Think Tank Session:
USN Dive Manual, Revision 6 to 7
Crosswalk

Capt Keith Lehnhardt
Supv. of Salvage & Diving
NAVSEA 00C
SUPSALV: What We Do…

**Underwater Ship Repair (N43 & Customer Funded)**
- Procedures/Technology Development
- Ship Design for Underwater Repair
- Up to 20:1 Return on Investment

**Search & Recovery (N43 & Cust.)**
- Air France Flight 447
- Space Shuttle Columbia & Challenger
- Ehime Maru
- Cargo Ship El Faro (NTSB Customer)
- DARPA/SSP Special Projects
- Malaysian Airlines Flight #370

**Salvage, Towing, & Heavy Lift (N43 & Customer Funded)**
- Disaster Relief: Hurricane Sandy, Haiti Earthquake, Japan Tsunami, Hurricanes Katrina & Rita
- USNS SGT MATEJ KOCAK Grounding
- Refloating and Salvage of the Ex-SHADWELL
- USS GUARDIAN (MCM 5)

**Oil Spill Response (N45)**
- Deepwater Horizon Oil Spill
- Ex USS CHEHALIS Fuel Removal
- Hurricanes Katrina and Rita
- Operation Iraqi Freedom
- USS MISSISSINewa Oil Removal
- Large Inventory Sized to Act as Tier II/III OSRO for Navy Ships/Facilities
- Emphasis on Transportability in Austere Environments

**Diving/Certification (N97)**
- Saturation Diving Capability
- Navy Experimental Diving Unit *One of a kind in the world*
- USN Lead Service for Diving
- USN Diving Manual & Decompression Tables used worldwide
- Equipment Dev & Procurement
- Certification Authority for all DoD

**El Faro VDR Recovery**

**USS ZUMWALT (DDG 1000)**
Brake Wheel Removal / Propeller Installation (August 2015)

**USNS SGT MATEJ KOCAK**
Grounding Jan – Feb 2015

**Deepwater Horizon Oil Spill**
April 2010

**USNS SGT MATEJ KOCAK**
Grounding Jan – Feb 2015
Why Change?

- Series of Class A Mishaps
  - CNO direction for holistic program review
    - Policy (OPNAVINST 3150.27)
    - Procedure (Navy Diving Manual)
  - Review compliance throughout the chain of command w/emphasis on supervisor accountability
  - Assess the culture related to:
    - Operational readiness
    - Mission planning
    - ORM
    - Diving safety
    - Lessons learned
Action Plan

- Revise Policy (OPNAVINST 3150.27) & Procedure (Navy Diving Manual)
  - Give Fleet More Control Over Their Diving Forces
    - Provide Improved Planning Process & How to Dive Guidance
    - Provide Engineering & Medical “Rules” based on Physics & Physiology
    - Reduce Prescriptive Rulemaking
  - Strengthen Diving Supervisors
    - Updated Planning & ORM
    - Non-diving Supervisory Skills
    - Consolidated Emergency Procedures
    - Improved Checklists
    - Uniform Diving Inspections
Reduce redundancies and increased readability by consolidating information to one location.

Clarified material and “bulletized” paragraphs where possible

Reduced rule-based decision making.

Moved information to the most relevant location (e.g.- all SCUBA info is in the SCUBA chapter).

Effort made to make the manual easier to read and find information.

Reduce/prevent growth of dive manual
Brief summary of Revision 7 changes:

- Reduced number of chapters from 21 (Rev 6) to 18 (Rev 7)
- Updated mishap reporting verbiage in Chapter 5 (Dive Program Administration)
- Revised Chapter 6 (Operational Planning and Risk Management)
- Added separate appendix (2C) for Environmental and Operational Hazards.
- Added appendix (2B) for U.S. Navy Dive Computer (NDC).
- Added separate appendix (2D) for Dynamic Positioning.
- Revised Recompression Chamber Support Levels.
- Update Dive tables to VVAL 79 algorithm.
- Updated Chapter 11 (Ice diving).
- Combined MK-16 Mod 0 & Mod 1 (Chapter 15)