



Patriot Missile operator adjusts launcher settings during field training (U.S. Air Force/Maeson Elleman)

Silent Watch

The Role of Army Air and Missile Defense

By Michael S. Tucker and Robert W. Lyons

On March 29, 2013, North Korean President Kim Jong Un continued his public provocation and stated that it was time to “settle accounts” and directed his missile units to prepare to strike U.S. mainland and Pacific military bases. The next day North Korea declared it had entered a state of war with South Korea and

had already deployed missile units to the North Korean coast.¹ Roughly 7,000 miles away, these North Korean declarations generated action in the Pentagon and across the Department of Defense (DOD). Officers from the Office of the Secretary of Defense, Joint Staff, and Army were called to assess the situation and suggest

potential solutions. Other key players in the planning process included the 32nd Army Air and Missile Defense Command (AAMDC) and 94th AAMDC teams that perform the missile defense planning, integration, and coordination for theater missile defense operations. The planning resulted in the Secretary of Defense deploying A Battery, 4th Air Defense Artillery (A-4 ADA) Terminal High Altitude Area Defense (THAAD), to Guam. THAAD is a unique and cutting-edge missile defense system that provides persistent defensive

Lieutenant General Michael S. Tucker, USA, is Commander of First Army, Rock Island, Illinois. Colonel Robert W. Lyons, USA, is Chief of Staff, 94th Army Air and Missile Defense Command. When this article was written, Lieutenant General Tucker was serving as Deputy G-3/5/7 Headquarters, Department of the Army (HQDA), and Colonel Lyons was serving as Air and Missile Defense Director, HQDA, G-3/5/7.



Two THAAD interceptors launched during test, which resulted in intercept of one MRBM target by THAAD and one MRBM target by Aegis Ballistic Missile Defense (DOD)

capabilities to defeat a wide range of stressing ballistic missiles in either the exoatmosphere (outer space) or the endoatmosphere. This capability was so new that only two THAAD batteries existed. Though A-4 ADA was maintained at heightened alert status, the order directed the battery to deploy in significantly less time. As a testament to the high degree of proficiency and professionalism of the Soldiers and leaders involved, A Battery, 4th Battalion successfully deployed in 7 days and attained full operational capability in 15 days—weeks ahead of predicted planning cycles.

The effect of the ongoing THAAD deployment to Guam cannot be overstated, as it assures U.S. allies and partners by demonstrating commitment to a country or region. THAAD provides critical persistent ground-based homeland missile defense for Guam and its key civilian and military sites. Additionally, it enables dual-mission *Aegis* ships to perform air and missile defense (AMD) and other critical missions for the geographic combatant commanders. No other

Service has this capability or can achieve this effect. DOD understands that Army AMD remains the cost-effective, persistent solution to address the enduring requirements of the new DOD strategy.² This one event and its effect illustrate both the strategic importance and the increased operational demand for AMD. Chief of Staff of the Army General Raymond T. Odierno stated, “Whether it’s missile defense, whether it’s to build partner capacity, whether it’s to put some small element on the ground to do work or operationally employ it to protect some U.S. interest, that’s what we’re looking to do.”³

Events in North Korea and Syria are only the most recent demonstrations of the critical role AMD plays in today’s strategic environment. The deployments of THAAD to Guam coupled with the Patriot missile system to Turkey further validate the thinking that Army missile defense systems are key strategic (or geopolitical) tools for the geographic combatant commands. Army AMD Soldiers provide an enduring presence to “1) demonstrate U.S. commitment

to a region, 2) create the ability to partner with allies there, and 3) provide a deterrent or calming perspective.”⁴ Additionally, as the wars in Iraq and Afghanistan wind down, the Army and other Services are transitioning from a combat force to a force of deterrence. Army AMD is central to the deterrence mission, providing persistent and credible defensive capability, assuring allies with U.S. presence, and providing operational access for the joint team.

A combination of strategic factors has elevated the importance of Army AMD capability. They include threats that have evolved in capability, complexity, and capacity; a defense strategy and policy that place a high value on an enduring deterrence capability; and an increasing need to maintain joint operational access to distant regions of the world. These strategic factors have increased the operational demand on the Army’s existing AMD force. In the Army’s G-3/5/7, we have a front-row seat to those demand signals through the Global Force Management Board process and other forums. We work with the Army staff, Missile Defense

Agency (MDA), combatant commanders, and others to ensure the Army will continue to provide the capability needed.

It has been more than a year since Army Secretary John McHugh and Chief of Staff General Odierno approved the AMD strategy, which was written to synchronize the stakeholders' efforts in developing the future AMD force. Since then, the Nation and the Army entered a time of sequestration, continuing resolutions, and increasing conflicts around the world. For Army AMD, what should have been a straightforward year of executing the approved strategy has additionally become a year of reacting to ever-increasing demands for AMD in a time of increasingly constrained resources:

The United States faces profound challenges that require strong, agile, and capable military forces whose actions are harmonized with other elements of U.S. national power. Our global responsibilities are significant; we cannot afford to fail. The balance between available resources and our security needs has never been more delicate.⁵

A new set of AMD capabilities is being developed and will significantly change the way Army AMD forces deploy, employ, and fight. Game-changing systems such as the Integrated Air and Missile Defense (IAMD) Battle Command System (IBCS) and Indirect Fire Protection Capability Increment 2 Intercept Multi-Mission Launcher (MML) weapon system will allow us to be more globally responsive, less constrained by command and control linkages, and better able to organize forces at the component level.

The Army AMD force is changing to meet the increasing demands of the joint warfighter. This article examines the strategic environment and the role of the Army's AMD team, reviews the Army's AMD strategy one year later, and considers the implications for the joint force.

Army's Directed Role

Providing AMD for the joint force has long been an Army mission. DOD Directive 5100.01, "Functions of the

Department of Defense and Its Major Components," directs the Army to "Conduct air and missile defense to support joint campaigns and assist in achieving air superiority."⁶ Significantly, no other Service is so charged. The Navy is directed to "Conduct ballistic missile defense,"⁷ and the Air Force to "Conduct offensive and defensive operations, to include appropriate air and missile defense."⁸ This is not to imply the other Services have small roles. Indeed, the Navy and the MDA have invested billions and achieved incredible capability to destroy ballistic missiles before they reenter Earth's atmosphere. The Air Force often serves as the higher headquarters for AMD operations, integrating Services, systems, fighters, radars, and even coalition partners to protect against an array of threats on a global scale. Nevertheless, only the Army is charged "to provide air and missile defense to support joint campaigns." That straightforward charge has become increasingly important in the current strategic environment.

The title of this article is deliberate. "Silent Watch" speaks to the critical and enduring role our AMD forces execute: deploy to faraway lands, often in or near harm's way, continuously "watching" for the first shot of the next war. When that shot comes—sometimes after months or even years—defeating the enemy can lead to greater operational and strategic flexibility for our leaders, greater control of escalation, maintaining coalitions, and even possibly helping to prevent that war. Every day, AMD forces are on Silent Watch around the world and at home. In addition to those deployed around the globe, 350 Soldiers of the Army National Guard protect 314 million Americans 24/7 from the threat of a rogue or accidental nuclear launch against the United States. Despite budgetary pressures, according to the recently released Quadrennial Defense Review 2014, the number one priority is defense of the homeland, which further highlights the criticality of the global missile defense mission area and directs increasing our capability and capacity with additional sensors and interceptors.

Defense Strategy

At a symposium in April 2011, Commander of U.S. Central Command General James N. Mattis stated:

We can reduce the desire for any nation to threaten our nations and our people, reminding adversaries that offensive plans with missiles cannot succeed, so don't even try. IAMD serves as an important manifestation of our collective protection and deterrent posture, and increases deterrence by reducing vulnerabilities.⁹

In January 2012, the President and Secretary of Defense released the new defense guidance, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*. It charted significant changes to defense policy including a rebalancing toward the Asia-Pacific region, a focus on preparing for asymmetrical warfare to include antiaccess/area-denial (A2/AD), a renewed emphasis on building partner capacity, and an acknowledgment of today's fiscally constrained environment. The defense guidance also highlights the following challenges relevant to Army AMD:

The United States must maintain its ability to project power in areas in which our access and freedom to operate are challenged. In these areas, sophisticated adversaries will use asymmetric capabilities, to include electronic and cyber warfare, ballistic and cruise missiles. . . .¹⁰ With the diffusion of destructive technology, these extremists have the potential to pose catastrophic threats that could directly affect our security and prosperity.¹¹

This policy shift is taking place within the context of a global security environment that presents a multitude of security challenges for the Nation, the Army, and the Army's AMD forces. It also manifests a new concept called Joint Operational Access.

The Concept

The Joint Operational Access Concept (JOAC) focuses on how the joint force will achieve operational access against armed opposition that possesses A2/AD

capabilities. A core component to achieving global access is the importance of setting preconditions, which could be forward deployment of forces, multinational exercises, or support agreements. The JOAC identifies one of the required capabilities as the ability to provide expeditionary missile defense to counter the increased precision, lethality, and range of enemy A2/AD systems.¹² “The U.S. requires a more geographically distributed, operationally resilient, and politically sustainable posture that allows persistent presence and, if needed, power projection. . . . This rapid response hinges on flexibility and forward positioning of permanent and rotational forces.”¹³ Army AMD has a significant role in setting preconditions for given regions and countering A2/AD capabilities in a nonescalatory manner, especially in early phases of conflict. For example, in the U.S. Pacific Command (USPACOM) area of responsibility there are three Patriot battalions, one THAAD battery, an Army AMD command center, and an Army Navy/Transportable Radar Surveillance (AN/TPY-2) radar forward stationed. These AMD units engage in multiple exercises with partners and allies. In the USPACOM region alone, we participate annually with the Republic of Korea’s forces in Ulchi Freedom Guardian and Key Resolve exercises, with Japan’s forces in Keen Edge and Keen Sword, and with our multinational partners in Terminal Fury and Talisman Saber. These AMD assets are on Silent Watch, providing force protection over critical power projection, command and control, and other strategic locations.

Threat

These challenges, as they relate to AMD, include a danger that has evolved in both capability and employment. The threats from rockets and unmanned aerial vehicles (UAVs) to cruise and ballistic missiles are increasingly more capable, longer range, and more precise. Ten years ago, the “circular error probability” of where an enemy missile would land was often measured in kilometers or tens of kilometers; in the

future, Global Positioning Satellites and improved navigation will reduce that error to mere meters. UAVs are increasingly becoming “near real time” targeting devices capable of bringing lethal missiles on our forces in short order. The thinking enemy is increasingly practicing “complex integrated attacks,” where multiple capabilities are brought to bear against a single target in a simultaneous raid to defeat air defenses.

Many countries view ballistic and cruise missile systems as cost-effective weapons and symbols of national power. In addition, they present an asymmetric threat to U.S. airpower. Key findings from the National Air and Space Intelligence Center’s unclassified 2013 report *Ballistic & Cruise Missile Threat* highlight the evolution of threat capabilities. North Korea has unveiled the new road-mobile Hwasong-13 intercontinental ballistic missile (ICBM) while continuing to develop the Taepodong-2. Also in development are an intermediate-range ballistic missile and a solid propellant short-range ballistic missile (SRBM). By 2015 Iran could develop and test an ICBM capable of reaching the United States. In 2010, Iran revealed the Qiam-1 SRBM, the fourth generation Fateh-110 SRBM, and now claims to be mass-producing antiship ballistic missiles. It has modified its Shahab-3 medium-range ballistic missile (MRBM) to extend its range and effectiveness and also claims to have deployed the two-stage, solid-propellant Sejil MRBM.

China has the most active and diverse ballistic missile development program in the world. It is developing and testing offensive missiles, forming additional missile units, qualitatively upgrading missile systems, and developing methods to counter ballistic missile defenses. It continues to field conventionally armed SRBMs opposite Taiwan and is developing a number of mobile, conventionally armed MRBMs. Missiles such as the Dong-Feng 21D ASBM are key components of a military modernization program specifically designed to prevent adversary forces’ access to regional conflicts. Russia still has over 1,400 nuclear warheads deployed on ballistic missiles

capable of reaching the United States, and although the size of the Russian strategic missile force is shrinking (with arms control limitations and budgetary constraints), development of new ICBM and SLBM systems is proceeding.

Land-attack cruise missiles (LACMs) are highly effective weapons systems that can present a major threat to military operations. At least nine foreign countries will be involved in LACM production during the next decade, and many missiles will be available for export.¹⁴ These advances in threat capability and capacity have significantly increased the operational demand for AMD capability.

Demand

On July 17, 2013, in testimony before the Senate Appropriations Defense Subcommittee hearing on MDA’s fiscal year 2014 budget, Vice Admiral James D. Syring stated, “I am working hard, as the new director, with the Army to find a way to the seventh and possibly eighth THAAD batteries. The system is needed, and the system is needed in more numbers, in my assessment and discussion with the combatant commanders.”¹⁵

The demand for Army AMD is outpacing supply. During recent Congressional testimony, Lieutenant General Richard P. Formica, former Commanding General, Space and Missile Defense Command, commented that “Our analysis, reinforced by the 2012 Global BMD [Ballistic Missile Defense] Assessment [a recent senior-level tabletop exercise], reinforces the fact that GCC demands for missile defense capabilities will always exceed the available BMD inventory.”¹⁶ In addition to the aforementioned THAAD and Patriot units in Guam and Turkey, we had counterrocket, artillery, and mortar capabilities in the Iraq and Afghanistan conflicts, Patriot units in Poland and Jordan, and AMD sites in Japan and Israel. AMD forces will continue to be forward stationed and deployed in Korea, Japan, throughout the Gulf, and in Europe according to the President’s priorities and Phased Adaptive Approaches for Europe, Asia-Pacific, and the Middle East. AMD’s Patriot force is

currently more than 40 percent forward deployed or forward stationed, and global demands for Patriot units continue to increase. Four of our five Joint Tactical Ground Station systems currently support overseas combatant commanders. As THAAD and AN/TPY-2 forward-based mode radars are fielded, requests for their deployment remain high as well.

We ask Soldiers to deploy to obscure sites, often with little preparation, in many cases breaking new ground for the Nation. They are as much diplomats for U.S. values as protectors of cities. Deployments are never rote; they require intensive command and leadership from all levels with extensive coordination between staffs and the host country to execute successfully. These deployments often call for nonstandard actions that speak to initiative and quick, effective decisionmaking to establish or sustain operations. Once deployed assets are operational, the pace remains at a high level with continual improvements to site security and procedures coupled with system maintenance to ensure units maintain a ready status. In addition, these deployments are not just 3- or 6-month tours: AMD units are some of the few remaining units that still deploy for 12-month rotations. Once employed, they normally stay and provide an enduring presence. Silent Watch becomes a lasting U.S. “foot in the door” for improved relations with host countries. We face a long-range threat with the knowledge that many lives are at stake if we fail. Thus we do everything within our power to ensure that failure is not an option.

AMD Strategy

As noted, the Army published its first Service-wide AMD strategy in 2012. Its purpose is to articulate an overarching AMD framework that synchronizes Service functions in support of Army and joint missions. It describes where the Army plans to be in the future, how the AMD force is shaped to support the Army and the joint force, and what must be accomplished to succeed in the future operational environment. The AMD strategy is informed by the new defense guidance, resource challenges,



Patriot missile mobile launcher and air defense equipment deployed to U.S. and NATO Patriot missile batteries at Incirlik Air Base, Turkey (U.S. Air Force/Charles Larkin, Sr.)

proliferation of threat technology, and an era of persistent conflict. It also articulates expectations for 2016 and 2020 to aid DOD in keeping the AMD force and Army staff within this framework in the near- and midterm years. The strategy’s desired outcomes are AMD’s three imperatives: to defend the homeland, defend the force and critical assets, and assure access for our forces. To achieve these, the AMD strategy has four Lines of Effort:

- attain networked mission command
- enable defeat of the full range of air and missile threats
- build partner capacity and maintain forward presence
- transform the AMD force.

Innovation Is Key

With increasing threats and decreasing resources, the Army needed to develop significant new AMD capabilities quickly and affordably. The prior approach of developing stand-alone systems (for example, Medium Extended Air Defense, Surface Launched Advanced Medium Range Air-to-Air Missile, and Joint Land Attack Cruise Missile Defense Elevated Netted Sensor) was no longer affordable; we had to “break the mold” with

AMD and develop capabilities that were integrated, joint, and multimission.

This led the Army to pursue an ambitious networked solution called Army IAMD. At the center of this effort is the IBCS program, which will not only serve as the Patriot’s next generation command and control (C2) system but act as the single mission command system for all Army AMD. IBCS will also enable systems to work together, share data, and employ assets in new and more efficient ways.

IBCS will provide enhanced mission command capability for AMD leaders. It will increase the range of options available to the commander on the ground as he tailors the defense design down to component level employment rather than emplacement of whole batteries and systems. This IBCS-driven evolution will allow leaders to better manage the battle, with increased operational flexibility resulting in the right capability at the right location, enhanced ability to manage missile inventories, and added decision time for leaders to improve their ability to execute engagements. Army AMD is inherently a joint (and coalition) mission area—Air Force fighters and Navy *Aegis* ships team with Army AMD Patriot and THAAD systems to complete actions across the joint engagement sequence. When enabled, IBCS will network across

the joint community and provide an exponential increase in integrating our joint fire control capability. The Army is working with the other Services to bring this capability to fruition. In addition, an IBCS-equipped force will potentially be able to leverage coalition AMD systems and further strengthen our efforts to build partnership capacity.

Like many Army and joint systems, today's AMD systems are "system centric," so each system has its own sensors, shooters, and C2. Patriot, for example, has Patriot launchers, Patriot missiles, and Patriot radar and is controlled by a Patriot Engagement Control Station at the battery level. IBCS will allow us to break that mold by putting individual platforms—launchers and radars—on the network. Each component will "join the fight" as it joins the network, and will allow innovative pairings of components. For example, an MML weapon system, Sentinel radar, or a Patriot battery could be paired together on the network to defeat a variety of threats.

Of the many capabilities that will benefit from IBCS, the MML deserves special mention as it will be loaded with several types of munitions. This single platform, coupled with Sentinel and other radars and commanded by IBCS, will address threats ranging from cruise missiles to UAVs to rockets, artillery, and mortars. The MML will become a critical complement to Patriot and provide the warfighter tremendous capability even in a resource-constrained environment.

Resource Constraints and AMD

On February 13, 2013, General Odierno, in testimony before the Senate Armed Services Committee, stated, "We are very focused on forward air and missile defense capability in our key theaters, both Asia-Pacific and other areas, to include the Middle East."¹⁷

As stated earlier, we are entering a prolonged period of constrained resources. No mission area is ever completely immune to across-the-board budget cuts. And the combined effects of sequestration and Continuing Resolutions will affect the AMD force more than the Army would like.

We offer that budgets are only one measure of priority. As the Army downsizes, force structure (that is, units and organizations) becomes a more visible indicator. By this metric, Army AMD is widely recognized as one mission area of a very select few that will grow in the coming years. Over the last few years, the Army has grown from one AAMDC to four, from zero THAAD batteries to seven, from 13 Patriot battalions to 15, and from zero counter-rockets, artillery, and mortar battalions to two. The AMD force is a very efficient use of manpower because it provides a strategic capability for the Nation at a very small investment in our most expensive resource, people. From tooth to tail the AMD force is less than a division's worth of military manpower across all components, which is very economical in a resource-constrained environment.

Army AMD is well postured to meet the current and emerging threat. We in the Army's G-3/5/7 have the privilege of representing Army AMD interests in a number of forums with the Office of the Secretary of Defense, MDA, the Joint Staff, and combatant commanders, as well as chairing monthly General Officer Steering Committees focused on the subject. Army leadership understands the strategic importance of AMD and is allocating resources in accordance with those priorities. This same leadership understands better than most the unique contributions and demands we ask of the AMD force. We all sleep better knowing that across the globe, tonight and for many nights to come, Army AMD professionals will maintain the Silent Watch. JFQ

Notes

¹ "North Korea: Timeline of Escalating Threats," *The Telegraph*, March 30, 2013, available at <www.telegraph.co.uk/news/worldnews/asia/northkorea/9962442/North-Korea-timeline-of-escalating-threats.html>.

² *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* (Washington, DC: Department of Defense, January 2012), available at <www.defense.gov/news/defense_strategic_guidance.pdf>.

³ General Raymond T. Odierno, comments, American Enterprise Institute,

July 28, 2013, available at <www.aei.org/events/2013/07/29/squaring-the-circle-general-raymond-t-odierno-on-american-military-strategy-in-a-time-of-declining-resources/>.

⁴ Admiral Samuel J. Locklear III, interview, *Joint Force Quarterly* 69 (2nd Quarter 2013), 66.

⁵ *Sustaining U.S. Global Leadership*, 8.

⁶ Department of Defense (DOD) Directive 5100.01, "Functions of the DoD and Its Major Components," December 21, 2010, 29, available at <www.dtic.mil/whs/directives/correspdf/510001p.pdf>.

⁷ *Ibid.*, 31.

⁸ *Ibid.*, 34.

⁹ General James N. Mattis, International Symposium on Air Defense 2020, remarks, April 17, 2011, available at <www.centcom.mil/press-releases/u-s-central-command-commander-addresses-international-symposium-on-air-defense-in-saudi-arabia>.

¹⁰ *Sustaining U.S. Global Leadership*, 2.

¹¹ *Ibid.*, 3.

¹² Chairman of the Joint Chiefs of Staff, "Joint Operational Access Concept," Version 1.0, January 17, 2012, 35, available at <www.defense.gov/pubs/pdfs/joac_jan%202012_signed.pdf>.

¹³ Samuel J. Locklear III, "Testimony on U.S. Pacific Command in Review of the Defense Authorization Request for Fiscal Year 2014 and the Future Years Defense Program," 113th Cong., 1st sess., April 9, 2013, available at <www.pacom.mil/commander/14-us-pacific-command-review-defense-auth-request-fiscal-2014.pdf>.

¹⁴ *Ballistic & Cruise Missile Threat* (Wright-Patterson Air Force Base, OH: National Air and Space Intelligence Center, 2013), 3, available at <www.afisr.af.mil/shared/media/document/AFD-130710-054.pdf>.

¹⁵ Vice Admiral James D. Syring, director, Missile Defense Agency, testimony before the Senate Appropriations Defense Subcommittee, 103rd Cong., 1st sess., July 17, 2013, available at <www.hsdl.org/?view&did=740609>.

¹⁶ Lieutenant General Richard P. Formica, statement before the Senate Armed Services Committee, Strategic Forces Subcommittee, 113th Cong., 1st sess., May 9, 2013, available at <http://missilethreat.wpengine.netdna-cdn.com/wp-content/uploads/2013/05/Formica_05-09-13.pdf>.

¹⁷ General Raymond T. Odierno, testimony before the Senate Armed Services Committee, 113th Cong., 1st sess., February 13, 2013, available at <www.army.mil/article/96868/Feb_13_2013_CSA_Testimony_before_the_Senate_Armed_Services_Committee/>.