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The Sea Striker: The Relevance of Small Assets Using an Integrated Conception with Operational Performance Computations

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Abstract : This paper presents the Sea Striker, a compact hydrofoil designed with the goal to address some of the issues raised by the recent evolutions of naval missions, threats and operation theatres in modern warfare. Able to perform a wide range of operations, the Sea Striker is a 40-meter stealth surface combatant equipped with a gas turbine and aft and forward foils to reach high speeds. The Sea Striker's stealthiness is enabled by the combination of composite structure, exterior design, and the advanced integration of sensors. The ship is fitted with a powerful and adaptable combat system, ensuring a versatile and efficient response to modern threats. Lightly Manned with a core crew of 10, this hydrofoil is highly automated and can be remoted pilote for special force operation or transit. Such a kind of ship is not new: it has been used in the past by different navies, for example, by the US Navy with the USS Pegasus. Nevertheless, the recent evolutions in science and technologies on the one hand, and the emergence of new missions, threats and operation theatres, on the other hand, put forward its concept as an answer to nowadays operational challenges. Indeed, even if multiples opinions and analyses can be given regarding the modern warfare and naval surface operations, general observations and tendencies can be drawn such as the major increase in the sensors and weapons types and ranges and, more generally, capacities; the emergence of new versatile and evolving threats and enemies, such as asymmetric groups, swarm drones or hypersonic missile; or the growing number of operation theatres located in more coastal and shallow waters. These researches were performed with a complete study of the ship after several operational performance computations in order to justify the relevance of using ships like the Sea Striker in naval surface operations. For the selected scenarios, the conception process enabled to measure the performance, namely a “Measure of Efficiency” in the NATO framework for 2 different kinds of models: A centralized, classic model, using large and powerful ships; and A distributed model relying on several Sea Strikers. After this stage, a was performed. Lethal, agile, stealth, compact and fitted with a complete set of sensors, the Sea Striker is a new major player in modern warfare and constitutes a very attractive response between the naval unit and the combat helicopter, enabling to reach high operational performances at a reduced cost.

Keywords : surface combatant, compact, hydrofoil, stealth, velocity, lethal
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