U.S. Navy Funding Goals for Future Mine Warfare Capability

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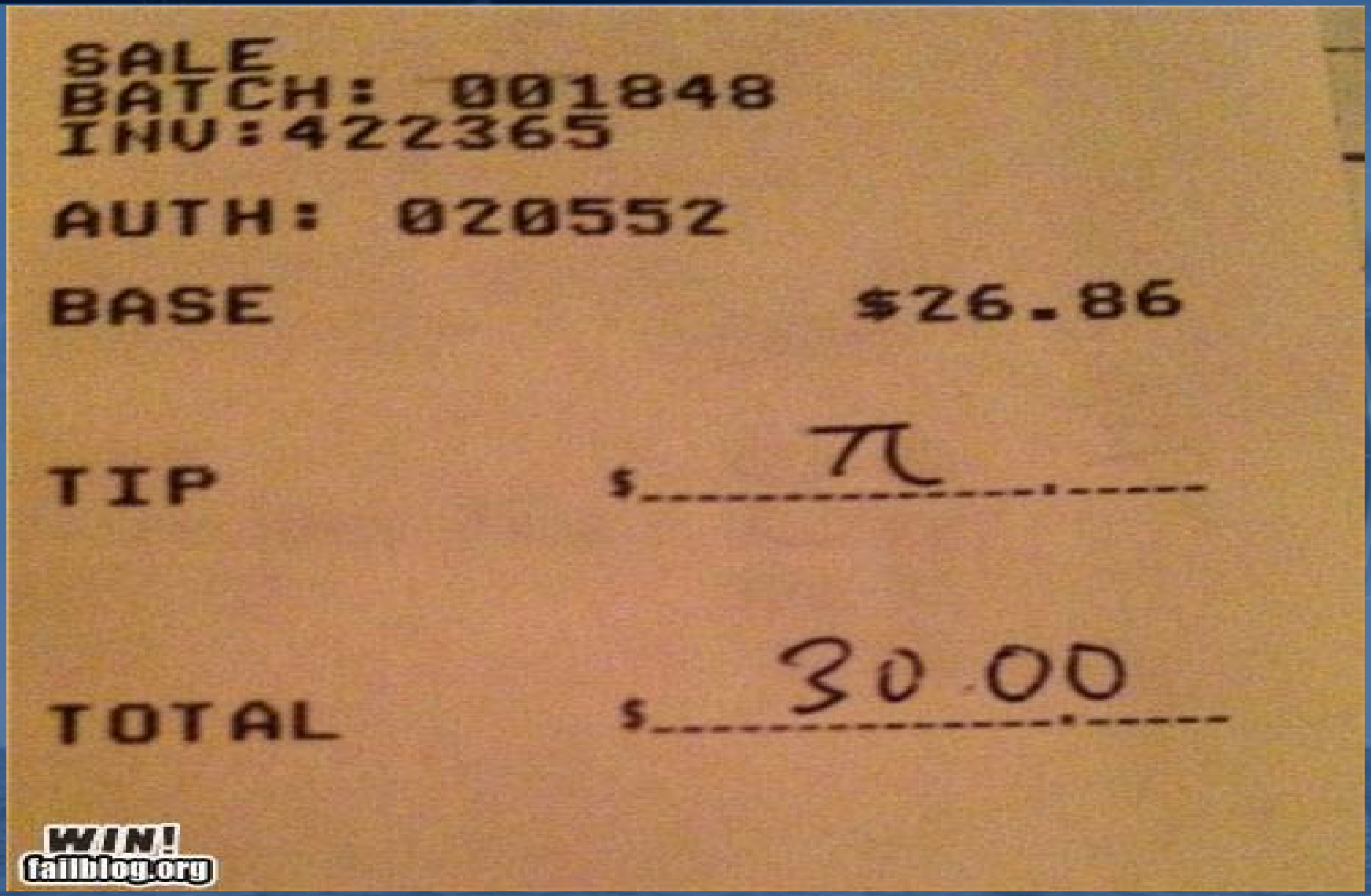
Facebook Profile

AMADOR Formula

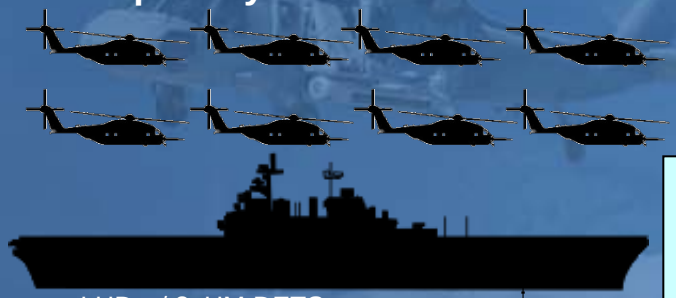


Bottom Line Up Front

- Navy committed to future MCM capability transition
- MIW resources are a small piece of the shrinking budgetary pie
- We can help with near-term initiatives – but can't do everything
- We need to prioritize getting the right capability to the fleet soonest

Mine Countermeasures Roadmap

Legacy Fleet MCM Capability – Now Until 2020



LHD w/ 2 HM DETS

MCM (4)

LSD w/ EOD

Field a <u>Common</u> Set of <u>Unmanned</u>, <u>Modular</u> MCM Mission Package Systems <u>Employable</u> from LCS that can <u>Quickly Counter</u> the <u>Spectrum of Mines</u> to Enable <u>Assured Access</u> with <u>Minimum Risk from Mines</u>

LCS w/ MCM Mission Package (Spiral Alpha) – 2020 and Beyond

LCS w/ MH-60S

Manpower ~ 2,300 Sailors

Modeled ACRS is comparable

Manpower ~ 390 Sailors

Right Mix of Man and Technology For Effective Operations

Transition Challenge: Competing Requirements

SEARCH

MH-53E, MCMs, AQS-24A, SQQ-32 (HFWB)

vs.

MH-60S, LCS, ALMDS, AQS-20A, COBRA, UUV w/ LFBB, RMS, MK18 UUV

NEUTRALIZE

MH-53E, MCMs, EMNS, EOD, Marine Mammals

MH-60S, JABS, CMS, LCS, AMNS

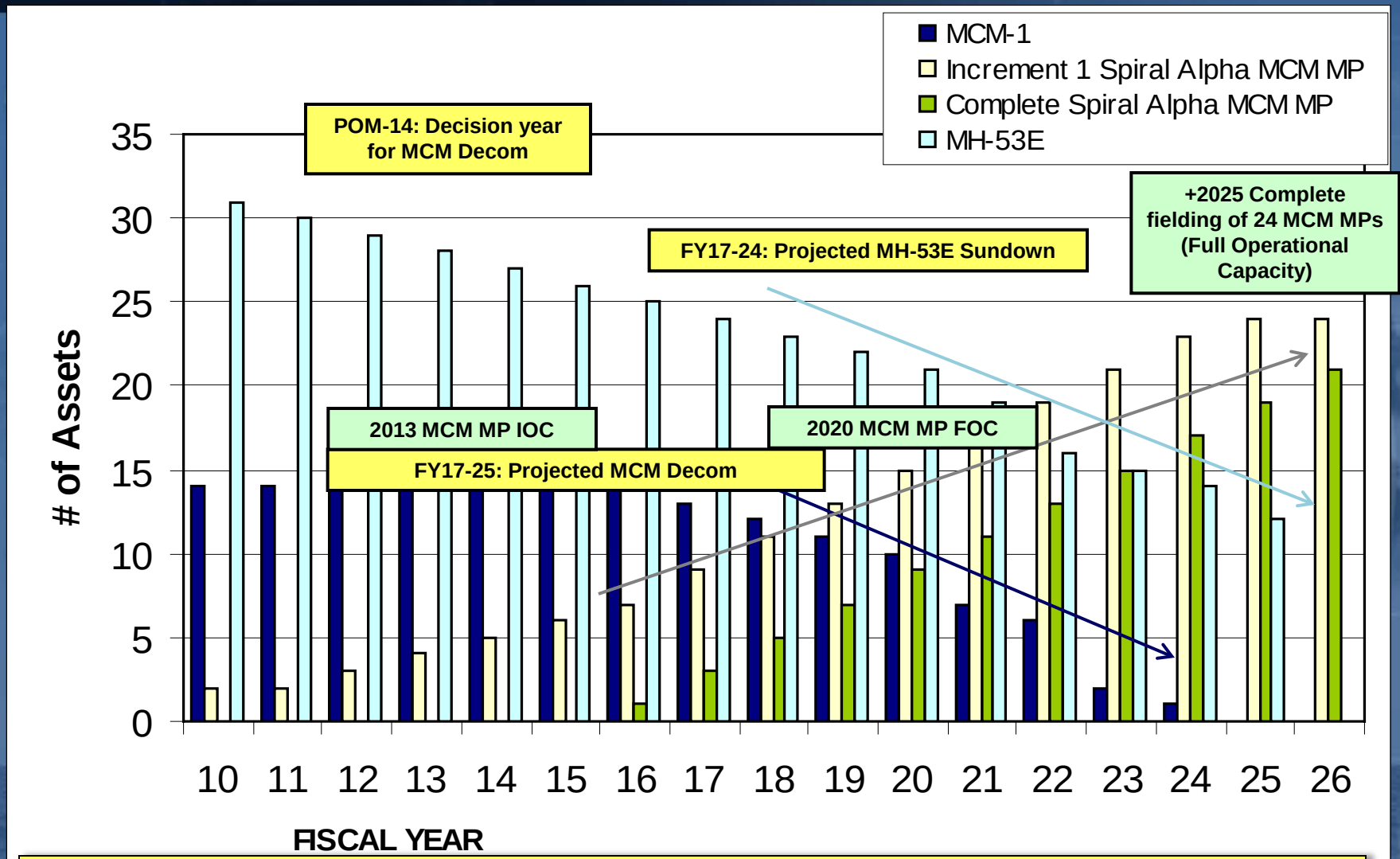
ZERO SUM

SWEEP

MH-53E, MCMs, Mk-105, Mk-104, IAAG,AAG

MH-60S, LCS, USV, UISS, OASIS

Transition from Legacy to Future



MCM program maintains current capacity without MCM-1 ELSP and supports LCS-based MCM to relieve forward deployed forces by 2020.

MCM + Mining = Mine Warfare

- The Mine Warfare Branch is responsible for both Mine Countermeasures(MCM) and Mining.

- Responsible for maintaining the current maritime mines in the Navy's inventory.

- Actively exploring future offensive mining concepts to use mines in offensive, protective, and defensive roles.

Current Resource Environment

- PB12 is currently on “The Hill”
  - CR until 18NOV and No New Starts

- Navy PB12 TOA is $161.4B – increase of $0.8B from FY11
  - N85 slice of the pie is $6.2B – 4% of overall budget
  - N852 budget is approx $400M of N85’s budget

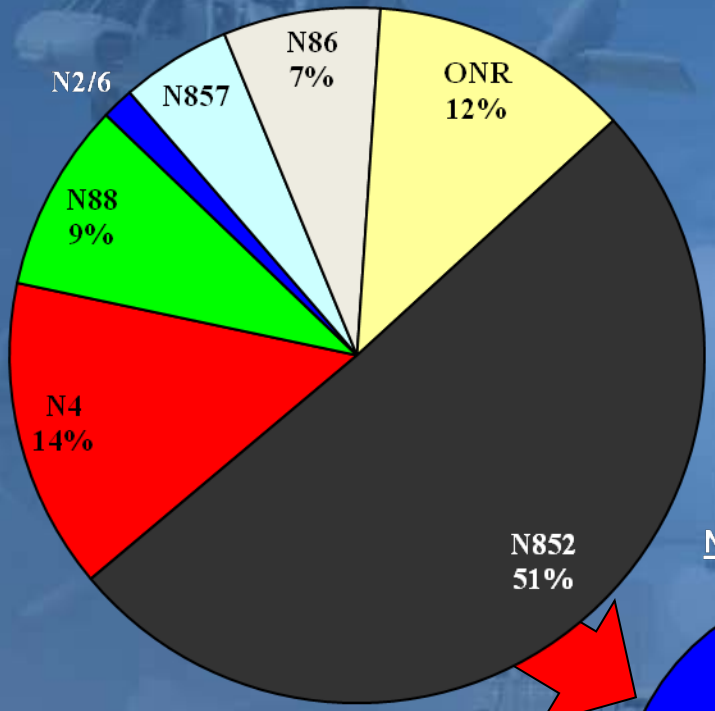
- Overall Mine Warfare budget is $722M
  - Includes current readiness and manpower accounts
  - 0.6% of Navy TOA – LCS SCN account excluded
    - BMD budget is approximately five times larger*
    - ASW budget is approximately four times larger*

- Still have the “Super Committee’s” decision to deal with

PB-12 Fiscal Overview

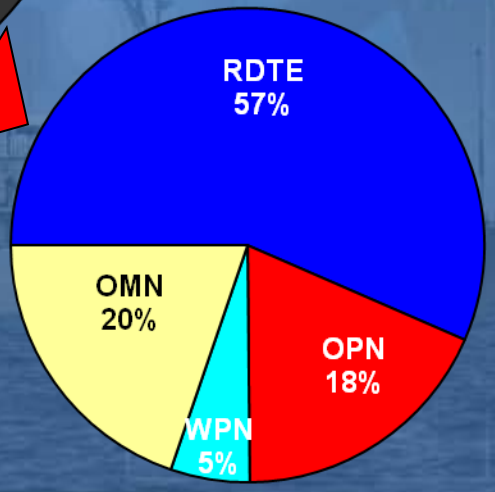
(Represents Funding Reported in FY12 MCM Certification Plan)

MIW Funding Ownership Breakout



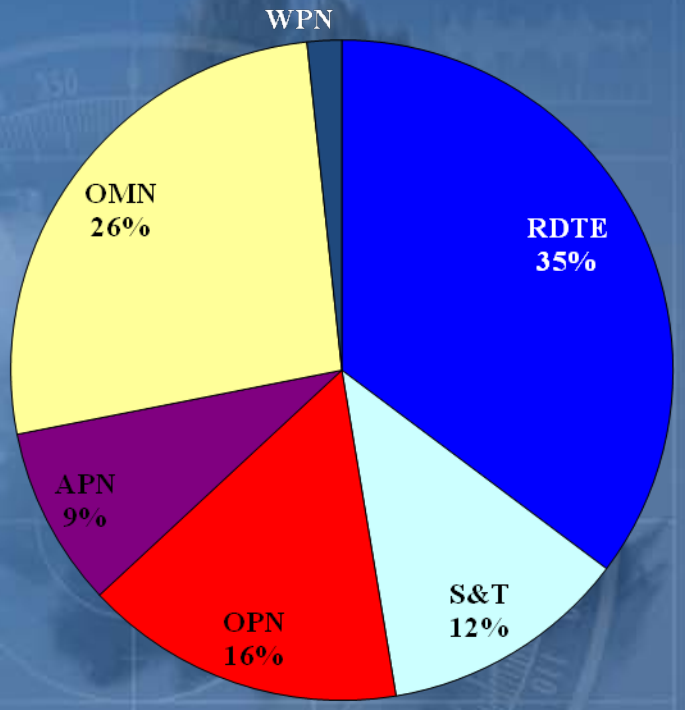
RS	$M
N4	104.4
N852	366.1
N857	37.0
N86	52.8
N88	63.6
ONR	87.6
N2/6	10.8
Total	722.3

N852 APPN Breakout



N4 – Readiness
N88 – Air Warfare
N857 – EOD
N86 – Surface Warfare
ONR – S&T Funds
N852 – Mine Warfare
N2/6 – Info Dominance

MIW Funding APPN Breakout



APPN	$M
RDTEN	254.6
OPN	113.5
WPN	12.2
OMN	190.8
S&T	87.6
APN	63.6
Total	722.3

Near Future MCM Challenges

- Sensor and Processing False Alarms
  - High False Alarms mean longer PMA & higher False Classification by PMA Operator
- Single Pass Detect to Engage
  - High False Alarms requires multiple passes to identify

- Computer Aided Detection(CAD)/Classification(CAC) Improvements
  - Potential for real-time algorithms in the MCM Community
  - Fast and accurate CAD/CAC capability needed for all PMA

- Reliability
  - System Reliability needs to meet requirements
    - Meet Operational Availability (Ao)
    - Improve Mean Time Between Operational Mission Failure (MTBOMF)
  - Require modular, open architecture systems that are supportable long term
- Mining
  - Stand-off delivery of mines
  - Remote Command and Control of mines
    - Distributed network of sensors in support of command and control

The Big Question: How good is good enough?

- How much better is the reduced performance future systems over present fielded systems?
  - Likely Performance of Future vs. Present Performance of Legacy

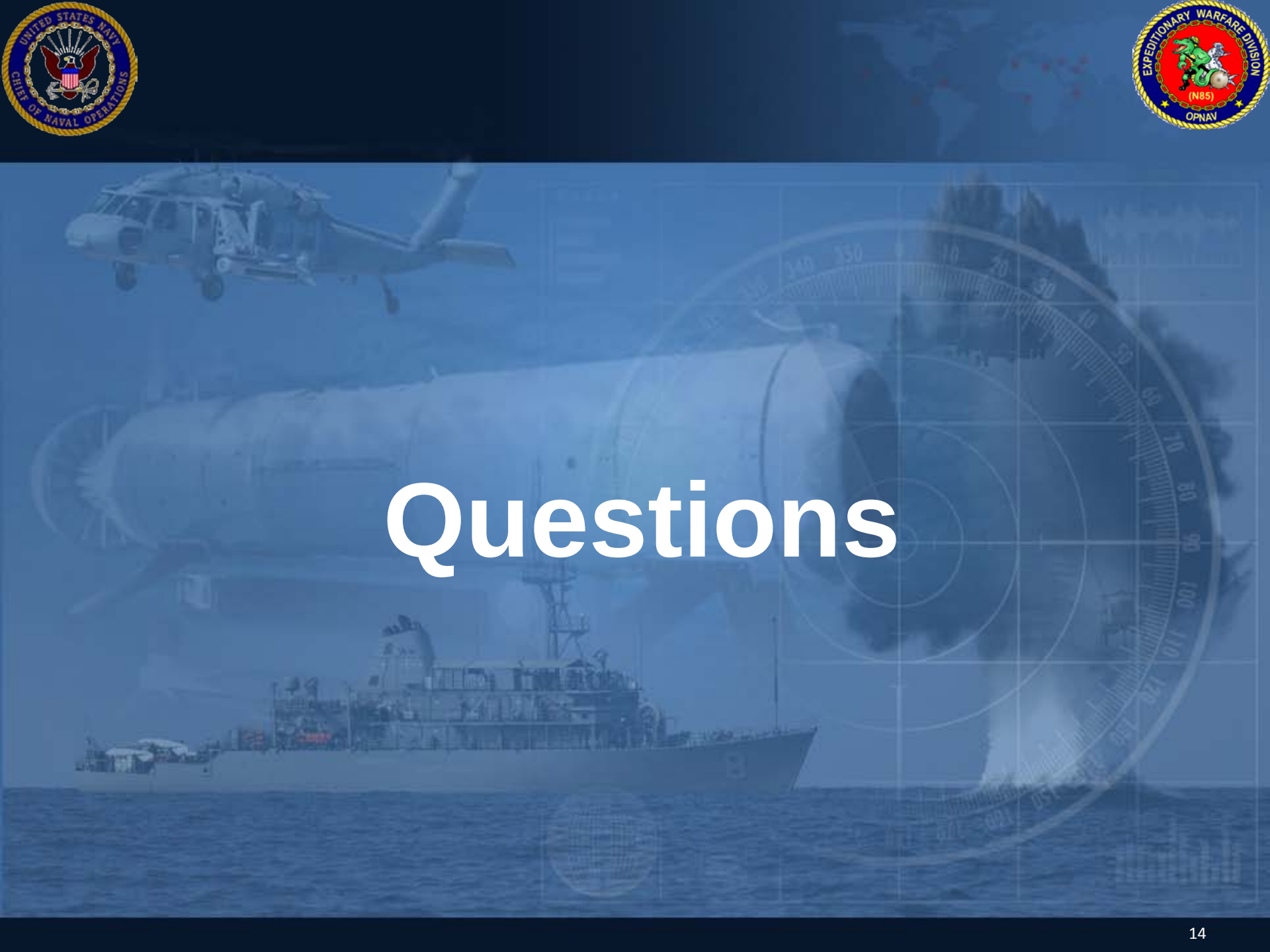
- Analyzing the present performance MCM MP systems to determine if they support Overarching LCS MCM MP KPPs.
  - Many Future MCM system requirements (ORDs) written well before LCS Concept—are they aligned?
  - Huge Effort, reliant on modeling (NMWS)
  - IF we are falling short in KPPs, namely Area Coverage Rate Sustained (ACRS), WHERE do we make improvements?

N85 assessing traceability of system requirements to MCM MP requirements

Summary

- The mine threat is real and not getting easier.
- The transition to LCS-based MCM is challenging…*and innovative.*
- Decreasing TOA makes TOTAL OWNERSHIP COST a key driver
- But…….system suitability and effectiveness still most important

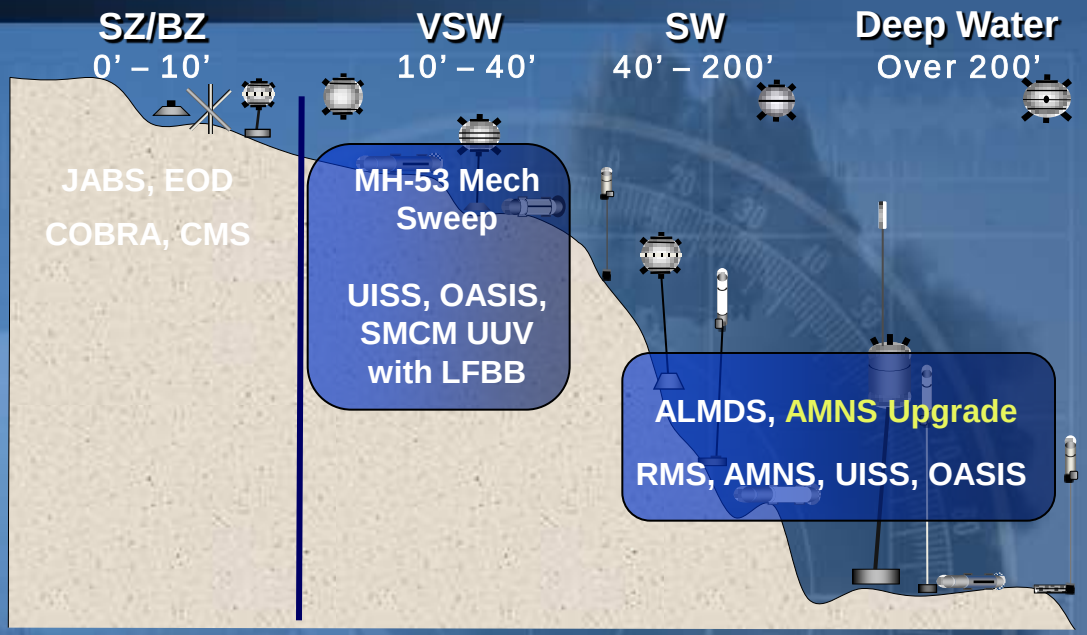
Got a solution?
Contact CAPT Rios at mark.rios@navy.mil

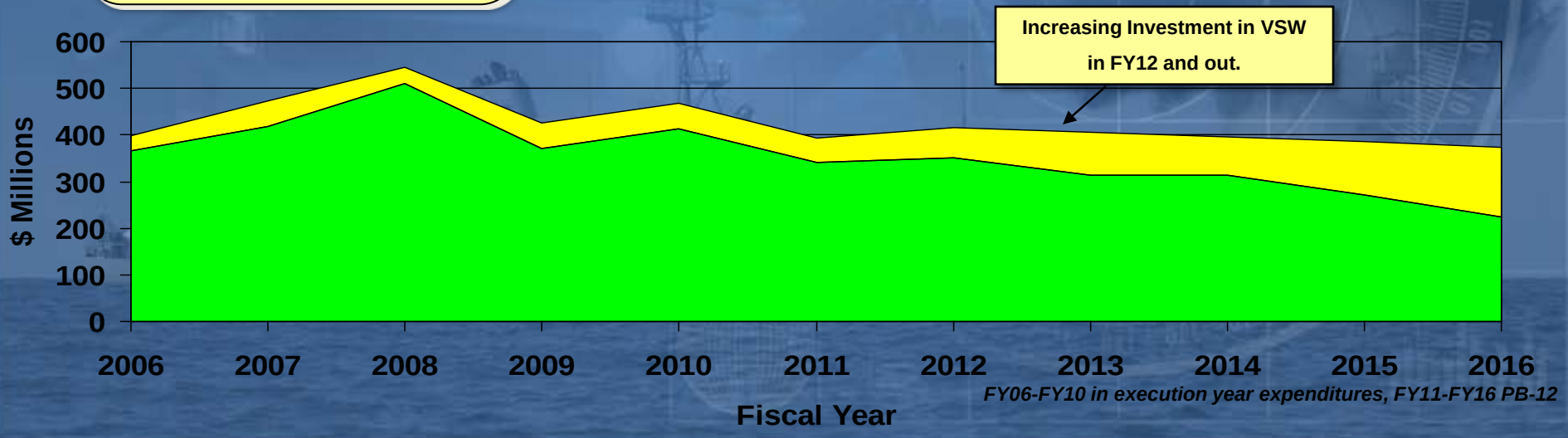

Questions

MCM System Investments

- **Greatest investment in the SW/DW**
  - 33% of FY11 budget allocated to legacy systems
  - Decreases to ~20% by FY16 as LCS-based systems fielded
- **Increased funding to the VSW zone**
  - JABS Upgrade
  - UUV with LFBB
  - Potential COTS solutions

> • ***Investments in SW/DW Sustain Legacy Force and Deliver the Future***
>
> • ***Initiatives to Solve the VSW Problem Are Underway***





FY06-FY10 in execution year expenditures, FY11-FY16 PB-12

MIW Far-Term Vision

- **Stop doing things "the old way"**
  - Increased passive MCM through ISR, satellites, and IPOE
- **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)
    - Idea: 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

Major PB-12 Adjustments

Program ADDS	
RMS Add to OSD CAPE Estimate	$ 101.7
EOD UUV (MK 18 UUV)	$ 76.0
AMCM SDLM Add	$ 38.4
ALMDS Add (Field Inc.1, Dev Inc II)	$ 31.7
AMNS Add (RDTEN & OPN)	$ 31.2

Program TAKES	
MCM MP Reduction	-$ 166.1
AMNS WPN Reduction (EMNS)	-$ 110.1
RAMICS Vertical Kill	-$ 82.1
CMS WPN Reduction	-$ 54.9
EMNS Vertical Kill	-$ 49.8
SMCM UUV Reduction	-$ 32.9

- Aligns resources (LCS ships and MP system)
- Slowed procurement and quantities of CN's
- SMCM was bill payer for other MCM programs