DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 2013

WEDNESDAY, APRIL 18, 2012

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

The subcommittee met at 10:32 a.m., in room SD–192, Dirksen Senate Office Building, Hon. Daniel K. Inouye (chairman) presiding.

Present: Senators Inouye, Cochran, Shelby, and Alexander.

DEPARTMENT OF DEFENSE

MISSILE DEFENSE AGENCY

STATEMENT OF LIEUTENANT GENERAL PATRICK J. O'REILLY, DIRECTOR, U.S. ARMY

OPENING STATEMENT OF CHAIRMAN DANIEL K. INOUYE

Chairman INOUYE. Good morning. Today, we are pleased to welcome Lieutenant General Patrick O'Reilly, Director of the Missile Defense Agency (MDA) to discuss the administration's fiscal year 2013 budget request.

While we scheduled this year's hearing several months ago, it could not be more timely given the events that transpired last week. The attempted North Korean rocket launch serves as a stark reminder of potential threats to our homeland. I know the operational demands the Nation places on you.

In fiscal year 2013, MDA is requesting $7.75 billion, a reduction of more than $650 million from amounts appropriated in the last fiscal year. This request supports a viable homeland defense, enhances European regional defenses, continues testing the current system, and develops new capabilities to address new threats.

Like all of our defense and other Federal Government agencies, we're asking you to continue to perform your vital mission in a fiscally constrained environment. Your agency has several significant programs underway that I'm certain you will address this morning.

In particular, I look forward to hearing an update on progress you have made after two successive test failures of the Ground-based Midcourse Defense (GMD) system. As you well know, the threat to our Nation is not static, and this subcommittee will continue to fully support your efforts to return to flight successfully.

In addition to the regional defense of our deployed troops and allies, MDA has begun implementation of a phased adaptive ap-

proach (PAA) by placing a forward-based radar in Turkey and deploying an Aegis ballistic missile defense ship in the Mediterranean.

You have also made progress in the next phases of the PAA by negotiating important postnation agreements and by continuing to upgrade our Aegis ships.

Therefore, we are concerned to hear about the Navy's proposed plans to prematurely retire some of its ships that were slated to be upgraded to a ballistic missile defense (BMD) capability. This will result in six fewer BMD capable ships than what you had projected just 1 year ago. I believe this is alarming given the evolving threat, and we would like to hear your thoughts on that proposal.

The year 2012 marks the 10-year anniversary of MDA, and over this time, you have made technical progress to secure our homeland and our allies. As we look forward to future challenges coupled with limited resources, our Nation will continue to rely on your foresight and technical expertise.

Before I proceed, I would like to recognize the Vice Chairman, Senator Cochran, for his remarks.

STATEMENT OF SENATOR THAD COCHRAN

Senator COCHRAN. Mr. Chairman, thank you, and thank you, General O'Reilly, for being here with us today to review the President's budget request with respect to the next fiscal year for the Department of Defense (DOD).

We, of course, are interested in trying to do our part to hold back on wasteful Government spending. That's kind of the word of the day, and constrains us, as we review the request being submitted to the Congress this year for DOD.

But we know we have no more important undertaking than to safeguard the security of the citizens of the United States and to help protect our interests around the world.

We do need to practice fiscal discipline, but our adversaries continue to develop medium- and long-range ballistic missiles that threaten our security, as well as the security of our deployed forces around the world. And our friends and allies are threatened as well.

So we hope to explore with our witnesses before the subcommittee at our hearing the technological and fiscal challenges we face and undertake to do what is thoughtful and necessary to help continue to provide a multi-tiered, missile defense system to help protect these security interests.

Thank you for being here today, and we look forward to our discussion about the MDA and what we can do to help support your best efforts.

Chairman INOUYE. Senator Shelby.

STATEMENT OF SENATOR RICHARD C. SHELBY

Senator SHELBY. Mr. Chairman, I ask that my opening statement be made part of the record. I look forward to hearing from General O'Reilly. We had a nice meeting yesterday. Thank you for calling this hearing.

Chairman INOUYE. Senator Alexander.

STATEMENT OF SENATOR LAMAR ALEXANDER

Senator ALEXANDER. Thanks, Mr. Chairman. I'm here to hear the General, and I have no opening statement.

Chairman INOUYE. Thank you, Sir.

General.

SUMMARY STATEMENT OF LIEUTENANT GENERAL PATRICK J. O'REILLY

General O'REILLY. Good morning.

Chairman Inouye, Vice Chairman Cochran, and other distinguished members of this subcommittee. Thank you for the opportunity to testify today on the MDA's $7.75 billion fiscal year 2013 President's budget request to further develop our missile defenses against the increasing ballistic missile threat to our homeland, armed forces, allies, and international partners.

This request balances our policies as documented in the 2010 Ballistic Missile Defense Review, U.S. Strategic Command's Integrated Air and Missile Defense priorities, the MDA's technical feasibility assessments, affordability constraints and current intelligence community estimates of the ballistic missile threat.

I describe our past year's accomplishments and detailed justification of this year's budget request in my written statement submitted to this subcommittee. However, I would like to highlight now that last year our homeland defense improvements included activating a new missile field and an additional fire control node at Fort Greely, Alaska, activating a newly upgraded early warning radar in Thule, Greenland, and upgrading the reliability of three ground-based interceptors (GBIs).

This year, we continue to aggressively pursue the agency's highest priority, to conduct a missile intercept with the newest version of the GBI's exo-atmospheric kill vehicle (EKV) after two previous flight test failures.

We conducted a failure review board comprised of Government and industry experts, redesigned critical GBI EKV components, and established more stringent manufacturing and component requirements.

These requirements had previously not been encountered anywhere in the aerospace industry. As a result of these stringent manufacturing requirements, we have encountered delays in preparing for our next flight test.

MDA is fully committed to test the GMD system as soon and as often as possible. But we will not approve the execution of a flight test until our engineers and independent experts are convinced that we have resolved all issues discovered in previous testing.

We will fly a nonintercept test by the end of this year to verify we have resolved all issues, and then we will conduct our next intercept flight test early next year to reactivate the GMD production line.

We will also activate our hardened power plant at Fort Greely, Alaska, this year, and we will increase the firepower of the fielded GBI's by continuing to test and upgrade the reliability of GBI components.

Finally, we will continue to increase the capability of the Sea-Based X-band Radar (SBX). But we have cost effectively limited its

operation to flight testing and operational contingency support under the control of the U.S. Navy Pacific Fleet.

Our regional defense highlights over the past year include the on-time deployment of the first phase of the European phased adaptive approach (EPAA) consisting of a command and control node in Germany, a forward-based radar in Turkey, and an Aegis missile defense ship on station in the Mediterranean Sea.

During the past year, we demonstrated the first Aegis intercept of a 3,700 kilometer target using a remote forward-based radar and we demonstrated the simultaneous intercept of two missiles by the Terminal High Altitude Area Defense (THAAD) system.

This year, the first two THAAD batteries will be available for deployment, increasing the number of Aegis capable ships to 29 and conduct of three Standard Missile 3 (SM–3) Block 1B flight tests to demonstrate the resolution of last year's flight test failure.

And we will conduct the largest missile defense test in history involving the first simultaneous intercepts of multiple short- and medium-range ballistic missiles and cruise missiles by Patriot Advanced Capability 3, THAAD and Aegis BMD systems integrated with a forward-based radar.

Finally, we continue to work with more than 20 countries including our Cooperative Development Programs with Israel and Japan, and our first foreign military sale of THAAD to the United Arab Emirates. And we continue to support technical discussions with the Russians on missile defense.

While Phases 2 and 3 of the EPAA to missile defense are on track to meet the 2015 and 2018 deployment dates, the Government Accounting Office (GAO) has criticized concurrent production of prefabricated buildings to house the Aegis Ashore System for Romania prior to the completion of flight testing with the Aegis Ashore at the Pacific Missile Range in Hawaii.

While I concur with the GAO that programs of high concurrency between testing, production and fielding such as the initial fielding of the GMD system have associated risks, I deem the risk of proceeding with the production of prefabricated buildings for the Aegis Ashore System, while flight testing, is a low risk, since all the functions of the Aegis Ashore System are identical to the functions of the Aegis System that have been thoroughly tested at sea.

However, the cost of suspending Aegis Ashore production until all flight testing is completed will greatly increase the production costs, needlessly delay the deployment of the second phase of the EPAA production protection of Europe, and negatively impact the industrial base supporting the Aegis program.

Finally, I'm concerned about delivering the critically needed and cost-effective missile defense sensor capability of the Precision Tracking Space System (PTSS) and the need to develop a second independent layer of homeland defense with the SM–3 IIB Interceptor due to past congressional funding reductions to both programs.

PREPARED STATEMENT

I request your support for these programs so that our homeland benefits from the same layered missile defense approach that we successfully employ in our regional defenses.

Three industry teams are developing the SM–3 IIB Interceptor concepts that expand the forward edge of our homeland defense battle space and provide our war fighters a highly effective Shoot-Assess-Shoot anti-intercontinental ballistic missiles (ICBM) capability as endorsed by the recent Defense Science Board Study.

Thank you, and I look forward to the subcommittee's questions.

[The statement follows:]

PREPARED STATEMENT OF LIEUTENANT GENERAL PATRICK J. O'REILLY

Good morning, Chairman Inouye, Vice Chairman Cochran, other distinguished members of the subcommittee. I appreciate the opportunity to testify before you today on the Missile Defense Agency's (MDA) $7.75 billion fiscal year 2013 budget request to develop protection for our Nation, our Armed Forces, allies, and partners against the proliferation of increasingly capable ballistic missiles. The Department developed the fiscal year 2013 President's budget request in accordance with the February 2010 Ballistic Missile Defense Review, which balanced war fighter needs as expressed in the U.S. Strategic Command (STRATCOM) Integrated Air and Missile Defense (IAMD) Prioritized Capability List (PCL) with technical feasibility and affordability constraints and intelligence community updates. We continue to demonstrate and improve the integration of sensor, fire control, battle management, and interceptor systems that transforms individual missile defense projects into a Ballistic Missile Defense System (BMDS) capable of defeating large raids of a growing variety of ballistic missiles over the next decade. For homeland defense, last year we completed the construction of the Ground-based Midcourse Defense (GMD) infrastructure for protection of the U.S. homeland against future limited intercontinental ballistic missile (ICBM) threats from current regional threats including the activation of our newest hardened missile field at Fort Greely, Alaska (FGA). This year, we will continue to aggressively pursue the MDA's highest priority—successful return to flight and intercept tests of the Capability Enhancement II (CE II) version of the ground-based interceptor (GBI). We will prepare for the next GMD nonintercept flight test by the end of this year and our next intercept early in the following year, activate the hardened power plant at FGA, prepare to restart the GBI production line, and aggressively conduct component testing and refurbish currently deployed missiles to test and improve their reliability. For regional defenses, last year we deployed phase 1 of the European phased adaptive approach (EPAA) consisting of a command and control, battle management system in Germany, forward-based radar in Turkey, and an Aegis ballistic missile defense (BMD) ship in the Eastern Mediterranean Sea. This year, we will have two operational Terminal High-Altitude Area Defense (THAAD) batteries, convert 5 Aegis ships and upgrade 1 for a total of 29 ships with BMD capability installed, and increase the number of associated Standard Missile 3 (SM–3) interceptors. In our test program, we will conduct three flight tests of the SM–3 Block IB to demonstrate resolution of last year's flight test failure and its ability to intercept complex short-range ballistic missile (SRBM) (up to 1,000 km) targets. Finally, this year we will demonstrate the maturity of our layered regional defense with the first simultaneous intercepts of three short- and medium-range ballistic missiles and two cruise missiles by an integrated architecture of PATRIOT Advanced Capability 3 (PAC–3), THAAD, and Aegis BMD systems assisted by a remote Army/Navy Transportable Radar Surveillance 2 (AN/TPY–2) forward-based radar—the largest, most complex, live fire missile defense test in history.

ENHANCING HOMELAND DEFENSE

MDA's highest priority is the successful GMD intercept flight test of the newest GBI exo-atmospheric kill vehicle (EKV)—the CE II EKV. Last year, we concluded the Failure Review Board (FRB) evaluation for the December 2010 FTG–06a flight test by identifying the most probable cause of the failure and revising the CE II EKV design to correct the problem. As a result of that FRB, we have redesigned critical GBI EKV components and established more stringent manufacturing and component test standards—standards previously not used anywhere in the U.S. aerospace industry. As a result of these stringent manufacturing standards, we have encountered several delays in preparing for our next nonintercept and intercept flight tests. MDA is fully committed to test the GMD system as soon and often as possible, but we will not approve executing a flight test until our engineers, and independent government and industry experts, have been convinced that we have resolved all issues discovered in previous testing and will be successful in our next

test. Flight testing as often as possible is our goal, but we risk further failure if we conduct GMD testing prior to verification that we resolved problems discovered in previous flight tests. Also, conducting flight tests at a pace greater than once a year prohibits thorough analysis of premission and postmission flight test data and causes greater risk of further failure and setbacks to developing our homeland defense capability as rapidly as possible. If our CE II nonintercept (controlled test vehicle (CTV) flight) is not successful later this year, we will be prepared to conduct the next test of the previous version of the EKV (the CE I EKV) GBI test while we continue to resolve any CE II issues in order to continue to test other improvements in our homeland defense. Other improvements to homeland defense include:

—the upgrades and integration of the Thule Early Warning Radar into the BMDS to view and track threats originating in the Middle East;

—upgrade of three emplaced FGA GBIs as part of our on-going GMD fleet refurbishment and reliability enhancement program;

—fielding improved GMD fire control software to allow testing or exercises to be conducted while simultaneously controlling the operational system; and

—upgrading the FGA communications system.

We activated Missile Field 2 earlier this year, thus increasing the number of total GBI operational silos to 38 (34 at FGA and 4 at Vandenberg Air Force Base (VAFB) in California). This past December, we awarded the GMD Development and Sustainment contract, one of MDA's largest and most complex competitive acquisitions, with a price of almost $1 billion less than the independent government cost estimate. For the next 7 years, this $3.5 billion contract will provide for sustainment and operations as well as improvements and enhancements of the current capability, provide for a robust and vigorous testing program, and deliver new and upgraded interceptors. A key part of the scope of this new contract is comprehensive verification and reliability testing, and upgrades as needed, of every component of our GBIs. These component reliability improvements and tests will require 3 years to complete and will provide the U.S. Northern Command (NORTHCOM) commander convincing GBI reliability data resulting in a greater number of ICBMs that can be engaged with a higher probability of protection of our homeland.

We are requesting $903.2 million in fiscal year 2013 in research, development, testing, and evaluation (RDT&E) funding for the GMD program. We plan to continue to upgrade our fleet of 30 operational GBIs and acquire 5 additional GBIs for enhanced testing, stockpile reliability, and spares, for a total of 57 GBIs. We will continue GBI component vendor requalifications for the future GBI avionics upgrade and obsolescence program.

Today, 30 operational GBIs protect the United States against a limited ICBM raid size launched from current regional threats. If, at some point in the future, this capability is determined to be insufficient against a growing ICBM threat, it is possible that we can increase the operational GBIs' fire power by utilizing all 38 operational silos, refurbishing our 6-silo prototype missile field, and accelerating the delivery of new sensor and interceptor capabilities. Additionally, our GBI reliability improvement program will enable more successful intercepts with fewer GBIs with the same probability of successful intercept. In fiscal year 2013, we will begin construction of the GBI In-Flight Interceptor Communication System Data Terminal (IDT) at Fort Drum, New York, with a completion date by 2015. The East Coast IDT will enable communication with GBIs launched from FGA and VAFB over longer distances, thus improving the defense of the Eastern United States. We will also continue to develop and assess the 2-stage GBI to preserve future deployment options, including an intercept flight test in fiscal year 2014.

Because the defense of our homeland is our highest priority, we are pursuing a layered defense concept—similar to that in regional missile defense—to achieve high-protection effectiveness by deploying more than one independently developed missile defense interceptor system; therefore, we will continue development of the SM–3 Block IIB to protect our homeland in the future by creating a new first layer of intercept opportunities, expanding the forward edge of our homeland defense battle space, and providing our war fighters highly feasible "Shoot-Assess-Shoot" firing doctrine. The recent Defense Science Board (DSB) agreed with our assessment that the SM–3 IIB will be challenged to destroy ICBMs before their earliest possible deployment of countermeasures. The DSB also supports MDA's development of the SM–3 IIB to significantly expand the forward edge of our ICBM battle space and enable SAS to obtain very high levels of ICBM protection of our homeland. The fiscal year 2012 congressional reduction of the SM–3 IIB funding has increased the challenge of fielding this improvement in homeland defense against ICBMs in the 2020 timeframe. My additional concern is the impact of reducing funding for the SM–3 IIB will eliminate the only new interceptor design and development opportunity for our Nation's missile defense industrial base for the foreseeable future.

The three SM–3 IIB industry teams lead by Lockheed Martin, Boeing, and Raytheon have shown rapid progress in developing very effective and feasible SM–3 IIB interceptor design concepts. To terminate, or slow down, the SM–3 IIB development effort will have a significant negative impact on missile defense aerospace industrial base at this time and risk our ability to cost-effectively respond to emerging regional ICBM threats to our homeland for decades in the future.

This year, we will begin upgrading the clear early warning radar in Alaska for full missile defense capability by 2016. We will also continue operations of the Sea-Based X-band (SBX) radar and development of algorithms to improve its discrimination capability. We are requesting $347 million in fiscal year 2013 for BMDS Sensors development for homeland defense, including support of the Cobra Dane radar, the upgraded early warning radars at Beale AFB (California), Fylingdales (United Kingdom), and Thule (Greenland). We are requesting $192.1 million to operate and sustain these radars and $227.4 million to procure additional radars and radar spares. In fiscal year 2013, we will also place the SBX in a limited test operations status for affordability reasons, but we will be prepared to activate the SBX if indications and warnings of an advanced threat from Northeast Asia become evident. We will also continue to upgrade the GMD system software to address new and evolving threats, including enhancing EKV discrimination algorithms by 2015, improving GBI avionics, and increasing GBI interoperability with the command and control, battle management and communications (C^2BMC) system.

ENHANCING REGIONAL DEFENSE

This year, we will demonstrate integrated, layered regional missile defense in the largest, most complex missile defense test ever attempted. We will simultaneously engage up to five air and ballistic missile targets with an Aegis, THAAD, PATRIOT and Forward Based Mode AN/TPY–2 radar integrated C^2BMC system operated by soldiers, sailors, and airmen from multiple Combatant Commands. This live-fire test will allow our war fighters to refine operational doctrine and tactics while providing confidence in the execution of their integrated air and missile defense plans.

Last year, in addition to deploying EPAA phase 1, we successfully supported negotiations for host nation agreements to deploy Aegis Ashore batteries to Romania (Phase 2) and Poland (Phase 3); we successfully tested the North Atlantic Treaty Organization (NATO) Active Layered Theater Ballistic Missile Defense (ALTBMD) Interim Capability with European Command (EUCOM) C^2BMC to enhance NATO situational awareness and planning; we installed the Aegis BMD 3.6.1 weapon system on three Aegis ships and upgraded one Aegis BMD ship to Aegis BMD 4.0.1 (increasing the Aegis BMD fleet to 22 operationally configured BMD ships); and we delivered 19 SM–3 Block IA interceptors and the first SM–3 Block IB interceptor. We continued SM–3 Block IIA system and component Preliminary Design Reviews. We delivered 11 interceptors for THAAD Batteries 1 and 2 and flight test, and started production of Batteries 3 and 4. We also delivered the latest C^2BMC upgrades to NORTHCOM, STRATCOM, Pacific Command, and Central Command. These software builds will improve situational awareness, sensor management, and planner functions.

We also demonstrated critical BMDS regional capabilities in key tests over the past year. In April 2011, we conducted an Aegis BMD flight test (FTM–15) using the SM–3 Block IA interceptor launched using track data from the AN/TPY–2 radar passed through the C^2BMC system to intercept an intermediate-range ballistic missile (IRBM) target (3,000 km to 5,500 km) to demonstrate the EPAA phase 1 capability. This mission also was the first Launch-on-Remote Aegis engagement and intercept of an IRBM with the SM–3 Block IA. In October 2011, the BMDS Operational Test Agency, with the oversight of the Director, Operational Test & Evaluation, conducted a successful Initial Operational Test & Evaluation test (FTT–12) of THAAD's ability to detect, track, and engage SRBM and middle-range ballistic missile (MRBM) targets simultaneously.

Enhanced Middle-Range Ballistic Missile Defense in Europe by 2015 (European Phased Adaptive Approach Phase 2).—Our goal in this phase is to provide a robust capability against SRBMs and MRBMs by deploying several interceptors to engage each threat missile multiple times in its flight. The architecture includes the deployment of the Aegis BMD 5.0 weapon systems with SM–3 Block IB interceptors at sea and at an Aegis Ashore site in Romania. When compared to the current SM–3 Block IA, the IB will be more producible, have an improved two-color seeker for greater on-board discrimination, and have improvements to enhance reliability of the SM–3 Block IB's divert and attitude control system. These improvements also provide an enhanced capability to simultaneously engage larger sized raids of threat missiles.

We are requesting $992.4 million in fiscal year 2013 for sea-based Aegis BMD to continue development and testing of the SM–3 Block IB, continue outfitting of ships with the BMD 4.0.1 system as well as spiral upgrades to Aegis 5.0 to support the operation of the SM–3 Block IB and IIA interceptors and associated flight tests. We are requesting $389.6 million in fiscal year 2013 for the procurement of 29 SM–3 Block IB interceptors and $12.2 million to operate and maintain already deployed SM–3 Block IA interceptors. In fiscal year 2013, we are also requesting $276.3 million to develop and build the Aegis Ashore Test Facility at the Pacific Missile Range Facility in Hawaii and $157.9 million to construct the first Aegis Ashore Missile Defense System battery in Romania by fiscal year 2015. We request $366.5 million in fiscal year 2013 to operate and sustain C^{2}BMC at fielded sites and continue C^{2}BMC program spiral development of software and engineering to incorporate enhanced C^{2}BMC capability into the battle management architecture and promote further interoperability among the BMDS elements, incorporate boost phase tracking, and improve system-level correlation and tracking. We will also continue communications support for the AN/TPY–2 radars and PAA-related C^{2}BMC upgrades.

In September 2011, we conducted FTM–16 to demonstrate Aegis BMD 4.0.1 fire control and the first flight test of the SM–3 Block IB interceptor. While we did not achieve the intercept of the SRBM separating payload, we demonstrated critical system functions, including the exceptional performance of the kinetic warhead divert system, which allowed the Navy's partial certification of the Aegis BMD 4.0.1 computer program. In the third quarter of fiscal year 2012, we will conduct FTM–16 (Event 2a) to demonstrate the resolution of the previous flight test issue and the SM–3 Block IB's Kill Warhead's capability. We will also demonstrate the ability of the SM–3 Block IB to intercept more complex SRBM targets in FTM–18 and FTM–19 later this summer. In the third quarter fiscal year 2013, we will conduct the first operational flight test led by the BMDS Operational Test Agency team involving a coordinated and simultaneous engagement involving Aegis BMD, THAAD and PAC–3 systems against three targets and two cruise missiles. Our fiscal year 2013 testing program continues to demonstrate the SM–3 Block IB and Aegis BMD 4.0.1 (FTM–21 and FTM–22), including a salvo engagement involving two interceptors against an SRBM.

Enhanced Intermediate-Range Ballistic Missile Defenses in Europe by 2018 (European Phased Adaptive Approach Phase 3).—The SM–3 Block IIA interceptor, being co-developed with the Japanese Government, is on schedule for deployment at Aegis Ashore sites in Romania and Poland, and at sea, in 2018 to provide enhanced protection for European NATO countries from all ballistic missile threats from the Middle East. This year we completed the SM–3 Block IIA preliminary design review, and continue shock and vibration testing of the SM–3 Block IIA interceptor canister, and development of Aegis BMD 5.1 fire control system. We also reduced the execution risk of the SM–3 Block IIA program by increasing the time between flight tests while maintaining the original initial capability date of 2018. The fiscal year 2013 request for SM–3 Block IIA co-development is $420.6 million.

Expanded Interceptor Battle Space by 2020 (European Phased Adaptive Approach Phase 4).—The SM–3 Block IIB will provide a pre-apogee intercept capability against IRBMs and an additional layer for a more enhanced homeland defense against potential nonadvanced ICBMs launched from today's regional threats. This program is in the technology development phase, and its 7-year development timeline is consistent with typical interceptor development timelines according to Government Accountability Office data. Last year we awarded risk reduction contracts for missile subsystem components, including advanced propulsion, seeker, and lightweight material technologies. We also awarded concept design contracts for the SM–3 Block IIB interceptor to three aerospace industry teams. In fiscal year 2013, we are requesting $224.1 million to develop the Request For Proposal and begin source selection for the SM–3 Block IIB Product Development Phase, which we propose to begin in early 2014. The SM–3 Block IIB is leveraging advanced tracking and discrimination technologies planned for deployment during EPAA phase 4, as well as the entire sensor network, with PTSS and C^{2}BMC upgrades to maximize homeland defense.

ADDITIONAL MISSILE DEFENSE CAPABILITIES

This year, we are procuring 42 THAAD interceptors for Batteries 1 and 2, six launchers, and two THAAD Tactical Station Groups. We are requesting $316.9 million in RDT&E funding in fiscal year 2013 to enhance communications and debris mitigation, which will allow THAAD to be more interoperable with PAC–3 and Aegis BMD and connected to the BMDS, and $55.7 million for THAAD operations and maintenance. We also request $460.7 million to procure 36 THAAD intercep-

tors. THAAD will complete delivery of the first 50 interceptors in June 2012, demonstrating the capacity of the contractor supply chain and the main assembly factory in Troy, Alabama to deliver interceptors. The next production lots are under contract, with delivery beginning this summer. We will maintain a production rate of four THAAD missiles per month through June 2012 due to components on hand and enhance the supply chain's production capacity to sustain a three missile per month production rate beginning in spring 2013. In late fiscal year 2012, we will demonstrate THAAD's ability to intercept an MRBM as part of an integrated operational test with PAC–3 and Aegis BMD.

Additional BMDS improvements include expanded coordination of missile defense fire control systems and improvements in radar discrimination. We are requesting $51.3 million for the Space Tracking and Surveillance System (STSS) in fiscal year 2013. We continue to operate the two STSS demonstration satellites to conduct cooperative tests with other BMDS elements and demonstrate the capability of STSS satellites against targets of opportunity. These tests demonstrate the ability of a space sensor to provide high precision, real-time tracking of missiles and midcourse objects that enable closing the fire control loops with BMDS interceptors. In fiscal year 2013, we plan the first live intercept of a threat missile by the Aegis BMD system using only STSS data to form the fire control solution for the SM–3 IB interceptor. Additionally, lessons learned from the two STSS demonstration satellites inform Precision Tracking Space System (PTSS) design development decisions.

DEVELOPING NEW CAPABILITIES

We are requesting $80 million in fiscal year 2013 to continue development of fiscally sustainable advanced BMD technologies that can be integrated into the BMDS to adapt as threats change. Intercepts early in the battle space will provide additional opportunities to kill threat missiles, enlarge protection areas, and improve the overall performance of the BMDS.

Last year, we accelerated our test campaign with the Airborne Laser Test Bed (ALTB) to collect data on tracking and atmospheric compensation, system jitter, and boundary layer effects on propagation for future directed energy applications. This year, in accordance with the funding reduction enacted by the Congress, we grounded the ALTB aircraft and are examining the technical feasibility of high-efficiency-directed energy technology for the next decade. In fiscal year 2013, we are requesting $46.9 million to pursue Diode Pumped Alkaline-gas Laser System and coherent fiber combining laser technologies, which promise to provide high-efficiency, electrically driven, compact, and lightweight high-energy lasers for a wide variety of missions of interest to MDA and the Department of Defense (DOD) and support concept development for the next generation of airborne missile defense directed energy systems.

We request $58.7 million in fiscal year 2013 to continue support for research and development of advanced remote sensing technologies, demonstrate acquisition, tracking and discrimination of multi-color infrared sensors, and investigate techniques to improve the system's data fusion capability to further strengthen the Nation's missile defense sensor network. We have integrated our international and domestic university research programs into the same structure, allowing MDA to capitalize on the creativity and innovation within our small business and academic communities to enhance our science and technology programs.

The greatest future enhancement for both homeland and regional defense in the next 10 years is the development of the Precision Tracking Space System (PTSS) satellites, which will provide fire control quality track data of raids of hostile ballistic missiles over their entire flight trajectories and greatly expand the forward edge of the our interceptors' battle space for persistent coverage of more than 70 percent of the Earth's landmass. The need for persistent, full trajectory, tracking of ballistic missiles is one of the war fighter's highest development priorities as stated in the 2012 STRATCOM PCL. PTSS will enhance the performance of all missile defense interceptors at an operational cost significantly less (and with much greater ability to track large raid sizes of threat missiles) than forward based AN/TPY–2 radars, based on MDA's experience with STSS program costs. The emerging concept design of the PTSS spacecraft is much simpler than STSS because it relies on the mature Air Force Space Based Infra-Red (SBIR) satellite system to acquire threat ballistic missiles, leverages PTSS's ability to provide precision tracks of the remainder of threat missiles' trajectories, and uses only satellite components with high technology readiness levels. Due to the intrinsic simplicity and component maturity of the PTSS design, the integration of concurrent developments is considered to be a low acquisition risk. Key to our acquisition strategy is MDA partnering Air Force Space Command and the Naval Research Laboratory with Johns Hopkins Univer-

sity Applied Physics Laboratory (APL), with participation of six aerospace corporations, to develop a fully Government-owned preliminary design and technical data package to enable full competitions by our aerospace industry for the production for the first and subsequent PTSS satellite constellations. MDA is requesting $297.4 million for PTSS in fiscal year 2013 to continue development of preliminary design requirements to create these multi-mission satellites (e.g., missile defense, space situation awareness, DOD and intelligence community support). APL has a noteworthy track record, dating back to 1979, for meeting planned development cost and schedule projections involving 17 significant spacecraft missions. We will complete final design and engineering models for the PTSS bus, optical payload, and communications payload in fiscal year 2013. PTSS project scope includes delivery of PTSS ground segments and launch of the first two PTSS spacecraft in fiscal year 2017. We are fully cooperating in an Independent Cost Estimate (ICE) of the development and 20-year life-cycle cost of the PTSS constellation by the Office of the Secretary of Defense of Capability Assessment and Program Evaluation (CAPE) to achieve a high confidence cost estimate of the development and 20-year life of the PTSS constellation. Of note, this ICE will provide great insight into the validity of the recent National Academy of Science (NAS) Boost Phase Intercept study cost estimate for the PTSS constellation that we believe is considerably higher than our estimates. Although the NAS study was critical of PTSS's ability to discriminate a re-entry vehicle (RV) from other objects accompanying a missile, the NAS did not benefit from an understanding of our sensor discrimination architecture concept nor our classified programs developing PTSS's future RV discrimination capability. However, the NAS study did benefit from understanding our disciplined systems engineering process that scrutinizes capability trades to achieve urgent, cost-effective, satisfaction of the war fighters BMD needs as documented in STRATCOM's PCL.

INTERNATIONAL COOPERATION

As stated in the 2010 Ballistic Missile Defense Review, developing international missile defense capacity is a key aspect of our strategy to counter ballistic missile proliferation. A significant accomplishment of international cooperation in 2011 was the signing of the first Foreign Military Sale case for the THAAD system to the United Arab Emirates, valued at nearly $3.5 billion. In Europe, we successfully completed interoperability testing of our C^2BMC system with the ALTBMD Interim Capability, demonstrating U.S. and NATO's ability to share situational awareness of missile defense execution and status and planning data. NATO plans to invest more than 600 million Euros for the ALTBMD capability. Moreover, we are working with our NATO allies on developing requirements for territorial NATO missile defense. We continue to pursue potential missile defense contributions of NATO countries such as the Netherlands' announcement that they are upgrading their maritime radars with missile defense surveillance and tracking capability. In East Asia, we are supporting the BMDR-based objective in leading expanded international efforts for missile defense through bilateral projects and efforts with Japan, the Republic of Korea, and Australia. And in the Middle East, we continue to work with long-term partners, such as Israel, and are pursuing strengthened cooperation with various Gulf Cooperation Council countries that have expressed interest in missile defense. MDA is currently engaged in missile defense projects, studies and analyses with more than 20 countries, including Australia, the Czech Republic, Denmark, France, Germany, Israel, Japan, Poland, Romania, Saudi Arabia the United Arab Emirates, the United Kingdom, and NATO.

MDA continues its close partnership with Japan on the SM–3 IIA interceptor (Japan is leading the development efforts on the SM–3 Block IIA second- and third-stage rocket motors and the nosecone), studying future missile defense architectures for defense of Japan, and supporting that nation's SM–3 Block IA flight test program, to include the successful intercept flight test in October 2010 involving a Japanese SM–3 Block IA. This test completed the first foreign military sale of Aegis BMD to a key maritime partner. Japan now has four Aegis destroyers equipped with Aegis BMD systems and a complement of SM–3 Block IA interceptors.

We also continue collaboration with Israel on the development and employment of several missile defense capabilities that are interoperable with the U.S. BMDS. Last year, at a U.S. test range off the coast of California, the Arrow Weapon System successfully intercepted a target representative of potential ballistic missile threats facing Israel today. This year, we plan to conduct several first time demonstrations of significant David's Sling, Arrow-2 block 4, and Arrow-3 system capabilities. We are requesting $99.8 million for Israeli Cooperative Programs (including Arrow System Improvement and the David's Sling Weapon System) in fiscal year 2013 to continue our cooperative development of Israeli and United States missile defense tech-

nology and capability. MDA will conduct a David's Sling flight test to demonstrate end game and midcourse algorithms and initiate David's Sling and Arrow-3 Low Rate Initial Production.

CONCLUSION

Our fiscal year 2013 budget funds the continued development and deployment of SRBM, MRBM, IRBM, and ICBM defenses while meeting the war fighters' near-term and future missile defense development priorities. We are dedicated to returning to successful GMD flight testing as soon as possible as well as developing an additional layer of homeland defense with the SM–3 IIB to ensure we have a robust and responsive ICBM defense for our Nation, during this decade and for many decades in the future. Additionally, we are committed to develop a persistent, space based, PTSS constellation to ensure always available, early tracking of large size raids of missiles to enable cost-effective homeland and regional missile defense. We are also dedicated to creating an international and enhanced network of integrated BMD capabilities that is flexible, survivable, affordable, and tolerant of uncertainties of estimates of both nation-state and extremist ballistic missile threats.

Thank you, Mr. Chairman. I look forward to answering the subcommittee's questions.

Chairman INOUYE. Thank you very much, General.

As I indicated in my opening remarks, we have been advised that including the ballistic missile defense (BMD) capability on Aegis ships is a critical element of the phased adoptive approach (PAA).

Now, the Navy has, as I indicated, the possibility of decommissioning six of the cruisers. What impact would it have on the PAA?

General O'REILLY. Sir, we support the Navy's technical assessments. They make the final decision, of course. I know of some factors that played into that consideration. Some of it was the stationing of ships in Rota, Spain, which has been agreed to, to reduce the transit time and increase the multi-mission ship presence in the Mediterranean.

That was part of their considerations. Additionally, we continue to work with the Navy to perform functions in other ways than just using a ship for BMD. For example, for sensors.

Can we deploy some of our sensors in locations and relieve the need for Aegis ships to be doing the surveillance mission which some of those ships are doing today.

So, Sir, I defer the final answer to your question because that is a Navy decision, but we work very closely to ensure our technical programs are synchronized with their programs, and at the same time, they benefit from our technical analysis.

Chairman INOUYE. So the decommissioning is not finalized?

General O'REILLY. Sir, I'm not in a position to answer that question. That's one where we have been supporting the Navy.

Chairman INOUYE. Can you tell us about Aegis Ashore?

General O'REILLY. Sir, the Aegis Ashore System is a very cost-effective approach to take the proven capability we've seen at sea and move it effectively to the land. It is then a focused mission on missile defense. Instead of the more than 270 sailors, for example, needed on a Navy ship, an Aegis Ashore System can operate the system with less than 35 sailors, and that includes multiple shifts.

So it's a very cost-effective way of having Aegis BMD capability. Aegis BMD capability has the longest range of our regional systems. So it adds a layer of missile defense to the land that otherwise would be solely relying on THAAD.

And, so, with Aegis Ashore and THAAD and Patriot and other international systems, we are able to achieve that multilayered ef-

fect with the dedicated and persistent presence of the Aegis Ashore system.

Chairman INOUYE. We've been told that these systems will be in Poland and Romania. When will this happen?

General O'REILLY. Sir, we have selected the sites with their countries and the European Command, both locations, in Romania and in Poland. We have signed agreements with their countries for that.

Romania will be fully operational in 2015, and Poland will be fully operational in 2018.

Chairman INOUYE. Thank you very much. Senator Cochran.

Senator COCHRAN. General O'Reilly, the request before us proposes a reduction in the number of Aegis ships that are planned to be equipped with ballistic missile capability. The ships are going to be reduced under this budget request from 43 to 36.

How do these changes affect our missile defense mission, and are we putting at risk any important U.S. military assets by adopting this plan?

General O'REILLY. Sir, that decision is made ultimately by the Chief of Naval Operations and the Joint Chiefs. As I said before, I provide technical support and things we can do to increase the capability of missile defense capable ships out there.

An example of the type of capability I'm referring to is even though it still looks like the same Aegis ship of a year ago, several of our ships have now been upgraded with the capability to launch three times as many interceptors at once.

We can use off board sensors. As I said last year, our system was designed to intercept missiles of about 1,000 kilometers, and with the assistance of off board sensors (like AN/TPY–2 radar) we intercepted a missile of more than 3,000 kilometers.

So there are enhancements which MDA is developing for the Navy so that each ship can handle many more missiles at once, and also at much greater ranges.

And that is the extent, that is the technical support I'm providing the Navy to make their final judgment on what's the right size of the fleet and how it's deployed.

Senator COCHRAN. How would you describe the success of our testing program up to this point in our effort to deploy a GMD system? Could you explain what contingency plans we may be developing to provide homeland defense if there are test failures?

General O'REILLY. Sir, the problems we've had in flight testing, and we've had two failures, were with the latest version of the front-end of the missile, the EKV.

The older EKV is deployed today. It's been successful in five tests (three intercept tests and two other flight tests). We have never seen any indication of a problem on the ground with the older EKV. And we have a lot of confidence in that system today to protect the United States as they're fielded at Vandenberg Air Force Base and in Fort Greely, Alaska.

However, we had obsolescence problems with continuing the older EKV design. We upgraded the design 4 years ago, and we've had two subsequent test failures. We have worked closely, and I firmly believe, with the best experts in the country, both government and industry, identifying where the problems were.

We've addressed the problems. The first one was a quality control issue in the production plant. It has been validated that we have addressed that issue with the second test.

And then the second problem, we literally found in space. We couldn't have identified it on the ground, and working with the best experts, including National Aeronautics and Space Administration and others, we believe we've addressed and resolved that issue. And we're out to prove it this year in our next flight test.

Senator COCHRAN. You mentioned that you're going to increase the number of operational interceptors and accelerate the delivery of interceptor capabilities.

Could you describe for us how this is going to be done, or what the timetable will be for accelerating the delivery of new sensors?

General O'REILLY. Sir, from a point of view for the GMD system, we currently have production on hold until we prove we've resolved the production issues.

But what I've done is use the work force and the supply chain to prepare for that production go ahead. So once we have a successful test, we can immediately go into refurbishing the missiles at Fort Greely and at Vandenberg, the ones that need it. Not all of them do.

We have also enhanced the manufacturing capability at the site, the ability to upgrade missiles, so we can accelerate their upgrade without shipping them away from the missile fields.

From the point of view of the delivery of our sensor systems, we have several of them that are ready today for operational deployment, and combatant commanders, we're in coordination with them. And we stand ready to support them and those in the Army and the Air Force who are associated with those deployments and the decisions made by the Joint Chiefs.

Senator COCHRAN. Thank you.

Chairman INOUYE. Senator Shelby.

Senator SHELBY. Thank you, Mr. Chairman.

General, I have a number of questions. We appreciate your service to the country and what you are doing as Director of the MDA.

General O'Reilly, the State Department official, Ellen Tauscher, recently told a Russian newspaper that the administration was "prepared to provide the Russian Government with written political guarantees regarding the U.S. and NATO Missile Defense Systems in Europe."

Have you been consulted regarding the form and substance of these guarantees, and, if so, what can you tell us about them?

If not, do you think it would be advisable for the administration to consult with you and the Congress about any potential restrictions on the systems you're responsible for developing?

Are you aware of this statement?

General O'REILLY. Sir, we have been providing technical consultation to Secretary Tauscher and to the State Department. I am unaware of specific proposals.

I will tell you that the nature of our work has typically been to address the Russian Government claims that we are building capability to upset the strategic balance.

We've been able to analyze that and provide them data that show we are not, and the errors in their estimates, such as interceptor missiles flying faster than anyone's ever built, and so forth.

So I am unaware, first of all, of what those specific proposals are, but also, I have never been given any instructions to consider limiting the development of our system.

Senator SHELBY. In other words, written guarantees that would limit our system?

General O'REILLY. No, Sir. I'm not aware of any nor have I ever been given guidance to consider any ways of limiting our system.

Senator SHELBY. Do they have, to your knowledge, any—any is a big word I guess here—any technical capabilities that if shared through a cooperative arrangement could help you defend our homeland or our allies, or is that off the table?

General O'REILLY. Sir, there are capabilities that we could benefit from. Primarily their sensors, their large sensors, that they have for their homeland defense or their protection in Russia.

The location of Russia itself, looking through from Europe, all the way across through Asia, including Northeast Asia, would give us the opportunity to view threats very early in their flight.

And, their ability to observe flight testing done by other countries would in fact provide us beneficial information.

Senator SHELBY. But you don't know of any information or promises that have been made to Russia that would compromise our ability to defend our interests in any way, do you?

General O'REILLY. No, none whatsoever.

Senator SHELBY. Okay.

In the GMD area, I know you face some challenges there. Does the MDA fiscal year 2013 budget request provide adequate funding to restore your confidence in all of the elements of the GMD system?

In other words, under this budget, will the GMD industrial base remain robust enough to respond to unanticipated developments in the ICBM programs of our adversaries or potential adversaries?

General O'REILLY. Sir, in our budget, we've requested the procurement of five additional GBIs, and one of the reasons is to ensure that our industrial base stays viable, and to leave open those options in the future if necessary.

Also, our newest missile field has eight additional spare silos in it, so we are postured in a way, if we're supported in our budget request, to maintain our capability, our industrial base, and continue testing in order to validate our missile defense capability with GBIs.

Senator SHELBY. In the area of what we call the kill vehicle development, you referenced in your testimony some of the problems that we've experienced with this kill vehicle, EKV on the GMD system.

I understand that you're working out some of those challenges, the problems most recently identified, and I hope that will be successful.

But I'm sure this won't be the last problem, because this is something that's being developed. It's my understanding that EKV was never meant to be the permanent kill vehicle for the GMD, and

that the current system is heavier, less capable, and less reliable than I think it can or should be.

But with the cancellation in 2009 of the Multiple Kill Vehicle Program, we're locked into the current system for the foreseeable future; do you agree with that, or disagree?

General O'REILLY. Sir, I do believe we can continue to improve the GMD EKV and make it a very viable, reliable system that we can rely on for decades.

On the other hand, I also believe, as technologies have moved on, we haven't taken advantage of those technologies. I can——

Senator SHELBY. Could you talk more about the SM–3 IIB Program?

General O'REILLY. Yes, Sir. The SM–3 IIB Program gives us the opportunity to continue supporting our aerospace industry to apply our latest technologies which, Sir, equates to smaller KVs and more capable KVs.

Senator SHELBY. It could possibly give you more than a single interceptor there, could it not?

General O'REILLY. Sir, depending on the size of the booster, yes, it could, if you had a large booster and these small interceptors.

Senator SHELBY. In the area of THAAD—I know I'm touching on a number of subjects, but they're all in your domain——

General O'REILLY. Yes, Sir.

Senator SHELBY. The administration's fiscal year 2013 request included funding for production of 36 THAAD missiles annually. That rate is considerably below what the MDA had proposed in fiscal year 2012.

Does that production rate, General, allow MDA to outfit THAAD batteries as they become available, or, on the other hand, will there be a lag time between when batteries are completed, and when the missiles to outfit them come off the assembly line?

Will there be a gap there, or you're working to make sure there's not?

General O'REILLY. Sir, at this time, we have realigned when the batteries will be available as well as the production of missiles for those batteries. And, no, there will not be a gap at this point in time.

We have also increased the number of missiles in each THAAD battery. So, even with those higher numbers of missiles in each unit, we'll be able to make our delivery needs, and our foreign military sale also increases production capacity of THAAD.

Senator SHELBY. Can I get into the ship modifications of the Navy a little bit.

Now, you believe that fielding the SM–3 IIB, it's a mouthful, SM–3 IIB, will require modifying the vertical launch system onboard the Aegis cruisers and destroyers?

And, if so, is there currently a funded plan, since we're here in the Appropriations Defense Subcommittee, is there a funding plan in place to make the necessary conversions, you know, if we have to do that?

And will those preparations be complete for the arrival of the production of missiles? Same thing. Will there be a gap there? Will you have the money, and what do you need?

General O'REILLY. Sir, for the SM–3 IIB is in concept development. The amount of progress that's been made by industry in the last year on that program indicates that they have a lot of engineering capability that they have now bring to bear.

And we've seen many different proposals. There are proposals that would require a modification, but there are also, as with every contractor, proposals that do not require a modification to a ship's vertical launch system.

So, they're at the point where they have not finalized what they're going to propose to us, but we've seen both options.

Senator SHELBY. How big an improvement is this new system, the SM–3 IIB?

General O'REILLY. Sir, it would fly at a tremendously higher velocity than the current SM–3.

Senator SHELBY. That's a quantum breakthrough, isn't it?

General O'REILLY. Yes, Sir, and the fact that it's mobile, that, as a long-range threat missile is launched, it's like playing hockey. You can get into the position where you can intercept with a smaller missile and still have the same effect.

Senator SHELBY. But, basically, does it make us—you're in charge of it—make us more agile?

General O'REILLY. Tremendously more agile, and we can surge a lot of missiles into a region like we do our other military capabilities if the need arise.

Senator SHELBY. What's your thought regarding Korea? You know, they've been in the news lately, about they had a failed launch. Of course, at some time, they might work those problems out.

They'll have to do it themselves. We'll all watch that with interest. I know the Chairman, coming from the State of Hawaii, had to be more than watchful of that, but we all are interested in that, as they build a more robust missile with longer legs, and a danger to Hawaii, Alaska, and perhaps others.

General O'REILLY. Yes, Sir. At the point I can say here in this hearing——

Senator SHELBY. Yes.

General O'REILLY [continuing]. They obviously failed early to demonstrate their capability in their flight, once again. Our experience has been you need a lot of ground testing and flight testing in order to validate and have reliance in a capability.

They do not. And it's been evident every time they test. And their progress has not been made apparent in this latest flight test.

Senator SHELBY. Thank you. Thank you, General, and thank you for your service to the country.

Chairman INOUYE. Thank you very much.

I have one more question. And, if I may, I would like to submit the rest for your careful consideration.

Recently, there were rocket attacks from Gaza on Israel. And the Iron Dome performed remarkably well. In fact, we've been advised that the success rate exceeded 90 percent.

My question, number one is, what is the current status of Iron Dome? And, second, in light of this recent attack, are we prepared to provide more Iron Domes?

General O'REILLY. Sir, I do not develop them. I am not part of the development of the Iron Dome system like I am responsible for the development, co-development, with other Israeli programs.

But I do oversee our funding of the manufacturing of the Iron Dome system for the Israelis. Our assessment is, it's a very effective system, and they are also adding improvements to it in the near term to make it even more effective.

I know the Department is considering right now several options on how to enhance our support to the availability of Iron Dome to the Israeli Government.

Chairman INOUYE. Senator Cochran.

Senator COCHRAN. Mr. Chairman, I have another question.

I would like to know, General O'Reilly, what your assessment is of the testing of the Arrow 3 Interceptor? I know there are plans to have additional tests. I wonder if you could give the subcommittee some idea of what the status of this effort is and what capability this system will provide?

General O'REILLY. The Arrow 3 Program will provide a significant increase over the current Arrow Program. In other words, it will be able to fly farther, faster, intercept earlier in the flight of a threat missile, and effectively add another layer of defense to Israel.

We work very closely with the Israelis to set up this program so that we have very identifiable milestones to show their progress.

While we felt their original schedule was optimistic, and although it is turning out to be optimistic—they're not on the original track that they set up—they have made significant progress. They are achieving those milestones.

ADDITIONAL COMMITTEE QUESTIONS

This year, we look forward to their first flight of their missile system. And so, we're very pleased with the progress they're making, and it's more along the lines of what we expect with our own programs.

Senator COCHRAN. Good. Thank you very much, Mr. Chairman.

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

QUESTIONS SUBMITTED BY CHAIRMAN DANIEL K. INOUYE

PACIFIC MISSILE RANGE FACILITY

Question. General O'Reilly, can you provide the subcommittee a schedule of Terminal High-Altitude Area Defense (THAAD) tests that will be conducted at the Pacific Missile Range Facility (PMRF) over the next 5 years?

Answer. Now that THAAD is in production, the operation and development of test communities agree (as documented in Integrated Master Test Plan [IMTP] 12.1) that flight testing is limited to development capability increments (which there are two in the next 5 years) and operational testing integrated with Aegis and PATRIOT. Thus, the developmental flight tests over the next 5 years are FTT–11a in the fourth quarter of fiscal year 2014 (4QFY14) and FTT–15 in the second quarter of fiscal year 2017 (2QFY17) at PMRF.

THAAD will also be extensively tested using models and simulations (hardware in the loop and distributed testing using actual THAAD batteries), which have been accredited based on the THAAD's highly successful flight test program.

Question. What is the current schedule for Aegis Ashore testing at PMRF, and how has it changed from last year?

Answer. The previous (IMTP 11.1) and current (IMTP 12.1) Aegis Ashore Flight Test Schedules are contained in the below table. The only change from last year is

the acceleration of AAFTM–02 by two quarters (from the second quarter of fiscal year 2015 (2QFY15) to 4QFY14).

AEGIS ASHORE FLIGHT TEST SCHEDULE

Flight Test (FY12–17)	Description	Date (IMTP 11.1) Approved 5/31/11	Date (IMTP 12.1) Approved 3/1/12
AACTV–01 E1	Aegis Ashore will engage a simulated Dynamic Test Target and launch an SM–3 Controlled Test Vehicle (CTV) to check out the installation of the land-based Aegis Weapon System and VLS Launcher.	2QFY14	2QFY14
AAFTM–01	Aegis BMD Ashore will detect, track and engage an air-launched MRBM target with an SM–3 Blk IB missile and track data provided by an up-range Aegis BMD ship.	4QFY14	4QFY14
AAFTM–02	Aegis BMD Ashore will detect, track and engage an air-launched MRBM target with an SM–3 Blk IB missile and track data provided by an up-range Aegis BMD ship.	2QFY15	4QFY14
FTO–02	This operational flight test event will be executed across two test ranges in two multiple simultaneous engagements against an SRBM and three MRBMs. Aegis Ashore will detect, track and engage an MRBM target with a SM–3 Blk IB missile. Aegis BMD 5.0 ship will detect, track and engage an MRBM with a SM–3 Blk IB missile. THAAD will engage an MRBM. Patriot will engage the SRBM.	4QFY15	4QFY15

Integrated Master Test Plan (IMTP)
Medium Range Ballistic Missile (MRBM)
Short Range Ballistic Missile (SRBM)
Terminal High Altitude Area Defense (THAAD)

Question. I understand that within a few seconds of an SM–3 missile launch from the test Aegis Ashore facility on PMRF, it must be determined that the missile is moving in the intended direction, and, if not, the missile must be quickly destroyed. For safety considerations, PMRF is likely to require an exceptionally fast capability that can accurately determine missile condition and location during the first few seconds of launch, something that radar alone may not be able to address. This is a critical requirement for PMRF and for safety considerations in any European country where the Aegis Ashore is deployed, since it will be in proximity to populated areas. Please provide an update on how the Navy and MDA will address this safety concern.

Answer. The Pacific Fleet Command has agreed to allow test firings from the Aegis Ashore Missile Defense Test Complex at PMRF only upon successful development, integration, and certification of the range flight safety upgrades. These upgrades provide PMRF with the independent capability to take a flight termination action as early as 2.5 seconds after launch (confining hazards well within PMRF's launch hazard area).

The flight safety upgrades include:

—Modification to the SM–3 Block IB missile's flight termination system that allows a termination command to be received within one second after launch;

—Procurement, integration and certification of two Early Launch Tracking Radars (ELTRs) that will provide missile position and velocity no later than one second after launch; and

—Development, integration, and certification of a Safety Augmentation System that will use missile position data from the ELTRs and predetermined safety boundary conditions based on test mission scenarios to make a decision on missile heading and send a flight termination command if the missile is headed outside the predetermined safety boundaries.

Status.—Acquisition contracts are in place, development plans are defined, designs have been approved, and certification test plans are in development for all flight safety upgrades. The ELTRs will be developed and delivered to White Sands Missile Range for initial testing and integration with targets of opportunity commencing in the second quarter of fiscal year 2013 (2QFY13). The radars will then be transported to PMRF for final range certification during 4QFY13, in time to support the first Aegis Ashore flight test (AA–CTV–01) in 2QFY14.

Fiscal year 2012 funds initiated the development of these safety upgrades. Fiscal year 2013 funding, necessary to complete these safety upgrades, was requested in the President's fiscal year 2013 budget.

SUBCOMMITTEE RECESS

Chairman INOUYE. All right. Thank you very much.

On behalf of the subcommittee, I thank you for your testimony and for your exemplary service. We will be looking at your request very carefully, and we look forward to working with you, Sir.

The Defense Subcommittee will reconvene at 10:30 a.m. on April 25 for a classified hearing on the national and military intelligence programs. We stand in recess.

[Whereupon, at 11:08 a.m., Wednesday, April 18, the subcommittee was recessed, to reconvene subject to the call of the Chair.]