

1 January 2026



NAVAL SURFACE WARFARE CENTER
INDIAN HEAD DIVISION

Naval Surface Warfare Center INDIAN HEAD

Command
Brief

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Commanding Officer

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Distribution Statement A (26-006): Approved for public release. Distribution is unlimited.



OUR MISSION

Research, develop, test, evaluate (RDT&E), manufacture and provide in-service support of energetics and energetic systems. Provide Soldiers, Marines, Sailors and Airmen with information and technology to detect, locate, access, identify, render safe, recover, exploit and dispose of explosive threats.

RANGE AND SPEED

- Propellants
- Explosives
- Fuels
- Reactive materials
- Rocket motors
- Conventional ammunition

LETHALITY

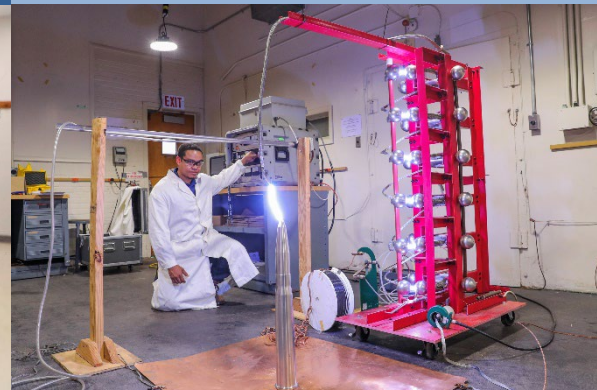
- Novel explosives
- Reactive materials
- Warheads
- Casing
- Modeling and simulation (M&S)
- Conventional ammunition

SIGNATURES MANAGEMENT

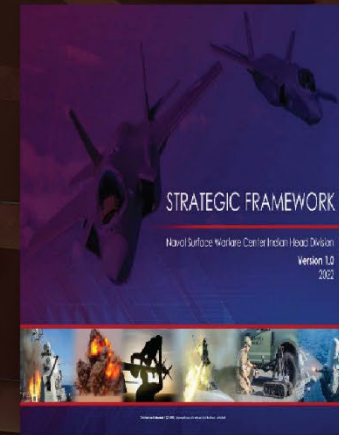
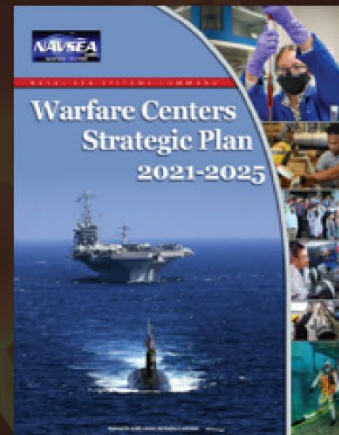
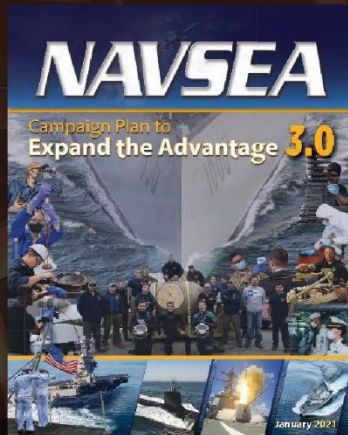
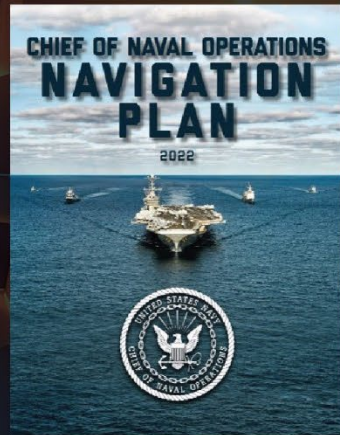
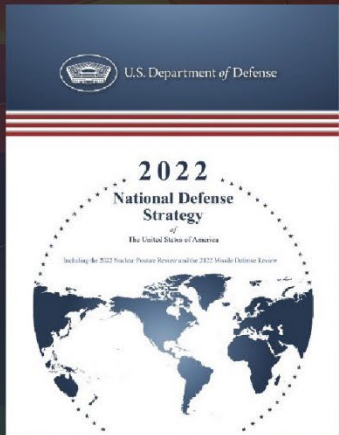
- Propellants
- Fuels
- Rocket motor design
- M&S
- Safe and arm (S&A) devices

SAFETY

- EOD
- S&A/Fuzing
- Aircrew escape
- Packaging, Handling, Storage and Transportation of Energetics
- Insensitive munitions
- Chem bio defeat



STRATEGIC THRUSTS



NATIONAL DEFENSE STRATEGY

- Defend the homeland
- Deter strategic attacks
- Deter aggression
- Build a resilient Joint Force and defense ecosystem

NAVIGATION PLAN

- Readiness
- Capabilities
- Capacity
- Sailors

NAVSEA EXPAND THE ADVANTAGE 3.0

- Deliver combat power
- Transform our digital capability
- Build a team to compete and win

WARFARE CENTERS STRATEGIC PLAN

- Workforce and leadership development
- Mission-aligned strategies
- Technical innovation and excellence
- Business excellence and improvement
- Right culture/values

STRATEGIC FRAMEWORK

- Molecule to mission
- Strengthen the Navy's arsenal
- Workforce flexibility and agility

WHAT ARE ENERGETICS?

Energetics define a weapon system's performance:

- Range, speed, lethality, signatures management, safety, logistics

Energetics include:

- Ingredients (energetic materials, inert ingredients)
- Formulations (explosives, propellants, fuels)
- Energetic material systems (fuzes, rocket motors, warheads, munitions)

Energetics are essential to every warfighting domain:

- Undersea (e.g., torpedo fuel, warheads, mines)
- Surface (e.g., guns, STANDARD Missile, Sea Sparrow Missile)
- Air (e.g., rockets, ejection seats, bombs, Sidewinder Missile)
- Expeditionary (e.g., ordnance disposal, crew-served weapons)



Energetics material systems are a critical enabler for all combat capability.



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THE NAVY'S ARESENAL

Purpose-built: Established in 1890, NSWC IHD has been manufacturing energetics at war mobilization scales for more than 125 years.

Navy's Public Arsenal: SECNAV designated NSWC IHD as a Center for Industrial and Technical Excellence (CITE) for Energetics and Ordnance Systems Depot maintenance and Arsenal activities in 2014; the only such public naval arsenal.

Government-owned: NSWC IHD focuses on military products with critical national security importance, significant safety/environmental risks, and low profit potential for the private sector; public-private-partnerships (P3) are in place to bolster the industrial base.

Necessary for Innovation: RDT&E, engineering and manufacturing combined at one site allows Navy to efficiently advance combat capability across ALL warfighting domains.

NSWC IHD is the Navy's surge energetics manufacturing site with the capabilities and expertise needed for wartime mobilization.



BENEFITS OF A GO-GO ARSENAL

- **Advance state of the art**
 - Low industry participation in energetics S&T and energetics manufacturing scale-up due to high-risk/low-reward
- **Foundational layer of the munitions industrial base (MIB)**
 - Sole/second source for critical munitions
 - Public private partnerships enable expansion to new and legacy entrants to the MIB
 - Provide risk mitigation and cost pressure for industry
 - Maintain capacity for peacetime and wartime response
- **Maintain core expertise and capabilities as Navy's trusted advisor**
 - Broad range of research, engineering and manufacturing competencies ensures the integrity, safety, reliability and performance of naval munitions
 - Responsive at addressing industry and fleet issues with munitions

A healthy organic industrial base: 1) drives energetics innovation; 2) meets surge manufacturing requirements; 3) sustains Navy's energetics expertise.



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NSWC IHD STRATEGIC LOCATIONS



*Contractor numbers not included

CRANE, INDIANNA

(2) CIVILIANS
(0) MILITARY

Design and construct portable armories
Provide automation for front gates

OGDEN, UTAH

(16) CIVILIANS
(0) MILITARY

Co-located at Hill Air Force Base
CAD/PAD Air Force Integrated Product Team

CAMP PENDLETON, CALIFORNIA

(8) CIVILIANS
(0) MILITARY

Demonstration and Assessment Team
Assigned to D Department

LEGEND:

Other Sites Supported

- Yokusuka
- Rota
- Yorktown
- San Diego



INDIAN HEAD, MARYLAND (2 SITES)

(1,708) CIVILIANS
(63) MILITARY

NAVSEA Center of Excellence for Energetics
DoD EOD Program Lead
Expeditionary Exploitation Unit ONE (EXU-1)

PICATINNY, NEW JERSEY

(259) CIVILIANS
(4) MILITARY

Located at the Picatinny Arsenal
Joint CoE for Guns and Ammo
Navy Package, Handling, Storage and Transportation, Guns and Ammo

NORFOLK, VIRGINIA

(30) CIVILIANS
(0) MILITARY

Demonstration and Assessment Team
Guns Division
CBR-D

LOUISVILLE, KENTUCKY

(10) CIVILIANS
(0) MILITARY
Naval Guns

MCALESTER, OKLAHOMA

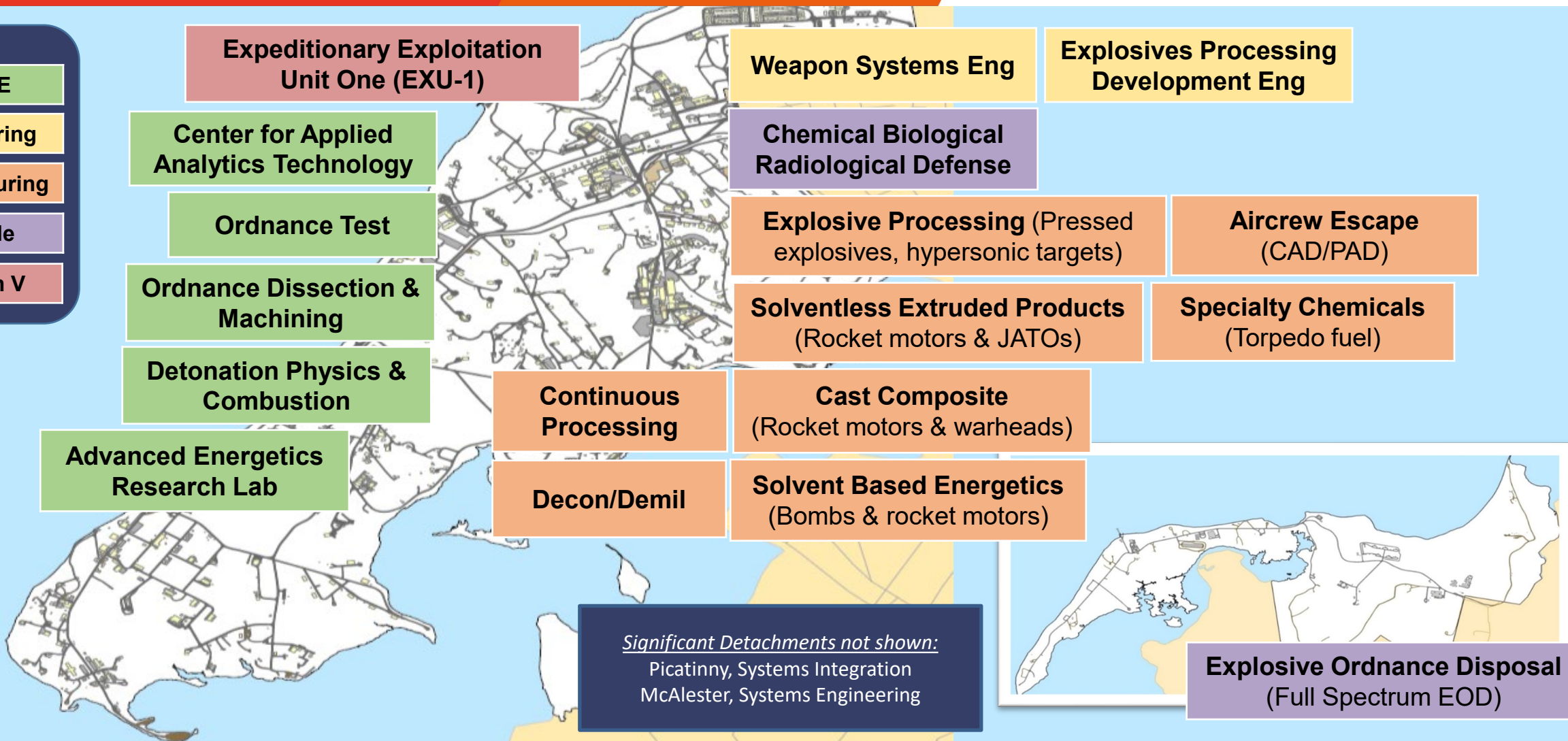
(45) CIVILIANS
(0) MILITARY

McAlester Army Ammunition Plant

INDUSTRIAL COMPLEXES

Key

- RDT&E
- Engineering
- Manufacturing
- Multiple
- Echelon V



ENERGETICS MANUFACTURING TECHNOLOGY (M)

M

Produces and delivers unsurpassed quality energetics for the Nation's strategic deterrence posture and provide a decisive advantage across all domains to operational and tactical military commanders executing operations across the conflict continuum.



CAPABILITIES

- Producing large and small-scale rocket motors and military munitions
- Scale-up of novel energetics for future use in large scale production
- Testing of components, chemical ingredients, and products to support energetics production and fleet use
- Manufacturing Cartridge Actuated and Propellant Actuated Devices for aircrew escape systems
- Machining, welding, and tooling of munitions components
- Over the road transportation of explosives anywhere in the continental United States

WARFIGHTING IMPACT

- Ensuring warfighter readiness by providing reliable explosives and propellants and reducing supply chain disruptions
- Rapid prototyping and transition of new energetics to enhance lethality and performance
- Strategically shifting production lines to align munitions output with current operational demands and the evolving threat landscape, ensuring a proactive and adaptive defense posture

LINES OF OPERATION

- Scalable Mix, Cast, Cure Production
- Various size energetic pressing capabilities
- Extruded Product Manufacturing
- Novel processing techniques
- Full suite of Test and Evaluation capabilities
- Safe, reliable and efficient energetics logistics support

WARFIGHTER DEFENSE & SYSTEM INTEGRATION (W)

W

Provides world class support to the Warfighter in the areas of guns, ammunition, chemical biological radiological defense, and explosive disposal (EOD) tools, technology and information. Also, provide packaging, handling, storage and transportation (PHST) solutions that meet or exceed the needs of our warfighters.

CAPABILITIES

- Chemical Biological and Radiological Defense (CBRD) filter media laboratories, collective protection test-bed, CONUS/OCONUS repair facilities, and CBR littoral testing lab (in-progress)
- Explosives chemistry, electronics and prototyping labs, disassembly complex, and explosives test and robotics ranges
- Medium caliber live-fire test range facility, minor caliber lab, gun stand complex and PHST Test facility

WARFIGHTING IMPACT

- Shipboard and Facility CBRD information, systems, testing, installation, maintenance and repair
- EOD information, systems, testing, maintenance and repair
- Gun Weapon System and ammunition packaging, handling, storage, transport, installation, maintenance, and repair
- Direct warfighter support for guns, CBRD and EOD

LINES OF OPERATION

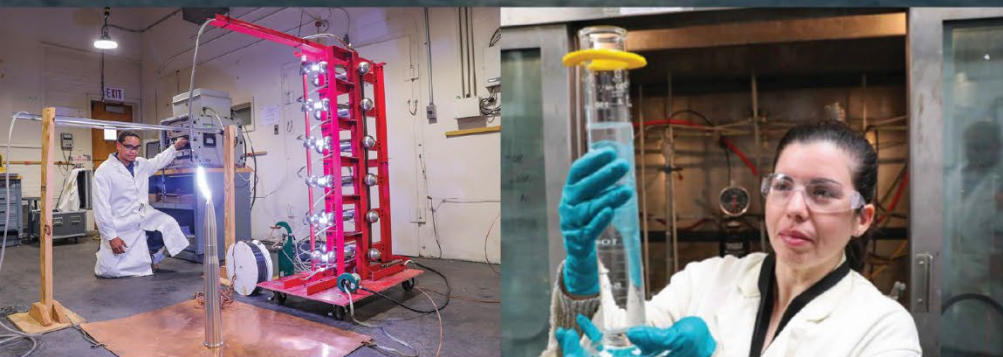
- Research Development Test and Evaluation (RDT&E), design agent, and engineering lead for CBR detection, modeling, collective protection, information systems, and medical systems
- RDT&E and engineering lead for EOD detection equipment, publications, unmanned systems, technology assessments, foreign material acquisition and exploitation
- Weapons and armament PHST design agent, in-service and acquisition engineering agent



RESEARCH & ENGINEERING (E)

E

Our Navy's resource for delivery of energetic system solutions across the full acquisition cycle, providing the warfighter with kinetic advantages.



CAPABILITIES

- Detonation Sciences Experimentation Campus
- Advanced prototyping, fabrication, and additive manufacturing of energetic component technology
- Underwater Analysis Facility (UWAF)
- Electrostatic Discharge (ESD) test facility

WARFIGHTING IMPACT

- Multi—domain warhead and fuze development from concept to program of record
- Advanced energetic test and characterization to tailor lethal effects to targets of interest
- Lethal Effects analysis to inform weapon system CONOP/CONEMP
- Life-cycle and logistics services for fielded conventional weapon systems and CAD/PADs

LINES OF OPERATION

- Unmanned System (UxS) kinetic payload development
- Novel Energetic Materials formulation and synthesis
- Advanced diagnostics, demonstration, test and evaluation of energetic components
- Advanced prototyping, fabrication, and additive manufacturing of energetic components



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NUMBERS AT A GLANCE



★ FY25 EXECUTION ★

\$793M Direct/\$302M Indirect

Total Contracting Effort

\$936M

Building Occupied

941

Total Square Feet

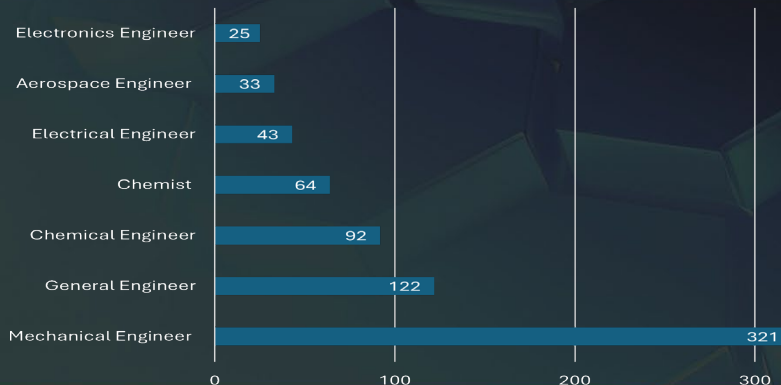
2,324,000

Civilian Staffing

Employees*

2,193

Top S&E Disciplines



Scientist & Engineers
796

Average Years of Service

12

Average Age of Workforce

44

Workforce Education (Technical)

Bachelors 519
Masters 196
Ph.D. 84

*Contractor numbers not included



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QUESTIONS?



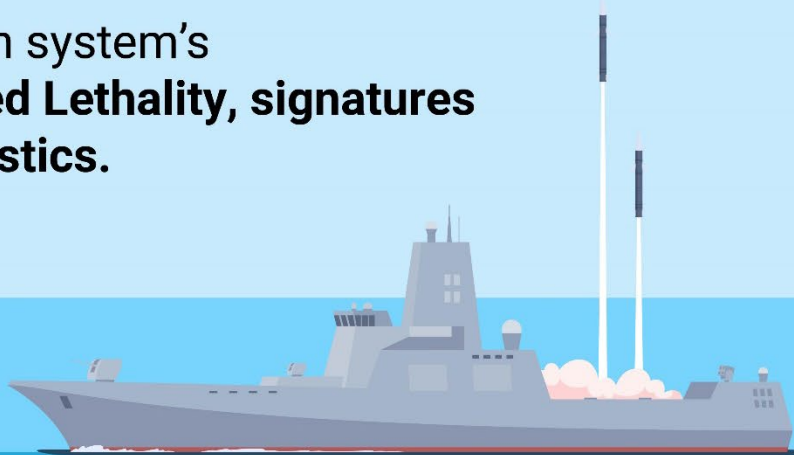
WHAT ARE ENERGETICS?

Energetic define a weapon system's performance. **Rance Speed Lethality, signatures management, safety, logistics.**



AIR

E.g. rockets, ejection seats, bombs, sidewinder missile

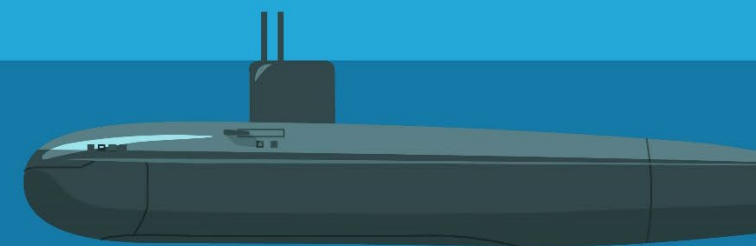


SURFACE

E.g. guns, standard missile, sea sparrow missile

EXPEDITIONARY

E.g. ordnance disposal, crew-served weapons



UNDERSEA

E.g. torpedo fuel warheads, mines

Energetics include:

- **INGREDIENTS**
(Energetic materials, inert ingredients)
- **FORMULATIONS**
(Explosives, propellants, fuels)
- **ENERGETIC MATERIAL SYSTEMS**
(Fuzes, rocket motors, warheads, munitions)

CORPORATE OPERATIONS (10)



Enable the Navy's arsenal to create, produce and adapt by providing operational, logistical, and business expertise.



VISION

- To be the Navy's benchmark for agile, innovative, and integrated arsenal operations, trusted logistics, and premiere business solutions
- Corporate Operations is the backbone of NSWC IHD

CAPABILITIES

- **Human Resources Management:** Talent acquisition, workforce development, employee relations, and compliance with federal employment policies to support mission readiness
- **Infrastructure:** Oversight of physical assets, maintenance, space planning, and ensuring operational continuity across all facilities
- **Information Technology Services:** Implementation and maintenance of secure, reliable IT systems, cybersecurity protocols, and data management to enable effective communication and operations
- **Security and Intelligence Operations:** Protection of personnel, assets, and information through physical security, threat analysis, and coordination with intelligence agencies
- **Corporate Planning and Logistics:** Strategic resource allocation, supply chain management, and logistics coordination to support efficient operational workflows

WARFIGHTING IMPACT

Corporate Operations directly contributes to warfighting readiness by:

- Create an agile and innovative logistics capability that optimizes resource flow, supporting rapid delivery of solutions and enhancing arsenal responsiveness
- Streamline processes and leverage technology to enhance operational efficiency, ensuring timely delivery of high-quality products and maximizing resource utilization.
- Optimize organizational structure and roles to enhance agility, enabling rapid adaption to emerging requirements and effective delivery of superior energetics solutions



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CONTRACTS DEPARTMENT (02)



Provide solid on-time acquisition solutions that equip our global warfighter with the supplies and services they need to outpace our adversaries.



SERVICES

- Acquisition Strategy Development (FAR/DFARS/NMCARS Compliance)
- Acquisition Planning, Solicitation, Award, Administration, and Closeout
- Strategic and Rapid Acquisition Instruments (OTAs/IDIQs/BPAs)
- Cost/Price Negotiation Expertise
- Vendor and Industry Engagement
- Compliance and Regulatory Oversight
- Strategic Support and Business Advisors
- Risk Management
- Real-Time Data Driven Metrics

LINES OF OPERATION

- **Acquisition Policy, Oversight and Metrics 021:** Develops, interprets and maintains policies, procedures and guidance related to contracting and procurement activities. Also provides oversight, training, data call support, metrics collection/reporting and advisory support to standardize practices, ensures compliance and mitigates risk.
- **Technical Liaison Office 02T:** Provides a critical link to the Technical Acquisition Specialist (TAS) community, the Contracting Officer Representative (COR) community and the Command's Purchase Card Program to promote partnering, transparency and accountability throughout the acquisition process.
- **Contract Execution and Administration 022, 023 and 026:** Provides customer aligned cradle to grave acquisition support from requirement generation to closeout, through the execution and administration of all acquisition types (simplified acquisition, large supply and service, agreements, grants and construction)

TOTALS

FY25 Total Obligations:
\$936M

FY25 Total Number of Actions:
2,365



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COMPTROLLER DEPARTMENT (01)



MISSION

- Leading financial management by ensuring the production of auditable financial statements, executing transparent and effective budgets, and equipping senior leadership with reliable data and authoritative stewardship to support mission readiness and governance.

CAPABILITIES

- Financial Planning and Budget Execution
- Accounting and financial reporting
- Business operations and performance management
- Policy Compliance and Internal controls
- Systems and data management
- Workforce and stakeholder engagement

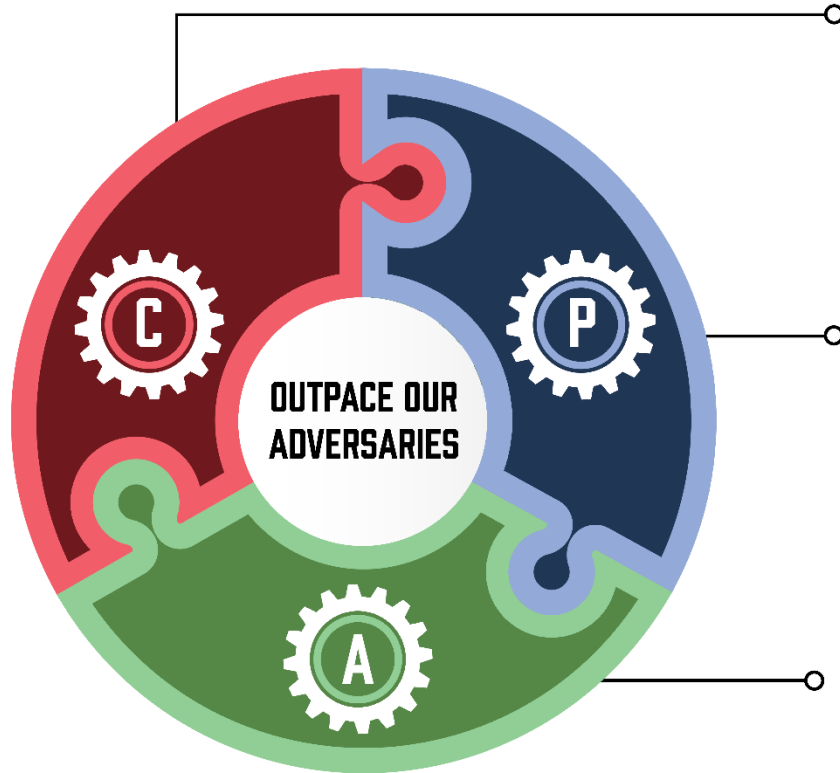
WARFIGHTING IMPACT

- By tracking costs, stabilizing rates and ensuring cost recovery, the comptroller office makes sure parts and maintenance are affordable and available to operating forces.
- By enforcing internal controls auditability and efficient use of resources, Comptroller functions prevent waste and free up resources than can be reinvested in warfighting priorities.
- Provide cost, rate and performance data that helps leadership decide where to position resources for maximum operational impact.

LINES OF OPERATION:

- Accounting
- Budget
- Employee Services
- FIAR

STRATEGIC FRAMEWORK



CREATE:

Molecule to Mission

Innovation brings new ideas. When people and tools work well together, they achieve through teamwork.

PRODUCE:

Strengthen the Navy's Arsenal

Ready infrastructure to increase production capacity at any time.

ADAPT:

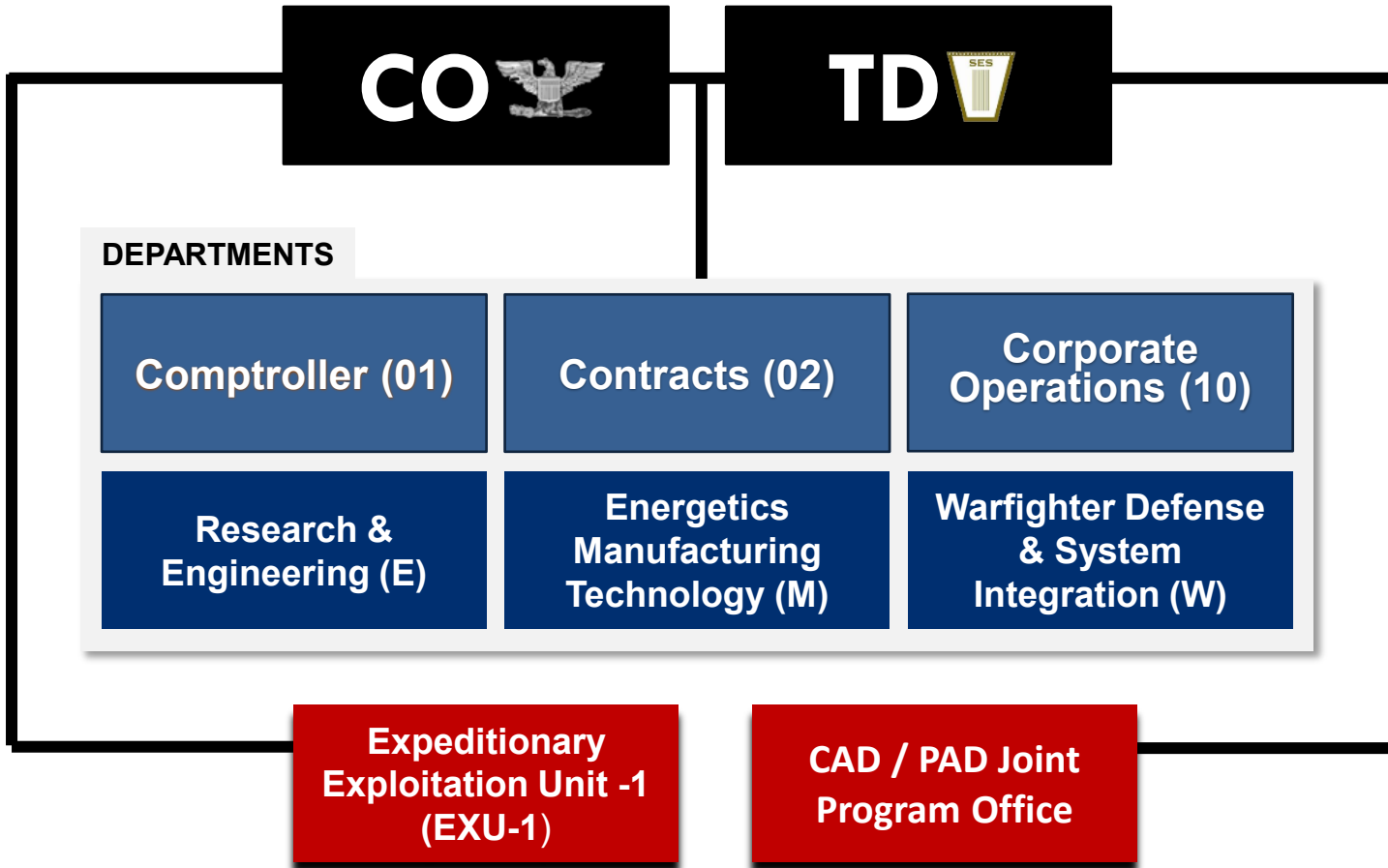
Workforce Flexibility & Agility



Leadership, workload capacity, and flexible capabilities.



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ORGANIZATIONAL STRUCTURE



- CNO
(Echl. I) ★★★★★
- NAVSEA
(Echl. II) ★★★
- NSWC/NUWC HQ
(Echl. III) ★
- NSWC IHD
(Echl. IV) 
- EXU-1
(Echl. V) 

COMMAND TIMELINE



1890: Ens. Robert Dashiell takes over construction and supervision of the new Naval Proving Ground upon its relocation to Indian Head.



1917: The Explosive D plant opens.

1942: Explosive Investigation Laboratory established at Stump Neck Annex.



1960: An overhead of the Polaris Plant.



2007: Naval EOD Technology Division aligns under NAVSEA as a division of NSWC.



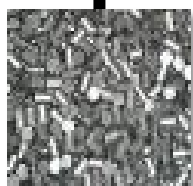
1947: Indian Head establishes R&D Department.

2013: NAVSEA announces the merger of NSWC Indian Head Division and Naval EOD Technology. NSWC IHEODTD is formed.



2015: Indian Head celebrates its 125th Anniversary.

1900: Indian Head begins producing smokeless powder. Dr. George Patterson is brought aboard as the station's first chief chemist.



1927: Indian Head begins work on torpedo fuzes, anti-submarine fuzes, signals and buoys.



1946: Navy WWII veterans employed at Indian Head's extrusion plant pose for a photo.

1954: The Biazzi Nitroglycerine Plant opens.



1973: CAD/PAD work is assigned to Indian Head.

TECHNOLOGY TRANSFER

NSWC IHD Technology Transfer initiatives look to jointly develop dual-use technologies with academic and private industry partners, develop collaborations with partners interested in access to our unique expertise and facilities, and assist in the commercialization and marketing of out intellectual property.

Partnering Agreements:

- 4 Patent License Agreements
- 73 Active CRADAs
- 9 Educational Partnership Agreements
- 8 Partnership Intermediary Agreements

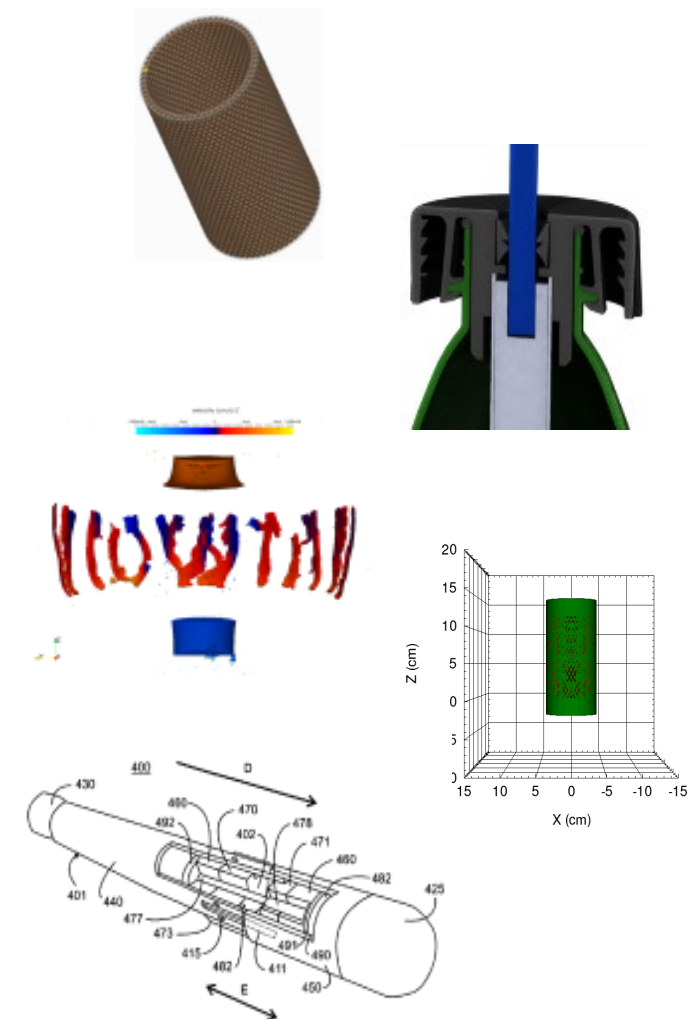
10 year Metrics

CRADAs:

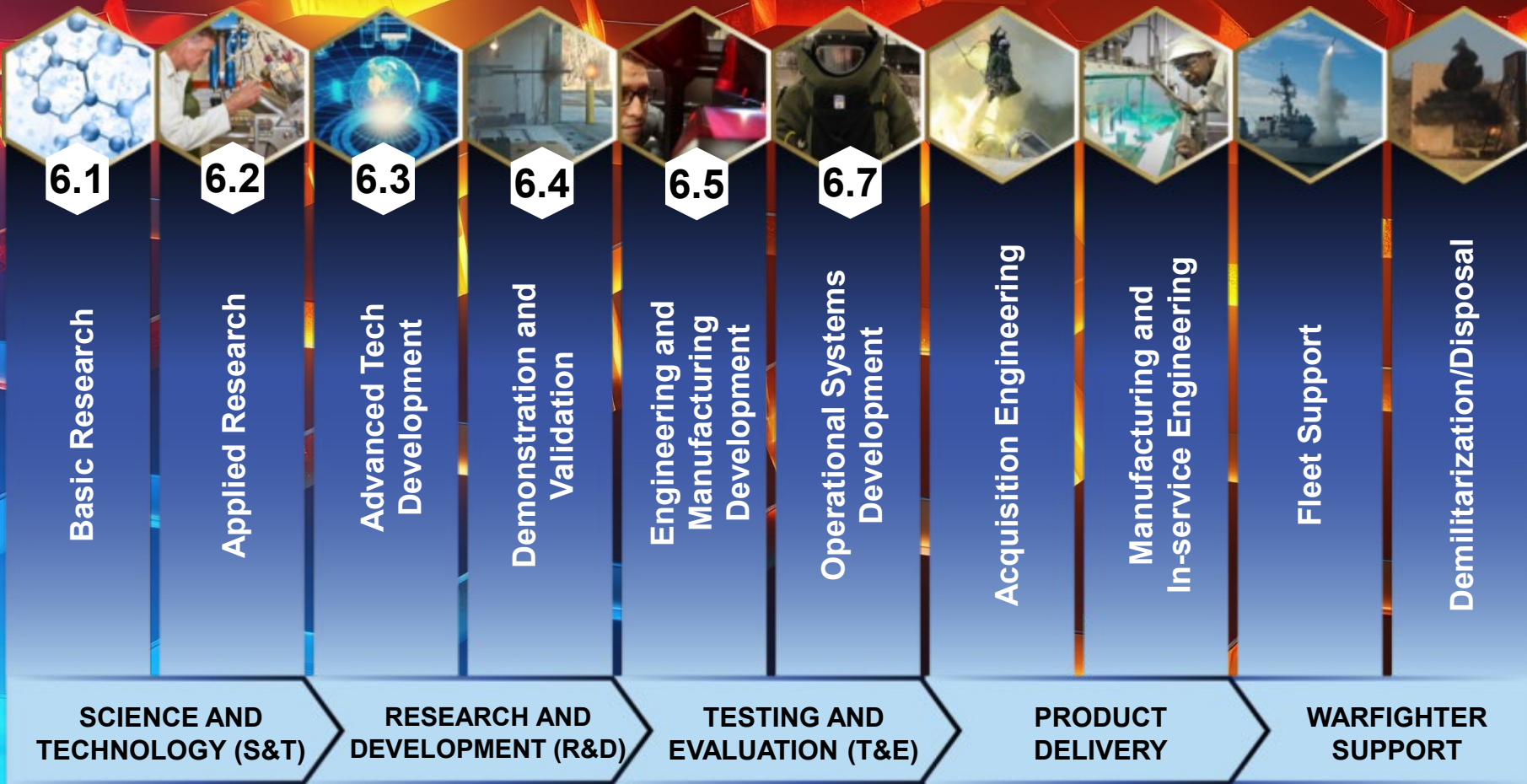
- 144 collaborations
- \$18 million

Patents:

- 172 patents awarded
- \$71,000 in revenue



MOLECULE TO MISSION



Only DON activity delivering both energetics and EOD technology solutions from basic research through disposal

TECHNICAL CAPABILITIES



1. EOD/improvised explosive device (IED) / counter radio-controlled IED electronic warfare (CREW) threat and countermeasure information development and dissemination.
2. EOD/IED/CREW technology development and integration
3. Emergent and national-need requirement energetics, S&T, ordnance components and systems.
4. Air warfare energetics, ordnance components and systems.
5. Surface warfare energetics, ordnance components and systems.
6. Expeditionary and undersea warfare energetics, ordnance components and systems.
7. EOD Unmanned Systems.
8. Conventional and Improvised Weapons Exploitation.
9. Chemical, Biological, and Radiological Defense Systems.
10. Force Protection Systems Engineering, Integration and Equipment Ashore.



NAVAL SURFACE WARFARE CENTER
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CENTER FOR INDUSTRIAL & TECHNICAL EXCELLENCE



NSWC IHD received Title 10 sec 2474 designation as a Center for Industrial and Technical Excellence (CITE) for Energetics and Ordnance systems Depot maintenance and Arsenal activities in May 2014.

CITE designation provides the legal authority for NSWC IHD to form Public-Private Partnerships (P3).

- Workloads critical plant complexes
- Facilitates collaboration with private industry
- Reduces total ownership costs to the NAVY, promoting financial viability

To date we have entered into 10 P3 agreements with private industry

- Chemring Ordnance, Inc. – APOBS Grain Manufacture
- Chemring Ordnance, Inc – SRM Rocket Motor Grain Manufacture
- NAMMO Energetics Indian Head (NEIH) – Tactical Rocket Motor and Warhead Manufacture
- GreyOps – Manufacture of Explosive Desensitizing Agents
- Global Military Products – Energetic Materials, Components, and Systems Manufacturing
- MBDA Inc. – Manufacture Solid Propellant Rocket Motors and Warheads
- XBOW – Solid propellant rocket motor manufacture
- Aerojet – Qualify and Manufacture Solid Propellant Rocket Motors
- USBTA – T&E of Explosive Ordnance and Explosive Hazard Equipment
- Avio USA – Solid Propellant Rocket Motor Production



NAVSEA
NAVAL SEA SYSTEMS COMMAND



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