Building A Capability-Based Missile Defense Force

5 MAR 03

MG Peter C. Franklin, USA
Deputy Director
Missile Defense Agency
CHARACTERISTICS OF AN EFFECTIVE BALLISTIC MISSILE DEFENSE SYSTEM

- Early Intercepts Are Good
- Layered Defense Is Better
- Land-basing Provides Continuous Coverage (24/7)
- Mobile-basing Provides Flexibility
- Space Provides Continuous Global Coverage
- Geography Counts
- Defend U.S., Allies And Friends
ACHIEVING A LAYERED DEFENSE AGAINST ALL RANGES OF MISSILES

- **Short Range Ballistic Missile (SRBM)**
  - Thousands Built, Widely Available
  - Commonly Land-Launched
  - Sea-Based Launch Demonstrated By Iran, India

- **Medium Range Ballistic Missile (MRBM)**
  - Many Exist In Third World
  - More On The Way

- **Intermediate Range Ballistic Missile (IRBM)**
  - A Few Exist In Third World
  - Not Yet Tested As Ballistic Missiles

- **ICBM**

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Range (km)

- 0
- 600
- 1,300
- 5,500
- 10,000

Altitude
MISSILE DEFENSE PROGRAM DIRECTION

- Establish A Single Program To Develop An Integrated System Under A Newly Titled Missile Defense Agency (MDA)
- Apply A Capability-Based Requirements Process For Missile Defense
- Enable The Services To Field Elements Of The Overall BMDS As Soon As Practicable

- The President Directed The Initial Fielding Of A Limited BMD Capability In 2004 And 2005
- Director, MDA Announces Intent To Leverage The Test Bed Into Operational Capability
BMD EVOLUTIONARY DEVELOPMENT

- Plan
- Execute
- Adjust

Evolutionary Spiral Development

- Add New Capability Based On Technical Maturity
- Upgrade Existing Capability – Insert Technology
- Evolve Requirements
- Procure Additional Force – Enhance Capability
- Extend To Allies And Friends When Appropriate

Feedback


Block 2004
Block 2006
Block 2008
Block 2010
Block 2012
Block 2014
PRESS BRIEF – 13 JULY 2001

MANAGING THE BALLISTIC MISSILE DEFENSE EFFORT AS ONE PROGRAM

<table>
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<th>Year</th>
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<td>Decision Points</td>
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**Deploy, Accelerate, Truncate or Modify**

- **Boost**
  - Airborne Laser
  - Space Laser Experiment
  - Space Hit-to-Kill Experiment
  - Sea Boost

- **Midcourse**
  - Sea-based
  - Ground-based
  - AEGIS Test

- **Terminal**
  - Ground-based

- **Sensors**
  - Shemya X-band
  - Sea-Based X-band
  - Both
  - SBIRS-Low
SUMMARY OF BALLISTIC MISSILE DEFENSE RDT&E PROGRAM

• Aggressive RDT&E Program
  - Without Commitment To A Single Architecture
  - With No Procurement Until Ready
  - Employs Parallel Risk Reduction Paths To Mitigate Potential Cost/Schedule/Performance Problems
  - Capabilities Based Vs. Requirements Based
  - Robust Testing

• Multilayer, Multi-faceted Development Program
  - Protect U.S., Allies, Friends And Deployed Forces
  - Managed As One System
  - Explores Air, Sea, Ground And Space Concepts
  - Designed To Intercept Any Range Of Threat
  - Designed To Intercept Threat In Boost, Midcourse, Terminal Phase

• Structured To Permit Test Asset For Operational Use On An Interim Basis, If Directed
OVER THE PAST TWO YEARS

• Withdrawal From ABM Treaty Enables Effective Missile Defense

• Evaluated And Made Changes To Program Of Work Based On Progress
  - Initiated Fielding Of One Element – Patriot Advanced Capability-3 (PAC-3)
  - Terminated One Element – Navy Area Defense
  - Restructured One Element – Space-Based Infrared System (SBIRS)-Low
  - Terminated The 2012 Space-Based Laser Experiment – Restructured To Technology Effort
  - Continued Progress On All Other Elements

• Testing Over Past Two Years Providing Confidence To Proceed
  - 4 For 5 Long Range Ground-Based Intercepts
  - 3 For 3 Short-Medium Range Ship Based Intercepts
  - 5 For 7 Short Range Ground-Based Intercepts (PAC-3) (Total 11 For 14)
  - ABL First Flight (Without Laser Installed)
CURRENT TEST INFRASTRUCTURE

Defense Support Program

Upgraded Early Warning Radar

Kwajalein
- Ground-Based Radar Prototype
- Ground-Based Interceptor

Hawaii Test Facility

Beale AFB

Vandenberg AFB - Target
BALLISTIC MISSILE DEFENSE SYSTEM TEST BED

Key: Current

- Common Test Bed For Ground- And Sea- Based Elements
- Expandable To Boost And Terminal Segments
- Adds Realism To Test
- Allows Multiple Engagements
- Adds Additional Intercept Areas
- Enhances Ground Test Capability
- Adds SBIRS High And STSS Testing

Defense Support Program

- Aircraft Launched Target
- Ground-Based Radar Prototype
- Ground-Based Interceptor (Dual)
- Vandenberg AFB Target (Dual)
- Ground-Based Interceptors
- Pacific Missile Range
- Added Intercept Areas
- Upgraded Early Warning Radar
- Long-Haul Fiber Communications Network
- STSS
- STSS Viewing
- Cobra Dane
- AEGIS (Sensor)
- Hawaii Test Facility
- Fort Greely
- K
- K Target

Vandenberg AFB

ms-104721 / 022703
“I have directed the Secretary of Defense to proceed with fielding an initial set of missile defense capabilities. We plan to begin operating these initial capabilities in 2004 and 2005, and they will include ground-based interceptors, sea-based interceptors, additional Patriot (PAC-3) units, and sensors based on land, at sea, and in space.”
EVOLUTIONARY CAPABILITIES
DIRECTED BY THE PRESIDENT

  - 20 Ground-Based Midcourse Interceptors At Test Bed For Long Range Threats;
  - Up To 20 Sea-Based Interceptors For Medium Range Threat;
  - Sensors Based On Land, Sea and In Space;
  - Upgraded Early Warning Radars In UK (2005) And Greenland (2005-2006);
  - Additional Patriot PAC-3 Units For Short To Medium Range Threats

• Potential Improvements (2006 And Beyond) May Include
  - Field More Ground And Sea-Based Interceptors And PAC-3 Units;
  - THAAD And Airborne Laser Systems;
  - Family Of Boost-Phase And Midcourse Hit-To-Kill Interceptors;
  - Enhanced Sensor Capabilities;
  - Development And Testing Of Space-Based Defenses
AEGIS SEA BASED INITIAL CAPABILITY

USS LAKE ERIE Dedicated Test Bed

Command & Control Tactical Data Link Networks

Aegis Weapon System

SPY-1 Radar

Maintenance & Training

Vertical Launching System

STANDARD Missile (SM-3) Four Stage Hit-to-Kill Missile

Summary Of Initial Capability Against S/MR Threats

3 Aegis Launch Ships, 10-20 SM-3 Missiles

15 Aegis SPY-1 Sensor Ships

USS LAKE ERIE

Vertical Launching System

Maintenance & Training

Command & Control Tactical Data Link Networks

Aegis Weapon System

SPY-1 Radar

STANDARD Missile (SM-3) Four Stage Hit-to-Kill Missile
FORT GREELY PROGRESS

Summer 2001

October 2002

Richardson Highway
Pipeline
Interceptor Storage Igloos
Missile Assembly Building Site
Construction Entry
DSCS Site
Entry Control
Electrical Substation
Site Main Entry
Lower Firebreak
Middle Firebreak
Missile Pad
Mechanical & Electrical Building
Utilidor
Readiness & Control Building
Utilities Building
IDT Site

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FORT GREELY PROGRESS

Missile Field Layout
PATRIOT PAC-3

Summary Of Initial Capability
By End Of 2005

- 42 Fire Units
- 42 Radars (TPS-65)
- 50 Launchers
- 346 Missiles
MAINTAIN THE MOMENTUM OF A ROBUST AND COMPREHENSIVE TEST PROGRAM

• Over The Past Two Years (2001 And 2002) We Conducted 55 Flight Tests Including 17 Intercept Tests And 60 Ground Tests Of The BMDS And Its Elements

• Over The Next Two Years We Plan To Conduct An Additional 68 Flight Tests And 58 Ground Tests

• A Wide Variety Of Wargames, Exercises And Seminars

Our Long Term Development Program Maintains A High Tempo Of Increasingly Complex Ground And Flight Tests
FUNDING SUMMARY

• The Budget Request For Continuing BMDS Development And Test Program Is Expected To Remain Stable At $8+B Per Year

• Initial Capability Evolutionary Approach For 2004-2005 Requires An Increase In Funding Of $1.5B Over Two Years

• Navy Has Assigned USS LAKE ERIE As An Operational Ship Dedicated To Missile Defense Agency’s Use For Consideration Of $386M In Outyear Budgets

• Accelerated Production Of PAC-3 Has Been Approved

• Decisions On Further Additions To Evolutionary Capability Will Be Based On Progress, Effectiveness, And The State Of Threat. They Will Be Funded Only When Directed
TRADITIONAL PROCESS AND MISSILE DEFENSE

• Traditional ORD-Based Acquisition Is Well Designed For Procurements Involving
  - Well-known Technologies
  - Proven Systems
  - Sizeable Production Runs
  - Established Operational Experience

• None Of These Conditions Yet Exists For Missile Defense Which Needs
  - Threat Defined More Broadly Within Capability Ranges
  - Flexibility To React As Threat Changes, Technology Improves
  - Trade-offs During Development Between Possible Capabilities
CAPABILITY BASED APPROACH OFFERS EARLIER DECISION POINTS TO FIELD CAPABILITY

Threat/ORD Based Approach

Capability Based Approach

10 Years

2 Year Blocks

100% Solution

Warfighter Assessment of Future Need

No Capability
MISSILE DEFENSE STAKEHOLDER RELATIONSHIPS

Specific Roles For The Team

- Service BoD
  - Army (4)
  - Navy (3)
  - Air Force (3)
- Liaison Office
  - Multi-mission
  - Interface Mgmt

- BMDS / User Interface
- Joint Warfighter Support
  - Exercise Support
  - Contingency
  - Planning
  - Fielding And Logistics

- Operational Capabilities Description
- Force Structure Integration
- Joint CONOPS
- Ops Concept Team
- ILST
CAPABILITY-BASED ACQUISITION SUMMARY

• Motivation
  - Get Ahead And Stay Ahead Of The Threat
  - Flexible Strategy To Take Advantage Of What Can Be Done
  - Place Capabilities “In Play” Sooner

• Capability-Based Acquisition Is Flexible – Iterative Process Provides Basis For And Opportunities To
  - Insert New Ideas And Capabilities
  - Make Decisions To Accelerate, Continue, Modify, Or Truncate Activities

• Capability-Based Acquisition Is A Structured And Disciplined Process
  - Iterative Process Converges To Establish Expectations
  - Expectations Are Documented And Progress Is Tracked
  - Baseline Is Controlled
    – Changes Processed Through Change Control Board
    – Changes Executed Through ECPs And Contract Modifications
SUMMARY

• Aggressive RDT&E Program On Track

• Testing And Analysis Gives Us Confidence In Taking Initial Steps – Hit-To-Kill Works

• President’s Direction For Initial Capability Of Evolutionary Approach Executable With Additional Funding Of $1.5B Over Two Years

• We Will Continue RDT&E To Build Confidence And Prepare To Add To Evolutionary Capability

• Capability-Based Force Planning – We’re Doing It