

***NDIA Expeditionary Warfare Operations Conference***  
***13 October 2016***



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Expeditionary Warfare, OPNAV N95



## ➤ Key accomplishments over the last year

- **ESB-3: Delivered**
- **LPD 26: Delivered and Commissioned**
- **LPD 27: Christened**
- **LPD 28 and LHA 8: Awarded**
- **RQ-21: 1<sup>st</sup> system delivered (FRP approved)**
- **MK18 Mod 2: Program of Record**





# N95 Program Priorities

- **Promote amphibious force structure & readiness (capacity, maintenance, modernization)**
- **Ensure effective F-35B integration**
- **Recapitalize our legacy surface and airborne mine countermeasures capability**
- **Recapitalize surface connectors to prevent gaps**
- **Effectively shepherd UONS/Fastlane systems**
- **Achieve Navy Expeditionary Combat Enterprise (NECE) wholeness/readiness**
- **Support alignment of service-common Naval Special Warfare (NSW) capabilities**
- **Field, support mature alternative platform (ship) capability**
- **Optimize expeditionary manpower & training**

*Priorities are aimed at investing in technologies to secure the future*



# How We Will Fight

## ➤ Expeditionary Forces are an Asymmetric Force

- We must be the asymmetric threat to future enemies
- We're not building a 21<sup>st</sup> century Marine Corps to refight Iwo Jima
- Never send a Sailor or Marine into a "fair" fight

## ➤ Expeditionary Forces are part of an Integrated Naval Force: "Green in Support of Blue"

- Old assumptions must be revised. CS-21, New USMC Operating Concept
- Joint Strike Fighter—5<sup>th</sup> Generation aviation deployed aboard LHDs in 2018
- Tilt-rotor enabled amphibious force. Range and speed create options.
- Distributed Lethality / Distributed Maritime Operations / "Kill Webs"
- Expeditionary Advanced Bases

## ➤ Forward deployed Expeditionary Forces embody and enable Distributed Operations

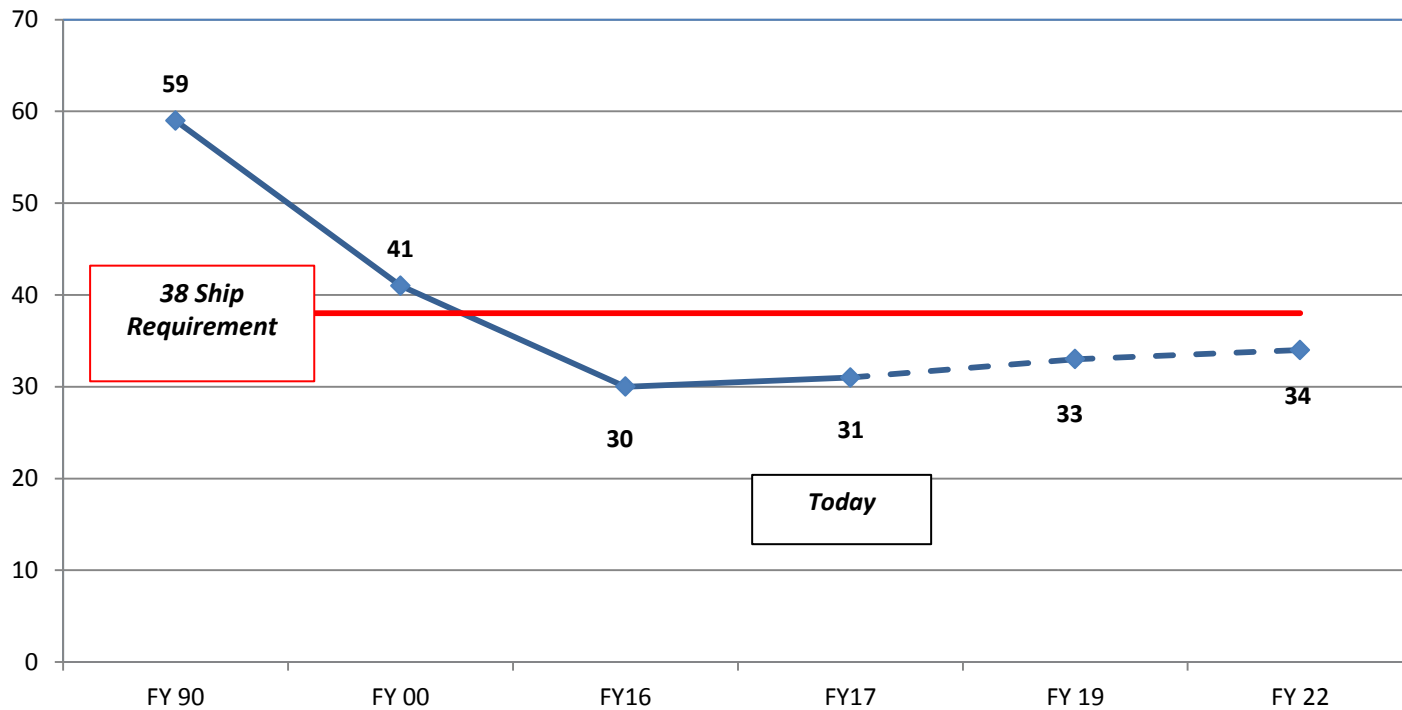
- Ready to respond, to form an aggregated Naval Force in crisis or contingency
- Maintaining access, building partner capability and mutual Interoperability
- Gaining experience—Humanitarian Assistance / Disaster Relief (HA/DR) = Expeditionary Logistics
- Reassurance & Deterrence – Demonstrating capability, readiness and interest

*We must bring Navy and Marine Forces together into a true Naval Campaign*



# Amphibious Ships: Numbers (Still) Matter

- “The Chief of Naval Operations and Commandant of the Marine Corps have determined that the force structure requirement to support a 2.0 MEB lift is 38 total amphibious assault ships.” – SecNav/CNO/CMC memorandum, Jan 2009
- “...Frankly, we need about 50 amphibious gray hulls to get done what we need to around the world today.” ADM Greenert, Navy League’s Sea Air Space Exposition, Apr 2014
- “...We’d like to have 50 amphibious ships today to answer all of the demands. Those are workhorse ships.” – Secretary Sean Stackley, ASN RDA, HASC Seapower Hearing, July 2014
- “...If we could meet all the [COCOM] requirements, it would take 50 ships.” – Gen Neller, SASC testimony, Sep 2016



**Demand continues to outpace capacity**



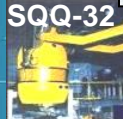
# Mine Countermeasures Roadmap

## Current MCM Force

## Future Force



### MCM-1 Class



MNV



MH-53E



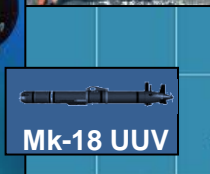
Mk-104



AQS-24



EOD



Mk-105

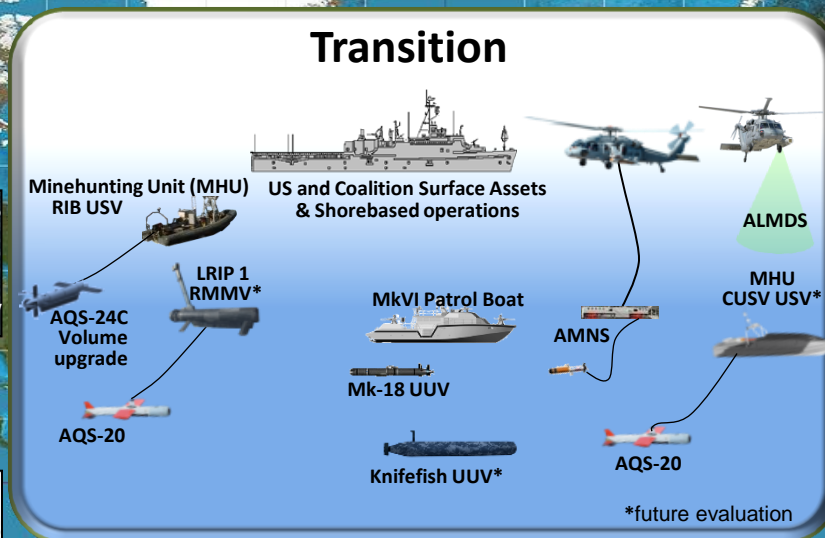


Mk-18 UUV

### Current Systems

- Platform End of Service Life
- Man in the minefield
- Limited flexibility
- Slow response time (MCM-1)

## Transition



### Bridge

- ExMCM Capabilities
- Targeted Sensor Upgrades
- Expanded Adaptive Force Experimentation
- Operational Assessment of MCM MP components
- Initial LCS deployments with MCM systems

### MCM VISION:

1. Reduce MCM timelines for Combatant Commanders
2. Reduce risk from sea mines to allow Joint Force mission execution



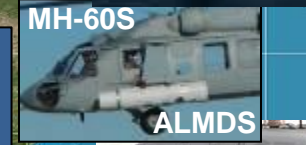
LCS-1



LCS-2



CUSV



MH-60S



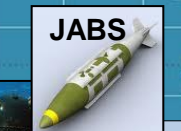
AMNS



AQS-20A



UISS



JABS



EOD



Knifefish UUV



Barracuda



VTUAV

COBRA

### Future Performance

- Unmanned Systems
- Fast, Agile, Flexible
- Modular
- Optimized use of Manpower

ALMDS – Airborne Laser Mine Detection System  
 AMNS – Airborne Mine Neutralization System  
 COBRA – Coastal Battlefield Reconnaissance & Analysis  
 CUSV – Common USV  
 EOD – Explosive Ordnance Disposal  
 JABS – JDAM Assault Breaching System  
 JDAM – Joint Direct Attack Munition













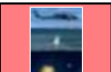






LCS – Littoral Combat Ship  
 MP – Mission Package (for LCS)  
 MHU – Mine Hunting USV  
 MNV – Mine Neutralization Vehicle  
 RIB – Rigid hull Inflatable Boat

RMMV – Remote Multi-Mission Vehicle  
 UISS – Unmanned Influence Sweep System  
 USV – Unmanned Surface Vehicle  
 UUV – Unmanned Undersea Vehicle  
 VTUAV – Vertical Takeoff Unmanned Aerial Vehicle



# MCM Programmatic Challenges

- **Canceled and defunded** components while maintaining the same requirements
- **Delivery strategy often misunderstood**
  - Use of “Increments” – full system capability is achieved only with final increment
  - Each increment adds requirements to existing systems to meet MP ACRS
- **Platform Integration**
  - Example: RMMV designed for DDG, “Come as you are” to LCS
  - Lack of underway integration prior to test
  - “Platform Agnostic”

		<u>Increment I</u>	<u>FY18</u>	<u>Increment II</u>	<u>FY19</u>	<u>Increment III</u>	<u>FY20</u>	<u>Increment IV</u>	<u>FY21</u>
Hunt	Beach Zone			  VTUAV COBRA				 COBRA Block II	
	Near Surface	  MH-60S ALMDS		 ALMDS P3I					
	Bottom & Volume	   MH-60S Tow RMMV RGP-V6.0 x2 AQS-20A x3		  RMMV LRIP 2 AQS-20A P3I				 Knifefish UUV w/LFBB x2	
Neutralize	Near Surface	 RAMICS	+		+	 AMNS P3I	+	 Barracuda	
	Bottom & Volume	  MH-60S AMNS							
Sweep						 OASIS	 UISS		

NEW
UPGRADE
CANCEL
DEFUNDED



# MCM Transition Roadmap

## ➤ Imperatives:

- Bring capacity and capability (and operational experience) to the Fleet before the sundown of legacy systems (FY24/25)
- Decrease coverage timelines and manage risk using unmanned technology

## ➤ 2016 Independent Review Team (IRT) Implementation Plan:

- FY 17 IOC for airborne systems
  - System operational performance verified through TECHEVAL
- FY 17-18 MCM Mission Package (MP) Testing
  - Continue to exercise the end-to-end detect to engage sequence w/ all mission package components
    - Shift to CUSV as tow platform, using RMMV as near-term surrogate
  - Decide on MP composition to support FY20 (IND) /21 (FRE) IOC
  - CONOPS validation and tactical integration
  - Fleet Sailor evaluation and operational feedback
- Manage fiscal hurdles

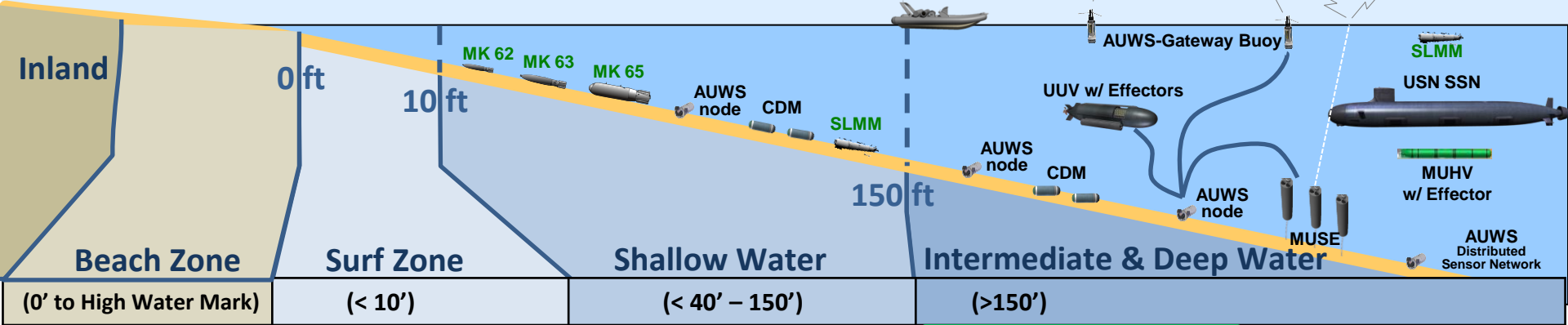
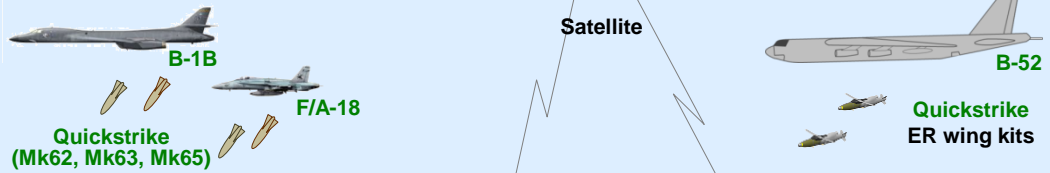
***Provide Capability and Capacity to the Fleet in Time for Legacy Sundown***





# Maritime Mining

- AUWS – Advance Undersea Weapons System
- CDM – Clandestine Delivered Mine
- CRAW – Compact Rapid Attack Weapon
- FMAUV – Fleet Modular Autonomous Undersea Vehicle
- MUHV – Modular Undersea Heavyweight Vehicle
- MUSE – Modular Undersea Effector
- RECO – Remote Control
- SLMM – Submarine-Launched Mobile Mine
- USV – Unmanned Surface Vehicle
- UUV – Unmanned Undersea Vehicle



**From 2016 Maritime Mining Program Interim Review:**

- Continue advanced mining CDD development
- Establish mining POR
- POM18 funding support AUWS FNC
- Leverage ONR MUSE
- OPNAV coordinate execution of Resource Management Decisions (RMD) #1, #2, #3
- Include Maritime Mining in MIW IPT organization

**Air delivered Quickstrike:**  
 Mk 62 500 lb  
 Mk 63 1000 lb  
 Mk 65 2000 lb

**Submarine delivered:**  
 SLMM  
 MUHV  
 FMAUV

**USV, UUV delivered:**  
 CDM  
 SLMM warhead  
 AUWS  
 Distributed network of sensor and effector nodes

**Submarine delivered:**  
 SLMM

**USV, UUV delivered:**  
 CDM  
 AUWS  
 MUSE  
 Encapsulated moored effectors (CRAW/Mk54)  
 Distributed network of sensor and effector nodes

*In-Service Systems*



# Opportunities in Mine Warfare

- **Abundance of ideas from numerous partners**
  - Multi-national collaboration
  - Industry
  - Labs (Government and Academia)
    - Resourcing drives need for coordination
    - Leverage data exchange and capability development
    - Widely varied environments and threats require multiple technologies and tactics
- **User Experimentation process**
  - RPED - Opportunity to equip the fleet faster
  - Use lessons learned to inform future decisions and CONOPS development
- **Venues for learning and experimentation**
  - Industry opportunities to demonstrate systems in realistic environments
    - UNMANNED WARRIOR 16
    - IMCMEX
    - Ship to Shore Maneuver Exploration and Experimentation (S2ME2)
    - Fleet Exercises (ex. RIMPAC, Bold Alligator)

# *Questions*

