



# **Undersea Warfare Priorities**

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Director of Undersea Warfare**



# Global Maritime Presence Ensures U.S. Prosperity

## Surface Ships



**Ships**

- **Large volume** maritime warfighting capacity
- **Overt**; ideal for “signaling”
- **Inspection and boarding operations**

## Naval Air Forces



**Aircraft Carriers**



**Aircraft**

- **High speed** reaction
- Ability to **reach far inland**
- **Repeat missions** (“reload”) with a “Man in the loop”
- **Highly flexible** operations

## Undersea Forces



**Attack and Guided Missile Submarines**

- Flexible and **survivable nuclear deterrent**
- Capable of **undetected operations** (intel)
- **Can penetrate** deep into enemy waters
- Capable of long-endurance **independent offensive operations** far forward



**Ballistic Missile Submarines**

Since WWII, the U.S. Navy has used its global dominance to stabilize the world’s maritime commons, permitting the greatest expansion of trade, prosperity and living standards in history

## **US Submarine Force**

- ~10% of Navy Personnel
- ~25% of Warships
- ~13% of Navy Budget
- ~50% of accountable nuclear warheads
  - ~70% under New START
- 100% of survivable warheads
- Over 4000 SSBN patrols completed (over 1100 Trident patrols)



# Submarine Force Mission Areas

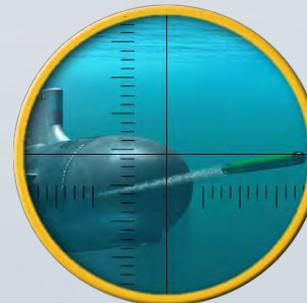
**Strike**



**Strategic Deterrence**



**ASW**



**SOF**



**ISR**



**ASUW**



**Counter Drug Ops**



**Mine Warfare**



# Undersea Warfare Across the Spectrum of Hostilities



**PEACE**

**BATTLESPACE PREPARATION**

**PRE-HOSTILITIES**

**CONFLICT ESCALATION**

**WAR**

Nuclear Strategic Deterrence -----

Intelligence/Surveillance/Reconnaissance-----

Indication and Warning (I&W)-----

Intelligence Preparation of Battlespace (IPB)-----

Information Operations-----

Mine Reconnaissance-----

Special Operations Forces Support-----

Offensive Mining-----

Anti-Ship Warfare-----

Anti-Submarine Warfare--

Precision Strike--



# Submarine Force Top Priorities

- Provide a survivable and effective sea-based strategic deterrent
  - OHIO Replacement: The Navy's #1 priority
  - OHIO: Restore and maintain acceptable margin
- Deliver force structure for global posture
  - Maintain at least 2/yr VIRGINIA-Class SSNs to reduce the “shortfall”
  - Execute on time or early SSN construction / delivery timelines
    - Block V+ includes VPM
- Enhancing our asymmetric advantage
  - Acoustic Superiority
  - Increase Heavyweight Torpedo Inventory: Mk-48 ADCAP Restart
  - Increase Heavyweight Torpedo Capabilities
  - Expand missile portfolio
  - Small and Large Displacement Unmanned Undersea Vehicles
  - Universal Launch and Recovery Module
  - Logical first step toward 3<sup>rd</sup> Offset Strategy / Vision 2025

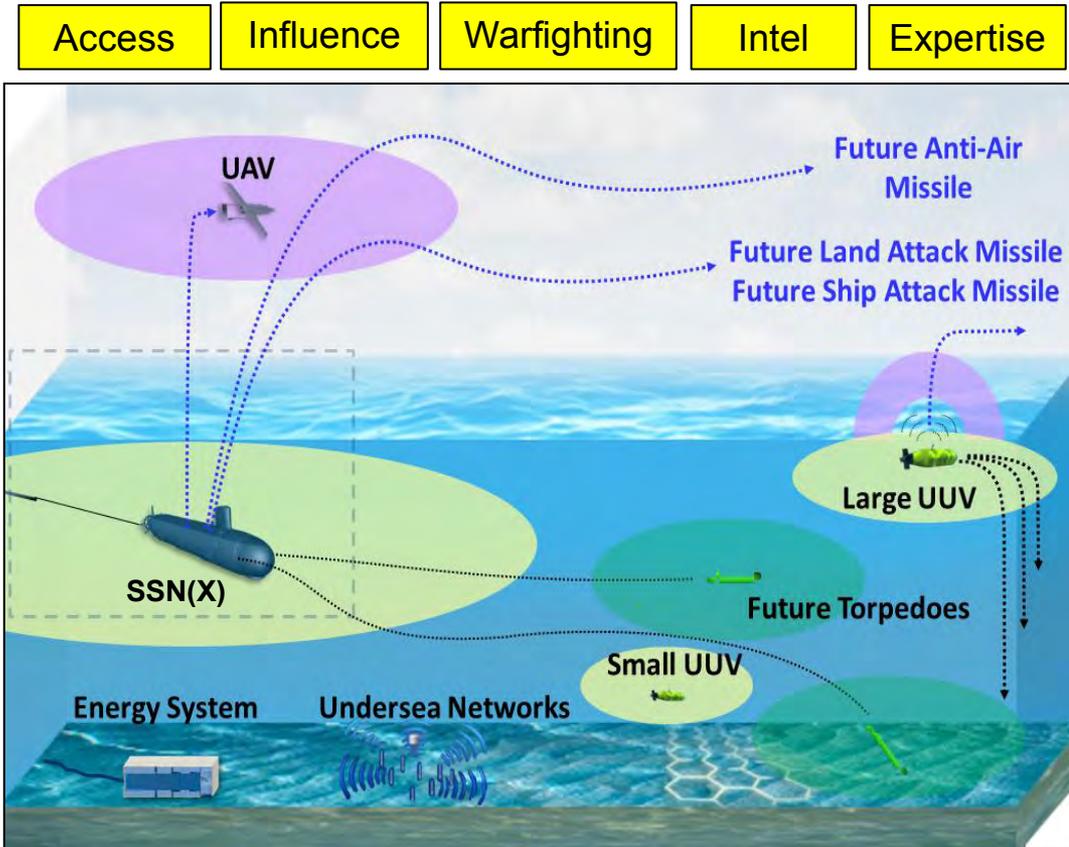
**Maintaining undersea superiority**



# Turning Commander's Intent Into Reality

## Defining "What's Next?"

### Undersea Vision ("Platform to Domain Centric")



### Defining Capabilities that Provide the Vision

#### Sense the Environment

- Cross domain capabilities
- Electromagnetic Spectrum
- Battlespace Acoustics
- Passive and Active Electro Optical
- Long Distance Targeting

#### Using the Sea Floor

- Possible offset for payload capacity
- Mitigation for denial of traditional C2
- Offsets for power density limitations
- Portable vice mobile systems

#### Command and Control Networks

- Populating and Retrieving Information
- Multiple undersea system nodes
- Autonomy / Decision Making

#### Payloads – Kinetic / Non-Kinetic

- Continuum for a Range of Options
- Countermeasures / Decoys

"Own The Best"

"Grow Longer Arms"

"Beat the Adversary's System"

"Protect Our Strategic Assets... and Threaten Theirs"

"Get Faster"

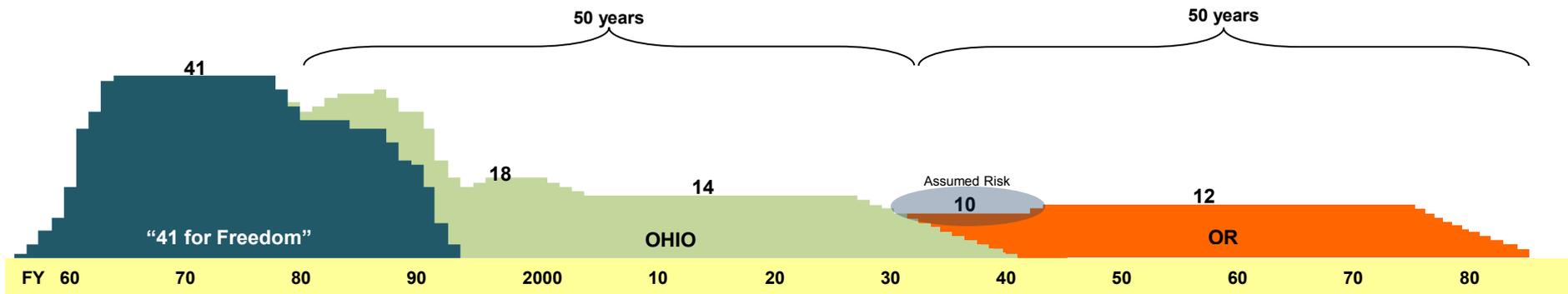
"Get on the Same Page"

"Be the Best"

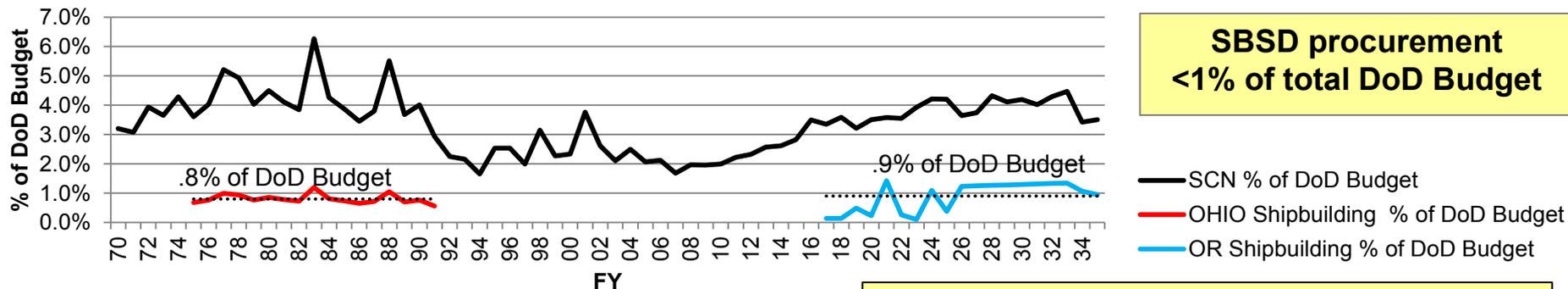


# SSBN Procurement

## An Infrequent but Critical Responsibility



### SCN/OHIO/OR as a % of DoD Total Budget



### Average Annual Ship Procurement Funding\* (FY16\$)

"41 for Freedom" (1958-1964)	\$16.7B
OHIO-class (1974-1991)	\$18.5B
All other Post-Korean War years	\$12.0B

\*PBIS data (TY\$) converted to FY16\$

**Increasing Ship Procurement Funding for SSBN Recapitalization is Historically Consistent**

**FY10 VIRGINIA (7,800 Tons): \$2.75B**  
**FY10 OR (Avg. 2-12) (20,800 Tons): \$4.9B**



# OHIO Replacement Program



Modular Construction



SSBN Design



Integrated Tube and Hull Construction

Propulsor



Electric Drive



Coordinated X-Stern

Survivability,  
Acoustic Superiority



Updateable Tactical Systems (SWFTS)

42 Year Service Life



Life of Ship Reactor Core

Improved Availability



Strategic Weapons System and D5-LE



U.S. – UK  
Common Missile  
Compartment

OHIO / VA Reuse  
New Development

All areas must remain aligned and properly resourced for the program to succeed





# VIRGINIA Class

## Pressing the Advantage

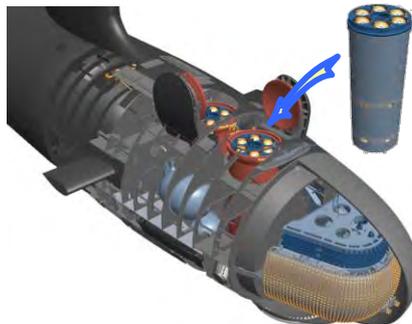
### Block I & II

- Reduction of construction schedule
- BLK II delivered ahead of schedule



### Block III

- Design for Affordability
- Large Aperture Bow Array
- Virginia Payload Tube



### Block IV

- Reduced Total Ownership Cost
- Increased Availability per submarine

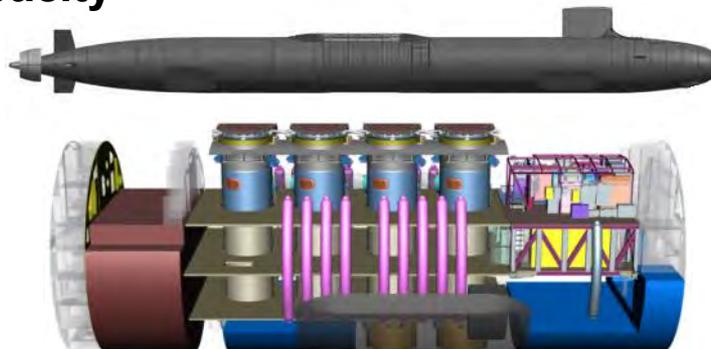


### Block V

#### Virginia Payload Module (VPM) and Improved Acoustic Superiority

##### VPM

- Mitigates lost strike capacity
- SOF host capability
- Host future payloads



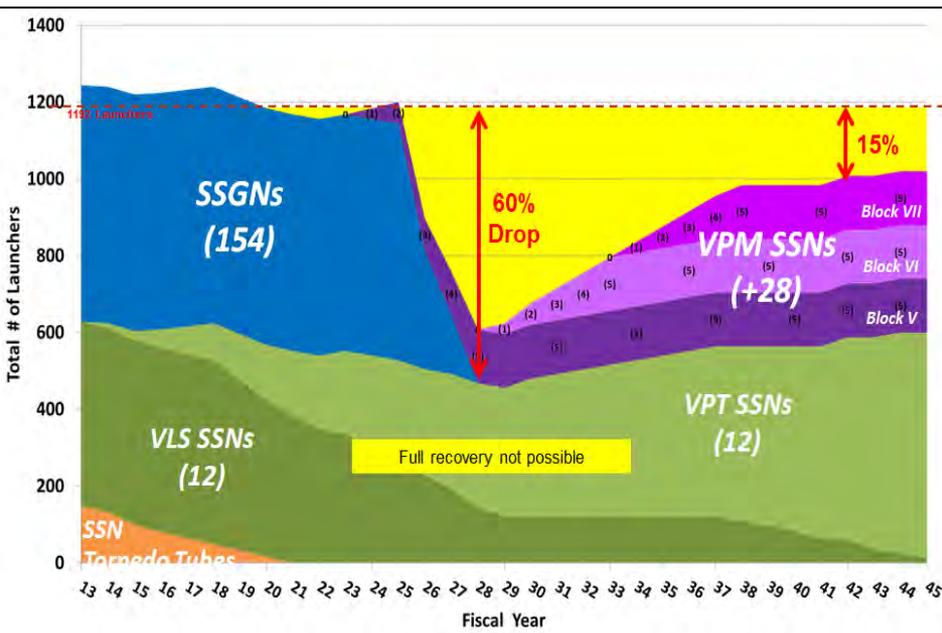
##### Acoustic Superiority

- Improved sensors
- Advanced hull coating
- Improved quieting

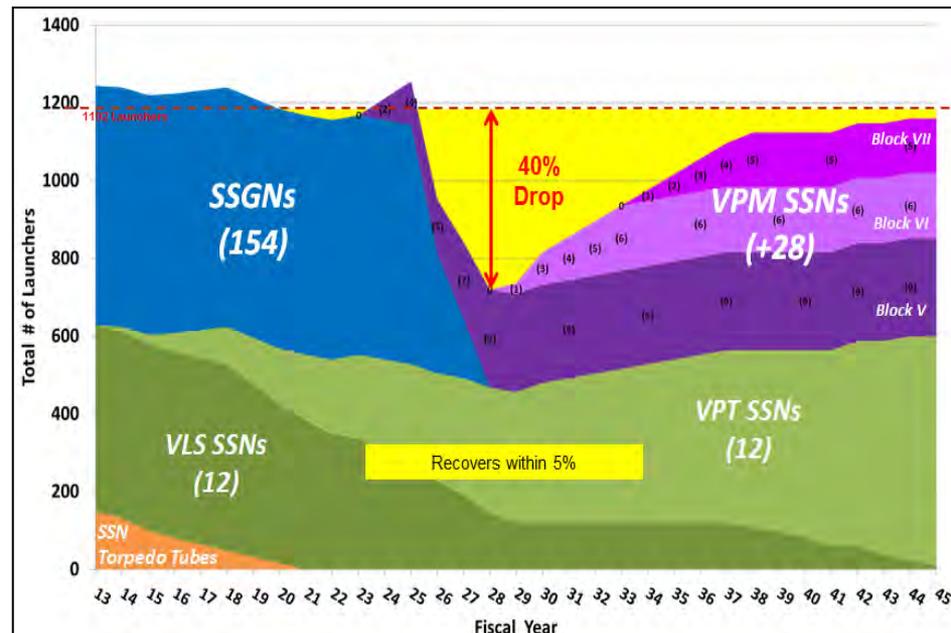


# Expand SSN Capacity and Capability VIRGINIA Payload Module (VPM)

VPM 1/ year on BLK V-VII (15 total)



VPM on all BLK V-VII (20 total)



## Future undersea payloads hosted by VPM

- TLAM and follow-on land strike missile
  - Unmanned Undersea Vehicles
- Manned Undersea Vehicle (SDV and SWCS)
  - Expanded Missile Portfolio

**> 3x the Firepower, < 15% increase in cost per SSN**



# Owning the Undersea Domain

## We deliver value *every single day*

- Sea-Based Strategic Deterrence
  - ✓ New START: ~50% to ~70% of accountable nuclear warheads
  - ✓ Only survivable leg of nuclear TRIAD
  - ✓ Preventing major power war for 7 decades
- Far forward, persistent, covert posture
  - ✓ Non-provocative influence to deter and de-escalate potential conflicts
  - ✓ Undersea and cross-domain Intelligence, Surveillance, and Reconnaissance
  - ✓ Real-time warning to U.S. leadership
  - ✓ Presence permits rapid transition from peacetime

## Ready for *decisive operations and combat*

- The key that unlocks the adversary's Anti-Access / Area Denial (A2AD) door
- Operating inside adversary defenses
- Access that "sets the table" for Joint Forces
- Stealth and surprise at the time and place of our choosing

**Expanding the decision space for National Leadership**



# Questions?



For any additional questions, please contact OPNAV N974 at: 703-614-9375  
<https://usff.portal.navy.mil/sites/csl/erb/default.aspx> (CAC required)