

Underwater Bicycle

Soon, exploring seabeds will be easier than going for a bike ride: Saint Petersburg researchers have invented the first “underwater bicycle,” entirely pedal-powered.

Modern tourist submarines move thanks to traditional propeller engines; to obtain a speed of 2-3 knots (4-6 km/h) they need large and expensive batteries and cost at least 100 thousand US dollars. Vladimir Taradonov, director of the Blue Space project tells us of the many attempts at making the first underwater bicycle, without success, as even the physical strength of two people didn't prove enough to propel the vessels “A person cycling in the woods or on the road consumes about 300-400 Watts; two people, 600-800 Watts. It's impossible to move underwater at this force, where density is about 1000 times that of air.”

The Russian inventors opted for jet engines instead. “With rotor engines, water is sucked through slits at the front and then pushed out along the hull. This generates a [Coandă effect](#), which means that a lower pressure is created at the fore,” Taradonov explained. “This causes the vessel to move towards the low pressure area, i.e. forwards, as if it were self-propelling.” After working for years on the project, a theory on the motion of submarine vessels has finally been formulated, thus allowing for many experiments.

The ‘underwater bicycles’ will cost about as much as the average car. On the Blue Space Project website, emails come in from all over the world, including purchase offers for the project to start production abroad. “At the moment, we have a prototype which is 80% complete and is being built in the “Admiraltejskij” shipyard, in collaboration with our University.” added Taradonov. “These are its dimensions: 3.5 metres long, by 2 metres in width and 1.2 metres in height, much like the cabin of an automobile. The basic design is for two people, but modifications will allow it to carry up to 8.”

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