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

Scott Gustavson
Engineering and Marine Services

- Scope: Provide acquisition of engineering and marine services in support of the NSWCCDDN mission. This is a multi-disciplinary Engineering and Alteration Installation Team (AIT) services task order including managerial, structural, mechanical, electrical, electronic, naval architectural, research and development, logistics, test and evaluation, prototyping, and installation and repair.

- Contract N00178-04-D-4027-EHP5
  Incumbent Prime Contractor: CDI Marine Company
  Base Year Contract w/One 1-Year Option
  Award Date: 9/23/2014
  POP End Date: 5/12/2016
  Total - $39,269,135.94
Overview of Active Contracts

Administrative, Information Technology and Financial Services

- **Scope:** Provide Program Management and Planning support services, Administrative Services, and Computer Engineering and Information Technology support services in support of the NSWCCDDN mission. This is a multi-disciplinary contract including managerial, administrative, financial and computer programmer/scientist services.

- **Contract N00178-04-D-4107-EHP3**
  - Incumbent Prime Contractor: Professional Software Engineering
  - Base Year Contract w/ Two 1-Year Options
  - Award Date: 2/1/2013
  - POP End Date: 1/31/2016
  - Total - $12,198,074.24
Waterfront Operations

• **Scope:** Contract provides for many aspects of RDT&E efforts, maintains the waterfront facility, and ensures operational readiness of boats and associated equipment in the custody of NSWCCDDN. Includes the full range of Testing and Evaluation efforts, maintains boat and craft, and accomplishes minor and major repairs and modernization on boats/craft. Includes operation of boats and craft during RDT&E events as well as other events as required. Provides for inspections and surveys to assess the material condition of boats and associated equipment, diagnose and/or troubleshoot faulty equipment, and perform the work to repair/replace such equipment.

• **Contract N00178-05-D-4554-EHP1**
  Incumbent Prime Contractor: Seaward Services
  Base Year Contract w/ Two 1-Year Options
  Award Date: 2/14/2013
  POP End Date: 2/14/2016
  Total - $35,016,114.66
Overview of Active Contracts

Advanced Systems Engineering

• Scope: Engineering and Technical Management Support Services to design, develop and integrate advanced systems for all types of combatant craft, boats, watercraft, unmanned craft, and associated systems on U.S. Navy and other Federal agency vessels. Provides for all aspects of design, development, integration and installation of C4ISR, state of the art HM&E and autonomous systems.
• Contract N65540-12-D-0007
  Incumbent Prime Contractor: Gibbs and Cox
  Base Year Contract w/ Two 1-Year Options
  Award Date: 7/10/2012
  POP End Date: 7/8/2016
  Total - $10,799,969.24
• Contract N65540-12-D-0006
  Incumbent Prime Contractor: Vencore (formerly QinetiQ)
  Base Year Contract w/ Two 1-Year Options
  Award Date: 7/10/2012
  POP End Date: 7/8/2016
  Total - $9,902,317.35
Overview of Active Contracts

OCONUS Engineering and Marine Services

• Scope: Provide acquisition of engineering and marine services in support of the NSWCCDDN OCONUS mission. This is a multi-disciplinary Engineering and Alteration Installation Team (AIT) services task order including managerial, structural, mechanical, electrical, electronic, naval architectural, research and development, logistics, test and evaluation, prototyping, and installation and repair for OCONUS projects; includes travel to and/or presence OCONUS

• Contract Pending Award
  Incumbent Prime Contractor: N/A – New Requirement
  Base Year Contract w/One 1-Year Option
  Solicitation N00024-14-R-3405 Closed
  Award Date: TBD
  POP End Date: TBD + 2 years
  Estimated Value < $50,000,000
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>
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</thead>
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<tr>
<td>• Engineering Services (OCONUS) 5-Year</td>
<td>&gt; $100 M</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; QTR FY-17</td>
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<tr>
<td>• Engineering Services (CONUS) 2-Year</td>
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<td>• Engineering Services (CONUS) 5-Year</td>
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<tr>
<td>• Advanced Electronics</td>
<td>&lt; $25 M</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; QTR FY-16</td>
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<tr>
<td>• Intelligent Systems</td>
<td>&lt; $50 M</td>
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<tr>
<td>• Advanced Systems Engineering</td>
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<td>• Advanced System Prototype</td>
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<tr>
<td>• Admin/IT Support</td>
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<td>1&lt;sup&gt;st&lt;/sup&gt; QTR FY-17</td>
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QUESTIONS?
Administrative & Business Operations

Scott Gustavson
Administrative, Information Technology and Financial Services

- **Scope:** Provide Program Management and Planning support services, Administrative Services, and Computer Engineering and Information Technology support services in support of the NSWCCDDN mission. This is a multi-disciplinary contract including managerial, administrative, financial and computer programmer/scientist services.

- **Contract N00178-04-D-4107-EHP3**
  - Incumbent Prime Contractor: Professional Software Engineering
  - Base Year Contract w/ Two 1-Year Options
  - Award Date: 2/1/2013
  - POP End Date: 1/31/2016
  - Total - $12,198,074.24
Summary SOW

• This contract primarily supports in-house Administrative, Financial and Information Technology functions

• Primarily supporting the Admin Officer and Business Operations Manager, but also support to the Tech Codes
  – Timekeepers
  – Financial Analysts
  – Travel Specialists
  – Program/Project Analysts
  – Computer Programmers (IAWF certifications required)
  – Database Administrators (IAWF certifications required)
  – Network Administrators (IAWF certifications required)
  – Shipping/Receiving/Warehouse/Storage/Supplies
  – Reception/Visitor Control
  – Public Works Liaison

• Infrastructure support to the entire organization, supporting much of the non-inherently governmental functions needed to operate the detachment
Job Categories

- Program Manager
- SharePoint Administrator
- Network Administrator
- Senior Computer Programmer
- Computer Analyst
- Senior Analyst/Analyst/Junior Analyst
- Program Analyst
- Quality Specialist
- Senior Administrative Specialist
- Travel Systems Specialist
- Supply Clerk (Office Assistant)
- Senior Technical Writer/Technical Writer
- Graphics Illustrator
- Database Administrator
- Computer Programmer/Junior Computer Programmer
QUESTIONS?
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.
Design & Acquisition

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
Craft Design & Fielding

UISS-PROTOTYPE MODELING AND AS-BUILT DRAWINGS

Combatant Craft Division

8/18/2015 Approved for Public Release; Distribution is unlimited
Construction

- **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

*Combatant Craft Division*
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**
PMS325G Acquisition History (1998 - 2014)

Carderock

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<tr>
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<th>FY98</th>
<th>FY99</th>
<th>FY00</th>
<th>FY01</th>
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<td>11</td>
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<td><strong># Boats Procured</strong></td>
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<td><strong># Boats Delivered</strong></td>
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### Current Other Than Navy

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<td>27m MK V PB</td>
<td>FY 09</td>
<td>Kuwait</td>
<td>PMS 325F</td>
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<td>FY 11</td>
<td>EXPECTED FY 15</td>
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<td>28m Egyptian Coastal Patrol Craft (Co-Production)</td>
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<td>63m Egyptian Fast Missile Craft</td>
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<td>PMS 325E</td>
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<td>NAVSPECWARCOM/ USSOCOM</td>
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<td>24ft Bridge Erection Boat</td>
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<td>U.S. Army</td>
<td>TACOM</td>
<td>400+</td>
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<td>FY20</td>
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<td>FMS - Uruguay</td>
<td>PMS 325F</td>
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<td>FY15</td>
<td>FY15</td>
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<td>FMS - Ukraine</td>
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<td>FMS - Thailand</td>
<td>PMS 325F</td>
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<td>FY16</td>
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<td>30' Riverine Boat</td>
<td>Expected FY15</td>
<td>FMS - Nepal</td>
<td>PMS 325F</td>
<td>10</td>
<td>FY15</td>
<td>FY17</td>
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<td>7M RIB (SDAF)</td>
<td>FY15</td>
<td>FMS - Various (SDAF)</td>
<td>PMS 325F</td>
<td>up to 360</td>
<td>FY15</td>
<td>FY19</td>
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The sea is selective, slow in recognition of effort and aptitude, but fast in sinking the unfit – Felix Riesenberg Jr.

QUESTIONS?
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
A Primary Tool for Code 8320 but used across division!

Current Contract
Very Broad Technology Coverage

Future Contracts
Advanced Electronics
Intelligent Systems
Advanced Systems

“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

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

NAV/FILE TRANSFER CPU

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

DAGR
- Defense Advanced GPS Receiver
- Anti-jam security

RADIO CONTROL/INTERCOM SYSTEM

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

Combatant Craft Division 8/18/2015
Approved for Public Release; Distribution is unlimited
Electronics System Integration

Craft Health Monitoring System & Simulation

High Temperature Superconductor - Minesweeping

Integrated Electronics Suite Prototyping
Intelligent Systems

Small USV for Reconnaissance

USV Test Center

Combatant Craft Division
Intelligent Systems

USV Navigation and Communications

USV Homing

USV Command & Control Architecture and Autonomy

To:
Radio Link

UISS Risk Mitigation Initiatives

E-net Switch

Mission Computers

Can Nodes

Gyro Compass

Flight Recorder

Radar

Weather

Cameras

Monitoring, Rudder, Throttle, Transmission Control

Approved for Public Release; Distribution is unlimited
Advanced Systems

LCS USV Line Catching

LCS Ramp Bunk

Towed USV Refueling

USV Refueling Latch/Sponson

HOSE FEED CONCEPT

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Advanced Systems

Stern Gate Launch and Recovery Trailer

Hybrid Electric Propulsion


Engine development, Integration and Testing

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System Development

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 Contract(s) covers the left end of this scale where highly technical problems without precedence need solutions
Current ASE Contract

- Very Broad
- Multi Award
  - Vencore (QinetiQ)
  - Gibbs and Cox
- Developed to hand off to Engineering Services Contract
- 3 years up in July 2015, extension granted until 3 separate contracts can be competed
  - Advanced Electronics (Heavy on Tactical Communications)
  - Intelligent Systems (Primary tool for USV work)
  - Advanced H,M, & E (Covers non standard systems)
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?
Prototyping

Kent Beachy

Combatant Craft Division

Approved for Public Release; Distribution is unlimited
Limited Contracting Options Available

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
Scope

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.
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.
Past Prototyping Efforts

- S&T model watercraft
- Polymer Kelp material prototypes
- Pop up gun
- Army workboat
- MK V/ Jetski L&R
- UISS watercraft prototype
- MHU watercraft prototype
- Jet array box (Small Structural box)
- SEAMOB USV
- Various antennas
- USV bow latch
- Mk VI Integrated Electronics Suite
- Black box/health monitoring system
- Multi-vehicle comms system
- EOD dynamic positioning system
- Hand Held USV Operator Control Unit
- Sealion Technology demonstrator
- Towable sled
- LCS launch and retrieval bunks
- Small Catamaran
- USV refueling gear
- Towbodies
Boat Builders
   Metal and Composite
Machine Shops
Electrical/Electronic Shops
High ODCs
Supports Design/Build
Easy access to specialty contractors
Can withstand lumpy activity
Supports tasks $10k-10M+
Initial stages

Statement of Work being developed
ICGE being developed
Explore contract options and structure
single award, multi-award?
Timeline TBD
QUESTIONS?
Life Cycle Management & Sustainment Engineering

Bob Bradford
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

28 Gov People
We Have a Permanent Presence West Coast

Combatant Craft Division
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 BOAT ATLS

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Industrial Support

RMC Support (as tasked by customers)
- MARMC, 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

FY14 AIT WAS APPROXIMATELY 33% OF CONTRACTOR FUNDING
Craft Supported

Number of Boats - 3559

Boat Allowance Types - 77

Customers

- PMS 325
- PMS326
- 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

Combatant Craft Division
Navy Support

LCUs
Work Boats
Utility Boats
Dive Boats
Navy Support

Ship’s Boats
Mission Modules
Navy Support

Riverine Patrol Boat
34’ Patrol Boat
Riverine Assault Boat
Riverine Command Boat
11M RX
FY14 Total Allocation
(Gov’t and Contractor)

- FMS: 33%
- LCU: 5%
- NECC: 29%
- PC: 2%
- SPECWAR: 1%
- STANDARD BOATS: 20%
- SSP: 6%
- UISS: 1%
- ARMY: 3%

Combatant Craft Division

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Combatant Craft Division

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73
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
FMS Support

35 Meter Patrol Boat
- Maintenance/Repair
- BOATALTS
- Design Shop Improvements

60 Meter Off Shore Vessel
- Maintenance/Repair
- BOATALTS
- Design Shop Improvements

Ship Repair Facility
- Dyno and Dyno Enclosure Support
- Developed 35M and 60M training for craft
- Electrical Drawing Redlines/Calcs for power requirements
FMS Support

78 FT Fast Coastal Patrol Craft (PCF)
- Engineering evaluations
- Analysis
- Investigations and reports to PMS 326
- PCF Hull Cracking

42 Meter Coastal Security Craft
- Maintenance/Repair
- Dry Docking
- Part Procurement

Combatant Craft Division

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MK V Special Operations Craft
- Transfer of MK V’s, Industrial Support CONUS and OCONUS
- Familiarization and operational training of MK V’s

7 Meter & 11 Meter Rigid Inflatable Boats
- Develop reactivation and training plan. Identify material and part deficiencies

FMS Support

Anticipate huge growth in this area

Combatant Craft Division
FMS Support

25 Meter Fast Patrol Craft
- Engine/generator room ventilation
  BOATALT Design/Installation

78 FT Patrol Craft Fast
- Main Engine
- A/C
- Marine Gear
- Reverse Osmosis
- Propeller Replacement Engineering,
  Engine
- Exhaust Mod
- BOATALT Development
  Engine Exhaust Mod

Combatant Craft Division
8/18/2015
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40 Foot SeaArk
- Developed BOATALT for Engine Replacement
- Design/Installation
- Developed Logistic Package/Parts Validation
- Developed BOATALT for 12V DC Electrical System
- Operation and Maintenance Support
- Decrease to steady-state for Standard Navy support
- Decrease of Fleet funding for overhaul support – RMCs performs their own work
- Increase in ISEA support for RMCs and regions
- Overall slight growth after initial decline in In-Service funding
- 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 could cause this to increase
- Increase in Life Raft funding and support
- Continued backlog of BOATALT designs mostly due to lack of funding
- Increase in MSC and Non-Standard boat support
- Increase in Commonality support which will long term reduce life cycle support
- Increase in Uniform National Discharge Standards support
Future Needs Prediction OCONUS

- Continued Growth in FMS ISEA support – Possibly to the point of being another branch
- Growth in FMS in Africa, Southeast Asia, Caribbean, South America
- Continued Growth in NECC support as MK VI arrive and NECC expands operations world-wide
- Increase in continuous support in Bahrain
- Increase in on-site support OCONUS – often continuous
- Increase in OCONUS travel
- Increase of placing government and contractors in foreign countries…mostly contractors
- Increase in in-country familiarization and activations
THE BITTER END
QUESTIONS?
“The test and evaluation capability of the Department 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)
• 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
• Direct Fleet Support
  – Boat Repair, Troubleshooting
  – Boat De-Preservation
  – Transportation
  – Crew Familiarizations

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

• Facilities Support
  – ESH Compliance
  – Vehicle Operation

• 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?
Code 836 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)

Assigned Navy Boat Functions
• Acquisition Engineering Agent (AEA) – ILS
• Technical Support Activity (TSA)
• Technical Manual Management Activity (TMMA)
• In-Service Engineering Agent (ISEA) – ILS
• Boat Inventory Management (BIM)

Core Business Areas:
1. Acquisition ILS
2. Life Cycle ILS
3. Boat Inventory Management (BIM)
Code 836 Core Functions

**Acquisition ILS**
- Develop Supportability Plans
- Review Technical Data Package
- Develop ILS Products

**Lifecycle ILS**
- Provide Direct Fleet Support – Logistics
- Revise with Configuration Changes
- Maintain ILS Products on more than 3000 boats

**Boat Inventory Management**
- Centrally manage Navy inventory of more than 3400 boats
- Issue and disposition authority to provide the right boats at the right time based on validated custodian boat allowances
- Manage wholesale boat inventory control points (i.e., stock)
Our Customers

- Customers
  - U.S. Navy
    - Fleet (all Ship’s boats and embarked boats, SURFLANT/PAC, USFFC)
    - NECC
    - Ashore (CNIC, etc.)
    - SYSCOMs
      - NAVSEA
      - NAVSUP
      - NAVFAC
      - MSC
      - SPAWAR
      - Strategic Systems Program (SSP)
    - NETC (Training Commands)
  - U.S. ARMY
  - SPECWAR
  - FMS
Engineering Services Contracts provide technical support for:

- Cost effective development of acquisition logistics deliverables such as technical manuals, planned maintenance and supply support.
- Cost effective life cycle management of ILS products, including revisions and updates.
- Requirements to post-disposal inventory management and configuration management of over 3400 U.S. Navy boats and combatant craft.
Contract Requirements

- The effectiveness of the Integrated Logistics Support Branch hinges on our ability to utilize engineering services contracts.

- Work includes:
  - Projects with discrete deliverables
  - ‘Level of effort’ tasks (especially in the life cycle sustainment realm), wherein experienced logisticians, technicians, analysts and engineers play a vital role in responding to emergent operational needs for boats from inventory or for logistics support.
Acquisition (Initial) ILS

- **Provisioning**
  - Develop APL/AEL Provisioning Technical Documentation (PTD) and Data for Provisioning (DFP)
  - Review resulting APLs for completeness and accuracy

- **Planned Maintenance**
  - Conduct RCM analysis on newly acquired craft and HM&E systems / equipment
  - Develop and/or Edit MRCs and MIPs for issue and submit to NSLC for incorporation/issue

- **Technical Manuals**
  - Develop Boat Information Books (BIBs)
  - Develop Custom Parts Manuals
  - Develop Operation and Maintenance Manuals
  - Develop interactive CDs
  - Distribute publications
• Acquisition (Initial) ILS (continued)
  – Configuration Data Accounting
    • Provide Configuration Accounting for boats using CDMD-OA via applicable CDM
  – Supportability Plans
    • Life Cycle Management Plan
    • Naval Training System Plans
    • Maintenance Plans
    • Supply Support Plans
    • Facilities Analysis
  – Commercial Off the Shelf (COTS)
    Technical Documentation Reviews
    • Vendor manuals
    • Drawings
    • Configuration/Parts Data
    • Maintenance requirements
Integrated Logistics Support

- In-Service ILS
  
  - Provisioning
    - Develop, update and maintain APLs and AELs with changes resulting from BOATALTs or LARs
    - Resolve Automated COSAL Improvement Program (ACIP) issues
    - Process and resolve Technical Referral Requests (TRRs) and DD Form 339’s
    - Support re-procurement or obsolescence related issues
  
  - Planned Maintenance
    - Maintain maintenance documentation per configuration
    - Receive, research, evaluate & respond to Technical Feed Back Reports (TFBRs)
  
  - Technical Manuals
    - Maintain technical manuals per configuration
    - Perform Technical Manual Management Activity (TMMA) functions for boat related publications
    - Respond to fleet Technical Manual Deficiency Evaluation Reports (TMDER)
• **In-Service ILS (continued)**
  
  – **Configuration Data Accounting**
    • Provide Configuration Accounting using CDMD-OA via applicable CDM
    • Transfer boat configuration data upon issue/transfer/stock/disposition
    • Make configuration changes resulting from BOATALTS
    • Make any corrections to configuration along with updating the boat APL
  
  – **Supportability Plans**
    • Update plans per programmatic/operational changes
  
  – **Direct Fleet Support and Trouble desk**
    • Provide information or resolution of issues as requested:
      – Configuration
      – Boat APLs
      – Parts obsolescence
      – Drawings
      – PMS
      – Publications
    • Interfaces with Navy Call Center
Integrated Logistics Support

Boat Inventory Management (BIM) 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
QUESTIONS?