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OPNAV N952

Overall Brief is: UNCLASSIFIED
Current Resource Environment

- No longer a linear Planning, Programming, Budgeting, Execution (PPBE) cycle
- PB14 budget is currently on “The Hill”
  - Does not account for sequestration
  - Under Continuing Resolution until 15 Jan
- Navy worked two different budgets for the POM 15 cycle
  - T-POM and Alt-POM
  - MIW not immune to cuts
  - OMB/OSD will determine actual budget submission
- Continued focus on improving current capability and delivery of LCS Mine Countermeasure Mission Package
  - Improve/sustain legacy Fleet while delivering new capability but with limited resources

Dynamic Environment Creates Uncertainty
Recent Activity in MIW

- Four CONUS based MCM-1s deployed in C5F
  - Two redeployed back to CONUS in Spring 2013 and two will return December 2013
- USS PONCE – AFSB(I) deployed and remains in C5F until relieved
- Deployed MK-18 Mod 2 UUV’s to C5F Jul 12 for User Operational Evaluation (ongoing)
- SQQ-32(V) 4 sonar with HFWB across the force (4 of 13 complete, 2 in progress)
- SeaFox
  - Installed on 3 x MCM-1 ships in Bahrain
  - Delivered 3 x AMCM systems to C5F
  - Delivered 4 x Portable Mine Neutralization Systems to C5F for EOD UMCM Platoons
- International Mine Countermeasures Exercises Sep 2012 and May 2013
- Permanently crewing 4 x MCMs in Bahrain approved and scheduled Spring 2014
- AQS-24 volume upgrades in progress
- Completed Joint Maritime Mining AoA (JHU APL)
- USV integration w/ AQS-24 sonars for day/night minehunting (four vessels)
  - First vessel delivers in Dec 2013
- Quickstrike mine wing kits – demo by Q2FY14
- Large Diameter UUV mine payload – demo by 2QFY14

Improvement To MCM Force Remains a CNO Priority: Steady Improvements Seen
MCM Force Transition

Effective MCM at required Capacity

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

Modeled Performance
- Fast and Agile
- Precise
- Modular
- Optimized use of Manpower

MCM VISION:
Field a Common Set of Unmanned, Modular MCM Systems Employable from a Variety of Host Platforms or Shore Sites that can Quickly Counter the Spectrum of Mines to Enable Assured Access with Minimum Risk from Mines
### MCM Bridging Technologies

<table>
<thead>
<tr>
<th>CAPABILITY</th>
<th>Hunt</th>
<th>Neutralize</th>
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<tbody>
<tr>
<td><strong>MINE THREAT</strong></td>
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<tr>
<td><strong>TYPE &amp; DEPTH</strong></td>
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<tr>
<td>MINE THREAT TYPE &amp; DEPTH</td>
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<tr>
<td>FLOATING &amp; NEAR SURFACE</td>
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<td>0’-30’</td>
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<td>IN-VOLUME</td>
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<td>30’ from Surface to 150’</td>
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<td>30’ to 150’ from bottom</td>
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<tr>
<td>CLOSE-CLOSE-TETHERED</td>
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<tr>
<td>within 30’ of bottom</td>
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<tr>
<td>BOTTOM</td>
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<tr>
<td>BURIED</td>
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#### Urgent Operational Need (UON) Systems
- SeaFox portable neutralizer
  - MH-53E (neutralize)
- SMCM (identify & neutralize)
- RHIB (identify & EOD neutralize)
- AQS-24 volume hunt upgrade
- Day/Night minehunting (USV)

#### OSD Fastlane System
- Mk18 Unmanned Underwater Vehicle (UUV) bottom hunt

#### Legacy System Upgrade
- High Frequency Wide-Band (HFWB) SQQ-32 sonar
**LCS MCM MP Programmed End State**

<table>
<thead>
<tr>
<th>WATER DEPTH</th>
<th>Shallow Water/Deep Water</th>
<th>Very Shallow Water (VSW) 10'-40'</th>
<th>Surf Zone (0-10')</th>
<th>Beach Zone (BEP-HWM)</th>
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</thead>
<tbody>
<tr>
<td>CAPABILITY</td>
<td>Hunt</td>
<td>Detect &amp; Classify</td>
<td>Detect ONLY</td>
<td>Detect ONLY</td>
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<tr>
<td>MINE THREAT TYPE &amp; DEPTH</td>
<td>Neutralize</td>
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<td></td>
<td>Sweep</td>
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</tr>
<tr>
<td>FLOATING &amp; NEAR SURFACE 0'-30'</td>
<td>MH-60S</td>
<td>MH-60S</td>
<td></td>
<td>COBRA</td>
</tr>
<tr>
<td>IN-VOLUME &gt;30' from Surface to &gt; 150' from bottom</td>
<td>ALMDS</td>
<td></td>
<td></td>
<td>COBRA</td>
</tr>
<tr>
<td>CLOSE- TETHERED Between 150' &amp; 30' from the bottom</td>
<td>RMS</td>
<td>AMNS Near-Surface</td>
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<tr>
<td>CLOSE-CLOSE- TETHERED w/in 30' of bottom</td>
<td>AQS-20</td>
<td>USS</td>
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<tr>
<td>BOTTOM</td>
<td>AMNS</td>
<td>Influence Sweep</td>
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**Delivered in 4 Phases**
- **Phase I FY15**
  - Airborne Laser Mine Detection System (ALMDS)
  - Remote Minehunting System (RMS)
  - Airborne Mine Neutralization System (AMNS)
- **Phase II FY16**
  - Coastal Battlefield Recon & Analysis (COBRA)
- **Phase III FY17**
  - Unmanned Influence Sweep System (UISS)
  - AMNS upgrade
- **Phase IV FY19**
  - Knifefish UUV
- **Full Operational Capability FY19**

DISCLAIMER: DEPTH CAPABILITIES ARE GENERALIZED
MIW Near Term Challenges

- Constrained Fiscal Environment
- Affordable, Innovative, Modular and Sustainable Systems
  - Can not pass inefficiencies to Sailors
- Mine Warfare C4I (US/Coalition) and Command & Control Facilitation
- Compress time to complete Kill Chain for all MCM Systems (Find, Fix, Finish)
- Post Mission Analysis (PMA) Delay
  - 1 hr of operation ~ 1 hr of PMA; we need to do better
- Obsolescence
  - Require modular, open architecture systems that are supportable / easily replaceable
- Revitalize Offensive Mining Capability
  - UUVs and Air launched
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
Technology Enablers – Unmanned Vehicle 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

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

Informational Assurance
- Anti-Tamper
- Sterilization

Commonality of Systems Regardless of Host Platform
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*
Command, Control, Communications, Computers & Intelligence (C4I)

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

- Coalition—MEDAL integration
- Long endurance airborne (UAV) relay
- In-stride data transfer
- Tactical Decision Aides

Enhanced C4I to include Coalition Partners

Data Links
- Common Operating Picture
- IFF
- Information exchange
Opportunity for Industry

- Common Operating Picture (COP) for US/Coalition Forces
  - Information exchange
- Solutions to reduce Post Mission Analysis (PMA)
  - Computer Aided Detection (CAD) / Classification (CAC)
  - Automatic Target Recognition (ATR)
- Innovative Offensive Mining Solutions
- Near Surface Neutralization Capability
- Reduce Life-Cycle maintenance and sustainment costs
- UUV/USV power generation / endurance / communication
- Air-dropped UUVs for rapid reaction
  - Need robust design while adhering to weight & aircraft/helo integration
- Info sharing and cueing between Unmanned Systems
- Launch, Handling and Recovery system improvements
- Multiple, networked UUVs/USVs operating autonomously in suspected mine danger area
  - Full Detect-to-Engage capability in a single pass
Takeaways

• Mine Warfare remains a top priority and Industry can help

• Fiscal environment is less stable, requiring stronger Government and Industry partnership

• Execute the Plan. Maintain Cost, Schedule, & Performance goals for programs is critical in this uncertain fiscal environment

• Inefficiencies and Risk can’t be passed on to the Sailors

• Mission Package performance only gets better as operational concepts and new technologies evolve and are leveraged with Technology enablers

• Continue evolving LCS from single-ship to multi-ship, networked concept of employment