

Press release: The technologies used aboard the flying boats, the latest developments in terms of design and construction

Every Thursday in October, Eurolarge Innovation is showing a Bretagne Sailing Valley café video from 9.30 to 10.30 all about the Vendée Globe. The third in the series took place on 15th October and looked at the latest developments in terms of the design and construction of foiling Imocas, with Luc Talbourdet, founder of Avel Robotics, Yann Dollo, CEO of CDK Technologies and the boat designer, Sam Manuard.

Over the past eight years, Imocas have been through a real technological revolution with the appearance of foils, a concept tested on the 2016 generation and finally adopted for the 2020 Vendée Globe. This revolution is viewed in different ways depending on the designer. While all the new boats were VPLP-Verdier designs back in 2016, four have worked on the concept - VPLP and Guillaume Verdier (separately), Juan Kouyoumdjian as well as Sam Manuard, who has designed his first Imoca, L'Occitane.

The latter explained how he came up with the design of Armel Tripon's 60-foot boat: "I was convinced from the outset that we needed to define a concept allowing fast sailing in the Southern Ocean making the most of the low-pressure systems down there, but we also needed to design a boat that could be used to its maximum theoretical potential. The scow-shaped hull was our solution as it offers dynamic stability and when sailing downwind allows the boat to bounce off the wave that it catches rather than going through it."

The foiling revolution has had a major impact on the construction of Imocas, as Yann Dollo explained, "The new generation has led to an extremely complicated construction method, particularly when we look at the hulls and decks, which are now major design features. If we compare them with Macif, the boat that won the Vendée Globe in 2013, the construction of the hulls now takes 30% more time and the decks 60% more." The CDK yard has also gone about manufacturing foils for Imocas (those for PRB in the 2020 Vendée Globe), but also for the future Ultimes, Banque Populaire XI and M101, which has led them to invest: "If we wanted to tackle this market, we needed computer assisted design software, a new cutting machine and a bigger oven measuring 25 metres in length and 4 in diameter," explained Yann Dollo.

It was in order to tackle this new market that Avel Robotics was created in late 2017, as Luc Talbourdet, Jean-Pierre Dick's project manager in the last four Vendée Globe races (from 2004 to 2016), explained: "The big change is the result of the arrival of foils on Imocas. By examining what is done in the aeronautical sector, we realised that by using a robot we could manufacture better quality foils." Once again, this required a big investment, but the innovation has paid off for the 2020

Vendée Globe with the new Lorient-based company making foils for L'Occitane, two pairs for Apivia (Charlie Dalin), and one with Lorima for Arkéa Paprec (Sébastien Simon).

Luc Talbourdet is already looking beyond ocean racing. "The next step in 2021 will involve making other parts for the marine sector and then in 2022/2023, series parts for the aeronautical sector. That is why we will be buying another robot next year." And all this while continuing to invest in human know-how, as Sam Manuard, who recently moved to Bretagne Sailing Valley®, stresses: "A large part of the added value with builders comes from their human resources. There is an incredible amount of new talent here and that is something you don't find anywhere else in the world."

**Go to the replay of the Bretagne Sailing Valley video coffee,
Subtitled in English (activate the YouTube subtitling function)**



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