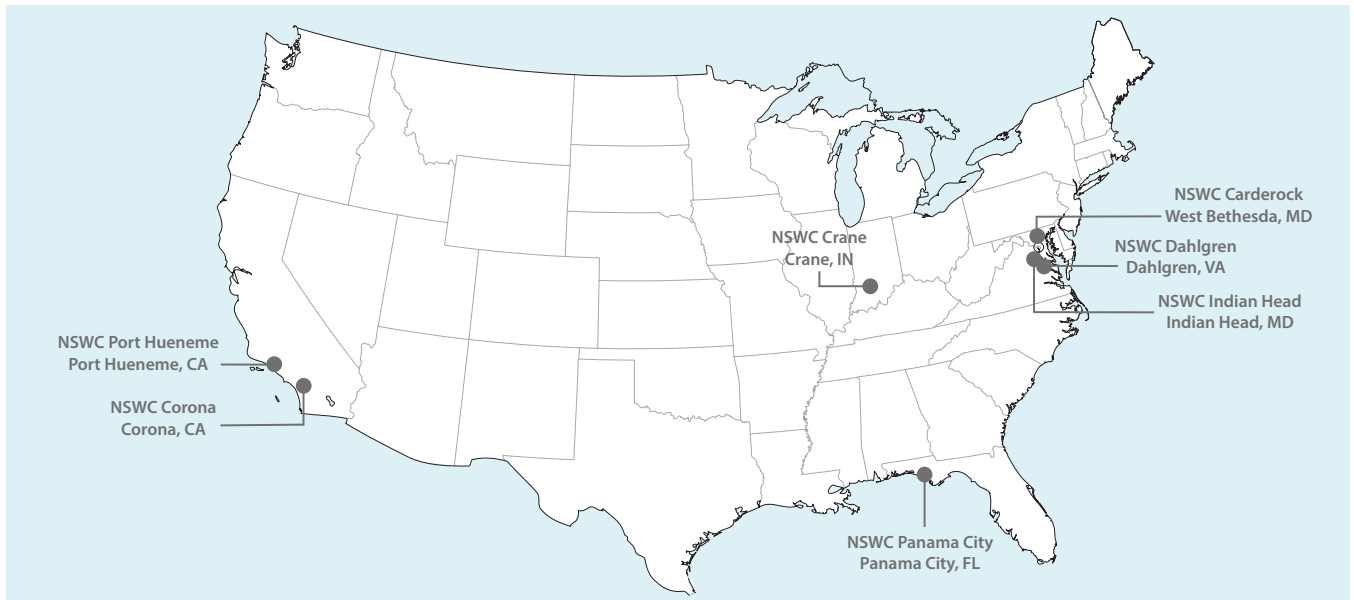


WARFARE CENTERS



Naval Sea Systems Command Naval Surface Warfare Centers Map

Naval Sea Systems Command (NAVSEA) exists to make Naval (Navy and Marine Corps) 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.

The mission of the 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, as well as 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 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 center's capabilities and focus on capabilities relevant to the Marine Corps.

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.

Description

The Carderock Division consists of approximately 2,000 scientists, engineers and support personnel working in more than 40 disciplines ranging from fundamental science to applied/in-service engineering. We are the Navy's experts for maritime technology. The Division houses world-class facilities and laboratories. Carderock's Headquarters is located in West Bethesda, Maryland. The Division also conducts research and development at several remote sites across the country.

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

Current Marine Corps Programs Supported

PEO-Land Systems

PM-AAA

- ▶ AAV Hydrodynamics
- ▶ AAV Corrosion
- ▶ ACV 1.0/2.0 Hydrodynamics
- ▶ ACV Human Factors

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)

- ▶ SBIR 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.

Description

Through the years, Dahlgren established itself as the major testing area for naval guns and ammunition. Today, it continues to provide the military with testing and certification by utilizing its Potomac River Test Range in Dahlgren, VA, and provides Fleet support at Combat Direction Systems Activity in Dam Neck, overlooking the Virginia Capes Fleet Operations Area, Virginia Beach, VA.

NSWCDD conducts basic research in all systems-related areas and pursues scientific disciplines including physics, mathematics, laser and computer technology, software, mechanical, electrical and systems engineering, and biotechnology and chemistry.

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

NSWCDD 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. 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

- ▶ 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, and testing
- ▶ Energy Modeling, Analysis, and Testing
- ▶ Expeditionary Analysis, Modeling and Simulation
- ▶ Human Systems Integration
- ▶ Safety Engineering
- ▶ Directed Energy Weapons
- ▶ Advanced Sensor Development
- ▶ Autonomous and Unmanned System Development
- ▶ Chem-Bio Sensors and Defense Development

Current Marine Corps Programs Supported

Combat Development and Integration (CD&I)

- ▶ 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
- ▶ Composite Tracking Network (CTN)

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

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 and 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 a 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)

- ▶ Counter – Unmanned Aerial Systems (C-UAS)

PM-Light Tactical Vehicles (LTV - Legacy)

- ▶ HMMWV
- ▶ ITV
- ▶ UTV

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)

PM-Marine Intelligence (MI)

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

PM-Infantry Weapons Systems (IWS)

- ▶ PdM-Anti Armor Systems (TOW, Javelin, SMAW, SABER)

PM-Armor and Fire Support Systems (AFSS)

- ▶ 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

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)*

- ▶ 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 Monitoring,
Program Management, Contracting
Officers Representation, Reliability
Maintainability and Availability
(RM&A) Engineering, 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 (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 DoD, 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) located in Indian Head, MD brings together the largest full-spectrum energetics facility in the DoD 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)
- ▶ MK154 Electrical Systems:
- ▶ Design Review and Production
- ▶ CSS Program Safety

PM Infantry Weapon Systems (IWS)

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

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

- ▶ 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 (OOT) Division

Joint Non-Lethal Program Office

- ▶ Indirect Fire Munition Engineering/ Technical Support
- ▶ BAA & Contract

NSWC Corona Division

Mission

NSWC Corona provides the Navy and Marine Corp independent analysis and assessment, with 1375 scientists, engineers, and support staff, and more than 1200 contractors.

The mission of NSWC Corona is to “Serve warfighters and program managers as the Navy’s independent assessment agent throughout systems’ lifecycles by gauging the Navy’s 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.”

Description

Using a rigorous, disciplined independent assessment process, NSWC Corona, located in Corona, CA, provides the fleet, program managers and acquisition community with the objective assessment needed for the Navy to gauge warfighting capability of ships and aircraft, assess warfare training and analyze new defense systems - even those systems in the concept phase. This commitment to independent assessment allows the Navy to achieve the greatest value for acquisition, material readiness and lifecycle management programs - for Today’s Navy, the Next Navy, and the Navy After Next. As the Navy’s metrology and calibration authority, Corona also sets the measurement science and calibration standards to support proper weapons operation, interoperability and peak readiness for the fleet. Corona uses innovation and automation to also reduce burdensome workload for Sailors, while reducing maintenance costs and increasing readiness for the Navy.

Technical capabilities and unique expertise - ranging from missile defense assessment to range and test instrumentation to setting measurement standards - enable Corona to support in-service and

emerging weapons and combat systems for key customers in critical areas.

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 premier national laboratory and assessment centers: Joint Warfare Assessment Lab (JWAL); Measurement Science and Technology Lab (MSTL); and Daugherty Memorial Assessment Center (DMAC). Along with the “Corona Engineers,” these state-of-the-art facilities enable Corona to fulfill its unique mission for the Navy. The JWAL and DMAC are at the core of Corona’s integrated approach to warfare assessment, and the MSTL is where Corona researches and establishes the metrology and calibration standards for the procedures for the Navy and Marine Corps. NSWC Corona’s Fallbrook Detachment is strategically positioned next to Marine Corps Base, Camp Pendleton providing integrated Test and Evaluation (T&E) support to the fleet.

Using a rigorous, disciplined independent assessment process, Corona provides the fleet, program managers, and acquisition community with the objective assessment needed for the Navy and Marine Corps to gauge warfighting capability of ships, aircraft, and ground systems; assess warfare training;

and analyze new defense systems - even those systems in the concept phase.

Current Marine Corps Programs Supported

PEO-Land Systems

PM AC2SN

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

PM GBAD/GATOR

- ▶ G/ATOR Block 1, Analysis and Assessment
- ▶ G/ATOR Block 1, DT&E Test Director

MARCORSYSCOM

AC/ALPS

- ▶ Item Unique Identification (IUID) Engineering

PM Ammunition

- ▶ Total Life-Cycle Assessment:
- ▶ In-Service Systems Engineering
- ▶ T&E Technical Agent for Operational Reliability and Predictive T&E for Surveillance
- ▶ Technical Agent for Fleet Malfunction Investigations
- ▶ Global Inventory Supply Chain Management and Pre-Positioning
- ▶ Knowledge and Information Management
- ▶ Joint Services Production Readiness Assessments and Quality Engineering

PM CSS

- ▶ Test Measurement and Diagnostic Equipment (TMDE) Maintenance
- ▶ Automated Test and Equipment Program (ATEP) Calibration
- ▶ Metrology and Calibration (METCAL) Engineering

- ▶ Infantry Weapons Gage Calibration Program (IWGCP) Maintenance

PM ISI

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

PM IWS, PdM AAS

- ▶ T&E Technical Agent for Javelin
- ▶ T&E Technical Agent for Tube-launch Optically-tracked Wire-guided (TOW)

PM MAGTF C3 I2SA

- ▶ Joint Battle Command Platform (JBC-P) T&E
- ▶ MAGTF Common Handheld (MCH) T&E
- ▶ Military GPS User Equipment (MGUE) T&E

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

SIAT

- ▶ Global Positioning System (GPS) Liaison

MCICOM

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

MCB Camp Pendleton Environmental Security Division

- ▶ Geographic Information Systems (GIS)
- ▶ Knowledge and Information Management and Accreditation
- ▶ SharePoint Support

MCOTEA

- ▶ Ocular Interrupter (OI) OT&E
- ▶ Assault Amphibious Vehicle Survivability Upgrade Program (AAV SUP) Initial Operational Test and Evaluation (IOT&E)
- ▶ G/ATOR, CAC2S, and CTN OT&E support.

NSWC Panama City Division

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.

Description

Located in Panama City, FL, the division is the technical center of excellence for Littoral Warfare and Coastal Defense.

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
- ▶ 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.
- ▶ CSE Enhanced Tray Ration Heating Sink System engineering and testing 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

SPAWAR Systems Center (SSC) Atlantic - SSC

Atlantic Strategic Guidance-Work together as a high performing organization delivering timely capabilities at the right cost. Rapidly provide information warfare capabilities that exceed expectations.

Land Systems Integration (LSI) Mission

Provide design, engineering, prototyping, and full scale integration of C4ISR capabilities into tactical ground vehicle platforms. Improve USMC readiness through the integration of mission equipment on vehicle platforms. Provide fielding, post-production, and sustainment support.

SSC Atlantic LSI Technical Capabilities

Rapid integration and fielding of new capability into tactical vehicle platforms.

Complete System engineering data management approach. The Amphibious Combat Vehicle (ACV) and Assault Amphibious Vehicle (AAV) program offices invested in a suite of tools and SSC Atlantic LSI has integrated them into a systems engineering tool set. The tool set includes the following applications and their supporting function:

- System Architect-Enterprise Architecture (DoDAF)
- Rational DOORS & DOORS Next Gen-Requirements Development, Requirements Management, Requirements Traceability, and Requirements Verification/Validation Reporting
- Rational Team Concert- Configuration Mgmt., Risk Mgmt., Task Mgmt., Defect Mgmt., etc
- Rational Quality Management-Manage Test: Process, Plans, Cases, Scripts

- Rational Asset Management-Enterprise Class Data Storage for COTS / GOTS applications
- Open Services for Lifecycle Collaboration (OSLC) Integration -Link to other non-IBM applications (PTC Windchill-Product Lifecycle Management, supporting Technical Data Packages)

Open Technical Data Package (TDP) development utilizing a wide range of technology from 3D scanning, 3D modeling, and 3D printing, as well as expanding their capabilities in the realm of mechanical and electrical simulation.

Software and Hardware Tool Set:

- 2D & 3D Modeling, Scanning and Simulation Software
- AutoCAD Professional
- SolidWorks Professional (2013-2016)
- SolidWorks Electrical (2013-2016)
- PTC Creo 3.0
- GEO MAGIC DESIGN X
- ANSYS Mechanical
- ANSYS HFSS
- 3D modeling and scanning hardware

Rapid and dynamic MAGTF test environment architecture engineering.

Radio Frequency (RF) test and analysis capabilities with the equipment, facilities, personnel, and expertise to ensure RF capable systems are compatible with other subsystems and its host platform.

Shock and Vibration test and analysis capabilities.

Proactive collaborative teams utilizing Government Quality Assurance Processes and Procedures utilized.

Facilities

24,000 square foot Digital Integration Facility (DIF) is reconfigurable to support multiple concurrent platform systems design and testing.

100,000 square foot Vehicle Integration Facility provides the capability for production scale C4ISR integration. Configured to rapidly customize vehicular platforms with mission equipment.

40,000 square foot Swing Space Facility is a secure government Test & Evaluation (T&E) laboratory. This space offers the capability to connect to various secure Government networks in coordination with other DoD C4ISR projects.

USMC Programs Supported

PEO - Land Systems

- ▶ Advanced Amphibious Assault (AAA)-AAV SW sustainment / 3-D Modeling / COMMS upgrade
- ▶ Amphibious Combat Vehicle
- ▶ Light Tactical Vehicles (LTV)
-Joint Light Tactical Vehicle /GB-GRAM-M integration and testing
- ▶ Medium and Heavy Tactical Vehicles (M&HTV)-LVSF & MTRV Integration / MRAP Integration

Marine Corps Systems Command

- ▶ Light Armored Vehicle (LAV)
-Win 10 Fielding / C2 SW Sustainment / JBC-P / 117-G
- ▶ MAGTF Command, Control, and Communications (MC3)-Networking On-The-Move (NOTM) into MRAP / M-ATV / KC-130 / HMMWV
- ▶ Digital Fires Situational Awareness (DFSAs)- Mobile Tactical Shelter (MTS)

- ▶ Force Protection Systems- CVRJ Support
- ▶ Expeditionary Power Systems
- ▶ Engineering Systems-Route Reconnaissance & Clearance

Marine Corps Logistics Command

- ▶ MRAP