

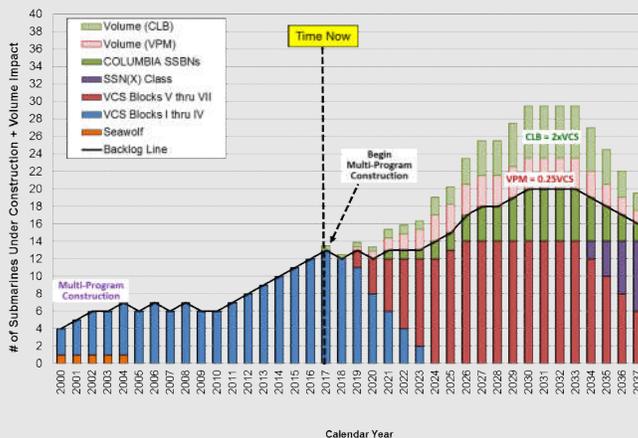


Letter to the Suppliers

It is a great time to be in the nuclear submarine business. The Nation's Submarine force is in high demand with our 50 SSNs and 4 SSGNs supporting critical national security missions and our 14 OHIO class submarines providing the most survivable leg of the strategic deterrence force, responsible for 70% of the Nation's deployable warheads. Construction of our core product, the Virginia Class Submarine (VCS), has continued unabated at the two per year rate since 2011. This has created a backlog of about a dozen submarines under construction at all times. The delivery of the USS Colorado (SSN 788) in September marks the beginning of Virginia class two-per-year delivery. Submarines are being delivered at a steady rate of one VCS per year from each of the two delivery yards in Groton, Connecticut and Newport News, Virginia.

In August, we received an RFP for 10 more Virginia Class Submarines which continues the two VCS per year build rate through 2023. All signals from the Navy indicate that the two SSNs per year build rate will continue through three more multi-year blocks of the Virginia Class Program (Block V, Block VI and Block VII). Procurement is expected to continue through FY2033 which will result in a VCS Class size of up to 58 submarines. This is an increase of 28 Virginia Class Submarines from the original class size of 30.

There are two significant demand drivers that will double our existing workload starting in 2019. The Virginia Payload Module (VPM) is an 85-foot hull section with four centerline large diameter payload tubes that is expected to be added to all future Virginia Class SSNs starting in Block V with the FY19-2 ship (SSN803). This hull section will increase payload capacity of each submarine by 250% while adding about 25% more work to the VCS Construction Program. The Columbia Program will build 12 new SSBNs over a period of 20 years to replace the 14 OHIO Class SSBNs. At 560' and 20,800 tons displacement, the Columbia is slightly larger than the OHIO Class SSBN it is replacing and represents a doubling of overall demand compared to the Virginia Class Construction Program.



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Calendar Year

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In This Issue

Growth is the theme you'll discover woven throughout this issue of the Supplier Information Bulletin. We appreciate all that you do today to support the Submarine enterprise. Recently, the Virginia Class production rate increased from 1 SSN/year to 2 SSNs/year. As a submarine industrial base, we are being called upon to step-up to a new challenge which requires a steep growth trajectory to ensure our continued future success. We will be building and delivering two new types of nuclear submarines starting in the next decade --- the Columbia Class SSBN and a Virginia Class variant that includes a new payload module. In the coming years, we will need to work closely together to establish new production lines and supply chains, deliver new products, and transfer our unique knowledge and know-how to the next generation of workers. We must continue to execute our work efficiently so that the Navy can afford to buy the ships the Nation needs in the quantities needed while maintaining our standards for on-time, on-budget delivery with safety, quality, continuous improvement and integrity ingrained into our culture and all of our processes and practices.

Feedback

Please let us know what you think about this bulletin!

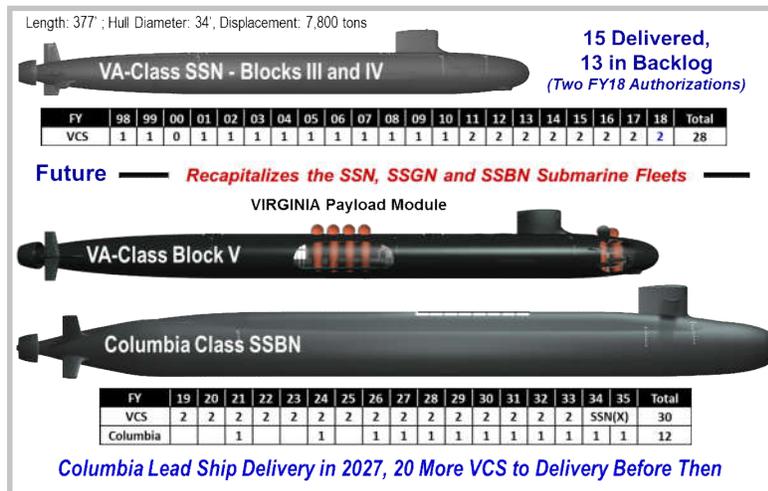
Send content suggestions and comments to Kayla Monahan (x9814) at EBSIB@gdeb.com

Letter to the Suppliers (continued)

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The number of submarines under construction at any time will increase to 20 (14 VCS+VPM and 6 Columbia). The net effect will seem like the late 1970's and early 1980's when the nuclear submarine enterprise, consisting of the two nuclear submarine shipyards and the associated 17,000 suppliers, delivered 4.2 submarines per year (one OHIO Class SSBN and 3.2 Los Angeles Class SSNs). The industrial base that built those submarines does not exist today. We still have the same two nuclear shipyards, however, our current industrial base has shrunk to less than 5,000 suppliers with about 80% being single/sole source. In most cases, the entire industrial base has downsized its workforces, facilities and respective supply chains.

To prepare for the new increased demand, we must critically assess our capacity and capabilities and establish detailed execution plans that affordably expands our critical resource base to support the Navy's Shipbuilding Plan as illustrated below.



We have begun multi-program execution in 2017. This includes advanced procurement for VCS Block V and construction prototypes for the Columbia Class which includes the Common Missile Compartment (CMC) that will be built at our Quonset Point Facility and in the United Kingdom to support their Dreadnought Class SSBN program. Our guiding principles for our Integrated Enterprise Plan (IEP) are as follows:

- Prioritize Columbia program execution
 - ◇ Columbia must deliver on time
 - ◇ Coordinate across programs to reduce schedule risk and provide affordability opportunities
- VCS deliveries to quality, schedule and cost targets
- Carrier deliveries to quality, schedule and cost targets
- Ensure executability and enable affordability during the planned ramp-up in submarine production

Our current commitment to execute the VCS Construction Program is challenging enough. The two SSNs per year production rate leave little margin for late deliveries or quality issues on the respective production lines across the entire value chain. Now we have the added strategic imperative to develop and operationalize the plan to double production once again. It's a great opportunity for our enterprise. Electric Boat and Newport News Shipbuilding look forward to working with each of you to deliver the next round of advanced submarine capability to the US Navy.

Thomas Plante, Director of Strategic Planning

LESSONS LEARNED FROM THE SHIPYARD

Preparing for Growth—A Four Part Plan

The shipbuilding industry is on the verge of witnessing a level of demand it has not experienced in many years. Therefore, Electric Boat is making strategic changes in four key areas to prepare its facilities, workforce, processes and supply base to meet the expectations and demands of the Navy's 355 ship plan. In turn, Electric Boat is also asking its suppliers how they will prepare for this demand. It is imperative that suppliers take action now, as the submarine industrial base is facing many of the same challenges as Electric Boat. Among these challenges are aging facilities and rapidly shifting workforce demographics, with many new and less experienced individuals in the submarine workforce. Additionally, the 355 ship surge in demand crosses many common suppliers, further increasing the pressure and demand on the supply base to provide for multiple products.

Electric Boat is following the four-part plan outlined below to prepare the enterprise for the next 30 years of submarine design and construction. We ask that our suppliers are following a similar approach to prepare employees, facilities, processes and resources.

1. Build Plan

To strategically plan for workload over the next 30 years, Electric Boat has launched an organization-wide initiative to establish strategic roadmaps to drive each organization to develop business area strategies and action plans to successfully navigate Electric Boat's current and future growth trajectory.

2. Facility Plan

A team at Electric Boat is developing a Facility Master Plan which outlines the 30 year schedule for facility development and expansion. The master plan includes new shipyard building construction and existing building upgrades. Construction has already begun in some areas to support the increase in shipyard work and incoming material volume.

3. Resource Plan and Workforce Development

As we expand and improve our facilities, Electric Boat is also working to ramp-up its workforce to support the increased construction workload. With many employees retiring and new employees beginning their careers at Electric Boat, training and workforce development has become a focus for the company. There is an urgent need to prepare the young workforce to be capable to support the demand of simultaneous submarine production. In addition to training, there are many other initiatives in place to prepare and develop employees for growth. A dedicated Knowledge Management team is leading initiatives to capture and transfer knowledge between employees. Business area leaders are working to develop additional leaders of the future. The Process Improvement team is driving projects to streamline processes and reduce costs and time to perform work.

4. Supply Base

The final piece of the plan is preparing and working with our supply base to ensure readiness. Electric Boat is working to improve supplier oversight and communication through many initiatives such as this newsletter, supplier quality all hands briefings, and periodic visits. Additionally, Electric Boat is implementing a Supplier Capability and Capacity Assessment Process, which identifies suppliers most critical to Electric Boat's success and strategically works with those suppliers to address any issues or gaps. The team is actively working with those suppliers to put formal plans in place to address gaps in performance.

The four-part plan outlined above highlights some of the steps Electric Boat is taking to prepare for the next few decades. We are expecting that our suppliers are preparing and planning to face a similar surge in growth. The expectation is that our suppliers are working to prepare their facilities and employees by making facility enhancements and increasing training and hiring to support the demand. We expect that our suppliers are working to improve their processes and capture knowledge from experienced employees. We expect that our suppliers are evaluating any resource needs and acquiring new equipment as needed. Our suppliers should be thinking ahead with us to make strategic changes to position themselves positively to support the Navy's requirements for many years to come.

LESSONS LEARNED FROM THE SHIPYARD

Expanding Your Facility For Growth

By Luke Georgian, Director of General Procurement

For many businesses in rapid growth industries, the decision to expand facility infrastructure is a challenging one. Investing in internal processes and resources may be sufficient to support an increase in workload and demand. Sometimes, organizations are inhibited by their own facility structure and operational layout. Businesses can choose to invest in improving internal layout and processes as a potential alternative to launching a major facility expansion initiative. Organizations can leverage lean and six sigma methodologies to reduce waste and non-value added activities in processes. Examples include re-organizing a facility layout for optimal flow or organizing an inventory area to take up less space. Additionally, organizations can move toward a level loaded schedule, with a delivery cadence consistent with the customer demand rate. Cadence is critical in instituting standard work and achieving the full benefits of applying lean principles. By aligning the schedules at each work center to match the overall customer demand rate, a facility can typically accomplish more work within the same footprint. This will also reduce the amount of work in process and allow for just in time delivery of material, thereby reducing the need for inventory space. Additionally, increasing the labor force on off-shifts increases production within the same facility footprint.

Strategically outsourcing, can help a business balance the need to expand by transferring work to qualified suppliers. The first step is to identify what work within an organization is core work. Core work is the primary competence of an organization and directly impacts a business' competitive advantage and goals. Work that is not categorized as core work is subject to consideration for outsourcing. By outsourcing, an organization can free up capacity and resources to focus on their core work. Suppliers need to develop a strategy, identify the parts that meet that strategy and ensure there is a viable supply base to support. It is extremely important that a thorough analysis is performed to carefully select competent suppliers to perform outsourced work.

Electric Boat is facing similar challenges and is applying the techniques outlined above. Suppliers can leverage these techniques to assess and improve their internal processes. The successful implementation of these improvements can result in cost savings for an organization and can increase throughput and reduce inventory. Additionally these improvements may free up facility space, allowing organization to invest in new machines and tools to further improve efficiency and throughput for core work.

Our suppliers should be evaluating their ability to deliver to the expected demand and the need to expand their facility capacity through either process efficiencies or facility upgrades. Additionally, we expect that our suppliers are working with their sub-tier suppliers to ensure readiness. It is extremely important for our suppliers and their sub-tiers to understand current capacity and constraints to make the right capital decisions for the future.

The Department of Defense sponsors a funding opportunity for supplier improvements. For more information on this opportunity, please visit the website for the Defense Production Act Title III (link below). The Title III Program is a government-funded venture that aides manufacturers who specialize in materials used for defense applications.

Defense Production Act Title III Website: http://www.dpatile3.com/dpa_db/index.php

Hiring and Workforce Development

By Maura Dunn, Vice President of Human Resources and Administration

Electric Boat is growing at a remarkable pace to support the delivery of the VIRGINIA and COLUMBIA submarine programs. Having hired more than 10,000 people in the last 6 years, EB has been laser focused on how we hire, train and develop new employees. Most aspects of EB's staffing and training practices have been reconsidered in the last 3 years. For example, the time to hire a person has been reduced by more than 50%. Likewise EB has significantly rethought how we help new trade employees master their craft. Today, classes are more hands-on and learning is more multi-modal (meaning we teach content in more than one way) which is vital to reaching the newest generations entering the workforce. EB has also reintroduced its apprenticeship programs and partnered with our home states of RI and CT to create trade training pipelines into careers in Operations. Lastly, a team has specifically been tasked to work with each key organization in the business to develop strategic roadmaps to define their goals and direction for the next few years.

These actions are just a few examples of the forward-thinking initiatives that have been implemented to develop the next generation of shipbuilders. Our suppliers should be asking themselves similar questions: How will we train and develop the next generation of workers? How will we ensure these employees are engaged and motivated? It is our responsibility to cultivate and instill knowledge and integrity in our new employees. We must strive to make those employees proud of the work they do and ensure they perform even better than the generation before them.



BEST PRACTICES

Transferring Knowledge to the Next Generation

By Bob Rossier, Principal Engineer, Knowledge Management Services

What if the only person who understands a critical part of your company leaves abruptly? How would you even begin to fill the knowledge gap? That's where effective knowledge management and transfer emerge. By utilizing knowledge management and transfer processes and strategies, a business can more effectively prepare and recover from sudden losses of key personnel.

Knowledge Management is defined as a structured process to help information and knowledge flow to the right people at the right time so they can act more efficiently and effectively find, understand, share, and use knowledge. A subset of knowledge management, knowledge transfer is the conversion of knowledge in people's heads into content, tools, and processes the entire workforce can use. So what does this mean in practical terms? Ideally, it means that all employees either already possess the knowledge they need to perform their duties or know exactly where to seek information whenever they need it.

Both knowledge transfer and knowledge management must be executed successfully to support the inevitable organizational changes that come with a growing industry. The submarine industry, in particular, is on the verge of a major increase in demand and production in the next few years and continuing for the next decade. In anticipation of this increase, Electric Boat and many of its suppliers have begun to expand their workforce significantly. With such a surge of new personnel, it becomes of the utmost importance to transfer knowledge to these new employees as efficiently and quickly as possible.

The following industry best practices and tips for knowledge capture and transfer were gathered by the Knowledge Management Team here at Electric Boat to facilitate and improve employee effectiveness, engagement and knowledge retention.

Tips for Capturing and Transferring Knowledge

1. **Product History Notebooks:** These notebooks can be thought of as electronic filing cabinets to preserve and provide access to key information, decision-making, and the rationale associated with the development of a particular product.
2. **Technical Lectures:** Also known as "lunch and learn" provide a way for employees to expand the breadth and depth of their knowledge through presentations given by seasoned employees. These lectures are often a great way for experts to share knowledge that might otherwise be lost, or that adds a perspective to the job that otherwise might not be appreciated.
3. **Develop a Training Course:** Training courses are an excellent way to disseminate knowledge from an individual to a group of less experienced employees.
4. **Transition Guide:** Create a "turnover binder" or "playbook" for the person who will be taking over your responsibilities when you move out of your current position.
5. **Mentoring:** The one-on-one contact and technical guidance can be highly effective in passing on extremely detailed and tacit knowledge.

Knowledge management is certainly not easy. It requires time, effort, structure and encouragement. Right now, it might seem like there's absolutely no time to focus on knowledge transfer, as we are on the brink of a massive increase in demand. We are in a situation where we have a lot of work to accomplish, senior employees are retiring, and new employees are coming along to take their places in highly important roles. We might feel the need to have our top talent putting out those fires that flare up all too frequently, however there's a whole forest to be concerned about. By taking the time to invest in knowledge retention and transfer, the industry as a whole will be better prepared to meet the ongoing and upcoming challenges.



LESSONS LEARNED FROM THE SHIPYARD

Supply Base Assessment and Development

By Jim Cassidy, Director of Subcontracts and Material Performance

With the increased growth, Electric Boat expects our suppliers to take the initiative to assess your own sub-tier suppliers' capability and capacity in terms of facility infrastructure, resources, employees, tools, processes and schedules. For any sub-tier suppliers that are not ready for the increased demand, we ask that you develop action plans in conjunction with your sub-tier suppliers to fill capability and capacity gaps and monitor progress to these plans. We must work together to ensure that all suppliers in the supply base are completely ready to support co-production of VIRGINIA and COLUMBIA class submarines and CVN programs. As you are assessing your sub-tier suppliers, please report any identified risk to your buyer. To assist our suppliers in assessing their sub-tier suppliers in terms of capability and capacity, more information on Electric Boat's supplier assessment initiative is presented below:

Supplier Capacity and Capability Assessment Initiative

Electric Boat and Newport News Shipbuilding have jointly established the *Supplier Capacity and Capability Assessment Initiative* to assess and develop the supply base. The purpose of this initiative is to gain insight into capacity, capabilities, risk and sustainability of the supplier base, including sub-tier suppliers required to support VIRGINIA, COLUMBIA and CVN shipbuilding programs. **The initiative consists of risk assessments, supplier quality assessments, surveys, scorecards and onsite visits.** The supply base assessment is structured to discover opportunities to improve efficiency, collaborate to manage risk, and improve overall team performance. The main objective of the assessment is to understand industrial base readiness and identify opportunities to ensure performance.

The shipbuilders are assessing suppliers to accomplish the following:

- Gain visibility into current and projected supplier performance
- Evaluate facility capacity and capital improvement plans
- Assess supplier and sub-tier suppliers' capability and capacity
- Ensure effective use of resources to meet delivery schedules

Now is the time for the supply base, including sub-tier suppliers, to identify the need for any enhancements and improvements. By investing time and effort in a thorough assessment now, the supply base will be able to develop a detailed plan of action to prepare for VIRGINIA AND COLUMBIA demand for the next few decades. Electric Boat is depending on you to ensure your sub-tier suppliers are prepared. Without your commitment to this initiative, the full assessment of the entire supply base will not be complete. We appreciate your effort in helping us maintain and grow a shipbuilding supply base that can successfully execute our Nation's defense priority.

If you are interested in leveraging Electric Boat's assessment tools for use with your sub-tier suppliers, please reach out to your buyer. Tools available for your use include an onsite assessment template, supplier questionnaire, and quality scorecard example.

SUPPLIER NEWS

First Columbia Class Missile Tube Arrival

In late September, the first of 417 missile tubes was delivered to Electric Boat's Quonset Point facility in North Kingstown, Rhode Island. This delivery marks a significant accomplishment for the COLUMBIA class submarine program, given that the missile tube industry did not exist five years ago. This milestone represents a first step in the tremendous growth that is to come for Electric Boat and the entirety of the submarine industrial base.



Delivery of the first Columbia class missile tube to EB's Quonset Point Facility

General Dynamics Awarded \$5 Billion for Design of U.S. Navy's Next Ballistic-Missile Submarine

Electric Boat Press Release

GROTON, Conn. (September 21, 2017) - The U.S. Navy has awarded General Dynamics Electric Boat a \$5.1 billion Integrated Product and Process Development (IPPD) contract to complete the design of the lead Columbia-class submarine, the nation's next-generation sea-based strategic deterrent. Electric Boat is a wholly owned subsidiary of General Dynamics (NYSE: GD).

"Working closely with the Navy and the submarine industrial base, Electric Boat will continue to lead critical aspects of the Columbia-class development effort, including design, material procurement, construction and operating-cost reduction, to achieve an affordable and effective program," said Electric Boat President Jeffrey S. Geiger.

The IPPD contract includes funding for component and technology development as well as continued development of the Common Missile Compartment, which will be integrated into both the Navy's new SSBN and the Royal Navy's Dreadnought-class strategic missile submarine.

Construction of the lead Columbia-class submarine is scheduled to begin in the fall of 2020. The Navy plans to build a fleet of 12 new SSBNs.

The contract announced today follows a five-year, \$1.85 billion award Electric Boat received in December 2012 to perform research and development work for the Navy's new class of ballistic-missile submarines.

SUPPLIER NEWS

Security Updates

1. Suppliers that process technical data electronically should be aware of updated Cyber Security, DFARS 252.204-7012 requirements being passed down through contracts. These new regulations will require subcontractors to be complaint with information system controls specified in NIST SP 800-171, and Cyber Incident reporting by the end of this calendar year. More details on this are provided on the EB Supplier Web site under Supplier Alerts at http://www.gdeb.com/suppliers/2_supplier_alerts/
2. Starting September 2016, CAGE codes were assigned an expiration dates. If a CAGE code is not renewed within its expiration date, it may delay or prevent you from obtaining a JCP certification. See news articles at <https://cage.dla.mil/>
3. SPARS users, please be aware that SPARS email accounts are not to be shared with others in your business. Additional accounts for SPARS access should be requested in lieu of sharing. Beginning on January 2, 2018, SPARS users will be subject to multi-factor authentication upon login. Additional information will be provided as the implementation date approaches.
4. In order to be in compliance with Electric Boat standard practices, EB is revising its process of reviewing SPARS user accounts and limiting users to 180 days of inactivity. All SPARS accounts that have not been logged into in the past 180 days will be disabled and will require an administrator to enable the account.
5. Over the past several months, the Electric Boat Industrial Security Compliance Office has noted an increase in emails received with malicious content. EB training includes directing our personnel to verify with the sender prior to opening any suspect content. Please assure your personnel are aware of your email and security policies to minimize the propagation of malicious content.



Ethics Helpline

1-800-433-8442

The Ethics Helpline above is available to all of our suppliers for use at any time. The Helpline is operated by EthicsPoint, an independent third-party contractor. The Helpline allows individuals to ask questions, report concerns and follow up on matters of which they have already reported. If you believe someone has violated ethical standards, you are encouraged to report it through this Helpline. Individuals have the choice to remain anonymous. All reports are investigated and action is taken, as necessary. For more information on the Ethics Helpline, please visit the link below. Please share this information with your coworkers and sub-tier suppliers.

Source: <https://secure.ethicspoint.com/domain/media/en/gui/29084/index.html>

A Peek at Next Quarter



Our supply base has requested through many different forums over the past few years to decrease the time it takes to approve weld procedures. In the next issue of the Supplier Information Bulletin, more information will be shared with our supply base on Electric Boat's plan for improvement in this critical area of the business for our suppliers. Stay tuned for this article and more articles about continuous improvement in the next bulletin.

Additionally, we are looking for example improvement initiatives from the supply base to feature in the next quarter issue. **If you have any initiatives you wish to share with the supply base, please email them to EBSIB@gdeb.com by November 30, 2017.**