DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 2007

WEDNESDAY, MAY 10, 2006

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:05 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Ted Stevens (chairman) presiding.

Present: Senator Stevens, Cochran, Shelby, Burns, and Inouye.

DEPARTMENT OF DEFENSE

MISSILE DEFENSE AGENCY

STATEMENT OF LIEUTENANT GENERAL HENRY A. "TREY" OBERING III, UNITED STATES AIR FORCE, DIRECTOR

OPENING STATEMENT OF SENATOR TED STEVENS

Senator STEVENS. We're pleased to have Lieutenant General Henry Obering, Director of the Missile Defense Agency (MDA), and Lieutenant General Larry Dodgen, Commander of the U.S. Army Space and Missile Defense Command, U.S. Army Forces Strategic Command, and the Joint Functional Component of the Command Integrated Missile Defense (IMD).

General Obering, given your service at the Missile Defense Agency for the last 2 years, we have been acquainted with you and your role, and appreciate your service as Director of the Missile Defense Agency.

General Dodgen, we thank you, again, for coming to appear before the subcommittee, and recognize your multiple command roles and responsibilities.

Since I am late, I am going to put the balance of my statement in the record. I would also like to include the statement for Senator Cochran in the record as well.

[The statements follow:]

PREPARED STATEMENT OF SENATOR TED STEVENS

The committee is pleased to welcome Lieutenant General Henry Obering, Director of the Missile Defense Agency and Lieutenant General Larry Dodgen, Commander, U.S. Army Space and Missile Defense Command, U.S. Army Forces Strategic Command, and Joint Functional Component Command—Integrated Missile Defense.

General Obering, given your service at the Missile Defense Agency for almost two years, we are acquainted with you and your role as Director of the Missile Defense Agency.

General Dodgen, thank you for testifying again before this committee and we recognize your multiple command roles and responsibilities and look forward to hearing your statement today.

We thank the both of you for being here today.

In the face of a growing threat, ballistic missile defense is one of the most challenging missions in the Department of Defense. Recognizing the strategic importance of this mission to the United States, this committee has consistently provided resources for missile defense programs. Unfortunately, we as a nation face multiple threats with limited resources, forcing this committee to make tough choices with respect to our defense priorities. This committee seeks to ensure that our nations limited resources are tightly focused, on countering the most important threats.

General Dodgen and General Obering, we look forward to hearing about the current status of our missile defense capabilities and how the program is proceeding. We will make your full statement a part of the committee's record. Before we begin, let me turn to Senator Inouye, my vice chairman, for his opening remark.

PREPARED STATEMENT OF SENATOR THAD COCHRAN

Mr. Chairman, I join you in welcoming our witnesses today. Given the development of missile programs around the world and the nuclear development efforts by North Korea and Iran, the importance of maintaining a strong missile defense program cannot be overstated. Our nation needs to continue to develop and deploy a missile defense capability.

I look forward to your testimony about the capabilities on which you are working. I appreciate your service, and offer you my support toward achieving a layered system capable of defending our nation, our deployed forces, and our allies against the full range of missile threats.

Senator STEVENS. But I do want to tell you, we do look forward to hearing from you about the status of our missile defense capabilities. I enjoyed very much the event out at Vandenberg, where we did commit part of that base to the National Missile Defense Command. And I look forward to hearing more from you about the future of that command.

Senator Inouye.

Senator INOUYE. Well, I thank you very much, Mr. Chairman. I'll follow your leadership, and may I ask that my statement be made part of the record.

Senator STEVENS. Without objection, we'll put your full statement in the record.

[The statement follows:]

PREPARED STATEMENT OF SENATOR DANIEL K. INOUYE

Today I am pleased to join our Chairman in welcoming to the committee Lieutenant General Obering and Lieutenant General Dodgen to discuss the fiscal year 2007 budget request for missile defense.

Gentlemen, it has been nearly two years since the President directed the Department of Defense to field an initial missile defense capability. We have been investing close to $10 billion annually on missile defense to reach that goal, and while there have been multiple successes for the system, we still do not have any of the "shoot-down" systems on alert.

We have placed significant resources and time in the ground-based missile defense system, the Aegis system, and in programs such as Airborne Laser and Theater High Altitude Area Defense. This Committee wants to see these programs succeed. However, each year as we review the budget request, it seems that the Missile Defense Agency is investing more of its resources on new research activities, instead of focusing on getting an operational capability out of the core programs I just mentioned.

Gentlemen, I know that you are committed to proving that the missile defense system works and that it is fielded and fully operational. I am confident that you have the best intentions when you invest in new research programs. However, I am concerned that we might not be able to continue the current rate of spending on missile defense into the future. As such, I want to be sure that the systems we have

been investing in so heavily are deployed and that their funding is not curtailed to pay for new programs.

I thank you both for appearing before the Committee. I hope you will address this concern today during our discussions, and I look forward to hearing your remarks.

Senator STEVENS. And we'll put the statement of each of you in the record in full, as though read.

Senator Shelby, do you have any comments?

Senator SHELBY. Mr. Chairman, I look forward to both generals' testimony here today.

Thank you.

Senator STEVENS. Senator Burns, do you have a comment?

Senator BURNS. I have a statement, and I'd put that in the record, looking forward to their testimony today. And it's a short one, so I think we get on with the business at hand.

Senator STEVENS. Yes, sir.

[The statement follows:]

PREPARED STATEMENT OF SENATOR CONRAD BURNS

Mr. Chairman, Lieutenant General Obering, Lieutenant General Dodgen. I would like to welcome you and let you know that we appreciate your professional service to our nation.

We also appreciate your efforts to field a ballistic missile defense system. Your labors are the continuation of years of research and development that began with the Strategic Defense Initiative under President Reagan. When SDI was introduced over 20 years ago there were many doubters who dubbed the program "Star Wars". In the due course of time those doubters were proven to be on the wrong side of history. As it turned out SDI was a definitive factor in breaking the back of our Soviet enemies. As we have seen, many of the technologies that resulted from this effort have seen uses that no one could have predicted. The development and fielding of the Patriot missile is one example of how missile defense technology is critical to our Armed Forces. The Patriot PAC–3 is now the most mature and effective system in our missile defense arsenal.

Today we have a new enemy, and our efforts need to be geared toward facing that enemy in the war that we are now engaged in. Missile defense is an important element of protecting our forces that are forward deployed. The spiral development of Patriot PAC–3 on the land, and the Navy Standard SM–3 missile paired with new long range radars are two examples of technology that can be used in any theater around the world, or re-deployed back to the United States for homeland defense. These tactical systems now have strategic capabilities.

Although, I understand the importance of developing missile defense technology I have concerns that your agency is juggling too many programs; and the result is that we are paying for parallel programs with some redundancies. I look forward to hearing your views about the integration of your programs, and your plan for making the most of our tight budget while we are fighting the global war on terror.

Senator STEVENS. Generals, we put a high value on your activities. And I must say that the progress that's being made is very enlightening, very welcome. So, we look forward to your statement.

General Obering.

General OBERING. Well, thank you. Good morning, Mr. Chairman, Senator Inouye, and distinguished members of the subcommittee. It's an honor to be here today.

This morning, I'll review the progress that we've made in fielding and developing a missile defense capability, our plans for 2007, and our test program.

We structured the Missile Defense Program to meet the current and evolving ballistic missile threats by balancing early fielding with steady system improvements over time. We're requesting $9.3 billion to support our very intense program of work in 2007. About $2.4 billion will cover the fielding and sustainment of the system

components. And about $6.9 billion will be invested in further development and continued testing.

Since I last addressed you, we've made good progress in developing and fielding an integrated layered defense for the United States, our deployed forces, allies, and friends, against ballistic missiles of all ranges and all phases of flight. This is especially true in our long-range defense component.

Last year, following the two test aborts, I chartered an independent review of the Ground-based Midcourse Defense (GMD) Program. The independent review team concluded that we were on the right track, but needed to make adjustments in our quality control, system engineering, and test readiness. I established a mission readiness task force to follow through on these adjustments, and delayed the interceptor deployment in 2005 until we were satisfied with that progress. We are finishing the additional recommended qualification tests and have implemented much stronger engineering accountability, configuration management, and mission assurance processes.

We've had a very successful flight test of our operationally configured long-range interceptor in December, and a very successful flight test generating intercept solutions from our Cobra Dane and Beale radars and their operational configurations, as well. These comprehensive reviews and our recent successes indicate that we should continue interceptor deployment. But I will pause again, if necessary.

We recently emplaced three more ground-based interceptors in Alaska, and plan to have a total of 16 at sites in Alaska and California by December. Current plans support emplacement of 22 interceptors by the end of 2007, and the fielding of 10 interceptors to a European missile field by 2011, which will expand our total available long-range inventory to over 50.

Sensors are the eyes of this system. They detect, track, and discriminate threatening objects and provide critical cuing information to the system. In addition to the Cobra Dane and the Beale radars that I mentioned earlier, this year we completed construction of the very powerful sea-based X-band radar and began integrating it into the system. It is now undergoing tests near Hawaii and will depart this summer for Alaska. We are also deploying the first transportable forward-based X-band radar to our very important ally, Japan, where it will support both regional and homeland defense. In the United Kingdom, we expect the upgraded Fylingdales radar to achieve its initial capability this year, and in 2007 we will deliver a second forward-based X-band radar and initiate a major upgrade of the Thule radar in Greenland.

By placing a third long-range interceptor field in Europe along with forward-based sensors in the region, we will meet two major objectives laid out by the President: Improved coverage of the United States and greatly improved protection of our allies and friends in Europe against a Middle East threat.

The command, control, battle management, and communications infrastructure is the heart, soul and brain of our defensive capability. Without it, we simply couldn't execute the mission. It is a true force multiplier for missile defense. The global command and control foundation that we've established is unmatched in the

world. We need to expand this effort to enable the integrated fire control which will allow us to mix and match sensors and weapons, greatly increasing our capability.

Our aegis ships provide a flexible intercept capability against the shorter range ballistic missiles, as well as the long-range surveillance and track support to the system. This past year, we added 6 more surveillance and track destroyers, for a total of 11, and another engagement cruiser, for a total of two. By the end of 2007, we expect to have 10 engagement ships available, with 33 interceptors delivered.

We also have an aggressive development program of work. In our terminal high altitude area defense, or THAAD, component, we are coming off a very successful test flight last November and are on track to field an initial capability against the short- to medium-range threats in 2008. To lay the foundation for global capability to meet future emerging threats, we plan to launch two space-tracking and surveillance system demonstration satellites in 2007, as well.

And in our very challenging boost-phase defense area, the airborne laser reached all of its knowledge points last year when it achieved a full-duration laser at operational power and completed the initial beam-control/fire-control flight tests. Currently, we're installing the tracking and atmospheric compensation lasers and preparing the aircraft to accept the high-power laser modules in 2007.

In our other boost-phase development activity, the kinetic energy interceptor (KEI), we are focused on demonstrating a mobile, very high acceleration booster that could give us improved capabilities to engage targets in the boost, midcourse, and terminal phases of flight. We've had a number of test successes and project the first flight of this interceptor in 2008. And with our multiple kill vehicle (MKV) system development, we will bolster long-range defenses by improving our abilities to engage multiple targets with a single interceptor.

Now let me quickly turn to testing. The test schedule for this year and next continues at a rigorous pace. We will conduct 38 major system tests in 2006 and 37 major system tests in 2007. We plan two to three more long-range flight tests this year, including intercepts, two intercept flight tests of our aegis standard missile–3, and four flight tests of the terminal high altitude area defense interceptor.

PREPARED STATEMENT

Mr. Chairman, we certainly have our challenges, but I believe the program is on track. The successes that we've had over the past year bear this out. I greatly appreciate this subcommittee's continued support and patience, and I want to thank the thousands of Americans and our allies, both in Government and industry, who are working hard to make missile defense a success.

Thank you, and I look forward to your questions.

Senator STEVENS. Thank you, General.

[The statement follows:]

PREPARED STATEMENT OF LIEUTENANT GENERAL HENRY A. OBERING III

Good morning, Chairman Stevens, Senator Inouye, distinguished Members of the Committee. It is an honor to be here today to present the Department of Defense's fiscal year 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.

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 to have 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. Last February, 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 one flight test, both 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 tar-

get 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 two more Aegis interceptor flight tests in 2006. Last March, we conducted a very successful cooperative test with Japan involving a simulated target to demonstrate the engagement performance of a modified SM–3 nosecone developed by the Japanese in the United States/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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 2007 we will undertake initial satellite check-out and prepare for tests involving live targets. We are requesting approximately $380 million in fiscal year 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 fiscal year 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 defen-

sive 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 fiscal year 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 fiscal year 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 fiscal year 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 culminated in the flight test of an advanced SM–3 nosecone earlier this year and ended 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.

Senator STEVENS. General Dodgen.

STATEMENT OF LIEUTENANT GENERAL LARRY J. DODGEN, COMMANDING GENERAL, U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND/U.S. ARMY FORCES STRATEGIC COMMAND, UNITED STATES ARMY

General DODGEN. Thank you, sir.

Mr. Chairman, Senator Inouye, and members of the subcommittee, thank you for your ongoing support of our military and for the opportunity to appear before this distinguished panel.

This subcommittee 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 appear before this subcommittee in two roles. The first is as the warfighting member of the joint missile defense team. I am the Commander of the Joint Functional Component Command for Integrated Missile Defense, or JFCC–IMD, a part of United States Strategic Command. The JFCC is a joint user representative working closely with the Missile Defense Agency, services, and combatant commanders to ensure that our national goal of developing, testing, and deploying an integrated missile defense system is met.

The second is as an Army commander for missile defense and a proponent for the ground-based midcourse defense system. In my role as the JFCC–IMD commander, I directly support the U.S. Strategic Command (USSTRATCOM) commander in planning the global missile defenses. The JFCC is truly joint, manned by Army, Navy, Air Force, and Marine Corps personnel, and is headquartered at the Joint National Integration Center at Schriever Air Force Base, Colorado.

This arrangement allows us to leverage the existing robust infrastructure and our strong partnership with the Missile Defense Agency to execute the IMD mission. In the past year, the JFCC–IMD has aggressively executed USSTRATCOM's global mission to plan, coordinate, and integrate missile defense. In collaboration with geographical combatant commanders, we are developing the IMB plans that integrate theater and national assets to provide the best protection. STRATCOM, in partnership with MDA, is setting the stage to evolve the ballistic missile defense system (BMDS) beyond its current capabilities to provide a more robust missile defense for the homeland, deployed forces, friends, and allies.

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

The President'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. 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 the PAC–3 configuration.

The medium extended air defense system, or MEADS, is a cooperative development program with Germany and Italy to collectively field an enhanced ground-based air and missile defense capa-

bility. 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 believe you are aware, the Patriot/MEADS combined aggregate program (CAP) has been established. The objective of the CAP is to achieve the objective MEADS capability through incremental fielding of MEADS major end items in the Patriot. Patriot/MEADS CAP is an important capability that will operate within MDA's BMDS. The Patriot and PAC–3 CAP research development and acquisition budget request for fiscal year 2007 is approximately $916 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 the CAP capabilities.

The fiscal year 2007 President's budget also includes a $264 million request for joint land attack cruise missile defense elevated netted sensor system, a program developing unique lightweight fire-control and surveillance radars to detect, track, and identify cruise missile threats. With the program funding, we expect first unit equipped occurring by 2011. Surface launched advanced medium range air to air missile (SLAMRAAM) will provide a cruise missile defense system to maneuver forces within an extended battle space and a beyond-line-of-sight engagement capability critical to countering the cruise missile and unmanned aerial vehicle threats we foresee in the future.

I appreciate having the opportunity to speak on these important matters, and I look forward to addressing questions you and other members of the subcommittee may have. I also respectfully request that my written statement be submitted for the record.

Thank you, Mr. Chairman.

Senator STEVENS. The statement has been included in the record, General.

[The statement follows:]

PREPARED STATEMENT OF LIEUTENANT GENERAL LARRY J. DODGEN

INTRODUCTION

Mr. Chairman, Senator Inouye, and Members of the Committee, thank you for your ongoing support of our military and for the opportunity to appear before this distinguished panel. 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 Lieutenant General Obering as an advocate for a strong global missile defense capability.

I appear before this committee in two roles. The first is as an Army Commander for missile defense and a proponent for the Ground-based Midcourse Defense (GMD) System. The second is as a soldier in the Joint Missile Defense Team and 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 (IAMD) 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 (JNIC) at Schriever Air Force Base in Colorado. Just a couple of years ago, we activated the GMD Brigade in Colorado Springs, Colorado, and a subordinate GMD Battalion at Fort Greely. 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 (AMD) community.

USSTRATCOM JFCC–IMD

The JFCC–IMD was established in January 2005 as one element of USSTRATCOM and reached full operational capability on early in 2006. This organization complements the capabilities inherent in other USSTRATCOM JFCCs and Joint Task Forces (JTFs) which plan, coordinate, and integrate USSTRATCOM's other global missions of Space and Global Strike, Intelligence Surveillance and Reconnaissance (ISR), Net Warfare and Global Network Operations, and the newest element, the USSTRATCOM Center for Combating Weapons of Mass Destruction (WMDs).

The JFCC–IMD is manned by Army, Navy, Air Force, and Marine Corps personnel. It is headquartered at the JNIC at Schriever Air Force Base, Colorado. This arrangement enables us to execute the IMD mission by leveraging the existing robust infrastructure and our strong partnership with our collocated MDA team.

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 USSTRATCOM's global mission instead of individual theater plans.

Based on guidance from the Commander, USSTRATCOM, 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 include early activation and deployment of the AEGIS SM3 Missile and the sea-based and Forward Based X-band Transportable (FBX–T) Radar to operational locations in the Pacific region, where, by the end of 2006, they will join a global network of radars. USSTRATCOM initiated planning efforts to integrate the capabilities of all the JFCCs to support the "New Strategic Triad," as it determines the next steps needed to fulfill our commitment to an integrated missile defense capable of defending the United States, its deployed forces, friends, and allies.

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 integral aspects of how we fight, to ensure the optimal application of limited resources.

The IMD community, led by the USSTRATCOM Commander and his Unified Command Plan Authority, has conducted numerous capability and readiness demonstrations, integrated flight and ground tests, and Combatant Command exercises to develop and validate the operators' tactics, techniques, and procedures. As we work toward our system's future operational capability, increased warfighter involvement in the testing and exercising of the Ballistic Missile Defense System (BMDS) 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). The CONOPS relies on the development and coordination of engagement sequence groups (ESGs) and the advocacy of desired global missile defense characteristics and capabilities.

USSTRATCOM-developed global IMD CONOPS serves as a roadmap for the warfighting community to guide the development of more detailed IMD planning and execution. These CONOPS contains two fundamental principles. First, the geographic component commanders execute the IMD fight within their Areas of Responsibility (AORs). Second, multi-mission sensors are centrally tasked by USSTRATCOM Commander to optimize their use 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 uses 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 serve to optimize our global missile defense system.

The USSTRATCOM commander 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 modifications to developing refined planning tools. These needs are prioritized by USSTRATCOM for review and approval and are 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 that will greatly enhance both planning and execution capabilities. C2BMC contributes to all phases of BMD from optimizing planning to synchronizing the automated execution of the BMDS. Upgrades to the Command, Control, Battle Management, and Communications System will extend situational awareness capability to Pacific Command and European Command by the end of 2006.

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 Combatant Commands with development of new defense designs and optimized locations for BMDS in exercises such as USSTRATCOM's GLOBAL LIGHTNING and PACOM's TERMINAL FURY.

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

AIR AND MISSILE DEFENSE—AN OVERVIEW OF THE FISCAL YEAR 2007 ARMY 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 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 of 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 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 enhancements 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 AMD forces to meet the increasingly sophisticated and asymmetric threat environment encountered by the Joint warfighter. The Army has the lead to conduct the IAMD Capabilities Based Assessment. This analysis will comprise the front end of the Chairman of the Joint Chiefs of Staff Joint Capabilities Integration Development System. The study will identify key joint, agency and combat command IAMD capability gaps and will 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, IAMD System of Systems (SoS). The IAMD SoS program focuses on systems integration, common battle command and control, joint enabling networking, and 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 SoS approach calls for a restructuring of systems into components of sensors, weapons and Battle Management Command, Control, Communications, Computers, and Intelligence (BMC4I) with a standard set of interfaces among these components using a standardized set of networks for communication.

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 the 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 AMD battalions. These battalions address capability gaps, which permit us to defeat cruise missiles and unmanned aerial vehicles (UAVs) while maintaining our ability 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, five battalions as AMD battalions, and create one battalion as a maneuver AMD battalion which will soon be our first pure SLAMRAAM Battalion. This transformation is underway.

Within the context just provided, allow me to briefly discuss each of the programs that support the Army's AMD Transformation.

TERMINAL PHASE BALLISTIC MISSILE DEFENSES

The PATRIOT/Medium Extended Air Defense System (MEADS) capability is designed to counter theater ballistic missile threats in their terminal phase in addition to cruise missiles and other air-breathing threats. Combining these systems with the Theater High Attitude Area Defense (THAAD) System 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 AMD 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 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 operational data, 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 when defending against Iraqi ballistic missile attacks during OIF. However, there were some operational deficiencies. 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 to be completed by the end of fiscal year 2007, pending any materiel release issues.

The PATRIOT system remains the Army's mainstay TAMD system and our nation's only deployed land-based short-to-medium range BMDS capability. The current PATRIOT force must be maintained through sustainment and recapitalization efforts until 2028, until the MEADS begins fielding, projected to begin in 2017.

MEADS is a cooperative development program with Germany and Italy, to collectively field an enhanced ground-based AMD capability. The MEADS program, which supports the President's goal for international cooperation in missile defense, will enable the joint integrated AMD 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 IAMD architecture. Major MEADS enhancements include 360-degree sensor coverage, a netted and distributed battle manager that enables integrated fire con-

trol, and a strategically deployable and tactically mobile, AMD 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 of the Defense Acquisition Executive, the Army embarked on a path to merge the PATRIOT and MEADS programs, establishing the PATRIOT/MEADS Combined Aggregate Program (CAP) with the objective of achieving the 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 and air breathing threats (i.e. cruise missiles and UAVs). The PATRIOT/MEADS CAP will be capable of operating within a joint, interagency, and multinational interdependent operational environment. It will provide wide-area protection at strategic, operational, and tactical levels.

PATRIOT/MEADS CAP will also provide BMC4I, 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 the ability to deploy strategically while maintaining tactical mobility. The system uses a netted and distributed architecture with modular and configurable battle elements, which allows for integration 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 AMD 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 the Nation with the most capable AMD 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

In the world today, there exists a real and growing threat from land attack cruise missiles. 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 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), the Patriot MSE missile, 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 SLAMRAAM/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 a full JLENS capability, with the first unit equipped by 2011.

SLAMRAAM Overview

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 uses the existing Joint AMRAAM missile currently used by the Air Force and the Navy, thereby capitalizing on the Joint harmony that the Department of Defense (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. Its 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 development and integration of improvements to support joint interoperability.

AIR, SPACE, AND 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 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 with 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 the past year, the Army activated the 94th Air and Missile Defense Command, supporting the U.S. Pacific Command (USPACOM) theater of operations. With the 94th AAMDC activation, there are three Army AMD Commands; two in the active component and one in the reserve component. The 94th AAMDC, designed for Joint and 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 with 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), forward deployed today in European Command (EUCOM), Central Command (CENTCOM), and PACOM, are providing assured missile warnings 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 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 and 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 a rapid, lethal response. C–RAM takes advantage of existing systems and capabilities, combining them in a SoS 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 (COTS) 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 of being combat multipliers, meeting air and missile defense needs in the future and enhancing current force capabilities, such as addressing the RAM threats. The ability of a HEL 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 HEL 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-powered solid state laser program with the Office of the Secretary of Defense 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) that will, by fiscal year 2013, have the ability to shoot down RAM threats 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 BMDS in defense of the Nation, deployed forces, friends, and allies. In my role as the Joint Functional Component Commander for Integrated Missile Defense, I will continue the development of a Joint BMDS capability 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-to-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 AMD 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 Committee members may have.

MISSILE DEFENSE FLIGHT TESTING

Senator STEVENS. General Obering, the Graham panel recommended intensifying the flight and ground testing of your systems. And I am told that the Inspector General pointed out there were some issues concerning network communications security. Now, it seems that you have changed the confidence in the deployed system at both Greely and Vandenberg. As I understand it, and staff tells me, your plans call for only one ground-based missile defense interception in this year we're in now, 2006. Is that right?

General OBERING. Sir, we have three more flight tests that we have planned. We know that two of those will be before the end of the calendar year 2006, based on our current projections.

Senator STEVENS. That's calendar 2006——

General OBERING. Yes, sir.

Senator STEVENS. One will be over in——

General OBERING. Yes, Chairman. One, most likely, will slide into the early part of calendar year 2007. We will be flying against targets in all of those flights. This next flight that will occur to—the mid part to the latter part of July, we will have a target, but the interceptor's not that primary objective of that mission, because this will be the first time that we are able to match the radar, the Beale operational radar, with the kill vehicle characterization, the seeker characterization. So, while an intercept could occur, it's not the primary objective. We will fly against a target later this fall which—in which an intercept will be the primary objective, and then we will also fly against a target in the third flight test, which, as I said, will probably move on into 2007.

Senator STEVENS. General Dodgen, is this system on alert right now?

General DODGEN. Mr. Chairman, currently the system is not on alert, however, we do have some capability that we can reach and put up at the Nation's disposal, if called.

Senator STEVENS. Well, what unit has operational control, then, if it's not on alert?

General DODGEN. I command the unit, sir, at Colorado and at Alaska, as an Army commander, and they are operationally under the commander of Northern Command, who is charged with our homeland defense.

Senator STEVENS. Well, then, operationally, General Obering, are you satisfied with the number of interceptors and the various assets you have, surveillance and capabilities? Is this system ready now?

OPERATIONAL READINESS

General OBERING. Senator, if we had to use the system in an emergency, as I've said before, I fully—I believe that it would work, based on what we have done to date in our testing, and that the previous testing we conducted with the actual intercepts using a prototype of the kill vehicle that we did in the 2000 to 2002 timeframe, that the recent tests that we conducted this past year do nothing—I mean, do a lot more to bolster our confidence in the system, as well, because we actually flew the operational configuration of the interceptor that we have in the silo, and we also, for the first

time, used the actual track information from an operationally configured radar—in this case, Beale—as part of our flight test. And that—the results of those tests were actually much more encouraging than we had originally even planned. The accuracy of that radar track and the ability of the system to accept that met all of our expectations. So, I feel confident that the system would work, if necessary. And, as General Dodgen can tell you, all of the operators have been trained and certified, and are ready, in that regard.

Senator STEVENS. General Dodgen, you mentioned upgrading all of the Patriots to PAC–3 level. Is that funded?

General DODGEN. It is not funded, Mr. Chairman.

Senator STEVENS. In this budget?

General DODGEN. It is not funded in this budget.

Senator STEVENS. When do you intend to budget—fund it?

General DODGEN. The reason it was not funded in this budget is, that we just did a recent review of our worldwide posture of the Patriot system, a review of Iraqi Freedom, and also the timeline to MEADS, which is the system of the future where we want to go. When we did this review with the chief, it became clear that our operational requirements overseas and the ability to operate succinctly and from different places, we needed the "pure fleet." In other words, we needed to take our last three battalions and bring them to Config-3, where we were holding those battalions in Config-2 until MEADS came on. So, the chief made a decision a couple of months ago that we needed the "pure fleet," and told us to do that by 2009. So, you'll begin to see that in the next budget cycle that we submit.

Senator STEVENS. Thank you.

AIRBORNE LASER

General Obering, we're pleased with the report on the airborne laser. Is there enough money in this bill, the request of—for 2007, to meet the key milestones you have to meet, in terms of that program?

General OBERING. Yes, sir. And what we are shooting for there, of course—we will roll the aircraft out, here, in about 1 month, with the tracking lasers installed and the atmospheric compensation lasers installed. We will begin a series of ground testing this summer, and then we go to flight testing in the fall with that aircraft, where we will use, initially, a surrogate of the high-energy laser to make sure that we've got the jitter and the beam control completely addressed. Then we plan to take the high-energy laser modules and move them on the aircraft, beginning in 2007, and shoot toward a lethal shoot down of a boosting missile in the 2008 timeframe. So, yes, sir, what we have funded in the program will get us to that.

Senator STEVENS. Well, you call for funding a second aircraft, modification of the 747. Is that in this budget, too?

General OBERING. Yes, sir. The—across our future year defense plan (FYDP), it is. We have not allocated the long-lead items for that second aircraft yet, because what we want to do is make sure that we were able to take all the results of this testing that we'll be doing in the next 2 years, and fold that into the design of that second aircraft. So, we want to make sure we've gotten all of the

lessons learned, and we need basically what we call a design turn between that and the procurement of the second aircraft.

Senator STEVENS. But do you have enough money in this budget, now, to meet the needs for that second aircraft, as far as the program is concerned that you have scheduled for this fiscal year?

General OBERING. Based on the schedule that we have laid out, yes, sir, we have enough money to do that.

Senator STEVENS. Thank you very much.

Senator Inouye.

Senator INOUYE. General Dodgen, we are very much encouraged by your success on the Aegis Missile Defense Program. Six out of seven intercepts is quite an impressive record. Assuming that the success continues, I would assume that it will be deployed. And, when that happens, who will be in charge—the Navy or will it be a national asset?

General DODGEN. Of the SM–3 missile, Senator? The vision right now is that the Navy will man that system, and it'll be aboard the fleets. Currently, there are some missiles in Pacific Command (PACOM). JFCC is actually planning the command-and-control relationships with the combatant commander to bring that capability into the family of ballistic missile defense systems. So, we're very encouraged by its performance. It has regional reach in its capabilities against these threats, combined with the Patriot system, and ultimately when the THAAD gets here, it'll be a tremendous combination of capabilities that we'll have in PACOM and in our other combatant commander regions.

TERMINAL HIGH-ALTITUDE AREA DEFENSE PROGRAM

Senator INOUYE. You've mentioned terminal high-altitude area defense (THAAD). It's been very successful recently. You're going to be finishing your testing at White Sands. Where do you go from there?

General DODGEN. Well, the testing done by the Missile Defense Agency, actually we are somewhat constrained, as I understand, by the testing that we do at White Sands, so we'll need more battle space in order to test against the threats we perceive for THAAD. And so, we'll go into the Pacific test range to do those things that we need to. General Obering could probably elaborate on that a little more, sir.

General OBERING. Yes, sir. We have a very aggressive program on track right now in our testing there. We will finish up the White Sands testing and then move out to the Pacific missile test range. Everything that we can see is on track. In fact, we have—the next flight will be tomorrow, of that system. And we're very encouraged by the progress that we've made to date.

KINETIC ENERGY INTERCEPTOR PROGRAM

Senator INOUYE. General Obering, 3 years ago your agency began the kinetic energy interceptor program. This is a multibillion dollar program that began as a boost-phase program. Over the last few years, the program has shifted. We have heard that it does everything from boost to midcourse to land and sea based, and it could be the replacement for the interceptors at Greely and Vandenberg.

Can you straighten out the record and tell this subcommittee what MDA's intentions are for the KEI program?

General OBERING. Yes, sir. The KEI program started, as you said, 3 years ago, and it started at the recommendation of the Defense Science Board, because they felt that the airborne laser program, while it was very high payoff with respect to its directed energy, it was also very high risk from a technical perspective. And so, they recommended that we have a backup basically for the—for that program. So, what that indicated is that we needed a very, very high acceleration booster to be able to reach out in that boost phase, that very quick boost phase, to intercept the boosting threat missile. As we got into the program and we realized what that capability entails, that means that with that high acceleration, you also have a much-expanded footprint in a terminal role, for example, and you could also apply that in the midcourse, as well.

So, what we're trying to do is be good stewards of the taxpayers' money. If we're developing this very high acceleration booster for the boost phase, could it be applied in other phases, as well, in other uses? The only thing you have to change is, you have to—you have to make sure that you integrated a different seeker as part of the kill vehicle. So, that's what we were looking for as—how could we exploit as much as we can of this capability?

So, as it exists today, it is, in fact, still an alternative for our boost-phase defense. And if it pans out—and it—we will know in fiscal year 2008, when we have planned for the first flight of that very high acceleration booster—if it pans out, then it could be applied to the other phases, as well. So, we're trying to keep an eye for the future to make sure that we have all of our bases covered. But what we're trying to do is take advantage of that very high acceleration.

The other advantage it has is, it is a mobile missile. It is canisterized, and it is mobile. It is designed to be both land based and sea based. And, there again, you could take advantage of that mobile capability to be able to augment or bolster your overall ballistic missile defense system where you may need it worldwide. So, this is a system that you could fly into a location, for example, and provide long-range protection—coverage against long-range threat missiles and very high speed missiles. And so, it became very attractive from that perspective.

But to make sure we've set the record straight, as you say, it is still our boost-phase defense alternative. We're still focused on the knowledge point in 2008, and then we will preserve our flexibility to determine what we would like to do, based on the achievement of those knowledge points.

Senator INOUYE. Is the funding request sufficient to keep this on track?

General OBERING. Yes, sir. The President's budget request is sufficient to keep this program on track.

COUNTERMEASURES

Senator INOUYE. One of the most difficult challenges facing the program is developing methods to overcome enemy countermeasures. There have been suggestions that we are building a very

expensive system that can be foiled by an inexpensive countermeasure. How do you respond to that?

General OBERING. Well, first of all, Senator, the system that we're fielding today does not have a robust capability against very complex countermeasures, as we have stated in the past. However, the systems and the components that we're bringing online this year, for example, and the work that we have, being able to net together the sensors, and the algorithms that we've developed to install those in these sensors, get us very far down that path to be able to meet that very complex threat.

In addition, we have a very important program that we call the Multiple Kill Vehicle Program. And what that does is, it takes a single interceptor and enables it to destroy multiple credible objects, so that you can handle the much more complex countermeasures and the much more complex threats suites that we may face in the future. And so, we are very much appreciative of that, the challenge that that represents. We, by the way, have probably these nations' leading experts in countermeasure, in counter-countermeasure technology. We have a very robust countermeasure test program. We actually fly missiles with very complex countermeasures on them, and we test our radars' and our sensors' capability to discriminate and to sort through those. And that's all part of this program. We want to make sure that we are not fielding a system that will only work against very simple threats, that we are, in fact, keeping an eye toward the future and keeping an eye for the robustness of this. And I'm very encouraged by what we have done in that area.

Senator INOUYE. And your funding request is sufficient to carry out this program?

General OBERING. Yes, sir, as long as we get the President's budget request, especially for the Multiple Kill Vehicle Program, which is that catchall, so to speak.

Senator INOUYE. Mr. Chairman, may I request that my other questions be submitted?

Senator STEVENS. Yeah. I'd appreciate it if you'll respond to the questions that are just submitted to you in writing.

Senator INOUYE. Thank you very much.

General OBERING. Yes, sir.

Senator STEVENS. Senator Shelby.

Senator SHELBY. Thank you.

GROUND-BASED MIDCOURSE DEFENSE QUALITY CONTROL

General Obering, a recent Government Accountability Office (GAO) missile defense report raised some doubt about the quality of the GMD kill vehicles. What actions have you taken to ensure that our ground-based midcourse interceptors are highly reliable?

General OBERING. Well, Senator, first of all, we have revamped the way that we are doing quality control across the program, and especially for the GMD, the EKV program.

Senator SHELBY. It's paid off, too, hasn't it?

General OBERING. Yes, sir, it has. In fact, the initial report—or the reports that I've got back as recent as just a couple of weeks ago about the changes that have been made now in the production

facilities, for example, in Tucson and other areas, are very, very encouraging. We think that we've gotten over the hump there.

What it primarily had to do with, by the way, is making sure that we had accountable engineering processes being applied, and we had folks accountable for the individual tail numbers that were going through the facility, and that we also had a much stronger supply-chain management approach to be able to control the quality of the vendors and the suppliers, and all of that is in place. We've also deployed more than 24 mission assurance representatives across the Nation in these facilities, working day to day with the contractors. And so, in fact, I've had at least one CEO of a major defense corporation say that our mission assurance program is the best he'd ever seen, and he's actually incorporating that as part of his own internal documents.

KINETIC ENERGY INTERCEPTOR PROGRAM

Senator SHELBY. I'm glad to hear that.

General Obering, the MDA budget request of $9.3 billion not only supports fielding missile defense capabilities, as you well know, but also funds the development of advanced technologies to make missile defense more robust and more effective. I believe our national defense needs to fully fund technology development in order to remain in front of the threat. One program currently threatened with cuts in the 2007 budget, as I understand it, is the Kinetic Energy Interceptor Program. Would you address how KEI makes missile defense more robust? And what is the impact to the ballistic missile defense system if this program isn't fully funded?

General OBERING. Well—yes, Senator——

Senator SHELBY. To you both.

General OBERING. Yes, Senator. As I mentioned earlier, that is our program, which is an alternative to the airborne laser program. While both of those programs are currently on track, we won't know until we reach the knowledge point, in 2008, as to whether we can actually lethally shoot down a boosting missile with the airborne laser, and whether we can attain the very high acceleration that we need out of that KEI program. So, if we were to sustain the cuts that have been proposed for the KEI program, it removes that flexibility, number one, and it prematurely forces us to——

Senator SHELBY. You need that flexibility, do you not?

General OBERING. Yes, sir, because I can't tell you right now with confidence that the airborne laser could be an operational system. We may be able to technically shoot down a missile, but it may not be operationally viable, and we have a long way to go there. And it's making great progress, but I would not like our options limited too prematurely at this point.

Senator SHELBY. How much more money would you need for this, with this particular program?

General OBERING. Well, Senator, the President's budget request for 2007, I think, is about $386 million for the KEI program, and we need all of that.

Senator SHELBY. Need all of it.

General OBERING. Yes, sir.

MULTIPLE KILL VEHICLE FUNDING

Senator SHELBY. The multiple kill vehicle, as both of you know well, an initiative to provide increased effectiveness against potential countermeasures during midcourse engagement. It's presently under development. The 2007 request of $164 million is a considerable increase from the 2006 request of $82 million. General, will you be able to execute the funding of this requested increase? And what progress in MKV do you expect to realize in 2007? I think this is progress here, but what do you plan to do with it?

General OBERING. Yes, sir. Well, we actually have laid a divert and attitude control system test in the 2007 timeframe for that program—again, a key knowledge point for the program. We have transitioned and moved the management of that program, by the way, from the Washington area down to the Huntsville area, in terms of how we're executing that management. And so, I have no doubt that we'll be able to fully leverage the money that we've requested to be able to get us to—the next knowledge point is a hover test of that vehicle in 2009. And, again, as I mentioned with Senator Inouye, it is very, very important to be able to address emerging threats that we may be faced with in the future.

Senator SHELBY. Thank you.

General Dodgen, the 2007 budget request includes proposed funding for long lead items necessary for GMD interceptors 41–50. From your warfighter perspective, General, what would these additional interceptors provide, in terms of an increased ballistic missile defense capability? Is this request warranted? Do you need it?

General DODGEN. Senator, I think they're very much warranted. I think the missile count, as strategically located as Fort Greely is——

Senator SHELBY. Absolutely.

General DODGEN [continuing]. To go east and west——

Senator SHELBY. Sure.

General DODGEN [continuing]. It's all about how many rounds you have in the ground, and the reach of those particular rounds. And our shot doctrine calls for us to use potentially more than one interceptor against a warhead. And so, we potentially could use every one of those rounds.

Senator SHELBY. That's just smart, isn't it?

General DODGEN. It is smart. We have, in addition to that, our joint capability-mix studies played those full inventories of munitions and verified that we'll need every one of those rounds for the threats that we'll be facing.

Senator SHELBY. Well, you can't afford to be too thin when you're defending something, can you?

General DODGEN. That's correct, sir.

Senator SHELBY. Thank you, Mr. Chairman. I might have some additional questions for the record.

Senator STEVENS. Thank you very much.

Senator Burns.

Senator BURNS. Thank you, Mr. Chairman.

I want to dwell on just a little bit of the development of the entire system and where we're going and to complete the mission. I've had an opportunity to visit facilities, as you well know, and also

it appears to me, when we dwell on the development, I think, of the Patriot, the PAC–3, in the—and the Navy SM–3. We're not only developing a tactical weapon, but now—we have a weapon now that could probably go strategic as this develops out.

I have some concerns about it, because I'm from Montana, and if you guys miss, you put us into business——

Senator STEVENS [continuing]. Up there. And so, we're—as those—these systems—can you comment on how you're using these multiple parallel paths, really, to create a competition or synergy for our ground-based terminal missile system programs, because we understand that competition does create a certain synergy, and how those two programs play out? General Obering, I—yes.

LAYERED DEFENSE

General OBERING. Yes, sir. Well, first of all, we are designing the system so that we have layers of defense that work together, so we can take a sea-based interceptor, like the SM–3, and the radar with the aegis program, and integrate that into the long-range defense system that is based in Alaska, California, and, of course, Colorado Springs. And so, it is designed to work together to be able to integrate these capabilities and greatly expand the detection and engagement zones over what we would have individually.

Now, what you're referring to in the multiple paths is that—for example, with airborne laser and the kinetic energy interceptor, we have options that we can execute within the boost phase—in the boost phase, for example, to be able to make sure that we don't have all our eggs in one basket. And that's why I think it would be premature to cut either one of those programs until we get to those knowledge points.

We also have laid in several midcourse capabilities against the long range and the Aegis, for example, with the shorter-range threats. We have planned and have funded in the budget the ability to engage the longer-range threats with the sea-based interceptor and the midcourse, as well. That's our SM–3 block–2 capability. So, where we can, we like to make sure that we have options and flexibility. And we also are integrating all of these capabilities together to ensure that we get the most that we can out of the system.

Senator BURNS. Well, you were going down the path where each one of them sort of had their niche.

General OBERING. Yes, sir.

Senator BURNS. General Dodgen could probably address that.

General DODGEN. Sir, I would add to that by saying, operationally, what we're doing is divorcing sensors from their normal role as a system and using them across all the systems we have so that multiple sensors can shoot different interceptors. When you do that, first of all, you probably don't need as many systems. That's what the joint capability-mix study is telling us. And, second of all, you bring great flexibility in the ability to adjust the system for a particular threat and in a regional fight. So, we definitely plan to integrate the SM–3 missile onboard ships, with THAAD, and with Patriot in the regional fight, and some of those same sensors will be feeding the GBM system that's at Fort Greely and gaining great

significance to that. And we're about dealing with the command and control to make that all work succinctly for the future.

ARROW PROGRAM

Senator BURNS. Let's talk about sharing of technology a little bit. I think most of us are pleased with the success of the Israeli Arrow, that missile in this past year. In fact, they had a pretty successful shoot the other—about 1 month ago, I understand. This subcommittee has funded that technology development with the Israeli Missile Defense Agency, and we're pleased that their system is really improving its capability, in light of recent developments in Iran. We—you know, it may play a larger role than we really think right now.

Would you care to comment on the benefits of funding the Arrow program to your agency? And how has the sharing of technology—has it enhanced what we're trying to do here?

And either one of you can——

General OBERING. Yes, sir. Well, first of all, we've learned an awful lot collaboratively together, working with the Israelis. We have a series of exercises that we execute with them on an annual basis that we learned even more. It played out very well in Operation Iraqi Freedom, where we actually had integrated and combined the Arrow system with the Patriot system to be able to provide coverage during the Operation Iraqi Freedom. But we've also, as you say, enjoyed the technology benefits. We've actually been able to incorporate some of the developments on the Arrow program back into other interceptor programs within the Missile Defense Agency. We continually do that. We continue to look at their advances in software, advances in human/machine interface, and those types of things, to see what advantages that we can take. So, it very much is a collaborative effort. And, of course, we need that even more so in the future as we expand the opportunities for missile defense cooperation. And we have several countries that are very much interested across the world, and that continues to grow almost on a weekly basis.

Senator BURNS. Well, I've had the opportunity to visit not only what they're doing there, but also what we're doing down in the South Pacific, General. And we stopped in down there in—now, let's follow up on that. How positive has it been with our North Atlantic Treaty Organization (NATO) friends? What—and especially fielding the Joint Tactical Ground Station, the JTAGS—have we had the same kind of cooperation with our NATO friends?

General DODGEN. Of course, I command the JTAGS, and——

Senator BURNS. Yes.

General DODGEN [continuing]. Right now they're positioned with the combatant commanders to provide early warning for those forces. And we have a JTAGS located in Stuttgart with European Command (EUCOM). That early warning has been provided to our allies in some regard. And so, there is a great deal of cooperation there.

Senator BURNS. Are they holding up their share of the funding?

General DODGEN. Well, the funding's totally United States at this particular time, but I think I'm encouraged by the fact that NATO is beginning to step up their missile defense efforts, and, to

the most part, start to study and actually come forward with some recommendations as to what they want to field. They're certainly not where we are in missile defense, I would say, but they're certainly talking with us at the military level.

Senator BURNS. Well, I get the feeling, you know—we're really stretched for money, you know, in funding some of these programs, and I'm starting to ask myself, Why should we be funding their programs? The American taxpayers should know why we're doing that. Is there a reason? Because it is costly.

General OBERING. Senator, if I could address, from a different geographic area, Japan, we have entered into a co-development program pending Japanese approval, for a block-2 SM–3. And that is a—an equal share in the costing of that, which is great for us, and great for Japan, because we are able to get that capability, basically, at half the investment to the United States. So, that is, I believe, the model, and is something that we are very much interested in, in other programs, as we proceed in the future, too, to be able to leverage our allies.

General DODGEN. I would add to that, that certainly other NATO nations have the Patriot system, like we do. And we have a great operational cooperation with them in their systems, in their force. Germany and The Netherlands and now the Greeks all have Patriot, and Spain is procuring a system. In addition to that, we're partners in MEADS with the Germans and the Italians to develop the next generation. But those are the short-range terminal systems, and cooperation in the longer-range systems is something that will be forthcoming, I believe.

Senator BURNS. Well, the reason I asked the question is because we have—at the present time, we are facing an enemy that offers none of those kind of weapons that would endanger our security, both to our troops that are deployed, in the Middle East or wherever, or our domestic security. And so, we have to look at those. Should we be funding these systems, when basically we're in support of boots on the ground, so to speak? I come from a different mentality. I served in the Marine Corps, and so my mentality is the support for the troops that's on the lines, so to speak. And so——

MISSILE DEFENSE

General OBERING. Senator, one thing I'd like to address there is, this missile defense, as you started out your statement, about the overall system——

Senator BURNS. Yes.

General OBERING [continuing]. It is designed not just to defend the United States, but also our deployed forces. And, as you know, they are deployed worldwide. And, as these ballistic missile threats continue to proliferate, I think it's important that we do provide that protection, whether they be from the shorter-range missiles, as well as the longer-range missiles, because, as we say, as we see this threat evolve, they will reach those capabilities. And that's why we're trying to expand out the umbrella of our defensive coverage to be able to give ourselves that flexibility and to prevent a nation—a threat nation from either coercing or threatening our al-

lies or ourselves, so we can do something about the ballistic missiles that could be married with a weapon of mass destruction.

Senator BURNS. Well, I think the American taxpayer would thank you for that answer. I agree with you, but those are questions that come up, you know, when we talk about the security or the support of our troops on the ground. I have concern for those men and women, because they are really standing in harm's way. I thank you for your answer.

General OBERING. Thank you, Senator.

Senator BURNS. Thank you, Mr. Chairman.

Senator STEVENS. Senator Cochran, do you have questions, sir?

Senator COCHRAN. Mr. Chairman, thank you very much. And let me join you and other members of the subcommittee in welcoming our witnesses to the hearing today.

We have a genuine need for continuing to support a strong, robust, workable missile defense system across a broad range of threats that we see that are present today and that are evolving for future concern—and give us concerns for the future, as well. These are big, complicated, challenging jobs that you have, and we appreciate the dedication and the efforts that you are making to discharge your responsibilities and help carry out these important activities in the development and deployment of missile defense systems. So, thank you. That's the first point I want to make.

Second, it appears that we are making good progress in developing technologies, improving old technologies, in helping stay ahead of the curve. And I think that investment of dollars is very important. We need to be careful not to waste money. And you realize that. We're concerned about keeping spending under control, making sure we're getting what we pay for.

And, in that connection, I was interested in your observations about some of the programs I know that you've already talked about, the airborne laser and some of the other programs, maybe the kinetic energy interceptor, which are still under development, but with hope that we can deploy systems of this type to help ensure that we have the best possible protection.

COMMAND AND CONTROL

Now, one thing that I was curious about is the command and control infrastructure. You're developing an integrated ballistic missile defense system, but the infrastructure of command and control is very important. I wonder what your assessment—of this is at this point. General Obering, could you give us an update or an overview on the progress you are making in integrating command and control capability for missile defense?

General OBERING. Yes, sir, be happy to.

First of all, I have to say that I am extremely pleased with the progress that we have made in that area. If you stop and think about it, there's no other mission area that I'm aware of where you have to get simultaneous situational awareness across as many as 11 time zones or more, across the various combatant commanders and the geographic commanders, again, simultaneously, do the deconfliction and to the battle management that will have to be done in the missile defense arena, which is a—very much of a challenge.

But, in fact, we have tackled that. We have rolled out a capability that is currently not only here in the National Capital but also at Omaha, at STRATCOM, at U.S. Northern Command (NORTHCOM) in Colorado Springs, out at PACOM, in Hawaii. We have plans to also continue to expand into EUCOM and U.S. Central Command (CENTCOM) and to give those capabilities—those commanders that capability, as well. And so, from a command and control perspective, I think the program is very much on track.

We have requested—the money we have requested in the President's budget is important for that work. It is important to continue that, because that is the heart and soul and the brain of the system. We can't do the necessary integration, as General Dodgen mentioned, of the sensors and the interceptors that we mentioned earlier, without that capability. And this is truly a force multiplication effect. For example, if we can integrate a land-based radar using this command and control and battle management capability with sea-based interceptors, you cut down on the number of ships that you need to provide protection for a given defended area dramatically. And that same effect happens over and over again through the system, where you can do this mixing and matching of sensors with weapons. And so, we think that it is very, very important.

So, I think that the money that we've asked for this in the President's budget for 2007 is very much—is very important and very critical to the program.

General DODGEN. Senator, could I add to that?

Senator COCHRAN. Yes, please.

General DODGEN. The command and control for the initial capability that we fielded in Fort Greely, Alaska, what we've called limited defensive operations, very mature tactics have been taught through, the foreign doctrine is there, the command and control through Northern Command is there. What we're about now in a JFCC is expanding that globally through the other combatant commanders. And what we do is, we understand the new capabilities, such as the sea-based SM–3 capability and when the THAAD comes on. We bring the warfighters in from PACOM and EUCOM. We fight the system in games. We develop a concept of how we're going to operate. We validate that concept. And then we feed those means in which we want to operate in terms of functionality to MDA, so that they can produce the command and control battle management communications (C2BMC) terminals that will populate the geographical combatant commanders. That process is just starting to go globally. And the funding will put that functionality into those command and control terminals that we'll use to fight the global fight.

Senator COCHRAN. That leads me to my next question, which is about international cooperation. It's important for us to maintain a spirit of cooperation in order for us to deploy radars and other capabilities around the world that make the whole system work. At Fylingdales, for example, we have the radar there that England has permitted us to continue to use. Are there any other examples of problems that we're having in the international area?

General DODGEN. Sir——

General OBERING. Well, sir, in terms of the overall—not only situational awareness, but the willingness to cooperate and to collaborate in missile defense, I have seen that dramatically increase just in my tenure as director of the Missile Defense Agency.

To give you just one little anecdotal metric there, we cohost a missile defense international conference every year. The last one was held in Rome, last September. We had over 1,000 delegates at this conference. We had more than 20 nations represented there. And we see an upswell of interest and of cooperative effort across the board. We have countries, like you said, the United Kingdom, who are working with us and hosting radar sites and allowing us to be able to use that information with respect to the missile defense system. We have countries like Japan who are investing their own money, significant amounts of it, over $1 billion a year, in missile defense, and are working with us not only procuring systems from us, but also co-developing new systems with us. And so, across the board, I see a dramatic increase in that collaboration and that cooperation.

But I think it's only reasonable, in light of what we see happening with the threat. We know that there is a lot of activity, nearly 80 missile launches last year around the world in the threat communities. We know that this proliferation continues. We know it is a weapon of choice. When you marry it with a weapon of mass destruction, the ballistic missile becomes a convenient delivery vehicle, whether you're talking about short range or long range. And so, I think it's not only important, I think it's critical that we get this continued international development and cooperation.

EXPENDABLE LAUNCH VEHICLE PROGRAM

Senator COCHRAN. One of the essential parts of this entire process is maintaining intelligent satellites and launching these satellites. You have the Evolved Expendable Launch Vehicle Program, which has produced a couple of families of capability. These have had only a few initial launches. But you were hoping to reduce the overall cost by agreements with commercial customers who are likewise interested in these capabilities. Tell us what the status of that is and what you foresee as the need, in terms of budget requirements, funding of this Expendable Launch Vehicle Program.

General OBERING. Senator, I don't have the Expendable Launch Vehicle Program. If you're referring to—I have the Multiple Kill Vehicle Program. I also have the space tracking and surveillance system programs. But the Expendable Launch Vehicle Program is an Air Force-run program. We benefit, obviously, from launch services that could be provided for our space satellites when we are getting ready to deploy those and getting ready to put those up.

Senator COCHRAN. So, this is not a part of your budget request.

General OBERING. No, sir.

Senator COCHRAN. I understood that $937 million is being requested in the budget for the Evolved Expendable Launch Vehicle Program.

General OBERING. No, sir, not for Missile—

Senator COCHRAN. But that's not——

General OBERING [continuing]. Defense.

Senator COCHRAN [continuing]. Your budget——

General OBERING. No, sir.
Senator COCHRAN [continuing]. Request. That's Air Force——
General OBERING. It's not mine, sir.
Senator COCHRAN. Okay.
Thank you very much, Mr. Chairman.
Senator STEVENS. Thank you, sir.

X-BAND RADAR SECURITY

General, the radar—the X-band radar, Shemya—or, no, the radar at Shemya, and the sea-based X-band radar, are going to be part of this system. I'm—as you know, I'm fairly interested in that. They're going to be, obviously, targets now. Would you care to discuss the security situation of those targets, or would you like to do it in closed session?

General OBERING. Any details of that, Senator, I'd prefer to do that in closed session. But I will tell you that we do have what we consider to be adequate security and force protection measures that we've employed on those—on the platform, on the sea-based X-band radar. We have security arrangements that we've—that we have procured for the Cobra Dane radar, as well. I am working with General Dodgen and STRATCOM and the combatant commanders, because the force protection responsibilities, especially in an operational environment, fall under the combatant commanders' responsibility—area of responsibility. And we're working with them to make sure that we have what is considered to be adequate force protection for the future, as well.

But I would prefer the details of that to be in a closed session, if you don't mind.

Senator STEVENS. Well, we'll respect that, of course. We'll look forward to having a closed session, discussing some of these activities later this year.

General Dodgen, when is this X-band radar going to transition to operational status?

General DODGEN. It will do that later this year. I believe—I don't know what the exact month—is it December? It's going to leave Hawaii and go through some more trials up in the Adak region. Primarily, the software build that we're going to put into the GMD fire control (GFC) system will allow this radar to be used by the interceptors, will be tested and validated in those particular times. So, it won't just be the platform that'll be tested. It will be the command and control system that's going into the GFC now that will be tested by the operators and when I say the "operators," I mean the soldiers at Fort Greely, Alaska, will verify this system. And all that'll be done before it's actually placed into the system on alert later this year.

SEA BASED X-BAND

General OBERING. And, Senator, if I may, we have had the radar in the vicinity of Hawaii for the past several months. We have been doing some corrosion control work on the platform. And then, we motored it off the coast to begin the radar calibration test, and we actually—I got a report this morning that we've completed that activity. So, we'll be coming back in, and then we'll be making our

way—after a thorough review of readiness, we'll be making our way up to Adak, Alaska, in the next month or so.

Senator STEVENS. Well, I want to chat with you about it. I've been invited to participate in something in August pertaining to that X-band radar, and I was surprised, because I didn't expect it to be in our waters until later this year.

General OBERING. No, sir. It will be up in Alaska, should be there this summer, and then we will——

Senator STEVENS. It will be there this summer?

General OBERING. Yes, sir. And then, we will use the remainder of the time to complete its integration from that—from the location near Adak into the system, do the full checkout using those satellite transponders, et cetera. And then we'll be available for operations this year, as General Dodgen said.

Senator STEVENS. You intend it to be in Adak sometime this summer?

General OBERING. Yes, sir.

Senator STEVENS. Do you know a time—any timeframe for that?

General OBERING. I will take that for the record and get back to you, but I believe it is in the latter part of July.

[The information follows:]

The SBX is currently scheduled to depart the Hawaii Operational Test Area upon completion of X-Band Radar Calibration testing, and will arrive at its loitering location 50 nautical miles off Adak, AK in late summer.

The MDA Mission Readiness Task Force, at Lieutenant General Obering's request, recently chartered an independent review team consisting of retired Navy and Coast Guard admirals, senior naval architects, and semi-submersible oil rig experts, to assess SBX operational viability with a focus on operations in the Bering Sea. The agency will implement some of the recommendations in the Hawaii region as well as perform low-level repairs and maintenance required from calibration testing prior to departing for Adak.

XBR calibration is scheduled to be completed in August, 2006.

Senator STEVENS. Well, that fits in with the request I have had, then. Thank you.

I was surprised. I didn't think it was going to be there that early.

Well, gentlemen, I want to tell you that I, personally, am very pleased with everything I've heard about this, and I'm very pleased with the activities of the National Missile Defense Support Group that's out there, with Ricky Ellison. And I congratulate you on the way your information is being disseminated throughout the country about the importance of the program and how it's proceeding. I really think it meets up with the basic expectations we've had.

I will tell you that we'd like to talk to you a little bit later about some of the aspects of this program. I think that it would be best to do that in that closed session we're talking about, in terms of how this money is going to be allocated.

Do you, Senators, have any further questions?

Well, we do thank you very much. And, again, we congratulate you. I think the decision to deploy these missiles while they're still in the development phase, has proven to be a wise decision, and we'd look forward to your keeping us advised on the schedule of further developments in the system.

I failed to ask you about the Kodiak connection. Do you have anything scheduled with regard to the Kodiak launching system during this year?

General OBERING. Yes, sir. In fact, the targets that I mentioned earlier that we will be flying in our next series of tests next week, those targets will be launched from Kodiak. And I have to tell you that we've been very, very pleased with the performance and cooperation there.

Senator STEVENS. That's proved to be a very good place for that activity, and we're delighted that you're there.

And we do thank you for your testimony. And——

Senator Shelby.

Senator SHELBY. I just want to add something to what you said. I think General Obering and General Dogden both, their respective commands, Mr. Chairman, are showing real leadership and resourceful for the Nation. And this ought to be recognized.

ADDITIONAL COMMITTEE QUESTIONS

Senator STEVENS. You're right, and I'm particularly pleased, as I said, with the transparency. I think everywhere I go, people have asked about it, and they've been stimulated by the appearances that you and so many members of your command have made throughout the country. So, it's very good to have that kind of transparency in a program like this.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO LIEUTENANT GENERAL HENRY A. "TREY" OBERING III

QUESTIONS SUBMITTED BY SENATOR TED STEVENS

Question. Over a year ago, the Graham panel recommended intensifying your flight and ground testing, while recently the Inspector General pointed out issues with your network communications security. How has your confidence in our deployed system, including the interceptors Fort Greely and Vandenberg, changed? Your plan calls for only one ground based missile defense intercept test in fiscal year 2006; are you comfortable with that level and rate of testing?

Answer. The Missile Defense Agency's confidence in our deployed BMDS is growing. If the deployed system were called upon in an emergency we believe that it would work based on the testing we have conducted to date. Recent tests conducted over the past year bolster our confidence as we have successfully flown the operationally configured interceptor. We hope to gain further confidence in our system's capability when we conduct an intercept flight test with an operationally configured GBI later this year.

We are successfully executing our plan of continued laboratory and distributed asset testing at the component and system level, and are conducting a regimented flight test schedule with well-defined entrance and exit criteria in accordance with the recommendations of the Independent Review Team (IRT) and the Mission Readiness Task Force (MRTF). We have instituted a stringent pre-mission ground test program prior to our Ground Based Midcourse Interceptor flight test missions which allows us to fully exercise the ground components at Fort Greeley and Vandenberg prior to a flight test event. In addition, we have successfully demonstrated the ability to launch, fly and separate the Ground Based Midcourse Interceptor's Exo-atmospheric kill vehicle, thereby validating the modifications we made after previous flight tests. We have also recently conducted live tests of other key BMDS assets demonstrating the system's ability to detect and track live targets in flight using operational sensors, operational networks, and our operational battle management and fire control nodes.

Our disciplined path to returning to a flight program required specific technical criteria to be met before the flight test could occur. This approach limited us to one intercept flight test in fiscal year 2006, but provided us with key insights to bolster confidence in each and every subsequent event. We plan to maintain this strategy as we strive to increase the flight test tempo in subsequent years, improve integration of Information Assurance (IA) Controls, and believe that this strategy helps bal-

ance the technical risks with additional confidence that comes from testing in more stressful intercept environments.

Concerning the Department of Defense Inspector General (DOD IG) report on the Ground Based Midcourse Defense Communications Network (GCN), MDA is confident that the GCN will continue to perform safely, securely, and efficiently when called upon to defend this nation, our friends and allies against missile threats. The IG recommendations are matters that need attending to, and are being appropriately addressed.

GROUND-BASED MISSILE DEFENSE

Question. I'm pleased that the airborne laser has made technical strides during the last year. Will this program have the funding to meet its key milestones in 2007?

Answer. The program has sufficient funding to accomplish the projected milestones in 2007. ABL is a high-risk/high-payoff program based on cutting edge technology in developing and integrating advanced optics and lasers on a flying platform. The program has made significant progress by successfully demonstrating long-duration lasing at lethal power levels in ground tests and completing flight testing of the integrated beam control/fire control and battle management systems on board the ABL prototype aircraft. The program is following a very aggressive schedule to complete both ground and flight tests of the beacon and tracking illuminators (including demonstration of atmospheric compensation) before the end of CY 2006, and completion of low power system testing in CY 2007, while the high energy laser component is refurbished in preparation for installation on board the aircraft in CY 2007. All these efforts are leading up to a lethal shoot-down of a ballistic missile in the 2008 timeframe.

Question. Fielding Aegis and Ground Based Midcourse Defense are priorities for this committee. Can you assure this committee that the Missile Defense Agency has adequate resources allocated to the testing, fielding and operational aspects of the current system before embarking on the development of new capabilities?

Answer. I share your views on the importance of fielding the Ground-based Midcourse and Aegis BMD elements of the Ballistic Missile Defense System (BMDS).

In fiscal year 2007 we plan to continue the incremental fielding and sustainment of Ground-based Midcourse Defense interceptors; additional SM–3 missiles and upgrades to Aegis BMD ships; and the supporting sensors, command, control, battle management and communication capabilities required to integrate these interceptors into the BMDS. We have been steadily increasing the operational realism of Aegis BMD flight tests leading to deployment of a certified tactical capability later this year. In Aegis BMD, the Navy's Operational Test and Evaluation force is conducting concurrent testing as part of Aegis BMD flight test missions. We will also be pursuing a comprehensive and integrated approach to increasing the operational realism of our GMD and BMDS flight tests as well as making our ground testing program more robust. At the same time, we are not wavering from our commitment to sustaining these systems once they are in the field.

The resources included in our fiscal year 2007 President's Budget request, as well as throughout the FYDP, are adequate to support our fielding, sustaining and testing commitments. Currently, we are fielding missile defense assets about as fast as we can and I can assure you that our budget request represents an appropriate balance between providing near term missile defense capabilities and preparing for the emerging threats of the future through our evolutionary development programs.

Question. The radar at Shemya and the sea based X-Band are key elements of the ground based missile defense system. As such, they are likely high value targets in the initial phases of an attack. Does the Missile Defense Agency plan to protect these assets from our adversaries? Can you provide us that plan in a classified session?

Answer. The overall protection strategy for the Cobra Dane Radar on Shemya Island, Alaska and the Sea-Based X-Band (SBX) is based upon an assessment of the current threat, the application of security measures to deter identified threats and appropriately protect the radar and personnel, and the Combatant Commanders planned response to actual threats.

Cobra Dane

U.S. Strategic Command (USSTRATCOM) Strategic Directive 538–2, "Global Ballistic Missile Defense Systems (GBMDS) Physical Security Program" directs protection standard at the SSL–A level. This specifies protection commensurate with assets for which loss, thefts, destruction or compromise would cause great harm to the strategic capability of the United States. Cobra Dane does not currently meet all SSL–A protection requirements. Remoteness of the asset, severe weather conditions,

and cost vs. risk are considerations being evaluated towards a decision to properly updated existing security. MDA is working with USSTRATCOM and Pacific Air Forces (PACAF) to conduct a security assessment and develop a risk mitigation plan to identify security systems suitable for the Eareckson environment, including enhanced security for the Cobra Dane radar.

SBX

SBX is currently protected as a System Security Level-A asset in accordance with DEPSECDEP direction, as implemented by U.S. Strategic Command (USSTRATCOM) Strategic Directive 538–2. USSTRATCOM has endorsed MDA security and force protection measures as consistent with 538–2 for SSL–A.

Geographic Combatant Commands (GCC) are responsible under the Unified Command Plan (UCP) for force protection oversight of SBX–1 when operating in their area of responsibility. While MDA is responsible for antiterrorism/force protection (AT/FP) of the vessel, the GCC is responsible for responding to attacks by adversaries during increased threats/wartime. Based on the Force Protection Condition (FPCON) and current intelligence, GCCs will direct assigned forces or request additional forces to protect the SBX operations, as required.

Question. Your agency is in the initial development stages of the Kinetic Energy Inteceptor, which appears to offer improved performance during boost and ascent phase engagements. For commonality, supportability, and cost have we examined all avenues of improvements, or modifications, to the existing ground based interceptors to provide this capability?

Answer. The Missile Defense Agency did examine the possibility of improving or modifying the existing Ground-Based Interceptor to enable boost and early ascent phase defenses prior to starting the Kinetic Energy Interceptors program in 2003. What we and multiple industry teams determined is that a mobile, fast-burning, high acceleration booster capability is required to meet boost/ascent phase mission requirements. The Kinetic Energy Interceptor booster has approximately three times the acceleration of a Ground Based Interceptor with a similar payload volume and weight capacity. The Kinetic Energy Interceptor is also half the weight of a Ground Based Interceptor; its physical size (length and diameter) is constrained to allow rapid transport on a C–17 aircraft and future integration on a sea-based platform. The only way to achieve this mobile weapon capability is to design, develop, integrate and test new booster motors. The development of this unique booster vehicle capability is the primary focus of the Kinetic Energy Interceptors program through the 2008 booster flight knowledge point.

Question. What milestones and testing events need to occur prior to announcing an initial operating capability of the ground-based missile defense system?

Answer. Today, the Ballistic Missile Defense System (BMDS) could provide a limited defense if called upon as the initial set of capabilities necessary to defeat an incoming ballistic missile have been fielded and demonstrated. These capabilities are currently in a "shakedown period" under which our crews are gaining valuable experience in their operations, and should some threat arise, we could transition from a test phase to an operational phase in a matter of hours. MDA is working with the warfighters to ensure they are ready to operate the system when directed as well developing the capability to operate and test the BMDS concurrently.

A Secretary of Defense decision to put the system on a higher level of alert will be based on a number of factors. These factors include: the advice he receives from the Combatant Commanders, and other senior officials of the Department; our confidence in the operational procedures we have developed; demonstrated performance during both ground and flight tests; modeling and simulation; and the threat.

Question. If the third stage rocket motor is removed from the ground-based interceptor, can it do boost phase intercept? What would its capabilities and characteristics, including size and mobility, be in comparison to the Kinetic Energy Interceptor?

Answer. [Deleted].

VALUE OF TEST RANGES TO MISSILE DEFENSE AGENCY (MDA)

Question. White Sands is perhaps the most unique installation in all of DOD and, when combined with Fort Bliss (most of which is located in New Mexico) and Holloman Air Force Base, it gives the Department a highly valuable venue for combining operations and testing.

Can you describe the value MDA places on its access to an installation like White Sands with its enormous geographic size and unrestricted airspace?

Answer. MDA values access an installation like White Sands Missile Range (WSMR) for testing of Ballistic Missile Defense (BMDS) elements due to its geographic size and airspace. However, WSMR is not well suited for MDA test engage-

ments across multiple time-zones which are necessary to increase confidence in the whole BMDS. We continue to integrate theater and regional missile engagement capabilities into the Ballistic Missile Defense System with a strategic engagement capability demonstrated for Block 04. With its size and airspace, WSMR will contribute to the success of the BMDS in future testing involving PATRIOT integrated with Command Control Battle Management and Communications (C2BMC) and the Theater High Altitude Area Defense system (THAAD). PATRIOT testing is required to assist in maintaining the Limited Defensive Capability of the BMDS as well as the development of future Blocks of the BMDS.

QUESTIONS SUBMITTED BY SENATOR PETE V. DOMENICI

VALUE OF TEST RANGES TO MISSILE DEFENSE AGENCY (MDA)

Question. Does this access provide the type of realistic testing environment needed to collect accurate data for your systems?

Answer. Yes, at the developmental testing level, but not as much for operational testing:

Airborne Laser (ABL).—WSMR is well suited for firing the laser in flight at diagnostic missiles during beam characterization, and for some test sorties where active laser operation is not required.

THAAD.—For ground testing, THAAD will conduct a total of 26 activities comprised of tests, demonstrations and New Equipment Training/Collective Training. These activities will exercise the Launcher, Radar, and Fire Control and Communication components of the THAAD element, at WSMR and other ranges, from 2007 through 2011.

PATRIOT Advanced Capability (PAC)-3.—In fiscal year 2007 and fiscal year 2008 there will be a total of two BMDS tests that use the Army's PATRIOT tests at WSMR. The first test, set for the second quarter fiscal year 2007, will bring C2BMC and THAAD Hardware-In-the-Loop (HWIL) to exercise the latest PATRIOT and C2BMC software. MDA will collect data on communications between THAAD and PATRIOT and will test PATRIOT's ability to receive C2BMC engagement-coordination direction. For the second test, set for the first quarter fiscal year 2008, MDA will bring C2BMC and THAAD HWIL to the PAC–2 Guidance Enhancement Missile (GEM) P6X–2 test to accomplish the same objectives. It should be noted that the Army will be conducting PATRIOT tests at WSMR in addition to MDA specific tests.

Question. How will White Sands contribute to the success of the Ballistic Missile Defense System in the future?

Answer. In Block 06 and beyond, the MDA has planned engagement sequences that include THAAD engagement on its X-band radars and on system-level tracks. The WSMR flight campaigns will contribute to proving key functionality and interfaces as the BMDS extends to integrated, layered, worldwide-defensive capabilities. Accordingly, the MDA testing program includes THAAD flight tests and Patriot flight tests to demonstrate early interoperability, then integration with the BMDS. The C2BMC element will participate in these flight tests to demonstrate the situational awareness and planning functions that are needed to conduct regional missile defense operations.

Question. A range-wide environmental impact statement has not been completed for WSMR in more than ten years. Would the Missile Defense Agency benefit from such an EIS?

Answer. A decision to conduct a range wide EIS at the Army's White Sands Missile Range would be made by the Army and White Sands Missile Range, and any value to the Missile Defense Agency would be indirect. The Missile Defense Agency (MDA) coordinates test planning at White Sands Missile Range with the Army, and as new missile tests are identified to meet our testing goals, and as the proponent of those tests, the Missile Defense Agency would initiate the necessary level of compliance with the National Environmental Policy Act for the specific action. Current planned Missile Defense Agency testing at White Sands Missile Range is compliant with the National Environmental Policy Act.

Question. What does the Missile Defense Agency need from White Sands Missile Range and New Mexico?

Answer. THAAD returned to flight testing in 2005, and the second flight test of five at WSMR occurred on May 11, 2006. The THAAD program currently plans to conduct three additional flight tests at WSMR over the rest of this year and into fiscal year 2007 before moving future testing to the Pacific Missile Range Facility (PMRF) at Barking Sands, HI, where we can conduct tests of more challenging engagement scenarios.

WSMR provides support for many other MDA flight tests via our Pacific Range Support Teams (PRST) which are teams composed of staff from multiple DOD ranges to support broad ocean area tests, and to specific MDA dedicated mobile test assets. We need the WSMR team to continue their outstanding support of our MDA PRST, providing critical mobile equipment and expertise to remote locations around the Pacific. While the WSMR geography seems substantial for tactical systems, MDA systems must demonstrate their capabilities on both a broader theater and global scale. This large-scale testing will require us to use large areas within the Pacific oceans.

MDA and DOD continually seek more commonality of testing processes and tools across the Major Ranges and Test Facility Base, to enable more efficient and flexible testing in the future. WSMR's continued support of these activities is crucial.

The C2BMC element participates in THAAD and PATRIOT testing from WSMR to achieve early demonstrations of element interconnectivity and data message transfer during live fire events. This interconnectivity testing is made easy by WSMR's SIPRNET on-range connectivity and ease of set-up and troubleshooting.

MDA's programs take advantage of a substantial amount of infrastructure and technical expertise from across New Mexico. Some of the other areas include: Holloman High Speed Test Track and WSMR for lethality and survivability testing; Kirtland Air Force Research Labs and the ABL program office support to our Directed Energy activities; and Sandia National Labs for support to our FT targets, threat analyses, survivability, among others.

QUESTIONS SUBMITTED TO LIEUTENANT GENERAL LARRY J. DODGEN

QUESTIONS SUBMITTED BY SENATOR TED STEVENS

BALLISTIC MISSILE DEFENSE SYSTEM

Question. Given that the system spans multiple departments, commands and areas of responsibility, can you describe the current operational control of the system? Is the system currently on alert, if not when do you project that it will be?

Answer. The operational control of current Ballistic Missile Defense System (BMDS) begins with the Secretary of Defense (SECDEF) who retains direct control of the current capabilities. These capabilities are in a Research, Development, Test and Evaluation (RDT&E) status managed by the Missile Defense Agency (MDA). However, in an emergency, operational capabilities are available today and upon direction from the SECDEF, control transitions to an operational status. The operational control is executed by a combination of Geographic Combatant Commanders (GCCs), e.g. Commander STRATCOM, Commander NORTHCOM, and Commander PACOM. Control processes have been vetted by the GCCs in readiness exercises that verified necessary warfighter tactics, techniques and procedures to operate the system. MDA and GCCs continue to add capability to BMDS that remain in an RDT&E status until the SECDEF decides to place all or parts of the BMDS into a 24/7/365 mode of operation.

Question. I understand the 2007 budget cut the advanced procurement for the second aircraft. The airborne laser program calls for a fleet of modified 747 aircraft. How comfortable are you with the overall concept of operations provided the laser's range, aircraft on station time and deployment options?

Answer. The Ballistic Missile Defense Concept of Operations has been vetted during developer (Missile Defense Agency) and warfighter (Geographic Combatant Commanders) exercises. In many of these exercises, use of current simulation resources to depict Airborne Laser (ABL) capabilities as part of the larger Ballistic Missile Defense System (BMDS) is exercised. Operator's tactics, techniques and procedures are refined as we learn more about how each element and component of the BMDS interacts in a dynamic, operational context over a range of potential adversarial operations. Once ABL technology and potential deployment advances, we will be able to better assess the state of ABL's concept of operations within the overall BMDS.

Question. Operationally, to meet the current ballistic missile threat, are you comfortable with the number of interceptors, surveillance assets, and capabilities at your disposal? When will the Sea Based X-Band Radar transition to operational status, and who will operate it?

Answer. As you are aware, the system continues to evolve within the Research, Development, Test and Evaluation (RDT&E) arena but, if necessary, it can provide an operational capability now. While we now have an operational capability, continuous assessments indicate that we need both present as well as programmed assets to defeat the evolving ballistic missile threat. Provided that planned assets are field-

ed, I am comfortable that the Nation will possess an effective global missile defense system. The Sea Based X-band radar (SBX) continues to undergo a series of sea trials and sensor calibration activities prior to moving to its area of operations later this year. Currently, the SBX is operated by a combination of Missile Defense Agency (MDA) provided contractors and security personnel. Negotiations are continuing with the Services to ensure long-term operations of the SBX.

Question. Given uncertainty in the international community to support our missile defense efforts, what are the risks to the forward deployment concept?

Answer. Capabilities of the Ballistic Missile Defense System (BMDS) remain in a Research, Development, Test and Evaluation (RDT&E) status under direct control of the Secretary of Defense. Limited, rudimentary capabilities are spread over a number of geographic areas that include the domains of friends and allies who are forthcoming in support of our forward deployment needs. To date, it appears there is a legitimate interest by additional friendly and allied entities to provide support necessary for stationing and operation of additional deployable elements and components and therefore, greatly mitigate any risks there may be. In fact, as countries like North Korea and Iran continue to develop and market ballistic missiles, there is a corresponding increase in international support for missile defense. Many elements and components are rapidly deployable from friendly and allied operating areas serving as forward basing for support and sustainment of BMD assets in adjacent operating areas. Sea and airborne BMDS elements and components are rapidly relocated to compensate for any loss of any ground stationing issues that may arise in any particular scenario. In addition, many friends and allies continue to make their own BMDS asset contributions fully integrating regional BMD architecture.

SUBCOMMITTEE RECESS

Senator STEVENS. We will stand in recess until Wednesday, May 17, when we will hear testimony from the Secretary of Defense and the Chairman of the Joint Chiefs.

Thank you very much, gentlemen.

[Whereupon, at 11:05 a.m., Wednesday, May 10, the subcommittee was recessed, to reconvene at 10 a.m., Wednesday, May 17.]