Missile Defense 2020

Next Steps for Defending the Homeland

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publié le 15/03/2018

Histoire & stratégie

Information for this study was compiled using a wide review of publicly available material on homeland missile defense issues. In particular, presentations from Department of Defense and Missile Defense Agency officials, and annual reports of the Director of Operational Test and Evaluation, were preferred when discrepancies emerged between sources. The study team also conducted extensive interviews and visited Fort Greely, Alaska.

INTRODUCTION

In policy pronouncements over the last two administrations, the protection of the American homeland was regularly identified as the first priority of U.S. missile defense efforts. This prioritization was found, for instance, in the 2010 Ballistic Missile Defense Review, National Security Presidential Directive-23 of 2002, and numerous statements by sen ior officials. Defending U.S. forces, allies, and other partners has also long been recognized as import ant, but the formal prioritization of homeland missile defense and part icu l ar programmatic efforts both represent points of relative continuity.

Significant effort has been devoted to the development and deployment of the defenses now protecting the United States, stretching back to the beginnings of the National Missile Defense (NMD) program in 1996 and well before. Variations in programmatic emphasis and budgets, however, have not always supported the prioritization suggested in expressions of policy. At times, long-range missile threats to the homeland have been assessed as more urgent; at other times, regional missile defenses have received more emphasis. There is no doubt, however, that missile defenses of various kinds now represent an established part of U.S. national security.

Missile defense has been described as an evolving effort, with no final architecture. Each of the past five administrations has characterized a national missile defense program in terms of ongoing, phased, or block development. Since the U.S. withdrawal from the Anti-

Ballistic Missile (ABM) Treaty in 2002, both the George W. Bush and Barack Obama administrations have opposed any legally binding restrictions on the numbers, locations, and capabilities of such defenses. Today's capabilities have now matured from a kind of infancy, to initial defensive capabilities, to a kind of adolescence— but have far to go before they might be described as mature or robust.

Homeland missile defense today is provided by the Ground-based Midcourse Defense (GMD) program. GMD and its associated systems span 15 time zones, including interceptors at two locations, seven types of sensors on land, sea, and space, and multiple distributed fire control systems. At the end of 2016, some 36 Ground-based Interceptors (GBIs) were deployed to silos at military bases in Alaska and California, providing a limited defense against long-range missiles from North Korea and potentially Iran. An additional eight interceptors will be added by the end of 2017, for a total of 44.

The challenge of deploying this global architecture in short order involved stitching together preexisting sensors and shooters from a wide array of Cold War–era systems that had not originally been designed for the mission. Over the past 12 years, the United States has since made considerable progress in addressing some inherent limitations. Newly developed or integrated systems now include the Sea-based X-band radar (SBX), upgraded Early Warning Radars, the SPY-1 radar on Aegis missile defense ships, and forward-based TPY-2 radars.

GMD has seen some notable successes, including four consecutive successful intercept tests leading up to President Bush's 2002 deployment decision, and five more since. It has also suffered setbacks, reflecting the complexity of the missile defense challenge, short deployment time frames, a limited testing program, and uneven investments over time. The current system remains burdened with numerous interceptor configurations, older ground system hardware and software, and lower reliability. Many of the qualitative improvements that were planned and expected to follow the initial defensive capability have not yet, in fact, come to pass.

These challenges have been manifest in numerous test failures. Failures are to be expected in any technology development program and much can be learned from them. After three successive intercept failures in 2010 and 2013, GBI deployments were paused while the Missile Defense Agency (MDA) identified the root causes of the failures, fixed them, and prioritized kill vehicle reliability.

These efforts paid off with the "return to intercept" over the Pacific Ocean on June 22, 2014. Facing a complex target with countermeas ures, the test represented the most challenging missile defense intercept yet attempted. Had it been unsuccessful, there might have been political pressure to scrap the program and start a new. Instead, GMD has been reinvigorated. Besides improved confidence in the fielded GBI fleet, work is now under way on a Redesigned Kill Vehicle (RKV) to capitalize on what has been learned, as well as making gradual additions to the global sensor architecture.

The program's positive direction comes none too soon given increased missile activity by North Korea and others. Significant improvements remain under way, most notably with regards to discrimination, kill vehicle reliability, and additional sensors. Defenses fielded thus far may put the United States in an advantageous position relative to previous North Korean threats, but this advantage is unlikely to last. Foreign missile threats have continued to evolve in number, range, sophistication, and survivability...

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Date de parution 13/03/2018

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