

# The FY 1995 Ballistic Missile Defense Program

Statement by  
Lieutenant General Malcolm R. O'Neill,  
USA Director  
Ballistic Missile Defense Organization  
Before The Committee on Appropriations  
Subcommittee on Defense  
United States House of Representatives  
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Thank you, Mr. Chairman and Members of the Committee. It is an honor to appear before you today as Director of the Ballistic Missile Defense Organization (BMDO) and testify on the Department's Ballistic Missile Defense (BMD) program for Fiscal Year 1995.

Before I begin my presentation on the fiscal year 1995 program, however, I would like to briefly review for the committee the evolution of the BMD program, as several significant changes have occurred during the past few years. As you are aware, the President has endorsed the Department's Bottom-up Review (BUR) which established very specific guidance with respect to the BMD program, and I would like to review this for the Committee.

## BMD Program Evolution

The Ballistic Missile Defense Organization is a successor to the Strategic Defense Initiative Organization (SDIO), which was restructured in early 1993 by the Secretary of Defense. The Strategic Defense Initiative was begun in 1983 as a broad-based, integrated research and development program to explore the feasibility of eliminating the threat of weapons of mass destruction delivered by ballistic missiles of all ranges. By 1987, ballistic missile defense (BMD) technologies and system and architecture concepts were developed sufficiently to permit the Joint Chiefs of Staff to issue a formal statement of mission objectives and required system characteristics for a Phase I Strategic Defense System, which was intended to deter or, if deterrence failed, disrupt a massive Soviet first strike on the United States. Further, U.S. defense strategy at the time called for an incremental and evolutionary growth in BMD capabilities beyond the Phase I system.

With the dismantling of the Soviet Union and the end of the Cold War, the SDI program was re-

oriented toward addressing regional threats caused by the proliferation of weapons of mass destruction and short-range ballistic missiles, and the threat from potential accidental or unauthorized limited attack on the U.S. arising out of the political instability among the states of the former Soviet Union. The Department's BMD approach to addressing the changing world conditions was embodied in a concept called Global Protection Against Limited Strikes (GPALS), which integrated theater and strategic defenses and emphasized global protection in addition to deterrence. GPALS defenses were intended to protect forward deployed U.S. forces, power projection forces, and other U.S. overseas interests against theater-range ballistic missiles; and the U.S. against a long-range limited attack of up to 200 reentry vehicles. This approach called for spending approximately \$39 billion for BMD in Fiscal Years 1995 through 1999.

The BMD program is now structured to respond to the "here and now" theater ballistic missile threat and an uncertain, but evolving threat to the United States. The current structure is founded upon the President's endorsement of the 1993 Department of Defense Bottom-up Review and the Missile Defense Act of 1991, as subsequently amended in Fiscal Year 1993 and 1994 National Defense Authorization legislation. The BUR, the Presidential endorsement, and the legislation call for the United States to adhere to the 1972 Anti-Ballistic Missile (ABM) Treaty, while seeking to assure that the Treaty is not interpreted to constrain development of advanced Theater Missile Defenses (TMD) to meet the dangerous and growing theater missile threat.

As amended, the Missile Defense Act also directs the Department to:

- o maintain the option to deploy an ABM system that is capable of providing a highly effective defense of the United States against limited attacks of ballistic missiles,
- o maintain strategic stability, and
- o provide highly effective theater missile defenses to forward deployed and expeditionary elements of the Armed Forces of the United States and as appropriate to friends and allies.

## The Bottom-up Review and BMD

The Bottom-up Review examined U.S. missile defense requirements from a perspective of identifying options that could meet future needs at an affordable cost. The BUR began by assessing the ballistic

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missile threat and outlined three general categories of long-range missile threats to the United States: deliberate attacks by the former Soviet Union or China; accidental or unauthorized launches from those countries; and the emergence of new long-range missile threats from potentially hostile nations.

If Ukraine, Belarus, and Kazakhstan ratify and implement START I and join the Nuclear Nonproliferation Treaty as nonnuclear states, Russia will be the only country of the former Soviet Union possessing missiles capable of reaching the United States. Once START II is implemented, Russian strategic nuclear forces will be much smaller than they are today and strategic modernization is expected to proceed at a slower pace. While China also has a few nuclear missiles that could reach the United States, its strategic nuclear force is currently quite small and it is likely to grow slowly in both size and capability over the next decade. Finally, the Intelligence Community has concluded that a deliberate attack by Russia or China on the United States would appear to be highly unlikely. Accidental or unauthorized launches of Chinese or Russian nuclear missiles are also considered unlikely.

Finally, while no other potentially hostile nation currently possesses the capability to threaten the United States with ballistic missiles, the possibility of a limited, long-range ballistic missile threat from the Third World sometime in the first decade of the next century cannot be excluded. In this context, I would like to defer to the expertise of James Woolsey, Director of Central Intelligence, on such matters. Last year he testified to the development of a Third World ICBM threat to the United States and noted that:

*... After the turn of the century, some countries that are hostile to the United States might be able to acquire ballistic missiles that could threaten the continental United States. We can't give you a precise date -- whether its eight years or ten years or fifteen years from now -- by which that might occur.*

*... A short-cut approach that's prohibited by the Missile Technology Control Regime and by the Nonproliferation Treaty would be for such Third World countries to buy ICBMs or major components covertly together with suitable nuclear warheads or fissile materials. Anything such as that would, of course, speed up ICBM acquisition by such nations.*

A different threat of particular concern in the post-Cold War period is the proliferation of shorter-range ballistic missiles armed with nuclear, biological, or chemical warheads. Ballistic missile deploy-

ments are expected to increase worldwide, despite stepped-up efforts to inhibit their proliferation, and several countries other than the acknowledged nuclear states are developing both nuclear weapons and ballistic missiles. Similarly, a number of countries have or are developing chemical or biological weapons that could be delivered by ballistic missiles. Of particular concern are those missile programs in India, Pakistan, Iran, Iraq, Syria, Libya, and especially North Korea -- all of which have or could develop weapons of mass destruction for use on their ballistic missiles.

I would like to once again quote the Director of Central Intelligence, James Woolsey, whose judgments on the ballistic missile threat are most relevant:

*Ballistic missiles are becoming the weapon of choice for nations otherwise unable to strike their enemies at long range. Today there are 25 countries, many hostile to our interests, . . . that are developing nuclear, biological, or chemical weapons. . . some of these countries may place little stock in the classic theory of deterrence which kept the cold war from becoming a hot one. . .*

A case in point is North Korea. In January of this year Mr. Woolsey noted that "North Korea could already have enough plutonium for at least one nuclear weapon" and that its "missiles, including those in the 1000 kilometer range. . . can be made capable of carrying nuclear, chemical, or biological weapons."

The BUR's sober assessment of the existing and emerging ballistic missile threats provided the foundation for determining the appropriate programmatic response. The BUR considered a range of TMD options. However, all options included a "core" set of TMD systems consisting of an enhanced version of the existing land-based Patriot air and missile defense system, called Patriot Advanced Capability, Level-3 (PAC-3); the sea-based AEGIS/Standard Missile Block IVA; the land-based Theater High Altitude Area Defense (THAAD) missile system; and battle management/command, control, communications and intelligence (BM/C3). (These Core TMD programs are detailed below in the section highlighting the Fiscal Year 1995 Theater Missile Defense program.) In considering the proper approach to Theater Missile Defense, the Bottom-up Review stimulated the generation of a course that also included the exploration of three advanced TMD concepts, with one of those three entering the demonstration/validation phase of the acquisition process in Fiscal Year 1998. The Bottom-up Review estimated that about \$12 billion would be needed in

Fiscal Years 1995 through 1999 to implement the TMD program.

In recognition of the low probability of a long-range ballistic missile attack from the former Soviet Union or China, but to preserve a hedge against acquisition or indigenous development of a long-range ballistic missile capability by another potentially hostile nation, National Missile Defense (NMD) efforts were designated as a second priority relative to TMD. In evaluating options for national missile defense, three main factors were considered: technological promise, responsiveness to the projected threat, and ABM Treaty compliance. Various NMD architectures were examined by the BUR, consisting of the Ground-based Radar (GBR) and the Ground-based Interceptor (GBI), with and without the Brilliant Eyes (BE) space and missile tracking system. Four different development approaches were analyzed.

The Bottom-up Review determined that a prudent option to pursue would be one that focused on achieving and maintaining technical readiness to move NMD into the system acquisition process. This will be accomplished by emphasizing risk reduction programs, key technologies, and activities to resolve critical technical issues and reduce deployment timelines. The technology readiness effort would concentrate upon exoatmospheric interceptors, space-based passive sensors, ground-based active sensor, BM/C3, and those technologies and practices required to ensure their eventual integrability. The Bottom-up Review determined that this option would cost about \$3 billion over the FYDP, including funds for the space and missile tracking system (Brilliant Eyes) which has been funded by the Air Force in Fiscal Year 1994. This NMD technology readiness option would also, in conjunction with TMD and research activities, preserve an adequate industrial base in critical ballistic missile defense technology areas.

**The BMD Budget: FY95 and Beyond**

Since the announcement of the BUR, the Department has removed \$1.1 billion in program growth from the Fiscal Year 1995-1999 program, partially offset by increased escalation, resulting in a total FYDP funding of approximately \$17.6 billion, with the reduction applied primarily to Theater Missile Defense efforts and Brilliant Eyes to maintain a balanced BMD program. The following chart outlines the Fiscal Year 1995 budget request for the BMD program.

**BALLISTIC MISSILE DEFENSE ORGANIZATION  
FY 95 PRESIDENT'S BUDGET**

*TY \$ In Thousands*

	<u>FY 93</u>	<u>FY 94</u>	<u>FY 95</u>
• RDT&E			
- Theater Missile Defense			
- Advanced Tech Dev 6.3	341,683	393,457	479,131
- Demonstration / Validation 6.4	685,375	1,080,490	1,071,283
- EMD 6.5	0	42,097	217,755
- Ballistic Missile Defense			
- Exploratory Development 6.2	120,210	73,053	106,460
- Advanced Tech Dev 6.3	2,052,780	829,301	769,993
- Demonstration / Validation 6.4	209,900	0	120,000
- Management Support	218,352	198,802	215,233
<b>Total RDT&amp;E</b>	<b>3,628,300</b>	<b>2,617,200</b>	<b>2,979,855</b>
• Procurement			
- Theater Missile Defense	75,200	120,719	273,390
• MILCON			
- Ballistic Missile Defense	2,500	2,727	530
<b>Total BMDO</b>	<b>3,706,000</b>	<b>2,740,646*</b>	<b>3,253,775</b>

\* Does Not Account For \$104 Reclassification Or \$22.8M Reprogramming

The Fiscal Year 1995 budget request for the Ballistic Missile Defense Organization is \$3.25 billion. The Department is requesting \$1.77 billion for Theater Missile Defense RDT&E and \$270 million for Theater Missile Defense procurement efforts. The National Missile Defense Technology Readiness RDT&E program is budgeted for approximately \$587 million. The remaining \$625 million is requested for Research & Support activities, to include exploratory development, advanced technology development and management support activities.

Our current FYDP profile, at approximately \$17.6 billion, represents a 55 percent reduction in out year spending relative to the FYDP prior to the Bottom-up Review. I would also like to note that the current FYDP includes a total of approximately \$3 billion of procurement expenditures to purchase Theater Missile Defense systems -- an amount that increases each year across the FYDP from the \$270 million level requested this year to over \$1 billion by Fiscal Year 1999.

**Theater Missile Defenses: Getting "Rubber on the Ramp"**

As part of the BUR, the Department assessed the proliferating ballistic missile threats emerging throughout the world, analyzed various TMD systems to determine the prudent programmatic response, estimated the costs, and has outlined a clear commitment to develop and deploy effective missile defenses that are both responsive to the threat and

affordable. Our TMD efforts can be grouped into three main categories: near term initiatives that provide relatively inexpensive upgrades to existing air and missile defense systems; Core TMD programs that provide a substantially increased defensive capability against theater ballistic missiles; and advanced TMD concepts which involve concept exploration activities for systems that could enter the acquisition phase down the road.

At this point I would like to stress that the Department has heard loudly and clearly Congress' concerns about multiple TMD interceptor candidates. The Department, as part of the BUR and in our continuing approach to TMD, is making the difficult choices required to "neck down" our TMD interceptor options. In light of this, I would like to spend a few minutes outlining the TMD programs so there is little doubt the Department is following through on the Congress' strong direction in this area.

As I noted, TMD consists of three sequential efforts. First, we are making near term improvements and enhancements to existing air and missile defense systems. For example, funds appropriated to BMDO directly enhance our missile defense capabilities today. BMDO's proposed Fiscal Year 1995 budget, supports a Marine Corps Tactical Missile Defense (TMD) Initiative that provides a basic TMD capability for the Marine Corps to sustain an interim point defense of vital assets in the amphibious operating area. Our budget request includes approximately \$30 million for this effort in Fiscal Year 1995. This TMD capability will be accomplished through product improvements to the TPS-59 Radar and Hawk missile system and through development of the Air Defense Communications Platform. These developments will provide the Marine Corps an important, near-term operational TMD capability in an area that represents a lucrative target to theater ballistic missiles: amphibious points of debarkation. Such a near-term product improvement represents an important interim capability -- or bridge -- until the TMD programs deliver maritime and expanded ground-based TMD for protection of the amphibious force.

Near-term improvements also include enhancements to the PATRIOT Advanced Capability Level-2 (PAC-2), and both more accurate and faster launch detection and sensor cueing. PAC-2 upgrades include rapid, accurate, fire unit emplacement; a capability to remotely locate launchers from the radars that greatly expands defended areas; radar enhancements to improve ballistic missile detection; and missile guidance enhancement to extend PAC-2's defended footprint and increase lethality. The initial

radar improvements will complete fielding in Fiscal Year 1995, the same year improved missiles will begin to be fielded.

Improved launch detection will provide earlier targeting opportunities for active Theater Missile Defense elements and earlier warning for missile defenses and counterforce operations. Improved launch detection is achieved by fusing data from sources like the Defense Support Program satellites. BMDO is supporting the integration of three related early warning programs: the Air Force's Talon Shield, the Navy's Radiant Ivory, and the Army-Navy Joint Tactical Ground Station (JTAGS). The JTAGS test bed has been deployed to Europe providing an initial capability and Talon Shield at Colorado Springs, Colorado will reach an initial operational capability, including integration of Radiant Ivory data, in October of this year. These programs dramatically, and immediately, improve capabilities beyond Desert Storm levels.

Over-the-horizon Sensor cueing of a fire control radar extends the radar's detection range and increases the protected area. These enhancements are particularly important in the presence of jamming and weather clutter. Recent sensor cueing demonstration tests at White Sands Missile Range have been very successful in extending the range of PAC-2 fire control radar. Additional tests using multi-Service equipment are planned for Fiscal Year 1995. My objective is to make sure that we fully exploit the intrinsic capabilities of our existing air and missile defense systems providing improved defenses in the interim period prior to Core TMD program maturation and deployment.

To improve our interaction with the warfighter, we have initiated a Commanders-in-Chief Theater Missile Defense (CINC TMD) Experiments Program which inserts TMD into existing CINC exercises in order to increase the warfighters' understanding of TMD capabilities and to help them develop and refine their tactics. CINC TMD experiments have been conducted by the European Command, Central Command, and Pacific Command. Experiments are planned for Atlantic Command as part of its preparation for Joint Task Force 95. Additional CINC TMD exercises are being planned for Fiscal Year 1995.

#### **Core TMD Programs:**

As I noted above, the BUR determined that three TMD systems were of such critical importance as to constitute the "core" TMD effort and, therefore, a central focus of our TMD effort includes this Core set

of TMD systems.

It is vital to understand that the theater ballistic missile threat is complex, and cannot be addressed by any single TMD system. Theater missiles currently exist in a variety of ranges from hundreds to thousands of kilometers. They deliver a variety of lethal warheads, and are located in numerous and diverse geographic locations. Recognizing that there are important policies being pursued to limit further proliferation of these weapons, reliable intelligence estimates nevertheless, forecast qualitative and quantitative growth. Without developing and fielding a responsive mix of advanced TMD systems, theater ballistic missiles will continue to threaten U.S. forward deployed forces, and our friends and allies.

**Patriot Advanced Capability Level-3 (PAC-3)** - While the PAC-2 was used with some success against the modified Iraqi Scud missiles during the Gulf War, the immediacy of the tactical ballistic missile threat strongly supports the rapid development and deployment of the PAC-3 missile defense system. PAC-3 will provide greater lethality, range and accuracy, and more effective capability against tactical ballistic missiles. PAC-3 will include an improved fire-control radar and a new interceptor missile. I would like to note that the Department's Defense Acquisition Board is scheduled to complete selection of the interceptor missile for PAC-3 on April 21, 1994. To date, the Army has recommended that a new hit-to-kill missile (ERINT) is the appropriate candidate. However, prior to the DAB, the Department is sponsoring an independent review to insure that the best technical solution was recommended. During its last two flight tests, the ERINT missile successfully intercepted its targets, one of which carried a simulated countermeasure payload. On the following page is a series of photographs depicting the first ERINT intercept test last November. We are requesting \$541.5 million in Fiscal Year 1995 in total for the PAC-3 program. This includes \$69.2 million for demonstration/validation efforts, \$217.2 million for engineering and manufacturing development, and \$255.1 million for procurement. Our plan is to fielding the first PAC-3 systems by Fiscal Year 1998.

**Navy Lower-tier TMD (AEGIS/Standard Missile Block IVA)** - In many instances, a naval TMD capability could be in place within a regional conflict area to provide TMD protection for land-based assets before hostilities erupt or before land-based defenses could be transported to the theater. For instance, our forces may have to fight their way into the theater, in which case naval combatants could provide important TMD coverage early in the

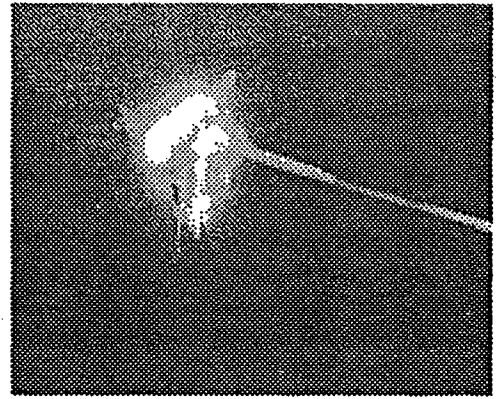
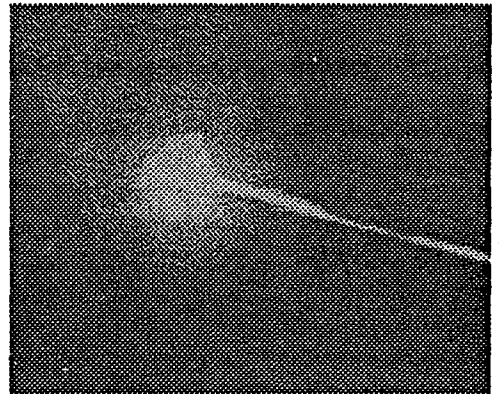
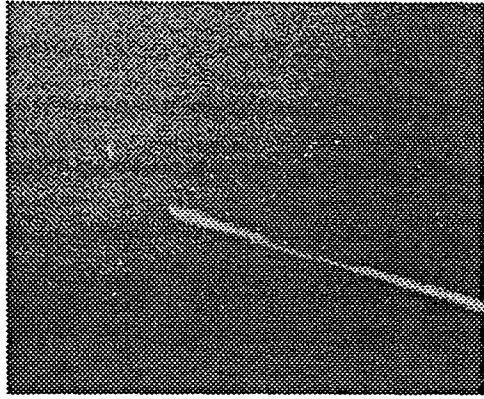
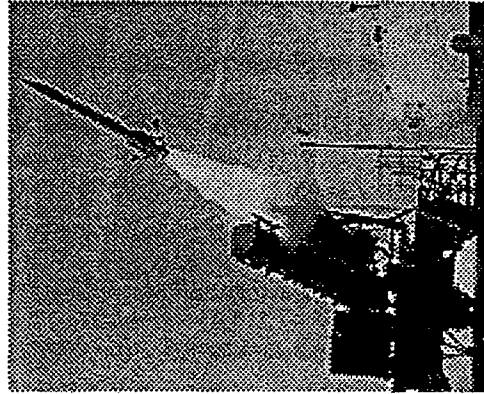
conflict. Therefore, the Navy and BMDO have been cooperatively working to develop an enhancement to the AEGIS/Standard Missile air defense system that would provide a tactical ballistic missile defense capability -- similar to that provided by the PAC-3 -- from the sea. The Navy currently deploys AEGIS cruisers and a growing number of destroyers equipped with the Standard Missile for air defense operations. The Standard Missile Block IVA program will capitalize on this existing infrastructure by fielding upgraded Standard missiles and software improvements to the AEGIS radar to provide a sea-based TMD capability. We are requesting \$194.039 million in Fiscal Year 1995 for the sea-based lower-tier program. Our plan is for the first AEGIS cruisers to be equipped with the sea-based lower-tier TMD system by Fiscal Year 1999.

**Theater High Altitude Area Defense (THAAD)** - As the most critical element in the "core," THAAD is the first TMD system which has been designed to fully match the existing threat. While modifications to present systems deal with many existing theater ballistic and cruise missile threats, the THAAD system allows multiple shot opportunities to intercept longer-range and more capable theater ballistic missile threats. Multiple shot opportunities, coupled with THAAD's longer range interceptor, will assure that theater ballistic missiles carrying weapons of mass destruction are neutralized at higher altitudes and longer ranges from the defended area than current generation defense systems. When deployed with either a PAC-3 or AEGIS/Standard Missile Block IVA as a lower defensive tier, THAAD would represent the centerpiece of a highly effective integrated defense of critical areas. We are requesting \$495.69 million in Fiscal Year 1995 for the THAAD program. Our plan is to develop a prototypical THAAD battery as a user-operational evaluation system (UOES) at the end of the Demonstration/Validation phase as early as 1996 for early operational assessment and possible deployment if a contingency arises. Provision of the UOES is a major thrust and priority of the TMD program. Deployment of the objective THAAD system is planned for Fiscal Year 2002.

**Theater Missile Defense Ground-based Radar (TMD-GBR)** - The TMD-GBR meets an immediate requirement for a more capable wide-area defense radar to provide surveillance and fire control support for the THAAD missile system and cueing support to lower-tier systems such as PATRIOT. The TMD-GBR utilizes state-of-the-art radar technology to accomplish its required functions of early warning, threat type classification, interceptor fire control, external sensor cueing, and launch and im-

**ERINT HIT-TO-KILL FLIGHT TEST**  
**NOVEMBER 30, 1993**

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pact point estimation. In particular, TMD-GBR will be able to provide a capability to perform threat classification against theater tactical ballistic missiles, and then, kill assessment after intercept. In addition to providing fire control support for THAAD and cueing support to the lower tier, the TMD-GBR also will have a residual capability against air-breathing threats. We are requesting \$173.2 million in Fiscal Year 1995 for the TMD-GBR program.

**Battle Management/Command, Control, Communications and Intelligence (BM/C3I)** - Perhaps no area depends more on "jointness" and multi-Service interoperability than BM/C3I. Accordingly, BMDO is taking an aggressive lead to establish an architecture that all the Services can build upon and is actively pursuing three thrusts to ensure an effective and joint BM/C3I. The first thrust establishes the capability for in-theater dissemination of launch warning information from space-based and other intelligence systems. The second thrust focuses on communications interoperability via the Joint Near Real Time Data Net. The third thrust supports upgrades to command and control centers of the Joint Staff and the Services. BMDO's acquisition strategy takes advantage of the large inventory of BM/C3 assets already available in the theater and maximizes the use of existing command center and communications capabilities. This approach minimizes costs and provides an enhanced early combat capability. Some modifications will be required to account for the unique features of TMD, but these can be accomplished at less cost, both in terms of time and financial resources. The primary focus will be on interoperability and the free exchange of improved warning and surveillance data. We are requesting \$34.1 million in Fiscal Year 1995 for these TMD BM/C3 activities.

#### **Advanced TMD Capabilities:**

Additional TMD efforts will involve concept exploration activities for a potential sea-based upper-tier, defense for maneuvering ground forces (Corps SAM), and a boost phase interceptor system. A decision to proceed with further development of these advanced and longer-term systems will be based on a rigorous acquisition decision process. An advanced concept will be considered for a new acquisition start based on national priorities, current and projected threat, maturity, capability, effectiveness, lethality, operational need, and affordability. This process will include advanced technology demonstrations to provide early capability and acquisition risk in addition to cost and affordability analyses. We project that the BMDO budget will support initiation of one new acquisition program in Fiscal

Year 1998.

**Sea-based Wide Area** - Sea-based concepts for wide area, higher altitude missile intercepts (upper tier) take advantage of the Vertical Launch System on naval combatants and offer very long-range intercept potential against theater ballistic missile threats. The sea-based systems, which could be among the first deployed TMD systems in a regional crisis, could provide extensive areas of protection. Sea-based wide area defense couples the combat system modifications developed for area defense with an exo-atmospheric interceptor. Sea-based upper-tier technologies include: THAAD, THAAD hit-to-kill vehicles, lightweight exo-atmospheric projectiles (LEAP), Navy Standard Missile air frames, and advanced solid axial stage rocket motors. The \$17.725 million requested in Fiscal Year 1995 will allow for continuation of concept definition, THAAD-AEGIS compatibility studies, and acquisition-related analyses.

**Corps SAM** - This new mobile air and missile defense system would protect Army or Marine maneuver forces against short-range ballistic missiles and advanced cruise missiles fired from any direction. In addition, we plan for Corps SAM to be more transportable, mobile, and have more on-line missiles per battery than the PAC-3. Corps SAM concepts have already been developed and preparation for an acquisition program start, along with concept maturation activities, are contemplated. The Department proposes \$17.725 million for Corps SAM in Fiscal Year 1995. A major initiative in international cooperative development is being contemplated for Corps SAM due to the similarity of military requirements between it and both European and Asian concepts.

**Airborne Boost Phase Intercept** - Ballistic missiles, regardless of range, can be targeted and countered during their boost phase. Therefore, concepts which employ airborne systems for attack of missiles in the boost phase offer the potential to destroy attacking missiles over enemy territory and would be effective particularly against advanced delivery system countermeasures. The Department is requesting \$61.1 million for kinetic energy Boost Phase Intercept programs in Fiscal Year 1995, leading to technology and operational concept demonstrations in Fiscal Years 1998 and 1999.

#### **Cooperation with the Allies**

The United States has long pursued active programmatic and policy dialogue with its European, Asian, and Pacific allies, as well as with Israel on ballistic missile defenses. In developing its BMD

program, specifically its TMD systems, the United States will be looking to cooperate with many of its allies and friends who share the problems arising from the proliferation of ballistic missiles and weapons of mass destruction. In both bilateral and regional fora, the Administration has stressed the operational importance of cooperative efforts with alliance partners and friends in development, production and follow-on support of weapons systems in general, and TMD systems in particular. In an era of declining budgets, cooperation is especially important. The Department will pursue opportunities to enhance the return on scarce research, development, and acquisition resources. Cooperation with allies and friends will be conducted in a manner consistent with U.S. international obligations, such as the ABM Treaty and the Missile Technology Control Regime guidelines.

Historically, a "core group" of allies and friends have been involved in the BMD program: NATO Countries, Australia, Japan, South Korea, and Israel. The BUR decision to emphasize TMD has tended to move our activities with allies from exclusively basic R&D toward development and procurement programs. We are exploring opportunities for cooperation with them that is consistent with our existing security relationships and guarantees.

The NATO Conference of National Armaments Directors (CNAD) recently established an Extended Air Defense/Theater Defense Ad Hoc Working Group (AHWG) composed of interested nations with resources to contribute to TMD. This group is chartered to exchange views on the tactical ballistic missile threat to the Alliance and to define future opportunities and methods of collaboration in the area of TMD. Participants in the U.S. chaired AHWG are: Canada, France, Germany, Italy, the Netherlands, and the United Kingdom. The U.S. is also participating in separate bilateral TMD working groups with France and Japan.

The Fiscal Year 1994 Defense Authorization Act established a special account in the U.S. Treasury designed to accept contributions of money from any nation or international organization for use by the Department of Defense in support of TMD programs. This element of potential foreign support or contribution to the U.S. TMD program is being discussed with our friends and allies. Their participation may include such contributions in the future in accordance with their budget approval process.

### Theater Missile Defense System Testing

I would like to take a moment to address for the Committee the impact of a provision in the Fiscal Year 1994 Defense Authorization Act. Section 237 directed that the Secretary "may not approve a theater missile defense interceptor program proceeding into the Low-Rate Initial Production (Milestone IIIA) acquisition stage until the Secretary certifies to the congressional defense committees that more than two realistic live-fire tests, consistent with section 2366 of title 10, United States Code, have been conducted, the results of which demonstrate the achievement by the interceptors of the weapons systems performance goals specified in the system baseline document. . . before the program entered engineering and manufacturing development. The live-fire tests demonstrating such results shall involve multiple interceptors and multiple targets in the presence of realistic countermeasures."

This provision requiring interceptor performance to be demonstrated solely through the use of live-fire testing will be exceedingly expensive and likely increase the acquisition time needed to get interceptor programs into production and fielded. Augmenting live-fire testing with modeling and simulation has been shown to provide a less expensive and fully validated method for predicting interceptor performance. My staff estimates that compliance with this provision could incur unforeseen costs of about \$400 million for Fiscal Years 1995 through 1999 to conduct multiple simultaneous engagements for TMD interceptor programs. More accurate cost estimates will be available as the TMD programs mature and actual testing costs are determined.

I would like to note that the requirement for demonstrating interceptor performance to achieve multiple shot engagements involving multiple interceptors and multiple targets is traditionally conducted during Initial Operational Testing and Evaluation (IOT&E). The IOT&E is conducted at the end of the engineering manufacturing and development (EMD) acquisition phase prior to entering the production and deployment phase of Milestone III. Section 237 would require BMDO to conduct such tests prior to beginning Low Rate Initial Production. The rationale for conducting multiple shot engagements during IOT&E is that it provides time for system maturing during the EMD acquisition phase to obtain a level of performance capability necessary to conduct multiple shot engagements. Under section 2399 of title 10 United States Code, the Department is already required to report to Congress on TMD interceptor performance. The Director of Operational Test and Evaluation, Office of the Sec-

retary of Defense, prepares and submits a Beyond Low-Rate Initial Production Report to the Secretary of Defense, Under Secretary of Defense (Acquisition) and the Congressional Defense Committees. This report will confirm that adequate testing has been conducted in an operational environment consistent with what the interceptor will be expected to operate in when fielded to evaluate system performance prior to committing to a production decision.

A legislative proposal to amend Section 237 of the Fiscal Year 1994 Defense Authorization Act to expand the methods of test and evaluation used to demonstrate interceptor performance has been included in the Department's Omnibus Bill proposal for the legislative program for the second session of the 103rd Congress. I would urge the Committee to support this proposed amendment. I would like to work with the four Defense Committees to amend Section 237 in a manner that simultaneously addresses Members' concerns while also allowing the Department to quickly and affordably develop and deploy effective Theater Missile Defenses.

### **National Missile Defense Technology Readiness**

In light of the intelligence assessments regarding the long-range ballistic missile threat to the United States, the BUR reoriented the National Missile Defense program into a Technology Readiness program, structured to provide the ability to rapidly develop and deploy ballistic missile defenses for the United States should a threat emerge in the future. Our NMD program provides for improved capability of BMD components in a structured and evolutionary manner. The Department's reorientation of the NMD program is consistent with Fiscal Year 1994 Congressional guidance to "conduct a research and development program to develop and maintain the option to deploy" a defense for the United States.

The Department requires funding the NMD Technology Readiness program at \$587 million in Fiscal Year 1995 and approximately \$600 million per year through the FYDP as a hedge against the emergence of a long-range threat. The NMD program is focused and consistent with the Congress' directions, as outlined in the Conference Report accompanying the Fiscal Year 1994 Defense Authorization Act, that "priority funding . . . shall be placed on those projects aimed at resolving the key system-level technical challenges associated with a limited defense system." Further, NMD efforts "lead to reduced lead-times for deployment in response to a future threat." The NMD Technology Readiness Program must be highly focused, and not allow funds to be "expended across a broad array of 'technology development'

activities."

In response to the Bottom-up Review and Congressional guidance, I have established a series of "Epochs" beginning in Fiscal Year 1995 to incrementally increase our technological capability and reduce the lead time to deploy a National Missile Defense, should we be directed to do so. The baseline NMD architecture as described in the Fiscal Year 1994 Report to Congress will remain the guiding technical foundation for the NMD effort, with the epochs representing "way points" for DoD to most effectively react in a timely manner to unexpected threat developments and deployments. The initial Epoch will focus on resolving the key technical challenges we face to develop an initial capability. Key activities will include improving the exo-atmospheric kinetic kill vehicle (EKV) for a Ground-based Interceptor, as well as conducting on-going contingency deployment planning. The EKV effort will evolve from the highly successful ERIS technology and GBI concept definition program and leverage both the LEAP and THAAD efforts. The space and missile tracking system (Brilliant Eyes) program will continue to develop demonstration satellites, while technology for an NMD Ground-based Radar will evolve from the TMD GBR program.

Later Epochs will build on the technical progress made in the first Epoch. However, a key emphasis of these Epochs will be executing activities specifically designed to counter a more capable threat while reducing our lead time to deploy should a decision be made to do so. Our technical activities will include continued testing of the EKV to reduce technical risk and increase reliability and confidence in the system, and the integration of a radar technology demonstrator at the Kwajalein Missile Range made from components of the TMD demonstration/validation Ground-based Radar. A space and missile tracking system flight demonstration, developed as an interim step towards a fully mission capable system, will be conducted.

The NMD Technology Readiness Program must be structured in such a way as to be flexible to changes in the environment. Depending on technical progress and the emerging threat to the United States, we must adjust the content of the technology readiness program to be responsive to national requirements.

The incremental approach to increasing our technical capability and decreasing our lead time to deploy provides a low risk, affordable, and methodical approach to address our technical, deployment readiness, and funding issues. This approach does

not include planned entry into full system development, nor is it a commitment to deploy. It is, I believe, a prudent approach to develop and protect an evolving deployment option should fielding be required in the future.

### **Space and Missile Tracking: Needed for Both NMD and TMD**

Missile tracking satellites (Brilliant Eyes) offer the potential for significantly enhancing the capabilities of both NMD and TMD systems, as their contributions cut across all BMD systems. Missile tracking satellites would provide an autonomous missile tracking capability for a number of regions of interest, or if cued by global surveillance satellites, they could observe missiles soon after their launch. The unique contribution of these missile trackers is high-precision midcourse data, which allows interceptors to be launched very early. This means that intercept ranges and shot opportunities would increase, particularly for long-range, wide-area TMD defensive systems such as THAAD, sea-based upper-tier and for NMD Ground-based Interceptors. This capability is not provided by any other current or planned space-based system.

Should a National Missile Defense deployment decision be made, strategic missile tracking satellites could be deployed to provide support to a single site NMD system. With the development of the upper-tier TMD weapons, more accurate and timely threat track data than currently available will be needed to take full advantage of these interceptors' capabilities. The Brilliant Eyes midcourse tracking system is able to provide this important data.

### **BMD Advanced Technology**

While the Bottom-up Review established TMD and NMD as our first and second priorities, it clearly established the requirement for a focused, albeit lean, technology base effort. This is because the Department recognizes that technology simply does not stand still. This is true of both offensive and defensive technologies. Threatening offensive systems, against which ballistic missile defenses are designed, may not only proliferate in numbers but may also tend to become more sophisticated over time. Similarly, defensive technologies can become more sophisticated and capable as our RDT&E experience broadens our technical horizons. To maintain the vitality of a BMD architecture over time, therefore, technologies must be developed to provide options for improvements to planned and deployed defenses, giving them new capabilities to respond to a range of needs. Among the most important of these needs are:

(1) capabilities to meet potentially straightforward countermeasures; (2) ability to cope with threat evolution that complicates an effective defense; and (3) affordability and sustainability improvements as military users gain operational experience.

To prepare to meet these future needs, advanced technology programs will invest in high leverage technologies across a reduced set of thrusts which include: kinetic energy interceptors; advanced surveillance and targeting sensors; directed energy defenses; innovative science and technology; and small business innovative research efforts. The high potential payoffs include:

- o boost phase TMD intercepts that assist in defeating tactics and warhead deployments designed to counter midcourse and terminal tier defenses;

- o continuous coverage, to provide defensive capabilities against surprise attack or during early stages of rapidly escalating conflicts;

- o exo- and endoatmospheric intercepts with a high probability of kill at lower cost, thus expanding battle space, enlarging defended areas, and overcoming simple countermeasures; and

- o multi-sensor detection, tracking and discrimination that extends through the missile flight path and supports assured targeting.

Additionally, funding is proposed for activities that will provide much needed research into potential countermeasures, threats and threat development, civil engineering, architecture and studies, technology transfer, and test and evaluation support. To support these technology efforts, the Department is requesting a total of \$409 million in Fiscal Year 1995.

Over the past few years, in compliance with Congressional direction and in consonance with the Bottom-up Review findings, the Department has significantly restructured the BMD technology program. As required by the Fiscal Year 1994 Defense Authorization Act, the Secretary of Defense will soon forward to the four Defense Committees a report that identifies those far-term follow-on technology programs that will be transferred to either ARPA or the Services, and those that should be retained in the Ballistic Missile Defense Organization.

I would like to note that today only those programs that either directly support future TMD and NMD system developments, or hold significant promise for advanced BMD systems, remain under the

management responsibility of BMDO. In instances where those programs have significant collateral applications to other military missions, technical information is shared with the interested military department. The ongoing advanced technology program supports the Department's long term commitment to continue, at a stable level, critical research on technologies that build on work to date in order to prepare for more capable and affordable active Ballistic Missile Defense systems

### **The BMD Program and the ABM Treaty**

While all of BMDO's testing and development activities will remain compliant with the "narrow" interpretation of the ABM Treaty, the Department is planning to develop and deploy theater/tactical missile defense systems to counter the projected threat to our forces abroad and to our allies. Although the objective of the ABM Treaty is to limit defenses against strategic ballistic missiles, there could be conflicts between the Treaty and the development and deployment of some of the theater missile defense systems under consideration. The Administration is currently studying this issue and is developing its negotiating strategy consistent with the Missile Defense Act, as modified, as it engages in discussions with the former Soviet Union in the Standing Consultative Commission (SCC).

To assure compliance, the Department has in place an effective process under which key offices in DoD are responsible for overseeing BMD compliance with all the United States arms control commitments. Under this process, the DoD ensures that the implementing program offices adhere to DoD compliance directives and seek guidance from offices charged with oversight responsibility, and certify internal compliance periodically. At this point I would like to point out that currently no experiment has been approved that is not in strict conformity with the "narrow" interpretation of the ABM Treaty.

The Fiscal Year 1994 Defense Authorization Act directed the Secretary of Defense to review six theater missile defense systems or system upgrades and the Brilliant Eyes system to "determine whether the development, testing, or deployment of that system or system upgrade would be in compliance with the ABM Treaty". The Department is complying with the Act's direction. We did not and will not exceed the Congressionally-mandated limitations on funding prior to the submission of these reports. These reports will clarify the status of these systems relative to the ABM Treaty, as we seek to test, and develop and deploy these much-needed systems while observing the limits of the ABM Treaty.

### **Conclusion**

In closing, I would like to point out that Fiscal Year 1995 is a critical year for Ballistic Missile Defense programs. Last year the program absorbed a severe budget reduction. Quite frankly, it cut the BMD program to the bone. If the Department is going to field effective Theater Missile Defenses by the end of this decade -- and protect the option to develop defenses for the United States -- this program cannot sustain similar reductions. As I noted earlier, the Bottom-up Review recommended a prudent funding profile for the BMD program starting in Fiscal Year 1995 and continuing in the out years. I think it is important to note that the peak budget request in the Fiscal Years 1995 to 1999 FYDP does not exceed the budget appropriated by Congress in Fiscal Year 1992 for this program.

The Department has assessed the strategic and theater ballistic missile threats, exhaustively reviewed program options, made some very difficult acquisition decisions, and selected a prudent and affordable program that will develop and deploy effective theater missile defenses, while both preserving an option to defend the Nation as a strategic threat emerges and preserving an advanced technology program. However, it is important to note that we no longer have a robust program in directed energy research for lasers and particle beams. We no longer have funds for a space-based interceptor program called Brilliant Pebbles. We no longer have the resources to carry programs and experiments that, while testing scientifically important technologies, have not allowed us to focus dollars upon putting "rubber on the ramp." While I realize that each of these and many other programs had many important supporters -- whether in Congress, industry, the national laboratories, NASA, or the Department of Defense -- the bottom line remains we simply cannot afford to hold onto everything we once pursued. The BMD program today is an intensely focused effort to develop and deploy effective theater ballistic missile defenses as soon as possible. The remaining BMD resources for National Missile Defense and Advanced Technology are very limited and cannot be decremented without serious risk either to our options for strategic defense or our ability to respond to threat modernization.

I think most Members will agree with me when I say that the Fiscal Year 1995 BMD program is responsive to a time of reduced resources. Moreover, I believe this program is directing its efforts on the most pressing ballistic missile threats of today and the near future. While we are working diligently to

field enhanced and new TMD systems as soon as possible, we will simultaneously protect our options -- by developing and maintaining the needed technologies -- to deploy a National Missile Defense system should the threat arise and respond credibly to an evolving threat.

I appreciate that this is but one program within the Department, and that there are many other valid demands on the Federal budget. Vital U.S. counterproliferation programs include diplomacy, dissuasion and deterrence, but active ballistic missile defense must remain as an insurance policy if these other measures fail. To this end, I assure you it is a priority of the Department to field effective missile defenses so that in a future conflict, our Servicemen

and women will not be left vulnerable to the threat of ballistic missile attack and the weapons of mass destruction they may deliver. We want to assure that in a future conflict an adversary cannot threaten to use his ballistic missiles to undermine our ability to build and maintain coalitions, and cannot launch missile strikes that would inflict severe damage upon our military forces arrayed against him.

I look forward to working with the Members of this Committee, as well as the entire Congress, to make highly effective and affordable ballistic missile defenses a reality.

Mr. Chairman, that completes my opening statement. I am ready for your questions.