OPNAV N95 Update

Mine Warfare Association

Government—Industry Day

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Agenda

- Current Environment
- State of Mine Warfare
- MIW Roadmap
- Program Activity in MIW
- Challenges / Priorities

Managing Risk: Sustaining Capability and Capacity during transition to LCS MCM MP systems
**MCM Transformation—The Plan**

**DETECT/IDENTIFY**
- **MH-53E**
- **AQS-24**
- **SQQ-32**
- **Sonar**
- **Towed Sonar**
- **Mk-104**
- **SeaFox**
- **EOD**
- **Infrasonic Advanced Acoustic Generator**

**NEUTRALIZE**
- **MH-53E**
- **SeaFox**
- **Mk-104**
- **Mk-105**
- **Explosive Ordnance Disposal**
- **Remote Minehunting System**
- **Littoral Combat Ship**
- **JABS**
- **Littoral Combat Ship**
- **AMNS**
- **Mk-105**
- **Infrasonic Advanced Acoustic Generator**

**Sweep**
- **MH-53E**
- **Mk-104**
- **Mk-105**
- **SeaFox**
- **Infrasonic Advanced Acoustic Generator**
- **Unmanned Surface Vehicle**
- **Littoral Combat Ship**
- **Unmanned Influence Sweep System**

**Maintenance Operational Capability While Transitioning to LCS MCM MP**
**MCM VISION:**

1. Reduce MCM timelines for Combatant Commanders
2. Reduce risk from sea mines to allow Joint Force mission execution
3. Integrate new and evolving technologies into the Littoral Combat Ship to fill capability gaps

**Current Systems**
- Dated technology
- Slow speed of advance
- Large footprint
- Manpower / Training Intensive

**Modeled Performance**
- Fast and Agile
- Precise
- Modular
- Optimized use of Manpower
Current Resource Environment

- PB14 passed without sequestration due to budget compromise
- PB15 in process of being submitted to Hill
  - Protected from sequestration due to budget compromise
- Back to sequester levels in FY16 if grand bargain not reached
  - Sequester level also known as Budget Control Act (BCA) level
- Navy is working two different budgets for POM 16
  - Baseline at BCA level
  - Excursion for adds if compromise is reached
- Continued focus is on improving and sustaining current capability while delivering the LCS Mine Countermeasure Mission Package

N95 Priorities during a challenging fiscal environment:
- LCS IOT&E
- Sustain Legacy Systems
- Invigorate Maritime Mining

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Mine Warfare Program Activity

• Avenger Class MCM’s
  • 2 C5F MCMs redeployed to CONUS
  • 2 San Diego MCMs to replace C7F AVENGER and DEFENDER
  • C5F to receive permanent MCM crews
  • SQQ-32(v)4 / HFWB install on C5F MCMs

• PONCE remains in C5F

• Major International Mine Countermeasures Exercises
  • Sep 2012 & May 2013
  • IMCMEX 14 in November

• Seafox Neutralization Units exercised in C5F: Surface, Airborne, and Portable Mine Neutralization Systems

• Mine Hunting Units deployed to Bahrain

• ALMDS early deployment to C5F, IMCMEX 14. (CNO interest item)

Improvements To MCM Force Remain a Priority during Transition

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• **Quickstrike Mod 3:**
  – Mk-65: IOC 2009, fleet intro of new algorithms in Q4FY15 and Q4FY16
  – Mk-62/63: IOC Q4FY17

• **Submarine Launched Mobile Mines (SLMM):**
  – Capability has been reinstated; maintenance continues

• **LDUUV Mining Demo – California**
  – April 2014: ONR LDUUV INP vehicle to deliver mine-like object

• **Quickstrike Wing Kit Demo**
  – Fleet demo to be completed NLT July 2014

• **Advanced Undersea Weapons System (AUWS): FY14 FNC**
  – Wide area coverage weapons with distributed sensor field and RECO

• **Near-term Initiatives**
  – Converting SLMM warheads into LDUUV-delivered mines

• **N95 POM-16 Above-Core Submissions**
  – Clandestine Delivered Mines
  – Quickstrike Wing Kits
  – Mk-65 RECO
MIW Challenges

• Maintaining the Current MCM Force Today While Delivering Future LCS MCM MP Systems
• Fiscal Environment
• Speed of the Kill Chain for all MCM Systems
• Revitalizing U.S. Intermediate and Deep Water Mining Capability
• Low Cost, Innovative, Expedient/COTS Solutions
• Plan for Obsolescence - Require modular, open architecture systems that are supportable long term

Where Industry may help
- UUV power generation / endurance
- Unmanned System Autonomy
- Info sharing and cueing among Manned and Unmanned Systems
QUESTIONS
BACKUP
Current MCM Force

Mine Countermeasures (MCM) Triad

Airborne Mine Hunting and Sweeping

Surface MCM

Underwater MCM

AVenger-Class Minesweepers (MCM-#)

MH-53E Squadron/Detachment

EOD MCM Platoon

4* – Bahrain
4 – Sasebo
5 – San Diego

HM14 – Norfolk
2 MH-53E - Korea

HM15 – Norfolk
4 MH-53E - Bahrain

3 – San Diego
4 – Norfolk
2 – Rota
1 – Bahrain
1 – Guam
1 – Sasebo

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MCM Environment

Multiple Systems and Host Platforms Operating in Concert

AFSB – Afloat Forward Staging Base
ALMDS – Airborne Laser Mine Detection System
AMNS – Airborne Mine Neutralization System
EOD – Explosive Ordnance Disposal
LCS – Littoral Combat Ship
MCMC – Mine Countermeasures Mission Commander

MOC – Maritime Operations Center
RMS – Remote Minehunting System
UISS – Unmanned Influence Sweep System
USV – Unmanned Surface Vessel
UUV – Unmanned Underwater Vessel
VTUAV – Vertical Takeoff Unmanned Aerial Vehicle

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Technology Enablers – UV Control

Universal Control Equipment for USV / RMMV
• Common console for all locations
• Hand-off capability
• Expeditionary
• Eliminate system-unique support hardware
• Develop/Incorporate detection aids: Computer-Aided Detection/Classification & automatic target recognition (CAD/CAC/ATR)

Common Neutralizer Station
• Portable
• Ruggedized
• Common display and controls (air/surface)

Commonality of Systems Regardless of Host Platform

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Technology Enablers – Servicing

Alongside Servicing of Unmanned & Manned vessels

- Refueling
- Data extraction/transfer
- Expeditionary

- Reduce timelines
  - Recovery, turnaround, re-launch not required
  - Increase in-water time for multiple missions

More On-Station Time, Less Turnaround Time = Increased ACRS
Technology Enablers – C3

Command, Control, Communications

- Compatible data-links
- Over-the-horizon
- High data-rate transfer/connectivity
- Common data protocol

- Coalition—MEDAL integration
- Long endurance airborne (UAV) relay
- Common Operating Picture (COP)
- In-stride data transfer

Enhanced Command, Control, Communications

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MCM Interoperability

Common Operating Picture, MEDAL databases, planning, RMG generation & parsing, Classified Chat/Blog

Data Sharing – NATO Allies

Data Sharing – Other Key Allies

Ability to share information directly between units across a full spectrum of NATO, Allied, and Coalition nations – using classified and unclassified means

Partial Data Sharing – Theater and Nation specific

MEDAL overlays, RMG generation & parsing, CENTRIX Chat/Blog

Other MCM Partners

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Other Items

• Utilize Unmanned Undersea Vehicles (UUVs) and Unmanned Surface Vehicles (USVs)
  – Comms, endurance, and power generation/management issues inherent with UUVs/USVs must be resolved
  – Flexible, adaptable, open architecture design. Stovepipes removed.
    • Idea: A common powered-section that can be fitted with a mission-specific “front end” (e.g., minehunting, neutralization, or even minelaying)

• “Other” approaches to speed up the MIW timeline
  – Increase passive MCM through ISR, satellites, and IPOE
  – Decouple payloads from platforms (MCM and mining)

• Air-dropped UUVs for rapid reaction
  – Need robust design while adhering to weight & aircraft/helo integration

• Multiple, networked UUVs/USVs operating autonomously in suspected mine danger area
  – Full Detect-to-Engage capability in a single pass

Far-Term = Autonomous, Networked UUVs and Advanced Underwater Weapons