



**RESETTING MISSILE DEFENSES:
Setting the Matter Straight**

**By Captain George V. Galdorisi, USN (Retired)
and Scott C. Truver, Ph.D.**

We print below an exchange between George Galdorisi, Scott Truver, and James Jay Carafano stimulated by Carafano's earlier FPRI E-Note "Resetting Missile Defense," which can be accessed at:

<http://www.fpri.org/enotes/201104.carafano.missiledefense.html>

Captain George Galdorisi (U.S. Navy retired) is Director of the Corporate Strategy Group at SPAWAR Systems Center Pacific. Prior to joining the Center he completed a 30 year career as a naval aviator, including four command tours. As Commanding Officer of HSL-43, he fielded LAMPS detachments on the Navy's first Aegis cruisers, and his involvement in Aegis and Aegis BMD has followed him to his current job where he has written extensively on Aegis BMD for professional journals in the United States, Australia and the United Kingdom.

Dr. Scott Truver is Director, National Security Programs, at Gryphon Technologies LC. Since 1972 he has participated in numerous studies and assessments for government and private industry, and assisted in the development of Navy, Marine Corps and Coast Guard strategy policy and doctrinal papers.

James Carafano's April 20, 2011 commentary, "[Resetting Missile Defenses](#)" is breathtaking in scope as it moves from missile defense, to the overall defense budget, to prescriptions regarding government-wide spending and national priorities. While there is much in his piece we agree with—particularly the importance of ballistic missile defense to the United States and key allies—some of his remarks fly in the face of the current realities regarding one aspect of the National Ballistic Missile Defense System (BMDS), Aegis BMD.

That said, we agree with him when he acknowledges, "The Aegis sea-based missile defense with Standard Missile 3 (SM-3) interceptors provide the U.S. with the most promising opportunities to remain protected in the face of the evolving threat" and calls for producing more SM-3 interceptors. But he loses his technical bearings as he bemoans the demise of the Bush Administration's "Third Site" plan for European missile defense and denigrates the Obama Administration's Phased Adaptive Approach (PAA). In arguing for a return to the original Bush Administration plan that "would have been built with proven radars and interceptors," instead of an Obama plan, which "requires new missile technologies that have yet to be developed and expects them to be fielded on a very ambitious timeline," he is just flat wrong and is playing fast and loose with the facts.

In that, he ignores one of the linchpin standards he sets: the need to provide cost-effective ballistic missile defense on a realistic timeline. By design, Aegis BMD takes maximum advantage of more than \$80 billion of investments in the sensors, weapons, command-and-control systems, ships and facilities that comprise the Aegis weapon system. Each expansion of the Aegis capabilities—including its adaptation to the BMD mission—has been rigorously tested, and the system has proven effective time and again.

Beginning in the early 1960s, when Aegis was first conceived—and throughout nearly two decades of development that led to the commissioning of the first Aegis cruiser in 1983—Navy planners structured the Aegis system with the potential to take on future missions. Under the stewardship of visionary but demanding program managers like the late Rear Admiral Wayne E. Meyer, the system had an overarching imperative to "build-a-little...test-a-little...learn-a-lot" as the way to insert revolutionary capabilities into the fleet in an evolutionary manner.

The success of Aegis BMD to date thus is not surprising. Much of this success is reflected in and can be attributed to the robust nine-year test program, involving 25 at-sea live-firings between January 2002 and early 2011 with 22 hits—19 for 22 with the SM-3 missile. Not bad for a program that, until recently, accounted for only 10% of annual MDA budgets. With the Navy's string of successes, MDA has now boosted ABMD spending to about a quarter of its total funding.

Aegis BMD's accomplishments are even more impressive in light of the complex technical challenges that all BMD systems must overcome. For example, the Terminal High-Altitude Area Defense (THAAD) system went zero-for-six during the 1990s before achieving two hits. Then, after a five-year hiatus and redesign, the system has had an eight-for-eight record. Likewise, the Ground-based Midcourse Defense (GMD) system has had eight successful intercepts in 15 attempts, but the last two tests in January and December 2010, were failures. This performance was behind the MDA decision last February to restructure the GMD test program. Efforts are *still* underway to understand why the system failed in two consecutive flight tests.

Dr. Carafano's comments ignore the repeated successes of the Aegis BMD component of the national BMDS. Most recently, on April 15 the Missile Defense Agency conducted the first-ever "launch-on-remote" test of the Aegis BMD system against an intermediate-range "separating target"—a warhead separating from its booster missile. The Flight Test Mission (FTM)-15 featured an Aegis BMD-equipped ship firing a Standard Missile-3 Block IA missile in response to remote sensor data provided by a forward-based radar.

The FTM-15 test featured a standard Aegis BMD system installed in the guided-missile destroyer USS *O'Kane* (DDG-77) and pitted for the first time an in-service SM-3 Block IA missile against an intermediate-range (1,800-3,400 miles) modified Trident ballistic missile target. This test was well beyond Aegis BMD's original design, which since the early 1990s has focused on short- and medium-range threats.

Importantly, FTM-15 used technologies and systems that are at sea and in service *today*. There were no changes to *O'Kane's* BMD suite for the test. And, the success unveiled new possibilities for Aegis BMD using technologies and systems available today. What's also important about the FTM-15 launch/engage-on-remote concept is that it linked the ship to remote sensor data to increase the coverage area and responsiveness. Once this capability is fully developed, the interceptors—no longer constrained by the range of the Aegis radar to detect an incoming missile – can be launched sooner and fly farther.

Aegis BMD's continuing test successes and the potential for further improvements makes the Phased Adaptive Approach's focus on Aegis all the more understandable. The first phase of the PAA focuses on existing sea-based Aegis missile defense ships and radars in southern Europe to defend against short/medium-range ballistic missiles. That has already happened. In March, the Navy deployed the Aegis cruiser USS *Monterey* (CG-61), armed with SM-3 Block IA missiles, to European waters. In 2015, Aegis BMD capabilities will migrate to a land-based "Aegis Ashore" site.

With this successful test of the SM-3 Block IA missile, the Navy will now focus its attention on the first firing of the SM3 block IB from the USS *Lake Erie* using the next upgrade of the Aegis BMD weapon system, an initial test of the PAA Phase 2 architecture due for deployment in 2015. The focus of FTM-16 and subsequent tests will be on the SM-3 Block IB, the next-generation sea-based missile spiral upgrade. These engineering upgrades have already undergone laboratory and ground tests, and flight-testing of the SM-3 Block IB missile is scheduled for this year. Aegis BMD in 2010 began sea trials Aegis BMD 4.0.1, the next-generation system that will fire the SM-3 Block IB missile. Fleet deployment could begin soon thereafter—roughly 18-24 months ahead of the test/deploy schedule defined by the Phased Adaptive Approach.

Additionally, as noted in the Missile Defense Agency's *Aegis Ballistic Missile Defense Program Review 2011*, "The PAA for BMD in Europe will leverage several elements of the BMDS, including forward-deployed sensors as well as sea- and land-based variants of the SM-3 interceptor. Evolutionary upgrades to the SM-3 Standard Missile and sensors, combined with improvements to command and control infrastructure, provide capability to the warfighter to perform an increasingly complex and critical regional and homeland-defense mission."

At the current stage of the PAA, the Aegis/SM-3 combination does not yet have the ability to perform boost-phase intercept intercontinental ballistic missiles that can threaten U.S. territory, a point that clearly concerns Dr. Carafano. The Navy and MDA also are moving methodically toward that goal, however, with the SM-3 Block II upgrades that are currently in work. Dr. Carafano may perceive this approach as overly "ambitious," but this upgrade process incorporates the same "build-test-learn" philosophy that has served Aegis and the nation so well in the past.

Moving forward, MDA plans call for the Navy to increase the number of Aegis BMD-capable ships from the 21 today, to 27 by 2012, to 38 ships by 2015, and as many as 60 ships by 2024, in addition to "Aegis Ashore." Concurrently, U.S. friends and allies continue Aegis shipbuilding as well as Aegis BMD installations. The United States will deploy SM-3 interceptors using the sea-based Aegis BMD system, and then deploy improved SM-3s in 2015 on both ships and land as part of the PAA. "Aegis Ashore" will deploy dozens of SM-3 missiles at shore sites, with more onboard Navy BMD ships.

No one system can perform the entire gamut of ballistic missile defense missions, but it is undeniable that Aegis BMD has

become a key pillar of the U.S. national BMDS. The system has earned this position through proven performance and processes, a fact Dr. Carafano missed.

JAMES JAY CARAFANO REPLIES

Dr. James Jay Carafano is the Deputy Director of The Kathryn and Shelby Cullom Davis Institute for International Studies and is Director of the Douglas and Sarah Allison Center for Foreign Policy Studies at The Heritage Foundation.

Captain George V. Galdorisi and Dr. Scott C. Truver's critique of my April 2011 commentary "Resetting Missile Defenses" wrongly interprets my criticism of the Obama Administration's Phased Adaptive Approach (PAA) for missile defense as an attack on the Aegis-based missile defense program. The PAA is much broader than the Aegis program and includes a variety of errors of both commission and omission. I recognize that Aegis is making the fastest progress of all the U.S. ballistic missile defense systems, especially in the view of the most recent successful "launch-on-remote" test against an intermediate-range target missile.

In my view, the PAA needlessly holds back the progress on the broader missile defense program, including to a lesser degree the Aegis ballistic missile defense system. Starting with the broader program, the Obama Administration's policy is to subordinate missile defense to its arms control agenda. This was made clear by its successful fight against a proposed amendment in the Senate to the New START arms control treaty with Russia to strip out of the treaty's preamble sweeping, though not precisely defined, restrictions on missile defense. This is why the Administration moved to terminate the so-called Third Site missile defense deployments in the Czech Republic and Poland. Second, the policy makes it clear that the missile defense program will not be permitted to achieve capabilities that would permit the intercept of Chinese and Russian missiles. The Clinton Administration's policy to establish such a "demarcation" in missile defense capabilities was rejected by Congress in the 1990s for good reason. It would have required "dumbing down" missile defense capabilities. Finally, the PAA omits any commitment to deploy missile defense interceptors in space.

Turning to the Aegis program in particular, the PAA even serves to restrict unnecessarily progress here. Specifically, the PAA structures the Aegis missile defense program so that the system will not achieve a capability to counter long-range missiles until 2020. This is because it seeks to provide this capability only with the deployment of the untested Block II-B version of the Standard Missile 3. It is not necessary to wait for the deployment of the Block II-B. With a number of narrow modifications, including in command and control arrangements and systems, the tested Block I-A version of the interceptor could be demonstrated to perform intercepts against long-range missiles long before 2020.

The fact is that I am strongly committed to making the Aegis missile defense program as effective as possible as soon as possible. This commitment, however, is in no way inconsistent with a missile defense policy that permits more rapid advancements than the Obama Administration's PAA. This includes the simultaneous pursuit of ground-based and space-based systems.

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