

# Navy Combatants Can Defend Against Emerging Missile Threat

**By Edward Lundquist**

A growing Russian threat to surface ships in the European theater has prompted the U.S. Navy to upgrade its four guided-missile destroyers (DDGs) forward deployed to Rota, Spain. The multi-mission ships have a sophisticated ballistic missile defense capability as part of their Aegis weapon system.

The four DDGs comprise the forward-deployed naval forces, which support the European phased adaptive approach to defend Europe against ballistic missile threats from the Middle East. However, Russia views their presence, as well as the establishment of land-based Aegis ashore missile defense sites in Romania and Poland, as directed against Russia, and has increased its offensive capability in the region.

U.S. and NATO officials have warned that Russia has deployed capable offensive weapons in the region — including the annexed territory of Crimea — that pose a significant threat to naval forces operating in the Black Sea and Eastern Mediterranean. Those threats presumably include the Russian Kalibr and Iskander missiles.

The North Atlantic ocean, Norwegian, Baltic, Black and Mediterranean seas are the maritime flanks of the NATO alliance, said Adm. Mark Ferguson, commander of Naval Forces Europe and Africa, speaking at the Atlantic Council last October. “It is here we are observing the manifestation of a more aggressive, more capable Russian navy. It is a naval capability focused directly on addressing the perceived advantages of NATO navies. And they are signaling us and warning us that the maritime space is a contested domain.

“We have to be pacing these threats — both the asymmetric threats coming from the south, coming from the east, and then all the way up to the high-end threat coming from Russia,” said Ferguson in a recent interview.

While the four ballistic missile defense DDGs are multi-

mission combatants, they may find themselves focused on a mission to deal with exo-atmospheric threats. And they can be vulnerable to a range of threats that might otherwise warrant an escort to defend against anti-ship cruise missiles or other weapons.

As a means to improve the defensive capability of these ships, the Navy is adding the SeaRAM weapon system to help counter the emerging threat.

“We just put SeaRAM on the USS Porter, and you’ll see that go on all of our forward-deployed ships,” Ferguson said. “I’m committed to delivering additional lethality to our fleet.”

According to Ferguson, SeaRAM complements the coverage of CIWS, or close-in weapon system. “I appreciate the efforts of the OPNAV staff and Naval Sea Systems Command to give us the additional coverage on a short timeline.”

SeaRAM is the combination of two U.S. Navy systems: the MK 15 CIWS and the MK 31 rolling airframe missile (RAM) guided-missile weapon system.

Ed Lester, Raytheon SeaRAM program manager, said the system “leverages the RAM and CIWS life cycle support infrastructure.”

SeaRAM uses the same mount and fire control system, but substitutes the RAM launcher in place of the Vulcan

chain gun of the CIWS. With one of each, the DDGs will have a greater ability to provide a layered self-defense against multiple high-performance, supersonic and subsonic threats.

The 11-missile RAM launcher assembly replaces one of the DDG’s two Phalanx’s 20 mm guns. The above-deck system has the same footprint and uses the same power as CIWS 1B. SeaRAM combines the RAM’s accuracy, range and high maneuverability with the Phalanx Block 1B’s high-resolution search-and-track sensor systems and rapid-response capability, said Rick Nelson, vice president of Raytheon Missile Systems in Tucson, Arizona.

Both CIWS 1B and SeaRAM are defensive systems. The 20 mm Vulcan gun system on Phalanx is the ship’s last line of defense by automatically tracking and engaging threats that have penetrated the ship’s other defenses. SeaRAM can do the same thing at longer ranges.

Although both RAM and SeaRAM have been installed on Navy ships, SeaRAM had not previously been integrated with a DDG or the Aegis combat system. RAM is installed on the Navy’s amphibious ships and the Freedom-class variant of the littoral combat ship. SeaRAM is currently installed on the Independence-class variant of LCS. USS Coronado (LCS 4) fired a rolling airframe missile from its SeaRAM anti-ship defense system last August during a live-fire exercise at a test range off the California coast.

The installation on the USS Porter is

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the first for the class, and was performed by the Spanish shipyard Navantia in Rota. Post installation testing is being supported by Spain, a key NATO ally in the European missile defense mission.

The four DDGs in Rota have a deployment schedule that ensures that two of the four ships are deployed while the other two are in an upkeep period back in Rota where they undergo maintenance. The SeaRAM modernization will take place during one of their scheduled maintenance availabilities conducted by the Navantia shipyard, under the oversight of the Navy's forward-deployed regional maintenance center.

Following her installation — the first ever aboard a DDG — Porter accom-

plished all industrial installation, system testing and live-fire qualification events in Spain at Naval Station Rota and at the Spanish Ministry of Defense missile test range near Huelva.

"The crew of Porter spent weeks training to employ the new weapon system and develop the tactics, techniques and procedures to integrate SeaRAM into their combat system," said Cmdr. Andrew Bates, officer-in-charge of the Destroyer Squadron 60 detachment at Rota. "Following a highly successful structural test firing to validate the safety and integrity of the newly installed mount, Porter executed a series of tracking exercises that culminated in a flawless live-fire intercept of a drone target on March 4."



**USS Porter undergoes repair and modernization at Naval Station Rota, Spain.**

Cmdr. Joseph Saegert, officer-in-charge of the maintenance detachment at Rota, said test firing is part of a new weapons installation, to ensure it is safe to fire and serves to validate engineering calculations and the modeling and simulation.

Saegert credited the successful installation of SeaRAM aboard Porter to the Rota maintenance team. "In Spain, the maintenance team is everyone: from the regional maintenance center and our partner, Navantia; the Naval Supply Systems Command Fleet Logistics Center at Sigonella, Sicily; Commander Naval Surface Forces Atlantic; program executive office for integrated warfare systems; Naval Surface Warfare Center, Port Hueneme Division; Commander, Destroyer Squadron 60; and the Missile Defense Agency."

Following Porter, USS Carney (DDG-64), USS Ross (DDG-71) and USS Donald Cook (DDG-75) will receive SeaRAM.

Warfare tactics instructors at the naval surface and mine warfighting development center in San Diego created the doctrine and training syllabus to enable the crews to operate this new combination.

"The addition of this advanced weapon system to Porter's arsenal is extremely welcome," said Cmdr. Andria Slough, USS Porter's commanding officer. "It is a culmination of the cooperation of several program offices and agencies, both at sea and ashore, ensuring that out here on the front lines, we receive the capabilities we need, when we need them." **ND**

**Edward Lundquist is a contributing writer.**



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