Note 1 from the Technical Committee, July 2011

During the last two months, the Technical Committee has received several questions and made a number of observations. By means of this note we would like to address two important items which may influence your designs.

Steering control mechanisms (rule 5.29)

During the previous race in 2010 as well as during the Dutch Open Solar Boat Challenge in Zeeland this year we noticed that several teams have chosen to install a steering control system that shows play. Rule 5.29 states the following:

The steering gear of the vessel must be sized for adequate controllability and must operate smoothly and be free of play both in loaded and unloaded condition.

Some of these systems are commercially available and have no possibility to remove the play in the system. Since the speed of the boats keeps increasing, the installation of an adequate steering control system is important.

We will therefore no longer accept steering control systems that show any play that cannot be removed. Arguments that the systems are commercial systems and are designed such that the play cannot be removed and thereby must be accepted, will no longer be accepted.

Interpretation of rules 4.4 and 5.30 in conjunction with the use of hydrofoils

Several participants asked the Technical Committee to give a more detailed explanation of the rules 4.4 and 5.30 in relation to the use of hydrofoils. When judging your designs in the design steps 2 through 5 and during the technical inspection and sailing tests of the boats (steps 6 and 7) in order to be admitted to the race, the Technical Committee will use the following interpretation of these two rules.

Rule 4.4 reads:

The height above the waterline must be limited to the specified height in both static and sailing conditions. Any mechanism used to adjust variable height must be electrically operated from the main battery. It is not allowed to install a secondary power source for that purpose.

Rule 5.30 reads:

Adding removable parts to the vessel is allowed. These additional parts have to meet all necessary requirements of these technical regulations

- *The removable parts must either be installed or carried in the boat during the complete race.*
- *During step 3 of the design process it must be clearly indicated that you want to apply this rule and this has to be approved*
- *The boat will have to pass the technical inspection both with and without the removable parts installed*
- *Marking parts as removable parts after having passed step 3 in the design process is not allowed*
- *Certain parts will not be allowed to be classified as removable parts. They include at least:*
    - *parts necessary for achieving the required stability, for example floats*
    - *solar panels*

The original intention of rule 4.4 was to allow the participants to change the height above the waterline of their boat such that they will be able to pass all bridges in the route without having to wait until they will be opened. With the introduction of hydrofoils the interpretation of this rule needs to be re-assessed. The main purpose of hydrofoils is to raise the hull of the boat out of the water and thereby reducing the drag and increase the speed of sailing. The reason for requiring the adjustment of height to be powered from the main battery was that we wanted to prohibit the use of such mechanisms to create some kind of propulsive force (paddling or likewise).

With the introduction of rule 5.30 on removable parts the possibility was created to change the configuration of the boat for a certain stage of the race. Thereby giving the possibility to optimise its configuration for that specific stage. The removing and installation of these parts requires a physical removal/installation, meaning unbolting and taking the parts off (or installing them). For this procedure there is no rule that requires that this has to be done making use of energy out of the main battery. Manual removal/installation is allowed.

The combination of rules 4.4 and 5.30 in the use of hydrofoils now generates a bit of a "grey area" with respect to the use of energy. The Technical Committee will therefore interpret the rules as follows:

a. Physical removal/installation of hydrofoils may be done manually. In the case of removal this means taking them off and storing them in the hull of the boat before travelling further. Rule 5.30 thus applies. Inside the hull it must be clearly marked where the removed parts will be stored such that they don't go "missing".
b. Using a system that makes it possible to take the hydrofoils out of the water without removing them from the boat will have to be a system that is operated electrically from the main battery. This may be done in both a direct (e.g.an electrically operated actuator) and indirect way (e.g. the system requires forward speed of the boat to operate and the required forward speed is achieved via the propulsion system that is powered electrically). Rule 4.4 thus applies.

c. Trimming the setting of the hydrofoils (=small adjustments of the pitch angle of the blades) whilst being installed and submerged in the water may be done both electrically and manually. Manual operation may be direct (manual operation of a control) or indirect (e.g. using a hydraulic or pneumatic system that is powered manually). The condition for manual operation is that there may be no significant propulsive force being generated from the manual operation of the system.