

AUSTRALIAN-INTERNATIONAL MODEL SOLAR CAR CHALLENGE

Australian - International Model Solar Challenge



AIMSCC Plate Event Winner Re-entry

31/08/2009 – Marc Iseli

This document contains details on a method in which the plate event winner may be given the chance to return to the main knockout draw.

It is highly probable that this procedure will be implemented at the 2009 National finals held in Melbourne on November 28 and 29 and all car teams participating in this event are expected to be aware of this.

The Australian-International Model Solar Challenge Committee is empowered to make a decision on any case not covered or clarified in by this document.

Main Event Knockout Draw Overview

The following draw setup was used at the 2008 AIMSCC in Hobart and will again be used in 2009.

AIMSCC Knockout Draw

	Pairing	Seed	Round 1	Round 2	1/4 finals	Semi finals	Final
Quarter A	1	1					
	1	25 to 32					
	2	17 to 24					
	2	13 to 16					
	3	9 to 12					
	3	17 to 24					
	4	25 to 32					
	4	7 or 8					
Quarter B	5	5 or 6					
	5	25 to 32					
	6	17 to 24					
	6	9 to 12					
	7	13 to 16					
	7	17 to 24					
	8	25 to 32					
	8	3 or 4					
Quarter C	9	3 or 4					
	9	25 to 32					
	10	17 to 24					
	10	13 to 16					
	11	9 to 12					
	11	17 to 24					
	12	25 to 32					
	12	5 or 6					
Quarter D	13	7 or 8					
	13	25 to 32					
	14	17 to 24					
	14	9 to 12					
	15	13 to 16					
	15	17 to 24					
	16	25 to 32					
	16	2					

NOTE: Round for 3rd and 4th exists but has not been included in the above draw.

The simplicity of a standard knockout draw in the AIMSCC is lost the instant more than one entrant from the same school is entered into the competition. This is due to the multiple school entrant regulation that forbids more than one car from the same school from reaching the top 4 cars. The problem becomes progressively more complicated as schools enter further cars or the number of schools with more than one car increases. Another rule also to affect draw arrangement is the prohibited result of same-school cars racing one another in the first knockout round.

To allow for these regulations to stand, the main draw is implemented such that all cars from the same school are to be placed in the same quarter of the draw.

This will prevent more than one car from a particular school from progressing through to the semi finals. As a result, rearranging of the draw during the event is avoided.

(NOTE: If a school competing with 2 cars records the 2 fastest seeding times, these cars will be seeded 1 and 7 for the purpose of draw sorting)

Rather than sort the main draw manually, the AIMSCC has developed a Microsoft Excel computer program to do this. For this program to operate, an element of draw randomisation is required. This also allows for fair and unbiased draw sorting.

The following algorithm is used to allow for automatic draw sorting with excel:

(1) Excel is to pseudo-randomly allocate seeds to the designated fields (visible in the above knockout draw), but without placing same school cars in mirrored fields in opposite halves of the draw.

(2) From highest seeds (3 and 4) to lowest seeds (31 and 32), mirror cells in opposite draw halves are swapped if same school cars are not in same halves.

(3) Process (2) is repeated, but between the quarters in each half.

(4) If a same school clash should occur, seeds 25 to 32 and/or seeds 17 to 24 are to be swapped within the particular quarter of interest.

(5) Process (4) is repeated but for same state clashes.

Plate Event Knockout Draw Overview

The following Plate draw setup was used at the 2008 AIMSCC in Hobart and will again be used in 2009.

AIMSCC Plate Knockout Draw

Loser of pairing	Expected seed	Plate Round 1	Plate 1/4 finals	Plate Semi finals	Plate Final
1	25 to 32				
2	17 to 24				
3	17 to 24				
4	25 to 32				
5	25 to 32				
6	17 to 24				
7	17 to 24				
8	25 to 32				
9	25 to 32				
10	17 to 24				
11	17 to 24				
12	25 to 32				
13	25 to 32				
14	17 to 24				
15	17 to 24				
16	25 to 32				

The plate knockout draw is a straight forward continuation from the main knockout draw. Similar to the Round 1 winner progressing to Round 2 in the main knockout event, the Round 1 loser from each pairing progresses directly to the 1st plate event round. This is by far the simplest and most time efficient arrangement. It will enable the AIMSCC to move directly into the plate event once Round 1 of main event has concluded.

It will also insure that no school is capable of having more than one plate event semi-finalist, since same-school cars are still positioned within the same quarter of the draw.

In addition, higher seeded cars (seed 17 – 24) will, theoretically, not oppose one another until the plate quarter finals. Since cars are placed into the original main event knockout draw at random, the plate event can also be considered random.

Plate Winner Re-entry

There are numerous arguments both for and against presenting the winner of the plate event with an opportunity to re-enter the main event.

Some against in the past have been:

- Added complication.
- Added time required to implement.
- Cause for competitor protests

A well thought out and organised system will eliminate almost all of these. Including the nature of the plate event winner re-entry within the AIMSCC regulations will limit possible disputes.

Some benefits of having a plate winner re-entry may include:

- Providing a second chance to a car that has under-performed in the 1st Round of the main event.
- Maintaining/enhancing the interest and suspense among competitors and spectators.
- Means of comparison between the winner of the plate event (and therefore of the bottom 16 cars) and a car already through to the second round.

NOTE: While it may be theoretically possible for a plate winner to win both the plate event and receive a top 4 place in the main event, this can be regarded as being very unlikely to occur.

The positives of a plate winner re-entry, when executed efficiently, can be seen to outweigh the negatives.

Method of Re-entry

There are primarily 2 methods of allowing the winner of the plate event to re-enter the main event:

1. The competitor field must be reduced down from the current 32 to 30 participants. This allows for 15 cars to remain within the competition after the first knockout round. The plate winner is then to be included to increase the number to 16 in the second round. While this may seem like a suitable solution, other undesirable problems arise because of it.

For example, if car numbers are reduced from 32 to 30, the 8 groups of 4 cars used at present for Round Robin/seeding will no longer be applicable. Alternatively, if 32 cars are still used for seeding purposes, 2 cars must then be omitted from the knockout event.

Secondly, a bye will be required to be issued in the first round of the plate event. An opponent for the plate winner must also then be determined from the 15 cars already through to Round 2.

Finally, this system requires the current National event format to be altered.

2. The plate winner is required to race off against a car already through to Round 2 of the main knockout event. If successful, the plate winner will assume that car's position in the draw. If unsuccessful, the plate winner will participate no further and the opponent that it had competed against will remain within the draw.

Due to its associated side effects, the first method listed here will be overlooked for consideration. A system which is guided by the second option must therefore be developed.

Proposed Plate Event Winner Re-entry

The AIMSCC Plate event winner will be given a chance to re-enter the main AIMSCC knockout event. The manner in which this is to occur will be as follows:

- The Plate winner will not be issued with a direct path into the second round of the main AIMSCC knockout draw.
- A best of three races elimination round over 1 lap against an opponent having won it's first round, and through to the second round, must be won.
- Should this encounter be successful, the Plate winner is to then assume that opponent's place in the main draw.

The nature of the Plate winner opponent shall be determined as follows:

The Plate winner shall oppose the slowest seed (car with largest seed number) of a randomly selected second round pairing.

To reward the top 4 seeds, second round pairings involving these may be excluded from plate winner re-entry race-off. This is to prevent the top 4 seeds from a potential second round clash with the plate winner.

The plate winner will therefore race-off against 1 of 4 cars. The 4 cars in question, will be those that progress into a coloured cell (shown in the below or in the above main event knockout draws) after winning their first knockout round encounters. These cars will have a draw seeding of 9, 10, 11 or 12. The reason for this being that their original round 2 opponents are seeds 5, 6, 7 and 8, which are all seeded higher than they are. Seeds 9 to 12 will be expected to lose their original second round encounters, so a loss to the plate winner will still see them compete in the same number of races.

Should the Plate winner already have another car in the main event through to the second round, there can only be 1 eligible opponent out of the 4. This must be the car that lies within the coloured cell that is in the same quarter as the car that is already through to the second round from that school. This is to insure that no more than one car from the same school is able to reach the semi finals.

Should the Plate winner not have another car already through to the second round in the main event, the opponent will be chosen at random. This process will take place after a winner of the plate event has been determined.

The names of the 4 cars may be placed into a container and a member of the AIMSC or a competitor from one of the 4 teams may draw the plate winner opponent out of that container. This is to be overseen by the AIMSC committee and all competitors to insure that the process is fair.

Once the opponent has been established, the plate winner and opposing car will be given a determined amount of time to prepare for their best-of-three race-off. After the first race, cars will be given two minutes for adjustments as per standard knockout round. Should a third and deciding race be required, another 2 minutes will be granted and a coin toss conducted by an authorised member of the AIMSCC will determine the choice of lane.

The race-off winner will assume the original position of the second round plate winner opponent. The entire process will be expected to take between 5 and 10 minutes.

Plate Event Winner Opponent – AIMSCC Knockout Draw Second Round

	Winner of pairing	Expected seed	Round 2	1/4 finals	Semi finals	Final
Quarter A	1	1				
	2	13 to 16				
	3	9 to 12				
	4	7 or 8				
Quarter B	5	5 or 6				
	6	9 to 12				
	7	13 to 16				
	8	3 or 4				
Quarter C	9	3 or 4				
	10	13 to 16				
	11	9 to 12				
	12	5 or 6				
Quarter D	13	7 or 8				
	14	9 to 12				
	15	13 to 16				
	16	2				