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Candela 7

Dave Marsh looks at this package of innovation, technology & environmental mindfulness.

Back in 1987 when he was still alive, Frenchman Eric Tabarly, in my opinion the 20th century’s greatest sailor, allegedly said: ‘Un jour, tous les bateaux voleront’ (‘one day, all boats will foil’). And he knew a thing or two. It may have taken a while, but environmental concerns are a powerful driving force today, as is the onward march of technology, especially in the field of batteries and high-tech construction.

This holy trinity - environmental awareness, lithium ion batteries and precisely engineered resin-infused carbon fibre - has made entirely new genres of boat a practical reality.

The Candela 7 is not the first small, fast foiling boat we’ve tested - in June 2018, we drove SEAir’s first 32-knot foilers along the Seine, but these were powered by conventional outboards. Nor is it the first small, fast all-electric boat - we got 25+ knots from designboats.ch’s excellent Elektro 06 back in 2016. But, significantly, the Candela 7 is the first small (7.7m), fast (30kn) boat we’ve come across that combines both technologies: foils and electricity.

It’s a marriage made in heaven – the limitations of an energy source with significantly lower power density than petrol or diesel, combined with a form of transport that requires far less energy to propel it along, courtesy of its low-drag foils. The Candela team claims that ‘the achieved [50nm] range is four times longer than the best electric boats currently on the market and close to that of a combustion engine boat of the same size’, which seems unnecessarily bullish with boats like the Elektro 06 proving otherwise, and, for example, Windy’s outboard-powered OceanCraft 760 with double that range at 25 knots. But if it is an accurate figure, 50nm at 20/25 knots is impressive anyway.

The most surprising and promising aspect of the Candela 7 is largely hidden. Like most similar arrangements, the T-shaped foil at the rear is more of a balancing and trimming foil. However, the inverted amidships U-shaped foil that provides the majority of the lift is linked to a sophisticated automatic control system. That is hugely significant because it allows Candela to use completely submerged foils, rather than surface piercing. Why is that so advantageous? Partly because it relieves the helmsman of the need to control the foils as conditions change - some foilers need to be trimmed manually as they climb out of the water and onto their foils, and that cannot be easy. It also submerges the foils’ lifting surfaces below the water, which should in theory make for a far smoother ride through waves and in rough conditions. As we discovered when we trialled the SEAir foiler, from a standing start the boat lifted very easily onto the foils and ran along very smoothly indeed. However, the foils would rapidly pick up and/or lose lift as they passed through waves in the river, which caused the little 5.5m SEAir foilers to shimmy around in an odd way, and to occasionally drop off the foils completely when passing through the bigger waves. As long as the Candela’s hull rides above the waves, then that rise and fall of lift on the foils should be absent - a very big plus.

You will be pleased to know that the Candela 7 is no crazy inventor’s prototype pipe dream - Candela have a price list and a range of options, and as of September 2019 had already sold five boats. It’s great to see innovation, technology and environmental mindfulness combining in such an attractive package.
The Candela 7 certainly appears very stable underway in calm conditions.

An automatic control system handles all aspect of the foils’ movement.

The Candela’s construction is 100% resin-infused carbon fibre.