

Why an East Coast Missile Defense Does Not Make Sense

To add capability to intercept a future ballistic missile threat from Iran, missile defense advocates in Congress have tried to compel the Pentagon to build a new interceptor deployment site for the Ground-based Midcourse Defense (GMD) system in the eastern United States. Such a site would host up to 60 interceptors in silos, and would be in addition to the two existing GMD interceptor sites on the West Coast (MDA 2014). It would cost at least \$3.6 billion to build and operate over the first five years. To this end, Congress has attempted to add funding to the defense budget each year since 2012 for a Continental Interceptor Site (CIS). Congress has required the Pentagon to study potential sites and mandated it identify the preferred one. The CIS study concluded in 2016, with the results to be released in early 2017.

The Pentagon has not included a third site in its budget requests nor has it made a decision that a new site is desirable. The Missile Defense Agency (MDA) has stated repeatedly that the current GMD system provides defensive coverage for the entire homeland against limited long-range ballistic missile attacks from North Korea and projected future threats from Iran. At present, the Ground-based Midcourse Defense (GMD) system has interceptors fielded in two locations, Fort Greely, Alaska and Vandenberg Air Force Base, California. Current plans are to place Ground Based Interceptors (GBI) in 44 existing GMD missile silos at these fields by 2017. To be built under Congress' desired compressed schedule, a new site would use similar technology. However, the MDA continues to struggle to get the GMD technology working. Additionally, the MDA's leadership has repeatedly stated that it has higher priorities for its next dollar, including improving the system's reliability and its ability to identify the attacking warhead from among decoys.

The Problems

Building the site is a poor idea for several reasons. First, this project is exclusively a Congressional add-on. It does not originate from a rigorous study of what missile defense improvements are most useful or cost-effective. The Pentagon has never asked for money to build the CIS site, but nevertheless Congress continues to add it.

Second, the MDA has bigger fish to fry. It continues to struggle to get the basic GMD technology to work reliably. In 2014, the Pentagon's highest testing official assessed that the

GMD has not yet demonstrated real-world capability (DOT&E 2015). Simply expanding unproven technology is not a path to an effective defense. Missile defense officials have repeatedly stated that the money could be better spent on other improvements.

If I had one more dollar to do ballistic missile defense, I wouldn't put it against the East Coast missile site.

— Admiral William Gortney

Third, an additional site does not by itself significantly improve the effectiveness of the GMD system, even if the interceptor reliability were improved. At best, as part of a shoot-look-shoot strategy (which would need to be supported by building additional sensors) it could improve the system's *efficiency*, allowing fewer interceptors to be used against a given target. However, such a strategy provides little benefit under the likely conditions: the warhead will be accompanied by decoys and other countermeasures, which will simply overwhelm the defenses and deplete the interceptor inventory even with the site's additional interceptors.

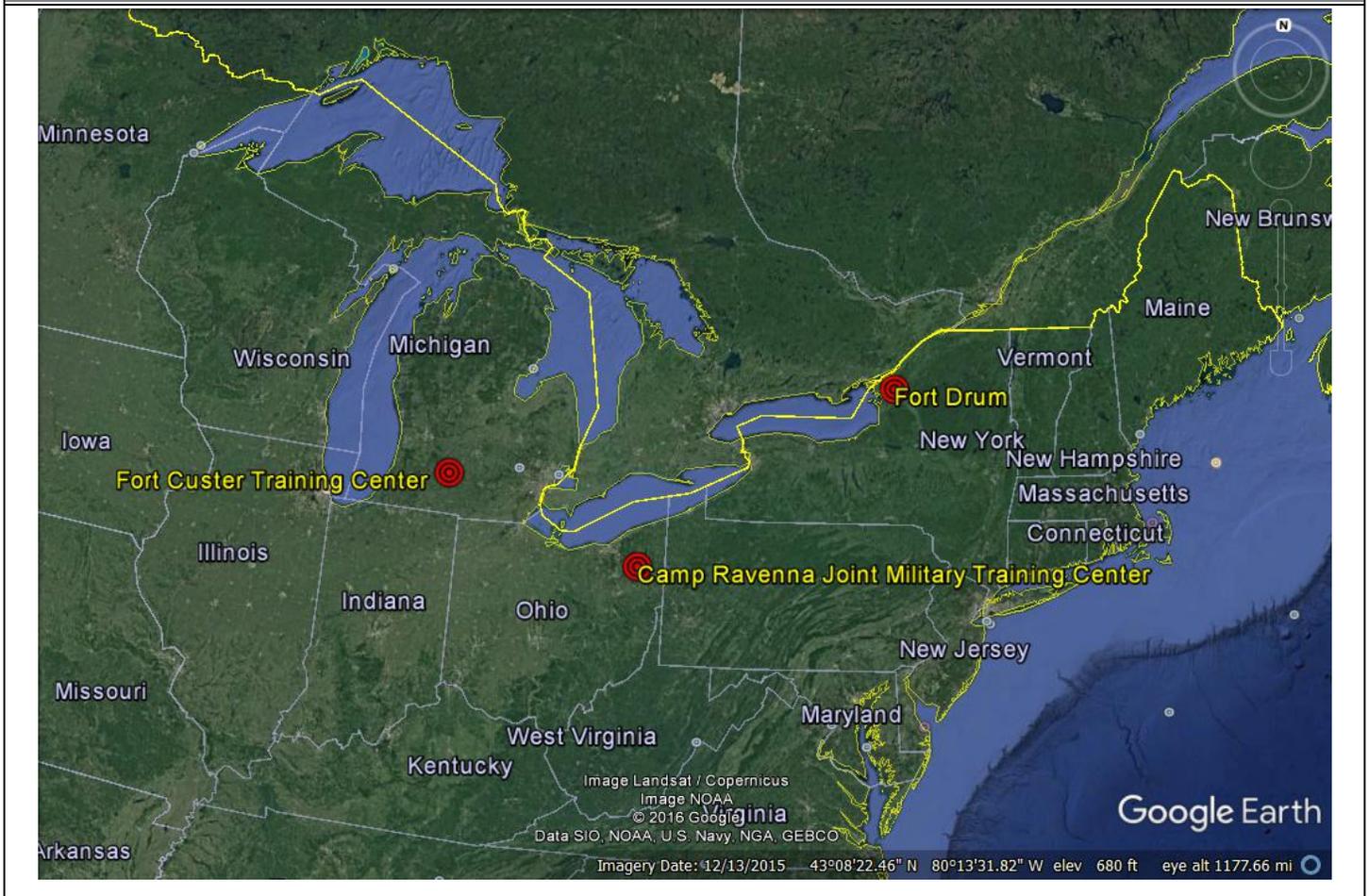
Finally, it would be expensive. A new site would cost at least \$3.6 billion to build (though not at full capacity) and operate over the first five years (CBO 2012).

History

In April 2012, the Subcommittee for Strategic Forces of the House Committee on Armed Services inserted language into the defense authorization bill that tasked the MDA to conduct a study to select an additional site for missile defense interceptors in the continental United States. It mandated the site to be operational by 2015 and earmarked \$100 million for its construction.

This project was not part of the Pentagon's budget nor was it in the Senate version of the bill. In the defense bill's final version, the 2015 timeline and \$100 million were eliminated, but \$30 million was added to fund a site study. The Pentagon demonstrated no enthusiasm for a third site, and did not ask for any money for it in the next year's budget.

FIGURE 1. Proposed New Sites in Red Circles



In March 2013, the House Armed Services Committee Chairman Rep. Buck McKeon (R-CA) and 18 other Republicans sent a letter to Defense Secretary Chuck Hagel, urging him to request “not less than \$250 million” for an East Coast site in the Pentagon’s pending budget submission (Capaccio 2013a). The next month, 16 Republicans on the House Armed Services Committee sent a letter to the chair of the Subcommittee on Defense of the House Committee on Appropriations, urging the chair to appropriate \$250 million for the new site (Turner 2013a).

The Director of the MDA, Vice Admiral James Syring, when asked during his budget testimony, stated the \$250 million for a third site would not be of use to him at that time (Syring 2013). In a letter to Senator Levin, he stated that “There is no validated military requirement to deploy an East

Coast missile defense site” (Capaccio 2013b). And further, he argued that more cost-effective and less expensive alternatives were available to improve the GMD, including improving sensors and the system’s discrimination capabilities. Despite this testimony, the House added \$140 million to the defense budget with a requirement that the Pentagon build a site by 2018, but the final authorization bill only provided \$20 million to support the site studies.

In September 2013, the Pentagon announced the locations of five candidate sites. The next month, 16 HASC Republicans sent a letter to the chair of the House Appropriations Subcommittee on Defense, urging him to appropriate \$250 million for the site, and Rep. Mike Turner, the chair of the HASC Strategic Forces subcommittee, wrote a letter to President Obama urging him to move ahead on the third site (Turner 2013b).

The MDA and combatant commanders continued to state that the current interceptor sites are adequate, that they have other priorities, and are concerned that funding the East Coast site could adversely affect other efforts. At an April 2015 press briefing, Navy Admiral William Gortney, commander of the North American Aerospace Defense Command and US Northern Command is reported as stating (Gruss 2015):

If I had one more dollar to do ballistic missile defense, I wouldn't put it against the East Coast missile site; I'd put it against those technologies that allow us to get to the correct side of the cost curve in the ballistic missile defense.

In May of that year, Vice Chairman of the Joint Chiefs Admiral Winnefeld stated his concerns (Gruss 2015):

A decision to construct the new site would come at significant material development and service sustainment cost. So we need to be careful.

Despite their feedback, the 2016 defense budget included two Congressional adds: \$30 million for the development of a CIS and a requirement that 30 days after the completion of the draft environmental impact statements, the Director of the Missile Defense Agency must designate a preferred site and the Secretary of Defense must submit a plan to expedite deployment of the site by two years.

What would be built and what would it cost?

A CIS site would host up to 60 interceptors and be built over a period of five years. The Congressional Budget Office estimated it would cost \$3.6 billion to build the site and buy 20 interceptors. Fielding the full 60 interceptors would add at least \$2.6 billion. The Pentagon looked at five candidate sites. Three were still under consideration by mid-2016. These are (Fig.1):

Fort Drum, New York
Camp Ravenna Joint Military Training Center, Ohio
Fort Custer Training Center, Michigan

Building a new site in the next few years would require relying on existing interceptor technology. However, the Pentagon has struggled to get the system to work. Indeed, the system has failed to intercept test missiles in nine of 17 attempts since 1999, even under heavily simplified and controlled conditions. After \$40 billion invested and years of effort, the Pentagon's highest testing official reports that the GMD system has yet to demonstrate the capability to defend against a real-world threat (Grego, Lewis, and Wright 2016).

The Rationale

The Administration's 2010 Ballistic Missile Defense Review did not suggest the need for such a site, saying GMD interceptors currently deployed in Alaska and California are enough to engage Iranian long-range missiles. While the 2012 National Academies of Science missile defense report recommended an additional site, it was as part of an entirely new architecture for ground-based midcourse missile defense (called GMD-E) which also included new interceptors, sensors, and a new concept of operations (NRC 2012). However, deploying interceptors at a new site could offer an advantage only if the Pentagon can solve the countermeasures problem.

The Pentagon has not initiated the push for the new site. What is the rationale given by House members and other supporters? It appears to be threefold: 1) to provide protection from long-range Iranian ballistic missiles that might materialize in the future for parts of the United States not adequately covered by the two current GBI sites, 2) to provide increased opportunity for a shoot-look-shoot strategy, or 3) to simply add more interceptors.

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While Iran is "politically" east of the United States, geometrically the shortest path from Iran to the continental United States is north on a great circle route.

The Missile Defense Agency has stated repeatedly that the entire continental United States is protected by the interceptors at Fort Greely, Alaska and Vandenberg Air Force Base in California. Setting aside the effectiveness of the interceptors, the kinematics—the ability of an interceptor to get to the right place at the right time—permit an interceptor with a seven km/s burnout speed to reach an Iranian missile launched at any part of the continental United States, even if the trajectory were lofted or depressed. This nominal burnout speed is likely slower than the actual GBI speed, meaning that the GBIs actually have greater reach than that indicated by a seven km/s speed.

SHOOT-LOOK-SHOOT

Another reason proponents give for an additional GMD site in the eastern United States is to increase the amount of time during target missiles' flight that the GMD system can engage the enemy missiles—the "battlespace" — compared to the time allowed for interceptors launched from the Alaska site. Increased time can help compensate for unanticipated delays, but the primary motivation appears to be supporting a shoot-

look-shoot strategy: the system can take a shot, look to see if the incoming missiles were hit, and then shoot again if they weren't. Because the reliability of the interceptors is low, current strategy calls for multiple (likely four) interceptors to be sent to intercept each potential target before knowing the outcome of the first intercept attempt. Because using multiple interceptors per target could rapidly deplete the interceptor inventory, especially in the presence of credible decoys that the GMD determines must be engaged, a shoot-look-shoot strategy is advantageous.

A shoot-look-shoot would not make the GMD more *effective* than the current strategy of shoot-shoot-shoot-shoot, as long as there is sufficient interceptor inventory. In that case, shoot-look-shoot could conserve interceptors and make the system more *efficient*, using to use fewer interceptors against each target. This requires both that the United States has sensors in place for the "look" part of the strategy and sufficient confidence in the interceptors to want to conserve them rather than launch them all.

However, this strategy to improve efficiency improves the outcome only marginally under the conditions that are much more likely: the incoming warhead is accompanied by credible decoys that are difficult or impossible for the defense to distinguish from the warhead. In that case, there could be many more targets than the interceptor inventory could handle and the defense would be overwhelmed with or without shoot-look-shoot.

To reduce the likelihood of such a defeat, the Director of the Missile Defense Agency identified more cost-effective alternatives to strengthen the US missile defense system, including improving the system's sensors and its ability to discriminate targets from decoys.

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