent of the solar array.

Your car has to have a space behind the cabin **able to fit a load 100mm x 100mm x 50mm high weighing 2kg** beneath your solar array. **The front and back of this cargo space must be flat rigid fixed transverse bulkheads 200mm apart, one 200sq cm and the other 100sq cm.** The sides and the floor of this space must have no holes or cut outs. The bulkheads and the space may be larger, but..... You cannot carry other bits of the car in this space. You can carry your ballast here. The floor (and the rest of the car) has to be able to support the **load** standing on it.

You need side panels, one on each side, at least **50mm high and 100mm long** and flat within 20mm vertically and 15mm horizontally.

You must have a flat, rigid opaque solar panel cover for use at the start of races.

You must have your School and Car Name in letters at least 10mm high, visible when racing but not on the Side Panels.

Your car must have a fully enclosed and sealed compartment at the front with space for **two 60g egg driver and passenger sitting side by side. If each egg was seated alone**, the top 25mm of the egg must be visible from straight ahead and to 90 degrees to each side through a transparent windscreen with 10mm clearance over the full visibility arc. There must be 3mm clearance over the top of the eggs. You are allowed two 4mm wide frames in the windscreen but you cannot use adhesive of any sort on the eggs. The eggs cannot wear a seat belt. **You have to be able to access the cabin with the solar array fitted to the car and in less than 2 minutes. You can replace one egg with a camera if you like.**