NDIA Guns and Missiles Conference
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My Goal For This Brief Is To Give You A High Level Exposure To:

- Surface Navy’s role in the Maritime Strategy
- Shipbuilding and Modernization
- New Surface Ship Technologies

Surface Navy: Ready and Relevant
Maritime Strategy

“Our challenge is to apply seapower in a manner that protects U.S. vital interests even as it promotes greater collective security, stability and trust.”

- ADM Gary Roughead, CNO

- Forward-deployed forces will provide regionally concentrated, credible combat power to limit regional conflict, deter major power war, and should deterrence fail, win our Nation’s wars as part of a joint or combined campaign.

- Persistent, mission-tailored maritime forces will be globally distributed to contribute to homeland defense-in-depth, foster and sustain cooperative relationships and prevent or mitigate local disruptions and crises.

Preventing Wars is as Important as Winning Wars
Surface Forces Provide Persistent, Visible Presence Around the Globe
Shipbuilding

- DDG 51
- LCS
- DDG 1000
- LCC(R)
- CG(X)
DDG 51 Class

- Last ships in Class under construction
- USS STERETT (DDG 104) will be commissioned Aug 2008
- USS Dewey (DDG 105) will launch 26 Jan 2008
- Arleigh Burke Class ends with DDG 112 (FY 2011)
LCS

- MCM Mission Package delivered Aug 2007
- LCS 1 Delivery Aug 2008
- LCS 2 Delivery Oct 2008

MCM Mission Package
DDG 1000

- Multi-mission surface combatant built for full spectrum of littoral dominance
- Brings unique new capabilities to the fleet
- Program Status
  - Lead ship construction contract awarded Jan 2008
  - Build profile remains 7 ships
  - Dual Band Radar (DBR) testing continues with outstanding results
CG(X)

- Will deliver and expand upon six core capabilities of Maritime Strategy
  - 21st Century AAW and Ballistic missile threats
  - Sea Base Defense
  - ESG and CSG support
  - APOD and SPOD defense

- Program status
  - Analysis Ongoing for Radar/Hull/Power Concepts

Multi-Mission Ship to Fill 21st Century Capability Gaps
Modernization

- Required for 313 floor
- Build on innovative successes
  - New weapons systems
  - Upgraded weapons systems
  - HM&E upgrades

AEGIS Modernization is the Clearest Way to the 313 Ship Floor
Making 313 Ships a Reality

The calculus is simple. If you have 280 ships, and you need 313, you have to build more, maintain those that are already in-service, and modernize the ones that are in-service.

VADM Paul Sullivan
11 April 2008
CG Modernization

Navy Precision Fires:
5" / 62 Gun/MK 160 GCS

Force Protection:
SPQ-9B
CIWS 1B

ASW:
SQQ 89A V(15)
Multi-Function Towed Array (MFTA)

Improved Air and Missile Defense:
Aegis Advanced Capability Build (ACB)
Cooperative Engagement Capability (CEC)
Evolved Sea Sparrow Missile (ESSM)
Naval Integrated Fire Control – Counter Air (NIFC-CA)
Surface Electronic Warfare Improvement Program (SEWIP)
SM-6

All Electric
SMART SHIP
MH-60R

Hull, Mechanical & Electrical (HM&E) upgrades

Significant AAW Upgrades
CG Modernization Availabilities

- Homeport Shipyards
- Fleet priority HM&E alts such as All Electric accelerated as much as possible
- Cruiser Modernization Program completes FY17

- CG Modernization is on track
DDG Modernization

Force Protection: CIWS BLK1B

Navy Precision Fires: MK 160 GCS

ASW: SQS 89A V(15) Multi-Function Towed Array

Improved Air and Missile Defense:
- Ballistic Missile Defense
- Aegis ACB
- CEC
- ESSM
- Multi-Mission SIGPRO
- SEWIP
- SM-6
- NIFC-CA

Reduced Lifecycle Costs

Hull, Mechanical & Electrical (HM&E) Upgrades

True Multi-Mission IAMD Capability
 DDG Modernization Availabilities

- Homeport MSMO Shipyards
- Split into two avails, HM&E followed 2 years later by Combat Systems
- Flight I and II DDG’s complete in FY 21

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- **HM&E Availability (20 weeks shipyard + 4 weeks testing)**
- **C/S Availability w/ Aegis Advanced Capability Build (ACB) 12 (20 weeks shipyard + 20 weeks testing)**

DDG Modernization is on track
IAMD Capability

- Netted and Distributed Force
- Paces the threat
- Employed through an Open Combat System
Navy BMD Systems

Aegis BMD Baselines

- **BMD 3.0E** – Fielded Today - SENSOR
  - Long Range Surveillance and Track (LRS&T)
- **BMD 3.6** – Fielded Today - SENSOR/SHOOTER
  - LRS&T and Engage
  - SRBM and MRBM Defense
  - Some AAW capability
- **BMD 4.0.x** – Future - SENSOR/SHOOTER
  - LRS&T and Engage
  - SRBM, MRBM and limited IRBM Defense
  - 2010-2012 timeframe
- **BMD TBD** – Future - SENSOR/SHOOTER
  - LRS&T and Engage
  - SRBM, MRBM, IRBM, and limited ICBM Defense
  - 2012-2014 timeframe

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**SM-3 Block I/IA/IB**

**Theater BMD**

MDA Funded
- IOC: Blk I A FY06
- Kinetic Kill Vehicle for exoatmospheric hit-to-kill

**SM-2 BLK IV**

**Gap-Filler Sea-Based Terminal (SBT)**
- Available upon fuze conversion (100)
- Currently three CGs with emergency Linebacker software load
- Provides limited SRBM Terminal Defense (APOD/SPOD defense only)

**SM-3 Block II/IIA**

**Regional/Homeland BMD**

MDA/Japan Co-development (50/50 – MOU signed)
- IOC: Blk II FY 11
- Full 21” propulsion stack; increases ship station flexibility

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**SPY-1**

- Legacy Aegis radar
- BMD Capable after MDA-funded Signal Processor (SIGPRO) mods
- Increased Capability with FY10 addition of BMD SIGPRO – Allows Better Target Discrimination

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9 for 11 in SM-3 Midcourse Intercepts
1 for 1 in SM-2 Block IV Terminal Intercepts

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**Recent / Future Testing**

- **FTM-13 (10/07):** Engage Two Near Simultaneous SRBMs
- **FTM-14 (6/08):** Engage IRBM Threat (Launch on TADIL)
Strike / SuW Capability

- Long Range Precision Strike
- Support to the Joint Expeditionary Warfighter
- Address Modernization
Anti-Terrorism/Force Protection
Extended Maritime Interdiction Operations

- Use of biometrics to identify terrorists at sea
- Expanding WMD detection capabilities
- Improving ATFP/VBSS equipment and systems

Visit, Board, Search and Seizure (VBSS) technologies

25mm Chain Gun

VBSS Tactical Gear
Implementing Open Architecture: Surface Navy OA Technical Model

- Technical
- Business
- Requirements

Infrastructure:
- Common Services and APIs
- Flexibility to Support Forward-Fit and Back-Fit

Common Computer Environment:
- Standards-based Interfaces to network
- Commercial Mainstream Products and Technologies

Componentize Objective Architecture:
- Common Reusable Components
- Platform Specific Components
- Data Model
- Extensible to the Future

Decouple Hardware (H/W) from Software (S/W)

OA creates a business and technical environment that encourages collaborative competition by 3rd party developers
Takeaways

- Surface Navy has a compelling and enduring role in the Maritime Strategy
- Shipbuilding and modernization programs are critical to maintaining that role
- The framework for warfighting modernization is open architecture
Questions?

Surface Navy: Ready and Relevant