



MCM in Transition

Legacy to Expeditionary and Modular



“

Whoever can hold the sea,
has command of everything.

Themistocles (524–460 B.C.)

”

UNCLASS



AGENDA

What We Do

Legacy MCM Systems

Transition Overview

Expeditionary and Modular MCM Systems

LCS MCM MP Systems

The Way Forward

UNCLASS

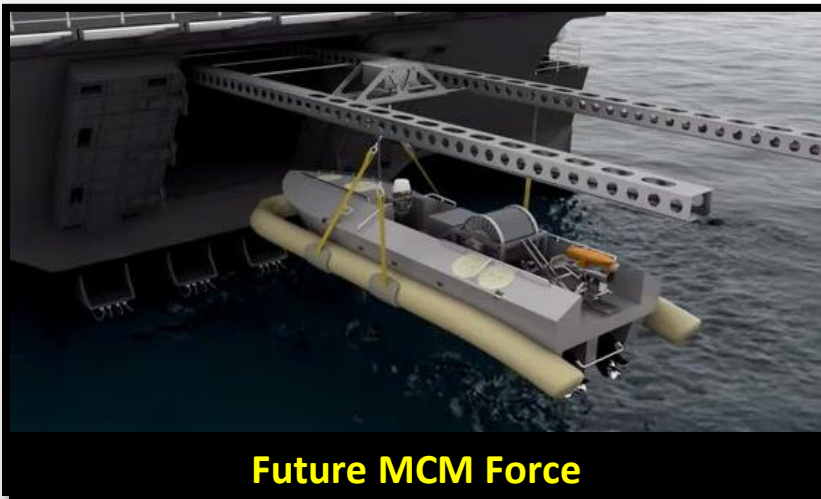


MIW Operational and Fleet Support

- Global Mine Warfare Commander
 - Deployable Battle Staff
 - Theater Operations and Plans
 - Intelligence analysis
- MCM Force training / certification
- MIW capability / capacity assessments
- IPCL and State of MIW reports
- Doctrine and Tactical Development



Legacy Force



Future MCM Force

Fleet Testing and Experimentation

- FLEX (Fleet Experimentation)
- Wargame Support
- Tactical System Integration Doctrine
- UONS System Testing
- Joint Capability Technology Demos
- Wargaming
- MIW Readiness and Effectiveness Measuring (*MIREM*)



GLOBAL MIWC Operations

Presence, Partnership, Professionalism





MIW WTI Training Continuum

- Commence WTI training 05 August 2019
 - 32-week syllabus. Majority of training (21 weeks) conducted at the NATO Naval Mine warfare School in Belgium
 - Integration Training with SMWDC AMW division and AMCM/UMCM to understand natural linkages and aid in planning/execution
- As we look to sundown our legacy systems, as warriors, teachers, and thinkers, MIW WTIs will help shape the future of MIW operations
 - LCS-Centric Operations
 - ExMCM Company and UUVs operating from AFSB or vessel of Opportunity
 - MH-60S and ALMDS/AMNS
 - Mining

MIW WTI TRAINING PIPELINE								
AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
WTI BSLN	MIW SOC	NATO PWO			AMW	TRIAD INT	NATO SO	CAPSTONE
2 WEEKS	5 WEEKS	13 WEEKS			1 WEEK	2 WEEKS	8 WEEKS	1 WEEK
SMWDC COURSE			SMWDC MIW COURSE			NATO COURSE		

Leveraging NATO Expertise to Build the Future of MIW



Legacy MCM Systems



- **11 Avenger Class MCMs**
 - **SQQ-32 VDS Sonar**
 - **SLQ-48 MNS**
 - **Acoustic/Magnetic Influence Sweep**

- **29 MH-53 Helicopters**
 - **Q-24 Towed Sonar**
 - **Mechanical / Acoustic / Magnetic Influence Sweep**
 - **SeaFox MNS**
- **EOD Divers**



UNCLASS



Transitioning to Unmanned Systems

US Navy MCM is currently undergoing a sea-change

Sundown of Legacy Systems

Avenger Class decommissioning

MH-53 approaching flight-hour limits

End of life servicing issues






Final Developmental Testing of MCM Mission Package Systems for LCS

Building Expeditionary MCM (ExMCM) Capability





LCS MCM MP Systems

SEARCH and LOCALIZE		MCM-USV with AQS-20A Sonar
		Airborne Laser Mine Detection System (ALMDS)
		Surface Mine Countermeasures Unmanned Underwater Vehicle with LFBB (SMCM-UUV) aka Knifefish
		Vertical Takeoff Unmanned Air Vehicle (VTUAV) Coastal Battlefield Reconnaissance & Analysis (COBRA)
ID		Airborne Mine Neutralization System (AMNS)
NEUTRALIZE		
SWEEP		MCM USV with Unmanned Influence Sweep System (UISS)



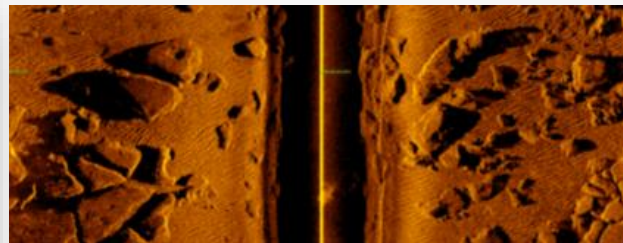
ExMCM Company Capability

EOD Unmanned Systems Platoon



- Mine Hunting
- Amphibious Support
- Intelligence Collection
- Reconnaissance

Post-Mission Analysis Cell



- Sonar Data Analysis
- Data Fusion
- Mission Reports

EOD MCM Platoon



- Mine Neutralization
- Ordnance Disposal
- Dive and Air insert capable



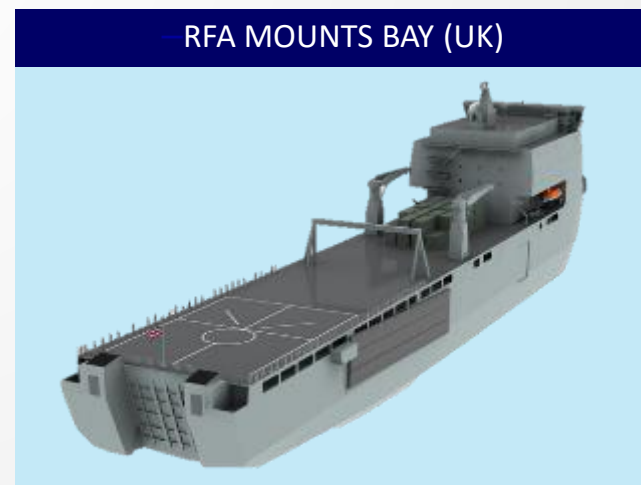
- **Capability:**
 - Large area coverage / OTH
 - High Ao
- **High Resolution Synthetic Aperture Side Scan and Forward Looking Sonars**
- **Characteristics:**
 - **Weight:** ~600lbs
 - **Battery Type:** Lithium-Ion
 - **Endurance:** 20 hrs
 - **Speed:** 0.5 to 4.5 kts
 - **Max Depth:** 600 m





Adaptive Force Packages

- Modular MCM Concept
 - Expeditionary MCM Companies
 - MCM Mission Package Systems
- Deployable from variety of vessels of opportunity
 - Expeditionary Support Base ships
 - Fleet Auxiliaries (US and Coalition)
 - Amphibious Ships
 - Ashore





The Way Forward

UNCLASS



Where Can Industry Help?

- **Speed up the timeline**

- In stride / OTH communication
- Automatic Target Recognition
- Single Sortie DTE
- Data Handling

- **Expeditionary MCM**

- Self contained capabilities hosted on multiple platforms
- Integrate into LCS and ESB
- Improved VSW Capability
- Improved Modularity- small, agile, flexible

- **UxVs / ROVs**

- Improving the sensors
- Reducing Signatures
- Improved and Networked Autonomy, Sensing, Cueing

- **Denied Environments**

- Positioning, Navigation, Timing
- Comms resilience

- **Seamless Interoperability**

- Multiple Coalition Partners
- Data Transfer
- Interoperable Planning Tool





MCM Interoperability enhances MCM Operations



MCM Systems and Data must be developed, classified, and formatted for sharing with Coalition partners

- Interoperable and compatible equipment and software
- Small, Agile, Flexible Systems and Plans
- Reliance on Coalition only goes so far
- Availability and Capability must be carefully weighed.



Conclusion

- Specific Gaps in 2019 MIW IPCL and State of MIW
 - Supporting Tasks- capabilities, not systems
 - Near Term Solutions
 - S&T Focused List

- Available on NWDC MIW SIPR SharePoint site

- Contact Info: CDR Brent Jackson
 - N8/9 MIW Requirements, Doctrine, Experimentation
 - Brent.jackson2@navy.mil
 - (619) 524-0167



It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change.

The background features a large, semi-transparent seal of the Naval Surface and Mine Warfarefighting Development Center. The seal is circular with a scalloped outer edge. The outer ring contains the text "NAVAL SURFACE AND MINE" at the top and "WARFIGHTING DEVELOPMENT CENTER" at the bottom, separated by two stars. The inner circle contains a central shield with a trident, flanked by two crossed swords. Above the shield is a crest with a crown and a banner. Below the shield are two banners with the words "TACTICS" and "DOCTRINE".

Thank You

CAPT Chris Merwin
MIW Director
619 524-1686

Chris.Merwin@navy.mil

UNCLASS