Graving Dock 3 Repairs On Schedule To Support Spring Float-Off Of Hawaii

Describe what’s going on with the repair job right now.

Currently concrete is being placed at an amazing rate. There are approximately 110 trucks a week entering and exiting the shipyard. The total volume of concrete for this job is 18,500 cubic yards. For the last month, our contractor, Peter Kiewit Son’s Inc., has been on a 1,000 cubic-yard per-week pace. This is equal to between 25 and 30 typical house basements per week. The major portion of the new graving dock wall will be complete by Thanksgiving – right on schedule.

When will the job be finished and certified? When will the dock be ready for Hawaii?

The schedule calls for the dock to be completed in February 2006. We’re on schedule to achieve this. Electric Boat has to submit to the Navy a Facility Recertification Report (FRR) in October. The FRR consists of the new dock design, the calculations (about 900 pages) and new operating procedures. The Navy will review these documents for about four months. Then – between the end of February and early March 2006 – Navy represen-
tatives will visit EB and inspect the dock. At that time, we will operate the dock and demonstrate that our operating procedures are valid. Certification is expected by the end of March 2006, which will support moving the Hawaii out into launch position.

Can you provide some milestones that have been accomplished since work began?

The most significant milestone was the successful de-watering of the dock in January. Stabilizing the failed dock wall was a significant engineering challenge. The new dock walls were designed and the award of the construction contract was made in December 2004 when the dock was full of water. Neither the engineering firm designing the new wall nor the contractor had the opportunity to view the dock in the dry condition. Consequently, there were some design changes required after cell S-2 was repaired and the dock dewatered.

The next major milestone was the completion of the final design on April 22. This allowed the contractor to start drilling the 1,200 rock anchors that tie the walls down to bedrock. Concrete placement started May 24. The rock anchors are all in place now and Kiewit’s contractor, Terra, has started on the 122 tiebacks that are drilled through the wall at a 45-degree angle to bedrock. These tiebacks provide additional stability to the new concrete wall. This work will continue on into early 2006.

Are there any EB individuals or groups you can mention for recognition?

Any successful job requires a good team working together. Austin Alvarez (463) has coordinated with the engineering firm Weidlinger and Associates to keep the design on track and handle all the engineering challenges the project has faced. Jon Mogul (496) and Glen Rice (463) have coordinated dock activities during cell S-2 repair and subsequent construction. Many others from Facilities and the Graving Dock Assessment Team have provided significant contributions to this effort as well.

I really can’t say enough about the Gilbane management team headed up by Pete Matson and the Kiewit team headed up by Kevin Hughes. Gilbane was hired as the construction manager. They coordinate and track all activities between Kiewit, Weidlinger, Briggs Engineering (EB’s independent inspection agency) and Electric Boat. The Kiewit workforce also deserves special recognition; conditions down in the dock are difficult and they continue to perform in a highly productive and safe manner to produce a very high quality product.
Getting the skinny on fat

Doria Sklar, EB’s Fitness Center director, conducts a body-fat analysis on Kenneth Peters (405) during the Health Fair held in Groton earlier this month. The event, sponsored by the company, the MTC, the MDA-UAW, the Fitness Center, the Occupational Health Center and Health Net, provided employees with several services and attractions, including cholesterol screenings, glucose testing and blood-pressure checks.
EB Engineer Receives International Award Named For Former Colleague

When Burt Gischner started working at Electric Boat in 1971, he quickly came to respect fellow EB engineer Bill Conroy, who would eventually become one of the world leaders in the development of product-data standards.

Thirty-four years later, Gischner himself is among the leaders in the field, as evidenced by a black marble award sitting on his desk. The award, named in honor of his former co-worker and friend, was presented in a surprise ceremony this summer at a product-data standards meeting in Spain.

“Receiving an award named after Bill makes it much more valuable and important to me, because I admired him and I really enjoyed working with him,” said Gischner (405), a principal engineer who holds a doctorate in applied mathematics from Brown University. “Plus, the award makes me feel like people appreciate what I’m doing.”

Formally known as the International William J. Conroy Standards Professional Award, the honor was established by the U.S. Product Data Association following Conroy’s death in 1997. Conroy had left EB in the mid-1970s for General Motors, where he helped blaze a trail for product-data standards.

Gischner said the standards, which have been under development for about 20 years, allow the transfer of digital design information— for submarines, cars and many other engineered products—from one computer system to another. Such transfers are particularly useful when the computer systems are at different locations, such as when EB needs to send submarine design data from Groton to Quonset Point, or to Northrop Grumman Newport News.

“We have developed four application protocols for shipbuilding information,” he explained. “I’ve been leading a lot of the efforts in the shipbuilding areas, but I’ve worked in some of the other areas also.”

Gischner said the data standards, funded in part by the National Shipbuilding Research Program, are already being put to use at Electric Boat and elsewhere, but they are mostly being developed to meet the far-reaching requirements of the future.

“We’re using some of them now, but the goal is to think bigger picture,” he said.

Program Manager Tom Rando (405) said Gischner has been instrumental in the ongoing development of data standards.

“Burt’s selection for this award highlights the leadership role that Electric Boat continues to play in advancing the technologies and standards needed to increase the cost efficiency of U.S. shipbuilding and ship design.”

Principal engineer Burt Gischner (405) displays the award he received this summer for his efforts to develop international product-data standards. The award is named for former EB engineer William Conroy, who died in 1997.
As employees begin to complete their assignments in the company’s Professional Development Rotation, they’re discovering how valuable the program has been to their personal and professional lives.

“The rotation program is excellent,” said Charlie Montalbano (467). “It provided me with the tools I needed to do bigger and more challenging jobs, and it also introduced me to a different part of the business that most engineers wouldn’t get to see.”

Montalbano, an engineer when he entered the rotation in the fall of 2003, was promoted to an engineering supervisor job when he finished the program in February.

“Working in a supervisory role in the shipyard definitely helped me gain some of the skills and experience I needed to succeed at my new position – skills and experience that I’m not sure are offered elsewhere,” said Montalbano. His rotation included jobs as a machinist foreman and machinist manufacturing representative.

While not all of the people completing the rotation have taken supervisory jobs afterward, the experience has broadened their understanding of the business and how the different organizations work together to achieve a common goal.

“With the knowledge I gleaned from the trades, I’m in a better position to provide them with an engineering document that they can work to,” said Matt Boone (474), who returned to an engineering job after completing a one-year rotation as a steel trades supervisor. “I’ve got both sides of the fence in perspective now.”

Boone said the rotation quickly taught him some valuable lessons in dealing with all types of people. “It gave me a better understanding of what motivates people,” he said. “I also learned some things about how to manage and treat people. That was the most valuable thing I got out of the whole rotation.”

Engineering Director Jackson Morgan (400), who is overseeing the rotation with Bo Miller (648) of the Organizational & Management Development group, said about 80 employees have joined the program since its inception in early 2002.

“It was initially targeted to engineers with one to five years’ experience, but we’ve since expanded it beyond engineers,” Morgan said. “The program has really evolved.”

Miller said rotation participants gain continued on page 8
Evidence-Based Medicine

Last month we talked about Practice Guidelines and raised the question of what constitutes quality care. We know from our discussions that many agencies promulgate guidelines to guide patients and physicians in healthcare decisions.

But what is quality care?

Access, cost and quality are the typical measurements applied to healthcare. The Institute of Medicine has defined quality as, “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.” Further, it defined quality of primary care services as, “The provision of integrated, accessible healthcare services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community.”

The Institute of Medicine has published several articles and books, which you may have heard of. The committee’s report, To Err Is Human: Building a Safer Health System, was released in the fall of 1999. The report made headlines with its estimate of 44,000 to 98,000 deaths annually due to errors in hospital care. Often overlooked was the fact that the errors were due to error-prone institutional systems rather than to mistakes by individual healthcare workers. Predictably, the report launched many governmental and private projects to study the cause and reporting of such events and the means of preventing them.

The Institute’s second report, Crossing the Quality Chasm: A New Health System for the 21st Century, identified and analyzed the deficiencies in the quality of our present medical care delivery system. In addition, it presented a guideline of how the system ought to work. But it did not say much about the fundamental causes of those deficiencies. Nor did it address the central question of whether we can cross the quality chasm without major medical reform. The report cites fragmentation of responsibility and lack of continuity in the care of individual patients. It describes the lack of coordination and communication among providers and between providers and patients. In addition, it criticizes the medical profession for not employing an electronic medical record, and with employing evidence-based medical guidelines within practices. It faults providers for failing systematically to record and report outcomes. In short, it found the current healthcare delivery system insufficient.

In our high-tech, “latest procedure” healthcare system, it is often difficult for the patient to discern “quality.” Fragmentation or specialty care is wrongfully believed to be excellent care. Healthy People 2010, a consensus statement of healthcare goals for the federal government, is quite clear. The goal of healthcare is to extend years of healthy, disease-free life. This is derived from low-tech preventive measures, which are the hallmarks of primary care providers. The bottom line is that healthcare is much more than seeing your orthopedist for your knee, an endocrinologist for your diabetes or a urologist for your prostate. The most important member of the healthcare team is your primary care internist, family doctor, pediatrician and, for women, an Ob/Gyn. These individuals have the requisite training to provide the needed life-extension skills to help you meet your goal.

If living a long, healthy life is your goal, then read more at http://www.healthypeople.gov/ And, get a primary care doctor. Set up an appointment and discuss issues pertaining to your health and your quest for a long and happy, disease-free life.

Health Tips

September is Cholesterol Awareness Month. The American Heart Association wants you to be aware of the dangers of cholesterol and what you can do about it. By going to the AHA website; http://americanheart.org, and accessing the cholesterol page, you can download information to fight heart disease. Better lifestyle habits can help you reduce your risk for heart attack. Learn what you can do to help prevent heart disease and stroke.

You Are What You Eat

Better food habits can help you reduce your risk for heart attack. A healthful eating plan means choosing the right foods to eat and preparing foods in a healthy way.

Exercise & Fitness

Swimming, cycling, jogging, skiing, dancing, walking and dozens of other activities can help your heart. Whether it is included in a structured exercise program or just part of your daily routine, all physical activity adds up to a healthier heart.

Managing Your Lifestyle

The AHA can help you manage your lifestyle to reduce your risk for heart attack. Eat a healthy diet, take your medicine exactly as prescribed and follow the recommendations of your team of healthcare professionals.

Cholesterol Low Down

To urge Americans to reduce their risk for heart disease, the American Heart Association introduces “Taking It Personally,” as part of the Cholesterol Low Down national education campaign.
The BAE SYSTEMS shipyard here has announced it is on track to deliver the first of the Royal Navy’s Astute-class submarines by August 2008. The company currently has three submarines under construction – HMS Astute, HMS Ambush and HMS Artful. When they enter service, the 7,800-ton ships will be the largest and most powerful nuclear attack submarines ever built for the Royal Navy.

In 2003, Electric Boat agreed to use its design and engineering expertise to provide design assistance to BAE SYSTEMS in the development and production of Astute-class submarines.

The U.S. Navy has awarded Electric Boat an $8.4 million contract to begin advanced planning for maintenance, repair and alterations on the USS Augusta (SSN-710). Known as a Pre-Inactivation Restricted Availability, the work will be performed at the Naval Submarine Base in Groton and will comprise alterations, repairs, maintenance and testing. The contract has a total potential value of $43.2 million, and is scheduled for completion by March 31, 2006.
many things, including increased confidence. “After they get in there, they realize they can pretty much do anything they set their minds to,” he said.

Montalbano said a strong network was another key benefit he came away with. “Suddenly I had the ability to coordinate among engineering, the trades and ship’s management to get a job done,” he said. “That was a lesson that probably couldn’t have been taught in my previous position.”

Boone said in addition to professional development, the rotation provided plenty of personal growth as well. “It really stripped me of all, ‘This is what I think of myself,’” he explained. “It peeled off the outer coating and showed me, ‘This is what I’m really like.’ I gained a much better understanding of what makes me tick.”

Engineering VP Pete Halvordson said the rotation is invaluable for what it can offer its participants. “EB is obviously much broader than any one of our individual departments,” he said. “This program allows employees to see firsthand how all the pieces fit and work together, both physically and organizationally. It is very important for employees to experience this in their careers.”

Besides Montalbano, the employees who have been promoted since completing their rotations are Harold Haugeto (now an engineering supervisor); Chris Roddy (outside electrician supervisor); Mary Alice Pocock (program management chief); Todd Beardsley (area superintendent); and Matt Olander (overhaul and repair program manager).

And in addition to Boone, the employees who have made lateral transfers since completing their rotations are Richard Girard (senior test engineer); and Mark Grigg, Ken Schroeder and Eric Langer (engineers).  

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**Retirees**

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Engineering supervisor Charlie Montalbano, center, confers with optical tool technicians Jonathan Vane, left, and John Genese as they take a precise measurement with the company’s Faro Arm.

*continued from page 5*
**COATS Program Wins EB Manufacturing Excellence Award**

Electric Boat earlier this month presented its Manufacturing Excellence Award to a team of system integrators and systems testers for their contributions to the Command-and-Control Off-Hull Assembly and Test Site (COATS) program, which has reduced Virginia program costs and cycle times.

Honored at a ceremony held in the Technology Center were Bill Evans (210), Sonny Barnard, Bob Smith, Jerry Utz and Charlie Kraemer (all of 449), Miguel DeJesus and Anthony Fernando (441), Dave Gornish (210), Mike Perry, Dave Champlin, Howard Adams and David Castanho (all of 441), Ray Stanley and Steve Bush (449), Matt Cormier (448), Pete Larkin, Ron Mauldin, Thom Veitch and Joan Sienkiewicz (all of 449), Walt Clauson (702), Royal Allard (441), Richard Sears (272), and Tom Baillargeon and Richard Springman (441).

The command-and-control system module is the heart of the submarine combat system. In the case of the Virginia program, Electric Boat developed a revolutionary approach based on the off-hull installation, integration and test of the combat system before it is loaded into the ship. This approach required the construction of an $11.5 million facility to conduct these activities.

Electric Boat’s COATS facility also was designed to resolve a number of issues directly related to traditional submarine installation and test processes and procedures:

- Major submarine systems testing cycles are lengthy and sequential – build/test; integrate/test and install/test. Operability issues can drastically affect the ship’s delivery schedule.
- Multiple component and integration vendors working in series can result in costly and redundant testing that lengthens the delivery schedule.
- Identifying and correcting test issues late in the construction state when the submarine is dockside can be eight times more expensive than performing the same work before installation.
- Component and technology upgrades and integration are unpredictable and costly once the ship is in the water.

*continued on page 12*

**NASSCO Starts Construction On Third T-AKE Ship**

**SAN DIEGO**

National Steel and Shipbuilding Company (NASSCO) has begun construction on the third ship in the T-AKE program, a new class of combat logistics force ships designated the Lewis and Clark class.

Jennifer Stanton, wife of U.S. Navy Capt. Mike Stanton, the supervisor of shipbuilding in Bath, made the first cut on the ship’s first steel plate to signify the start of construction. Stanton’s San Diego detachment is responsible for overseeing construction on the T-AKE program.

The U.S. Navy has awarded NASSCO contracts for eight dry cargo/ammunition ships and holds options for an additional four ships. If all the options are exercised, the 12-ship program would have a total value of $3.7 billion and become the largest contract in NASSCO’s history.

The first T-AKE, named the Lewis and Clark to honor the two legendary explorers who led an expeditionary force from 1804 to 1806 to explore the American West, was launched May 21. The ship is in the final stages of construction, with delivery scheduled for early next year. The second T-AKE, to be named the Sacagawea in honor of the Shoshone Indian woman who acted as guide and interpreter for Lewis and Clark, is scheduled to be launched in the spring of 2006.

The T-AKEs are 689 feet in length and 105.6 feet in beam, with a design draft of 29.9 feet. The ships will carry almost 7,000 metric tons of dry cargo and ammunition and 23,500 barrels of cargo fuel. They will be the first modern Navy vessels to combine proven international marine technologies – such as an integrated electric-drive propulsion system that can achieve a speed of 20 knots – and commercial design features that will minimize operation and maintenance costs over their expected 40-year lives. 🌍
Classifieds

AUTOS/TRUCKS

AMC RENAULT ENCORE, 1986, 1.7 liter engine, runs, needs work; 2 DR, body/tires in great shape. $200 or best offer. 572-9936.

CHEVY 1988 C1500 PICK-UP V-8, auto, a/c, ps, cruise, am/fm, cd, 8 ft. bed, 174 k, runs good, passed emissions, transmission was rebuilt, $1,500 or best offer. 443-9050.

1997 LINCOLNTOWN CAR, signature / congressional series, very good condition, forest green with white carriage top $7,850 or make offer. 442-0612.

1994 MAZDA PROTEGE DX, sedan, 5 spd, 152,500 miles, over $1500 worth of parts, new tires, timing belt, springs, struts & more! Asking $1,200. 2 yr inspected. 401-739-8352.

2001 TOYOTA CAMRY LE SEDAN 4D, silver, excellent condition, 52,000 miles, 4-cyl, 2.2 liter, automatic. Has all except moon roof. 34 mpg. Kelley Blue Book listed at $9,500, selling it AS IS for $8,500. 460-0289.

AUTO PARTS

PO Spoiler, for 1995-99 Maxima, $50. Call 434-9305.

BOATS

BASS BOAT, 16 ft Cajun 89, single console, 91 70 hp Evinrude o/b, 40 lb troll bow mount, electronics bow & stern, 3 batt, trailer $3,500. B/O. 984-1492.

INFLATABLE, 8 footer, $200. 546-6449.

CHAMPION BASS BOAT, 1988 16’ 90 hp, motor, trolling motor, trailer, and extras. $3,500 obo. 401-353-2786.


SEARAY 260 SUNDANCER 1984, MerC i/o’s, trailer, radar, VHF, stereo, galley, head w/shower, sleeps 4, many extras. Recent canvas, upholstery, hatches, battery charger, and inverter. $10,000. OBO. 401-348-2163

FURNITURE

2 TWIN HEADBOARDS, off-white with flower design and wood trim, one is a bookcase, good condition, $100/each. 936-0140.

BEDROOM SET, loft bed, 5 drawer dresser, bookcase, solid wood, barn door style, excellent condition; $350. 464-8506.

DINING ROOM SET, quality solid maple with drop leaf table; open top hutch with base having drawers and 2 doors; 4 chairs; $500. Excellent. 536-6337.

KITCHEN SET, 3x5x6 table and 4 chairs, all wood, natural and white paint, excellent condition, $250. 443-0590.

LOVESEAT - 1920s, original horsehair padding, 49” wide, excellent condition, $250. 443-0590.

OAK DESK, with matching bookcase, $750. Excellent condition. 449-1492.

PINE BUNK BEDS, with desk and chair, $300. Used 2 years. Call 434-9305.

UNDER THE BED 4 DRAWER FOUNDATION, fits regular or queen size bed, dark oak finish $50. 401-849-5154.

MISCELLANEOUS

2 MICROWAVE OVENS, New 1200 watt 1.6 cu ft Sharpie black counter-top, box never opened - $20. Kenmore microwave (over the range) with exhaust fan, bisque, used very little, $50. 434-1362 after 6PM.

SPORTCRAFT TURBO AIR HOCKEY TABLE, automatic scoring, ultraviolet lights, excellent condition, $150. 536-0140.

WALL MIRROR, vintage 1950 wall mirror, 66”x42” with 6” beveled mirror, 66”x42” with 6” beveled mirror, $200. 464-1384.


NORDICTRAC CROSS COUNTRY MACHINE, in good mechanical condition. All electronics need not work. Reasonably priced. Call 572-7590. Leave message.

SET OF 25 LB BARBELLS, includes four 5 lb and two 2.5 lb weights per bar. $25. 401-849-5154.

WOODSTOVE, $75; commercial freezer, $125; ser of end tables, $20; girls bicycle with training wheels $10. Call 464-1384.

REAL ESTATE

2004 KAWASAKI XRZ1200, red. 2,200 miles, $6,800. 5 gallon fuel tank, 40-45 mpg, 5 speed transmission. Engine: inline, liquid cooled, DOHC 4 cylinder, 122 HP / 83 ft-lbs torque. Contact Jeff at 715-0436.

To submit a classified ad, send an e-mail to EBNewsAds@gdeb.com with the following information:

CATEGORIES

Appliances

Computers

Pets

Real Estate / Sales

Autos / Trucks

Furniture

Real Estate / Rentals

Auto Parts

Miscellaneous

Motorcycles

Boats

MISCELLANEOUS

Employees without e-mail can submit their ads through interoffice mail to: Terrie Pangilinan, EB Classified, Dept. 605, Station J88-10.
Service Awards

45 years
436 Linda M. Lord

40 years
355 Kenneth W. Michaud
355 Kenneth G. Prescott
459 Ronald Arner
464 Richard R. Stottlemyer
472 Edward M. Suter
626 Henry P. Rianhard
650 David A. Gienau

35 years
228 Edward E. Barber
241 Edwin R. Frink
241 Kenneth W. Moriarty Jr.
241 Ronald W. Poole
243 John L. O’Neil
244 Victor R. Jenschke
330 Mary Anne Alfieri
355 Michael H. Cardinal
355 John R. Morris
425 Ronald O. Espinosa

30 years
100 Gary R. Glauce
243 Antonio A. Tavares
243 Stephen Zeiba III
252 James E. Chapman
271 William S. Smyth
355 Leonard J. Devoe
355 Alan G. Kuhse
412 Francis B. Pendola
436 William D. Higgins
449 Stephen J. Bush
452 Bernard L. Deleon Jr.
456 Dennis J. Severns
795 Thomas J. Kiely
801 George C. Mowell
853 William F. James Jr.
904 Bernard I. Brammall
911 Peter D. Lee
915 Gary M. Slater
921 Howard H. Brown
921 Roy R. Wheeler
924 Randall Blankenship
935 Norman J. Baxter Jr.
970 Donna T. Patterson

25 years
455 Rita A. Grant
626 J. C. Brown
650 William P. Heuer Jr.

20 years
226 David L. Triplett
229 Kevin M. Chapman
229 George A. Sautter
230 Michael A. Carver
244 Russell E. Barker
251 Richard W. Adamec
251 Todd W. Emard
251 Carrie M. Traynham
252 Michael J. Hague
252 Susan I. King
252 Bernadette C. Repetti
274 Michael A. Civardi
804 John T. Michels
852 Robert J. Archambeaut
901 Donald E. Stoddard
902 Michael R. Flanagan
915 Lascom E. Rice
915 Leonard L. Totten
921 Eduardo Espinola
935 Michael D. Radkovich
957 David R. Lees
439 Stephen R. Menno
482 Gary J. La Belle
321 Harry H. Hubbling Jr.

20 years
229 John R. Myshka
243 James K. O’Neill
248 Mark D. Gardner
403 David A. Gauthier
433 Peter J. Smith
438 Robert J. Carroll
449 Jay L. Moss
545 James V. Lewis
615 Steven J. McAuliffe
626 John C. Rathbone
660 Donald S. Kuchyt
705 Francis E. Labombard
705 Peggy C. Martinez
705 Frederik R. Osborne Jr.
803 Pierre C. Cappuccino
915 Charles Botelho
915 Raymond R. Cornell
With the COATS facility and its supporting processes, however, these negative factors are avoided. Specifically, COATS enables the shipyard to:

- Reduce costs and shorten delivery schedules for command-and-control systems module testing cycles by integrating and simulating dockside conditions off-hull.
- Identify and correct system issues off-hull, before installation.
- Eliminate redundant systems tests by consolidating the separate vendor integrators within the off-hull testing facility.
- Reduce system defects by developing collaborative communications among integrators, installers, testers and the Navy.

Some remarkable results have already been achieved. For example, 98.5 percent of significant CCSM problems were discovered earlier in the construction process, before the ship was floated off. And the total number of CCSM problems uncovered in Virginia (SSN-774) compared with Texas (SSN-775) have plummeted by nearly 60 percent.

Additionally, the COATS facility has enabled the Navy to train ships’ crews, using virtual conditions well before the submarines are dockside.

“You’ve taken a tremendous amount of time out of the schedule,” Operations VP Rick Geschrei told the award recipients. “That’s very significant for its own sake and because process improvement is a very important corporate goal.

“Your project was excellent and you should be very proud of what you’ve accomplished,” said Geschrei.
Electric Boat is the industry leader in the engineering, design, production, and life cycle support of the world’s most advanced nuclear submarines.

We deliver the highest quality, affordable products and services to our customers through the commitment, technical excellence, and innovation of our workforce and the application of disciplined processes.

We strive to balance and meet the needs of our customers, shareholders, employees, and partners.
**Electric Boat’s Markets**

**U.S. NAVAL SUBMARINES AND UNDERSEA SYSTEMS**

**Engineering**
- Research & Development
- Concept Formulation, Capability Insertion
- Engineering Analysis
- Design
- System Integration

**Manufacturing & Construction**

**Maintenance & Modernization**
- Overhaul & Repair
- Conversion & Technology Insertion
- Intermediate level repairs

**Life Cycle Support**
- Engineering & Logistics Services
- Navy Supply Support

**US NAVAL SHIPBUILDING**
- Engineering Analysis
- Design
- Manufacturing

**INTERNATIONAL NAVIES**
*(with domestic customer concurrence)*
- Australia, United Kingdom, Taiwan, Spain

**SELECT NON-NAVAL MARKETS**
- Engineering Analysis
- Design
- Manufacturing

**Electric Boat Has Unique, Proven Capabilities**

**DESIGN & ENGINEERING**
- Concept Formulation (CONFORM)
- Combat Systems Engineering
- Electrical Analysis, Components, and Systems
- Fluid Systems and Components
- Integrated Product Development Engineering
- IT Systems Engineering
- Mechanical Systems and Components
- Naval Architecture
- Production Support
- Radiological Engineering
- Signature Analysis
- Software Engineering
- Solid Mechanics and Structural Engineering
- System Integration
- Test Engineering

**MANUFACTURING & CONSTRUCTION**
- Design / Build methodology
- Modular Manufacturing, Assembly, and Test
- Mold in Place Technology
- Final Assembly, Integration & Test
- Dimensional Control in Modular Construction
- Submarine Pressure Hull Manufacturing
- Integrated Mechanical / Structural Assemblies
- Pre-Fabrication of Assemblies & Fixtures
- Materials Joining
- Steel Processing / Dimensional Data

**OVERHAUL & REPAIR**
- Public-Private Workforce Integration

**PROGRAM MANAGEMENT**
- Disciplined EVMS Methodology Execution
- Customer Relationship Management
- Subcontractor Management
- Complex Design & Construction Integration
- Technical Program Management
**Electric Boat’s Strategy**

In order to achieve our business objectives, we will pursue two parallel strategies:
- Productivity, built on reducing the cost of our products and on maximizing return on assets; and
- Revenue Growth, in traditional and select adjacent markets.

We will deliver value to our customers by meeting commitments, leading product innovation, and standing as strong, trusted business partners.

We will execute our strategy of maximizing productivity and revenue growth by focusing on improving our processes and performance across our business operations:
- Operational Performance Excellence -- enabling us to meet quality, schedule, and cost commitments;
- Core Product Leadership -- sustaining leadership in product technology and production processes; and
- Business Development -- growing our traditional product lines and penetrating select adjacent markets.

The foundation of our strategy is the optimum development and deployment of our resources.

**Electric Boat’s Strategic Roadmap**

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**Electric Boat Is a “Values” Driven Company - Our Strong Culture Is a Competitive Advantage**

**Electric Boat’s Values**
- Integrity
- Commitment
- Health & well being of our workforce
- Respect for our people
- Loyalty

**Electric Boat’s Values**

**Electric Boat’s Culture is defined by our commitment to:**
- Safety
- Quality
- Schedule
- Cost
- Continuous Process Improvement

**Electric Boat’s Vision**

Electric Boat will be the US Navy’s preferred provider for Concept Development, Engineering/Design, Construction, and Life Cycle Support for all submarine programs and for undersea warfare systems integration.

**Electric Boat’s Strategic Roadmap**

![Diagram of Electric Boat’s Strategic Roadmap]

**Electric Boat’s Culture is defined by our commitment to:**
- Safety
- Quality
- Schedule
- Cost
- Continuous Process Improvement
Electric Boat’s Resource Perspective – what capabilities must we have to meet our objectives?

Electric Boat’s strength resides in our workforce. We must ensure that each individual is properly trained and supported, and effectively employed, in order to maximize their contribution to the success of the business.

Focus: Optimized Development and Deployment of Resources – Human Resources

Capability: SAFETY
Objective: Provide a safer and healthier workplace by promoting employee involvement and participation
1. Meet or better all safety performance goals; maintain OHSAS 18001 Conformance Certification

Capability: CRITICAL SKILLS / COMPETENCIES
Objective: Manage critical skills and competencies in a changing workload environment
1. Develop and track essential corporate competencies utilizing position mapping activity and competency gap analysis
2. Monitor leadership attrition by management level and functional area and develop a management succession plan – track the percentage of successors available

Capability: HEALTH AND WELLNESS
Objective: Initiate actions for employee benefit and healthcare cost control to include health and wellness initiatives to educate employees, communicate healthcare alternatives, and involve preventive actions for overall health improvement
Objective: Sustain a coordinated state government relations program to influence in a positive manner the executive, legislative, and regulatory government toward favorable laws, policies, and regulations for enhancement of the company’s competitive position

Capability: STAFFING / HIRING / RETENTION
Objective: Manage retention and hiring to adapt the workforce to business forecast resource requirements
1. Implement improved Personnel Requisition and Applicant Tracking systems that meet / exceed OFCCP requirements, reduce annual vendor licensing costs, and reduce hiring cycle time
2. Continue / expand EB participation on GD Corporate committees to leverage other business unit initiatives and / or cost sharing where appropriate (i.e. Staff Committee, Total Rewards Committee, and International Compensation Committee)

Capability: EDUCATION / TRAINING
Objective: Develop and maintain a highly skilled workforce that meets continually changing contractual requirements and production goals
1. Work with internal and external customers to identify gaps in skills and knowledge, and develop and deliver affordable and effective training to close those gaps
2. Actively measure the effectiveness of training programs and integrate results into continuous process improvement initiatives
3. Increase the pass rate during retention of knowledge examinations for nuclear trade skills through more effective training and ensuring regular application of acquired skills

Capability: EMPLOYEE RELATIONS
Objective: Work to foster and improve an environment of positive employee relations throughout the workforce and at all Electric Boat site operations
Objective: Utilize “Alternative Bargaining” for the 2006 MDA-UAW Contract
Objective: Work with union leadership to define and communicate the basis for effective Performance Incentive Awards and Safety Incentive Awards
Objective: Educate the workforce on the positive outcomes of interaction and work sharing with AITs and Naval Shipyard personnel under the “One Shipyard” resource sharing approach

Capability: COMMUNICATIONS
Objective: Support Electric Boat / General Dynamics business objectives by providing timely, relevant information to employees, the news media, community leaders, and other constituent groups as appropriate
Objective: Support program goals through focused and proactive media / trade show and advertising activities
Objective: Advise Electric Boat leadership team on communications issues, ensuring messages are consistent with business objectives
Focus: Optimized Development and Deployment of Resources – Information Technology

**Capability: BUSINESS SYSTEMS**

**Objective:** Provide a Robust Business Systems Environment that places significant emphasis on process improvement, leverages the incumbent (legacy) systems, promotes the use of COTS software, and functionally supports the requirements of the business

**Capability: BUSINESS MANAGEMENT**

**Objective:** Meet or exceed established IT financial targets, leverage cost efficiencies between EB and BIW, and continue to negotiate with CSC the most favorable conditions for the Marine Group

**Capability: DISTRIBUTED ENVIRONMENT**

**Objective:** Provide a technically current, secure and affordable Distributed Environment that allows for full connectivity within the main EB facilities, off-site locations, customer locations, and non-GD partner sites

Electric Boat’s Internal Perspective – what processes must we excel at to deliver value to our customers and meet our financial objectives?

The processes identified below define the core of our business operations. The effectiveness and continued improvement of these processes are essential to our ability to meet or exceed our customers’ expectations, and to achieve the financial goals of the corporation.

Focus: Operational Excellence – reduce product cost – meet schedules – maintain quality

**Process: PROGRAM MANAGEMENT: VIRGINIA PROGRAM**

**Objective:** Develop and implement manufacturing / construction plans that will reduce Groton support hours by 2006 and lower SSN776 construction manhours by 15% vs SSN774

**Objective:** Reduce VCS construction span by 24 months by the start of Block III by implementing a new assembly plan and increasing Module weight / Transfer capability

**Process: CERTIFICATIONS / QUALIFICATIONS**

**Objective:** Maintain and make more robust EB’s business critical certifications and authorizations including the authorization to perform nuclear work, SUBSAFE work, industrial radiography, facility certifications, and all ISO/OHSAS/SEI-CMMI certifications

**Process: FINANCIAL PLANNING**

**Objective:** Identify key leading indicators to preclude need for reactive management efforts

**Objective:** Develop alternative contracting strategies for overhaul and repair

**Objective:** Assess increased responsibility for materials management to improve visibility and reduce handling costs of all material

**Objective:** Develop an enhanced Operations and Engineering business management and resource planning process that will both more accurately forecast the design, engineering, and operations workload, and will improve our capability to handle surge requirements

**Objective:** Develop a process for developing all work products during design development in PLM, minimizing MRP manipulation and data handoffs

**Objective:** Develop the electronic “roll-over” of shipyard work paper from ship to ship in order to minimize manual planner intervention

**Objective:** Develop an integrated scheduling database that will eliminate the need for separate project software
Process: TECHNICAL PRODUCT SUPPORT
   Objective: Reduce technical support function ratios in new construction and overhaul areas
   Objective: Initiate improvements to document flow
   Objective: Improve the ER process and reduce non-conforming ERs and DRs
   Objective: Implement problem prevention teams

Process: MATERIAL PROCUREMENT
   Objective: Provide systems enhancements and material functionality that reduces the cost and improves the efficiency of the material procurement system. Key capabilities include:
   1. SPARS enabled technology
   2. Material Ordering team control and oversight
   Objective: Improve management of the Part Definition Data and Engineering Bill of Material through Configuration Control processes used in the identification, acquisition, fabrication, inspection, and installation phases of programs, including an expanded role in NAVICP Material Support
   Objective: Revitalize the “Extended Enterprise” supplier base effort to ensure that the domestic capability to design and fabricate critical submarine materials and components remains affordable

Process: FACILITIES PLANNING
   Objective: Near-term, continue facility assessments of critical assets required to support core business, and fund those items identified as priority or at the greatest risk of loss / failure
   Objective: Continue initiatives to reduce the infrastructure cost to the business
   Objective: Develop a facilities strategic plan that considers two possible future scenarios:
   1. A business environment leading to continued consolidation and / or deactivation of idle assets
   2. A business environment that supports upgrading priority assets and process improvements in related areas

Focus: Core Product Leadership – sustaining leadership position in traditional business

Process: CONCEPT FORMULATION
   Objective: Aggressively exploit technology push and requirements pull to influence definition and development of future undersea superiority systems
   Objective: Monitor DOD, Navy, Congressional and industry activities for insight into changing business environment, and evaluate impact to EB’s Core Product Leadership position of changes to the environment
   Objective: Develop necessary organization changes to ensure that the long term reputation and capability of CONFORM are sustained

Process: ENGINEERING & ANALYSIS
   Objective: Provide high quality, on schedule / on budget engineering/design deliverables for all programs
   Objective: Initiate/support producibility design improvements to reduce the cost of submarine construction

Process: INTEGRATED PRODUCT DEVELOPMENT ENVIRONMENT
   Objective: Maintain the leadership position in the application of IPDE to Design, Engineering, Construction, & Support of naval ships
   Objective: Develop and deploy the Next Generation IPDE across the entire EB business enterprise
   Objective: Significantly reduce the cost of design, construction and life cycle support

Process: DESIGN / BUILD
   Objective: Advance the “Design/Build process” by developing an approach for a “Design for Lean Production” that incorporates elements of production engineering to evolve the construction processes, so as to achieve lowest design and shipbuilding costs

Process: MANUFACTURING & MODULAR CONSTRUCTION
   Objective: Deliver submarine sections to the waterfront that are outfitted to the maximum extent possible by increasing Electric Boat’s land and waterborne unit transportation capacity to 1800 net tons
   Objective: Extend the scribing of ship’s lines, abutting part numbers, weld profiles, etc, to heavy plate processing by implementing state-of-the-art cutting, forming, marking, and plate handling technologies in Building 2004 to improve efficiency and quality
   Objective: Implement a single-piece-flow cellular manufacturing strategy in pipe manufacturing and modernize existing facilities
   Objective: Incorporate mechanized/robotic welding in Automated Frame and Cylinder Fabrication and in the other major structural fabrication centers at Quonset Point
**Process: SHIP ASSEMBLY, TEST, AND TRIALS**

**Objective**: Develop and execute an integrated test plan that will complete post float off test programs (nuclear / non-nuclear) within seven weeks of float off on the Virginia program

**Process: SYSTEMS INTEGRATION**

**Objective**: Sustain EB’s leadership position as submarine systems integrator by performing on existing contracts and capturing new technology insertion work for the Virginia program

**Objective**: Position EB to become Lead System Integrator (LSI) for broader spectrum of undersea superiority systems that include submarine platforms and other distributed assets

**Process: MAINTENANCE AND REPAIR**

**Objective**: Develop internal controls to ensure that planning and work package preparation is completed prior to availability start so that growth work can be addressed as soon as it is identified

**Objective**: Plan to complete “open and inspect” activity as soon as possible after availability start in order to identify and make resources available to work growth items

**Objective**: Create a more responsive mechanism to adjudicate / authorize changes and turn work on

**Objective**: Develop a faster inspection, blast, and paint process to remove tank work from the critical path

**Objective**: Improve our knowledge of historical issues and problems in performing maintenance work

**Process: ILS and Modernization**

**Objective**: Secure new Life Cycle Support business by expanding core planning yard tasking across all programs, leveraging planning yard functions to increase modernization activities, and sustaining the AIT business expansion at Kings Bay and Bangor

**Objective**: Implement changes to achieve cost and quality improvements in life cycle support products and services including application of Earned Value Management System; Lean Six Sigma ship alteration process improvement; and Product Lifecycle Manager (PLM) development

**Objective**: Implement a three-year plan to establish a world-class publications and training capability

**Focus: Business Development – grow the business in core and adjacent markets**

**Process: BUSINESS DEVELOPMENT PROCESS MANAGEMENT**

**Objective**: Establish an aggressive and effective Business Development process involving all key stakeholders. Develop functional approaches and practices for work during the capture process that meet customer requirements and enable Electric Boat to perform profitably

**Objective**: Create professional, technically exceptional proposals while developing a diverse cadre of personnel at Electric Boat with technical proposal development experience, to enable the company to flexibly respond to emergent proposal opportunities, including multiple opportunities simultaneously

**Objective**: Market Design, Engineering and Construction capability to traditional / non-traditional customers

**Process: INVESTMENT CRITERIA**

**Objective**: Develop a strategy for identifying and targeting select markets for the expansion of Electric Boat business, with rational filters for assessing specific opportunities

**Objective**: Align the expenditure of New Business Funds appropriately to Electric Boat’s business strategies, including maintenance of core business, pursuit of new business, and other technology objectives

**Objective**: Ensure New Business Funds expenditures are appropriately analyzed, and result in a reasonable return on investment to Electric Boat and General Dynamics

**Process: CONTRACTING & ESTIMATING**

**Objective**: Negotiate the maximum value for Electric Boat for new and added work by balancing costs, contract risk profiles, applicable regulations, and customer funding / interests

**Objective**: Develop timely cost estimates that will respond to formal customer Requests for Proposal (RFP), support pre-RFP capture efforts, and allow informed senior management pricing decisions
Electric Boat’s Customer Perspective – what do our customers value?

Achieving our customer value objectives is key to the success of our current business and builds the foundation for future business with our current customers as well as new customers and business partners.

**Objective**: ON-TIME DELIVERY
- Meet or better all contractually agreed to completion events and deliveries

**Objective**: SUPERIOR QUALITY
- Meet or exceed all contractual and specification requirements and strive for zero-defect performance

**Objective**: AFFORDABLE PRODUCTS
- Fairly priced products and services that deliver customer value and acceptable return to shareholders

**Objective**: TECHNOLOGY LEADER
- A responsive, highly-capable source for system and product technology solutions

**Objective**: FULL SERVICE PROVIDER
- Ability to provide a wide-range of technical, production, and / or support capabilities – wherever – whenever

**Objective**: PRODUCT INNOVATION
- Source for new concepts and technologies applicable to customer requirements and products

**Objective**: STRONG CUSTOMER RELATIONSHIP
- Accessible, responsive management committed to partnership with the customer

**Objective**: EB / GD REPUTATION
- Unquestioned commitment to the highest standard of business conduct and ethics

Electric Boat’s Financial Perspective – what do our shareholders expect?

Our shareholders expect a competitive rate of return balanced against an acceptable, carefully managed level of risk. We will meet these expectations by optimizing performance on our contracts and pursuing a disciplined strategy to capture new business in our core and select adjacent markets.

**Focus: Productivity Strategy – perform on the backlog**

**Objective**: REDUCE COST OF PRODUCTS
- Meet / better overhead performance targets as measured by CAIG line and rates
- Meet / better direct cost performance as measured by CPI and contract commitments
- Meet / better schedule performance targets as measured by SPI and contract commitments

**Objective**: MAXIMIZE RETURN ON ASSETS
- Minimize / eliminate underutilized property, plant and equipment
- Ensure acceptable level of return on all capital investments as measured by ROIC
- Ensure all contracts include acceptable margins and protection against risk

**Focus: Revenue Growth Strategy – capture new work**

**Objective**: GROW TRADITIONAL BUSINESS
- Achieve orders and revenue growth targets as identified in new business plans
- Be prepared to capture emergent opportunities

**Objective**: GROW ADJACENT MARKETS
- Achieve orders and revenue growth targets as identified in new business plans
- Be prepared to capture emergent opportunities

**Focus: Financial Perspective – increase shareholder and stakeholder value**

**Objective**: MAXIMIZE RETURN ON THE BUSINESS
- Achieve or exceed orders, sales, earnings, cash flow, and return on investment targets