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Statement by
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Before the
House Armed Services Committee

Missile Defense

March 15, 2005

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05-C-042

Mr. Chairman, distinguished members of the committee, I am pleased to have the opportunity to speak with you about the Ballistic Missile Defense System (BMDS) test program. As you requested, I will talk about the status of the major test activities, and our relationship with the Missile Defense Agency. Given the emphasis placed on fielding a limited defensive capability, my remarks will focus primarily on the two elements of the BMDS that are the principle contributors to this early capability – the Ground-based Midcourse Defense System (GMD) and the Aegis Ballistic Missile Defense system. I will conclude with a few observations about progress towards testing the other theater defense systems.

I am encouraged by several developments over the last year. The Missile Defense Agency (MDA) has constructed a testbed infrastructure and populated it with prototype missiles, six in Fort Greeley, Alaska, and two at Vandenberg Air Force base, California. The testbed is a major accomplishment and addresses much of the prior criticism from my office regarding the lack of operational realism for testing the GMD system. The testbed supports integration testing, ground testing, and flight testing in more operationally stressing test geometries and permits military operators to control the system.

Early in development, capability demonstrations and flight testing focused on the feasibility of hit-to-kill technology. The BMDS testbed significantly improves the test infrastructure, allowing more operational assets to participate in testing and more operationally realistic end-to-end test scenarios. Similarly, the testbed allows integrated ground testing, which provides the best opportunity for assessing operator training and performance.

To define the testbed operational capabilities, MDA established engagement sequence groups that describe defensive capabilities in terms of available sensors, command and control networks, and interceptors. MDA defined the first increment of this capability,

called Limited Defensive Capability, by four engagement sequence groups to evaluate defense of the 50 United States against a limited attack from North Korea. This has been a useful way to coordinate system development, testing, activation exercises, and the development of tactics and procedures. Integrated ground test results to date indicate the testbed has the potential to defend against a limited attack, under certain conditions. However, difficulties in the flight test program have delayed the confirmation of intercept capability using the testbed.

Recent flight test failures in Integrated Flight Tests 13C and 14 (IFT-13C and IFT 14), indicate the need to further develop and mature BMDS hardware and software. In IFT-13C, the system aborted the launch of a missile when its internal checks were not satisfied. However, the system performed well from target launch, until the system properly aborted the interceptor launch. The operational testing community identified eighteen operational objectives that addressed operational realism in IFT-13C. Ten of these objectives were partially or completely met, and five objectives were not met due to interceptor abort. Sea conditions off Alaska prevented Aegis at-sea participation in this test, resulting in the deferral of three test objectives to later test events.

In IFT-14, the system performed as expected until it detected a problem in the interceptor launch sequence and aborted launch. One of the last steps in the launch sequence is to open the silo doors and retract the horizontal stabilizers that hold the missile in place. In this instance, sensors indicated that one of the three stabilizers had not retracted, causing the missile to abort launch.

The system again performed well from target launch, until the system properly aborted the interceptor launch. Of the eighteen test objectives addressing operational realism in IFT-14, ten of these objectives were partially or completely met, three objectives were deferred due to lack of Aegis at-sea participation, and five objectives were not met due to interceptor abort.

In both IFT-13C and -14, the target launched properly and presented a good target scene to the BMDS. Further, the Cobra Dane Upgrade Surrogate, which uses GPS data from the target complex and adjusts that information to simulate the radar's capability to detect and tract the target, worked properly. However, from an operational mission perspective, these tests are failures. In an operational mission using the full-up testbed, it is possible that other missiles would have been available for the user to select and launch against the target. In fact, during integrated ground testing, MDA has successfully simulated the capability of the system to fail-over to another missile.

After both IFT-13C and IFT-14, MDA acted quickly to complete a root cause analysis, and incorporate the fixes. MDA did not move forward with planning IFT-14 until they identified the root cause of the IFT-13C failure and verified the corrective action by both analyses and ground testing. I agree with this approach that General Obering is taking. I applaud his commitment to a "test-fix-test" philosophy that results in an event driven test program.

It should be noted that PATRIOT PAC-3 and Aegis missile defense systems have been in development since the early 1990s and are now showing the maturity that has accrued from a comprehensive test-fix-test program. Conversely, the Ground-Based Missile Defense (GMD) system has only been in development about 5 years. These types of setbacks are not atypical for a program in development, and they contribute to maturing the system.

MDA has made important progress in documenting their test planning activities. In November, DOT&E approved MDA's Integrated Master Test Plan (IMTP). We are working with MDA and the Operational Test Agency team to increase operational realism through the test planning process, consistent with the maturity of the BMDS testbed. The IMTP provides a framework for identifying and integrating test requirements from the BMDS elements, MDA, the Operational Test Agencies, and DOT&E. As a top-level planning document, it identifies criteria for operationally realistic testing that apply to all system-level test events. It also identifies a series of

planned tests that should demonstrate the progress towards developing and maturing the BMDS capability.

In a developmental program that is employing a test-fix-test philosophy, test plans are necessarily fluid. My office and the OTA team are working with MDA to identify the impact of schedule changes on achieving the test objectives in the IMTP. The maturity of the testbed will not yet support traditional, full end-to-end operational testing. For example the Sea-Based X-Band Radar, which is not available until the end of this year, is essential to provide mid-course discrimination and track updates. Also, the testbed is limited to one-on-one intercepts against target missiles, and the crew still is limited on their control over the system.

MDA is reviewing the Live Fire testing programs of the BMDS elements in order to coordinate efforts and provide a consistent approach to assessing system lethality. This will ensure that data from earlier tests and analyses are used to maximum advantage, and that future efforts focus on the most critical data needs. As the BMDS system moves through development and maturation, it is essential that we continue our commitment to understanding the lethality of the system against the threats associated with each increment of capability.

Last year, MDA was working toward a goal of delivering limited defensive capability by the last quarter of calendar year 2005. In September, they began a "shakedown" period, where they systematically activated and tested the integrated system to identify potential interoperability and performance problems. These exercises provided valuable insights and helped develop effective procedures for transitioning the system to alert. In order to support potential activation of the BMDS for Limited Defensive Operations, MDA, the Operational Test Agency team, STRATCOM, and DOT&E prepared independent assessments of BMDS capability.

While these assessments varied widely, the process of developing and coordinating these analyses provided an excellent opportunity to exchange information and perspectives.

Delays in accomplishing the goals of the test program have limited the system-level test data available to support capability assessments. Over the last year, military users have participated in all ground test events.

The Aegis BMDS provides forward based sensor capability to the BMDS testbed. The first flight test to engage the target using Aegis track data is planned later this year. Aegis BMDS is making progress in demonstrating end-to-end capability to defeat short-range ballistic missiles. The recent successful flight test of the Aegis BMDS using the Standard Missile-3 (SM-3) reflects significant progress. The Aegis BMDS has demonstrated that it can intercept a unitary, short-range target in the ascent and descent midcourse phases of flight. The operational realism of the Aegis test program has been steadily increasing. The Navy Operational Test Force has worked closely with the Aegis BMDS element to make this happen. They have provided observations on operational issues during early developmental tests and have introduced more operational realism into recent tests. For example, the Aegis operators did not have prior information about the target launch.

Other elements of the BMDS clearly reflect the success of MDA's "test-fix-test" philosophy and willingness to restructure program goals when appropriate. In early 2004, MDA recognized the major technical challenges still faced by the Airborne Laser program. MDA restructured the ABL program to focus on developing and demonstrating specific technical goals annually, instead of pursuing future development. This resulted in the successful "first light" of the High Energy Laser through all six modules in the ground aircraft mockup System Integration Laboratory. It also resulted in the successful first flight of the aircraft with the laser turret and Beam Control/Fire Control installed.

The Theater High Altitude Terminal Defense system (THAAD) also accomplished extensive component and subsystem level testing during 2004. The THAAD launcher demonstrated the ability to roll on/roll off a C-17 transport aircraft. The program successfully performed a Short Hot Launch of a missile round loaded with only a portion of the normal amount of propellant. This test verifies the firing circuits and increases

confidence in the success of first flight-test later this year. A new THAAD radar arrived White Sands Missile Range in March 2004 for testing. The radar has successfully tracked targets of opportunity, including PATRIOT PAC-3 flight test missiles and targets.

The performance of the Joint Operational Test Agency team is nothing less than outstanding. Their continuous involvement and characterization of the BMDS provides important insight into the BMDS operational capability. The entire operational test and evaluation community has access to all test planning and execution meetings, test data, and data analyses. General Obering and I meet routinely, and my staff coordinates daily with MDA and the element offices.

In summary, MDA is executing an event driven, test-fix-test program. The operational testing community is working with MDA to incorporate operational objectives and realism into each test to the degree possible. MDA and the operational test community are planning tests that address the requirement in the FY 2005 National Defense Authorization Act for an operationally realistic test in FY05.

That concludes my opening remarks and I welcome your questions.