

Porsche and world-record-holder Sebastian Steudtner present jointly developed surfboard

26/05/2023 Together with Porsche technology subsidiary Porsche Engineering, current big-wave world record holder Sebastian Steudtner has spent the past two years scientifically analysing and significantly optimising his surfboard. Now the board, dubbed the “Caçador RS”, has been presented to the public for the first time in Cascais, Portugal.

Sebastian Steudtner is the current world record holder in big-wave surfing with a wave height of 26.21 metres. With enhanced equipment, he wants to go even bigger in the future. In his long-term partnership with Porsche, he has substantially optimised his gear. The crucial boost came from Porsche technology subsidiary Porsche Engineering.

The idea of the collaboration was to translate experience from automotive development to the surfing context. Using the latest simulation methods and wind tunnel validation, the team improved the surfboard's handling in the water (hydrodynamics) as well as the aerodynamics of both the board and

the surfer – always with the goal in mind of reducing drag in both the water and the air.

And enabling Steudtner to reach higher speeds on the board. 70 to 80 km/h is currently possible. The higher speed is necessary to ride bigger waves – because the higher a wave is, the faster the surfer has to be to keep it from crashing over him.

Aero-edges for surfing speeds of up to 100 km/h

Optimisation of the complete system of Sebastian's surfboard resulted in significantly reduced drag, which in turn could now potentially enable surfing speeds of up to 100 km/h.

"To reduce drag and stabilise the board, patented attachments known as aero edges were added to the front and back of the board", explains Marcus Schmelz, Project Manager at Porsche Engineering. "We know this principle from automobiles: here, too, tear-off edges are defined, for example through the use of spoilers. They reduce air turbulence, making the car more stable and aerodynamic at high speeds."

Beyond the structural changes to the board, aerodynamics tests in the Porsche wind tunnel also found other potential optimisations: adapting Sebastian's body position while surfing and optimised equipment also produce significantly lower drag.

Steudtner's new board was dubbed the "Caçador RS".The name is a combination of the Portuguese word "Caçador" (hunter) and the classic Porsche designation "RS", which is reserved for the sportiest Porsche models. With his new surfboard, Steudtner can now set off in pursuit of the next world record.

"It's a very exciting moment for me to introduce our 'Caçador RS' at long last", says Sebastian Steudtner. "Together with the Porsche Engineering team, we've spent two years intensively researching, testing and developing. The result is a faster and more stable board that enables me to ride into even bigger waves – a milestone for our project."

Next project already in the works: the precise measurement of waves

Using a measuring drone, in the future it will be possible to quickly and accurately measure the height of waves. At present, measurements are made using videos and still photographs.

The current prototype from Porsche Engineering is equipped with cameras, control and storage units, and sensors of the type used in vehicle development for modern driver assistance systems. The device measures all areas of the wave and the surfer in a 100-metre radius. The first reliable data is expected to be collected this autumn of this year, when the next big-wave season begins in Nazaré, Portugal.

More image material is available here.

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