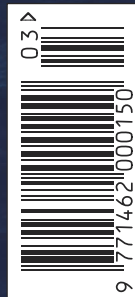


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# THE GROWING THREAT OF THE MARITIME SWARM

*In the Arabian Gulf last month (Jan) a sailor scans the horizon for surface contacts from aboard a Mark VI patrol craft. Photo: MCS3C Zachary Pearson/US Navy.*

Swarm tactics are nothing new. They have been used since antiquity, albeit not always as clearly defined doctrine. Last year for example, multiple Iranian boats ran alongside USS Abraham Lincoln as the Nimitz Class carrier sailed through the Strait of Hormuz. Swarming is very often encountered in asymmetric conflicts where one side has a conventionally superior (but not necessarily numerically superior) force. Maritime swarms can be seen in scenarios that range from counter terrorism to piracy, asymmetric activity and conventional naval warfare. Some nations have developed large, swarm-oriented forces as a counter to the conventional maritime superiority of their rivals. Swarm tactics use numerous, fast-moving forces that can quickly converge upon an adversary from multiple angles - using target saturation to gain the advantage. This overwhelms the target's ability to respond in time to the sheer volume of threats now confronting them. Swarm devices are often rudimentary or easy to access machines, using their numbers over sophistication. Many swarm

craft are essentially speedboats with weapons fitted to them. Some vessels have been reported to reach speeds of 80 knots in calm waters and nations have recently claimed to be working on boats that can attain 100 knots. Some vessels, for example, use a fibreglass hull that runs close to the surface - dramatically reducing the wake and radar signature of the craft. Advances in communication and network technology allow swarms to better share target information and coordinate their assaults. Swarms can often converge, so as to appear as larger vessels at a distance and then splinter into individual targets as they get closer. Modern swarming uses developments in communications and navigation technology to augment numerical superiority. This is done to maximise the ability of the swarm to attack simultaneously and retreat quickly. Autonomous swarms become more dangerous as the algorithms that coordinate them

improve and the drones themselves grow more capable, especially as they use their operating areas to maximise their impact. Swarms are in their element in coastal areas where conventional warships are at a geographical disadvantage. Tight littoral environments, such as the Strait of Hormuz, have repeatedly demonstrated the superior mobility of small swarm craft. This geographical disadvantage for conventional warships can also impact their ability to respond to swarm attacks with conventional weaponry. Swarms can attack from an area that is beyond the range of a ship's close-in ballistic systems (e.g. 50 calibre machine-guns or 25mm close-range weapons). This is particularly important as, in most training scenarios, close-range systems are the primary defence against swarms. This will also become more of an issue as the power of small and medium sized weapons continues to improve. More powerful small arms enable even the most diminutive swarm craft to pack a formidable punch.

*Therefore, how do we defend against maritime swarms?* Nations must develop principles and realistic training to better defeat swarms. Maritime swarms have been training for decades to fight against conventional forces - who in turn have been training to fight other (conventional) foes. Over the last few years, as maritime swarm threats increase, navies have adapted their principles and training in order to counter small, fast-moving threats. This is a good start, but arguably doesn't go far enough. In the current scenario, training is incomplete - often facing off against small, isolated, fast-moving targets is not enough. Navies need to prepare for the sheer volume, coordination and target saturation that a true swarm will present. By training in environments that replicate the swarm tactics using Unmanned Surface Vehicle Targets, designed to simulate Fast Inshore Attack Craft (FIAC) naval threats in a multivehicle swarm, navies can better equip themselves to counter the growing threats of swarm tactics.

• Jules Werner is Business Development Manager at QinetiQ [www.qinetiq.com](http://www.qinetiq.com)

*USS Abraham Lincoln launches a Super Hornet jet during flight operations in the Arabian Sea, during the same deployment that she was menaced by a swarm of Iranian small craft. MCS3C Zachary Pearson/US Navy.*

