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Missile Defense of the Homeland: Setting the Stage for Initial Operations

**(Third in a series of three Background Briefs based on information
obtained from U.S. Army Space and Missile Defense Command)**

The U.S. Army Space and Missile Defense Command (SMDC) is a member of the U.S. Strategic Command (STRATCOM) Globally Integrated Joint Missile Defense Team. SMDC's role as the Army's component to STRATCOM and also the Army proponent for Space and Ballistic Missile Defense enables the Command to interact with the joint team at all levels of command and staff. The goal is to ensure relevant, adaptable and seamless solutions to mission area requirements in support of regional combatant commanders.

On 16 October 2003 SMDC proudly played another small part in the initial stages of deploying the nation's ballistic missile defense program by activating the Army's Ground-based Missile Defense Brigade. That contribution supported a series of successes by the joint acquisition and war-fighting communities leading to an initial ballistic missile defense capability for the nation in 2004.

Proliferation of weapons of mass destruction and the ballistic missiles that can deliver them pose a direct and immediate threat to the security of the United States and its territories. In 1972, only nine countries possessed ballistic missiles; today, 36 have that capability. Of these, at least 25 countries now possess or are acquiring nuclear, biological and chemical weapons. Since 1980, ballistic missiles have been used in seven regional conflicts, including the recent Iraqi campaign. These threats endanger peace and freedom around the world; accordingly, the United States has taken action to counter them.

The National Missile Defense Act of 1999 established the policy of the United States to "deploy as soon as technologically possible an effective missile defense system capable of defending the territory of the United States against limited ballistic missile attack."

On 16 December 2002, the President signed a National Security Presidential Directive committing the nation to the deployment of missile defenses to protect from long-range ballistic missile attack by 2004.¹ An element of the Department of Defense, the Missile Defense Agency (MDA) is in charge of developing the Ballistic Missile Defense System (BMDS). The BMDS will be an evolving, integrated, layered system comprised of multiple elements and components that provide opportunities to intercept ballistic missiles in all phases of their flight against all ranges of threats.²

The quest to shoot down ballistic missiles began 8 September 1944, the day the first German long-range V-2 missiles fell on Paris and London during World War II. Since then, the United States has developed a variety of systems to bring down enemy missiles, but establishing a

shield to protect all 50 states has been a formidable challenge. Now facing a presidential deadline, the military plans in less than one year from now to flip the switch on a missile interceptor system designed to protect the United States from very limited attacks.³ “I have high confidence it will work, and yes, we will be ready,” said Major General John Holly, program director for Ground-based Midcourse Defense (GMD) in Huntsville, Alabama. The new ground-based missiles are designed to knock out incoming enemy missiles in midcourse, above the earth’s atmosphere. “We will have all the facilities in place,” Holly said. “We will have interceptors able to engage a target; we will have trained operators; and we will have the communications infrastructure and sensors in place.”⁴

GMD stands for Ground-based, Midcourse Defense—ground-based because the interceptors it uses are launched from silos in the ground; midcourse because the interceptors kill the inbound warhead in its midcourse phase above the atmosphere.⁵ GMD’s record of successful performance was a factor that led to the President’s decision to field GMD to provide protection of the United States and its territories by the end of 2004.

GMD is made up of sensors, interceptors, and Fire Control components:

- **Sensors** include satellites that will detect an enemy missile shortly after launch; and high-powered radars at several land locations and aboard U.S. Navy ships that will track the threatening ballistic missiles, discriminate between warheads and decoys, and determine if the warhead was hit and whether it was destroyed or rendered harmless.
- **Interceptors** consist of the Exoatmospheric Kill Vehicle (EKV) integrated with a booster that launches it into space. The EKV performs final discrimination and steers itself to collide with the warhead, pulverizing it by sheer force of impact.
- **Fire Control** interconnects communications among all GMD components and manages the battle. It is comprised of terminals that communicate with the EKV, fiber optic and satellite communication networks, and control nodes allowing military and civilian authorities to operate the GMD.

In a typical scenario, sensors detect and provide early warning of the launch of enemy missiles. They then track these threats while simultaneously gathering data. Fire Control uses this data to calculate a projected intercept point. Once authority is granted, the EKVs are launched, using onboard sensors and data received from Fire Control to acquire and discriminate the threat warhead amidst debris and decoys, guiding itself to a direct, high-speed collision. During and after each engagement, GMD sensors continue to collect data to provide kill assessment and evaluate the EKV’s success.

Adequate and timely delivery of a missile defense capability is required for Homeland Security, to protect the infrastructure and population at-large, and to protect the nation’s ability to mobilize and respond. The President announced the plan to begin initial missile defense capabilities in 2004 and 2005. Current plans are to have a combined 20 underground silos and missiles at Fort Greely, Alaska and Vandenberg Air Force Base, California by 1 October 2005.

The U.S. Army was designated the Joint User Representative for the ground-based portion of missile defense, and the Army National Guard was given the mission of manning the Army portion and assisting with system testing. A total of 85 full-time Army National Guard soldiers have been assigned to work at the site, and an additional 102 will be brought on in Fiscal Year 2004.

The Alaska National Guard is staffing the first GMD battalion at Fort Greely. Army National Guard soldiers from across the country will become part of that battalion. The battalion's higher headquarters, the multicomponent GMD brigade, is based at Colorado Springs, Colorado. It is supported by 90 soldiers—77 members of the Colorado Army National Guard and 13 members of the active Army.⁶

The missiles at Fort Greely stand about 50 feet tall and will not carry explosive warheads. They are intended to hit incoming enemy missiles at a range of about 100 miles above the earth. An EKV hitting its target missile will be like a bullet hitting a bullet at a combined closing speed in excess of 10,000 miles per hour.

The Alaska location was cleared two summers ago from a section of spruce forest that was destroyed by a wildfire in 1999. The initial construction contract was awarded for \$265 million, with subsequent contracts awarded for \$20 million. Alaskan companies will perform about 80 percent of that work.

The first six silos have been dug, and their liners were set in place last summer. Each silo is 80 feet deep and 14 feet in circumference, and each silo insert weighs 88 tons. The silos were covered to protect them from the Alaskan winter, and four new buildings, including the system's fire control and communications center, are now under construction.

The Fort Greely facility is just one part of the midcourse defense system being built in Alaska. Interceptor communications stations will be located at Kodiak Island and at Eareckson Air Force Station at the far end of the Aleutian Islands in the Bering Sea. The Cobra Dane Radar Facility at that air station is also being upgraded as part of the new missile system. The Sea-Based X-Band Radar, currently under construction, is scheduled to be home-ported in Adak, Alaska.

From Fort Greely, the GMD interceptors will be able to protect all states and territories of the United States. The installation was realigned under the 1995 Base Realignment and Closure (BRAC) process and most of its functions and tenants moved to Fort Wainwright, also in Alaska. In 1991, however, Congress authorized the Secretary of Defense to retain all or a portion of Fort Greely to meet support requirements for missile defense.

The developmental plan for Fort Greely proposes a full garrison operation with quarters and many services and support facilities for those assigned. The garrison will be made up of about 990 people, including soldiers, garrison staff, family members and contractors. The plan calls for 24-month accompanied tours with quality-of-life (QOL) support. The QOL standard will be achieved through a garrison with quarters, a fitness center with pool, commissary, child-care facilities, community activities center, outdoor recreation services, Army & Air Force Exchange Service gas station and shopette, entertainment facilities, and other amenities.⁷

These important facilities will be needed, for the arctic environment at Fort Greely is very challenging. Winds there can exceed 100 miles per hour; temperatures there range from 100 degrees in the summer to minus 70 degrees in the winter.

Congress approved \$160 million more than the President requested for the GMD system, according to Senator Ted Stevens (R-Alaska). In a brief summary, members of the FY 2004 Defense Appropriations conference committee said the money would help meet President Bush's stated goal of having a workable missile defense system by fall 2004. The President's budget, to which the additional funding was added, already asked for enough money to cover

the 16 interceptors required at Greely by fall 2005. This funding did not bump up the administration's total request for missile defense spending because Congress trimmed an equivalent amount from another segment of the program.⁸

The National Guard and SMDC have worked with multiple agencies to craft innovative solutions to enable these new organizations. The brigade's primary task of operating the GMD system requires an ability to remain flexible to emerging requirements of the MDA and U.S. Northern Command while also providing direct linkage to STRATCOM in their role as the coordinator and integrator of Global Missile Defense capabilities. The battalion's primary mission is to operate the GMD fire control network, to provide positive operational control over the interceptors at Fort Greely, and to ensure protective security to the systems deployed there.

These units will be exceptionally busy in the months ahead. They will actively support the combatant commanders' exercise programs and MDA's testing, training and deployment efforts while simultaneously training and certifying to the standards set for them. The robust development program and testbed activities will continue long after the first missiles are put on alert to ensure that the defense provided to the nation, our allies, and troops deployed abroad continues to mature.

Endnotes

¹ The following day, President Bush announced the United States would begin to "field missile defense capabilities to protect the United States, as well as our friends and allies." He stated that "these initial capabilities emerge from our research and development program and build on the test bed that we have been constructing." (<http://www.whitehouse.gov/news/releases/2002/12/20021217.html>)

² Secretary of Defense Memorandum, 2 January 2002, Subject: Missile Defense Program Direction.

³ Kent Faulk, "Missile Interceptor System," *The Birmingham News*, 28 September 2003, p. 01-A.

⁴ *Ibid.*

⁵ All ballistic missiles follow a trajectory that includes three phases: the boost phase, or the missile's ascent; the midcourse phase, when the missile's warhead has separated from the booster and is coasting above the atmosphere; and the terminal phase, in which the warhead is reentering the atmosphere heading towards its target. (MDA Communications Directorate, "Ground-based Midcourse Defense, JPO Annual Report, FY 2002," Washington, D.C., p. 1.)

⁶ Lieutenant General Joseph M. Cosumano, Jr., Commander, SMDC, told attendees at the brigade's recent activation ceremony: "This activation is a fine example of coordination and cooperation between the joint community, the National Guard, and the active component that follows a national recruiting campaign to select the finest soldiers with an honored tradition of defending our homeland."

⁷ SMDC Command Concept Plan, 10 June 2003.

⁸ "Surplus for Greely Approved," *Fairbanks News-Miner*, 29 September 2003.