Delft University Solar Boat Team wins Frisian Solar Challenge for the second time

Innovative hull design brings victory again

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Once more the Maritime Research Institute Netherlands (MARIN) at Wageningen offered their knowledge to support the winning team of Delft University of Technology at the recently held Frisian Solar Challenge. This six-day solar boat race followed the course of the historical Frisian Eleven Cities Skating Race of 220 kilometres. Loudly applauded by the crowd the Delta Lloyd Solar Boat Team were the first to finish at the Prinsentuin in Leeuwarden and thus took the lead by over 3 hours in the open class in a time of 12:05:05 hours. With due pride MARIN congratulates the students' team on this impressive achievement.

Sponsored by MARIN

It was more or less a matter of course that MARIN chose to sponsor the team of Delft University with hull and propeller design. By means of a competition held in 2006 MARIN selected their project plan from various entries. MARIN supported the team during that first race with advice on hull form optimisation and model tests. The result was a glorious victory, which

made MARIN decide to continue this successful co-operation in 2008.

Improved design

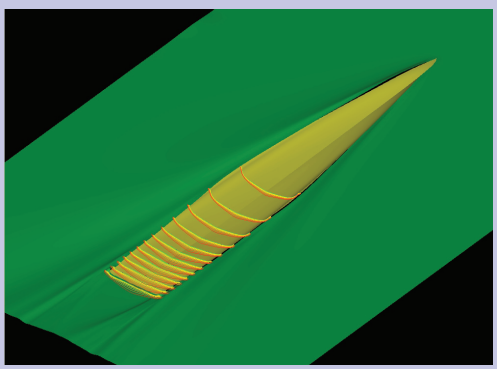
In close consultation with the students' team the concept was slightly improved, giving the boat less resistance and a higher propulsion efficiency. In order to validate these adjustments CFD calculations were carried out. Beside general consultancy and calculations MARIN also designed and produced two propellers.

For the hull form a long, slender (shallow) canoe form was chosen with widely fanning sideboards just above the design water level, carrying the extensive solar deck. These sideboards do not touch the water while the boat is sailing upright, but they do restrict the angle of heel in waves and curves.

Hull form proves effective

This proved to be an extremely successful design philosophy, which became evident especially during this year's Solar Challenge event. Here it became painfully clear that a wide, relatively heavy solar deck may cause problems. Regrettably, on the very first day of the race wind gusts caused two boats to capsize, one of them a favourite: the long monohull (8 m) with two outriggers in the stern of the Noordelijke Hogeschool Leeuwarden (northern college Leeuwarden).

"It must be said, though, that the victory of the Delta Lloyd Solar Boat Team is mainly due to the right choices and good management of the team in many respects", says Tom van Terwisga, principle researcher at MARIN as well as professor in Ship Propulsion and Resistance at Delft University of Technology. "The lightweight and high-efficiency solar panels, the effective hull form, the well-balanced propulsion installation, the lightweight structure, the project management and last but not least the great effort and enthusiasm of the students". MARIN



Fish eye view of the flow around the hull and the waves generated by the ship as predicted by PARNASSOS, the calculation programme of MARIN.

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