WORLD SOLAR CHALLENGE – OBSERVERS & VOLUNTEERS IN SOLAR-POWERED RACING

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ABSTRACT

The first real cross country solar car race, the World Solar Challenge (WSC) was created by Hans Tholstrup in 1987. The WSC is truly a unique adventure, with teams from all over the world preparing their solar powered vehicles to undertake the 3000 km journey across the outback of Australia from tropical Darwin in Northern Territory to Adelaide in South Australia.

The World Solar Challenge is an extreme endurance event and the premier forum for electric vehicle technology. It is the focus of the creative efforts of some of the best companies and engineering schools in the world and attracts worldwide media attention, books, documentaries and even a feature film. WSC promotes educational excellence in science and engineering, renewable energy technologies and the creative integration of technical and scientific expertise across a range of disciplines.

INTRODUCTION

The Challenge: Design and build a car capable of crossing the vast and imposing continent of Australia using only sunlight as fuel and to prove it, in the spirit of friendly competition against others with same goal.


The jubilee 10th World Solar Challenge, 25-31 October 2009, was managed within new event Global Green Challenge, by the multi award winning South Australian Motor Sport Board - with Chris Selwood as event director.

World Solar Challenge requires commitment, professionalism and, in many cases, diplomacy.

WSC VOLUNTEER POSITIONS

The event relies on its volunteers and seeks a mix of experience and new blood, therefore there will always be new volunteer positions available in each event.

Volunteering for the World Solar Challenge is not like volunteering for any other event. Entries and volunteers will be away from home for extended periods, and may not be provided with the most comfortable accommodation or their favourite food and while not everyone can be in Darwin, it is a wonderful experience.

Each Challenge event requires around hundred volunteers to perform duties such as: Official Observer, Scrutineer Assistant, Marshal and General Office Duties.

Fig. 1: WSC Official Observers briefing in Darwin

The World Solar Challenge, like many events, relies on the support and commitment of its passionate volunteers to make each event successful and enjoyable for all involved. Volunteers have always been crucial to the success of solar racing. Volunteering for the

Fig. 2: Escort vehicle (rear - with observer) on the route WSC

Official Observers and Scrutineer Assistants are required to start their duties in Darwin before event.
Scrubineer Assistants help the Official Scrutineers assess each solar car ensuring they meet strict event regulations and are suitable to drive on Australian roads.

By definition, an Official Observer is a “judge of fact”, that is assigned from time to time to travel with participating solar car teams.

Simply put, an Official Observer is one who watches and notes the actions of the team to which they are assigned. The Observer attached to each team has a role of great importance to fulfil duties, and as such is expected to conduct themselves in a professional manner to the best of their ability.

Throughout the day, the observers monitor the actions of the teams for safety, fairness, and sportsmanship. Many of the observers are school teachers and they get to take the adventure of the solar-powered race back to their classrooms. The event would not be possible without their dedication.

Observers should also read, and have a broad understanding of, the regulations of the event. This together with thorough knowledge of the information contained in the observer guide and control stop rules ensure that the Observer Team is consistent in its approach and professional in its duties.

Each Challenge event is fully subscribed with many on the “standby” list.

WSC SCRUTINEER / ADMINISTRATION ASSISTANT

The Scrutineer Assistant administers the scrutineering process by observing and recording all pertinent actions, including obtaining measurements and keeping records of the solar team to which they have been assigned.

He assists the Event Management team with administration and general duties in Darwin event office. Qualifications: Engineering / technical / basic administration/past participation.

Fig. 4. Observer with Nuon Solar Team on the end of day

WSC GENERAL DUTY VOLUNTEERS

General Duty Volunteers assist with the scrutineering process in Darwin or post event duties in Adelaide.

Event Marshals assist the Chief Scrutineer administer the scrutineering process by obtaining measurements and keeping records.

Post Event Marshals also assist teams and competing solar cars around the Adelaide finish line. General Duties Assistants provide to the Event Management Staff with administration and general duties in Adelaide event office.

Qualifications: Keen interest in the event / basic administration / past participation.

Fig. 5. Member of Solar Team Twente offers food to Observer

WSC OFFICIAL OBSERVER

Each participating solar car team is allocated an Official Observer to travel with the team, record details and report progress to the Clerk of Course.

Observers are placed to “observe and record” all pertinent actions of the solar team to which they have been assigned. The regulations preclude them from interpreting regulations or giving advice, however a broad knowledge of the regulations will be very useful in deciding what to note in the official record.

Hosted as a team member of a participating solar car team, the regulations detail the observer’s responsibility to the participants and vice versa.

Regulations outline the Observer’s responsibility to the participant:

1. To record their name and the time and the period of their observation duty.
2. To record the start and stop times, the distance covered each day, and all other incidents.

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3. To secure removable battery boxes or the solar vehicle at sunset.
4. To notify the Clerk of Course at the earliest opportunity if a battery has been changed or a battery seal has been broken.
5. Observers may not interpret regulations or give advice to the team. The only exception to this being issues of safety – if you are uncomfortable with anything or think the team or any of its vehicles are being driven illegally or in an unsafe manner.

Entrant’s Responsibilities to the Observer:

1. To assist the Observer in his duties at all times.
2. To provide reasonable food and water for the Observer at least 3 times a day.
3. Never to leave the Observer alone with the car.
4. To send for assistance from the Organiser or call in results if requested by the Observer
5. To provide a proper seat in the primary (rear) escort vehicle. It is expected that the Entrant will allocate the front passenger seat of the primary escort vehicle to the Official Observer and provide space for the Observer’s luggage in the same vehicle.

Essential Qualifications: Have undertaken the Observer training course.
Desiderable Qualifications: Senior First Aid Certificate.
Supervision: Observers work under control of the Clerk of Course and his deputies.
Tenature: Appointment of “Observer” status commences at sign-on in Darwin until sign-off in Adelaide.
Special Conditions: Observers are required to make their own “bush” sleeping arrangements (sleeping bag/tent/swag etc) and should not pack more than they can easily carry. All are required to attend Observer training sessions (on-line option) and formal Observer briefing in Darwin and general team briefings as published. Observers not assigned to solar teams, who are required to wait at Control Stops, may be provided with bunkhouse style accommodation.
Entitlements: The World Solar Challenge will provide each Official Observer with:
Uniform polo shirts, a hat and sunscreen, a wristwatch for use on the event, etc.

Fig. 6. Event Director welcomes solar team Aurora in Adelaide finish line

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Fig. 7. Observer with BoCruiser Solar Team during parade in Adelaide finish

More Relevant Observer Rules:

- Once you have been appointed to a car, never let it out of your sight.
- If the battery is removed from a car, never let it out of your sight.
- You are not to interpret the rules for a team.
- Do not advice to teams.
- Record the start and stop times, driver changes (don’t forget the ballast), distance covered each day and all other incidents. This includes control stops, breakdown and other stops, apparent regulation breaches, moving violations, penalties, or battery replacement. It will also be very useful to the post event researches to record events such as the time and position of overtaking or being overtaken by other teams, etc.

Check on seals and notify the Clerk of the Course if a battery has been changed.
Obey directions from Event Officials.
At driver change, record and observe that the correct drivers ballast is in solar car.
Observe and record all team actions that you think may contravene the regulations. Report these to an Official. Do not take action yourself.

Observer’s Typical Day

At sunrise, observe the installation of the battery for morning charge. Check that all seals are intact. Complete breaking camp.
07:50 - Get the name of the first solar driver and make sure the correct ballast is in place.
07:59 - Supervise the placement of the solar car on the finish mark from the previous day and countdown the time from 15 seconds prior to 08:00.
08:00 – Wave away solar car and follow in Observer car, complete Log Book.
08:01 to next stop – Observe that all regulations are being followed and tick off your location in the route notes at regular intervals.
16:45 – Inform your driver that competition will finish in 15 minutes.
17:00 – Inform your driver that competition is finished. If the team continues to drive, remember 10 minutes grace; note this in your Log Book down exact time of stop and km location. Mark exact spot on the road that the solar car stopped (or left the road).
17:01 to Sunset – Stay near the car and observe that no batteries are being replaced, and no external power source is being used to charge the batteries. Set up your camp and at sunset supervise the removal of the battery chassis into your care. Lock up and ask the team manager to sign daily sheet in the Log Book.

Selected illustrations of “volunteers – observers in work” are on Figures 1-9.

The majority of volunteers were people who had done it before and relished the chance to come back and be part of the event again and again. A few, like Bill Boyd, James Buchanan, Terry Poustie, David Rand and John Ward had volunteered in every WSC event and so they “volunteered 30 thousands solar km in total”.

REFERENCES

www.wsc.org.au 2007 Panasonic World Solar Challenge, Media Centre