

# National Shipbuilding Research Program 2025 All Panel Meeting

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**February 2025**



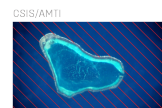
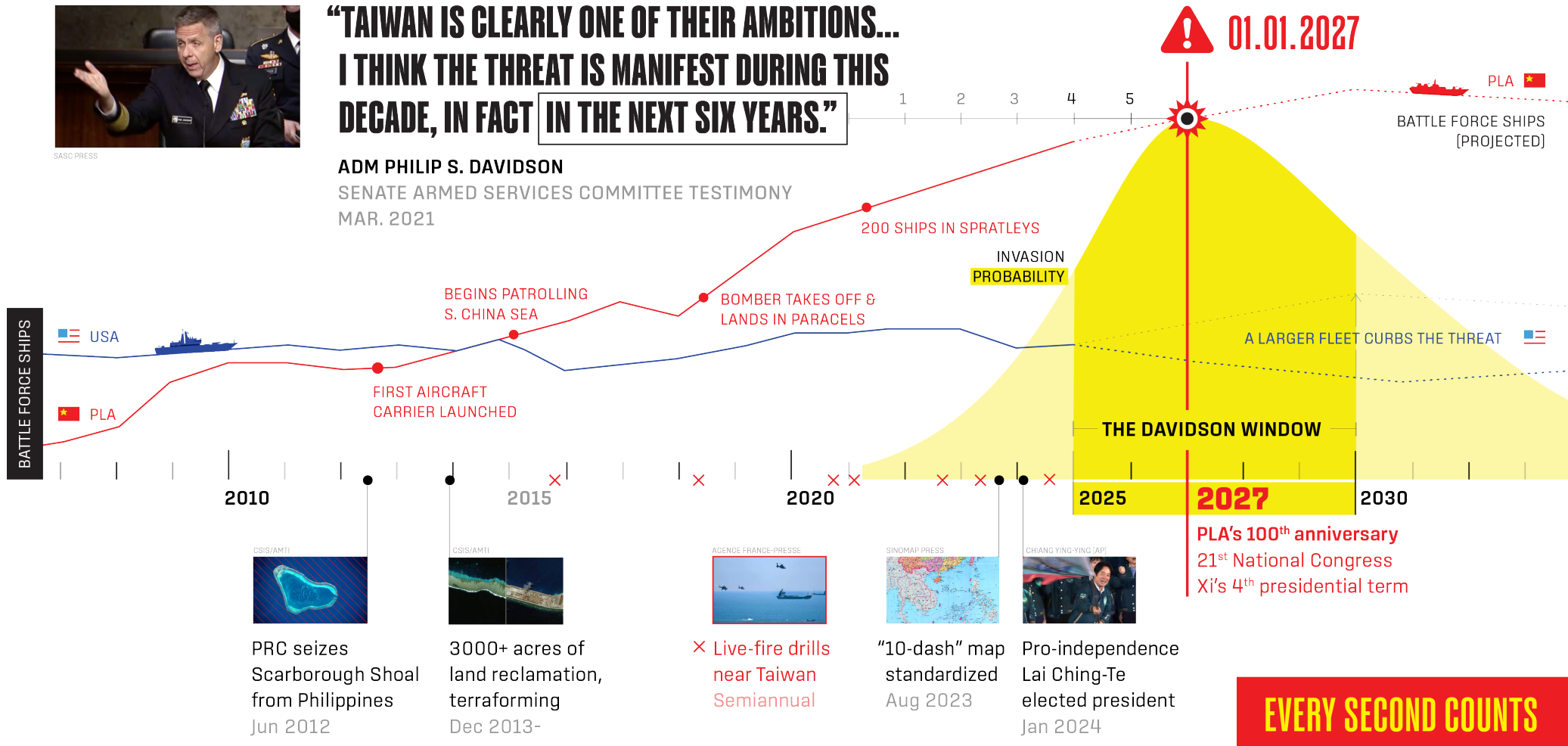
# Today's strategic competition



SASC PRESS

**“TAIWAN IS CLEARLY ONE OF THEIR AMBITIONS... I THINK THE THREAT IS MANIFEST DURING THIS DECADE, IN FACT IN THE NEXT SIX YEARS.”**

**ADM PHILIP S. DAVIDSON**  
SENATE ARMED SERVICES COMMITTEE TESTIMONY  
MAR. 2021



PRC seizes Scarborough Shoal from Philippines  
Jun 2012



3000+ acres of land reclamation, terraforming  
Dec 2013-



× Live-fire drills near Taiwan  
Semiannual



"10-dash" map standardized  
Aug 2023



Pro-independence Lai Ching-Te elected president  
Jan 2024





Janes

## US Navy focuses on faster rearming of surface ships in wake of Red Sea combat

As US Navy (USN) surface warships defend allies, the open sea lanes, and themselves in the Red Sea region from missile and unmanned system...

1 day ago



Defense Daily

## CNO: Navy Learning From Red Sea Ops Against Houthi Weapons

The Navy's top officer said naval operations in the Red Sea against Houthi weapons launches from Yemen has helped the service quickly adapt...

22 hours ago



Newsweek

## US Navy Warships Targeted in 'Complex Attack' on Red Sea

The Houthis of Yemen have attacked U.S. warships and commercial vessels in the Red Sea since the start of the Israel-Hamas war.

3 weeks ago



USNI News

## Red Sea Lessons Informing Fleet Forces' Combat Surge Model, Says Admiral

The short-notice surge of US warships from the East Coast to take on missile and drone threats in the Eastern Mediterranean and the Red Sea is informing a model

1 month ago



Business Insider

## The US Navy is battling 'the best Iranian technology' in the Red Sea and changing how it fights to beat it, admiral says

US forces in the Red Sea have been intercepting missiles and drones launched by the



AP News

## Lessons from Red Sea and Ukraine's Black Sea fight help prep Navy for possible conflict with China

The Navy is taking lessons from its combat in the Red Sea and from what Ukraine has done to hold off the Russians in the Black Sea,...

1 month ago



New York Post

## Navy intercepts Houthi barrage of missiles, drones launched at three US warships in the Red Sea

The US Navy intercepted a barrage of Houthi missiles and drones launched at three of its warships in the Red Sea on Thursday, US defense...

3 weeks ago



Business Insider

## US Navy warships fought off a 'complex' missile and drone attack in the Red Sea

A Pentagon spokesperson said no US warships were damaged or hit by the Houthi munitions, and no American personnel were injured.

3 weeks ago



United States Navy (.mil)

## U.S., Egyptian Naval Forces Conducts Inaugural Eagle Defender Exercise in Red Sea

US Navy, Marine Corps and Coast Guard forces joined the Egyptian Naval Force in executing Exercise Eagle Defender in Safaga, Egypt, and in the Red Sea, Sept. 8...

3 weeks ago



USNI News

## Navy Conducts First Successful Tests Reloading Missiles and Rearming Warships At Sea

NAVAL AIR STATION NORTH ISLAND, Calif. – With an eye toward ongoing missile threats to military and commercial shipping, the Navy is moving



# NAVSEA Enterprise Strategy

## FORCE BEHIND THE FLEET

**NAVSEA ENTERPRISE STRATEGY**  
Deliver ships and systems on time, ready for tasking

**LINES OF EFFORT (LOEs)**

LOE 1 ACCELERATE FORCE GENERATION Deliver Ships and Combat Systems	LOE 2 GENERATE READINESS Maintain, Modernize, and Sustain Platforms	LOE 3 GENERATE, CAPTURE, AND USE DATA Drive Innovation with Data	LOE 4 STRENGTHEN THE NAVY TEAM Attract, Retain and Grow Our Workforce	LOE 5 STRENGTHEN THE FOUNDATION Enhance Critical Infrastructure
<p>Ensure that NAVSEA's capabilities are fully operational and ready to support the fleet through a relentless focus on quality and on-time delivery. Partner with industry to strengthen the industrial base and develop innovative solutions to warfighting needs.</p> <p><b>We will measure:</b></p> <ul style="list-style-type: none"> <li>- On-time delivery</li> <li>- Quality</li> </ul> <p><b>We will:</b></p> <ul style="list-style-type: none"> <li>- Get more "players on the field"</li> <li>- Meet construction schedule milestones</li> <li>- Deliver ships on time, ready for tasking</li> </ul> <p><b>NORTH STAR</b> Achieve shipbuilding rate to meet Navy's 30 year shipbuilding plan by 2030.</p>	<p>Ensure maintenance, modernization and sustainment of ships, submarines, and systems is completed on-time to maximize readiness and availability for fleet tasking. Partner with industry and implement proactive strategies to enhance lifecycle management.</p> <p><b>We will measure:</b></p> <ul style="list-style-type: none"> <li>- On-time delivery</li> <li>- Operational Availability</li> </ul> <p><b>We will:</b></p> <ul style="list-style-type: none"> <li>- Reduce unplanned work, days of maintenance delays and delays in depot maintenance availabilities</li> <li>- Improve and achieve on-time completion of work</li> <li>- Improve adherence to cost milestones</li> </ul> <p><b>NORTH STAR</b> Achieve 80% combat surge ready by 2027.</p>	<p>Enhance readiness through data integration and real-time analytics to deliver a decision-making advantage. Use innovative technologies and predictive analytics to improve efficiencies, identify risks and opportunities, and forecast performance.</p> <p><b>We will measure:</b></p> <ul style="list-style-type: none"> <li>- Data Availability</li> <li>- Analytics-enabled Workforce</li> </ul> <p><b>We will:</b></p> <ul style="list-style-type: none"> <li>- Integrate data analytics at speed and scale</li> <li>- Adopt a data-centric approach to make informed decisions</li> <li>- Transform the organization's culture to be data-driven</li> </ul> <p><b>NORTH STAR</b> Enterprise-wide integration of data, utilization of analytics, and adoption of AI by 2027.</p>	<p>Enhance the NAVSEA team by attracting, developing, and retaining a capable workforce. Ensure team members are equipped to effectively support the warfighter. Become one of the best places to work in the federal government.</p> <p><b>We will measure:</b></p> <ul style="list-style-type: none"> <li>- Fill Rate</li> <li>- Attrition</li> <li>- Development</li> </ul> <p><b>We will:</b></p> <ul style="list-style-type: none"> <li>- Enhance talent management</li> <li>- Renew our commitment to technical competency and leadership development</li> <li>- Establish and execute enterprise human capital strategy</li> </ul> <p><b>NORTH STAR</b> Achieve a Global Satisfaction Index (CSI) score of 80 by 2027, becoming one of the best places to work in federal government.</p>	<p>Create mission resiliency throughout our operations by building, deploying, and sustaining critical physical and digital infrastructure. Allocate the necessary resources to prioritized enhancements providing uninterrupted quality access and optimized throughput.</p> <p><b>We will measure:</b></p> <ul style="list-style-type: none"> <li>- Operational Availability</li> <li>- On-time and On-budget Delivery</li> <li>- Workforce Productivity</li> </ul> <p><b>We will:</b></p> <ul style="list-style-type: none"> <li>- Enhance digital and cyber capabilities</li> <li>- Reconfigure facilities and equipment</li> <li>- Optimize shipping layout and functionality</li> </ul> <p><b>NORTH STAR</b> Improve public maintenance efficiencies by at least 10% by 2030.</p>

**"CNO is relying on us, across the NAVSEA enterprise, to get our ships and their warfighting systems designed, delivered, maintained, and sustained to meet global national security requirements. We must continue to put more players on the field—that is, platforms, ready with the right capabilities, weapons, and sustainment."**

**Vice Admiral Jim Downey**



# Collaborative Value Proposition

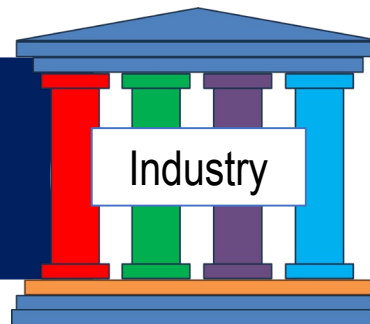
- Adversaries are building capabilities faster, cheaper, and in large quantities
- Traditional acquisition process struggle to keep up with the rate of technology change
- **Requires: Rapid and significant increases to warfighting capabilities**



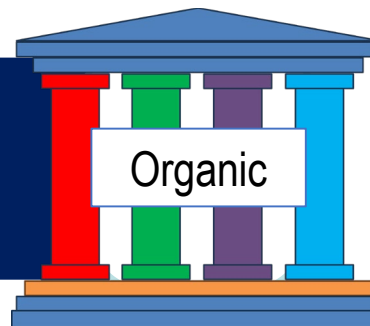
- Collaborate to rapidly identify and demonstrate solutions to defeat emergent adversary capabilities
- Utilize traditional and non-traditional acquisition processes for urgent operational needs and long-term sustainment
- **Action: Be innovative, agile, and receptive to diverse solutions**

# AM Lines of Effort

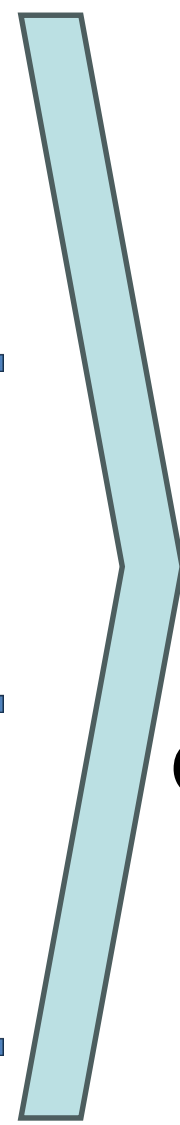
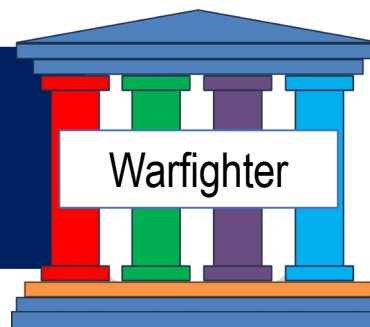
**Harness Cutting-Edge Commercial Capabilities for Strategic Advancement**



**Modernize Organic Depots and Strengthen Intermediate Capabilities**



**Strengthen Warfighter Capacity and Self-Sufficiency for Mission Success**



**Operationalized  
Additive  
Manufacturing**

# AM Strategy

## Operationalize

Interchangeability with Legacy Manufacturing Processes

Accessible and Contractually Invokable Requirements

Define and Mature the Value Stream

Governance  
and  
Standards

Production  
Capability  
&  
Capacity

AdvM Digital  
Architecture

Logistics &  
Procurement  
Integration

Foundational RDT&E data on Manufacturing Technology

SEA 08, SEA 05, MIB, SEA 04, SEA 03, PEOs, TYCOMs, Industry, Academia

**Cross-cutting enablers key to successful AM scaling**

### Governance and Standards

**Goal:** Clear, pragmatic Navy requirements to make AM procurable and accessible.

### Production Capability & Capacity

**Goal:** Navy production capacity within uniformed, public, and private industrial bases to meet Navy needs.

### AdvM Digital Architecture

**Goal:** Securely store, send, retrieve, and freely collaborate across network boundaries on large data files with accessible databasing infrastructure.

### Logistics and Procurement Integration

**Goal:** Exercise upstream and downstream processes required to identify, create, install, and requisition an acceptable component made via Advanced Manufacturing (AdvM).

# VLS At-Sea Reloading – TRAM Demonstration

- **Transferrable Reload At-sea Method (TRAM) device**
  - UNREP based concept to rearm MK 41 Vertical Launch System at sea
- **Refurbishment, Analysis, Testing and Modifications**
- **Ships**
  - USS CHOSIN (CG-65)
  - USNS WASHINGTON CHAMBERS (T-AKE-11)
- **Demonstration**
  - Land Based Demonstration successfully completed 08-12 JUL 2024
  - At-Sea Demonstration successfully completed 9 – 11 OCT 2024



JOHNS HOPKINS  
APPLIED PHYSICS LABORATORY



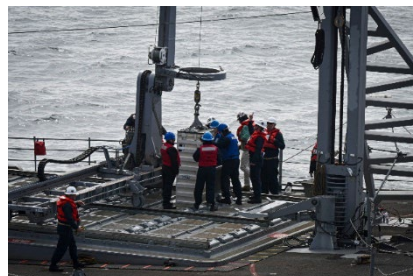
THE  
**ENTWISTLE**  
COMPANY

PRISM MARITIME



AOC  
Engineering Solutions

GENERAL DYNAMICS  
Applied Physical Sciences





# Sustainment and Repair

**Problem Statement:** Future fleet size, infrastructure limitations, increased operational tempo and near peer environment require maintenance, sustainment and repair actions to occur concurrent to mission

## Align Maintenance & Sustainment technology with Expeditionary Maintenance and Battle Damage Repair:

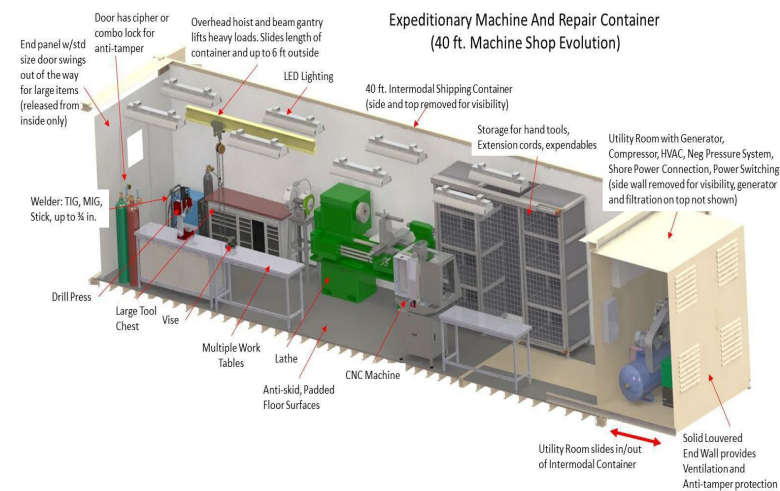
- Shop in a box (EMARC)
- Cold Spray Pop Up Cell
- Cold Spray mobile expeditionary equipment

## Expeditionary Technology Portfolio:

- Rapid Digitization - Topside Drone Scanning
- Mobile Infrastructure - Expeditionary Repair units
- Underwater inspection - Robotic snake/drone
- Surface Restoration - Multi-purpose end effector

## Battle Damage Repair:

- War game potential solutions
- Test in live expeditionary scenarios to aid technical decision making
- Develop acquisition, training and fielding plans





## 231019-N-GF955-1113 RED SEA

October 19, 2023

The Arleigh Burke-class guided-missile destroyer USS Carney (DDG 64) defeats a combination of Houthi missiles and unmanned aerial vehicles in the Red Sea, Oct. 19. Carney is deployed to the U.S. 5th Fleet area of operations to help ensure maritime security and stability in the Middle East region.

*U.S. Navy photo by Mass Communication Specialist 2nd Class Aaron Lau*



## MAYPORT, FL

May 19, 2024

The Arleigh Burke-class guided-missile destroyer USS Carney (DDG 64) returned to Naval Station Mayport, Florida, May 19, after being deployed for more than seven months to the U.S. Naval Forces Europe – Africa and U.S. Naval Forces Central Command areas of operation.