

Section 6

# NAVAL SURFACE WARFARE CENTERS



Figure 6-1. Naval Sea System Command Naval Surface Warfare Center Map

Naval Sea Systems Command (NAVSEA) exists to make Naval (USN and USMC) programs successful. The vision of NAVSEA is to be the Navy’s trusted partner for identifying and providing innovative cost effective technical solutions to the warfighter. NAVSEA is responsive to the Naval enterprises, the joint force and national requirements, while partnering with industry, other DoD laboratories, and academia. Within NAVSEA, support for the warfighter is accomplished at both the Naval Surface Warfare Center (NSWC) and the Naval Undersea Warfare Center (NUWC).

The mission of NSWC is to operate the Navy’s full-spectrum research, development, test and evaluation, engineering, and fleet support center for ship systems, surface ship combat, and weapons

systems, littoral warfare systems, force warfare systems, and other offensive and defensive systems associated with surface warfare and related areas of joint, homeland and national defense systems from sea and ashore. NSWC also provides the Navy’s core technical capability for the integration of weapons, combat and ship systems into surface ships and vehicles and for development and integration of energetic materials for joint applications.

The mission of NUWC is to operate the Navy’s full-spectrum research, development, test, and evaluation, engineering, and fleet support center for submarines, autonomous underwater systems, and offensive and defensive weapons systems associated with undersea warfare and related areas of homeland security and national defense. NUWC

also provides the Navy's core technical capability for the integration of weapons, combat and ship systems into submarines and undersea vehicles.

The Warfare Centers view the Marine Corps as an important strategic partner. To facilitate a productive relationship with the Marine Corps, the Warfare Center Division Technical Directors chartered the NAVSEA Warfare Center USMC Collaboration Team (CT). The vision for the CT is to work seamlessly across the Warfare Centers Divisions to support and advocate for technically superior and cost effective solutions for the Marine Corps. The CT is a readily available resource to

facilitate Marine Corps Stakeholder engagement with the Warfare Center Divisions.

The following NSWC Division Fact Sheets highlight each warfare centers capabilities and Marine Corps focus.

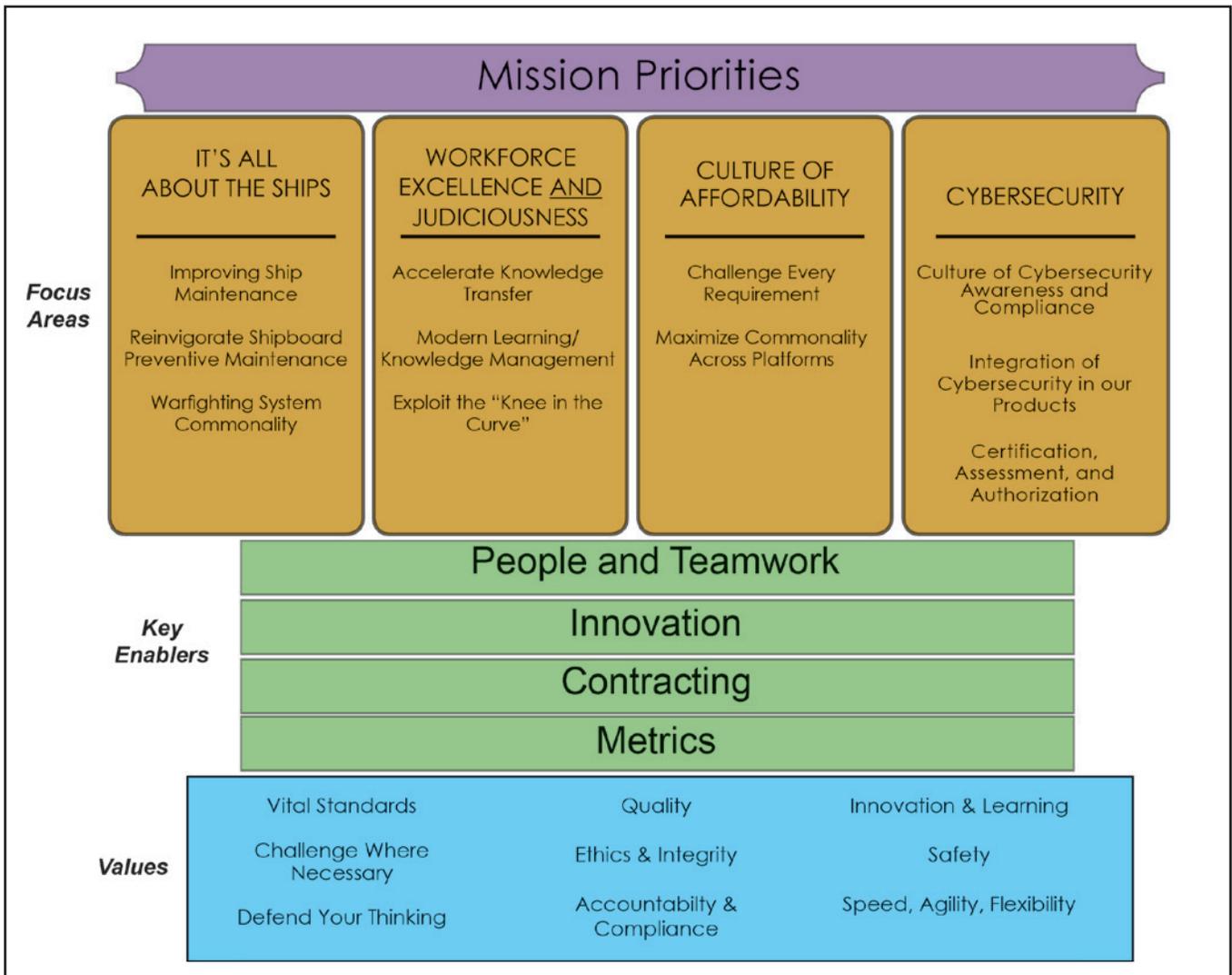


Figure 6-2. NAVSEA Strategic Framework

## NSWC Carderock Division (NSWCCD)

### Mission:

Provide research, development, test and evaluation, analysis, acquisition support, in-service engineering, logistics and integration of surface and undersea vehicles and associated systems. Develop and apply science and technology associated with naval architecture and marine engineering, and provide support to the maritime industry. Execute other responsibilities as assigned by the Commander, Naval Surface Warfare Center.

### Technical Capabilities:

- ▶ CD04 Surface and Undersea Vehicle Machinery Systems Integration
- ▶ CD05 Combatant Craft and Expeditionary Vehicles
- ▶ CD07 Hull Forms and Fluid Dynamics
- ▶ CD09 Surface and Undersea Vehicle Mechanical Power and Propulsion Systems
- ▶ CD10 Surface and Undersea Vehicle Electrical Power and Propulsion Systems
- ▶ CD14 Surface, Undersea, and Weapon Vehicle Materials
- ▶ CD15 Surface and Undersea Vehicle Structures
- ▶ CD16 Alternative Energy and Power Sources R&D
- ▶ CD17 Liquid Waste Management, Science and Systems
- ▶ CD18 Solid Waste and Hazardous Material Management, Science and Systems, and Ships and Subs Systems Safety
- ▶ CD20 Surface, Undersea and Expeditionary Vehicle Vulnerability Reduction and Protection

### Facilities:

- ▶ Acoustic Research Detachment
- ▶ Advanced Ceramics Laboratory
- ▶ Biotechnology Laboratories
- ▶ Center for Innovation in Ship Development
- ▶ Circulating Water Channel
- ▶ Combatant Craft Department
- ▶ David Taylor Model Basin
- ▶ Deep Submergence Pressure Tank Facility
- ▶ Dosimetry Laboratories
- ▶ Electrochemical/Battery Laboratories
- ▶ Environmental Protection Laboratories
- ▶ Explosives Test Pond
- ▶ Fatigue and Fracture Laboratories
- ▶ Fire Tolerant Materials Laboratories
- ▶ IR Systems
- ▶ Large Cavitation Channel (LCC)
- ▶ Large Scale Grillage Test Facility
- ▶ Magnetic Fields Laboratory
- ▶ Magnetic Materials Laboratory
- ▶ Maneuvering and Seakeeping Basin (MASK)
- ▶ Manufacturing Technology Laboratory
- ▶ Marine Coatings Laboratories
- ▶ Marine Corrosion Control and Evaluation Laboratories
- ▶ Marine Organic Composites Laboratories
- ▶ Materials Characterization and Analysis Laboratory
- ▶ Metal Spray Forming Laboratory
- ▶ Nondestructive Evaluation (NDE) Laboratories

- ▶ Radar Imaging Modeling System (RIMS)
- ▶ Rotating Arm Facility
- ▶ Ship Materials Technology Center
- ▶ Shock Trials Instrumentation
- ▶ Signature Materials Laboratories
- ▶ Signature Materials Laboratory
- ▶ Small Gas Turbine Test Facility
- ▶ South Florida Testing Facility
- ▶ Southeast Alaska Acoustic Measurement Facility (SEAFAC)
- ▶ Structural Dynamics Laboratory
- ▶ Structural Evaluation Laboratory
- ▶ Subsonic Wind Tunnel
- ▶ Survivability Engineering Facility
- ▶ Welding Process and Consumable Development Laboratories

### **Current Marine Corps Support Areas:**

- ▶ USMC Platform/Vehicle Hydrodynamics and Hydromechanics
- ▶ USMC Platform/Vehicle Integration and Design
- ▶ Survivability
- ▶ Structures
- ▶ Materials
- ▶ Power/Energy
- ▶ Environmental Quality and System Safety
- ▶ Machinery

### **Current Marine Corps Programs Supported:**

#### **PEO Land Systems**

- ▶ PM-AAA

- ▶ AAV Hydrodynamics
- ▶ AAV Corrosion
- ▶ ACV 1.0/2.0 Hydrodynamics
- ▶ ACV Human Factors
- ▶ CV 2.0 Turbine Air Induction
- ▶ ACV Tire Study (Survivability)

#### **PM-JNLW**

- ▶ Polymer Kelp Program (Small Boats/Craft)

#### **PM-MRAP**

- ▶ Live Fire Testing and Evaluation (LFT&E)/Survivability

#### **AUTOCELL**

- ▶ Survivability

### **Marine Corps Systems Command**

#### **SIAT (Systems Interoperability and Architecture Technology)**

- ▶ BIR Program Manager
- ▶ Corrosion Prevention and Control (CPAC Program)
- ▶ Expeditionary Power

#### **PMM-115 (PM-Combat Support Systems)**

- ▶ Power/Energy (MEHPS; GREENS, etc...)

#### **USMC Headquarters Expeditionary Energy Office (E20)**

- ▶ Power/Energy

## NSWC Dahlgren Division (NSWCDD)

### Mission:

Provide research, development, test and evaluation, analysis, systems engineering, integration and certification of complex naval warfare systems related to surface warfare, strategic systems, combat and weapons systems associated with surface warfare. Provide system integration and certification for weapons, combat systems and warfare systems. Execute other responsibilities as assigned by the Commander, Naval Surface Warfare Center.

### Technical Departments:

- ▶ A-Strategic and Computing Systems
- ▶ B-Electromagnetic & Sensor Systems
- ▶ E-Gun & Electric Weapon Systems
- ▶ H-Weapons Control & Integration
- ▶ R-Readiness & Training Systems
- ▶ V-Warfare Systems Engineering & Integration
- ▶ ME-Mission Engineering & Analysis Directorate

### Facilities:

NWWCDD occupies four geographic locations, the Naval Observatory in DC and Dahlgren, Wallops Island, and Damn Neck in Virginia. The NSWCDD Headquarters at Dahlgren is near Quantico and the Pentagon and the Damn Neck facility is near Marine Corps Forces Command in Norfolk. NSWCDD includes several unique national facilities including the Littoral Operational Area Range and the Potomac River Test Range. NSWCDD operates state-of-the-art facilities supporting all assigned technical areas such as: sensors, unmanned systems, fire control systems, integrated warfare systems, directed energy, railgun, chem-bio defense, and electromagnetic environmental effects.

### Current Marine Corps Support Areas:

- ▶ Combat Engineer Route Reconnaissance and Clearance (R2C) and Mobility/Counter-Mobility design, integration, testing, fielding, and sustainment
- ▶ Vehicle 3-D Modeling and Laser Scanning drawing development, configuration management and sustainment
- ▶ Vehicle Capability Insertions design, integration, fielding and sustainment
- ▶ Expeditionary Command and Control design, integration, testing, fielding, and sustainment
- ▶ Energy Modeling and Analysis and Testing
- ▶ Expeditionary Analysis, Modeling, and Simulation

### Current Marine Corps Programs Supported:

#### Combat Development and Integration (CD&I)

- ▶ Marine Corps Technology Assessment Group (MTAG) Technical Support
- ▶ Engineering Support to Seabasing Integration Division

#### Marine Corps Warfighting Laboratory (MCWL)

- ▶ Engineering Support

#### PEO Land Systems

##### PM-AAA

- ▶ AAV Emergency Egress Lighting
- ▶ AAV Electrical Upgrade
- ▶ AAV ARVCOP (Funded by PMS 495)
- ▶ Habitability

### **PM-Aviation Command & Control and Sensor Netting**

- ▶ CAC2S Software Integration and Management
- ▶ CAC2S Test & Evaluation

### **PM-Medium and Heavy Tactical Vehicles**

- ▶ LVSR 3-D Modeling
- ▶ MTRV 3-D Modeling
- ▶ Vehicle Capabilities Insertions

### **PM-G/ATOR**

- ▶ Engineering and Acquisition

## **Marine Corps Systems Command**

### **PM-MAGTF Command, Control, and Communications (MC3)**

- ▶ Combat Operations Center (COC) Engineering
- ▶ Joint Battlespace Viewer sustainment
- ▶ E3 Hazards Engineering

### **PM-Ammo**

- ▶ 40mm Ammunition
- ▶ Anti-Personnel Obstacle Breaching System (APOBS)
- ▶ 120mm Ammunition, Missiles & Rockets

### **PM-Infantry Weapons Systems (IWS)**

- ▶ Follow on to SMAW (FOTS)
- ▶ Raids and Recon Depot Support
- ▶ Anti-Armor
- ▶ M40A5 Rifle Improvement Project

### **PM-Armor and Fire Support Systems (AFSS)**

- ▶ Ordnance Qualification
- ▶ Weapon System Integration

- ▶ M1A1 Weapon System Upgrades
- ▶ Ground Weapon Radar Support

### **PM-Light Armored Vehicle (LAV)**

- ▶ Anti-Tank Modernization

### **PM SIAT**

- ▶ Systems Engineering
- ▶ Energy
- ▶ CIED
- ▶ Expeditionary M&S and FACT Support

## NSWC Crane Division (NSWC Crane)

### Mission:

Provide acquisition engineering, in-service engineering and technical support for sensors, electronics, electronic warfare and special warfare weapons. Apply component and system-level product and industrial engineering to surface sensors, strategic systems, special warfare devices and electronic warfare/information operations systems. Execute other responsibilities as assigned by the Commander, Naval Surface Warfare Center.

### Description:

Naval Surface Warfare Center, Crane Division, (NSWC Crane) is a shore command of the U.S. Navy, under the Naval Sea Systems Command headquartered in Washington, DC. It is a business-based enterprise operating under the Navy Working Capital Fund. Seventy-three percent of the workforce is made up of scientists, engineers, and technicians.

NSWC Crane Headquarters is located in southwestern Indiana, with a secondary location in Fallbrook, CA. NSWC Crane Headquarters is a tenant on the third largest Navy installation in the world. With nearly 100 square miles of land, no encroachment, strong state and local support, and cost of living index 22.7 percent below the U.S. national average, Crane is indispensable to the nation as a high-value provider of innovative solutions and services.

Multi-service partnerships with Crane Army Ammunition Activity and Army/Indiana National Guard's Camp Atterbury Joint Maneuver Training Center, Muscatatuck Urban Training Center (MUTC), and Hawthorne Army Depot in Nevada strengthen Crane's ability to rapidly assess new technologies immersed in an operational-type environment with electronic attack clearance and restricted air space.

In 2013, NSWC Crane realigned our technical capabilities, thus increasing our military value assessment while integrating our adjacent technology products and narratives. NSWC Crane specializes in sensors, electronics, electronic warfare, and special warfare weapons. Our primary mission focus areas are Special Missions, Strategic Missions, and Electronic Warfare/Information Operations. In support of these Mission Focus Areas, Crane's scientists, engineers, and professional workforce provide stewardship and high-military value knowledge, contracts, hardware, and software across the following Technical Capabilities with support from the Business Capabilities.

### Technical Capabilities:

- ▶ CR04: Electronic Warfare Systems RDT&E/ Acquisition/Life Cycle Support
- ▶ CR10: Infrared Countermeasures and Pyrotechnic RDT&E and Life Cycle Support
- ▶ CR15: Strategic Systems Hardware
- ▶ CR16: Special Warfare and Expeditionary Systems Hardware
- ▶ CR18: Advanced Electronics & Energy Systems
- ▶ CR19: Sensors and Surveillance Systems

### Current Marine Corps Programs Supported:

#### PEO Land Systems

#### **PM-Air Command and Control and Sensor Netting (AC2SN)**

- ▶ Common Aviation Command and Control System (CAC2S)
- ▶ Marine Air Command and Control System (MACCS)
- ▶ Composite Tracking Network (CTN)

### **PM-Ground Based Air Defense (GBAD) and Ground / Air Task Oriented Radar (GBAD & G/ATOR)**

- ▶ G/ATOR
- ▶ Advanced Man-Portable Air Defense System (AMANPADS)

### **PM-Light Tactical Vehicles (LTV - Legacy)**

- ▶ HMMWV
- ▶ ITV
- ▶ ATV

## **Marine Corps Systems Command**

### **PM-MAGTF Command, Control, and Communications (MC3)**

- ▶ Ground Based Operational Surveillance System (G-BOSS)
- ▶ USMC Counter Radio-Controlled Improvised Explosive Device Electronic Warfare (CREW)
- ▶ USMC CREW Marine Expeditionary Unit (MEU)

### **PM-Marine Intelligence (MI)**

- ▶ Topographic Production Capabilities (TPC)
- ▶ Target Material Production (TMP), Tactical SIGINT Collection System (TCSC)
- ▶ Technical Control and Analysis Center (TCAC)
- ▶ Intelligence Broadcast Receiver (IBR)

### **PM-Infantry Weapons Systems (IWS)**

### **PM-Anti Armor Systems (TOW, Javelin, SMAW, SABER)**

### **PM-Armor and Fire Support Systems (AFSS)**

- ▶ Armor and Fire Support Systems (AFSS) Information Assurance (IA)

- ▶ AN/TPS-59 and AN/TPS-63 Long Range Radars

### **PM-Combat Support Systems**

- ▶ Mk-154 Land Mine Clearance
- ▶ TMDE Systems

### **PM-Ammunition**

- ▶ Ammunition Programs and Inventory Management

## NSWC Port Hueneme Division (NSWC PHD)

### Mission:

Provide test and evaluation, systems engineering, integrated logistics support, in-service engineering and integration of surface ship weapons, combat systems and warfare systems. Provide the leading interface to the surface force for in-service maintenance and engineering support provided by the Warfare Centers. Execute other responsibilities as assigned by the Commander, Naval Surface Warfare Center.

### Description:

Naval Surface Warfare Center, Port Hueneme Division (NSWC PHD) maintains technical expertise at locations across the United States: Engineering and Logistics at Port Hueneme, CA; Search Radar Engineering at Virginia Beach, VA; and Live Fire Testing at White Sands, NM.

Port Hueneme Division is recognized as the Navy's Center of Excellence for In-Service Engineering, Test and Evaluation, and Integrated Logistics Support for surface warfare combat and weapon systems. Since its inception in 1963, Port Hueneme Division has been supporting the combat and weapon systems of the Fleet by providing highly skilled personnel and state-of-the-art facilities to lead the development and support of Navy surface ship warfare systems throughout their life cycles.

Port Hueneme Division focuses its technical capabilities on direct connectivity to the Fleet on a global basis and the immediate availability of around-the-clock access to products, services, and Fleet support capabilities. Capabilities will support predictive system failure, remote diagnostics, and corrective action via real-time, networked communications.

Port Hueneme Division capabilities include "Cradle to Grave" lifecycle engineering and sustainment planning to ensure that combat, weapon, radars, air and surface surveillance systems work effectively together to accomplish ship, Strike Group, and Theater Warfare assigned missions throughout their life. Naval Enterprise area assignments include: Surface, Aviation, Expeditionary Combat, NETWAR/FORCENet, and Undersea for over 50 major acquisition programs. In addition, NSWC PHD provides overland live fire testing of Naval weapons in support of weapons systems acquisition (missiles and laser systems), assembly of weapons for overland and at sea live-fire testing, launch of research rockets, and assembly/launch of low- and medium-fidelity theater ballistic targets.

### Technical Capabilities:

Provide In-Service Engineering (ISE), Test & Evaluation (T&E), and Integrated Logistics Support (ILS)

- ▶ PH01 Strike Force Interoperability and Theater Warfare Systems
- ▶ PH02 Surface and Expeditionary Combat Systems
- ▶ PH03 Surface and Expeditionary Weapon Systems
- ▶ PH04 Underway Replenishment Systems
- ▶ PH07 Surface and Expeditionary Missile Launcher Systems
- ▶ PH08 Radar Systems
- ▶ PH09 Directed Energy Systems
- ▶ PH10 Littoral Mission Module
- ▶ PH11 Ballistic Missile Defense T&E Specialized Target Vehicle Development, Integration and Deployment

### Marine Corps Support Areas:

- ▶ Test & Evaluation (T&E), Integrated

Logistic Support (ILS) , and In-Service Engineering (ISE)

- ▶ Enterprise Product Life Cycle Management Integrated Decision Environment (ePLM IDE), Sustainment and Product Support modeling and analytics/end-to-end product data management

## **Current Marine Corps Programs Supported:**

### **PEO Land Systems:**

#### **PM-Air Command and Control and Sensor Netting (AC2SN)**

- ▶ Common Aviation Command and Control System (CAC2S) T&E Support
- ▶ Composite Tracking Network (CTN) T&E, M&S, ILS & ISE support

#### **PM-Ground Based Air Defense (GBAD) and Ground / Air Task Oriented Radar (G/ATOR)**

- ▶ G/ATOR T&E, Production, Reliability Maintainability and Availability (RM&A), ILS Support

#### **PM-Advanced Amphibious Assault (AAA)**

- ▶ Amphibious Assault Vehicle (AAV) Family of Systems (FoS) ePLM IDE product data configuration management implementation

## **Marine Corps Systems Command:**

#### **PM-Armor and Fire Support Systems (AFSS)**

- ▶ AN/TPS-59 and AN/TPS-63 Long Range Radars T&E, Systems Engineering, CM support
- ▶ AN/TPQ-49 Lightweight Counter Mortar Radar Sustainability Study, In-Service Review for USMC Primary Inventory Control Activity (PICA), Diminishing Manufacturing Sources and Material Shortages (DMSMS) analysis

#### **PM- SIAT**

- ▶ In-Service Engineering (ISE), Guidebook development & Training

## **NSWC Indian Head Explosive Ordnance Disposal Technology Division (NSWC IHEODTD)**

### **Mission:**

Provide research, development, engineering, manufacturing, test, evaluation and in-service support of energetic systems and energetic materials (chemicals, propellants and explosives) for ordnance, warheads, propulsion systems, pyrotechnic devices, fuzing, electronic devices, Cartridge Actuated Devices and Propellant Actuated Devices (CAD/PADs), Packaging, Handling, Storage, and Transportation (PHS&T), gun systems and special weapons for Navy, Joint Forces and the Nation. Develop and deliver Explosive Ordnance Disposal (EOD) technology, knowledge, tools and equipment and their life-cycle support through an expeditionary work force, which meets the needs of the Department of Defense, combatant commanders and our foreign and interagency partners. Support the Executive Manager for EOD Technology and Training. Execute other responsibilities as assigned by the Commander, Naval Surface Warfare Center.

### **Description:**

The NSWC Indian Head Explosive Ordnance Disposal Technology Division (NSWC IHEODTD) brings together the largest full-spectrum energetics facility in the Department of Defense with the largest concentration of explosive ordnance disposal technology resources and information in the world. The Division's unique synergy and balanced capabilities address all aspects of the energetics technical discipline, including basic research, applied technology, technology demonstration, prototyping, engineering development, acquisition, low-rate production, in-service engineering, weapons system integration, system safety, mishap & failure investigations, surveillance, EOD technology & information, and demilitarization.

### **Technical Capabilities:**

- ▶ Threat and Countermeasure Information Development and Dissemination for EOD, IED, and CREW
- ▶ Technology Development and Integration for EOD, IED, and CREW
- ▶ EOD unmanned systems
- ▶ Energetic and Ordnance Component and Ordnance Systems for:
  - S&T
  - Air Warfare
  - Surface Warfare
  - Undersea Warfare
  - Expeditionary Warfare
  - Emergent & National Requirements

### **Major Facilities:**

- ▶ Aircrew Escape Ordnance Devices Development & Prototyping Complex
- ▶ Detonation Physics RDT&E and Acquisition
- ▶ Bombproofs, blast chambers, self-contained gun ranges
- ▶ Continuous Twin-Screw Processing R&D and Scale-up
- ▶ 20-mm, 37-mm, 40-mm and 88-mm extruders
- ▶ Novel Materials R&D
- ▶ Nano-energetic materials characterization
- ▶ Complete suite of analytical capabilities
- ▶ Cast Composite Rocket Motor and PBX R&D & Scale-Up Complex
- ▶ Ordnance Test Facilities
- ▶ Chemical, Physical Property and Metallurgy Labs

- ▶ Quality Evaluation (QE)/Surveillance Facility
- ▶ Specialty Energetic Chemical Scale-up Facility
- ▶ High Pressure Explosives, Physics & Combustion Lab
- ▶ Bomb testing; Strand burning; Combustion instability testing
- ▶ MEMS Clean Room, Underwater Warheads RDT&E and Modeling & Simulation
- ▶ Foreign Ordnance Electronics Exploitation Laboratory
- ▶ Magnetic Signature Test Facility
- ▶ Ordnance Disassembly Complex
- ▶ Hypervelocity Test Facility
- ▶ Oxygen Cleaning Laboratory
- ▶ EOD Diver Complex

## **Current Marine Corps Programs Supported:**

### **PEO Land Systems**

#### **PM-Advanced Amphibious Assault (AAA)**

- ▶ Amphibious Assault Vehicle (AAV).

#### **PM- Light Tactical Vehicle (LTV)**

- ▶ LTV System Safety.

### **Marine Corps Systems Command**

#### **PM AMMO**

- ▶ Multi Point Initiator (MPI)
- ▶ MK22 Mod 4 Rocket Motor
- ▶ MK154 Line Charge Release

#### **PM Combat Support Systems (CSS)**

- ▶ Explosive Ordnance Disposal (EOD)
- ▶ CSS Program Safety

#### **PM Infantry Weapon Systems (IWS)**

- ▶ PdM Anti-Armor
- ▶ PdM Non-Lethal & Optics

#### **PM-MAGTF Command, Control, and Communications (MC3)**

- ▶ Ground Based Operational Surveillance System (G-BOSS)
- ▶ Joint Battle Command – Platform (JBC-P)

#### **PM Armor & Fire Support Systems (AFSS)**

- ▶ PdM TANKS System Safety

#### **Systems Engineering Interoperability, Architecture & Technology (SIAT)**

- ▶ System Engineering (SE) Division
- ▶ Developmental Test & Evaluation (DTE) Division
- ▶ Safety (00T) Division

#### **Marine Corps Operational Test & Evaluation Activity**

- ▶ Operational Test & Analysis Division (OTAD)
- ▶ Naval Branch, Expeditionary Division (Ships)

## NSWC Corona Division (NSWC Corona)

### Mission:

NSWC Corona provides the Navy and Marine Corps independent analysis and assessment with more than 1,100 scientists, engineers, and support staff, and more than 800 contractors. The mission of NSWC Corona is to “Serve warfighters and program managers as the Navy and Marine Corps’ independent assessment agent throughout systems’ lifecycles by gauging the Navy and Marine Corps’ warfighting capability of weapons and integrated combat systems, from unit to force level, through assessment of those systems’ performance, readiness, quality, supportability, and the adequacy of training.”

### Technical Capabilities:

- ▶ AC01 Warfare Systems Performance Assessment
- ▶ AC02 Quality and Mission Assurance Assessment
- ▶ AC03 Metrology, Test, and Monitoring Systems Assessment
- ▶ AC04 Naval Surface & Air Range Systems Engineering
- ▶ AC05 Weapons Systems Interface Assessment
- ▶ AC06 Naval Systems Material Readiness Assessment
- ▶ AC07 Strategic Systems Testing and Analysis, and Surveillance Assessment

### Facilities:

NSWC Corona is home to three state-of-the-art national facilities: Joint Warfare Assessment Lab (JWAL); Measurement Science and Technology Lab (MSTL); and Daugherty Memorial Assessment Center (DMAC). The JWAL and DMAC are the core

to an integrated approach to warfare assessment, and the MSTL houses Corona metrology research and intellectual capital for establishing metrology and calibration standards and procedures for the Navy and Marine Corps.

### Current Marine Corps Programs Supported:

#### Headquarters Marine Corps

##### MCOTEA

- ▶ Small Tactical Unmanned Aircraft System (STUAS) Operational Test and Evaluation
- ▶ Ground Combat Element (GCE) Integrated Task Force (ITF) Evaluation Support

#### MARCORSYSCOM

##### PM TRASYS

- ▶ Training Assessment Program Development
- ▶ Tactical Warfare Simulation Certification and Accreditation (C&A)
- ▶ Tactical Training Ranges (TTR) Development and Maintenance
- ▶ Virtual Battlespace Two (VBS2) C&A

##### PM MAGTF C3

- ▶ Composite Tracking Network (CTN) Analysis and Assessment

##### PM CSS

- ▶ Test Measurement and Diagnostic Equipment (TMDE) Maintenance Support
- ▶ Automated Test and Equipment Program (ATEP) Calibration Support
- ▶ Metrology and Calibration (METCAL) Engineering
- ▶ Infantry Weapons Gage Calibration Program (IWGCP) Maintenance Support

## **PM ISI**

- ▶ Emergency Response System (ERS)  
Development and Maintenance
- ▶ Public Safety Network (PSNet) Engineering
- ▶ Secure Operational Network Infrastructure  
and Communications (SONIC) Analysis

## **PM AC/ALPS**

- ▶ Item Unique Identification (IUID)  
Engineering Support

## **MCTSSA**

- ▶ Cloud Computing Development

## **SIAT**

- ▶ Global Positioning System (GPS) Liaison

## **PEO Land Systems**

### **PM AC2SN**

- ▶ Marine Air-Ground Task Force (MAGTF)  
Common Aviation Command and Control  
Systems (CAC2S) Analysis and Assessment

### **PM GBAD/GATOR**

- ▶ G/ATOR Analysis and Assessment

## **MCICOM**

- ▶ Utilities and Energy Management Systems  
Development
- ▶ Advanced Metering Infrastructure (AMI) C&A
- ▶ Industrial Control Systems (ICS) Assessment

## NSWC Panama City Division (NSWC PCD)

### Mission:

Conduct research, development, test, evaluation and in-service support of mine warfare systems, mines, naval special warfare systems, diving and life-support systems, amphibious/expeditionary maneuver warfare systems, and other missions that occur primarily in coastal (littoral) regions. Execute other responsibilities as assigned by Commander, Naval Surface Warfare Center.

### NSWC PCD Technical Capabilities:

- ▶ PC20-Chemical and Biological Warfare Individual Protection Systems
- ▶ PC21-Expeditionary Coastal and Maritime Security System Engineering and Integration
- ▶ PC25-Air Cushion Vehicle Systems
- ▶ PC26-Expeditionary Maneuver Warfare Systems Engineering and Integration
- ▶ PC27-Special Warfare Maritime Mobility Mission Systems and Mission Support Equipment
- ▶ PC28-MCM Detect and Engage Systems, Modular Mission Packaging, and Platform Integration and Handling
- ▶ PC29-Littoral Mission Systems Integration and Modular Mission Packages Certification
- ▶ PC30-Unmanned Systems Engineering and Integration, Autonomous Operations, Joint Interoperability and Common Control
- ▶ PC31-Mine Sensor and Target Detection Technology, Mine Delivery Platform Integration, and Minefield Architecture
- ▶ PC33-Diving and Life Support Systems
- ▶ PC34-Surface Life Support Systems for Extreme Environments

### Facilities:

Located on 650 acres, NSWC PCD operates state-of-the-art facilities supporting all assigned mission areas such as: LCAC Repair and Maintenance Facility, Air Operations, Sea Fighter (FSF-1), and the Littoral Warfare Systems Facility. The Gulf Coast is an ideal location for Expeditionary Operations and Testing. NSWC PCD manages the water space for the Joint Gulf Test Range (JGTR), which includes Eglin ranges and spans the Gulf of Mexico, bays, estuaries, rivers and harbors. As part of the JGTR, we perform amphibious operations and have developed an Expeditionary Maneuver Test Range for vehicle testing.

### Current Marine Corps Support Areas:

- ▶ Combat Engineer Route Reconnaissance and Clearance (R2C) and Mobility/Counter-Mobility design, integration, testing, fielding, and sustainment
- ▶ Vehicle 3-D Modeling and Laser Scanning drawing development, configuration management and sustainment
- ▶ Vehicle Capability Insertions design, integration, fielding and sustainment
- ▶ Expeditionary Command and Control design, integration, testing, fielding, and sustainment
- ▶ Energy Modeling and Analysis and Testing
- ▶ Expeditionary Analysis, Modeling, and Simulation

### Current Marine Corps Programs Supported:

#### PEO Land Systems

##### PM-AAA

- ▶ AAV Emergency Egress Lighting
- ▶ AAV Electrical Upgrade
- ▶ AAV ARVCOP (Funded by PMS 495)

- ▶ Habitability

### **PM-Medium and Heavy Tactical Vehicles**

- ▶ LVSR 3-D Modeling
- ▶ MTRV 3-D Modeling
- ▶ Vehicle Capabilities Insertions

### **PM-MRAP**

- ▶ Cougar Configuration Management

## **Marine Corps Systems Command**

### **PM-MAGTF Command, Control, and Communications (MC3)**

- ▶ Lead Systems Integrator, Design Agent, In-Service Engineering Agent for Expeditionary Command and Control System
- ▶ Joint Battlespace Viewer sustainment

### **PM-CSS**

- ▶ NSWC PCD is the Technical Agent (TDA, ISEA, AEA, and SSA) for systems of the USMC Engineering Systems Route Reconnaissance and Clearance and Mobility/ Counter-Mobility missions
- ▶ Combat Support Equipment (CSE) Shelter and Heater Energy Modeling
- ▶ CSE Enhanced Tray Ration Heating Sink System engineering and testing support
- ▶ Expeditionary Power Systems program support

### **PM-Infantry Weapons Systems (IWS)**

- ▶ Raids and Recon Depot Support

### **PM- SIAT**

- ▶ Energy
- ▶ CIED
- ▶ Expeditionary M&S and FACT Support

## **CD&I**

- ▶ Engineering Support to Seabasing Integration Division