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- Boat Acquisition Engineering
- Systems Design & Integration
- Prototyping
- Life Cycle Management & Sustainment Engineering
- Test & Evaluation
- Integrated Logistics Support
Overview of Active Contracts

**Combatant Craft Engineering & Marine Service (OCONUS)**

- **Contract Number:** N00178-04-D-4027 FD02
- **Type:** CPFF, term, Seaport
- **PoP:** September 28, 2016 – September 14, 2018
- **Total Contract Amount:** $38,373,352 ODC – 47.8%
- **Vendor:** CDI Marine
- **COR:** Bill Grider
- **Contracting Officer:** Keith Rouch

**Scope:**
The objective of this contract is to provide engineering and marine services in support of CCD's mission providing Research and Development (R&D), Systems and Design Engineering for new watercraft, in-service and all life cycle support for Outside Continental United States (OCONUS) watercraft efforts. This support covers, and is limited to, all aspects of OCONUS support including program/project management, technical, industrial and Integrated Logistics Support (ILS). Services will cover all disciplines including structural, mechanical, electrical, and electronic systems.

**Sample Orders:**
- Foreign Military Sales (FMS) St. Kitts and Nevis Defense Force Project Coordination and Technical Support
- Patrol Coastal Class In-Service Engineering Agent Support
- Commander Naval Installation Command (CNIC) (N4) In-Service Engineering Agent and Planning Yard (PY) Support
- Littoral Combat ship (LCS) In-Service Engineering

**Primary Sponsor(s):**
- PMS 325F & 326 FMS
- PMS 377 Amphibious Warfare
- PMS 325G Boats & Craft
- CNIC N4
- PMS 505 LSC
Overview of Active Contracts

Combatant Craft Engineering & Marine Service (CONUS)

Contract Number: N00178-04-D-4027 FD03
Type: CPFF, term, Seaport
PoP: September 28, 2016 – September 19, 2018
Total Contract Amount: $41,436,363 ODC – 23.1%
Vendor: CDI Marine
COR: Bill Grider
Contracting Officer: Keith Rouch

Scope:
The objective of this contract is to provide engineering and marine services for Code 83’s mission covering the functional areas of program management and planning, acquisition engineering, in-service engineering, and life cycle management. This is a multi-disciplinary engineering and Alteration Installation Team (AIT) services contract including managerial, structural, mechanical, electrical, electronic, naval architecture, research and development, logistics, test and evaluation, prototyping, and installation, repair, and maintenance in support of Continental United States (CONUS) watercraft.

Sample Orders:
• Navy Expeditionary Combat Command (NECC) Boats In-Service Engineering, Life Cycle Management (LCM) and Direct Fleet Support
• United States Fleet Forces Command (USFFC) Technical Support
• Center for Security Forces (CSF) In-Service Engineering and Direct Fleet Support
• PMS 325G In-Service Engineering Agent (ISEA) and Planning Yard (PY) Support
• Boat Inventory Management (BIM) Support
• PMS 325G MKVI Contractor Supported Interim Training for Coastal Riverine Group One (CRG 1)

Primary Sponsor(s):
• NECC
• USFFC
• PMS 325G Boats & Craft
• CSF
Facilities with Contract Support

San Diego, CA

- NavSta San Diego Bldg 71 – Engineering
- NavSta San Diego Bldg 279 - Storage

Hampton Roads, VA

- JEBLCFS - Administrative, IT, Engineering
- NavSta Norfolk Bldg V47 – Underway Operations, Warehousing, Prototyping, Training
- St. Julien’s Creek Annex Bldg 79 – Warehousing
- Cheatham Annex Bldg XX – Warehousing
### Future Competitive Requirements

<table>
<thead>
<tr>
<th>Summary Description/ Title</th>
<th>Estimated Total Value</th>
<th>Estimated Award Date*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Electronics</td>
<td>$30M</td>
<td>4th Quarter FY18</td>
</tr>
<tr>
<td>Watercraft Industrial Support (“WIS”)</td>
<td>$20M</td>
<td>2nd Quarter FY19</td>
</tr>
<tr>
<td>Intelligent Systems</td>
<td>$20M</td>
<td>2nd Quarter FY19</td>
</tr>
<tr>
<td>Advanced Systems Prototyping</td>
<td>$20M</td>
<td>3rd Quarter FY19</td>
</tr>
<tr>
<td>Engineering Services for Combatant Craft</td>
<td>$60M</td>
<td>4th Quarter FY19</td>
</tr>
</tbody>
</table>

* Award Dates subject to change.
QUESTIONS?
Naval Architecture & Boat Acquisition Engineering

Will Sokol
OUR MISSION

The Branch supports hull design and engineering during all phases of the craft life cycle. From displacement craft to planing craft, from monohulls to quadramarans, and from manned to unmanned surface vehicles, our expertise covers the gamut of all hull types supporting fiber-reinforced plastic, aluminum, steel, and wooden craft construction. Specialists in static and dynamic stability, resistance, speed, power, and seakeeping predictions ensure the craft’s safety and performance.

Perform research, development and feasibility studies; develop concept designs, preliminary designs, contract designs, and complex boat alterations; evaluate and support source selections (contractor/builder design); provide fleet and construction engineering and overall acquisition support for combatant craft and boats.
Key Functions

- **Naval Architectural Research & Development (R&D), Design and Analysis**: Hull design, hydrodynamics, stability, arrangements, structures, powering and platform integration

- **Program Planning Support**: Feasibility & tradeoff studies, cost estimating

- **Acquisition Support**: Requirements determination, specification development, contract development, drawing development, and source selection

- **Unmanned Surface Vehicle Research, Development & Fielding**

- **Boat & Craft Design**: Drawings, specifications, technical studies (craft and related technologies), 3-D modeling, HSI

- **Construction Oversight & Trials**: Support various levels of onsite supervision and oversight and trials/acceptance

- **Technical Craft Certification Support**: Safe and Suitable Determination/Ready for Issue
• Classic NavArch R&D (plus component development)
  – Hydrodynamics
  – Structural optimization
  – Seakeeping
  – Craft Integration

Open source: http://www.compositesworld.com/articles/re-inventing-the-rhib-shock-mitigation
Craft Design & Fielding

UISS-PROTOTYPE MODELING AND AS-BUILT DRAWINGS

Combatant Craft Division
• **Design and Systems Engineering Agent**
  – Design Reviews
  – Technical Authority
  – Certification

• **Construction Oversight**

• **Builders and Acceptance Trials**

Open source: http://www.f-boat.com/
Classic Naval Architecture

- **Structures**
  - Materials (metals, composites)
  - Response/Performance
  - Efficiency

- **Hydrodynamic Performance**
  - Seakeeping
  - Resistance
  - Ride Quality
  - Maneuverability
  - Efficiency

- **Survivability**
  - Suitability
  - Adequacy

- **Machinery**
  - Utility
  - Performance
  - Efficiency

- **Propulsors**
  - Suitability
  - Performance
  - Efficiency

- **Human Factors**
  - Utility/Functionality
  - Comfort
  - Safety
  - Maintainability
Naval Architects are System Engineers

- System engineering an **interdisciplinary** approach and means for enabling the realization and deployment of successful **systems**.
- ..., systems engineers deal with abstract systems, and rely on other engineering disciplines to design and deliver the tangible products that are the realization of those systems.
- ...The systems engineering effort spans the whole system lifecycle. SE focuses on defining customer needs and required functionality early in the development cycle, documenting requirements, then proceeding with design synthesis and system validation while considering the complete problem:
  - Cost & Schedule
  - Design & Development
  - Manufacturing & Deployment
  - Training
  - Test & Evaluation
  - Environment
  - Information Assurance
  - Performance Engineering
  - Operations & Maintenance
  - System Disposal
Boats and craft are typically much more sensitive to seemingly minor changes in areas such as:

- Stability
- Performance
- Seakeeping
- Safety
- Reliability
- Maintainability
- Signatures
- Structural Integrity
- Transportability
- Interchangeability
- Supply Support
- Durability

Tightly integrated systems engineering is essential
Technical Competencies

• **Craft Hydrodynamics** – Hull form development & resistance prediction, maneuverability, seakeeping, propulsor design & integration, control surfaces, appendages design; Tools: Model testing & computational tools incl CFD

• **Craft Hydrostatics** – Stability Analysis, Criteria Determination, Lines Measurement & Validation, Inclining Experiments

• **Craft Weight Estimates** – Feasibility, Preliminary, Contract and Final Estimates, Weight Validation and Tracking

• **Craft Structural Design** – Materials (Composite, AL, Steel), Design Methods, Detail Design Development, Construction Oversight

• **Craft Modeling and Simulation** – 2-D Drafting, 3-D Modeling, Solid Modeling

• **Craft Requirements Development Support** – Analysis of Alternatives, Operational Requirements support, Systems Analysis and Tradeoffs

• **Craft Specification Development** – Commercial and Gov’t Specifications Analysis and Selection, Regulatory Agency Rules Review & Development, Craft Design Criteria & Techniques

• **Craft Program & Project Management**

• **Craft Concepts Development and Prototyping**
Alignment to Service

• **Support for all ACAT Levels**: Technical Support for ACAT-level appropriate docs and support; R&D, studies, specification development, source selection, contract support, construction oversight, and delivery

• **Development of Technical Specifications & Drawings**: Range from: fully Gov’t-controlled configurations and design to Detailed Specification to Performance Specifications to GSA procurements

• **Use Commercial Standards**: Heavily involved in and utilize applicable commercial standards: ABS Rules & Guidelines, Det Norske Veritas, ISO Directive 94/25/EC, as well as applicable USCG, ABYC, IEEE, etc.

ALL Acquisitions Utilize COTS Components/Materials
<table>
<thead>
<tr>
<th>Designation</th>
<th>Contract Award</th>
<th>Customer</th>
<th>Program Office</th>
<th>Number in Contract</th>
<th>First Delivery</th>
<th>Contract Completion</th>
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<tbody>
<tr>
<td>Combatant Craft Medium (CCM)</td>
<td>FY14</td>
<td>NAVSPECWARCOM/</td>
<td>USSOCOM</td>
<td>24</td>
<td>FY15</td>
<td>FY19</td>
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<td></td>
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<td>USSOCOM</td>
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<td>Combatant Craft Assault (CCA)</td>
<td>FY13</td>
<td>NAVSPECWARCOM/</td>
<td>USSOCOM</td>
<td>30</td>
<td>FY14</td>
<td>FY17</td>
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<td>USSOCOM</td>
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<tr>
<td>Maneuver Support Vessel (Light)</td>
<td>FY17</td>
<td>U.S. Army</td>
<td>TACOM</td>
<td>37</td>
<td>FY22</td>
<td>FY28</td>
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<tr>
<td>11m NSW RIB</td>
<td>FY17</td>
<td>FMS – Australia</td>
<td>PMS 325F</td>
<td>2</td>
<td>FY17</td>
<td>FY18</td>
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<tr>
<td>7m RIB</td>
<td>FY16</td>
<td>FMS – Bulgaria</td>
<td>PMS 325F</td>
<td>3</td>
<td>FY17</td>
<td>FY18</td>
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<tr>
<td>Force Protection Boat - Medium (FPB-M)</td>
<td>FY16</td>
<td>FMS - Bulgaria</td>
<td>PMS 325F</td>
<td>1</td>
<td>FY17</td>
<td>FY18</td>
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<tr>
<td>7m RIB</td>
<td>FY15</td>
<td>FMS - Jordan</td>
<td>PMS 325F</td>
<td>2</td>
<td>FY17</td>
<td>FY18</td>
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<tr>
<td>7m RIB</td>
<td>FY16</td>
<td>FMS - Jordan</td>
<td>PMS 325F</td>
<td>1</td>
<td>FY17</td>
<td>FY18</td>
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<tr>
<td>27ft Riverine Boats</td>
<td>FY16</td>
<td>FMS - Colombia</td>
<td>PMS 325F</td>
<td>14</td>
<td>FY17</td>
<td>FY18</td>
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<tr>
<td>41ft Patrol Boats</td>
<td>FY17</td>
<td>FMS - Colombia</td>
<td>PMS 325F</td>
<td>2</td>
<td>Expected FY18</td>
<td>Expected FY19</td>
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<td>25ft Riverine Boats</td>
<td>FY18</td>
<td>FMS - Colombia</td>
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<td>27ft Dive Support Boat</td>
<td>FY18</td>
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<td>Expected FY19</td>
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<tr>
<td>27ft Patrol Boat</td>
<td>Expected FY18</td>
<td>FMS - Colombia</td>
<td>PMS 325F</td>
<td>2</td>
<td>Expected FY18</td>
<td>Expected FY19</td>
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<tr>
<td>10m PB</td>
<td>FY15</td>
<td>FMS - Kenya</td>
<td>PMS 325F</td>
<td>6</td>
<td>FY17</td>
<td>FY18</td>
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<tr>
<td>7M RIB (SDAF)</td>
<td>FY15</td>
<td>FMS - Various (SDAF)</td>
<td>PMS 325F</td>
<td>up to 360</td>
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<td>FY21</td>
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<tr>
<td>35m Patrol Boat</td>
<td>FY18</td>
<td>FMS - Jordan</td>
<td>PMS 325F</td>
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<td>Expected FY19</td>
<td>Expected FY21</td>
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<tr>
<td>9m RIB</td>
<td>Expected FY18</td>
<td>FMS - Philippines</td>
<td>PMS 325F</td>
<td>2</td>
<td>Expected FY18</td>
<td>Expected FY19</td>
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<tr>
<td>9m EOD RIB</td>
<td>Expected FY18</td>
<td>FMS - Philippines</td>
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<td>Expected FY19</td>
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<td>4m Inflatable</td>
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<td>FMS - Philippines</td>
<td>PMS 325F</td>
<td>41</td>
<td>FY17</td>
<td>FY18</td>
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<td>80ft Near Coastal Patrol Vessel</td>
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<td>FMS – Dominican Rep.</td>
<td>PMS 325F</td>
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<td>FY18</td>
<td>FY19</td>
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<tr>
<td>80ft Near Coastal Patrol Vessel</td>
<td>FY17</td>
<td>FMS – Various (IDIQ)</td>
<td>PMS 325F</td>
<td>Up to 13</td>
<td>Expected FY18</td>
<td>Expected FY23</td>
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<tr>
<td>Norwegian Combatant Craft Medium</td>
<td>FY17</td>
<td>FMS – Norway</td>
<td>PMS 325F</td>
<td>Planning Case</td>
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<td>FY18</td>
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<td>7m RIB</td>
<td>Expected FY18</td>
<td>FMS – Cambodia</td>
<td>PMS 325F</td>
<td>4</td>
<td>Expected FY18</td>
<td>Expected FY19</td>
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<td>Force Protection Boat - Medium (FPB-M)</td>
<td>FY17</td>
<td>FMS – Uruguay</td>
<td>PMS 325F</td>
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<td>Expected FY18</td>
<td>Expected FY19</td>
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<td>38ft Patrol Boat</td>
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<td>FMS – Iraq</td>
<td>PMS325F</td>
<td>8</td>
<td>Expected FY19</td>
<td>Expected FY20</td>
</tr>
</tbody>
</table>
The sea is selective, slow in recognition of effort and aptitude, but fast in sinking the unfit – Felix Riesenberg Jr.
Systems Design & Integration

Scott Petersen
The mission of the Systems Design and Integration branch within the Combatant Craft Division is to be the engineering resource for research, standards development, design, development, and integration of mechanical, electrical, and electronic systems across the full life cycle of manned and unmanned surface craft. We develop total craft systems and integrate new technologies, balancing user requirements and costs to deliver comprehensive solutions to meet the needs of the Navy and other government agencies.

- DoD and industry wide leader in technical knowledge and innovation in small craft systems design and integration
- Aligned to support national military strategy
- Maintain technical health
- Set standards for Navy systems acquisition
- Evaluate and support customer needs
- Showcase “realm of the possible”
Technical Competencies

- Electrical Power Generation
- Electrical Power Distribution
- Outboard Motors
- Engines and Propulsion Systems
- Fuels, Lubricants, and Related Regulation
- Machinery
- Heating, Ventilation and Air Conditioning
- Firefighting
- Command, Control, and Computers
- Navigation
- Communications, Intelligence, Surveillance, and Reconnaissance
- Mission System Integration
- Trailers
- Intelligent Autonomy
- Machinery Automation, Controls, and Sensing
- Unmanned Vehicle System Design
- Unmanned Vehicle Command and Control
- Ship Interoperability
- C4ISR Policy and Architecture
- Craft Acquisition Program Management
“Advanced” systems refers to those systems that are:

• Without precedent for use on operational assets
• Original designs emerging from the development and application of Research & Development (R&D) or Science and Technology (S&T) efforts
• Adapted from existing militarized aviation, ship or ground vehicle platforms for use on small boats and craft
• Small boat and craft derivatives of existing commercial technologies
• Proven for use on any platform but require a change in mission set from that which they were originally designed
Electronics System Integration

AN/PRC-117F (2 Nets)
- UHF/VHF LOS
- UHF SATCOM
- DAMA
- SINCGARS
- Have Quick 2

SeaFLIR III EO/IR
- Reconnaissance & Surveillance

COMMERICAL NAVIGATION EQUIPMENT AND VHF RADIO
- RADAR/DEPTH SOUNDER/VHF RADIO

FBCB2 (BFT)
- Force XXI Battle Command, Brigade and Below
- Blue/Red SA
- C2

IFF

AN/VRC-104
- HF/VHF
- 150W Output

DAGR
- Defense Advanced GPS Receiver
- Anti-jam security

NAV/FILE TRANSFER CPU

AN/PRC-152
- UHF/VHF LOS
- SINCGARS
- Have Quick 2

Electronics System Integration
Craft Health Monitoring System & Simulation

Integrated Electronics Suite Prototyping

High Temperature Superconductor - Minesweeping
Intelligent Systems

Full Scale Demonstration
USV and System
Design/Build

Combatant Craft Division
Intelligent Systems

Small USV for Reconnaissance

USV Test Center

Combatant Craft Division
Intelligent Systems

USV Command & Control Architecture and Autonomy

USV Navigation and Communications

USV Homing

UISS Risk Mitigation Initiatives

Combatant Craft Division

2/7/2018

Approved for Public Release; Distribution is unlimited
Intelligent Systems

LCS USV Line Catching

Autonomous USV Refueling
System Development Life Cycle

- Code 832 integrates both established and emerging mechanical, electrical and electronics systems onto combatant craft
- Code 832 requires niche expertise and high end engineering partnerships in early phases of R&D to cover a broad spectrum of technologies

ASE covers the left end of this scale where highly technical problems without precedence need solutions
The past Advanced System Engineering Contract was intended to bring together a broad range of companies to provide engineering support and prototyping of advanced technologies to advance the state of the art in manned and unmanned craft systems, improve operational effectiveness and investigate new paradigms.
Vision

Set the standard for delivering the right solution at the right time.
QUESTIONS?
Why a Prototyping Contract?

Contracting Options Limits

Engineering services contract
  Low ODCs

Simplified Acquisition Procedures
  Limited dollar amounts
  Longer lead time

Large Purchase
  Longest lead time
  Potential funds expiration prior to work completion
Prototyping Needs

Focused on physical hardware
Fabrication engineering as needed
Specialty engineering as needed
Testing
Support
This scope is for the acquisition of prototyping services and engineering, production and marine services in support developing test articles, physical engineering models, science and technology models, functional and operational prototypes.

Prototypes are developed in support of the development of science and technology and the validation of operational requirements. Prototypes are often used to examine scientific hypotheses, validate engineering solutions, or demonstrate operational effectiveness.

The intent is to support prototyping from initial conception through prototype production and throughout life of the prototype.
Work Areas

Program Management and Planning – cost estimating, scheduling, reporting, etc.

Prototype Development - production engineering support, technical analyses or other specialty technical services

Prototype Fabrication - may include material samples, test articles, individual components, systems and sub systems, partial scale and full scale craft, support gear and equipment required for the testing and fielding of prototypes

Prototype Support and Installation - support boat checks or ship checks as required, refurbish, repair or upgrade GFE in support of a successful installation, provide specialty tools or rigging, unique safety items, templates or jigs required.
Prototype Testing - This may include material testing of samples, coupons or panels, bench testing of individual component, systems or subsystems. This may also include builder’s trials and support of government trials in the development of prototype watercraft as required. May be required to supply test gear, instrumentation, consumables and fixtures as necessary. Testing may occur at the contractor facility, a government facility, test range or a public waterway anywhere in the United States.

Post-Delivery Support - This support may include repair, modification, refurbishment and upgrades to the prototype or its components and materials throughout the prototype’s useful life.
<table>
<thead>
<tr>
<th>S&amp;T model watercraft</th>
<th>Black box/health monitoring system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polymer Kelp material prototypes</td>
<td>Multi-vehicle comms system</td>
</tr>
<tr>
<td>Pop up gun</td>
<td>EOD dynamic positioning system</td>
</tr>
<tr>
<td>Army workboat</td>
<td>Hand Held USV Operator Control Unit</td>
</tr>
<tr>
<td>MK V/ Jetski L&amp;R</td>
<td>Sealion Technology demonstrator</td>
</tr>
<tr>
<td>UISS watercraft prototype</td>
<td>Towable sled</td>
</tr>
<tr>
<td>MHU watercraft prototype</td>
<td>LCS launch and retrieval bunks</td>
</tr>
<tr>
<td>Jet array box (Small Structural box)</td>
<td>Small Catamaran</td>
</tr>
<tr>
<td>SEAMOB USV</td>
<td>USV refueling gear</td>
</tr>
<tr>
<td>Various antennas</td>
<td>Towbodies</td>
</tr>
</tbody>
</table>
Boat Builders
   Metal and Composite
Machine Shops
Electrical & Electronic Shops
Supports Design-Build: Services (high ODCs) and / or Supplies
Easy access to specialty contractors
Can withstand lumpy activity
Supports tasks $10k to $10M+
Status

Initial stages
   Statement of Work being developed
   ICGE being developed
Explore contract options and structure
   single award, multi-award?
Timeline TBD
QUESTIONS?
Mission, Functions, Products

PROVIDE TIMELY BOAT AND CRAFT IN-SERVICE ENGINEERING SUPPORT TO MEET CUSTOMER MISSION REQUIREMENTS

• In-Service Engineering Agent
• Planning Yard
• Engineering and Design
• Direct Fleet Support
• Marine Boatyard Services
• Distance Support
• Obsolete Equipment Replacement
• Alteration Installation Team

- Drawings
- Boat Alteration Record
- Liaison Action Records (LARs)
- Design Histories
- Validation Sheets
- Calculations
- Weight & Configuration Tracking
- Industrial Work Packages
- Industrial Support
- Familiarization
- Boat Inspections
- Transportability Issues
In-Service Teams

- **Boats, Mission Modules**
- **CNIC, SSP**
- **NECC**
- **Patrol Coastal**
- **Landing Craft**
- **Life Raft**
- **Army**
- **SPECWAR/Unmanned Vehicles**
- **Foreign Military Sales In-Service**
- **INSURV, Misc. Craft**

- 38 Gov People

We Have a Permanent Presence West Coast

Combatant Craft Division
Planning Yard and ISEA Support

Planning Yard
- Design / Engineering
- Alteration and Drawing Development
- BOATALTs, LARs / RLARs
- Alteration Installation Support
- Prototyping Support
- Weight and Stability Tracking
- Configuration Control
- Estimating
- Maintain Drawing Data Base
- ILS

ISEA
- Direct Fleet Support
- Repair Support / Problem Resolution
- Engineering Analysis
- Obsolete Equipment
- Inspections
- ILS

ENSURE SAFE, RELIABLE, EFFECTIVE AND EFFICIENT SYSTEMS
Configuration Control

Aft Deck House

New Pilot Houses

Gun Mount

NO UNAUTHORIZED BOATALS
Industrial Support

RMC Support (as tasked by customers)
- MARMC, SWRMC, SERMC, FDRMC
- Regional CHENG Support
- Technical Oversight
- Technical Validation, Acceptance
- Alteration Installation Verification
- Overhaul Trials

Alteration Installation
- Work with Prime and Subs
- Alteration Prototype
- Installation Feedback
- Purchase / Kitting
- Storage and Shipping
- Installation World-Wide (Testing, QC…)
- Trials
- Turnover
Craft Supported

Number of Boats - 3536 (including those under construction)

Boat Allowance Types - 68

Customers
- PMS 325
- PMS 326
- PMS 377
- PMS 470
- PMS 420
- PMS 480
- NAVSEA 05
- Fleet Users
- NECC
- ACUs
- SSP
- CNIC
- NAVFAC
- Shipyards
- INSURV
- CNSL
- CNSP
- CSF
- PACFLT
- SPECWAR
Navy Support

Life Rafts
Personnel Boats
FP Boats
Security Boats
Port Ops Boats
Navy Support

FP Boats
Barrier Boats
Security Boats
Port Ops Boats
Navy Support

LCUs
Work Boats
Utility Boats
Dive Boats
Navy Support

Ship’s Boats
Mission Modules
Riverine Patrol Boat
34’ Patrol Boat
Riverine Assault Boat
Riverine Command Boat
11M RX
FY17 Total Allocation
(Gov’t and Contractor)

FY17 TEAMS

- NECC: 32%
- PC: 10%
- SPECWAR: 1%
- SSP, CNIC, & NEPO: 10%
- LIFERAFT: 9%
- LCU: 2%
- NON-STANDARD BOATS: 2%
- FMS: 27%
- CNSP: 1%
- FLOATER: 0%
- ARMY: 0%
- STANDARD BOATS: 7%

Combattant Craft Division
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*FY17 Metrics*

**Combatant Craft Division**

2/7/2018  
Approved for Public Release; Distribution is unlimited  
63
Code 834 List Of Processes

- Boat / Craft Alteration Record Development Process
- Boat Yard Production
- Customer Support Documentation
- Drawing Standard and Development
- Historical Tech Documentation
- Job Jacket Standard
- Parts Validation
- LAR
- Reverse LAR
- Short Form Boat Alt Process
- Technical Documentation Review
- Touch Time and Quality Defects
Future Needs Prediction CONUS

- Slight increase for Standard Navy support as fleet grows
- Decrease of Fleet funding for overhaul support – RMCs performs their own work
- Increase in ISEA support for RMCs and regions along with CCD possibly contracting out more boat overhaul work
- Increase in CNIC support
- Decrease slightly near term in industrial work (AIT, Repair), mostly due to contract limitations and limits on purchasing material...long term expect contract type and changes in policy will cause this to increase
- Steady state for Life Raft funding and support
- Continued backlog of BOATALT designs mostly due to lack of funding
- Increase in SPECWAR support
- Increase in MSC support
- Increase in commonality support and obsolescence management which will reduce life cycle support long term
- Increase in Uniform National Discharge Standards support
- Increase in configuration tracking and management
- Increase in cybersecurity support
- Decrease long term in LCU 1600 support as LCU 1700 program progresses
Future Needs Prediction OCONUS

- Slower Growth in FMS ISEA support worldwide
  - Partially related to State department policy and budget
  - Increase in FMS Excess Defense Article (EDA) transfer as lower cost approach for countries to build capability
- Continued support for Iraq
- Steady state to decline in PC support as they age
- Continued Growth in NECC support as NECC expands operations world-wide
- Increase in support in Bahrain, UAE and Guam
- Increase in in-country familiarization and activations
THE BITTER END
QUESTIONS?
Test & Evaluation

Dave Pogorzelski
“The test and evaluation capability of the [Division] has provided the Navy with the ability to technically evaluate the capabilities of boats or prototypes under procurement. Such evaluations can insure that the expenditure of funds for any new Navy craft resulting in the procurement of performance proven craft, technically capable of achieving required design goals, including the necessary documentation to predict performance as mission requirements are modified to suit new tactical situations.”

(excerpted from “Boat Engineering Department, NAVSEC, Norfolk Division” , presentation given to the Hampton Roads SNAME sections, dtd 07 Oct 1970)

To provide an unbiased, independent assessment of craft and craft systems performance.
What we do

- Conduct Underway Boat Trials to Quantify Performance Characteristics on:
  - Hull
  - Electrical
  - Mechanical
  - Propulsion Systems
  - Human Factors
- Data
  - Acquisition
  - Reduction/Analysis
  - Technical Reporting
- Risk Management
  - Requirements Definition
  - Contractual Compliance
- Expanding Knowledge
  - Validate Design Tools
  - R&D/New Craft Systems Evaluations
  - RDT&E - Rapid Technology Transfer
Full Spectrum Testing

- Seakeeping Trials
- Structural Response
- Propulsion Trials
- Maneuvering Trials
- Noise & Vibration
- Forensics / Failure Analysis
- Acceptance Testing
- Craft Characterization
- Signature Trials
- Operational Assessments
- Human Factors Assessments
- Craft & Systems Operation
- Reliability, Maintainability, Availability
Norfolk Waterfront Facility

- Located on Naval Station Norfolk
  - Close proximity to various operational commands
  - A variety of test environments nearby
  - 30,000 sqft building on approximately seven acres
- Facility maintains
  - Detachment Test and Support Craft
  - Fleet Loaners
  - Craft in Transition
- Facility enables
  - RDT&E
  - System Integration
  - Rapid Fleet Response

- Administrative Offices
- Conference/Training Rooms
- High Bays
- Warehousing
- Machine / Metal Fabrication Shop
- Electronics Shop
- Calibration & Test Lab
- Engine Shop
- Weld Shop
- Dive Locker
- Outboard Engine Test Shop
Waterfront Operations Contract

• **Direct Fleet Support**
  – Boat Repair, Troubleshooting
  – Boat De-Preservation
  – Transportation
  – Crew Familiarizations

• **Facilities Support**
  – ESH Compliance
  – Vehicle Operation

• **Test & Evaluation Support**
  – Range & Safety Craft Crews
  – Hardware and Sensor Installation
  – Detachment Support Craft Upkeep & Repair
  – Minor Prototyping

• **General categories of labor:**
  – Boat Captains
  – Able Body Seaman
  – Mechanics
  – Electronics Technicians
  – Supporting administrative personnel
  – Supply Chain Management
  – Divers
  – Medical

**Waterfront Support Contract Personnel**
SUPPORT but DO NOT Conduct T&E!
QUESTIONS?
Integrated Logistics Support

David Hartley, PMP
OUR MISSION:
Provide Integrated Logistics Support & Inventory Management for Combatant Craft and Boats…
at the right place, at the right time, at the right cost every time

VISION:
We will continually align ILS product focus with fleet mission needs through proactive support & commitment that enables Affordable System Operational Effectiveness (ASOE)
Authority & Functions

Policy References for Authority and Functions:
• OPNAVINST 4780.6F (POLICY FOR ADMINISTERING SERVICE CRAFT AND BOATS IN THE U.S. NAVY)
• NSTM Chapter 583, Vol 1 (BOATS AND SMALL CRAFT)

ILS Assigned Navy Boat Functions
1. Integrated Logistics Support Manager (ILSM)
2. Boat Inventory Manager (BIM)

Core Business Areas:
1. Acquisition (Initial) ILS
2. Life Cycle ILS
3. Boat Inventory Management (BIM)
Core Functions

Acquisition ILS
• Develop Supportability Plans
• Review Technical Data Package
• Develop ILS Products

Lifecycle ILS
• Provide Direct Fleet Logistics Support
• Synchronize Configuration Changes & ILS
• Maintain ILS Products on over 3,400 boats

Boat Inventory Management
• Centrally manage Navy inventory of over 3400 boats
• Provide the *right boats at the place at the right time*
• Manage wholesale stock at boat inventory control points
CCD Customers

- **U.S. Navy**
  - NAVSEA
    - Warfare Centers
    - NAVSUP
    - NSLC
  - Fleet
    - CNIC
    - Fleet Forces
    - NECC
  - NAVFAC
  - Strategic Systems Program (SSP)

- **SOCOM/SPECWAR**

- **U.S. ARMY**
  - TACOM

- **FMS**
Contract Requirements

Provide technical support for:

- Integrated Logistics Support (ILS) Product development & sustainment
  - enabled by 12 Integrated Product Support (IPS) Elements
  - to deliver system readiness and availability
  - optimizing total system life cycle cost.

- Boat Inventory Management (BIM) Watercraft Custodial Assignment, Configuration and Condition Management and Accounting in support of 3400 U.S. Navy watercraft

- Boat Inventory Management System (BIMS) management support of Navy Life Raft Tracking (LIFERAFT), Warfare Center Web Library Database (TDR), and Craft and Boat Support System (CBSS) web based applications.
ILS Requirements

• **Supply Support**
  – APL/AEL Provisioning Technical Documentation (PTD) and Engineering Data for Provisioning (EDFP)
  – APL review for completeness and accuracy
  – Obsolescence Management / DMSMS
  – BOATALT driven and APL and AEL updates
  – Automated COSAL Improvement Program (ACIP) issue resolution
  – Technical Referral Requests (TRRs) and DD Form 339 resolution

• **Maintenance Planning & Management**
  – RCM analysis on craft and HM&E systems / equipment
  – Maintenance Requirement Cards (MRC) and Maintenance Index Pages (MIP) develop / update in concert with NSLC
  – Technical Feed Back Reports (TFBRs) research & response

• **Technical Data / Interactive Electronic Technical Manuals**
  – Boat Information Books (BIBs)
  – Custom Engine Parts Manuals (CEPMs)
  – Operations and Maintenance manuals (O&M)
  – Safe Engineering and Operations manuals (SEAOPS)
ILS Requirements

Discrete Deliverables

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<th>Life Cycle</th>
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</table>

• **Configuration Management / Accounting**
  – Provide Configuration Accounting using CDMD-OA via applicable CDM
  – Make BOATALT driven configuration changes

• **Supportability Analysis & Planning**
  – RCM Analysis
  – Life Cycle Management Plan*
  – Naval Training Support Plans
  – Maintenance Plans
  – Supply Support Plans
  – Facilities Analysis

• **Technical Documentation Reviews**
  – Vendor Manuals
  – Drawings
  – Configuration/Parts Data
  – Maintenance requirements
  – Fleet Technical Manual Deficiency Evaluation Reports (TMDER) response

* ACAT Program of Record

Combatant Craft Division
Boat Inventory Profile

Boat Quantity by Enterprise

- **Total, SHIPS-PAC, 194, 7%**
- **SHIPS-TBD, 13, 1%**
- **SHIPS-LANT, 120, 5%**
- **Total, CNIC, 589, 22%**
- **Total, NECC, 296, 11%**
- **Total, OTHER, 1413, 54%**

Legend:
- CNIC
- NECC
- OTHER
- SHIPS-LANT
- SHIPS-PAC
- SHIPS-TBD
Boat Inventory Management Functions

• Central accountability and management of more than 3000 Navy boats
• Manage Boat Disposition & Boat Allowances
  – Authorize initial issue to fill a boat allowance, custody transfer, turn in and ultimately disposal of the boat; provide disposition instructions and track
• Maintain and Validate Navy Boat Inventory
  – Perform Boat Inventory Validation/Physical Inventory IAW OPNAVINST 4780.6F
• Broker Best Use of Available Boat Assets
  – Match available boats to validated needs/requirements
• Capture Boat Budget Requirements
  – Develop boat budget inputs for both phased replacements and emergent requirements
• Manage Wholesale Stock Points
  – San Diego
  – Williamsburg
• Disposal via GSA Sales Program
• Centrally accounted personal property assets - boats are issued to fill authorized allowances and tracked until dust
• Chief of Naval Operations (CNO) ‘owns’ the boats; PMS325/BIM has ‘accountable ownership’
• BIM has disposition authority; user command is responsible ‘custodian’
• Allowance Authority
  – CNO authorizes Afloat Activity changes
  – BIM authorizes Ashore Activity changes in concert with Chain of Command

The Boat Inventory
(- 3400+ Boats @ 450+ Activities Worldwide incl Stock Points)
### Integrated Watercraft Process Support

#### AEA: Key Event Collaboration
1. Review and document First Boat Weapon Systems for Certification process
2. Review and document First Boat RadHaz and Air Transport certification process (as applicable)
3. Validate final data for CBSS Characteristics, Boat Profile (BP) and Fleet Introduction Document (FI Doc)
4. Transition Project to ISEA

#### BIM:
1. Post-RFA
2. Boat Ready for Issue (RFI)
3. Follow-On Boats
4. All Boats in Contract RFI
5. Life Cycle

#### ILS:
1. Develop ILS
   - Maintenance
   - Supply
   - Tech Data
   - Config Status Accounting
2. Validate ILS
3. Deploy ILS

---

**GSA Sales**

**Inventory Tracking**

**Acquisition Project Tracking**

**Fleet Introduction**

**Boat Delivery**
QUESTIONS?