Defending against the Middle Eastern Ballistic Missile Threat

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Brief Analysis

The Ballistic Missile Defense Organization (BMDO) has its roots in the Strategic Defense Initiative (SDI) program introduced in 1983 by then-President Ronald Reagan. Ever since, the proliferation of missiles and their use during conflicts (such as the Gulf War) or for political purposes (as in China and Taiwan) have created a new strategic environment. Unfortunately, the fact that several nations in two regional hotspots -- Northeast Asia and the Middle East -- are developing even longer-range missiles suggests that the use of missiles is not likely to decrease in the future.

Within the ballistic missile defense program of the United States, the BMDO is responsible for formulating and allocating the budget for missile defense. It also directs and coordinates the missile defense programs for the army, navy, and air force, while the three branches of the armed forces are responsible for development activities.

The BMDO mission is three-fold: to develop and deliver an affordable missile defense for American military forces and the United States; to create, maintain, and expand interoperability among U.S. forces and with those of America's allies; and to maintain a missile defense technology base for the future.

Theater Missile Defense: The success of theater missile defense (TMD) depends on effective joint and combined forces operations. The United States needs international cooperation for military, strategic, and fiscal reasons. The ballistic missile threat is particularly problematic because of the very broad range of threat capabilities, from penetration aids to the potential arming of missiles with nonconventional warheads. Likewise, ballistic missile defense may serve various purposes: to protect troops, important assets, or entire populations. The awareness of this broad threat spectrum, coupled with the problem of a complex mission space, led missile defense experts to conclude that a "family of systems," rather than one single system, is necessary to cope with the missile problem. Another conclusion was that the importance of joint force operations and interoperability could not be overrated.

The three main TMD approaches are lower-tier, upper-tier, and boost phase intercept.

The lower-tier strategy emphasizes using existing capabilities and building on existing infrastructure to provide an early operational point defense capability. Among the lower tier systems currently under development are the Patriot PAC-3; Navy Area Defense -- based on the existing AEGIS infrastructure and intended for defense of ports and support for forced entry; and the highly mobile MEADS, to protect maneuver forces against both ballistic and cruise missiles.

The upper-tier strategy provides an area defense against longer-range missiles and an additional layer to defend critical areas. Current projects are the Theater High-Altitude Area Defense (THAAD) missile and its navy equivalent, Navy Theater Wide, both projected to be operational by 2007 -- though the Department of Defense currently lacks the money to deploy both systems. Moreover, following five unsuccessful flight tests of THAAD, it remains to be seen whether the system will meet expectations. Navy Theater Wide, although less farther along in its development than THAAD, will probably be more capable, thanks to its ability to intercept outside of the atmosphere.

The boost-phase intercept (BPI) strategy is a complement to the traditional approach to missile defense, in which

Patriots and similar systems intercept incoming missiles in the final few seconds of their flight. Efforts by the United States to develop systems capable of making use of more of the battlespace area face significant obstacles -- including the need to maintain a permanent forward military presence near the threat to increase chances of successful interception in the boost or ascent phase. The BPI approach faces many technical and operational problems, but it will offer the United States many advantages as well. BMDO's BPI effort consists of two components: the airborne laser, and an unmanned aerial vehicle (UAV) concept with air-to-air missiles, pursued jointly with Israel.

National Missile Defense: In January 1999, Secretary of Defense William Cohen announced that $6.6 billion will be spent in the coming years for research and development of a national missile defense (NMD) system -- pending a decision to deploy. The report of the Rumsfeld Commission and, more recently, the successful North Korean Taepo Dong missile test flight gave further impetus to the debate over the need for NMD. The mission of NMD is to defend the United States against a limited ballistic missile threat originating from a rogue nation. With the potential to be deployed by 2005, the NMD system consists of several elements that are being developed -- among them a new ground-based interceptor (GBI); a much improved ground-based radar (GBR); an upgraded early-warning radar (UEWR); as well as a battle management, command, control, and communications system (BM/C3).

The United States has recently conducted fact-finding and siting studies in Nebraska and Alaska, and it has initiated designs for a prototype site. A statement on the impact of NMD on the environment is due in March 2000.

The Missile Defense Environment in the Middle East: In the crisis- and conflict-laden Middle East, the acquisition of ballistic missiles by such states as Iran or Iraq is a particularly serious threat to regional stability. Longer-range missiles such as the Shahab-3 present the United States with two main problems: their higher velocity (as compared to short-range missiles) may challenge or exceed the capability of some defense systems, such as the Patriot; and their greater range compels the United States to defend more territory.

The development and fielding of medium-range ballistic missiles (MRBMs) requires the deployment of an upper-tier system that will extend coverage and can help mitigate the effects of weapons of mass destruction (WMD). In addition to upper-tier systems, the United States has to protect its maneuver forces stationed in forward areas which would more likely be attacked by shorter range missiles. A combination of upper and lower tier systems, therefore, is essential to increase shot opportunities and overall effectiveness.

Israel: As of today, the only missile-defense capability available to the United States is the Patriot PAC-2. As a result, one of the more promising developments in the realm of missile defense is the joint American-Israeli Arrow project. Supported by the United States with $600 million to $700 million over the last ten years, the Arrow has recently undergone a highly successful series of flight tests against a simulated target and is now in its final stage of development.

Israel and the United States envision close TMD interoperability in the future to optimize their operational capabilities. The United States has a very strong interest for the Patriot PAC-3 and Navy Area Defense systems to be capable of operating with Israeli forces. To that end, both countries have established several interoperability fora, the most important of which are the Binational Interoperability Working Group (BIWG) focusing on technical interoperability, and the Policy Advisory Group (PAG) involved in the operational aspects of interoperability.

Gulf Cooperation Council: Washington has embarked on a dialogue with other allies in the Middle East. Recent discussions with the Gulf Cooperation Council (GCC) have attested to stepped-up U.S. efforts to raise awareness among Gulf allies of the need for cooperation toward a regional missile-defense system.

Turkey, Egypt, and Jordan: The United States has held preliminary discussions with Turkey, which is very concerned about the threat posed by the Shahab-3. As a member of NATO, Turkey will be part of the organization's process

toward layered defense acquisition. Formal discussions with Egypt and Jordan on ballistic missile defense have not yet taken place.

This Special Policy Forum Report was prepared by Assaf Moghadam.

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