

## Solar Craft Build Guide

### Introduction

The hull of your craft is the most fundamental element of any boat. It is the structure that holds in place all other components. It gives the craft its shape size, form and buoyancy. Other fundamental aspects are the influence it has on the crafts performance and handling.

### Research Section

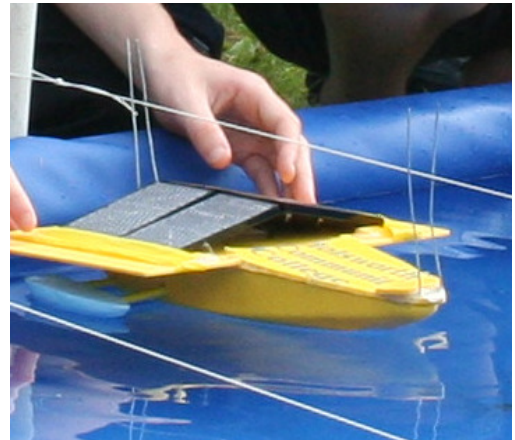
*What are the key design elements a hull must possess for the solar challenge?*

*Lightness; Stability; Ability to carry solar panels; Ease of manufacture*

### Design section

Collect all the information you will need to enable you to start designing your hull:

- ☞ Scale and size required, maximum length 450mm
- ☞ Where and how will you locate and fix the major components e.g. motor and propeller mount?
- ☞ Wire guide systems, your boat will be guided by an overhead wire so make sure you have a mounting point for this - see picture
- ☞ Material and processing availability, particularly the size of a likely vacuum former



### Manufacturing Section

Styra-foam is the most easily shaped material to produce the hull from, however if you want to mould several then wood or plaster may be better.

Vacuum form your hull over the mould but beware it may well stick to the vacuum forming plastic! A tip for removing the form tool from the moulding is to carefully cover the Styrofoam with masking tape. This prevents the heat from the vacuum forming plastic sticking your mould.

Prepare and locate propeller shaft and any coupling. (make sure your boat will move forwards and not go in reverse!)

Arrange your solar cells (select parallel or series)

Insert your guide wire system

Test your boat and make adjustments; and don't forget your race day number must be clearly displayed.

