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HEARING

ON

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2007

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED NINTH CONGRESS

SECOND SESSION

STRATEGIC FORCES SUBCOMMITTEE HEARING

ON

BUDGET REQUEST FOR MISSILE DEFENSE AGENCY AND BALLISTIC MISSILE DEFENSE PROGRAMS

HEARING HELD
MARCH 9, 2006

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FISCAL YEAR 2006, NATIONAL DEFENSE AUTHORIZATION ACT—BUDGET REQUEST FOR MISSILE DEFENSE AGENCY AND BALLISTIC MISSILE DEFENSE PROGRAM

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
STRATEGIC FORCES SUBCOMMITTEE,
Washington, DC, Thursday, March 9, 2006.

The subcommittee met, pursuant to call, at 1 p.m., in room 2212, Rayburn House Office Building, Hon. Terry Everett (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. TERRY EVERETT, A REPRESENTATIVE FROM ALABAMA, CHAIRMAN, STRATEGIC FORCES SUBCOMMITTEE

Mr. EVERETT. The meeting will come to order.

Thank you all for being here.

Somewhere I have an opening statement. I will get to it.

The subcommittee meets today to receive testimony on the Department of Defense fiscal year 2007 budget request for missile defense programs. Again, I thank you all for coming.

I welcome Lieutenant General Obering, Director of the Missile Defense Agency (MDA); Lieutenant General Dodgen, Commanding General, U.S. Army Space and Missile Command; Mr. Duma, Director of Operational Test and Evaluation in the Department of Defense; and Mr. Flory, Assistant Secretary of Defense for International Security Policy.

Thank you again for being here. We have a lot of ground to cover today, so I would ask each of you to limit your opening statement to about five minutes, and your entire statement will be made a part of the permanent record.

I will briefly comment that world events continue to highlight the security threats posed by the proliferation of missile technology and nuclear materials. The news concerning potential threats from Iran and North Korea is no better this year than it was last year.

As a Member of both the House Armed Services Committee and Intelligence Committee, along with my colleague Mr. Reyes, I firmly believe that we have a responsibility to press forward with fielding those missile defense elements for our nation's defense.

General Obering, I would like to highlight a few specific areas that I am interested in hearing about today: The impact of funding reductions for the fiscal year 2007 through 2011 Missile Defense Agency programs that were made late last year.

I was very pleased with your response to the independent review team's finding last year following several Ground-based Midcourse Defense (GMD) past failures. I specifically commend you for stand-

ing up a missions readiness task force, and I am looking forward to hearing your assessment on how the MDA test program is proceeding.

General Dodgen, I am specifically interested in hearing about the following: your crucial role as joint functional component commander for Strategic Command (STRATCOM), including progress in developing contingency operations for GMD, and your assessment of the operational readiness.

Mr. Duma, I know that your organization has been working very closely with MDA in developing criteria for operational realistic testing. I look forward to hearing more about your assessment of MDA's test program.

Mr. Flory, I look forward to hearing about your perspective on the ballistic missile threat to our country. I am interested in your views on how we are doing and engaging our international partners in cooperative missile defense.

Now, let me recognize my good friend and colleague Mr. Reyes, the ranking member of the subcommittee.

And a while ago when I mentioned that both of us were on the House Armed Services and the Intel Committees—comments following that—I do not speak for Mr. Reyes. He speaks for himself on those kind of things. But he has always been a strong advocate for the defense of this country.

STATEMENT OF HON. SILVESTRE REYES, A REPRESENTATIVE FROM TEXAS, RANKING MEMBER, STRATEGIC FORCES SUBCOMMITTEE

Mr. REYES. Thank you, Mr. Chairman.

I also want to thank Lieutenant General Obering and Lieutenant General Dodgen, Mr. Duma and Assistant Secretary Flory for joining us here today.

Welcome, gentlemen.

Mr. Chairman, although we have several contentious issues in our subcommittee's jurisdiction, our Members who follow your example are able to express differences of opinion without letting the debate turn ugly.

We may need to call upon your leadership again this afternoon, Mr. Chairman, as we will be discussing some contentious issues related to the development, the testing and the deployment of ballistic missile defense.

Before we get into that discussion, however, I want to explain, Mr. Chairman, how I frame this particular issue. This context is not for the sake of the Members of this subcommittee, because even when we may disagree about a defense issue, we never question each other's commitment to defending our nation.

Rather, I do this for the sake of the general public, because too often we Democrats are painted as reflexively and unalterably opposed to missile defense.

As you know, Mr. Chairman, after these many years that we have known each other, I am a strong supporter of missile defense, including the GMD system that already is being deployed in Alaska and California. And I think we will eventually prove that this system is an effective insurance policy against a limited ICBM threat.

Moreover, ballistic missile defense systems that protect or will protect our troops on the front lines such as Patriot Advanced Capability-3 (PAC–3), Terminal High Altitude Area Defense (THADD) and Aegis ballistic missile defense (BMD) enjoy broad and strong bipartisan support.

In 1999 H.R. 4, a bill co-authored by two of our committee colleagues, Congressman Curt Weldon and Congressman John Spratt, came to the House floor for a vote. H.R. 4 simply stated that, "It is the policy of the United States to deploy a national missile defense system."

This was the simple language of H.R. 4, period, end of story, no caveat. And I am proud to tell you that a majority of House Democrats—again, a majority of House Democrats—voted for that measure, supporting that policy.

I also know that on my side of the aisle we do not have as much consensus on national missile defense and deployment of that system as our colleagues on the other side. But somehow, in spite of all the evidence to the contrary, there is widespread perception that all Democrats oppose missile defense, especially a national missile defense system. That is flat wrong.

I provide this context because today many Members will ask tough questions. And even though I strongly support missile defense, and even though I believe it is important and imperative for our nation to have a ballistic missile defense system in place, I too want to ask some tough questions because even though I support missile defense, I do not think we should give it a blank check or allow it to avoid a thorough testing process. I think that is part of our obligation as Members of Congress.

On the contrary, the very fact that someday a missile defense system might be the last line of defense to protect our citizens against nuclear-tipped missiles, this is exactly why it should undergo some strenuous testing before deployment.

Last year, when we held our subcommittee oversight hearing after three missile defense test failures, I stated that we should not be discouraged by those tests, and I compared our task to that of a baseball player who, after striking out, needs to go back to the dugout, regroup before his next turn at bat.

Well, General Obering, MDA has regrouped. Your decisions to charter an independent review team and then implement its recommendations have helped to set the program back on the path to success. Since resuming testing last summer, MDA has achieved test objectives in all aspects of the program, including interceptors, radar, battle management, and targeting.

Just yesterday, MDA successfully completed a joint test with the Japanese demonstrating the performance of SM–3 Aegis missile that had been modified with a Japanese-designed advanced nose cone, all very welcome news to all of us on the committee.

Yet the most challenging tests, I think, are still to come. This spring and summer MDA will attempt to verify the entire field chain of the GMD system, including an actual intercept using deployed hardware under what I think are going to be more realistic conditions with our nation's warfighters at the controls.

Today we will have an opportunity to ask both the developer and the operational tester about the value of these upcoming tests. Spe-

cifically, if these tests are successful, will we have achieved Block 04 operational capability?

In the broader context, I also have questions about the pace and the scope of the missile defense program. As an example, the fiscal year 2007 budget includes long-lead funding for GMD boosters numbers 41 through 50. This buy would complete procurement of all GMD boosters prior to the conclusion of operational testing.

In addition, funding for the two boost phase missile defense options, Airborne Laser (ABL) and Kinetic Energy Interceptor (KEI), is collectively slated to grow by over 50 percent between fiscal year 2006 and 2007. This growth is proposed even after Congress requested a report comparing the capabilities and the cost of these two systems.

My question is do we really need to accelerate the development of both boost phase systems. As I see it, we are not debating the question of are you for missile defense or not. Instead, today we are discussing the relative value and the priority of different missile defense systems given the threats that we are facing worldwide.

We are also seeking assurance that deployed systems undergo the rigorous testing required to assure warfighters of their operational capability.

So, Mr. Chairman, I thank you for the opportunity to state the context as I personally see it and for calling this very important hearing. I value your leadership, and I value your friendship, and I know that you always have given us an opportunity to fully look at all these different issues.

So today I look forward to the testimony of our distinguished witnesses, and with that, I yield back.

[The prepared statement of Mr. Reyes can be found in the Appendix on page 41.]

Mr. EVERETT. I thank my colleague. And as my colleague knows, I have no objection to anything that he says. I am in full agreement.

I am supposed to have a—General Obering, I will tell you what. We will just start with you while I find out where I am at here.

STATEMENT OF LT. GEN. HENRY A. OBERING III, DIRECTOR, MISSILE DEFENSE AGENCY, U.S. AIR FORCE

General OBERING. Yes, sir. Good afternoon, Mr. Chairman, Congressman Reyes and distinguished Members of the committee. It is an honor to be here today. I ask that my prepared statement be entered for the record.

Mr. EVERETT. Without objection. And by the way, we can make that 10 minutes if you guys need it. I will take 5, but we can make it 10 minutes each, and the rest of your statements will be made a part of the record.

General OBERING. Thank you. Since I last addressed this committee, we have made good progress developing and fielding an integrated layered system to defend the United States, our deployed forces, allies and friends against ballistic missiles of all ranges in all phases of flight.

We have implemented improved mission assurance processes, established an increasingly robust and operationally focused test pro-

gram, and continued the fielding of system components and integrated capabilities.

For the 2007 budget request, we plan to expand the development, fielding and verification of this critically needed defense. Proliferating and evolving ballistic missile systems increasingly pose a danger to our national security.

There are hundreds of these missiles in more than 20 countries around the world, including those hostile to the United States. Last year, there were nearly 80 foreign ballistic missile launches.

Our program is structured to meet this evolving threat. We balance the early fielding of system elements with steady improvements for a spiral development and test approach. 2007 will be a very intense and demanding period for our development and fielding efforts. As such, we are requesting $9.3 billion to support our program of work.

About $2.4 billion covers the continued fielding and sustainment of system components, including the long-range ground-based midcourse defenses, short to intermediate range defenses involving our sea-based interceptors, and all supporting radars, command, control, battle management, and communications (C2BMC) capabilities. About $6.9 billion will be invested in development for evolution and testing of the system.

As I detail our request for 2007, I think that it is appropriate for me to review where we are with the budget that you previously approved.

In our long-range midcourse defense element, I delayed the interceptor deployment in 2005 to make the program changes recommended by an independent team that reviewed our two flight test reports last year.

I also established a mission readiness task force to follow through on the corrections to ensure our return to a successful program.

We are now undertaking the additional recommended qualification tests and have implemented much stronger systems engineering and quality control processes. These comprehensive reviews and our recent successes indicate that we should continue interceptor deployment. But I will pause again if necessary.

We recently emplaced 3 more ground-based interceptors in Alaska and plan to have a total of 16 deployed by December of this year. This progress is critical, since we expect the ground-based midcourse defense element to be the backbone of our long-range defense capabilities for years to come.

Missile defense testing, based on event-driven results, continues to evolve to where we test as we fight and we fight as we test. We cooperate fully with the operational test community and the combatant commanders and their efforts to characterize system effectiveness and readiness.

Last year, I told you that we planned to conduct two long-range interceptor tests in 2005. That did not happen, because we wanted to ensure that we fully implemented the recommendations of the mission readiness task force.

With the successful December flight of our operationally configured long-range interceptor, we have resumed an aggressive test program that includes three more flight tests this year. These will

include realistic targets, operational sensors, operational crews and operational interceptors from operational silos, with two of them as planned intercepts beginning this summer.

Last year the committee voiced concern about the ability of the Cobra Dane radar to support the fire control mission. This past September, we flew a threat representative air launch target, generating tracks that the operational fire control system then used to produce an intercept solution. We are confident in the capability of this radar.

We also reached another major milestone last month when we successfully tested the upgraded Beale early warning radar in California against a realistic ICBS target launched from Alaska. Again, the operation configured fire control system generated an intercept solution from the track data provided by the Beale radar.

Later this year, we will deploy the first transportable forward-based X-band radar to our very important ally, Japan, where it will provide both support for regional and homeland defense.

And in the United Kingdom, we expect the upgraded Fylingdales radar to achieve initial capability later this year.

In our sea-based sensor program, we added six more Aegis long-range surveillance and track destroyers for a total of 11. We successfully tested this capability against targets launched from Hawaii and California.

Last year this committee expressed interest in our long-range and our large sea-based X-band radar. I am pleased to report that we completed its instruction and made good progress in integrating that radar into the system.

This winter, after extensive sea trials and high-power radiation testing, the radar completed its long journey from Texas to Hawaii. Later this year, it will be placed on station in Alaska where it will complete its integration and checkout.

Of our total 2007 budget request, $2.7 billion would go toward the long-range midcourse defense. These funds would allow us to continue to improve and build additional interceptors, their silos, support equipment and facilities, as well as order long-lead items for the next fielding increment.

We plan to field and support up to a total of 22 interceptors and conduct two more flight tests by the end of 2007. To continue to expand our sensor coverage in 2007, we would deliver the second forward-based X-band radar and begin a major portion of the upgrade to the Thule radar in Greenland. We are requesting $475 million between these efforts.

As we prepare for an uncertain future, being able to meet emerging threats worldwide becomes important. This means moving to space with precision tracking sensors. Therefore, we have budgeted $380 million to continue the development of our space tracking and surveillance system. This includes the launch of two demonstration satellites in 2007 to begin experimentation.

I would now like to turn to our most important area, command, control, battle management and communications. This infrastructure is the heart, soul and brain of our defensive capabilities. Without it, we simply cannot execute the mission.

The global foundation that we have established for our nation's leadership, Strategic Command, Northern Command and Pacific

Command, is unmatched in the world, but we have only just begun. We need to expand this network to other combatant commands and to develop the integrated fire control that will allow us to mix and match sensors and weapons to expand our detection and engagement capabilities.

We also continue to work closely with strategic command and the combatant commanders to train and certify missile defense crews by exercising the system with launch-ready demonstrations. The $264 million we are requesting for these efforts is essential to ensuring an effective missile defense system.

Committee Members raised a concern last year that with our focus on long-range defenses, we might not be adequately funding defenses against the short to intermediate range ballistic missiles. I can assure you that we are aggressively addressing these threats from several angles. Nearly $2 billion of our 2007 budget request is allocated evenly between our Aegis ballistic missile defense and terminal high altitude area defense, or THAAD, program to enable us to field capabilities to counter these threats.

In addition to providing long-range surveillance and tracking support, Aegis is providing a flexible sea-mobile intercept capability against the shorter range ballistic missile. This past year, we added a second Aegis engagement cruiser trial involving architecture. In November, we successfully used an Aegis cruiser to engage a separating target carried on a medium-range ballistic missile. We plan to conduct two more intercept tests this year and two more in 2007 using upgraded versions of this interceptor.

By the end of 2007, we expect to have three engagement cruisers and seven engagement destroyers available with up to 33 Standard Missile-3 (SM-3) interceptors delivered.

In our THAAD program, we are coming off a very encouraging flight test last November when we put the redesigned interceptor through its paces. We will continue to characterize this performance and integrate this element into the overall system.

We plan to conduct four more flight tests in 2006, including the first high endo-atmospheric intercept. And in 2007, we plan to conduct four intercept tests in both the exo- and endo-atmospheric regions. We will continue our development efforts and plan to field a first unit in Block 2008 with a second unit available in Block 2010.

To keep ahead of future threats, there are several other important development efforts funded in this budget. We continue to follow a strategy of retaining alternative paths until the capability is proven, what we call a knowledge-based approach.

The airborne laser reached all of its knowledge points for last year when it reached and achieved a full duration lase at operational power and completed initial beam control and fire control flight tests.

Currently, we are installing the tracking and atmospheric compensation lasers and preparing the aircraft to accept the high-power laser modules in 2007. We have planned a campaign of flight tests leading to a lethal shootdown of a ballistic missile in 2008. Nearly $600 million of our budget request is for this revolutionary work.

In our other boost phase development activity, the kinetic energy interceptor (KEI), we focused our efforts on demonstrating a mobile land-based very high acceleration booster. Last year, we demonstrated the command, control, battle management and communications functions required for the boost intercept mission.

This past January, we completed the successful static firing of a second-stage prototype and will continue static firing tests of the booster's first and second stages in 2007 leading to the first flight in 2008. We have requested nearly $400 million in our budget for this moderate-risk effort.

As threats grow in complexity, we will need a volume kill capability. The multiple kill vehicle (MKV) program is a generational upgrade to our long-range midcourse interceptor.

In 2005, we made progress in the development of the seeker and made the decision to move to a lower-risk propulsion system which we plan to hover test in 2009. We have allocated $162 million to continue this very important development effort.

Committee Members expressed strong interest last year in our international efforts. We have been working closely with a number of allies and friends and have concluded formal agreements with four countries, with several more pending.

Japan continues to make significant investments in multilayered missile defenses. We have worked closely with Japan since 1999 to develop advanced Standard Missile-3 components, and I am proud to say that yesterday we successfully flight tested a product of this cooperation, an advanced nose-cone, off the coast of Hawaii.

This success is a good start for our most ambitious international effort with our partner, Japan, the co-development of a 21-inch Standard Missile-3 which will have greatly expanded performance and dependent area capability.

In April we concluded an agreement with Australia to expand our cooperative work on sensors. An agreement with Denmark allows us to upgrade the Thule radar and integrate it into the system by 2009.

In addition to the Fylingdales radar integration activities, we are undertaking a series of technical development efforts with the United Kingdom. In our ongoing work with Israel on the Arrow Interceptor will continue to enhance its missile defenses against emerging threats.

Mr. Chairman, last year I asked this committee to have tactical patience as we worked through our quality control issues. I explained that we certainly have our challenges, but for the most part the program is on track.

The successes that we have had over the past year bear this out. I greatly appreciate this committee's continued support and patience, and I want to thank the thousands of Americans and allies, both in government and industry, working hard to make missile defense a success.

Thank you, and I look forward to your questions.

[The prepared statement of General Obering can be found in the Appendix on page 46.]

Mr. EVERETT. Thank you, General Obering.

General Dodgen.

STATEMENT OF LT. GEN. LARRY J. DODGEN, COMMANDING GENERAL, U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND, AND U.S. ARMY FORCES STRATEGIC COMMAND, U.S. ARMY

General DODGEN. Thank you, Mr. Chairman.

Mr. Chairman, Congressman Reyes and Members of the Strategic Forces Subcommittee, thank you for the opportunity to appear before this distinguished panel and for your ongoing support to our military.

This committee's support of the Army and the missile defense community has been instrumental to our efforts in fielding missile forces for our nation and our allies.

I appear before this panel in two roles. The first role is as an Army commander for missile defense and proponent for the ground-based midcourse defense, or GMD, system. My second role——

Mr. EVERETT. General Dodgen, do you mind pulling that mike a little bit closer?

General DODGEN. Not at all.

Mr. EVERETT. I am getting old and it is hard to hear. Let me say older, not old.

General DODGEN. In my second role, I am a member of the joint missile defense team as commander of the joint functional component command for integrated missile defense, or JFCC–IMD, as part of the United States Strategic Command (STRATCOM), and the joint user representative working closely with MDA, other services, combatant commanders to ensure that our national goal of developing, testing and deploying an integrated missile defense (IMD) system is met.

Before addressing the fiscal year 2007 President's budget submission for the Army's missile defense systems, I would like to provide a very brief update on the JFCC–IMD. The JFCC–IMD was established in January 2005 as one of the JFCC supporting U.S. STRATCOM's new triad concept. We reached full operational capability on 28 February of this year.

The JFCC is truly joint, manned by Army, Navy, Air Force and Marine Corps personnel. It is headquarters at the Joint National Integration Center at Schriever Air Force Base in Colorado. This arrangement allows us to leverage the existing robust infrastructure and our strong partnership with our co-located MDA team to execute the IMD mission.

In the past year, the JFCC–IMD has aggressively executed STRATCOM's global mission to plan, coordinate and integrate missile defense—in short, to operationalize capabilities. In collaboration with geographical combatant commanders, we are developing IMD plans that integrate theater and national assets to provide the best protection.

Through our partnership with MDA, our sister services and warfighters at the GCCs, U.S. STRATCOM is setting the stage to evolve the BMDS beyond its current capability to a global capability to provide more robust missile defense for the homeland, deployed forces, friend and allies.

I would now like to highlight the Army's fiscal year 2007 budget submission for air and missile defense (AMD) systems. The Presi-

dent's budget presented to Congress on February 6 includes approximately $1.57 billion with which the Army proposes to perform current Army AMD responsibilities and focus on future development and enhancement of both terminal phase and short-range AMD systems.

Mr. Chairman, with the past support of this committee, the Army continues to improve its ability to acquire, track, intercept and destroy theater air and missile threats. The Patriot system remains the Army's mainstay theater air and missile defense system, and our nation's only deployed land-based short to medium-range ballistic missile defense capability.

Today's Patriot force is a mixture of configured units. To maximize our capabilities and better support the force, the Army is moving toward updating the entire Patriot force to PAC–3 configuration. The current and updated Patriot force should be maintained through sustainment and recapitalization efforts until the medium extended air defense system, or MEADS, is fielded, which is projected to begin in 2015.

As many of you are aware, the MEADS is a cooperative development program with Germany and Italy to collectively field an enhanced ground-based air and missile defense capability. The MEADS program will enable the joint integrated air and missile defense community to move beyond the critical asset defense designs we see today.

MEADS will provide theater-level defense of critical assets and continuous protection of a rapidly advancing maneuver force as part of a joint integrated AMD architecture.

As I reported last year, the Patriot MEADS combined aggregate program, or CAP, has been established. The objective of CAP is to achieve the objective MEADS capability through incremental fielding of MEADS' major in-items into Patriot.

Patriot MEADS CAP is an important capability that will operate within MDA's BMDS. The Patriot and PAC–3 MEADS CAP research, development and acquisition budget request for fiscal year 2007 is approximately $916 million. This request procures 108 PAC–3 missiles and reflects the necessary Patriot development to keep the system viable as we pursue development of PAC–3 MEADS CAP capabilities.

The threat from land attack cruise missiles exists today and will grow in the future. As you know, cruise missiles are inherently very difficult targets to detect, engage and destroy because of their small, low-detection signature and low-altitude flight characteristics.

It is clear that the required systems and capabilities necessary to counter this emerging threat need to be accelerated to the field, to field a cruise missile defense (CMD) capability as soon as possible.

Critical Army components of the joint CMD architecture are provided by the joint land attack cruise missile defense elevated netted sensor, or JLENS; the surface launched advance medium-range air-to-air missile, or SLAMRAAM; and an integrated fire control capability.

We are also working closely with the joint community to assure development of doctrine that synchronizes our military's full capabilities against the cruise missile threat.

The JLENS program is developing unique lightweight fire control and surveillance radars to detect, track and identify cruise missile threats. JLENS uses advanced sensors and networking technologies to provide precision tracking and 360-degree wide-area, over-the-horizon surveillance of land attack cruise missiles.

The fiscal year 2007 JLENS funding request is $264 million, supports development of full JLENS capability with first unit equipped occurring by 2011.

SLAMRAAM will provide a CMD system to maneuver forces with an extended battle space and a beyond line-of-sight engagement capability critical to countering the cruise missile and unmanned area vehicle threats. The fiscal year 2007 funding request of $49 million supports the scheduled initial operational capability target of 2011.

Sentinel radar is a critical component in the Army's ability to conduct air surveillance for the maneuver force. Sentinel is a small, mobile battlefield radar that supports the joint air defense sensor network in detecting cruise missiles, UAVs and helicopter threats.

The fiscal year 2007 request of $17.6 million provides for continued development and integration of improvements to support joint interoperability.

The forward deployment today of joint tactical ground stations, or JTAGS, in EUCOM, CENTCOM and PACOM, provides assured missile warning to combatant commanders and assigned forces through a direct downlink to space-based infrared assets into the joint theater communications architecture.

Fiscal year 2007 funding request of $24.9 million sustains the forward deployed JTAGS units supporting joint warfighters and postures the Army to participate with the Air Force in future ground mobile system compatible with the space-based infrared system and follow-on sensors.

Mr. Chairman, the Army is a full contributing member of the joint team to develop and field ballistic missile defense for our nation, deployed forces, friends and allies. With the continued support of this committee, the Army will continue the transformation to support the Army's future force, the joint integrated air and missile defense system and our global BMDS, building on the ongoing success of our theater air and missile defense forces.

I appreciate having the opportunity to speak on these important matters and look forward to addressing your questions to you and other Members of this committee. Thank you very much.

[The prepared statement of General Dodgen can be found in the Appendix on page 71.]

Mr. EVERETT. Thank you, General Dodgen.

Mr. Duma.

STATEMENT OF DAVID W. DUMA, DIRECTOR, OPERATIONAL TEST AND EVALUATION, U.S. DEPARTMENT OF DEFENSE

Mr. DUMA. Chairman Everett, Ranking Member Reyes, distinguished Members of the committee, I am pleased to have this op-

portunity to speak to you about the ballistic missile defense system test program. I will cover four areas.

First, I will recap the Missile Defense Agency, or MDA, test accomplishments during the past year. Second, I will discuss organization and philosophy changes within MDA. Third, I will give you a status of compliance with the test requirements prescribed in recent national defense authorization acts. Fourth, I will highlight future challenges facing the test program of the ballistic missile defense system, or BMDS.

First, the results. The MDA testing program during 2005 was adequate and appropriate to the developmental maturity of the BMDS. The results of ground tests demonstrated that integration, interoperability, tactics, doctrine and procedures were adequate to increase confidence in these aspects of the system.

For the first time, MDA flew a Raytheon exo-atmospheric kill vehicle integrated onto an orbital sciences booster. While the flight was successful, it did not evaluate the fixes to the ground support system that caused the previous flight test launch failures. Plans are to demonstrate the ground system fixes in subsequent flight-testing.

The flight of threat representative targets across the search and track volumes of the Cobra Dane and Beale early warning radars demonstrated their capability to provide target acquisition, tracking and queuing data.

MDA executed an operationally realistic test scenario that provided significant information regarding the Cobra Dane capabilities and limitations. MDA also demonstrated they could successfully launch a long-range threat representative target from an air platform.

The Aegis ballistic missile defense system completed two intercept missions with the new SM–3 missile. One of these flights included an intercept of a separating target. This was a first for that missile.

The airborne laser completed the passive phase of flight test of the beam control/fire control system, and completed the integration and operational demonstration of six integrated chemical oxygen iodine laser modules.

The terminal high-altitude area defense system, or THAAD, executed its first flight test in five years. It flew its redesigned missile on a non-intercept test to demonstrate performance and measure interceptor kinematics.

Last year, two new sensors completed integration and some combined developmental and operational testing. The forward-based X-band radar-transportable, or FBX–T, demonstrated its ability to track long-range ballistic missile launches.

The sea-based X-band radar completed integration testing in the Gulf of Mexico and has arrived in Hawaii to begin its checkout and integration into the BMDS test bed. The results of the integrated ground tests, coupled with the success of other element-level ground and flight test events, indicate the BMDS is maturing.

Second, the approach. General Obering implemented several changes in organization and test philosophy during the past year. These changes more tightly integrate the developers, warfighters and operational testers. They should also better integrate the sys-

tem engineering functions and the test and evaluation functions within MDA.

These changes, coupled with improvements in test planning, execution and analyses should result in better definition of data requirements and better, more efficient test execution.

As part of his re-engineering his agency, General Obering established the responsible test organization and combined test force under the leadership and direction of his deputy for test and assessment.

The combined test force will plan and execute tests and collect and analyze data that will populate a database to support the technical and operational evaluations of BMDS performance. The combined test force will include test personnel from each of the BMDS elements and the operational test agencies.

With the support of General Obering, I have commissioned the Institute of Defense Analyses to examine and recommend a construct that integrates the operational testers into the combined test force. The goal is to maintain the operational testers' independence and credibility while economizing resources, eliminating duplication of effort and supporting the combined test force mission and objectives.

General Obering and I have also asked the institute to investigate and recommend how to best integrate each stakeholder's assessment needs into the test planning, execution, data collection, analysis and evaluation processes. This should further streamline the test and evaluation planning and execution process, while ensuring all stakeholders efficiently and effectively meet their objectives.

Along with these organizational changes, MDA and the operational test community have agreed on an integrated test planning approach for future BMDS blocks. Beginning with Block 2006, MDA, the joint operational test agency and my office will develop an integrated, evaluation-driven test plan.

This test planning philosophy brings discipline and structure to planning block testing based upon overall system evaluation needs. It does this while concurrently addressing individual element test requirements.

This approach should increase the quantity and the quality of data while fostering the efficient use of test resources. It will also enhance efforts to address priority issues, such as verification, validation, and accreditation of models and simulations.

Third, congressional interest. Over the last few years, Congress has asked MDA and my office to accomplish several specific initiatives with regard to operational testing of the BMDS. Fiscal year 2004 National Defense Authorization Act required operationally realistic testing of the BMDS.

This past year, MDA conducted numerous ground tests, war games and capability demonstrations using trained warfighters to operate the systems. These exercises included fully integrated ground and simulated missions designed by the operational testers and the warfighters.

This year's update to the integrated master test plan incorporates greater operational realism in the areas of increased warfighter involvement in flight tests; more end-to-end system test-

ing; use of operationally representative missiles; employment of operational tactics, techniques and procedures; and inclusion of more complex countermeasures.

Incorporating trained warfighters into the testing program has added to the operational understanding of the capabilities, limitations and maturity of the BMDS.

In fiscal year 2005, Congress required the MDA to conduct a realistic operational test of the BMDS. Following two launch failures in the ground-based midcourse defense system and recommendations from two independent review teams, General Obering restructured the flight test program.

Flight testing to date has not yet reduced the risk to the point where General Obering is ready to execute an operationally realistic flight test. Under the restructured program, MDA plans three operationally realistic flight tests later this year.

In fiscal year 2006, Congress required the operational test community to plan and conduct an operational test of the capability provided by each block of the BMDS beginning with Block 2006. I have taken action to begin this effort involving not only the operational test community but also the warfighters and MDA.

When the evaluation plan is finished, MDA will include these tests in the next revision to the integrated master test plan.

Fourth, the challenges. The complexity of the BMDS is increasing. Elements are maturing and being integrated into the system. Consequently, testing of the BMDS is becoming more challenging as the agency adds elements and capability.

Testers must assess performance and reliability during concurrent test and operations of a layered BMDS system. Integration of the BMDS elements and sensors that are still maturing with operational legacy systems is a difficult task.

Fusing the data that each element provides into a single, unambiguous operational picture is a significant software development, integration, and testing challenge. Range safety and environmental restrictions limit intercept geometries to only a few scenarios.

Meeting each of these challenges is a big task, one that requires a series of well-planned ground and flight tests.

Over the long term, MDA should incrementally develop a capability to support concurrent testing and operations, including simulation over live testing, to speed up the process. This is similar to how DOD upgraded and tested Cheyenne Mountain without interfering with operations.

When developed, this capability will provide an alternative means for system test and evaluation to characterize operational effectiveness and suitability using actual hardware and warfighters in the loop.

Mr. Chairman, in conclusion, the MDA experienced a difficult year with its ground-based midcourse defense system but ended the year on several high notes. Element successes indicate they are progressing toward maturity.

Last year, warfighters demonstrated they could operate the integrated ground system. The fact remains, however, that we ground test for discovery, and we must flight test to verify operational performance and validate the simulations.

Successful flight tests are the cornerstone for building confidence in the BMDS. War fighters must have confidence that the system will defend on demand.

This concludes my opening remarks. I ask that my statement be entered into the record. And I welcome your questions.

[The prepared statement of Mr. Duma can be found in the Appendix on page 90.]

Mr. EVERETT. Without objection, and thank you, Mr. Duma.

Mr. Flory.

STATEMENT OF HON. PETER C.W. FLORY, ASSISTANT SECRETARY OF DEFENSE FOR INTERNATIONAL SECURITY POLICY

Secretary FLORY. Chairman Everett, Ranking Member Reyes and Members of the subcommittee, thank you. It is a pleasure to be here with you today to provide the subcommittee with a policy perspective on our ballistic missile program. You just heard laid out for you very capably and exhaustively the details of that program and where we are going with it.

I would like to express our support for the subcommittee's support and assistance over the years for our strategic programs and for the Department of Defense.

Ballistic missile defense has been a top defense priority of this Administration from day one, and it remains a priority today. I take you back briefly to the beginning of the Administration and look at the threat in the world we faced at that point.

As members are aware, the security environment at 2001, at the beginning of 2001, was very different from the one we faced in the Cold War and it is about to change again significantly.

Former Director of Central Intelligence Jim Woolsey has pointed out that with the demise of the Soviet Union, we found that while we had slain a great dragon, the dragon had been replaced by many dangerous snakes. So the end of the Cold War did not mean that the we no longer faced a threat, but it meant that the United States would faced a different kind of threat and a greater number of threats.

One such threat was the spread of weapons of mass destruction and the means of delivering them, particularly ballistic missiles. Regimes in countries such as North Korea and Iran and, at the time, Iraq understood that while they could not hope to match the United States in conventional forces, they could gain strategic leverage by investing in ballistic missiles.

Without a defense against ballistic missiles, the American people are vulnerable to the threat of missile attack. And without defenses, an American President, faced with a threat to vital U.S. interests from a rogue state armed with long-range missiles, could find that our options are constrained by the fact that these countries can now, for the first time, hold at risk the U.S. population and the American homeland.

To deal with this threat, President Bush in 2001 and 2002, took several bold steps. First, he announced that the United States would exercise its right to withdraw from the Antiballistic Missile, or ABM, Treaty.

Second, in 2002 he directed the Department of Defense to end what had been for decades a research-and-development-only approach to ballistic missile defense and to begin actually fielding an initial set of capabilities for the United States by the end of 2004.

I am pleased to say that today the United States has all of the pieces in place that it needed to intercept an incoming long-range ballistic missile. As you have heard described, we have ground-based interceptors in Alaska and California; a network of ground, sea and space-based sensors; a command and control network; and, most importantly, trained servicemen and women ready to operate the system.

Our system today is primarily oriented toward continued development and testing, but we are confident that it could intercept a long-range ballistic missile if called upon to do so.

Because of the importance of this mission, one of the first things I did on assuming my current position in the Department of Defense was to take a trip up to Fort Greely. I want to tell you how impressed I was, not just by the equipment and the hardware and the facilities there, but the dedication and the professionalism and the sense of mission of the men and women who are there guarding our country day and night.

And I would encourage you all to visit Fort Greely. I know it is a long way away. But I know the men and women who are stationed there would appreciate the visit, and I am confident you will be as impressed as I was by both the facilities and the quality of the people we have there.

I would like to take a few minutes to put this program in its strategic context, in terms of the evolving threat, and in terms of our overall defense strategy. First and foremost, as I mentioned briefly earlier, the threat posed by ballistic missiles is growing. And the missiles we are talking about are growing in range, complexity and in the threat they pose.

In 1990, around the end of the Cold War, there were 16 countries that possessed ballistic missiles of varying ranges. Today, about 25 countries have them.

The number of countries that possess medium, intermediate, or intercontinental ballistic missiles—in other words, missiles with ranges over 600 kilometers that may reach our friends and allies and, in some cases, the U.S. homeland itself—has increased from five to nine, so it has almost doubled.

Not only is the number of nations possessing ballistic missiles increasing, but the group includes some of the world's most threatening and least responsible regimes, such as North Korea and Iran.

General Maples, the director of the Defense Intelligence Agency, testified recently in an unclassified session that North Korea continues to invest in ballistic missiles, not only for its own use but for foreign sales as well.

As General Maples—I should be clear, Lieutenant General Maples, pointed out, Pyongyang is likely developing intermediate and intercontinental ballistic missile capabilities.

As then—Deputy Secretary of Defense Wolfowitz testified before the Senate Armed Services Committee in 2001, North Korea launched a multi-stage Taepo-Dong-1 missile in 1998, which the in-

telligence community tells us demonstrated a North Korean capability to deliver a small payload to the United States.

Now today, North Korea continues to work on the Taepo-Dong II. In fact, it may be preparing to test the Taepo-Dong II, which is a longer range missile capable of reaching more of the United States with a nuclear weapon-size payload.

Mr. Chairman, for over 50 years, U.S. service members have stood on the border of North and South Korea. And we have always known that these men and women were in harm's way. The prospect of long-range ballistic missiles in the hands of the North means that, for the first time, the American people, too, are in harm's way.

Turning to Iran, Iran represents a dangerous nexus, combining a vigorous ballistic missile program, a desire and a program to develop nuclear weapons, and a history of support for international terrorism.

Terrorism has been part of Tehran's strategy for decades. And in fact, before the 9/11 attacks, more Americans had been killed by Iranian-backed terrorists like Hezbollah and others than by any other terrorist group.

Iran has now made ballistic missiles an important part of its defense strategy. The intelligence community judges that Iran now has the Shahab–3 missile operationally deployed and could flight-test an IBM by the year 2015, so that is 9 years away.

Now, the Director of National Intelligence, John Negroponte, recently testified before Congress that Iran has engaged in a clandestine uranium enrichment program for nearly two decades and that, although it is the judgment of the intelligence community that Iran does not yet possess a nuclear weapon or have the necessary fissile material to do so, the danger that it will acquire a nuclear weapon and the ability to integrate such a weapon with ballistic missiles that Iran already possesses is a reason for immediate concern.

In this environment, the recent statements by Iranian president Ahmadinejad threatening the United States and its friends are of even greater concern. In an October 2005 speech, president Ahmadinejad declared that "Israel must be wiped off the map and, God willing, with the force of God behind it, we shall soon experience a world without the United States and Zionism."

I note that in the papers today we see an Iranian spokesman promising that harm and pain will come to the United States if the U.N. sanctions Iran over its nuclear weapons program.

Iran's ballistic missiles already cast a shadow over U.S. friends and allies and over our deployed forces in the Middle East. And as DNI Negroponte testified recently, this is part of Iran's strategy to be able to threaten our allies, to be able to threaten our forces in the region.

The addition of nuclear warheads and an ICBM that could reach the United States would further extend Iran's ability to coerce others and to threaten the United States.

As we face these threats, ballistic missile defenses are an important part of our overall defense strategy. Last month, the department released the 2006 Quadrennial Defense Review, or QDR. The QDR identifies a number of priorities to guide the department as

it makes choices about how to best defend the Nation and how best to win the long war against terrorism and extremism.

These priorities include defending the homeland in depth, shaping the choices of countries at strategic crossroads, and preventing hostile states and non-state actors from acquiring or using weapons of mass destruction.

Ballistic missile defenses make a contribution to each of these important priorities. They can be used to defend the homeland and to defeat the actual use of a ballistic missile against the population and territory of the United States, or its deployed forces or its friends and allies.

And by making an adversary uncertain that a ballistic missile attack would succeed, missile defenses can dissuade countries from investing in missiles or deter their use by those who have already acquired them.

Some have questioned the amount of attention and the amount of money that has been invested in ballistic missile defense in the years following the September 11th attacks, on the theory that the main threat to the United States is terrorism, and that a ballistic missile attack against the United States is unlikely.

I would turn that argument around. One of the lessons of September 11th is that nothing is unthinkable, and that the United States must and can prepare to defend itself against the widest range of threats possible.

The U.S. Government was criticized in the wake of 9/11 for not connecting the dots on the terrorist threat and for failing to act to prevent the attacks. With respect to the ballistic missile threat, the dots are out there for all to see.

And I certainly would not care to have to come before this committee in the wake of a ballistic missile attack to explain why, given all that we know of ballistic missiles in the hands of dangerous regimes, we had not acted to defend the American people.

A theme throughout the Quadrennial Defense Review is the presence of uncertainty and surprise. And I mention this because this has been particularly part of our history of dealing with the ballistic missile threat.

Despite the best efforts of our intelligence community, the fact is that countries that develop ballistic missiles for the kind of purposes that they are developing them for, to threaten the United States, to intimidate us and our allies—first, they tend to do it in unorthodox ways that do not look like the way that we and the Soviets prepared them.

They do not have long, extensive test programs. They are not seeking high degrees of reliability or safety. But as a result of that and the way that they proceed, they are able to achieve what for them is a useful capability with relatively little time and, because they are going to great lengths to hide these, often with very little or no warning for the United States.

We have been surprised many more times than we would like to. One example is North Korea's deployment of the No Dong missile after only one test, something that we, based on our own practices, would have judged unlikely.

Another example was when North Korea launched the Taepo-Dong-I missile in 1998 and when, to our surprise, it turned out to

have a third stage that we had had no idea that they were working on.

I mention this to emphasize that the—while I have tried to give you an idea of the threats that we know about, we always need to be very modest and we need to be very cautious in our confidence in the information that we have and the assumptions that we are making based on that information, because as the Rumsfeld Commission on Ballistic Missile Defense pointed out in 1998, we need to be very cautious, and we cannot be sure that we know all the things that we need to know to make these decisions, and that therefore decisions that require—that are premised on having a certain level of certainty can be very risky.

I spoke earlier about the ballistic missile defense goals the President laid out in 2002. In addition to directing us to field defenses for the United States, the President directed us at that time to cooperate with friends and allies to extend the benefits of missile defenses to them as well.

Since then, we have embarked upon a number of important missile defense initiatives with our international friends and partners. We have worked with the United Kingdom to upgrade the early warning at Fylingdales so that it can perform a ballistic missile defense mission.

We have worked with Denmark to achieve agreement to allow us to upgrade the early warning radar at Thule, Greenland. We continue to work with Israel on the Arrow program. Our own Patriot system is widely deployed and is available for export to a number of countries.

Germany and Italy are our partners in the medium extended range air defense system, or MEADS. We signed a framework memorandum of understanding on missile defense cooperation with Australia in 2004.

And we are negotiating a defense technical cooperation agreement with Russia to facilitate both government-to-government as well as industry-to-industry missile defense cooperation. At the same time, we continue to seek practical areas of cooperation with Russia on a bilateral basis as well as in the NATO-Russia context.

One particularly good news story in our international ballistic missile defense is our cooperation with Japan. The successful test that we just had has already been noted. Japan has committed to spending the equivalent of roughly $1 billion on ballistic missile defense, making it our largest international partner.

If you look at the map of Japan's neighborhood, and if you consider that Japan was the country that North Korea launched a ballistic missile over in 1998, you can understand the level and the intensity of their interest in this program.

We have agreed with the Japanese to work together to develop a more capable sea-based interceptor that will improve the defense of both the U.S. and Japan. That is the larger standard missile.

I am particularly pleased that the government of Japan has agreed to evaluate the optimum deployment site for an X-band radar on its territory that will help defend both the United States and Japan. In addition, the U.S. and Japan are taking the steps necessary to share ballistic missile defense information with one another.

We also are considering fielding long-range missile defense interceptors and radars in Europe. There is roughly $120 million in the President's fiscal year 2007 budget request to begin work on this project.

Such a site would house interceptors very similar to those that we have currently have fielded at Fort Greely and at Vandenberg Air Force Base in California. Fielding such a capability would improve the defense of the United States against long-range missiles, especially those launched from the Middle East, and it would also begin to extend missile defense to our European allies, protecting their populations from attack and reducing the risk of coercion or blackmail.

The U.S. Government has held consultations with a number of allies, beginning in 2002, about their willingness to host missile defense interceptors. We intend to continue those consultations in the near future with allies who have expressed interest.

We are currently in the process of notifying those countries, and I do not want to get ahead of that process today. But that said, I would be happy to follow up with the subcommittee in the near future with more details of what we are doing in this regard.

Mr. Chairman, Mr. Reyes, thank you very much for the time and the committee's time today. I look forward to answering your questions and those of other subcommittee Members. Thank you.

[The prepared statement of Secretary Flory can be found in the Appendix on page 96.]

Mr. EVERETT. Thank you, Mr. Flory.

Mr. Reyes.

By the way, we will limit our Members to 5 minutes. I will ask them to be respectful of that time so that all Members can have a shot at getting a question in. And then we will go as many rounds as we have to.

Mr. Reyes.

Mr. REYES. Okay. Thank you, Mr. Chairman. I will try to cover this briefly.

General Dodgen, based on current tests and procurement plans, when do you anticipate or expect that THAAD, the THAAD system, will be ready to be transferred to the Army for operational deployment?

And does the Army have a position on how many successful flight tests need to be completed before they consider THAAD ready for operational transition?

And then the last question is what will be the process to determine when that transition to the Army by THAAD will be accomplished?

General DODGEN. Thank you, Congressman Reyes. Let me start from the back of the question and go forward. We are in the middle of negotiations now with the Army and the Missile Defense Agency on exactly what those procedures—and we have come to a lot of agreement.

And I think the agreement we have right now and the understanding we have right now—there is no doubt that on 9/11 when the THAAD batteries are ready for operation, there will be United States Army soldiers that are manning those units wherever they may be deployed around the world.

The Army test agency has been intimately involved in the test program with MDA, as described by Mr. Duma in his statement.

And while I am not sure exactly how many test we ultimately see required, because we will continually test the program throughout the life of a particular weapons system, I will tell you that the Army's very comfortable with the test program and that it is meeting what we think are appropriate testing to operationalize the system.

I think the system is coming along very well. The successful test was a step in the right direction. There are four additional tests later this year. We look forward to doing those tests.

And inherent in the mechanism that MDA does, soldiers and operators are involved in every one of those tests, so there is a growing exercise from test to test. But the Army is very much looking forward to gaining that capability, putting it into our inventory.

And at the same time this year we will be determining what the ultimate number of batteries and missiles we will need for the defense of our nation.

Mr. REYES. Thank you, Mr. Chairman.

Mr. EVERETT. Oh, thank you.

Dr. Schwarz.

Dr. SCHWARZ. For anyone who cares to answer—and I am on the learning curve on this topic, gentlemen, so—but can you tell me what are the advantages or disadvantages in airborne laser intercept as opposed to a kinetic energy interceptor, A?

And B, could a laser interceptor, which I believe has got to be on an airborne platform—can that be scrambled quickly enough to intercept a missile in the boost phase?

General OBERING. Congressman, I will take that, if you do not mind. First of all, the advantages and the disadvantages of each. With a directed energy weapon like airborne laser, one of the significant advantages, of course, is you cannot outrun it—instantaneous speed of light transmission.

Also, a tremendous advantage in terms of its applicability to all ranges of missiles, so it can attack the short-range as well as all the way up to the intercontinental range missiles.

It can operate in a concept of operations not unlike what we do today with our Joint Surveillance Target Attack Radar System (STARS) aircraft, our Airborne Early Warning Control System (AWACS) aircraft, in establishing orbits. And then they are supported, obviously, by protective layers and tankers to be able to do that. That work we have done. We have worked that with the Air Force. And we thought through some of those concepts of operation.

Some of the disadvantages, on the other hand—it is not 24-hours, 7-day persistent like you could get with a terrestrial-based capability. But that is why we instituted a KEI, or kinetic energy interceptor, program, so that we would not only have a risk reduction alternative to the airborne laser, but also offers a complementary capability to that.

The disadvantage with a KEI is it cannot reach out and touch the very short range in the short range ballistic threats. It is more effective against the intermediate range and the longer range threats. But it does give us an alternative for that.

But again, it provides us persistence to the fight, and when we can either land-base them or sea-base them, it also gives you the flexibility to move as the emerging threats move.

Dr. SCHWARZ. In the end, we will have both.

General OBERING. Our intention is that we will——

Dr. SCHWARZ. Best-case scenario, in the end, you will have both.

General OBERING. In the end, we will have both options to choose from, if we have the resources, and the funding, and the affordability of both of those systems, we will pursue both of those.

Dr. SCHWARZ. Thank you, Mr. Chairman.

Mr. EVERETT. General, I applaud your optimism.

Mr. Franks.

Mr. FRANKS. Well, thank you, Mr. Chairman.

And thank all of you for being here. You know we appreciate what you do to protect this country and to especially prepare us for whatever kinds of challenges we may face in the future. I know that each one of you are very affirmed by that beyond any words of gratitude that I could have, but I certainly want you to know that it exists.

And having said that, Mr. Flory, if you can express it in an unclassified manner, what do you see as our greatest missile vulnerability? I mean, would it come from North Korea or China as far as our primary concerns?

And if not, let me know. If so, what would be our default systems to try to interdict some type of either singular missile or salvo? What would be the things that we would default to?

And then last, what would be our chances of successfully intercepting such an attack?

And perhaps, General Obering, you might want to follow up as well.

Secretary FLORY. Congressman Franks, thank you, first of all, for your kind words.

The threats we are most focused on are the what is sometimes called the rogue state threats. And Iran and North Korea are the main competitors for that title right now.

I would say that the—and we would be happy to get you greater detail in classified form. The tests I mentioned of the Taepo-Dong (T.D.) I—what we know about the Taepo-Dong II and the development of it suggests that North Korea may be closer than Iran today to actually having an ICBM that could reach out and hit the United States. The intelligence community assesses that Iran could flight-test an ICBM in the year 2015.

As I mentioned earlier, there is a lot of uncertainty involved, but given that the North Korean test of the T.D.–1 was in 1998, and they have been working on the T.D.–1 but also the T.D.–2 for that whole time, I think we have to assume that they are closer.

They also are more advanced in their nuclear weapons capability. The U.S. intelligence community assumes that they have nuclear weapons. They claim that they have nuclear weapons and we believe them.

We have not actually put our hands on them, not surprisingly. We do not have that level of certainty as to their numbers. But it is something that we have to assume that they have.

Now, Iran is right now the subject of a great deal of high-level diplomacy. As you know, there was a meeting of the IAEA, and the Iran dossier is going to the Security Council. And I hope that some vigorous and tough diplomacy can maybe achieve what we have not been able to achieve so far, which is to get Iran to back off of its efforts to develop a nuclear weapons program.

On the other hand, we have to be prudent, and we have to plan for the possibility that Iran may—either the diplomatic efforts may fail or, for whatever reason, Iran may end up with a nuclear weapons capability which, in time, when that ICBM—if that ICBM is tested and becomes operational, that could be then mated to that.

Now, in the meantime, there are a lot of other things that Iran's current missiles, the Shahabs, which have a range of about 1,300 kilometers, can already do to make our life more difficult. With 1,300 kilometer missiles they threaten a lot of our friends and allies in the Middle East.

By doing that, they also—not only is there the risk that they could actually hit these countries, but they have the ability to constrain our freedom of action, and we——

Dr. SCHWARZ. In the interest of time, Mr. Flory, may I——

Secretary FLORY. Sure.

Dr. SCHWARZ [continuing]. Try to just pull that question down to an attack on the continental United States? What would be our greatest danger there and what would be our chances of interdicting?

Secretary FLORY. I will defer to General Obering on the operational question, other than to say that we are confident that we have pieces in place that could intercept a missile. I would say that North Korea is probably going to be in a position to do that sooner than Iran.

General OBERING. Sir, with respect to North Korea, I cannot get into specifics on the effectiveness, but I will let you draw some of your own conclusions. We have actively flight-tested, as I mentioned in my oral statement, against the Cobra Dane sensor, against the Beale radar. We generated fire control solutions based on that testing that in the analysis shows that they would have been successful. Once we get this kill vehicle into its end game, into the terminal basket—it has done a very good job, and the testing we have shown to date shows that we would have done that on that series of tests.

With respect to the Iranian threat, until we get sensor coverage from that approach, we do not have protection against the homeland. That is one of the reasons that we are upgrading the Fylingdales radar in the United Kingdom and continuing with our work in Thule.

Dr. SCHWARZ. Thank you.

General DODGEN. Mr. Chairman, could I add on to that from the operator standpoint?

Mr. EVERETT. Yes, and also let me make a brief remark that General Obering or General Dodgen, either one of you, could comment on.

The stage we are in now—doesn't that pretty much compare to the way we were when the Israelis were when they deployed the Arrow missile?

General OBERING. Sir, we are following the very same approach, which is we test to where we get a sufficient level of confidence that we have a capability. We put it out there, because we know we do not have protection, therefore we want to get some modicum of protection. And we continue to improve it over time. And so we are following very similar approaches.

General DODGEN. I would like to add to Congressman Franks' questions and then answer a question you gave me in your opening statement, which is—and I speak for the operators on the system that have been manning the system 24/7 since October of 2004.

They have been involved in all the testings. They have seen the individual pieces of this system tested. The operational capability demonstrations—they have gained a great deal of confidence in this particular system for the threat that we might be facing at this time in this—and they are very ready and very able to put that system into effect if called.

They are looking forward to the testing which is coming on this year because the end-to-end tests will allow us to optimize the use of our inventory and maybe change our techniques and procedures to get the most out of the missiles we have.

But as far as operating the system they have right now, I share their optimism. I share their confidence that they are ready to do the job.

Mr. EVERETT. Mr. Larsen.

Mr. LARSEN. Thank you, Mr. Chairman.

General Obering, with regards to proposed budget and space-based test bed, although this year's proposal does not include any dollars, starting next year through 2011 there is $569.7 for a space-based test bed. Can you help us understand what you mean by a space test bed, first off?

And then can you discuss whether or not this test bed will include deploying some prototype space-based kinetic energy interceptors?

General OBERING. Yes, Congressman. First of all, there is a lot that we would like to learn about space and space basing when it comes to our sensors, to start with. So the first step in that, as I mentioned in my oral testimony, is that we want to launch two of our space tracking and surveillance system satellites in 2007, and that program is on track to do that.

Those two satellites along with their cross links allow us to begin experimentation to see can we solve the technical challenges that are facing us there, what effectiveness is it, and how reliable may this system be.

We intend to follow, as you said, in 2008 and beyond with some experimentation that starts us down the path to understand some of the technical challenges we face if we eventually decide to pursue a space-based interceptor layer.

Now, we currently do not have any interceptors programmed in our budget. All we have are experimentation to understand some of the technical challenges, things like netted sensors and how you would relate that to a fire control solution from space.

We have the Near-Field Infrared Experiment (N–FIRE), of course, which we are launching in 2007 that is part of this overall concept as well, in which we can do some of the boost phase meas-

urements between what we call the plume-to-hardbody handover—otherwise, can you track an object in that arena.

Mr. LARSEN. So you will use N–FIRE for that?

General OBERING. N–FIRE is part of our experimentation, exactly. So we think it is prudent that while we encourage the debate about whether or not we should have a space-based interceptor layer that we base that on some concrete results. And so we want to make sure we provide that debate with the information that we think we will gain from our experimentation.

Mr. LARSEN. I would hope as well that we are part of that debate——

General OBERING. Yes, sir.

Mr. LARSEN [continuing]. And that information comes back to us so we can participate in that. So with the $569 million you are requesting, would that then pay for developmental satellites—be deployed as part of this test bed with limited defense capabilities? Are you going to be looking at that as well? Should we expect to see that as well?

General OBERING. That is something we will come back to you and define in more detail what that looks like.

Mr. LARSEN. Yes. With regards to ABL and KEI, last year the NDAA included in section 231 a requirement for a comparative assessment of capabilities and costs, a report for that. When do you expect to complete this report? When do we expect to see it?

General OBERING. It should be forthcoming here in the next couple of weeks. We have done the majority of that and we will provide that to you.

Mr. LARSEN. Can you give us an preliminary thoughts on that assessment?

General OBERING. Well, as I say, we are trying to set this up to where we have the first flight in 2008 that we can understand whether or not we have reached the knowledge point for the KEI program as well as the airborne laser.

There are advantages and disadvantages to both, as I briefly mentioned earlier.

Mr. LARSEN. Right.

General OBERING. And so a lot of that will basically say that we are going to try to retain our options as long as we can and understand more. Airborne laser has achieved some great success last year.

However, we have a long way to go there. We have got to integrate that laser on the aircraft. We still have to go through the active flight tests and the high-power lasing. And so we believe that we have a lot more to learn before we can make a final decision.

Mr. LARSEN. That sort of gets up to a follow-up point, then, that I had about just kind of being aware of the potential cost of these systems before we—well, we have to make some decisions about the budget here this year for 2007, including the $631 million for ABL and $405 million for KEI, so that report—to the extent that we can certainly get that before we delve into markup would be a great help.

I will end the questions right there. I have got another set of questions on different topics for another witness, so I will just end there.

Mr. EVERETT. Mr. Spratt.

Mr. SPRATT. Thank you, Mr. Chairman.

And thanks for your testimony, and I am sorry I was late. I appreciate your forthcoming presentations. I want to see if we can link together the testimony.

Mr. Duma, I understand you from past statements to say that the ballistic missile defense testing regimen was not realistic enough. You seem to testify today that we have made strides in that direction over the last year.

But you also state in your testimony flight testing to date has not yet reduced the risk to the point where General Obering is ready to execute an operationally realistic flight test.

What is missing in the testing regimen now that needs to be added to it to make it realistic?

Mr. DUMA. Well, the fundamental technical unknown at this point is to demonstrate the intercept capability on the ground-based interceptor. We have modeled that. We have done a tremendous amount of work down in Huntsville and actually across the nation, linking models and simulations together for integrated ground tests.

The big benefit of that has been the inclusion of the warfighters, as General Dodgen has stated. That has gone a long way to look at the tactics, techniques, procedures, the integration problems that we are facing to get the communications flow.

But the technical unknown right now—and while we have demonstrated technology for hit-to-kill, we have not done it on the operational booster and operational kill vehicle. We did fly those for the first time successfully, but that was without a target. The booster operated as expected. The kill vehicle operated as expected and maneuvered as expected. But that was not against a target.

So we need to get a target up there. And you may recall from approximately a year ago we expended two targets but no ground-based interceptors, because of other problems, so we need to close that loop.

Mr. SPRATT. Until that is done, that loop is closed, can we state with confidence that a long-range missile can be intercepted by our system if called upon to do so?

Mr. DUMA. We have all the pieces in place to be able to try that. I cannot tell you with certainty that we can do it yet. We have not done that end-to-end demonstration.

Should a launch occur today, I would certainly hope the operators would put it on alert and try the best they can with what they have, but the testing to date has not confirmed that you could count on that.

Mr. SPRATT. Thank you, sir.

General Obering, as I look at your budget, it is $10.4 billion all together, including PAC–3 and MEADS. In addition, the Air Force is paying for SBIRS-high, but it is a component of your system. That is about $670 billion. The two together are $11 billion.

And we do not know where SBIRS-low is. I do not believe there is a breakout for Space Tracking Surveillance System (STSS), is there, or whatever that——

General OBERING. Yes, sir.

Mr. SPRATT [continuing]. In the line?

General OBERING. Yes, sir.

Mr. SPRATT. I beg your pardon. So that is included. If you include SBIRS-high, then we are talking about $11 billion this year, but almost all of that, as Mr. Larsen was saying, is already T&E.

What is the procurement? What is the likely acquisition cost of these systems if they are brought to fruition, proven to work? What is the far end of the effort that we are doing now when it comes to fielding all of this stuff that we are developing and proving?

General OBERING. Well, Congressman, I cannot give you a single number. And the reason I cannot is because we are trying to pace this program based on what we see as the threat development and what we see as the technology development and the maturation of the system.

So what we are doing is trying to manage the program within the budget that we have been given and the top line authority that we have been given. I have responsibility of that amount that you mentioned. I have responsibility for $9.3 billion of that.

And if you look across, it looks about that level, about $1.5 billion to $2 billion of that per year goes to fielding, and the rest of it goes to development of continuing improvement of the system.

And what we will do is we will field as maturity and as the knowledge-based testing presents itself to justify that and continue that, and we will produce the rates that we think we need to keep apace and ahead of what we see as the threat inventories.

Mr. SPRATT. You have got a full plate, I think you would agree.

General OBERING. Yes, sir.

Mr. SPRATT. Lots of things to bring together—GBI, KEI, ABL. There might be a tradeoff between the two of those. You are looking at an MKV to replace the EKV, and as you go along with the spiral development the technology gets more and more sophisticated.

I am a little dismayed at the notion that we would start by fiscal year 2008 adding to this plate—multiple systems—another system that could be hugely expensive, and that is a space-based system.

General Abrahamson came to the conclusion years ago that to field a space-based system you would have to have a dramatic reduction in the cost of lift. Now, he was supportive of the idea, but he also included in his SDI program a lift cost production program seeking a reduction by a factor of three or four in the cost of lifting a pound of payload into space.

Would you anticipate having to do the same thing to make 50 to 100 space-based interceptors a feasible undertaking?

General OBERING. Well, yes, sir. That is part of what I mentioned in the experimentation program that we would try to—as part of that experimentation program is miniaturization and how much weight can you get out of some of these payloads that you would have to do.

But General Abrahamson, as you reflected—the constellations that were envisioned at one time were much, much larger than what we are talking about now, when you add a layer to an already-existing terrestrial-based system. But we have a lot of work to do there.

About the $10,000-per-pound-to-orbit cost—that has to be driven down. A lot of those are the challenges that we would be facing in any type of an approach or movement to space.

But if I can address your point about the affordability, that is another advantage as to why we are proceeding the way we are. We will not embark on a program if we do not think it is affordable. We may have tremendous success with airborne laser all the way through to lethal shoot down. But if we do not think it is an affordable capability, we will not pursue that.

That is part of the criteria that we apply to these programs when they get to their knowledge points. It is not just knowledge points about technical performance. It is also about cost affordability. And we will reserve the right to make those decisions.

As we get to that point, there will be ebbs and flows throughout the program, so there will be programs that will be coming off of their fielding requirements and others that will be expanding.

That is why we think that this is a prudent investment, because even with all of those programs thrown in that you just mentioned, they are still less than 3 percent overall of our defense budget.

Mr. SPRATT. Thank you very much.

Mr. EVERETT. Mr. Reyes.

Mr. REYES. Thank you, Mr. Chairman.

I have a question for you, General Obering. Both the Central Intelligence Agency and the Defense Intelligence Agency, in an unclassified assessment of the threat that we face, have stated that it is their belief that North Korea is capable of using rudimentary countermeasures in an ICBM attack against the United States.

When will MDA test the GMD system against these kinds of countermeasures?

General OBERING. We already have, which is a little-known fact. But we have demonstrated—the successful intercepts that occurred in 1999 to 2002—there were countermeasures involved in those intercept tests. Having said that, we plan three more flight tests this year, as I said.

If we are successful in that test series, we will—we have already actually given the direction to look at how we could add countermeasures to part of that test regime.

Mr. REYES. And in those tests, do we mimic or mirror the basic or the rudimentary types of countermeasures that both North Korea, Iran and possibly others might use?

General OBERING. Well, Congressman, the intelligence community may have much better insight into that than I do, but I do not know of anybody that can say with any certainty what kind of countermeasures those countries are capable of.

However, based on the physics, based on what you would try to conjecture in terms of vulnerabilities, those are the kind of things that we would use as part of our test program.

Mr. REYES. All right.

Thank you, Mr. Chairman.

Mr. EVERETT. All right.

Dr. Schwarz.

Dr. SCHWARZ. Secretary Flory, I think this is probably best directed at you. And the way to ask this so that, you know, my ques-

tion does not make you answer that that information is classified—so let me give it a shot.

In unclassified terms, what is the near-term ballistic missile threat to the United States? What additional capabilities might we need to face that threat? And how likely is it that a non-nation state will ultimately possess or could conceivably possess ballistic missiles and the pertinent launch capability?

Secretary FLORY. I would say in terms of the near-term threat, I would probably go back to some of my response to Mr. Franks' question. In terms of a long-range missile, an ICBM threat, we know what North Korea has done—its 1998 test of the Taepo-Dong I. We know that it is working on the Taepo-Dong II.

As I mentioned, the intelligence community thinks that Iran may have an ICBM, might be able to flight-test an ICBM by 2015. So in this setting, and bearing in mind the classification issue, that is about all I think I can say on that, although we would be happy to get you a briefing on the details.

In terms of additional capabilities, I would ask my colleagues to jump in on that, but I think—what we are working on now is designed to deal with the kind of missile, the kind of trajectory, the kind of threat we are talking about here, so I think we are on a path to that.

Now, I would put one caveat. A couple of countries have tested shorter-range missiles launched from ships, so that is something—the shorter-range missiles exist. That is something that hypothetically could happen in a much shorter time frame, because all the elements of it exist. And that would be something very challenging.

In terms of non-nation states getting a hold of ballistic missiles—excuse me, I think non-state—maybe I garbled that—non-state actors getting a hold of ballistic missiles, we have to be concerned about that.

North Korea has shown a willingness to sell weapons to all and sundry. Iran's ties with terrorism, which go back for a long time, and represent a consistent element of Iran's national strategy, are other concerns.

On the other hand, I think that with respect to non-nation states, this would be challenging. I mean, they would have to use a nation state somewhere to launch it from, so I think they are—we know that there are terrorist groups, Al Qaida in particular, that are working on trying to get together materials for radiological and nuclear weapons. We know that they have pursued chemical and biological.

But I would think, at least in the shorter term, those would be more likely options for them to pursue.

Dr. SCHWARZ. Thank you, sir.

Thank you, Mr. Chairman.

Mr. EVERETT. Mr. Franks.

Mr. FRANKS. Thank you, Mr. Chairman.

And, General Obering, I would direct the question to you, with the understanding if anyone else has a different perspective or a better one—I am wondering, we were briefed by the high-altitude electromagnetic pulse, the EMP, commission here last year.

And that really reassessed in my own mind some of the potential priorities that we may face, and with the potential that even maybe a Scud missile or something of a more rudimentary level might be used to elevate some type of enhanced nuclear electromagnetic pulse weapon.

Having said that, do we have any focus in the direction of being able to interdict something that would come from our own homeland, you know, to be elevated high enough to be detonated over our homeland, or something that would, say, come off the near term coastline that would probably be more, like you mentioned, a rogue state attack?

So we have any sensing capability or any response capability for something like that? Are we even thinking in that direction?

General OBERING. Mr. Franks, actually, the big problem there is sensors and sensing. And we have taken steps to cover that—what we call an asymmetric threat that would be off the coast, and upgrading the sensors that we have existing today to be able to meet that threat.

We could also choose to deploy assets that are available to protect some of our higher population areas—that type of thing—that is a decision that could be made in the future. But in terms of the ability, the technical ability, we have that inherent as part of our program.

I will not comment on internal launches. That is something that we have nothing in our program today that would address that.

Mr. FRANKS. Well, I guess, you know, it occurs to me that maybe the greatest danger that we would face would be something along those lines, because even in Iran, as insane as that government is, it occurs to me that if they did have a missile capable of reaching the United States, even though they have to know what our response would be, they have to, it seems to me like they would try to pass some type of technology off to someone that could launch it closer, that they could ostensibly have no fingerprints on it.

But you are saying to me that at least that equation is being considered carefully, and I guess my add-on to that would be how do you assess that threat in terms of potential—put it in priority for me as far as, you know, some ICBM coming from North Korea.

It occurs to me that we are almost more likely to face some sort of close-in threat like that from some terrorist than we are from some nation.

General OBERING. Congressman, I would let the intel community comment on the likelihood, but I will comment on the technical feasibility. And I believe it is not that difficult to do.

And in fact, in August of 2004 we actually launched that type of a missile off the coast as part of a target series that we are using in a test program with the Arrow missile. And so we do not assess the difficulty technically of being that hard to do.

But the likelihood, the motivations and that type of thing, I would leave that to the intel community.

Mr. FRANKS. Sure. But you are saying to me that we have the technical capability to sense and acquire and respond to something like that if it were necessary.

General OBERING. We have that as part of our program, planned program.

Mr. FRANKS. Okay. Thank you.

Mr. EVERETT. Mr. Spratt, we are going to reserve a place for Mr. Larsen, if you are ready to go with a second round.

Mr. SPRATT. You have all touched upon this in your testimony, but it would be useful if particularly you, General Obering, or General Dodgen, you could kind of lay out for us—the Ground-based Initiative (GBI), for example. How many more tests do you have to go before you think you will be able to say with proven confidence that this is an operationally effective system? And what are these tests?

General OBERING. The tests that we have planned for the remainder of the year, I will walk through those very quickly. We have a target launched out of Kodiak, Alaska, that will fly across the Beale radar, and we will launch an interceptor out of the Vandenberg Air Force Base, and we will do what we call a target characterization for this flight. That will occur in the late May, early June time frame.

We will repeat that same type of profile in the latter part of the summer and then again in the latter part of the fall. And so those are what we would consider to be very operationally realistic tests because they are threat representative targets. That is an operational radar, the Beale radar.

They are operational crews manning the consoles. There will be an operational fire control system that will be used, operational hardware and software. And of course, we have an operational configured interceptor.

And so we believe that that begins to fit the bill of a—the closest that we can come to an end-to-end test other than trying to take a missile off the coast of North Korea and launch it back this way, which is very improbable and not practical.

General DODGEN. If I may deal with it from an operational question, in a way the crews are dealing with it, the uncertainty that we have in the performance of a system is dealt with at an operational level right now by the potential of doing multiple engagements on the same incoming missile.

As we see this test that is unfolding this year, we will get a better understanding of just exactly the effectiveness of the Exo-atmospheric Kill Vehicle (EKV) in the end game and the interceptor, and we will go and modify our firing doctrine in very short order so that we are gaining the effects we want.

At the same time, because this is the year when our inventory is going to be going up significantly—so I think they marry up pretty well that as our uncertainty goes down, and our confidence goes up, we will be modifying our firing doctrine to achieve the effect.

But we deal with the uncertainty with the ability to shoot multiple times at the same target today.

Mr. SPRATT. Going back to the electromagnetic question, once again I think your predecessors determined some time ago that if the attack were truly a massive attack in the days when we were still conceiving the Soviet Union or the former Soviet Union as our principal nuclear adversary, there was a general rule of thought that if the attack was more than 100 RVs or greater magnitude than that, that the electromagnetic effects of intercepting a number

of these RVs coming at us would be such that the system soon would be—its operation would be extremely problematic.

Do you still feel that way, that if we had a large attack against the system, and if we were successful and particularly if they were fused so that they would detonate upon collision, salvage-fused, would that thwart the effectiveness of this system if the—if so, what would be your estimate of the limit at which this problem—this became a problem?

General OBERING. Well, first of all, sir, the system that we are fielding today clearly is not designed for massive attack. It is not designed for that mission. It is designed to handle the degrees of nuclear detonation that you talked about with respect to the numbers that we would potentially be facing, and the inventories that we have fielded, and the capabilities that we have in the system, and we have further steps that are identified to even make that more effective against that type of a detonation that could occur.

But it is not designed for a massive attack, and it is designed right now for the rogue nation threat, as we mentioned.

Mr. SPRATT. Thank you.

Mr. EVERETT. Well, let me give it a shot while—I know Mr. Larsen wants to have some questions.

General Obering, as long as you are still up at bat, let me ask you about a—last year, this committee and the House Armed Services Committee, with the help of my colleagues here, authorized an additional $100 million for further testing.

And I think the appropriators added another $50 million. I think you ended up getting $150 million. Talk to me a little bit, or talk to the committee a little bit, if you will, on how that money was used and what good you think came from it.

General OBERING. Sir, it was tremendously advantageous for us to get that. What we used that money for specifically is over $100 million went directly into our test program.

One of the things I did last year upon the recommendation of the independent review team and the mission readiness task force was to divert more of our interceptors into our test program, so we actually diverted four interceptors from what would have been silo emplacement into our test program.

And they also recommended that we do additional ground test and additional qualification test with components. For example, we stack fired an interceptor this last November as part of our ongoing qualification and risk reduction testing. And so what that money did was allow us to offset some of those impacts of having to divert those boosters into the test program.

It also allowed us to integrate the sensors that are coming online this year, the sea-based X-band, the forward-based X-band that we are deploying, and that—especially the sea-based X-band—greatly enhances our test bed as well, so we were able to use that money for that, as well as provide $25 million for mooring for that sea-based X-band off of Adak, Alaska.

So that money went directly into our testing and helped us to offset some of the impacts from our diversion of interceptors into that test program.

Mr. EVERETT. General Dodgen, can you update us, please, on the Army's progress in directing the Patriot friendly fire that we noted

in Operation Iraqi Freedom? And also, do you have adequate funding to complete upgrading all the batteries out there?

General DODGEN. Thank you, Mr. Congressman. With congressional help, we were able to reprogram $43.1 million to take care of the immediate needs in the aftermath of Iraqi Freedom. We did a very good scrub of what are the combat-related improvements we needed to do. And they were in three categories.

The first one was better connectivity on the battlefield. The second one was retraining our crews in Tactics, Techniques, and Procedures (TTPs) and reinventing the way we did friendly protect. And the third one was fixing the software classification things in our software build and the Patriot system, the latter being the thing that took the longest.

We used that money to accelerate the fielding of the battery command posts that are out there now which gave every one of the Patriot batteries Link 16 connectivity and datalink connectivity assured.

We have retrained our crews over the last two years. We have redesigned the next software build which is post-deployment build six. It will be ready to put into the system at the beginning of next year, and that will be the extent of those improvements.

And we are very confident the TTPs will take care of us until the software gets into the system, and when the software gets into the system, we will be very robust and have those things corrected.

Mr. EVERETT. Well, thank you. I will just simply say this has been of long interest of this subcommittee. Some years back, when we first noticed this, we put about $20 million in there for you to take a look at it. And unfortunately, we lost it in the appropriation process. But that is good news.

Mr. Larsen, we have been carrying the weight here until you got back.

Mr. LARSEN. I did not know I had that much pull on the——

Mr. EVERETT. Absolutely.

Mr. LARSEN. Yes, sure. Yes.

A quick follow up for General Obering and the space-based test bed. The GMD system evolved from experimental assets deployed in Alaska into an operational system, and I think perhaps the coda of my question in the last round might be something like this.

As you move forward through 2011 with the $500 million or so, are we kind of moving from experimental to something that we assume will be operational, or can you commit to this committee right now that if this is—you are just experimenting, we are looking at this, and this is not the beginning of something that gets so far down the road that we cannot say hold on a second, what are the costs on this, why isn't this working, how does it work?

General OBERING. No, it is not. I would not characterize it like that at all, Congressman Larsen. Again, it is a space test bed for just experimentation purposes. We do not have any configuration, anything like that, that is laid into our program for that intercept.

Mr. LARSEN. Yes. Yes. Thanks.

Mr. Duma, the 2006 act included a section 234 requiring appropriate joint service operational test and violation components. As the director, you have to approve the block test plan and submit a report when the test is complete.

And the operational test requirement begins with Block 2006. Can you describe to the committee your plans for implementing that particular statutory requirement and discuss your progress to date?

Mr. DUMA. Yes, I can, Congressman. As I said in my opening statement, we have worked with the Missile Defense Agency to implement a bit of a new test philosophy, and that is any valuation-based philosophy to drive, then, the test events required to get the information to satisfy the knowledge points for the development and the operational capabilities of the systems.

We have begun that effort. And as I said, the approach being taken will be incorporated into the next update to the integrated master test plan. We did update the integrated master test plan based upon the findings and recommendations of the independent review team and the mission readiness task force.

Both of those bodies took inputs from the operational test community and incorporated them into their recommendations. We updated the master test plan based on that. That plan is virtually complete, and I believe it is in the final signature chain right now.

And General Obering just told me he had signed it now, so that will be out shortly. The next version of that will incorporate the evaluation-based test planning.

Mr. LARSEN. So this particular test plan design does not reflect evaluation-based——

Mr. DUMA. No, it does not. It reflects the recommendations of the IRT and the mission readiness task force.

Now, that statute also requires reporting, as you know, and I have three reports that I am read to provide to Congress. I do an annual report which is through my Title X in which I report an unclassified summary of the testing that has occurred. I have an annual report that I have submitted so far in a classified nature on the missile defense test program and progress made. That is due February 15th of every year. And now this section 234 requires another report on the completion of each block. So it starts with Block 2006. That technically ends on the 31st of December in 2007, so the report—or to satisfy that Article 234 requirement will be in January of 2008.

Mr. LARSEN. All right. I apologize for asking this, but you said the classified report that you have is due February 15th. Have we received——

Mr. DUMA. You have. I sent that, I think, around the 13th of February.

Mr. LARSEN. Just under the wire. All right.

General Obering, the Navy and MDA is scheduled to select a sea-based program for KEI in fiscal year 2007, and do you have any concerns about moving forward with that, given that we have not actually decided on the KEI or ABL?

General OBERING. We have a study involved in terms of what that recommended approach will be, looking at the various configurations, ship configurations, and recommendations. That is what that entails.

Mr. LARSEN. Okay.

General OBERING. But we will base any type of—even a development program on the testing that will occur between now and the

end of 2008. That is what we mean by a knowledge-based approach.

Mr. LARSEN. Okay.

General OBERING. We still do the systems engineering, and if you go with a land-based and sea-based version, you have to do that allocation of performance and allocation of requirements. That is a prudent thing to go do. And in fact, that is how you derive your knowledge points. But we fully intend to achieve——

Mr. LARSEN. But the dollars are not there to put something on a ship——

General OBERING. No.

Mr. LARSEN [continuing]. With the 2007——

General OBERING. No. No.

Mr. EVERETT. Thank you, Mr. Larsen.

Mr. Reyes.

Mr. REYES. I just have one last quick question.

Mr. EVERETT. Sure, absolutely.

Mr. REYES. And this one is for you, General Dodgen. What is the Army doing to develop or pursue technology to counter the rocket, artillery and mortar attacks? And what is SMDC's role in these efforts? And in your opinion, is there sufficient research funding for these efforts in the 2007 budget?

General DODGEN. Well, as you know, we have deployed certain guns with the help of this committee, certain guns into Iraq. And as a part of that, there has been a joint sense-and-warn ability which has been very effective also, which quickly senses and warns soldiers so they can take cover. And that, in and of itself, has saved a lot of lives.

So we have something that we have tested as an interim fix, and we have deployed, and we are going to deploy more of those, and we are going to continue to test those.

At this time, I think we recognize in the Army that this is going to be a threat that is going to stay with us for some time, and we are going to have to develop some capabilities for the future force. And we are looking at alternatives now, and the Army is actually looking at the requirements in building something for the future.

SMDC has always been involved in what I am optimistic about, and that is directed energy, a high-energy laser. We have recently gone away from chemicals because of its ability and its immobility on the battlefield, and now we are actively pursuing solid-state lasers that could be packaged in a mobile system to do that particular job.

And that is one alternative that is already funded. It is not ready to be accelerated. We have awarded some contracts. We want to get up to a certain level of power and make a determination then. So we are looking at the future with that alternative, directed energy, and we are looking at other things.

So from solid-state standpoint, I think the 2007 is properly funded for us to move forward.

Mr. REYES. Very good. Thank you very much.

Thank you.

Mr. EVERETT. Thank you.

And I thank the panel for being here today.

And I thank my Members for the questions. Obviously, there were some in-depth questions that I thought were well put and well answered.

I am personally pleased with the progress that we have made, General Obering and General Dodgen, and from where we were this time last year. I think that is a step forward. And I look forward to the rest of this year.

I think I actually smell some success out there, big-time success. So we are looking forward to that. There will probably be some questions for the record, and I would ask you to respond to those in real time rather than Washington time, which is about 30 days, please. [Laughter.]

So thank you again. I thank the panel. I thank the Members for participating.

The hearing is adjourned.

[Whereupon, at 2:52 p.m., the subcommittee was adjourned.]

A P P E N D I X

MARCH 9, 2006

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MARCH 9, 2006

Opening Statement
Honorable Silvestre Reyes
Hearing on Ballistic Missile Defense Programs
Subcommittee on Strategic Forces
House Armed Services Committee
March 9, 2006

Thank you, Mr. Chairman. I also want to thank Lt. General Obering, Lt. General Dodgen, Mr. Duma and Assistant Secretary Flory for joining us here today.

Mr. Chairman, although we have several contentious issues in our subcommittee's jurisdiction, our members, *following your example*, are able to express differences of opinion without letting the debate turn ugly. We may need to call upon your leadership again this afternoon, as we will be discussing contentious issues related to development, testing and deployment of ballistic missile defenses.

Before we get into the discussion, I want to explain how I frame the issue. This context is not for the sake of the Members of this Subcommittee; even when we may disagree about a defense issue, we do not question each other's commitment to defending our nation. Rather, I do this for the sake of the general public, because too often Democrats are

painted as reflexively and unalterably opposed to missile defense.

I am a strong supporter of missile defense, including the GMD system already being deployed in Alaska and California. And I think we will eventually prove that this system is an effective insurance policy against a limited ICBM threat.

Moreover, BMD systems that protect, or will protect, our troops on the front-lines – such as PAC-3, THAAD, and Aegis BMD – enjoy broad and strong bipartisan support.

In 1999, H.R. 4, a bill co-authored by two of our committee colleagues, Curt Weldon and John Spratt, came to the House floor for a vote. H.R 4 simply stated: *"It is the policy of the United States to deploy a national missile defense system."* Period. End of story. No caveats. A majority of House Democrats – let me repeat that—a majority of House Democrats voted for that measure.

Granted, on my side of the aisle, we do not have as much consensus on a national missile defense system as does the other side. But somehow, in spite of all evidence to the

contrary, there is a widespread perception that all Democrats oppose missile defense, especially a national missile defense system. That is flat-out wrong.

I provide this context because today many members will ask tough questions. And even though I strongly support missile defense, and even though I believe it is important for our nation to have a ballistic missile defense system in place, I too will ask tough questions. Because even though I support missile defense, I do not think we should give it a blank check or allow it to avoid thorough testing.

On the contrary, the very fact that, some day, a missile defense system might be the last line of defense to protect our citizens against a nuclear-tipped missile is *exactly why* it should undergo strenuous testing.

Last year, when we held our subcommittee oversight hearing after three missile defense test failures, I stated that we should not be discouraged by those setbacks. And I compared our task to that of a baseball player who, after striking out, needed to regroup in the dugout before his next turn at bat.

Well, General Obering, MDA has regrouped. Your decisions to charter an Independent Review Team, and then implement its recommendations, have helped set the program back on the path to success. Since resuming testing last summer, MDA has achieved test objectives in all aspects of the program including interceptors, radars, battle management and targets. Just yesterday, MDA successfully completed a joint test with the Japanese demonstrating the performance of the SM-3 Aegis missile that had been modified with a Japanese-designed advanced nosecone.

Yet the most challenging tests are still to come. This Spring and Summer, MDA will attempt to verify the entire kill chain of the GMD system, including an actual intercept, using deployed hardware, under more realistic conditions, with warfighters at the controls. Today, we will have an opportunity to ask both the developer and the operational tester about the value of these upcoming tests. Specifically, if these tests are successful, will we have achieved Block '04 operational capability?

In the broader context, I also have questions about the pace and scope of the missile defense program. For example,

the FY07 budget includes long-lead funding for GMD boosters 41 through 50. This buy would complete procurement of all GMD boosters prior to the conclusion of operational testing. In addition, funding for the two boost phase missile defense options – ABL and KEI – is collectively slated to grow by over 50 percent between FY06 and 07. This growth is proposed even after Congress requested a report comparing the capabilities and costs of these two systems. Do we really need to accelerate development of both boost phase systems?

As I see it, we are not debating the question of "Are you for missile defenses or not?" Instead, today we are discussing the relative value and priority of different missile defense systems given the threats we face. We are also seeking assurance that deployed systems undergo the rigorous testing required to assure warfighters of their operational capability.

Mr. Chairman, I thank you for the opportunity to set the context as I see it, and for calling this important hearing. I look forward to the testimony of our distinguished witnesses and I yield back the balance of my time.

Unclassified Statement of

Lieutenant General Henry A. Obering III, USAF

Director, Missile Defense Agency

Before the

House Armed Services Committee

Strategic Forces Subcommittee

Regarding the

Fiscal Year 2007 Defense Authorization
Ballistic Missile Defense

Thursday, March 9, 2006

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Lieutenant General Henry A. Obering III, USAF
Director, Missile Defense Agency
Missile Defense Program and Fiscal Year 2007 Budget
Before the
Strategic Forces Subcommittee
House Armed Services Committee
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Good afternoon, Chairman Everett, Congressman Reyes, Members of the Committee. It is an honor to be here today to present the Department of Defense's Fiscal Year (FY) 2007 Missile Defense program and budget. The Missile Defense Agency mission remains one of developing and progressively fielding a joint, integrated, and multilayered Ballistic Missile Defense (BMD) system to defend the United States, our deployed forces, and our allies and friends against ballistic missiles of all ranges by engaging them in all phases of flight. I believe we are on the right track to deliver the multilayered, integrated capabilities that are necessary to counter current and emerging threats.

As was the case last year, our program is structured to balance the initial fielding of system elements with steady improvements using evolutionary development and a test approach that continuously increases our confidence in the effectiveness of the BMD system. This budget balances our capabilities across an evolving threat spectrum that includes rogue nations with increasing ballistic missile expertise.

We are requesting $9.3 billion to support our program of work in Fiscal Year 2007. The $1.6 billion increase from 2006 reflects a return to the annual investment level targeted by the Department for ballistic missile defense and is indicative of the robust phase we are entering in the development and fielding of the integrated layered capability.

Approximately $1 billion of this increase will be applied to fielding and sustainment, and $600 million to continued development of the Ballistic Missile Defense System. $2.4 billion of the Fiscal Year 2007 request covers the continued incremental fielding and sustainment of long-range ground-based midcourse defense components; our short- to intermediate-range defense involving Aegis ships with their interceptors; and the supporting sensors, command, control, battle management and communication capabilities. This increase in funding for fielding and sustainment of nearly a billion dollars from last year reflects the success we have had across the program. About $6.9 billion will be invested in continued component improvements, system capability development, and testing.

I would like to review our accomplishments, as well as our shortfalls, over the past year, explain our testing and fielding strategies, and address the next steps in our evolutionary ballistic missile defense program.

The Evolving Security Environment

Proliferating and evolving ballistic missile systems and associated technologies continue to pose dangers to our national security. In 2005 there were nearly eighty foreign ballistic missile launches around the world. Nearly sixty launches last year involved short-range ballistic missiles, approximately ten involved medium- and intermediate-range missiles, and about ten involved long-range ballistic missiles.

North Korea and Iran have not relented in their pursuit of longer-range ballistic missiles. Our current and near-term missile defense fielding activities are a direct

response to these dangers. There are also other ballistic missile threats today for which we must be prepared, and there will be others in the mid- to far-term. We must be ready to operate the ballistic missile defense system against new and unexpected threats.

Our potential adversaries continue efforts to acquire ballistic missile systems and technology. Ballistic missiles were used against our forces, our allies and friends during the 1991 and 2003 Gulf Wars. When combined with weapons of mass destruction, they could offer our enemies an attractive counterbalance to the overwhelming conventional superiority exhibited by U.S. and coalition forces during those wars. We can expect that in the future our adversaries could use them to threaten our foreign policy objectives or pursue a policy of terrorism by holding our cities and other high value assets hostage. After all, those who support global terrorism can hide behind the threats posed by offensive missiles carrying highly destructive or lethal payloads. They will use them to try to deny our forces access to a theater of conflict or to coerce a withdrawal of our forces from that theater. Ballistic missiles provide a way for our adversaries to attempt to achieve some degree of strategic equality with us, especially at a time when ballistic missile defense is still striving to catch up with the progress made by ballistic missile offense over the past four decades.

Missile Defense Approach—Layered Defense

We believe that layered defenses integrated by a robust command and control system, will improve the chances of engaging and destroying a ballistic missile and its payload in-flight. This approach to missile defense also makes the effectiveness of

countermeasures much more difficult, since countermeasures designed to work in one phase of flight are not likely to work in another. It is much harder to overcome a complex, multilayered defense. Layered defenses, a time-honored U.S. approach to military operations, provide defense in depth and create synergistic effects designed to frustrate an attack.

With the initial fielding in 2004 of the Ground-based Midcourse Defense components, the Aegis long range surveillance and track ships, and the first integrated command, control, battle management and communications (C2BMC) suites, we made history by establishing a limited defensive capability for the United States against a possible long-range ballistic missile attack from North Korea and the Middle East. With the cooperation of our allies and friends, we plan to evolve this defensive capability to make it more effective against all ranges of threats in all phases of flight and expand the system over time with additional interceptors, sensors, and layers.

Since we cannot be certain which specific ballistic missile threats we will face in the future, or from where those threats will originate, our long-term strategy is to strengthen and maximize the flexibility of our missile defense capabilities. As we proceed with this program into the next decade, we will move towards a missile defense force structure that features greater sensor redundancy and sensitivity, interceptor capability and mobility, and increasingly robust C2BMC capabilities. In line with our multilayer approach, we will expand terminal defense protection and place increasing emphasis on boost phase defenses.

We are effectively employing an evolutionary acquisition strategy to field multiple system capabilities while maintaining an aggressive test and development program. The Missile Defense Agency continues to evolve and refine desired capabilities, based on warfighter need and technology maturity, through sound risk management. Our goal continues to be one of fielding the best capabilities possible, on schedule, on time, and within cost, in order to address current and emerging threats.

Completing the Fielding of Block 2004

Since I last appeared before this committee, we have made a number of significant accomplishments to complete initial fielding of the Block 2004 capability. We have also fallen short in some areas. When we rolled this program out in 2002, we set out to deploy 10 Ground Based Interceptors in 2004 and another 10 in 2005. A booster motor plant explosion in 2003, which had a major impact across the missile defense program, and the need to step back and undertake a mission readiness review of the Ground-based Midcourse Defense program following two test failures caused us to miss our fielding mark. I delayed the Ground-Based Interceptor deployment in 2005 and made changes based on the recommendations of the mission readiness review. I believe we are now back on track, but I will pause again if necessary. We recently emplaced three more Ground-Based Interceptors in silos at Fort Greely, Alaska, for a total of nine, and two at Vandenberg Air Force Base in California. This progress is critical because we expect the Ground-based Midcourse Defense element to be the backbone of our national missile defense capability for years to come. Today we continue with interceptor fielding and

plan to emplace additional Ground-Based Interceptors, for a total of sixteen by December of this year.

This past year we also added a second Aegis engagement cruiser and delivered additional Standard Missile-3 interceptors to our evolving sea-based architecture to address short- and medium-range threats in the midcourse phase of flight. We did not advance as rapidly as we hoped. We needed to resolve technical issues associated with the third stage rocket motor and the solid divert and attitude control system to take full advantage of interceptor performance designed to pace the threat. However, we are close to the 10 to 20 sea-based interceptors we projected for delivery in our initial program. Right now, I am comfortable with where we stand in our sea-based interceptor deployment plans. We will continue to grow our inventory of Standard Missile-3 interceptors for deployment aboard Aegis ships and, by the end of 2006, outfit three Aegis destroyers and one additional cruiser with this engagement capability. So, in addition to providing surveillance and tracking support to the integrated ballistic missile defense system, Aegis provides a flexible sea-mobile capability to defeat short- to intermediate-range ballistic missiles in the midcourse phase.

In our sensors program, we upgraded the Beale Early Warning Radar in California. The Beale radar complements and works synergistically with the surveillance and tracking capabilities of the fully operational Cobra Dane radar in Alaska, and together they will help us defend against the longer-range threats coming out of East Asia. The Beale radar will play an instrumental role in tests this year to demonstrate the

system's ability to intercept intercontinental-range missiles using operationally configured assets.

This past year we added six more Aegis Long-Range Surveillance and Track destroyers to our force, for a total of eleven. These ships provide much sought-after flexibility in our architecture, giving us more time to engage enemy missiles and improving the performance of the entire system.

We are making good progress in integrating the Sea-Based X-band radar into the system. It is the most powerful radar of its kind in the world and will provide the system a highly advanced detection and discrimination capability. This past January the radar completed its long journey from Texas, where it underwent extensive sea trials and high-power radiation testing in the Gulf of Mexico, to Hawaii. This spring its voyage continues to Adak, Alaska, where it will be home-ported and put on station.

This past year the Forward-Based Radar, our transportable X-band radar, successfully acquired and tracked intercontinental ballistic missiles in tests conducted at Vandenberg Air Force Base. We are now preparing to deploy the radar to provide precision track and discrimination capabilities, which will improve regional and homeland missile defense capabilities.

We also completed subsystem checkout of the Fylingdales radar in the United Kingdom and achieved high-power radiation. We conducted the necessary operator training at that site and are now in the middle of completing an important series of ground tests that are necessary to verify this system's capability, tests that had been deferred on

the recommendations of the Mission Readiness Task Force. We expect to complete testing at Fylingdales later this year.

We have an extensive command, control, battle management and communications infrastructure to support all these elements, and we are ready to provide complete operations and maintenance support to the warfighter. We have taken the first step in integrating the BMD system, which is necessary to establish an affordable and effective global, layered defense. We have installed hardware and software at the United States Northern Command (NORTHCOM), United States Strategic Command (USSTRATCOM), and United States Pacific Command (PACOM). C2BMC capabilities include basic deliberative crisis planning and common situational awareness at these Combatant Commands. In addition, we now provide common situational awareness directly to the President of the United States and the Secretary of Defense to aid in decision-making. In addition to fielding these suites, we also completed five major software release upgrades this past year, each improving the capability of the command, control, battle management and communications system.

It is this global connective capability that allows us to combine different sensors with different weapons. For example, we are developing the Aegis BMD system so that it can support a ground-based interceptor launch by sending tracking information to the fire control system. A forward-deployed radar can cue and pass tracking information on to, for example, a Patriot Advanced Capability-3 unit, or a regionally deployed Terminal High Altitude Area Defense battery, or a Ground-based Midcourse Defense or Aegis BMD engagement ships. In other words, we want to be able to mix and match sensor and

interceptor resources to give the system more capability by expanding the detection and engagement zones. Our ability to integrate all of the weapons and sensors into a single package that will use interceptors in the best location to make the kill gives us a critical multiplier effect.

We work closely with U.S. Strategic Command and the Combatant Commanders to certify missile defense crews at all echelons to ensure that they can operate the ballistic missile defense system. We have exercised the command, fire control, battle management and communication capabilities critical to the operation of the system.

We also are continuing to exercise the system to learn how best to operate it, and we have demonstrated our ability to transition smoothly from test to operations and back. In our exercises and tests, we have worked through a number of operational capability demonstrations in order to increase operational realism and complexity, certify crews and safety procedures, and demonstrate the operational viability of the system. The Missile Defense Agency will continue to coordinate with the warfighter to implement developmental upgrades and improvements in the system to maximize system capability. This is very important since we will continue to improve the capabilities of the system over time, even as we remain ready in the near-term to take advantage of its inherent defensive capability should the need arise.

Building Confidence through Spiral Testing

We have consistently pursued a comprehensive and integrated approach to missile defense testing and are gradually making our tests more complex. Missile defense testing

has evolved, and will continue to evolve, based on results. We are not in a traditional development, test, and production mode where we test a system, then produce hundreds of units without further testing. We will always be testing and improving this system, using a testing approach that cycles results into our spiral development activities. This approach also means fielding test assets in operational configurations. This dramatically reduces time from development to operations in a mission area where, until now, this nation has been defenseless.

Last year, following the two launch aborts of the interceptor for the Ground-based Midcourse Defense element, I explained that we had several concerns with quality control and reliability; but we did not view the failures as major technical setbacks. In response to those failures, I chartered an independent team to review our test processes, procedures and management. The team concluded that the Ground-based Midcourse Defense program met the challenge of providing an initial defensive capability but found deficiencies in systems engineering, ground qualification testing, flight test readiness certification, contractor process control and program scheduling. The independent review team recommended that the Missile Defense Agency reorient the missile defense program to strengthen its emphasis on mission assurance.

I established a Mission Readiness Task Force under Admiral Kate Paige to implement the corrective actions needed to ensure a return to a successful flight test program. The task force identified steps to strengthen our systems engineering and quality assurance processes and provide the reliability and repeatability necessary for operational success. As a result, we undertook a comprehensive review of these system

processes at each step along the way. We are also undertaking the necessary ground and flight qualification tests to retire the risks uncovered by the independent review team and the Mission Readiness Task Force. To strengthen our test program, I diverted four long-range interceptors slated for operational use into testing, with the intent to replace them in 2007 if our test program was successful. Last year, I asked the committee for "tactical patience" knowing that the system's basic functionality was not at risk. As a result of our aggressive actions, I believe that mission assurance and system reliability are now on track.

We finished the year strongly with a string of test successes across the board. These successes continue to build confidence in our spiral development approach. In a major step forward, in September 2005, we flew a threat representative target across the operational Cobra Dane radar and generated an intercept solution using the long-range fire control system. We then flew the operational configuration of the long-range interceptor in December 2005 and put the kill vehicle through its paces. We not only achieved all of the test objectives for that flight, but we also accomplished many of those objectives we identified for the next flight test scheduled for this spring. Just last month, we exercised an engagement sequence that used the Upgraded Early Warning Radar at Beale Air Force Base in California to provide tracking information to a simulated long-range interceptor from an operational site at Vandenberg. Based on the many tests we have conducted to date, including three successful flight tests of the operational long-range booster now emplaced in Alaska and California, we maintain our confidence in the system's basic design, its hit-to-kill effectiveness, and its inherent operational capability. We will continue to test this system to ensure it will remain mission ready.

We continue to work closely with the Director, Operational Test & Evaluation, Operational Test Agencies, and Combatant Commanders to characterize the effectiveness and readiness of the system at every stage in its development and fielding. This year the fielded BMD system will undergo ever more challenging and operationally realistic testing.

We will begin the important next step of testing our long-range ground-based defense with more operationally robust flight tests as a part of the integrated ballistic missile defense system With the next tests involving the Ground-Based Interceptor, we will step up testing complexity and involve operational crews, operational interceptor launch sites, and operational sensors. These tests will involve an operationally configured interceptor launched from Vandenberg that will attempt to acquire and intercept a target missile launched out of the Kodiak Launch Complex in Alaska. With the last two tests in this series, we will demonstrate the ability of the system to perform more refined acquisition and discrimination functions and the ability of the exo-atmospheric kill vehicle to divert toward the target and intercept it. We also plan to use tracking data from the Sea-Based X-band radar when it is available to feed its data into system tests and operations. In 2007, as we return our focus to fielding long-range interceptors, we plan one system intercept test and two flight tests, all three of which will further demonstrate the operationally configured interceptor.

In our sea-based midcourse defense element, we have continued to ratchet up the degree of realism and reduce testing limitations. This past November, for the first time, we successfully used a U.S. Navy Aegis cruiser to engage a separating target carried on a

threat-representative medium-range ballistic missile. A separating target is more challenging to engage because it can fly faster and farther than the boosting missile. In order to increase operational realism, we did not notify the operational ship's crew of the target launch time, and they were forced to react to a dynamic situation. We are planning three more Aegis interceptor flight tests in 2006. A cooperative test with Japan involves a simulated target and will test the engagement performance of a modified SM-3 nosecone developed by the Japanese in the U.S./Japan Joint Cooperative Research project. One of the upcoming U.S. Aegis intercept tests will again involve a separating warhead. In 2007 we plan to conduct two tests of the sea-based interceptor against short and medium-range targets.

Flight-testing involving the redesigned interceptor for the Terminal High Altitude Area Defense (THAAD) began last November when we successfully demonstrated the separation and operation of the production booster and kill vehicle. This year we will conduct four more tests to characterize performance of the new missile and the ability to integrate it into the BMD system. Later this year we will also conduct the first intercept test high in the atmosphere. In 2007 we plan to conduct four intercept tests as part of our THAAD flight test program.

Also planned in 2007 are two Arrow system flight tests and one Patriot combined developmental and operational test. The command, control, battle management, and communications infrastructure will be exercised in all of our system level tests.

Ground tests, wargames and modeling and simulation help demonstrate interoperability, assess performance and specification compliance, and develop doctrine,

tactics, techniques and procedures. In 2007 we will continue with our successful ground-testing, which involves warfighter personnel and test hardware and software in the integrated system configuration to demonstrate system connectivity and interoperability. Upcoming tests will verify integration of the sea-based, forward-based, and Fylingdales radars. The funds we are requesting also will support additional capability demonstrations and readiness demonstrations led by the warfighting community.

Completing the Next Increment—Block 2006

To keep ahead of rogue nation threats, we continue to hold to the fielding commitments we made to the President for Block 2006, which include investment in the necessary logistics support and command, control, battle management and communications infrastructure. In 2006 and 2007, we will build on the successes we had in 2005 to improve protection against a North Korean threat, provide protection against a threat from the Middle East, expand coverage to allies and friends, increase countermeasure resistance, and improve protection against short-range ballistic missiles. We are also planning to field more mobile, flexible interceptors and associated sensors to meet threats from unanticipated launch locations.

For midcourse capability against the long-range threat, the Ground-based Midcourse Defense (GMD) element budget request for FY 2007 of $2.7 billion will cover continued development, ground and flight testing, fielding and support. This is about $125 million more than we budgeted for FY 2007 in last year's submission. The risk-reduction work prescribed by the Mission Readiness Task Force has caused us to reduce

the number of interceptors fielded in 2007. This request includes up to 4 additional ground-based interceptors, for a total of 20 interceptors in Alaska by the end of 2007, their silos and associated support equipment and facilities as well as the long-lead items for the next increment. The increase in FY 2007 funding from last year to this year is attributed, in part, to increased sustainment, logistics and force protection requirements, as well as to other needs associated with preparing the system for operations. This budget submission also continues the upgrade of the Thule early warning radar in Greenland and its integration into the system.

The Royal Air Force Fylingdales early warning radar in the United Kingdom will be fully integrated for missile defense purposes by fall 2006. It will provide sensor coverage against Middle East threats.

As part of our effort to make the system more robust, improve defense of our allies, and address threat uncertainties, we are continuing discussions with our allies in Europe regarding the deployment of radars and a third site for Ground-Based Interceptors. Later this year we will be able to give greater definition to this important evolutionary effort.

To address the short- to intermediate-range threat, we are requesting approximately $1.9 billion to continue development and testing of our sea-based midcourse capability, or Aegis BMD, and our land-based THAAD terminal defense capability. System tests will involve further demonstrations of the sea-based interceptor, and we will continue enhancing the system's discrimination capability. We will continue Standard Missile-3 improvements. We added approximately $49 million to the FY 2007

request for Aegis BMD from last year to this year to address the Divert and Attitude Control System and other aspects of the system, including the development of a more capable 2-color seeker for the SM-3 kill vehicle. We will continue purchases of the SM-3 interceptor and the upgrading of Aegis ships to perform the BMD mission. By the end of 2007 we will have three Aegis engagement cruisers, seven engagement destroyers, and seven Long Range Surveillance and Track destroyers. These sea-based sensors and weapons will improve our ability to defend the homeland and our deployed troops and our friends and allies. In FY 2007 we will initiate work with Japan for follow-on SM-3 development in order to increase its range and lethality. We also will continue the THAAD development effort that will lead to fielding the first unit in the 2008-2009 timeframe with a second unit available in 2011.

We will continue to roll out sensors that we will net together to detect and track threat targets and improve discrimination of the target set in different phases of flight. In 2007, we will prepare a second forward-based X-band radar for operations. We also are working towards a 2007 launch of two Space Tracking and Surveillance System (STSS) test bed satellites. These demonstration satellites will perform target acquisition and handover and explore approaches for closing the fire control loop globally for the entire BMD system. In FY 2007 we will undertake initial satellite check-out and prepare for tests involving live targets. We are requesting approximately $380 million in FY 2007 to execute this STSS activity, and $402 million for the Forward-Based Radar work.

For the ballistic missile defense system to work effectively, all of its separate elements must be integrated by a solid command, control, battle management and

communications foundation that spans thousands of miles, multiple time zones, hundreds of kilometers in space and several Combatant Command areas of responsibility. C2BMC allows us to pass critical information from sensors to provide input for critical engagement decisions. Combatant Commanders can use the C2BMC infrastructure to enhance planning and help synchronize globally dispersed missile defense assets. These capabilities also can provide our senior government leadership situational awareness of ballistic missile launches and defense activities.

This C2BMC capability allows us to mix and match sensors, weapons and command centers to dramatically expand our detection and engagement capabilities over what can be achieved by the system's elements operating individually. We cannot execute our basic mission without this foundation.

With this year's budget request for $264 million for the C2BMC activity, we will continue to use spiral development to incrementally develop, test, and field hardware and software improvements. We will press on with the development of the initial global integrated fire control to integrate Aegis BMD, the forward-based radar, and Ground-based Midcourse Defense assets. We plan to install additional planning and situational awareness capabilities to facilitate executive decision-making among the Combatant Commanders.

The Missile Defense Agency is committed to delivering the best capabilities to the warfighter in a timely manner, and warfighter participation and input is a critical part in the engineering process. Today, the Army National Guard's 100th Missile Defense Brigade, Air Force's Space Warfare Center, and Navy ships in the Pacific Fleet are on

station and operating the system. Our FY 2007 request continues to fund critical sustainment and fielding activities and ensure that system developers have financial resources to support fielded components. We will continue to work collaboratively with the Combatant Commanders and the Military Services as the system evolves to define and prioritize requirements. Exercises, wargames, and seminars continue to be important collaboration venues. We will also continue to support training activities to ensure operational readiness, combat effectiveness, and high-level system performance.

Moving Toward the Future—Block 2008 and Beyond

There is no silver bullet in missile defense, and strategic uncertainty could surprise us tomorrow. So it is important that we continue our aggressive parallel paths approach to building this integrated, multilayered defensive system. There are several important development efforts funded in this budget.

In executing our program we continue to follow a strategy of retaining alternative development paths until capability is proven—a knowledge-based funding approach. That means we are setting specific targets, or knowledge points, that the development efforts have to reach within certain periods of time. Knowledge points are not reviews, but discrete activities in a development activity that produce data on the most salient risks. The approach involves tradeoffs to address sufficiency of defensive layers – boost, midcourse, terminal; diversity of basing modes – land, sea, air and space; and considerations of technical, schedule, and cost performance. This is fundamental to how

we execute the development program, because it enables us to make decisions as to what we will and will not fund based upon the proven success of each program element.

For example, we are preserving decision flexibility with respect to our boost phase programs until we understand what engagement capabilities they can offer. We have requested approximately $984 million for these activities in FY 2007. This past year the revolutionary Airborne Laser (ABL) reached its knowledge points when it achieved a full duration lase at operational power and completed initial flight tests involving its beam control/fire control system. The program's knowledge points for 2006 include flight testing of the lasers used for target tracking and atmospheric compensation. This testing, which will test the entire engagement sequence up through the point where we fire the laser, will require use of a low-power laser surrogate for the high-power laser. Once we have completed modification of the aircraft which has begun in Wichita, Kansas, we will start installation of the high-power laser modules in 2007. This will provide us with the first ABL weapon system test bed and allow us to conduct a campaign of flight tests with the full system. In addition to installation of the high-power lasers, we will continue integration, ground, and flight test activities in FY 2007 to support ABL's low-power beam control/fire control and battle management systems. We will be working towards a lethal demonstration of the weapon system against a boosting ballistic missile in 2008.

We still have many technical challenges with the Airborne Laser. Yet the series of major achievements beginning in 2004, when we achieved first light and first flight of the aircraft with its beam control/fire control system, gives me reason to be optimistic that we

can produce an effective directed energy capability. An operational Airborne Laser could provide a valuable boost-phase defense capability against missiles of all ranges.

The Kinetic Energy Interceptor (KEI) is a boost-phase effort in response to a 2002 Defense Science Board Summer Study recommendation to develop a terrestrial-based boost phase interceptor as an alternative to the high-risk Airborne Laser development effort. Last year we focused near-term efforts in our kinetic energy interceptor activity to demonstrate key capabilities and reduce risks inherent in the development of a land-based, mobile, very high acceleration booster. It has always been our view that the KEI booster, which is envisioned as a flexible and high-performance booster capable of defending large areas, could be used as part of an affordable, competitive next-generation upgrade for our midcourse or even terminal interceptors. A successful KEI mobile missile defense capability would improve significantly our ability to protect our allies and friends.

This past year we demonstrated important command, control, battle management, and communications functions required for a boost intercept mission, including the use of national sensor data for intercept operations in the field. The key knowledge point for this program is the demonstration of a very high acceleration booster. We began a series of static firing tests of the first and second stages of the booster and had a successful firing this past January. We plan a flight test to verify the new booster in 2008.

Development of the Multiple Kill Vehicle (MKV) system will offer a generational upgrade to ground-based midcourse interceptors by increasing their effectiveness in the presence of multiple warheads and countermeasures. We are exploiting miniaturization

technology to develop a platform with many small kill vehicles to engage more than one object in space. This effort will supplement other innovative discrimination techniques we are developing for use in the midcourse phase by destroying multiple threat objects in a single engagement. In 2005 we made progress in the development of the MKV seeker, but resource constraints and technical shortfalls have caused a delay in this development effort. We are now planning to conduct the hover test in 2009. Our first intercept attempt using MKV is now scheduled for 2012. We are requesting $162 million in FY 2007 to continue the MKV development effort.

International Participation

The global nature of the threat requires that we work closely with our allies and friends to develop, field, and operate missile defenses. We have made significant progress in fostering international support for the development and operation of a ballistic missile defense system capable of intercepting ballistic missiles of all ranges in all phases of flight. We have been working closely with a number of allies and friends of the United States to forge international partnerships. I would like to highlight a few of our cooperative efforts.

The Government of Japan continues to make significant investments toward the acquisition of a multilayered BMD system, with capability upgrades to its Aegis destroyers and acquisition of the Standard Missile-3 interceptor. We have worked closely with Japan since 1999 to design and develop advanced interceptor components. This project will culminate in a 2006 flight test that will end this phase of our joint

cooperative research. Additionally, the Missile Defense Agency and Japan have agreed to co–develop a Block IIA version of the SM-3 missile, which will significantly improve the kinematics and warhead capability. We also have agreed to deploy an X-band radar to Japan, which will enhance regional and homeland missile defense capabilities. In addition, Japan and other allied nations continue upgrading their Patriot fire units with Patriot Advanced Capability-3 missiles and improved ground support equipment.

In addition to the Fylingdales radar development and integration activities, we are undertaking a series of cooperative technical development efforts with the United Kingdom. Newly installed situational awareness displays in the United Kingdom also are indicative of our close collaboration with our British allies in the missile defense area.

Last year we signed an agreement with Denmark to upgrade the radar at Thule and integrate it into the system. This radar will play an important role in the system by providing additional track on hostile missiles launched out of the Middle East.

We will continue to expand cooperative development work on sensors and build on our long-standing defense relationship with the government of Australia. In April 2005 we concluded a Research, Development, Test and Evaluation agreement to enable collaborative work on specific projects, including high frequency over-the-horizon radar, track fusion and filtering, distributed aperture radar experiments, and modeling and simulation.

We are continuing work with Israel to implement the Arrow System Improvement Program and enhance its capability to defeat longer-range ballistic missile threats emerging in the Middle East. This past December Israel conducted a successful launch

and intercept of a maneuvering target using the Arrow missile. The United States and Israel are co-producing components of the Arrow interceptor missile, which will help Israel meet its defense requirements more quickly and maintain the U.S. industrial work share.

We also have been in discussions with several allies located in or near regions where the threat of ballistic missile use is high for the forward placement of sensors, and we continue to support our North Atlantic Treaty Organization (NATO) partners in conducting a feasibility study to examine potential architecture options for defending European NATO population centers against longer-range missile threats. This work builds upon ongoing work to define and develop a NATO capability for protection of deployed forces. We have other international interoperability and technical cooperation projects underway and are working to establish formal agreements with other governments.

Closing

Mr. Chairman, I want to thank this committee for its continued support of the Missile Defense Program. When I appeared before you last year, we faced numerous challenges. Over the past year, the dedicated men and women of the Missile Defense Agency and our industrial partners met these challenges head-on and overcame the difficulties we experienced in 2004 and early in 2005. The result was that in 2005 we made significant progress. We had a series of successful tests that are unparalleled in our development efforts to date. In 2006 and 2007 I am confident that we will continue this

success. I am proud to serve with these men and women, and the country should be grateful for their unflagging efforts.

There have been many lessons learned, and I believe the processes are in place to implement them as we field follow-on increments of the system. I also believe that our program priorities foster long-term growth in multilayered and integrated capabilities to address future threats. There certainly are risks involved in the development and fielding activities. However, I believe we have adequately structured the program to manage and reduce those risks using a knowledge-based approach that requires each program element to prove that it is worthy of being fielded.

Thank you and I look forward to your questions.

RECORD VERSION

STATEMENT BY

LIEUTENANT GENERAL LARRY J. DODGEN, USA

COMMANDING GENERAL,
U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND
AND
U.S. ARMY FORCES STRATEGIC COMMAND

BEFORE THE

COMMITTEE ON ARMED SERVICES
STRATEGIC FORCES SUBCOMMITTEE
UNITED STATES HOUSE OF REPRESENTATIVES

SECOND SESSION, 109TH CONGRESS

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Lieutenant General Larry J. Dodgen, USA
Commanding General
U.S. Army Space and Missile Defense Command
and
U.S. Army Forces Strategic Command

Introduction

Mr. Chairman, Congressman Reyes, and Members of the Strategic Forces Subcommittee, thank you for the opportunity to appear before this distinguished panel again this year and for your ongoing support of our military. This Committee continues to be a great friend of the Army and the missile defense community, particularly in our efforts to field missile defense forces for the Nation and our allies. I consider it a privilege to be counted in the ranks with Mr. Flory, Mr. Duma, and Lieutenant General Obering as advocates for a strong global missile defense capability.

Just as last year, I appear before this committee in two roles. The first role is as the Army representative for missile defense and proponent for the Ground-based Midcourse Defense (GMD) System. In my second role, I am a member of the Joint missile defense team as the Commander of the Joint Functional Component Command for Integrated Missile Defense (JFCC-IMD), a part of the United States Strategic Command (USSTRATCOM), and the joint user representative working closely with the Missile Defense Agency (MDA), other services, and combatant commanders to ensure that our national goals of developing, testing and deploying an integrated missile defense system are met.

Mr. Chairman, as I reported last year, Army Soldiers are trained, ready, and operating the GMD System at Fort Greely, Alaska, and the Joint National Integration Center at Schriever Air Force Base, Colorado.

Just a couple of years ago, we activated the GMD Brigade in Colorado Springs, Colorado, and a subordinate GMD Battalion at Fort Greely, Alaska. These Soldiers, as part of the Joint team, are our Nation's first line of defense against any launch of an intercontinental ballistic missile toward our shores. I am proud to represent them along with the other members of the Army's Air and Missile Defense Community.

US STRATCOM Joint Functional Component Command for Integrated Missile Defense

The Joint Functional Component Command for Integrated Missile Defense (JFCC-IMD) was established in January 2005 as one element of USSTRATCOM and reached full operational capability on 28 February 06. This organization complements the capabilities inherent in other USSTRATCOM JFCCs and JTFs which plan, coordinate, and integrate STRATCOM's other global missions of Space and Global Strike, Intelligence Surveillance and Reconnaissance, Net Warfare, and Global Network Operations and the newest element, the STRATCOM Center for Combating Weapons of Mass Destruction.

The JFCC-IMD is manned by Army, Navy, Air Force, and Marine Corps personnel. It is headquartered at the Joint National Integration Center (JNIC) at Schriever Air Force Base, Colorado. This arrangement allows us to leverage the existing robust infrastructure and our strong partnership with our collocated MDA team to execute the IMD mission.

In the past year, USSTRATCOM through the JFCC-IMD has aggressively executed its mission to globally plan, coordinate, and integrate missile defense. In collaboration with geographic combatant commands, we are developing IMD plans within a regional area of

operations in the context of STRATCOM's global mission instead of individual theater plans.

Based on Commander, USSTRATCOM guidance, we have also developed plans to take existing MDA assets currently in test and development status and rapidly transition them in an emergency to an operational, warfighting capability. This allows USSTRATCOM to provide additional critical IMD capabilities to the combatant commands in times of crisis. Examples of this capability would include early activation of the AEGIS SM3 Missile and the Forward Based X-band Transportable (FBX-T) Radar.

USSTRATCOM initiated planning efforts to integrate the capabilities of all the JFCCs to support the "New Strategic Triad". JFCC-IMD works closely with the other JFCC elements of USSTRATCOM and the combatant commands to make Offense – Defense Integration, ISR and the other mission areas an integral aspect of how we fight to ensure the optimal application of limited resources.

The IMD community, led by Commander, STRATCOM by his UCP Authority, has conducted numerous capability demonstrations, readiness demonstrations, integrated flight and ground tests, and combatant command exercises to develop and validate operators' tactics, techniques and procedures. Increased warfighter involvement in the testing and exercising of the BMDS as we work towards our system's future operational capability ensures both the viability of the defense and the confidence of its operators.

USSTRATCOM, through the JFCC-IMD, is leading the planning of global missile defenses with the development of the global IMD Concept of Operations (CONOPS). CONOPS relies on the development and

coordination of engagement sequence groups (ESGs) and the advocacy of desired global missile defense characteristics and capabilities.

STRATCOM developed global IMD CONOPS serve as a roadmap for the warfighting community to guide the development of more detailed IMD planning and execution. This CONOPS contain two fundamental principles. First, the geographic component commanders execute the IMD fight within their AOR. Second, multi-mission sensors are centrally tasked by Commander, USSTRATCOM to optimize their utilization in forming ESGs.

As a key requirement for IMD planning, the identification of ESGs as the optimal pairing of sensor and weapon capabilities required to provide active missile defense for the designated defended area is critical. The ESGs are a tool the IMD community utilizes to help operate the BMDS by balancing operational necessity with the realities of ongoing research, development, and testing in the near term. As more elements and components are made available, ESGs will represent the most efficient, maximized missile defense.

Commander, USSTRATCOM represents all the component commands as the advocate for IMD. He executes this responsibility at two levels. First, for those elements already deployed, Headquarters, USSTRATCOM J8, in collaboration with the JFCC-IMD, conducts the Warfighter Involvement Process (WIP) to evaluate the adequacy of the current capabilities of the BMDS. This process can encompass anything from identifying simple human interface changes or modification to development of refined planning tools. These needs are prioritized by USSTRATCOM for review and approval and provided to MDA for consideration. The second level of advocacy focuses on future capability

needs. These future elements and components will provide additional capabilities that enable a more robust, reliable and capable system.

The critical element that ties the entire BMDS system together is the Command and Control Battle Management Communications, or C2BMC. C2BMC is an essential evolutionary component of the BMDS system that will greatly enhance both the planning and execution capabilities. It contributes to all phases of BMD from optimizing planning to synchronizing the automated execution of the BMDS.

Our current and future capabilities require that we utilize all available sensors and shooters to obtain the maximum level of engagement success. C2BMC will allow the system to optimize assets to achieve success while providing the flexibility required to focus on different levels of the battle, strategic to tactical.

As our planning processes have matured over the past year, JFCC-IMD's innovative use of new collaborative planning capabilities in major combatant command exercises has demonstrated the effectiveness of distributed crisis action planning. JFCC-IMD was able to support the GCCs with development of new defense designs and optimized locations for BMDS systems in exercises such as USSTRATCOM's GLOBAL LIGHTNING and PACOM's TERMINAL FURY.

Through our partnership with MDA, our sister Services, and the warfighters at the GCCs, STRATCOM is setting the stage to evolve the BMDS beyond its current capability to provide more robust missile defense for the homeland, deployed forces, friends and allies. We are actively engaged with MDA and the other Services in the development and deployment of BMDS elements and components ensuring a layered, multi-phase operational capability for the GCCs.

Air and Missile Defense—an Overview of the Fiscal Year 2007 Army's Budget Submission

In addition to deploying a GMD system, MDA, the Services, and the combatant commanders are focused on improving Theater Air and Missile Defense (TAMD) capabilities within the context of the evolving BMDS in the context of the Integrated Air and Missile Defense (IAMD) Joint Integrating Concept. Both GMD and TAMD systems are vital for the protection of our homeland, deployed forces, friends, and allies. Air and missile defense is a key component in support of the Army's core competency—providing relevant and ready land power to Combatant Commanders.

I would now like to focus on the Army's Fiscal Year 2007 budget submission for air and missile defense (AMD) systems. The President's Budget, presented to the Congress on February 6th, includes approximately $1.57 billion with which the Army proposes to perform current Army AMD responsibilities and focus on future development and enhancement of both terminal phase and short-range AMD systems. In short, the Army is continuing major efforts to improve the ability to acquire, track, intercept and destroy theater air and missile threats.

The Army, as part of the joint team, is transforming its air and missile defense forces to meet the increasingly sophisticated and asymmetric threat environment encountered by the joint warfighter. The Army has the lead for conducting the Integrated Air and Missile Defense (IAMD) Capabilities Based Assessment (CBA). This analysis will comprise the front end of the Chairman of the Joint Chiefs of Staff Joint Capabilities Integration Development System (JCIDS). The study will identify key joint, agency and combat command IAMD capability gaps and recommend doctrine, organization, training, materiel, leadership and

education, personnel and facilities (DOTMLPF) transformation actions. The document is envisioned to fulfill time-phased IAMD needs across the range of military operations.

Integrated AMD System of Systems

The Army is transforming its Air Defense Force from its current separate systems architecture to a component-based, network-centric, Integrated Air and Missile Defense (IAMD) System of Systems (SoS). The IAMD SoS program focuses on systems integration, common battle command and control, joint enabling networking, logistics and training to ensure operational requirements, such as force protection, lethality, survivability, transportability and maneuverability, are achieved. The IAMD SoS program will employ an evolutionary acquisition strategy consisting of a series of increments leading to the objective capability. This system of systems approach calls for a restructuring of systems into components of sensors, weapons and BMC4I with a standard set of interfaces among those components using a standardized set of networks to communicate.

Technology insertions to the IAMD SoS will continue throughout each increment as high-payoff technologies mature and are ready for integration. Incremental development of the IAMD SoS allows the Army to field new or improved capabilities to warfighters faster by producing and deploying systems and components as their technologies mature. Funding in the proposed Fiscal Year 2007 President's Budget supports the first steps in achieving an IAMD SoS architecture.

Air and Missile Defense Battalions

As part of Air Defense Transformation, the Army is creating composite air and missile defense (AMD) battalions. The creation of AMD battalions addresses capability gaps, permitting us to defeat cruise missiles and unmanned aerial vehicles while maintaining our capability to defend critical assets from the ballistic missile threat. The composite AMD battalions will capitalize on the synergies of two previously separate disciplines: short-range air defense and high-to-medium altitude air defense. The current plan is to organize eight battalions as Patriot pure units, organize four battalions as AMD battalions, and organize the battalion in Korea as a maneuver air and missile defense battalion. This transformation is underway.

Within the context just provided, please let me briefly discuss each of the programs that support the Army's Air and Missile Defense Transformation.

Terminal Phase Ballistic Missile Defenses

The PATRIOT/MEADS capability is designed to counter theater ballistic missile threats in their terminal phase in addition to cruise missile and other air breathing threats. Combining these systems with the THAAD capability, being developed by MDA with a planned fielding in Fiscal Year 2009, brings an unprecedented level of protection against missile attacks to deployed U.S. Forces, friends, and allies well into the future.

PATRIOT/PAC 3 and MEADS Overview

Mr. Chairman, since the combat debut of the PATRIOT Air and Missile Defense System during OPERATION DESERT STORM, the Army

has continued to implement a series of improvements to address the lessons learned. During OPERATION IRAQI FREEDOM (OIF), we saw the debut of the improved PATRIOT Configuration-3 system, including the effective use of the Guidance Enhanced Missile (GEM) and the PATRIOT Advanced Capability 3 (PAC 3) missile. PAC-3 is the latest evolution of the phased materiel improvement program to PATRIOT. Combining developmental testing and operations, this program has enabled the development and deployment of a new high-velocity, hit-to-kill, surface-to-air missile with the range, accuracy, and lethality necessary to effectively intercept and destroy more sophisticated ballistic missile threats. Today's PATRIOT force is a mixture of PAC-2 and PAC-3 configured units. To maximize the full advantage of the PAC-3 capabilities, the Army is moving toward pure-fleeting the entire PATRIOT force to the PAC-3 configuration.

As I highlighted last year, PATRIOT saved many lives defending against Iraqi ballistic missile attacks during OIF. However there were some operational deficiencies noted, and the Army has undertaken steps to correct them and address lessons learned. The Army has pursued two thrusts—identification and execution of a $41.6 million program for nine specific OIF fixes and continued aggressive participation in joint interoperability improvements in situational awareness. All funded OIF fixes are on schedule, pending any material release issues, to be completed by end of Fiscal Year 2007.

The PATRIOT system remains the Army's mainstay theater air and missile defense system and our Nation's only deployed land-based short-to-medium range ballistic missile defense capability. The current PATRIOT force must be maintained through sustainment and recapitalization efforts until the Medium Extended Air Defense System (MEADS) is fielded, projected to begin in 2015.

The Medium Extended Air Defense System (MEADS) is a cooperative development program with Germany and Italy to collectively field an enhanced ground-based air and missile defense capability. The MEADS program, which supports the President's goal for international cooperation in missile defense, will enable the joint integrated air and missile defense community to move beyond the critical asset defense designs we see today. MEADS will provide theater level defense of critical assets and continuous protection of a rapidly advancing maneuver force as part of a joint integrated air and missile defense architecture. Major MEADS enhancements include 360-degree sensor coverage, a netted and distributed battle manager that enables integrated fire control, and a strategically deployable and tactically mobile, air and missile defense system. While the PAC-3 missile is the baseline missile for the international MEADS program, the Missile Segment Enhancement (MSE) missile is being developed to meet U.S. operational requirements. MSE will provide a more agile and lethal interceptor that increases the engagement envelope.

Combined PATRIOT/MEADS Approach

With the approval by the Defense Acquisition Executive, the Army embarked on a path to merge the PATRIOT and MEADS programs. In so doing, the PATRIOT/MEADS Combined Aggregate Program (CAP) was established. The objective of CAP is to achieve the objective MEADS capability through incremental fielding of MEADS major end items into PATRIOT. PATRIOT/MEADS CAP is an important capability that will operate within MDA's BMDS. It is in fact, the number one Army priority system for defense against short and medium-range Tactical Ballistic Missiles (TBMs) and air breathing threats (cruise missiles and UAVs).

The PATRIOT/MEADS CAP will be able to operate within a joint, interagency, and multinational interdependent operational environment. It will provide wide-area protection at the strategic, operational, and tactical levels of operations.

PATRIOT/MEADS CAP will provide common battle management command, control, communications, computers, and Intelligence; introduce lightweight deployable launchers; upgrade the PAC-3 missile; and eventually provide the full MEADS capability to the entire force. The MEADS system offers a significant improvement in being able to deploy strategically while maintaining tactical mobility. The system uses a netted and distributed architecture with modular and configurable battle elements allowing it to integrate with other Army and Joint sensors and shooters. These features and capabilities will allow MEADS to achieve a robust 360-degree defense against all airborne threats. By establishing the CAP, the joint integrated air and missile defense architecture has become more robust. First, MEADS enhancements are integrated into the existing system. Second, as lessons are learned from the present missile defense capability, they will be incorporated into the MEADS follow-on system. We are confident that this path will provide our service members, allies, friends, and Nation with the most capable air and missile defense system possible.

The Army and the entire missile defense community continue to strive to improve our Nation's missile defense capabilities. The PATRIOT and PAC-3/MEADS CAP research, development, and acquisition budget request for Fiscal Year 2007 is approximately $916.5 million. This request procures 108 PAC-3 missiles, purchases spares for the system and reflects the necessary PATRIOT development to keep the system viable as we pursue development of PAC-3/MEADS CAP capabilities.

Cruise Missile Defense

There exists a real and growing threat from land attack cruise missiles in the world today. Cruise missiles are inherently very difficult targets to detect, engage, and destroy because of their small size, low detection signature, and low altitude flight characteristics. When armed with a weapons of mass destruction (WMD) warhead, the effect of a cruise missile could be catastrophic. It is clear that the required systems and capabilities necessary to counter this emerging threat need to be accelerated to field a cruise missile defense (CMD) capability as soon as possible. The Army's CMD program is an integral piece of the Joint Cruise Missile Defense architecture, and we are proud of our contributions to this effort. Critical Army components of the Joint CMD architecture are provided by the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS), the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM), and an integrated fire control capability. We are also working closely with the Joint community to assure development of doctrine that synchronizes our military's full capabilities against the cruise missile threat.

JLENS Overview

JLENS brings a critically needed capability to address the growing CM threat. To support an elevated sensor, the JLENS program is developing unique lightweight fire control and surveillance radars to detect, track and identify CM threats. JLENS will support engagements using the Surface Launched Advanced Medium Range Air-to-Air Missile/Complementary Low Altitude Weapon System (SLAMRAAM/CLAWS), Navy Standard Missile, and PATRIOT/MEADS

weapon systems. JLENS uses advanced sensor and networking technologies to provide precision tracking and 360-degree wide-area, over-the-horizon surveillance of land attack cruise missiles. The Fiscal Year 2007 JLENS funding request of $264.5 million supports development of full JLENS capability, with first unit equipped occurring by 2011.

SLAMRAAM Overview

Surface Launched Advanced Medium Range Air-To-Air Missile (SLAMRAAM) will provide a CMD system to maneuver forces with an extended battlespace and a beyond line-of-sight, non-line-of-sight engagement capability critical to countering the CM threat as well as UAV threats. SLAMRAAM utilizes the existing Joint AMRAAM missile currently used by the Air Force and the Navy, thereby exploiting the joint harmony DoD is striving to achieve. The Army and the Marine Corps are also executing a joint cooperative development for SLAMRAAM/CLAWS to meet the needs of Soldiers and Marines in Homeland Defense as well as overseas deployments. The Fiscal Year 2007 funding request of $49 million supports the scheduled Initial Operational Capability (IOC) target of 2011.

Sentinel Radar Overview

The Sentinel radar is an advanced, three dimensional, phased array air defense radar and a critical component in the Army's ability to conduct air surveillance for the maneuver force. Sentinel is a small mobile battlefield radar that supports the joint air defense sensor network in detecting cruise missiles, UAVs, and helicopter threats, thereby contributing directly to the overall Single Integrated Air Picture (SIAP) and supporting multiple Homeland Defense missions. It's Enhanced Target

Range and Classification (ETRAC) radar upgrades will enable it to support engagements at extended ranges and reduce the time required to perform target classification. Additionally, these upgrades support next generation combat identification for friendly air thereby reducing the possibility of fratricide and providing an enhanced positive friendly and civil aviation identification capability. The Fiscal Year 2007 funding request of $17.6 million provides for joint identification and composite sensor netting development efforts, four ETRAC system upgrade kits and continues the development and integration of improvements to support joint interoperability.

Air, Space & Missile Defense Command and Control

The Army is increasing its command and control capabilities on the battlefield. The Army's Air and Missile Defense Commands (AAMDCs) will help integrate TAMD operations, by integrating, coordinating, and synchronizing joint attack operations, active defense, passive defense, and C4 operations in the theater and also globally tie into our JFCC-IMD.

Concurrent with the creation of AMD composite battalions, the Army has developed and is now in the process of fielding air defense airspace management (ADAM) cells throughout the force. ADAM cells will perform four ADA missions: plan AMD coverage, contribute to third-dimension situation awareness and understanding, provide airspace management, and integrate operational protection. With an emphasis on receiving and sharing the joint air picture from multiple sources and assets through the battle command network, ADAM cells will provide commanders situational awareness as well as the traditional friendly and threat air picture, enabling commanders to effectively manage their aerial assets. ADAM cells are already being fielded to the Army to meet

modularity requirements, with two ADAM cells at the Division Headquarters and one to every Brigade in the Army, to include both the active and reserve forces. This high-priority system has been supported through Supplemental Appropriations to this point. The Fiscal Year 2007 funding request of $49.5 million provides 15 ADAM Cells for the Active and Reserve Components.

Also in this past year the Army activated the 94th Air and Missile Defense Command, supporting USPACOM theater of operations. With the 94th AAMDC activation, there are three Army Air and Missile Defense Commands; two in the active component and one in the reserve component. The 94th AAMDC, designed for joint and or multinational operations will provide for missile defense in the Pacific theater and will assist in planning theater-level air and missile defenses. The 94th AAMDC will provide the PACOM commander a more robust theater based capability. Moreover, the unit's presence in the Pacific adds depth, because its capability will be readily available to the warfighting commander.

The Joint Tactical Ground Stations (JTAGS) are forward deployed today in EUCOM, CENTCOM, and PACOM providing assured missile warning to combatant commanders and assigned forces through a direct downlink from space-based infrared assets into the joint theater communications architecture. In addition to protecting the deployed force, these systems alert the BMDS architecture and enhance attack operations. The Fiscal Year 2007 funding request of $24.9 million sustains the forward deployed JTAGS units supporting Joint warfighters and postures the Army to participate with the Air Force in a future ground mobile system compatible with the Space-Based Infrared System (SBIRS) and follow-on sensors. The planned Multiple Mission Mobile Processor

(MP3) Program is being restructured due to the delays in the SBIRS schedule.

Counter-Rocket, Artillery, Mortar (C-RAM)

A significant danger in OIF/OEF today is posed by insurgents employing indirect-fire tactics of quick-attack, low-trajectory, urban-terrain-masked rocket, artillery and mortar (RAM) strikes against U.S. forward operating bases in Iraq. To combat this threat the Army developed Counter-RAM (C-RAM), an integrated solution of capabilities to provide warning and intercept of RAM threats. C-RAM provides a holistic approach to the Counter-RAM mission. Horizontal integration across the core functions—command & control, shape, sense, warn, intercept, respond and protect—is providing an integrated modular and scalable capability. This capability provides timely warning of mortar attacks, intercept and defeat of incoming rounds, and accurate location of insurgent mortar crews, enabling rapid, lethal response. C-RAM takes advantage of existing systems and capabilities, combining them into a system of systems architecture to support the warfighter on today's battlefield. The current C-RAM solution is truly Joint in that it uses fielded systems from the Army, Navy and Air Force along with a commercial-off-the-shelf system. C-RAM has been supported through Supplemental Appropriations. The Army will request funding for continued C-RAM fielding in the upcoming Supplemental request, and the C-RAM program will be included in the Army's POM beginning in Fiscal Year 2008.

Directed Energy Initiatives

The Army continues to explore directed energy capabilities for weapon system development and integration into Army Transformation applications.

High Energy Laser (HEL) systems have the potential to be a combat multiplier, meeting air and missile defense needs in the future and enhancing current force capabilities such as addressing the RAM threats. The ability of a high energy laser system to shoot down RAM targets has been repeatedly demonstrated, with mature chemical laser technologies proven by the Tactical High Energy Laser (THEL) program.

Meanwhile, the Army's Fiscal Year 2007 science and technology funding request of $32.8 million supports high energy laser technology development focused on solid state laser technologies that will offer electric operation and compatibility with the Future Combat System (FCS) by the year 2018. The Army is participating in a joint high power solid state laser program with the OSD High Energy Laser Joint Technology Office and the other services to pursue several candidate solid state laser technologies with the operating characteristics necessary for weapon system development. In Fiscal Year 2007, while leveraging the joint program, the Army is initiating a HEL Technology Demonstrator (HELTD) with the ability to shoot down RAM threats by Fiscal Year 2013 as a stepping stone toward deployment of HELs in a FCS configuration. Ultimately, HELs are expected to complement conventional offensive and defensive weapons at a lower cost-per-shot than current systems.

Conclusion

Mr. Chairman, the Army, a full contributing member of the Joint team, is Relevant and Ready, fighting the war on terrorism, deployed in Southwest Asia and elsewhere, and deterring aggression throughout the world while transforming to meet future threats. With its responsibilities for GMD and PATRIOT/MEADS, the Army is an integral part of the Joint team to develop and field the Ballistic Missile Defense System in defense of the

Nation, deployed forces, friends, and allies. My role as the Joint Functional Component Commander for Integrated Missile Defense will continue to add to our ability to continue development of a Joint BMDS to protect our warfighters and our Nation. The Army has stepped up to the land-attack cruise missile defense challenge by aggressively developing the joint, integrated and networked sensor-C2-shooter architecture necessary to defeat the emerging threat. The Fiscal Year 2007 budget proposal continues the transformation of the Army's ASMD Force to support the Army's Future Force, the Joint Integrated Air and Missile Defense System, and our global BMDS, building on the ongoing success of our theater air and missile defense force in OPERATION IRAQI FREEDOM. Transformation will continue to define the characteristics of the emerging ASMD force and determine how it can best support the Future Force operating in a joint, interagency, and multinational environment. I appreciate having the opportunity to speak on these important matters and look forward to addressing any questions you or the other members of the Committee may have.

Statement

By

David W. Duma
Director, Operational Test and Evaluation

Before the
House Armed Services Committee
Strategic Forces Subcommittee

Ballistic Missile Defense

March 9, 2006

Mr. Chairman, distinguished members of the committee, I am pleased to have this opportunity to speak to you about the Ballistic Missile Defense System test program. I will cover four areas. First, I will recap the Missile Defense Agency, or MDA, test accomplishments during the past year. Second, I will discuss organization and philosophy changes within MDA. Third, I will give you a status of compliance with test requirements prescribed in recent National Defense Authorization Acts. Fourth, I will highlight future challenges facing the Ballistic Missile Defense System, or BMDS test program.

The MDA testing program during 2005 was adequate and appropriate to the developmental maturity of the BMDS.

1. **The results of ground tests demonstrated that integration, interoperability, tactics, doctrine, and procedures, were adequate to increase confidence in these aspects of the system.**
2. **For the first time, MDA flew a Raytheon Exoatmospheric Kill Vehicle integrated onto an Orbital Sciences booster. While the flight was successful, it did not evaluate the fixes to the ground support system that caused the previous flight test launch failures. Plans are to demonstrate the ground system fixes in subsequent flight-testing.**
3. **The flight of threat representative targets across the search and track volumes of the Cobra Dane and Beale Early Warning Radars demonstrated their capability to provide target acquisition, tracking, and cueing data. MDA executed an operationally realistic test scenario that provided significant information regarding the Cobra Dane capabilities and limitations. MDA also demonstrated they could successfully launch a long-range threat representative target from an air platform.**
4. **The Aegis Ballistic Missile Defense System completed two intercept missions with the new SM-3 missile. One of these flights included an intercept of a separating target.**
5. **The Airborne Laser completed the passive phase of flight test of the Beam Control/Fire Control system, and completed the integration and operational demonstration of six integrated Chemical Oxygen Iodine Laser modules.**

6. The Terminal High Altitude Area Defense system, or THAAD, executed its first flight test in five years. It flew its redesigned missile on a non-intercept test to demonstrate performance and measure interceptor kinematics.
7. Last year, two new sensors completed integration and some combined developmental and operational testing. The Forward-Based X-band Radar-Transportable, or FBX-T, demonstrated its ability to track long-range ballistic missile launches. The Sea-Based X-band radar completed integration testing in the Gulf of Mexico and has arrived in Hawaii to begin its checkout and integration into the BMDS test bed.

The results of the integrated ground tests, coupled with the success of other element-level ground and flight test events, indicate the BMDS is maturing.

General Obering implemented several changes in organization and test philosophy during the past year. These changes more tightly integrate the developers, war fighters, and operational testers. They should also better integrate the system engineering functions and the test and evaluation functions within MDA. These changes, coupled with improvements in test planning, execution, and analyses, should result in better definition of data requirements and better, more efficient test execution.

As part of re-engineering his agency, General Obering established the Responsible Test Organization and Combined Test Force under the leadership and direction of his Deputy for Test and Assessment. The Combined Test Force will plan and execute tests, and collect and analyze data that will populate a database to support the technical and operational evaluations of BMDS performance. The Combined Test Force will include test personnel from each of the BMDS elements and the Operational Test Agencies.

With the support of General Obering, I have commissioned the Institute for Defense Analyses to examine and recommend a construct that integrates the operational testers into the Combined Test Force. The goal is to maintain the operational testers' independence and credibility while economizing resources, eliminating duplication of effort, and

supporting Combined Test Force mission and objectives. General Obering and I have also asked the Institute to investigate and recommend how to best integrate each stake holder's assessment needs into the test planning, execution, data collection, analysis, and evaluation processes. This should further streamline the test and evaluation planning and execution process, while ensuring all stakeholders efficiently and effectively meet their objectives.

Along with these organizational changes, MDA and the operational test community have agreed on an integrated test planning approach for future BMDS Blocks. Beginning with Block 2006, MDA, the joint operational test agency, and my office will develop an integrated, "evaluation-driven" test plan. This test planning philosophy brings discipline and structure to planning Block testing based upon overall system evaluation needs. It does this while concurrently addressing individual element test requirements. This approach should increase the quantity and quality of data while fostering the efficient use of test resources. It will also enhance efforts to address priority issues, such as verification, validation, and accreditation of models and simulations.

Over the last few years, Congress has asked MDA and my office to accomplish several specific initiatives with regard to operational testing of the BMDS. The Fiscal Year 2004 National Defense Authorization Act required operationally realistic testing of the BMDS. This past year, MDA conducted numerous ground tests, war games, and capability demonstrations using trained war fighters to operate the systems. These exercises included fully integrated ground and simulated missions designed by the operational testers and war fighters. This year's update to the Integrated Master Test Plan incorporates greater operational realism in the areas of increased war fighter involvement in flight tests; more end-to-end system testing; use of operationally representative missiles; employment of operational tactics, techniques, and procedures; and inclusion of more complex countermeasures. Incorporating trained war fighters into the testing program has added to the operational understanding of the capabilities, limitations, and maturity of the BMDS.

In Fiscal Year 2005, Congress required the MDA to conduct a realistic operational test of the BMDS. Following two launch failures in the Ground-based Midcourse Defense system and recommendations from two independent review teams, General Obering restructured the flight test program. Flight-testing to date has not yet reduced the risk to the point where General Obering is ready to execute an operationally realistic flight test. Under the restructured program, MDA plans three operationally realistic flight tests later this year.

In Fiscal Year 2006, Congress required the operational test community to plan and conduct an operational test of the capability provided by each block of the BMDS beginning with Block 2006. I have taken action to begin this effort involving not only the operational test community, but also the war fighters and MDA. When the evaluation plan is finished, MDA will include these tests in the next revision of the Integrated Master Test Plan.

The complexity of the BMDS is increasing. Elements are maturing and being integrated into the system. Consequently, testing the BMDS is becoming more challenging as the Agency adds elements and capability. Testers must assess performance and reliability during concurrent test and operations of a layered BMDS. Integration of the BMDS elements and sensors that are still maturing with operational legacy systems is a difficult task. Fusing the data that each element provides into a single, unambiguous operational picture is a significant software development, integration, and testing challenge. Range safety and environmental restrictions limit intercept geometries to only a few scenarios. Meeting each of these challenges is a big task – one that requires a series of well-planned ground and flight tests.

Over the long term, MDA should incrementally develop a capability to support concurrent testing and operations, including simulation over live testing, to speed up the process. This is similar to how DoD upgraded and tested Cheyenne Mountain without interfering with operations. When developed, this capability will provide an alternative

means for system test and evaluation to characterize operational effectiveness and suitability using actual hardware and war fighters in the loop.

Mr. Chairman, in conclusion, MDA experienced a difficult year with its Ground-based Midcourse Defense system, but ended the year on several high notes. Element successes indicate they are progressing toward maturity. Last year, war fighters demonstrated they could operate the integrated ground system. The fact remains, however, that we ground test for discovery, but we must flight test to verify operational performance and validate simulations. Successful flight tests are the cornerstones for building confidence in the BMDS. War fighters must have confidence the system will defend on demand.

This concludes my opening remarks and I welcome your questions.

Testimony of Peter C.W. Flory

Assistant Secretary of Defense for International Security Policy

Before the House Armed Services Committee

Subcommittee on Strategic Forces

9 March 2006

Chairman Everett, Ranking Member Reyes, Members of the Subcommittee, it is a pleasure to be with you today to provide the Subcommittee with a policy perspective on the progress we've made to date in the area of ballistic missile defense and where we are headed. Ballistic missile defense has been a top defense priority of the Administration from day one, and it remains a top priority.

I know that it has been some time since a representative of OSD/Policy has appeared before the Subcommittee, so I thought it might be useful to begin by reviewing how we got to where we are today.

At the beginning of the Administration, the United States faced a very different security environment from the one we faced during the four-and-a-half decades of the Cold War. Former Director of Central Intelligence James Woolsey has pointed out that with the demise of the Soviet Union, we found that while we had slain a great dragon, the dragon had been replaced by many dangerous snakes. In other words, the end of the Cold War did not mean that the United States no

longer faced a threat; rather, it meant that the United States would face different kinds of threats.

One such threat was the spread of weapons of mass destruction and the means of delivering them, including ballistic missiles. Yet, the 1972 Anti Ballistic Missile Treaty between the U.S. and the Soviet Union prohibited us from fielding an effective defense against this growing threat. Regimes in countries such as North Korea and Iran and – at the time – Iraq understood that while they could not hope to match the United States in conventional forces, they could gain strategic leverage by investing in ballistic missiles. The strategic wisdom of leaving the American people vulnerable to missile attack as a matter of policy during the Cold War was – at best – debatable. The wisdom of maintaining such a policy in the post-Cold War environment is not. Without a defense against ballistic missiles, the American people are vulnerable to the growing threat of missile attack. Without defenses, a U.S. President faced with a threat to vital U.S. interests from a rogue state armed with long-range missiles could find that our options are constrained by the fact that these countries can now hold at risk the United States homeland.

To deal with this threat, President Bush in 2001 and 2002 took several bold steps. First, he announced that the United States would exercise its right, which was enshrined in the Anti Ballistic Missile Treaty, to withdraw from the Treaty.

Second, he directed the Department of Defense to end what had been for decades a "research and development only" approach to ballistic missile defense, and to begin fielding an initial set of missile defense capabilities for the United States by the end of 2004.

I am pleased to say that we have by and large met the goal set by the President. In 2002, Fort Greely, Alaska, was an inactive installation, having been on the 1995 Base Realignment and Closure list. Two years later, it was a missile defense interceptor site. The United States today has all of the pieces in place needed to intercept an incoming long-range ballistic missile: ground based interceptors in Alaska and California; a network of ground, sea, and space-based sensors; a command and control network; and most importantly, trained servicemen and women ready to operate the system. Our ballistic missile defense system today is primarily oriented toward continued development and testing. But we are confident that it could intercept a long-range ballistic missile if called upon to do so.

Because of the importance of this mission, one of the first things I did upon assuming my current position in the Department of Defense was to take a trip to Ft. Greely. I want to tell you how impressed I was, not just with the site itself – the buildings, the silos, the computers – but with the dedication, the professionalism, and the sense of mission of the men and women who stand ready

to operate the system. I would encourage you all to visit Ft. Greely. It is a long way for most of you. But I know that the men and women stationed there would appreciate the visit, and that you will be as impressed as I was.

Our ballistic missile defenses are not as capable today as they will be in the future. But we knew that would be the case when we set out in 2002 to field these defenses. The end of 2004 was not a "pass/fail" exam, whereby we would evaluate what we had done to that point, declare it a success or failure, then move on to something else.

2004 was not an end point – it was a beginning. The President knew in 2002 that what we fielded in 2004 would be our *initial* capabilities. This is why he directed us to continue improving these capabilities over time through an on-going test and evaluation program, through research and development of promising new technologies, and by making continuous improvements to the systems we have already fielded. You will hear more of the programmatic details of how we are going about this from my fellow panel members in a few minutes.

But first I would like to take a few minutes to put this program in its strategic context, in terms of the evolving threat, and in terms of our overall defense strategy.

First and foremost, the threat posed by ballistic missiles is growing. And the missiles we are talking about are growing in range, complexity, and the threat they pose. In 1990, around the end of the Cold War, 16 countries possessed ballistic missiles of varying ranges. In 2006, 25 countries have them. The number of countries that possess medium, intermediate, or intercontinental range ballistic missiles – i.e., missiles that may reach our friends and allies, and in some cases the U.S. homeland itself -- has increased from five to nine.

Not only is the number of nations possessing ballistic missiles increasing, but this group includes some of the world's most threatening and least responsible regimes, such as North Korea and Iran.

As Lt. Gen. Michael Maples, the Director of the Defense Intelligence Agency, recently testified in an unclassified session, North Korea continues to invest in ballistic missiles, not only for its own use but for foreign sales as well. According to Lt. Gen. Maples, "Pyongyang is likely developing intermediate and intercontinental ballistic missile capabilities." And as then-Deputy Secretary of Defense Paul Wolfowitz testified before the Senate Armed Services Committee in 2001, North Korea launched a multi-stage Taepo-Dong 1 missile in 1998, which "the intelligence community tells us . . . demonstrated a North Korean capability to deliver a small payload to the United States. For over 50 years, U.S. service-members have stood on the border between North and South Korea. We have

known that if North Korea decided to attack the South, these men and women would immediately be in harm's way. The prospect of long-range ballistic missiles in the hands of the North means that, for the first time, the American *people* too would be in harm's way.

Iran represents a dangerous nexus, combining a vigorous ballistic missile program, a desire to develop nuclear weapons, and a history of support for international terrorism. The most recent edition of the State Department's *Patterns of Global Terrorism* (April 29, 2004) describes Iran as the world's most active state sponsor of terrorism.

Terrorism has been part of Tehran's arsenal for decades. In fact, before the 9/11 attacks, more Americans had been killed by Iranian-backed terrorists like Hezbollah than by any other terrorist group. Iran has now made ballistic missiles an important part of its defense strategy – scenes of Iranian missiles on display in military parades are reminiscent of the Soviet Union. The Director of National Intelligence, John Negroponte, recently testified before Congress that Iran has engaged in a clandestine uranium enrichment program for nearly two decades, and that although it is the judgment of the intelligence community that Iran does not yet possess a nuclear weapon or have the necessary fissile material to do so, "the danger that it will acquire a nuclear weapon and the ability to integrate it with the ballistic missiles Iran already possesses is a reason for immediate concern."

In this environment, recent statements by Iranian President Ahmadi-Nejad threatening the United States and its friends in the region, most notably Israel, are of particular concern. In an October 2005 speech before a "World Without Zionism" conference, Ahmadi-Nejad declared that Israel was a "disgraceful blot" that should be "wiped off the map," and that "anybody who recognizes Israel will burn in the fire of the Islamic nation's fury."

Iran's ballistic missiles already cast a shadow over U.S. friends and allies, and our deployed forces, in the Middle East. The addition of nuclear warheads and an ICBM that could reach the U.S. would further extend Iran's ability to coerce others and threaten the U.S.

The United States continues to support efforts by the Europeans, especially the EU-3 (France, Germany, and the United Kingdom) and Russia to find a diplomatic solution to the issue of Iran's nuclear activities. But, we need to take steps to safeguard our interests and the interests of friends and allies in the event diplomatic efforts do not succeed. And the Iranian case is just one example of a weapons of mass destruction (WMD) proliferation problem that, thanks to ballistic missile technology, could directly threaten the American people. We must be prepared for this possibility, and for others to follow suit. The continued development and fielding of missile defenses is one vital step to defend against

such threats, as well as to reduce the attractiveness, to other countries of concern, of such WMD and missile technology.

As we face these threats, ballistic missile defenses remain an important part of our overall defense strategy. Last month, the Department of Defense released the 2006 Quadrennial Defense Review. The QDR recognizes that since the previous QDR in 2001, the United States has found itself engaged in a "long war," a global conflict against violent extremists who use terrorism as their weapon of choice, and who are actively seeking weapons of mass destruction. We believe that ballistic missile defenses play an important part in this long war. The QDR identifies a number of priorities to guide the Department as it makes choices about how best to help the nation win the long war. These priorities include: defending the homeland in depth; shaping the choices of countries at strategic crossroads; and preventing hostile states and non-state actors from acquiring or using weapons of mass destruction. Ballistic missile defenses can make a contribution to each of these important priorities. They can be used to defend the homeland and defeat the actual use of a ballistic missile against the population and territory of the U.S., its deployed forces, or its friends and allies. And, by making an adversary uncertain that a ballistic missile attack will succeed, missile defenses may dissuade others from investing in missiles, or deter their use by those who have already acquired them.

Some have questioned the amount of attention we have paid to ballistic missile defense in the years following the September 11 attacks, on the theory that the main threat to the U.S. is terrorism, and a ballistic missile attack against the United States is unlikely. I would turn that argument around. One of the lessons of September 11 is that nothing is unthinkable. The United States must *and can* prepare to defend itself against the widest range of threats possible. Leaving ourselves vulnerable to a type of attack will only increase the likelihood that an adversary will exploit that vulnerability to threaten or attack us.

Further, the U.S. government was criticized in the wake of 9/11 for not "connecting the dots" on the terrorist threat and failing to act to prevent the attacks. With respect to the ballistic missile threat, the dots are out there for all to see. I would not care to be before this committee in the wake of a ballistic missile attack explaining why, given all we know of ballistic missiles in the hands of dangerous regimes, we had not acted to defend the American people.

I spoke earlier about the ballistic missile defense goals laid out by President Bush in 2002. The President directed us then not only to field defenses for the United States, but also to cooperate with friends and allies to extend the benefits of missile defenses to them as well. Since then, we have embarked upon a number of important missile defense initiatives with international friends and partners. We

have worked with the United Kingdom to upgrade the early warning radar at Fylingdales so it can perform a ballistic missile defense mission; we reached agreement with Denmark to allow us to upgrade the early warning radar at Thule, Greenland; we continue to work with Israel on the Arrow ballistic missile defense program; our own Patriot anti-missile system is widely deployed and is available for export; Germany and Italy are our partners in the Medium Extended Range Air Defense, or MEADS, system; after we signed a Framework Memorandum of Understanding on missile defense cooperation in 2004 with Australia, Canberra has expressed interest in cooperating on a number of potential missile defense projects; and we are negotiating a Defense Technical Cooperation Agreement with Russia to facilitate both government-to-government as well as industry-to-industry missile defense cooperation, while we continue to seek practical areas of cooperation with Russia on a bilateral basis as well as in the NATO-Russia context.

One particularly good news story in international ballistic missile defense is our cooperation with Japan. Japan has committed to spending the equivalent of roughly $1 billion U.S. dollars on ballistic missile defense, making it our largest international partner in missile defense. The United States and Japan have agreed to work together to develop a more capable sea-based interceptor that will improve the defense of both the U.S. and Japan. I am particularly pleased that the Government of Japan has agreed to evaluate the optimum deployment site for an

X-band radar on its territory that will help defend both the U.S. and Japan from ballistic missile attack. In addition, the U.S. and Japan are taking the steps necessary to share ballistic missile defense information with one another.

We also are considering fielding long-range missile defense interceptors and radars in Europe. There is roughly $120 million in the President's Fiscal Year 2007 budget request to begin work on this project. Such a site would house interceptors very similar to those we have currently fielded at Ft. Greely, Alaska, and Vandenberg Air Force Base in California. Fielding such a capability would improve the defense of the United States against long-range missiles, especially those launched from the Middle East. It also would begin to extend missile defense to our European allies, protecting their populations from attack and reducing the risk of coercion or blackmail.

The U.S. Government has held consultations with a number of Allies, beginning in 2002, about their willingness to host missile defense interceptors. We intend to continue these consultations in the coming weeks and months with allies who have expressed interest. I understand the Committee would like to know which countries we will be consulting on the matter. But we are currently in the process of notifying them, and I don't want to get ahead of that process today. That said, I would be happy to follow up with the Subcommittee in the near future with more details.

Thank you, Mr. Chairman. I look forward to answering your questions and those of the Subcommittee members after my colleagues have presented their testimony.

QUESTIONS AND ANSWERS SUBMITTED FOR THE RECORD

MARCH 9, 2006

QUESTIONS SUBMITTED BY MR. EVERETT

Mr. EVERETT. I understand that the Missile Defense Agency has invested over $250 million in the development of radiation hardened electronics. Additionally, DTRA has invested approximately $150 million and the Defense Production Act has invested over $100 million. Recognizing the importance of this technology and the large amount of funding that has been invested, how do you plan to utilize the results of these efforts? Will there be a centralized data base to prevent the unnecessary duplication of effort and the optimum utilization of the results by the prime contractors?

General OBERING. The Ballistic Missile Defense System began improving its nuclear survivability this Fiscal Year. Two Ballistic Missile Defense System elements, Ground-based Midcourse Defense and Aegis Ballistic Missile Defense, received funds to address electromagnetic pulse protection, radiation hardening against persistent radiation from high altitude nuclear blast, and to conduct the assessment study of nuclear survivability capability for the potential upgrades using radiation hardened electronics to enhance BMDS capability in accordance with our High Altitude Exo-atmospheric Nuclear Survivability standard. Our Future Years Defense Plan requests nuclear survivability funding to address High Altitude Exo-atmospheric Nuclear Survivability requirements next Fiscal Year for the Multiple Kill Vehicles, Terminal High Altitude Area Defense, and the Forward Based X-band Transportable radar. I have a table to submit for the record that identifies our current and future funding plan.

PB07 MDA Nuclear Survivability

[Dollars in Millions]

BMDS Element	FY06	FY07	FY08	FY09	FY10	FY11	Total
Aegis BMD	3	4	4	6	7	5	29
GMD	5	7	24	66	55	34	191
MKV		12	26	50	72	91	251
FBX–T				1	2	2	5
THAAD			3	25	25	3	56
Total	8	23	57	148	161	135	532

The Missile Defense Agency will include hardened electronics, co-funded by the Missile Defense Agency, the Defense Threat Reduction Agency, and the Defense Production Act, in future Ballistic Missile Defense System equipment deployments.

The Missile Defense Agency has a Small Business Innovation Research contract to build a radiation hardened catalog that will aid in access, recognition, and utilization of DoD radiation hardened electronics data. Next year, to prevent unnecessary duplication of effort, Ballistic Missile Defense System contractors will be able to use this catalog to search for hardened technology via a database warehouse using a secure Internet-based protocol.

In addition to the Small Business Innovation Research contract I just discussed, the Agency also participates in the Director of the Defense Research and Engineering's Radiation Hardened Oversight Council to mitigate unnecessary duplication of effort and optimize utilization of radiation hard technology.

Mr. EVERETT. As the Army's Patriot System remains the cornerstone for theater air and missile defense, I understand the Army Chief of Staff recently decided the need to upgrade 12 Patriot batteries from the older Configuration-2 to the upgraded Configuration-3 which permits the battery to fire all missile versions to include the PAC–3. Given that decision was only recently arrived at, would additional funding

in FY07 permit the Army to begin moving to that end-state more quickly and get that enhanced capability to our troops sooner in the face of the growing threats world-wide?

General DODGEN. Yes. The Army Chief of Staff directed the pure fleeting of all Patriot battalions to configuration-3 to occur no later than the end of FY09. Due to the long lead time necessary for industry to produce, test, and install the upgrade kits, funding is required in FY07 to meet the 2009 timeline. If funded in the FY07 appropriation, a contract would be awarded upon receipt of funds. This requirement is currently on the Army's unfunded 1–N list.

Mr. EVERETT. Would acceleration of moving the Patriot force to a "pure fleet" configuration-3, in other words PAC–3 capable force, starting in FY07 improve the Army's operational flexibility to meet global threats to our friends forward deployed troops?

General DODGEN. Yes.

- A Patriot configuration-3 system provides substantially increased capability against cruise and ballistic missiles in terms of Probability of Kill (Pk), defended area footprint, lethality ["hit-to-kill" missile technology], Weapons of Mass Destruction (WMD), and saturation attack.
- Additional funding in FY07 to pure-fleet the Patriot force to configuration-3 improves the Army's missile defense operational flexibility by:
  - Enabling the requisite number of "like Patriot battalions" (config-3) to implement the Army's Force Generation model (ARFORGEN) to ensure a continuous, rotational, and trained presence for Combatant Commanders and Allies in forward deployed locations.
  - Negating capability deltas and interoperability challenges between Patriot Configuration-2 and Configuration-3 systems enables attainment of Army's goal of modularity, which provides flexibility to deploy tailorable and modular Patriot task organizations.
  - Streamlining the Army's institutional training and logistics processes to maintain and sustain an operational Patriot force structure.

Mr. EVERETT. The Army has taken steps to address the unfortunate fratricide incidents experienced early in Operation Iraqi Freedom involving Patriot. There have been improvements to communications resources and software along with training and other measures. Along with these and other improvements to the Patriot system, if an upgrade to the radar were available to achieve a measure of organic combat Identification not now present; would you support additional funding to develop that onboard capability?

General DODGEN. Yes, upgrades to the radar are available which would provide a significant organic combat identification capability. This capability has been demonstrated in an engineering test environment, and if implemented into the tactical system, would greatly improve the protection of friendly aircraft. We fully support additional funding to develop the onboard capability.

Mr. EVERETT. Are there efforts currently underway to improve Patriot and other air defense systems with technologies and improvements that will reduce or eliminate the likelihood of firing upon friendly US or coalition aircraft?

General DODGEN. Yes, there are several efforts underway to incorporate new technologies to greatly reduce the likelihood of firing on a friendly aircraft.

- New Identification, Friend or Foe (IFF) Mode 5/Mode S. These capabilities are currently being developed for the Patriot system. However, with the present radar/IFF interface, the utility of these new capabilities is greatly limited. The full benefits of the new IFF modes cannot be realized with the current interface. An upgrade to the radar processor and IFF interface (unfunded) are required to realize the benefits of the new IFF capabilities.

- New radar processing techniques. These techniques are currently in use by other services, and have shown significant capability to improve combat identification. The techniques have been demonstrated with the Patriot radar in an engineering demonstration environment; however no funding is available to incorporate them into the tactical system.

Mr. EVERETT. The Army recently concluded a need to standup an Integrated Air & Missile Defense program office for the purpose of working to facilitate engineering and open architecture design activities in support of the Army System of Systems initiative in both the ongoing SLAMRAAM and Patriot/MEADS Combined Aggregate Programs. The FY07 President's Budget request arrived at the Hill before the results of this decision could be taken into account. Would additional funding in FY07 assist the Army in accelerating its efforts to field a System of Systems Integrated Air & Missile Defense capability by 2011?

General DODGEN. While adequate funds exists to meet the fielding of an Integrated Air and Missile Defense architecture by FY11, additional funding, if available, could be used to develop those unique and common components associated with attaining a more robust capability. Additional funding could be used to upgrade software of Patriot configuration-3 radars to ensure integration with a common Battle Manager, accelerate the Launch Station component to achieve the objective 2011 architecture and lastly, assist in the refinement and development of the common Battle Management architecture.

QUESTIONS SUBMITTED BY MR. REYES

Mr. REYES. In response to my question during the hearing concerning your plans for testing the Ground Based Interceptor against countermeasures that might accompany a threat-representative ICBM warhead, you stated that MDA has already successfully tested the system against a target accompanied by countermeasures. Please provide me with information about each GBI test that has included countermeasures.

General OBERING. [The information referred to is classified and retained in the committee files.]

Mr. REYES. Please describe the types of countermeasures that were included in these tests.

General OBERING. [The information referred to is classified and retained in the committee files.]

Mr. REYES. Were these test countermeasures developed based on intelligence community estimates of the most challenging types of countermeasures that could be developed to stress a missile defense system by threat nations?

General OBERING. [The information referred to is classified and retained in the committee files.]

QUESTIONS SUBMITTED BY MR. ROGERS

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