

Why a Third Missile Defense Site Does Not Make Sense

The United States currently deploys a limited system, the Ground-based Midcourse Defense (GMD), to defend the US homeland against long-range missile attacks, using interceptors based in California and Alaska. Missile defense advocates in Congress have tried to compel the Pentagon to build a third interceptor deployment site in the eastern half of the United States, but have been unable to overcome the lack of support from the Missile Defense Agency (MDA). Congress instead settled for requiring the Pentagon to study potential sites and mandated it identify the preferred one. The study concluded in 2016, with the results to be released in early 2017.

For years, 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 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 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.

The Problems

Building a third site is not an effective approach to defending the United States and is problematic for several reasons. First, the idea is an unsupported congressional add-on, rather than a GMD system requirement. It is not driven by a rigorous study of what missile defense improvements are most useful or cost-effective. This is not a prudent way to develop military systems. The Pentagon has never asked for money to build the third site.

As missile defense officials have repeatedly stated, the money could be better spent on other improvements in system, including augmenting the GMD system's sensors and improving the interceptors' reliability. The MDA continues to struggle to get the basic GMD technology to work reliably and under realistic conditions. 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.

Third, as long as sufficient interceptor inventory exists, an additional site does not significantly improve the effectiveness of the GMD system, even if the interceptor reliability were improved. By providing more time, it could improve the system's *efficiency*, allowing fewer interceptors to be used against a given target. However, this does not address missile defense's vulnerability to decoys and other countermeasures. An attacker could simply overwhelm the defenses and deplete the interceptor inventory even with the site's additional interceptors.

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

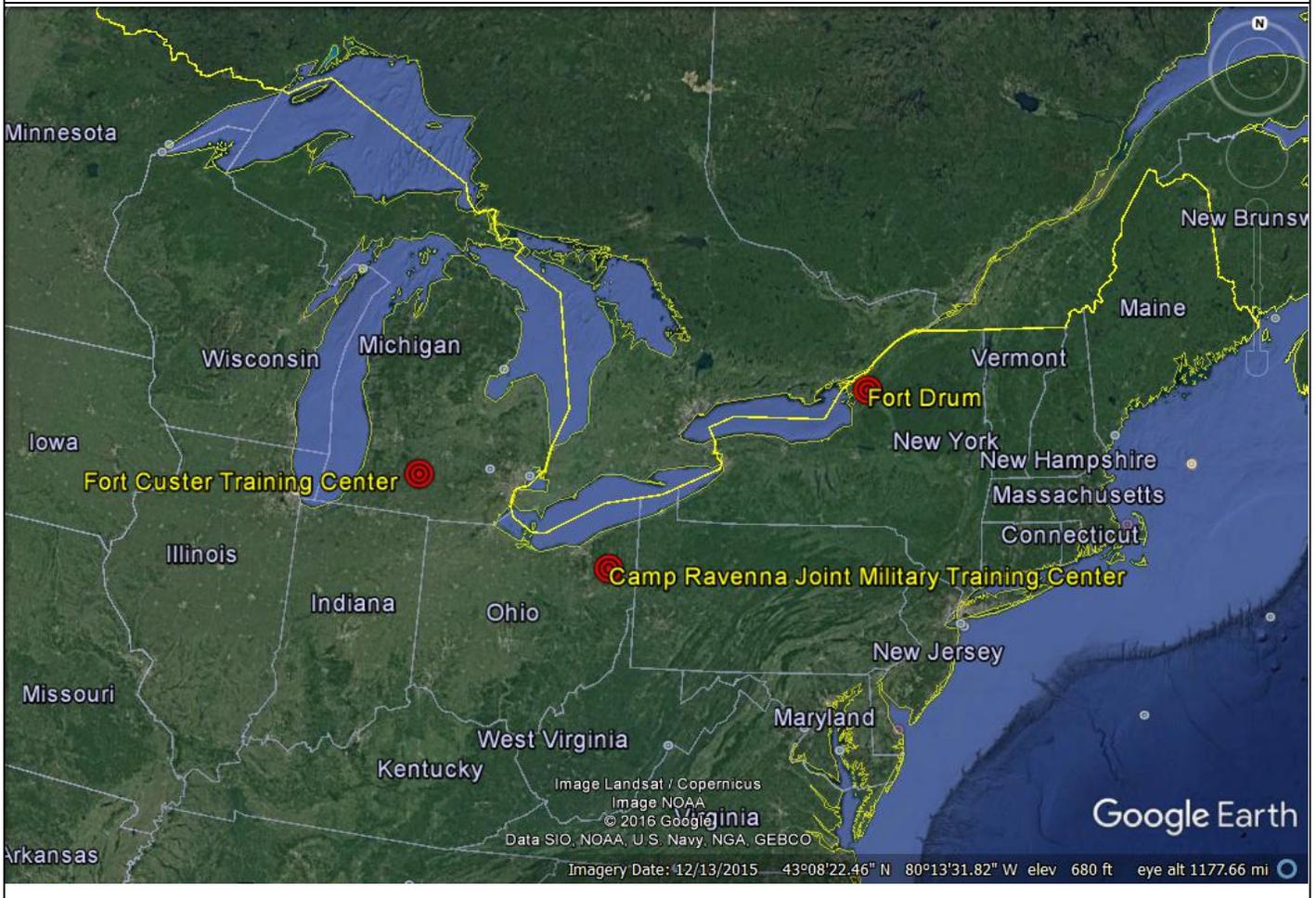
Finally, a third site would be expensive. The Congressional Budget Office estimated that building the site, acquiring and deploying 20 interceptors and operating the base over the first five years would require at least \$3.6 billion (CBO 2012).

The Supporter's Rationale

In 2012, a National Academy of Sciences (NAS) missile defense report recommended an additional site as part of an entirely new architecture for ground-based midcourse missile defense (called GMD-E) (NRC 2012). Supporters of the third site cite this report as a basis for their effort without the important context that the GMD-E system also included new interceptors, sensors, and a new concept of operations.

More broadly, House members and other supporters of a third site offer these three rationales: 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.

FIGURE 1. Proposed New Sites in Red Circles



COVERAGE FOR THE EASTERN AND SOUTHERN US

While Iran is east of the United States on the globe, the shortest geometrical path from Iran to the continental United States is north to south 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 7 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 interceptor’s speed,

meaning that the interceptors actually have greater reach than that indicated by a 7 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 fire interceptors, 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 as many as four interceptors to be directed at 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 fewer interceptors against each target. This requires 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 than the proposed third site or a shoot-look-shoot strategy, including improving the system’s sensors and its ability to discriminate targets from decoys.

Congressional Push, DOD Opposition

The House Armed Services Committee (HASC) is the primary advocate for the proposed third site, while the House appropriations committee and the Senate are less enthusiastic, and the Pentagon and MDA have not supported spending money on it. In April 2012, the HASC Strategic Forces Subcommittee inserted language into the defense authorization bill and 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 in the Pentagon’s budget request to Congress, nor was it in the Senate version of the bill. In the version finally approved by Congress, the 2015 timeline and \$100 million were eliminated, but \$30 million was included to fund a site study.

The Pentagon did not ask for any money for the third site in the next year’s budget, despite pressure to do so. In March 2013, the House Armed Services Committee Chairman Rep. Buck McKeon (R-CA) and 18 other Republicans sent a letter to Secretary of Defense Chuck Hagel, urging him to request “not less than \$250 million” for a third site in the Pentagon’s pending budget submission (Capaccio 2013a). The next month, 16 Republicans on the HASC 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, testifying before Congress, 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 that they are concerned that funding the third 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 to study the third site options, including an environmental impact review, 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?

The third 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 initially looked at five candidate sites. By mid-2106, three were still under consideration. 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. Unfortunately, the Pentagon has struggled to get the current interceptors to work. Indeed, in tests, the GMD system has failed to intercept the target missile in nine of 17 attempts since 1999. And that modest success rate was achieved in tests that were heavily scripted and under 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).

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