We Support
Today’s Fleet
Tomorrow’s Fleet
and the Fleet after

Department 60
Naval Surface Warfare Center – Carderock Division

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**Mission**

Provide fundamental enabling technologies for enhanced ship integrity and performance. Conduct full spectrum research, development, testing, life-cycle management, and in-service engineering in the areas of:
Vision
We will be the Navy's premier provider in survivability, structures, materials and environmental knowledge enabling the fleet and it's warfighters to perform all missions safely and effectively.

Technical Capabilities

CD 14: Surface, Undersea and Weapon Vehicle Materials and Manufacturing Technologies
CD 15: Surface & Undersea Vehicle Structures
CD 16: Alternative Energy and Power Sources R&D
CD 17: Liquid Waste Management, Science and Systems
CD 18: Solid Waste, Hazardous Supply & Radiation Technology Management, Science and Systems
CD 20: Surface, Undersea and USMC Vehicle Vulnerability Reduction and Protection
CD 25: Radiation Detection Technology Research and Management
Materials & Manufacturing Division (Code 61)

- **Welding, Processing & NDE**
  - Acquisition and ISE support
  - RDT&E on welding, processes, NDE, hull husbandry automation, and AM structures
  - Automated underwater hull surveys
  - Experts in welding consumable design and development

- **Additive Manufacturing Project Office**
  - Advancing the AM science
  - Navy Center of Knowledge
  - Developing certification processes for parts
  - Coordinating SYSCOM and DoN efforts

- **Propulsor Manufacturing Office**
  - Navy lead for Virginia Class Propulsor construction
  - Direct the design, development, manufacturing and acquisition of propulsors

- **Physical Metallurgy and Fire**
  - RDT&E, S&T, and ISE services for naval alloys
  - Metallurgical analyses and characterization
  - Supply failure analyses
  - Magnetostrictive materials
  - Evaluating the fire performance

- **Corrosion & Coatings Engineering**
  - Experts in R&D, S&T, acquisition, and ISE for naval and expeditionary environments
  - Develop mitigating technologies
  - Experts in biofouling and antifouling agents

- **Non-Metallic Mat’ls Research & Eng.**
  - RDT&E, S&T, acquisition, and ISE services
  - Experts in high temperature ceramic applic.
  - Experts in polymer processing applic.
  - Fabricator of acoustic absorbing/reflecting tiles

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Environmental and Energy Division (Code 63)

- Radiation Technology, EOSH, Ship Acquisition, and Systems Safety
  - Provide certified principle for safety services for NAVSEA acquisition programs
  - Evaluate environmental and radiation OSH technologies and processes
  - Develop radiation technical standards
  - Identify radiation instruments for testing, evaluating, calibrating and fielding devices

- Wastewater Management
  - Experts on EPA and international policies and requirements
  - RDT&E for ballast, grey and black technologies and processes
  - Support shore facilities and installations
  - Advise acquisition programs on selection of systems

- Solid Waste, Pollution Prevention Afloat, & Hazardous Supply Management
  - RDT&E for implementation of equipment, procedures, and processes of surface and submarine fleet
  - Provide ISE services for submarines
  - Support shore facilities and installations

- Advanced Power & Energy
  - RDT&E, S&T, and acquisition support to NAVSEA programs and USMC
  - Expert on energy storage (batteries) certification and safety
  - Engineering support of portable, hybrid, and fuel cells for forward deployed expeditionary sites

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Structures and Composites Division (Code 65)

• Ship Structures
  – RDT&E, S&T, acquisition, and ISE services
  – Validate contractor designs to standards via FEA
  – Develop design methodologies and software tools for surface ships and composite structures

• Submarine Structures & Propulsors
  – RDT&E, S&T, acquisition, and ISE services
  – Validate contractor designs to standards
  – Develop design methodologies and software tools for pressure hulls, composite structures and propulsors

• Performance and Evaluation
  – RDT&E, S&T, acquisition, and ISE services
  – Measure full and model scale test articles
  – 3D measurement capabilities
  – Rough water trials to validate design loads

• Criteria and Assessment
  – RDT&E, S&T, acquisition, and ISE services
  – Develop criteria to assess naval structures
  – Use analytical simulation models to quantify lifetime structural reliability and validate measure responses

• Advanced Materials and Structures
  – RDT&E, S&T, acquisition, and ISE services for composite materials
  – Develop and evaluate composite and lightweight design and evaluations
  – Composite patch repair of cracked alloys

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Survivability and Weapons Effect Division (Code 66)

- **Underwater Explosions R&D**
  - R&D and acquisition support services
  - Improving methods and procedures for shock hardening
  - Provide advanced M&S services to predict damaging effects of UNDEX on surface and submarine hulls

- **Dynamic Measurements & Testing**
  - RDT&E and acquisition support services
  - Measure dynamic pressure loads of ship and submarine structures
  - Preparing for the LCS-5 and-6 Full Ship Shock trials
  - Validate analytical predictions

- **Hull Response & Protection**
  - RDT&E, S&T, and acquisition services
  - M&S of ships, subs, and USMC vehicles responses from weapons effects
  - Develop structure, armor, and mitigation techniques to improve survivability

- **Vulnerability Assessment**
  - Experts in Live Fire Test & Evaluation and Total Ship Survivability Trials
  - M&S to assess primary and secondary damage and recoverability actions

- **Survivability and Weapon Effects M&S**
  - R&D and eventual acquisition services
  - Developing new MS technologies for advanced weapon effect simulations

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Overview of Active Contracts

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEAPORT</td>
<td>4</td>
<td>49</td>
</tr>
<tr>
<td>Services</td>
<td>7</td>
<td>32.5</td>
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<tr>
<td>Supply</td>
<td>7</td>
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# Current Services/Supply Contracts

## Materials & Manufacturing Division (C/61)

<table>
<thead>
<tr>
<th>Contract Title</th>
<th>Total Value</th>
<th>Service/Supply</th>
<th>Contractor</th>
<th>Concludes (Qtr/FY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Marine Corp Corrosion and Materials Engineering Services</td>
<td>$49.2M</td>
<td>SEAPORT</td>
<td>Vision Point Systems</td>
<td>Q3/FY21</td>
</tr>
<tr>
<td>U.S. Navy Corrosion Control Assistance Team (CCAT)</td>
<td>$43.9M</td>
<td>SEAPORT</td>
<td>Excet Inc.</td>
<td>Q2/FY21</td>
</tr>
<tr>
<td>Non Destructive Testing and Evaluation (SBIR Phase III)</td>
<td>$24.5M</td>
<td>Service</td>
<td>Materials Sciences Corp</td>
<td>Q3/FY20</td>
</tr>
<tr>
<td>Rubber Compound (NXAS126)</td>
<td>$0.51M</td>
<td>Supply</td>
<td>Burke Industries Inc.</td>
<td>Q4/FY19</td>
</tr>
<tr>
<td>Fire Test &amp; Engineering Services for Fire Safety Programs</td>
<td>$0.98M</td>
<td>SEAPORT</td>
<td>Southwest Research Institute</td>
<td>Q2/FY17</td>
</tr>
</tbody>
</table>

## Environmental and Energy Division (C/63)

<table>
<thead>
<tr>
<th>Contract Title</th>
<th>Total Value</th>
<th>Service/Supply</th>
<th>Contractor</th>
<th>Concludes (Qtr/FY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Spectrum Environmental Quality Systems</td>
<td>$49.8M</td>
<td>SEAPORT</td>
<td>BMT Designers and Planners</td>
<td>Q1/FY21</td>
</tr>
<tr>
<td>Thermoluminescent Dosimeter (TLD) Equipment</td>
<td>$19.9M</td>
<td>Supply</td>
<td>Thermo Eberline Inc.</td>
<td>Q2/FY20</td>
</tr>
<tr>
<td>8800 Reader Maintenance</td>
<td>$2.6M</td>
<td>Service</td>
<td>Thermo Eberline Inc.</td>
<td>Q3/FY19</td>
</tr>
<tr>
<td>Air Particle Sampler</td>
<td>$1.6M</td>
<td>Supply</td>
<td>Spectral Labs</td>
<td>Q3/FY19</td>
</tr>
<tr>
<td>Electronic Personal Dosimeter (EPD) IDIQ</td>
<td>$4.6M</td>
<td>Supply</td>
<td>Thermo Eberline Inc.</td>
<td>Q3/FY19</td>
</tr>
<tr>
<td>Tool Contamination Monitor (Shore)</td>
<td>$1.4M</td>
<td>Supply</td>
<td>Canberra Industries</td>
<td>Q2/FY18</td>
</tr>
<tr>
<td>Air Particle Detector (APD) Ships</td>
<td>$20M</td>
<td>Supply</td>
<td>SAIC/Leidos</td>
<td>Q1/FY18</td>
</tr>
<tr>
<td>Air Particle Detector (APD) Shore</td>
<td>$1.9M</td>
<td>Supply</td>
<td>Canberra Industries</td>
<td>Q4/FY17</td>
</tr>
<tr>
<td>Flight Deck Cleaning/Debris Removal Technology</td>
<td>$4.3M</td>
<td>Supply</td>
<td>Triverus</td>
<td>Q2/FY17</td>
</tr>
<tr>
<td>Tool Contamination Monitor (Shipboard)</td>
<td>$0.28M</td>
<td>Supply</td>
<td>Canberra Industries</td>
<td>Q4/FY16</td>
</tr>
</tbody>
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# Current Services/Supply Contracts

## Structures and Composites Division (C/65)

<table>
<thead>
<tr>
<th>Contract Title</th>
<th>Total Value</th>
<th>Service/Supply</th>
<th>Contractor</th>
<th>Concludes (Qtr/FY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Systems for Marine Components (SBIR Phase III)</td>
<td>$49.9M</td>
<td>Service</td>
<td>Seemann Composites Inc</td>
<td>Q3/2020</td>
</tr>
</tbody>
</table>

## Survivability and Weapons Effect Division (C/66)

<table>
<thead>
<tr>
<th>Contract Title</th>
<th>Total Value</th>
<th>Service/Supply</th>
<th>Contractor</th>
<th>Concludes (Qtr/FY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Recording Equipment and Calibration/Repair</td>
<td>$3.6M</td>
<td>Service</td>
<td>Pacific Instruments Inc</td>
<td>Q2/FY20</td>
</tr>
<tr>
<td>Survivability Technical Services</td>
<td>$6.6M</td>
<td>Service</td>
<td>T. Carroll Associates</td>
<td>Q3/FY18</td>
</tr>
<tr>
<td>Engineering Services for Software Development and Shock Assessments</td>
<td>$3.7M</td>
<td>Service</td>
<td>Weidlinger Associates</td>
<td>Q4, FY16</td>
</tr>
<tr>
<td>Engineering Services for Advanced Survivability Assessment Program (ASAP)</td>
<td>$4.6M</td>
<td>Service</td>
<td>Survive Engineering</td>
<td>Q4, FY16</td>
</tr>
</tbody>
</table>
## Projected Services/Supply Contracts

<table>
<thead>
<tr>
<th>Division</th>
<th>Contract Title</th>
<th>Est. Value ($M)</th>
<th>Service/Supply</th>
<th>Anticipated Announcement (Qtr/FY)</th>
</tr>
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<tbody>
<tr>
<td>63</td>
<td>NN-Air Particle Detector</td>
<td>$0.22</td>
<td>Supply</td>
<td>Q3/FY16</td>
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<tr>
<td>66</td>
<td>Engineering Services for Advanced Survivability Assessment Program (ASAP)</td>
<td>$5.0</td>
<td>Service</td>
<td>Q3/FY16</td>
</tr>
<tr>
<td>66</td>
<td>Instrumentation Cable and Accelerometers in support FSST</td>
<td>$2.0</td>
<td>Supply</td>
<td>Q3/FY16</td>
</tr>
<tr>
<td>61</td>
<td>Metallurgical Testing Services (IDIQ)</td>
<td>$6.0</td>
<td>Service</td>
<td>Q4/FY16</td>
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<tr>
<td>63</td>
<td>High Shear Rotary Membrane System</td>
<td>$0.3</td>
<td>Supply</td>
<td>Q4/FY16</td>
</tr>
<tr>
<td>63</td>
<td>Tritium Monitor (Hardware, Spare Parts &amp; Training)</td>
<td>$1.3</td>
<td>Supply</td>
<td>Q4/FY16</td>
</tr>
<tr>
<td>63</td>
<td>Radiation Air Particle Detector (APD) Ships</td>
<td>$20.0</td>
<td>Supply</td>
<td>Q1/FY17</td>
</tr>
<tr>
<td>63</td>
<td>Wastewater Hauler Services (Annual Requirement)</td>
<td>$0.1</td>
<td>Supply</td>
<td>Q1/FY17</td>
</tr>
<tr>
<td>61</td>
<td>Fire Test and Engineering Services for Fire Safety</td>
<td>$1.0</td>
<td>Service</td>
<td>Q1/FY17</td>
</tr>
<tr>
<td>65</td>
<td>C-Bay Cooling Tower Replacement</td>
<td>$0.3</td>
<td>Service</td>
<td>Q1/FY17</td>
</tr>
<tr>
<td>60</td>
<td>Engineering and Technical Services</td>
<td>$10.0</td>
<td>Service</td>
<td>Q1/FY17</td>
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<tr>
<td>60</td>
<td>IT/IA Engineering Services</td>
<td>$5.0</td>
<td>Service</td>
<td>Q1/FY17</td>
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<tr>
<td>63</td>
<td>Large Shipboard Incinerator Vibration &amp; EMI Testing</td>
<td>$0.2</td>
<td>Service</td>
<td>Q1/FY17</td>
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<tr>
<td>63</td>
<td>Commercial Solid Waste Compactors/Balers (LABEVAL)</td>
<td>$0.1</td>
<td>Supply</td>
<td>Q2/FY17</td>
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<tr>
<td>66</td>
<td>Modeling &amp; Simulation Engineering Services</td>
<td>$3.8</td>
<td>Service</td>
<td>Q2/FY17</td>
</tr>
</tbody>
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