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The People, the Technology &
the Trends Driving Subsea
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THE MTR100 2020

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On the Cover: Graham Hawkes tests off-the-shelf dive lights and Paralenz camera for SeaRocket in Penobscot Bay, Maine. SeaRocket dives just over 600-feet deep to old dredging dump sites in the Bay. © Peter Ralston



SubSeaSail LLC

San Diego, CA - <https://subseasail.com>

SubSeaSail LLC (SSS), based in San Diego CA, designs and manufactures unique unmanned semi-submersible sailing vessels (USSVs) that are wind-propelled and solar-powered. The platform is capable of autonomous or manual missions, individually or swarming. The key tenant is “Engineered for Simplicity” with significant, patented and patent-pending technologies. SSS has received a patent for a sailing vessel with the hull below the surface and the wingsail above. This reduces friction (drag) while producing little-to-no wake and a significantly reduced Infrared, radar and visual signature. A second patent is for a Passive Mechanical Wingsail Control Mechanism that sets the wingsail at the optimum angle with respect to the wind direction and the desired direction of travel without the use of electron-

ics, pulleys or lines. This feature significantly reduces complexity and cost while increasing reliability. A servo for the rudder is the only electromechanical component in the platform required for sailing control. An optional thruster can be added for navigation out of harbors, away from hazards, or to augment control in low wind conditions.

A key feature of the SSS platform is that it can take various form factors and is highly scalable. A catamaran version demonstrated that it can sail above or below the water and, while on the surface, can perform missions such as deploying and/or recharging unmanned aerial systems or to deliver cargo without need for a deep-water ports. The Gen6(S) variation is designed to sink to 10m to avoid bad actors, bad weather, or ship traffic. Systems are being developed with various solar panel configurations to maximize power generation or stealth. Applications are broad and include ASW, C4ISR, cargo re-positioning and delivery, communications gateways, mine delivery/counter measures, ocean sensing, protection of exclusive economic zones and marine protected areas (MPAs and EEZs), targets and decoys, UUV delivery/launch/landing/recharging, and UXO detection.

SubSeaSail has delivered a system to the US Army Corps of Engineers for unexploded Ordnance Detection turbidity monitoring. They are currently working with a partner on a patent-pending Reconfigurable Acoustic Array allowing location and identification of targets for various applications including target detection and protection of MPAs and EEZs in a disruptively economical system package.

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