INDUSTRY DAY BRIEF

Michael Zekas (Acting)
Propulsion, Power & Auxiliary Machinery Systems, Department 40

04 April 2018
Mission Statement:

Provide the Navy with Superior Engineering Solutions and Technologies for Propulsion, Power, Auxiliary and Machinery Systems to make our ships and systems operationally superior and affordable throughout their life cycle.

Vision Statement:

DEPARTMENT 40 OVERVIEW

TOTAL END-STRENGTH
(Civilian, Military, Contractors)
786

TOTAL CIVILIAN
668

TOTAL MILITARY
0

TOTAL CONTRACTORS
118

EDUCATION LEVELS (ALL CIVILIANS)
Bachelors: 424
Masters: 131
Doctorate: 2

Total Civilian Workforce: 668
The Auxiliary Machinery Systems Division provides full spectrum and innovative engineering support for the following systems:

- Air Conditioning and Refrigeration
- Steam Systems
- Auxiliary Systems
- Combat Support Systems
- Life Support & Ventilation Systems
- Compressed Air Systems

In collaboration with our NAVSEA Technical Warrant Holders, the Division provides leadership for the research, development, testing, acquisition, integration, maintenance, sustainment, and modernization of these systems thru:

- Technology Development
- Failure Investigation / Analysis
- Metrics Assessment
- Distance Support
- Land & Shipboard Test & Evaluation
- In Service Engineering
- Acquisition Support
- System Design
- Boiler and Pressure Vessel Inspections
- Energy Conservation
- Obsolescence Management & Legacy System Upgrades
- Training and Logistics
The Propulsion Systems Division provides full spectrum and innovative engineering support for the following systems:

- Gas Turbine Systems for Main Propulsion and Power Generation
- Diesel Engines for Main Propulsion and Power Generation
- Main Reduction Gears
- Shafting Systems
- Propellers, Waterjets, and Propulsors

In collaboration with our NAVSEA Technical Warrant Holders, the Division provides leadership for the research, development, testing, acquisition, integration, maintenance, sustainment, and modernization of these systems thru:

- Technology Development
- Failure Investigation / Analysis
- Metrics Assessment
- Distance Support
- Land & Shipboard Test & Evaluation
- In Service Engineering
- Acquisition Support
- System Design
- Energy Conservation
- Obsolescence Management & Legacy System Upgrades
- Training
- Modeling & Simulation
- Machinery Arrangements
- 2S Cog / Depot Management
Sail, Hull & Deck Machinery Systems Division (Code 43)

— The Sail, Hull & Deck Machinery Systems Division provides full spectrum and innovative engineering support for the following systems:

• Anchor, Mooring, Towing and Amphibious Assault Systems
• Aviation & Material Handling and Stowage
• Weapons/Cargo Handling and Stowage Systems
• Launch/Recovery & Crane Systems
• Hydraulics and Steering Mechanical
• Hull Outfitting
• Shipboard Habitability
• Maintenance Technologies
• Submarine Sail Modernization/Maintenance
• Submarine Availability Material Planning

— In collaboration with our NAVSEA Technical Warrant Holders, the Division provides leadership for the research, development, testing, acquisition, integration, maintenance, sustainment, and modernization of these systems thru:

• Technology Development
• Failure Investigation / Analysis
• Metrics Assessment
• Distance Support
• Land & Shipboard Test & Evaluation
• In Service Engineering

• Acquisition Support
• System Design
• Hull & Deck Machinery Inspections
• Modernization
• Obsolescence Management & Legacy System Upgrades
• Training and Logistics
The Power Systems Division provides full spectrum and innovative engineering support for the following systems:

- Electrical Power Generation, Regulation, Distribution, Controls and Protection for all ship class
- Electric Power Conversion Systems and Special Frequency applications
- Advanced Integrated Electric Propulsion and Power Systems
- Arc Fault / Thermal management protection systems
- Software based Electric Plant Control systems
- Advanced Power Systems protection scheme
- Aircraft Electrical Service Stations
- Degaussing Systems

In collaboration with our NAVSEA Technical Warrant Holders, the Division provides leadership for the research, development, testing, acquisition, integration, maintenance, sustainment, and modernization of these systems thru:

- Technology Development
- Failure Investigation / Analysis
- Metrics Assessment
- Distance Support
- Land & Shipboard Test & Evaluation
- In Service Engineering
- Acquisition Support
- System Level Design and Integration
- Energy Conservation
- Obsolescence Management & Legacy System Upgrades
- Hi Voltage management Safety Training
- Modeling & Simulation
- Fault Current Analysis
- Electrical System Infrastructure Alterations
Propulsion, Power and Auxiliary Machinery Systems Department

Expanding the Advantage

Propulsion, Power Generation, Auxiliary, and Hull & Deck machinery systems aboard Surface Ships, Aircraft Carriers & Submarines throughout their lifecycle

Providing affordable, timely, quality engineering, acquisition, repair, modernization & testing services for Propulsion, Power Generation, Auxiliary, and Hull & Deck machinery systems aboard Surface Ships, Aircraft Carriers & Submarines throughout their lifecycle

Electrical Power Architectures, Systems & Components
- Electrical Power Competency for Nuclear Ship Applications
- Power Generation, Distribution, Automation
- Electric Drive Propulsion
- High Power Mission Load Interface

Electrical Plant Controls & System Modernization
- Engineering of Architectures, System & Component Upgrades
- Electric Plant Management & Control System
- Power System Protection
- Power Electronics
- Active Load Management

Hull Outfitting and Habitability
- Sanitary / Berthing / Food Service Habitability Repair Contracts
- New Construction Initial Outfitting

Hull & Deck Machinery
- Advanced Weapons Elevator
- Cargo/Weapons, Aircraft Elevators, Upgrades
- Launch & Recovery Systems
- Hydraulic Systems

2S COG Program
- Marine Gas Turbine Overhaul
- Main Propulsion Shaft Repair
- RADCON Asset Restoration
- Organic and Commercial Depot Management

Diagnostics, Prognostics, Improved Maintenance Planning, Cost Savings
- CBM+
- Diesel Readiness System (DRS)
- Diesel Maintenance System (DMS)
- Kaplan Meier Survivability Analysis

Auxiliary Machinery
- High Efficiency Small Capacity – Chiller (HES-C)
- Thermal Management
- Air Conditioning & Refrigeration
- Compressed Air Systems/Dehydrators

Submarine Life Support Systems
- Advanced CO2 Removal Unit (ACRU)
- Low Pressure Electrolyzer (LPE)
- Central Atmospheric Monitoring System (CAMS)

Mechanical Power & Propulsion
- Full Scale Propulsion Testing
- Propulsion Executive Steering Committee (PESC)
- Marine Gas Turbine, Diesel, Steam, Power Transmission Inspector Program
- Columbia Class Shafting / Propulsor Design Team

Submarine, Sail & Deployed Systems HM&E
- Columbia Class Towed Buoy Design Lead
- Payload Handling Systems
- Universal Modular Mast
- Sail System Waterfront ISE
- Towed Buoy Land Based Test Site
- Legacy Towed Buoy Improvement Program

Green Font = Growth Area
<table>
<thead>
<tr>
<th>Brief Description</th>
<th>ROM</th>
<th>Anticipated Announcement Date (FY/QTR)</th>
<th>Requiring Technical Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Conditioning and Refrigeration System Field Service Repair Support.</td>
<td>$50M</td>
<td>FY19/Q2</td>
<td>411</td>
</tr>
<tr>
<td>Engineering and technical services for inspection and maintenance of Steam</td>
<td>$10M</td>
<td>FY19/Q1</td>
<td>412</td>
</tr>
<tr>
<td>Systems Valve Repair.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering and technical services for inspection and maintenance of Steam</td>
<td>$10M</td>
<td>FY19/Q1</td>
<td>412</td>
</tr>
<tr>
<td>Systems Boilers, Heat Exchangers, Condensers, and Appurtenances.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brief Description</td>
<td>ROM</td>
<td>Anticipated Announcement Date (FY/QTR)</td>
<td>Requiring Technical Code</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>------</td>
<td>---------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Engineering, technical, programmatic, logistics, and life cycle management services for NSWCPD DIV 41 system areas on U.S. Navy vessels.</td>
<td>$25M</td>
<td>FY18/Q4</td>
<td>416</td>
</tr>
<tr>
<td>Low Pressure Electrolyzer (LPE) Alteration Installations, aboard OHIO Class submarines.</td>
<td>$1M</td>
<td>FY18/Q3</td>
<td>416</td>
</tr>
<tr>
<td>Fleet Support Services for Compressed Gas Systems.</td>
<td>$75M</td>
<td>FY19/Q2</td>
<td>418</td>
</tr>
<tr>
<td>Brief Description</td>
<td>ROM</td>
<td>Anticipated Announcement Date (FY/QTR)</td>
<td>Requiring Technical Code</td>
</tr>
<tr>
<td>--------------------------------------------------------------</td>
<td>------</td>
<td>---------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>DDG 51, LHD, LSD, LPD Class Shaft Procurement Contract</td>
<td>$50M</td>
<td>FY18/Q3</td>
<td>423</td>
</tr>
<tr>
<td>DDG 51 Class Shaft Repair Contract</td>
<td>$75M</td>
<td>FY18/Q4</td>
<td>423</td>
</tr>
<tr>
<td>Commercial Overhaul of LM2500 Single Shank Turbine Gas Generator Assemblies</td>
<td>$75M</td>
<td>FY18/Q3</td>
<td>423</td>
</tr>
<tr>
<td>Brief Description</td>
<td>ROM</td>
<td>Anticipated Announcement Date (FY/QTR)</td>
<td>Requiring Technical Code</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>------</td>
<td>----------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Commercial Overhaul of LM2500 Paired Blade Turbine Gas Generator Assemblies</td>
<td>$75M</td>
<td>FY18/Q3</td>
<td>423</td>
</tr>
<tr>
<td>LCAC engineer support and on-site representatives</td>
<td>$10M</td>
<td>FY18/Q3</td>
<td>425</td>
</tr>
<tr>
<td>Engineering services for shafting, gears, waterjets and propellers</td>
<td>$10M</td>
<td>FY18/Q3</td>
<td>427</td>
</tr>
<tr>
<td>Brief Description</td>
<td>ROM</td>
<td>Anticipated Announcement Date (FY/QTR)</td>
<td>Requiring Technical Code</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>-----</td>
<td>----------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Engineering and Blue Collar Support Services for Navy Standard Slewing Arm Davit (SLADS) supporting the DDG Modernization program.</td>
<td>$10M</td>
<td>FY19/Q2</td>
<td>433</td>
</tr>
<tr>
<td>Engineering and Blue Collar Support Services for Davits and Cranes.</td>
<td>$10M</td>
<td>FY19/Q2</td>
<td>433</td>
</tr>
<tr>
<td>Furnishing of design, installation and repair services for Habitability Systems, Spaces, Facilities, Fixtures, and Equipment.</td>
<td>$1B</td>
<td>FY18/Q3</td>
<td>434</td>
</tr>
</tbody>
</table>
### Competitive Contract Requirements - Projected 2018 Announcements

<table>
<thead>
<tr>
<th>Brief Description</th>
<th>ROM</th>
<th>Anticipated Announcement Date (FY/QTR)</th>
<th>Requiring Technical Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDIQ contract for Engineering, Technical, Logistics, and Installation Service Support for the Steam/Diesel/Electrical Power Systems Division</td>
<td>$75M</td>
<td>FY18/Q4</td>
<td>442</td>
</tr>
<tr>
<td>Contract to repair electrical systems on all surface ships</td>
<td>$75M</td>
<td>FY18/Q4</td>
<td>443</td>
</tr>
</tbody>
</table>