

WebMemo



Published by The Heritage Foundation

No. 1664
October 16, 2007

Criticizing Success? The Test of the Long-Range Missile Defense System

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On September 28, 2007, some 75 miles into space over the Pacific Ocean, a kill vehicle from America's missile defense system destroyed the mock warhead of a long-range missile. This test of the Ground-Based Midcourse Defense (GMD) system provides further evidence that its "hit-to-kill" technology is effective. The GMD interceptor destroyed the mock warhead by the force of collision and did not use an explosive warhead of any kind.

Hit-to-kill technology is common to a variety of missile defense interceptors now in either development or deployment. In addition to the GMD system, the technology is used in the Navy's Standard Missile-3, Terminal High Altitude Area Defense (THAAD), and Patriot PAC-3 interceptors. Roughly 80 percent of recent tests across all four of these programs have been successful.

Yet, critics continue to argue that missile defense will prove ineffective. Congress should reject arguments that cloak policy preference in technical analysis and should protect Americans with a policy of designing and building the most effective missile defense system possible.

Technical Arguments Driven by an Antipathy to Missile Defense. At different times and for different reasons, an element of the scientific and engineering communities has argued against the adoption of a missile defense system on technical grounds. Most prominent among these criticisms was a 2000 report from the Union of Concerned Scientists criticizing the technical feasibility of the GMD system.¹

Given the growing confidence in the technology, these scientists and engineers now appear to be

changing their tune. In fact, one group has charged the Missile Defense Agency (MDA) of the Department of Defense with understating the capabilities of the GMD interceptors that may be placed in Poland.² The MDA has defended its assertion that the system will be unable to intercept Russian long-range missiles launched at the United States.³

Implied in the critics' argument is that it is inappropriate or illegitimate for the United States to field missile defense systems that are too effective, particularly if they possess even a limited capability to down Russian missiles. In other words, these scientists and engineers have argued against the GMD system both because it is ineffective and because it is too effective. Given these contradictory analyses, it is reasonable to conclude that these scientists and engineers are cloaking a policy argument against missile defense in technical analysis.

No Threat to Russia. It should be expected that, sooner or later, the U.S. missile defense system will have some capability to shoot down Russian missiles. As countries such as North Korea and Iran continue to increase the ranges and velocities of their missiles, an effective defense against these states will have some inherent capability against Russian missiles. It cannot be otherwise.

This paper, in its entirety, can be found at:
www.heritage.org/Research/HomelandDefense/wm1664.cfm

Produced by the Douglas and Sarah Allison
Center for Foreign Policy Studies

Published by The Heritage Foundation
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Washington, DC 20002-4999
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Missile defense opponents are claiming that the system is a threat to Russia. Leaving aside the fact that it is not a technical argument, there is no basis for that assertion. The Bush Administration has based its missile defense policy on the premise that the Cold War is over, Russia is not the former Soviet Union, and Russia is not an adversary of the United States.⁴ The policy's goal is simple and straightforward: The missile defense system is being designed to protect America, its forces deployed abroad, and its allies against attack. Defending the nation against attack can hardly be described as a threatening policy.

Optimal Basing Modes and Increased Interceptor Velocities. Given the increasing confidence in the basic hit-to-kill technology, the focus needs to turn to devising the most effective basing mode for missile defense interceptors and increasing the velocity of the interceptors.

Today, ground-based interceptors dominate the overall missile defense program. However, ground-based interceptors are not the best basing mode under all circumstances. Sea-based and particularly space-based interceptors offer greater mobility and coverage. These modes also provide the best options for intercepting attacking ballistic missiles shortly after launch, in the boost- or ascent-phase of flight. The Independent Working Group has called for rebalancing the overall missile defense program to give greater emphasis to sea-based and space-based interceptors.⁵

The greater the velocity of the interceptors, the more effective they will be in countering all missiles—long-range missiles in particular. There are two basic approaches to increasing the velocity of hit-to-kill interceptors. The first is to increase the size and power of booster rockets. The MDA has

emphasized this approach. The alternative is to design smaller and lighter kill vehicles. Such technology could become available by reviving the designs for the Advanced Technology Kill Vehicle (ATKV) for sea-based interceptors and the Brilliant Pebbles space-based interceptor. Both were developed in the late 1980s and early 1990s. The Independent Working Group recommends reviving both of these programs and using them to advance the capabilities of the sea-based interceptors and moving much more aggressively to develop and field space-based interceptors.⁶

Conclusion. Congress should pay little heed to scientists and engineers who cloak a policy preference in technical analysis. Technical analysis should serve to advance scientific knowledge and technology, not the scientist's policy preferences.

Furthermore, the policy debate should be *informed* by technical analysis but not *driven* by it. A policy that imposes artificial limits on missile defense technology will result in an inferior defense. Congress should reject that idea on policy grounds and not get drawn into a technical debate over exactly which kind of missile defense system may or may not be deemed capable of downing Russian missiles. Rather, Congress will best serve the national interest by adopting a simple declarative policy: that the Department of Defense design and field the most effective missile defense possible. Clearly, it is what the American people expect Congress to do in their defense.

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