

Handcrafted Bamboo Death Star Is Beautifully...



5 Reasons 'Star Wars' Tanks Make Absolutely No...



A U.S. Navy Carrier Group Is Sailing on Beef Fat



What It Takes To Turn a Motorcycle Into a...



Here's What 1500 Horsepower Sounds Like

# The Navy's Ship Defense Missile Just Got Deadlier

Everything's better when combined with a Gatling gun.



EVO PDF Tools Demo

US Navy / YouTube



By Eric Tegler Apr 11, 2016

442



In response to a range of new threats to its ships, whether it be air- and surface-launched missiles or drone aircraft, the U.S. Navy is improving and expanding its ship-defense capabilities. In early March, a test on the USS *Porter*—a guided-missile destroyer stationed in Rota, Spain—paired Raytheon's new Block 2 Rolling Airframe Missile with a launch and tracking system called SeaRAM to demonstrate a new way to protect ships.

Raytheon's Rolling Airframe Missile (RAM) is a lightweight supersonic weapon designed to destroy anti-ship missiles and other airborne threats to a ship at close range, typically less than 10 miles. Much like a bullet fired from a rifled-barrel, RAM Block 2 rolls around its longitudinal axis as it flies. The missile uses the rolling motion generated by its tail fins to change direction on a dime. It's guided by a radio frequency (RF)/infrared seeker to intercept threats.

**"ALL YOU WANT IS MORE TIME. THAT'S WHAT THE MISSILE GIVES YOU OVER THE GUN."**



Lasers have gotten all the hype recently thanks to their potential to create effective,

## MORE FROM POPULAR MECHANICS



The 50 Tools Everyone Should Own



Robot Performs Soft-Tissue Surgery By Itself



cheap defensive systems for ships. But RAMs have been doing the job since the early 1990s and are currently deployed on 165 different vessels across eight different navies. They form part of a three-layered ring of close-in defense for certain U.S. Navy ships. The outer defensive ring is handled by the Sea Sparrow, a ship-defense missile with a range of approximately 27 nautical miles. Inside 10 miles, RAMs take over. The last line of defense is the venerable Phalanx 20 mm radar-guided Gatling gun (or CIWS, Close-In Weapons System), which takes on threats inside two miles.



50 States Of Adventure: Everywhere In The USA You Need To Go This Summer



"As advanced targets are coming in closer and maneuvering much faster, we need the performance in the RAM Block 2 to be able to be able to engage them," says Alan Davis, Raytheon's director of short-range defense systems.

The new RAM Block 2 has a more powerful rocket motor and improved control surfaces, which make it faster and more maneuverable than its predecessor. Davis says the added power not only makes the RAM Block 2 faster, but also allows the missile to maintain its speed during energy-sapping high-G turns needed to intercept targets. The Block 2 has two and a half times the range of the Block 1 RAM, which has a reported effective intercept range of about 5.6 miles. The latest RAM also has an improved seeker package with greater sensitivity, allowing it to detect anti-ship missiles that employ low probability-of-intercept receivers.

EVO PDF Tools Demo



RAM

The second piece of the improved defense package is pairing the RAM Block 2 with

SeaRAM. SeaRAM is a hybrid system consisting of an 11-round Rolling Airframe Missile launcher mounted on a Phalanx chassis and radar unit. The combined Gatling gun-RAM launcher unit uses the Phalanx high resolution radar for initial tracking and fire control. The March test on the *Porter* marked the first time that the Block 2 RAM and SeaRAM have been integrated on a U.S. Navy destroyer.

The ranges of the RAM Block 2 missile and 20 mm rounds of the Phalanx Gatling gun overlap. While the Phalanx is a crucial last line of defense, the RAM Block 2/SeaRAM combo gives ships (particularly U.S. Navy destroyers which haven't previously had RAM capability) a better chance of defeating threats before they get so close that a gun becomes the only choice.

"It gives you breathing room," says Ed Lester, SeaRAM program manager and former commander of the guided missile cruiser USS *Leyte Gulf*. "When you're on the bridge of a ship or in the Combat Information Center, and bad things are happening, all you want is more time. That's what the missile gives you over the gun."

Lester adds that the live-fire testing on the USS *Porter* was successful, and the effort went from concept to reality in just 12 months. The *Porter* is the first of four destroyers the Navy plans to equip with SeaRAM/RAM Block 2 missile system. The ship is set to take the capability on an upcoming deployment and a second destroyer (USS *Carney*) is now in the process of having the RAM/Gatling gun combo installed.

Lasers may represent the future of close-in ship defense but the interest in the SeaRAM.Block 2 expressed by a number of Middle Eastern countries confirms that the latest Rolling Airframe Missile will be part of the ship defense equation for decades to come.



SeaRAM

US Navy

Advertisement - Continue Reading Below

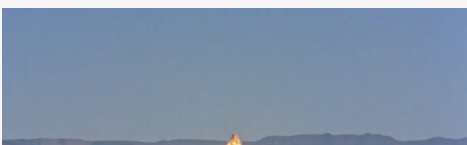
## More From **MILITARY**



**Watch South Korea's Homemade Tank Strut Its Stuff**



**To Thwart U.S. Lasers, China Wants Smokescreens**





**Watch the Smallest Nuclear Explosion With Bobby Kennedy**



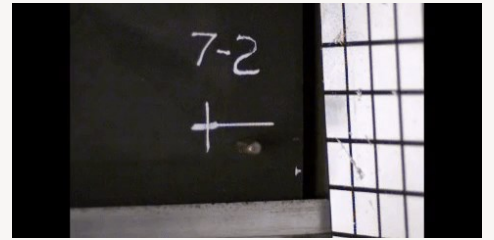
**'Transformers' Without the Robots Is Just Insanely High-Budget Military Porn**



**China Successfully Tests Hypersonic Weapon System**



**Russian Soldier Strolls Through a Gauntlet of Explosions Like It's Nothing**



**Metal Foam Stops an Armor-Piercing Bullet Cold**



**U.S. Military Weapons Lined Up From Small to Large**



**Congress to Air Force: You Can't Retire the A-10 Until the F-35 Proves It's Better**



**The Best Radio Antenna Is One That's a Tank**

## EVO PDF Tools Demo

MILITARY

NAVAL VESSELS

THE NAVY'S AIR DEFENSE MISSILE WILL BECOME A SUPERSONIC SHIP KILLER

PHALANX: THE U.S. NAVY'S LAST-DITCH AUTOMATED AIR DEFENSE SYSTEM

LOCKHEED, AUSSIES FIGHT FOR NAVY'S BEACHHEAD SHIP CONTRACT

WATCH THE NAVY'S NEWEST LITTORAL COMBAT SHIP ABSOLUTELY TEAR IT UP AT TOP SPEED

NAVY'S NEWEST SHIP HAS TROUBLE FENDING OFF TINY BOATS

UNDER-THE-RADAR PROGRESS AT MISSILE DEFENSE AGENCY



## MORE FROM MILITARY

### POPULAR MECHANICS



Newsletter  
Press Room  
About Our Ads

Give a Gift  
Why Did I Get This Ad?

Digital Editions  
Contact Us  
Customer Service

Events & Promotions  
Product Reviews

About Us  
Community Guidelines  
Subscribe

Giveaways

Media Kit  
Advertise Online  
Other Hearst Subscriptions  
Being Green

**HEARST** *men's group*

A PART OF HEARST DIGITAL MEDIA

©2016 Hearst Communications, Inc. All Rights Reserved.

[Privacy Policy](#) [Your California Privacy Rights](#) [Terms of Use](#) [Site Map](#)