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60th Anniversary of USS Thresher Loss

Monday, April 10 marks sixty years since the loss of the nuclear-powered submarine USS Thresher. During its initial dive to test depth on April 10, 1963, the submarine was lost with 129 U.S. Navy sailors, Portsmouth Naval Shipyard and civilian company employees on board. It's important that we take time each year to tell the Thresher story as a reminder of why we design, build and maintain submarines to be as safe as they can be.

On the morning of April 9, 1963, the men aboard Thresher waited to head out on sea trials that would prove the new capabilities added to the ship at the Portsmouth Naval Shipyard during the boat's nine-month post-shakedown availability. The men were looking forward to a party two days later to celebrate the 63rd anniversary of the U.S. Navy Submarine Force. Wives and children waved to their loved ones as the boat departed, and life would never be the same for any of them. On her way out to the dive point, Thresher made several shallow dives in practice for her dive to test depth and performed them perfectly. Late that evening, Thresher completed the final leg of her journey to the dive point 220 miles off of Cape Cod in 8,400 feet of water. LT CDR John Wesley Harvey prepared his crew to take Thresher to test depth.

The next morning, Thresher began her controlled dive in 100-foot increments. As she submerged, Thresher sent routine messages to her escort ship, USS Skylark, as she progressed to depth. But at 9:17 a.m., Skylark received an unexpected and garbled message, "…minor difficulties, have positive up-angle, attempting to blow." At 9:18 a.m., Skylark received the message “exceeding test depth," and then detected a high-energy low-frequency noise characteristic of an implosion. At approximately 9:18 a.m., USS Thresher was lost.

Despite the Navy's rigorous investigation following the loss of Thresher, the exact cause may never be known; however, the following is the likely sequence of events:

- One or more silver-braze joints in sea water systems failed, resulting in engine room flooding.
- Due to the ship's design and system arrangements, the crew was unable to quickly access vital equipment to control the flooding.
- Saltwater spray on electrical components caused electrical panels to short circuit, the reactor plant to shut down and loss of propulsion power.

The emergency main ballast tank blow system failed to operate properly. Restrictions in the piping system, coupled with excessive moisture in the compressed air, led to ice formation and subsequently blocked the path of air to the ballast tanks - Thresher couldn't return to the surface.

Later, a court of inquiry determined that the responsibility could not be placed on any one individual or organization. And what's typical with a very complex system like a submarine, they fail in very complex ways. Rather, there were collective failures that most likely led to the loss of the Thresher, including inadequate quality assurance, inadequate training, deviation from building and design specifications, a lack of communication, lack of proper approvals and schedule pressure.

Out of this tragedy, the U.S. Navy created the Submarine Safety or SUBSAFE program, the quality assurance program designed to provide maximum reasonable assurance that a submarine's hull will stay watertight, and that a submarine and its crew can recover from unanticipated flooding. SUBSAFE covers all systems exposed to sea pressure or critical to flooding recovery. All work done and all materials used on those systems are tightly controlled to ensure the material used in their assembly as well as the methods of assembly, maintenance and testing are correct. As a shipbuilder, please take a moment and imagine if you had worked on the Thresher, and the question that would haunt you for the rest of your life—I know it would haunt me: Was it my work that caused the loss of those men and the heartbreak borne by their families?

Never forget our priorities here at Electric Boat: safety, quality, schedule, cost and continuous improvement, in that order. Every job you complete, every document you sign, every decision you make, day by day, contributes to the material condition of our ships and the safety of future crews. Our nation is counting on us to deliver one Columbia and two Virginia-class submarines per year. We're doing this work with new tools, new business systems and increasingly, a new workforce. Along with ensuring ship integrity, our collective commitment to first-time quality means we have less rework, which in turn increases production velocity and volume.

We design, build and maintain the submarines that defend our nation and serve as homes for our service men and women. They, their families and our nation have entrusted us to keep them safe. What you do every day and how you do it matters to the lives of many people. Many of you work side-by-side with sailors and EB employees who are veterans. Ask them; they'll tell you, and I'll tell you, what it means to have confidence in their boat. I began my career as a submariner in 1986, and my family and I are grateful that I served on boats that were SUBSAFE-certified. No SUBSAFE-certified submarine has ever been lost.* And I never lost trust in the people who built my boat.

As a leader of a company who builds and maintains submarines, I think a lot about the important role our work plays in our national defense every single day. It fills me with enormous pride and a sense of enormous responsibility—those are emotions I know you all share with me. No matter what your job or role, every one of us has a responsibility to keep our sailors top of mind—that really is our higher purpose. Let's remember the sacrifice and legacy built by all who came before us, and then let's renew our vows and ensure that we build on that legacy for all who will follow us.

Kevin Graney

CONTINUOUS IMPROVEMENT

8 Wastes - Non-Utilized Talent

Unfortunately, it is rare to come to work and not deal with a problem or problems; big or small. Fortunately there is a vast resource available to us to solve those problems: our work force. This applies throughout the organization, as we all play a part and we all have insight into the challenges we may face each day. Very often overarching, high level problems are a culmination of problems faced by a group of employees. It is when those who put their hands on the product are not consulted to solve problems that this waste of human talent and ingenuity occurs.

The leveraging of one another's talents and insight are critical to effective, efficient problem solving. Every one of our employees must have the opportunity to contribute to the solving of the problems which they encounter and offer their insight and ideas to broader, higher level problems. When we do not respect the idea that every employee brings not only a set of hands, but their minds to work, we do ourselves a great disservice.

This concept is central to the grassroots continuous improvement program. When we do not listen to those who do the work or when we do not ensure that our peoples skills and knowledge are being fully utilized we are not operating to our full potential. Therefore, it is extremely important that each of our voices is heard and we work as a team to solve the problems which stand in the way of our goals.

I am reminded of an article by Bob Lutz which truly embodied the concept of non-utilization of talent.

To paraphrase: In the early 2000s, American automakers had fallen behind every other major automobile manufacturing region in final assembly quality. Bob Lutz, vice chairman of product development at the time, requested of the president of assembly that GM cars be competitive in final assembly quality. The president of assembly immediately stated that millions of dollars in new assembly equipment would be needed. GM cars were soon competitive with all other car makers in terms of assembly quality, but the request for capital was never made…

What occurred? Assembly technicians and their supervision were presented with the problem first. They were able to make the needed adjustments and process changes needed to solve the problem without millions in ultimately needless expenditure.

Have a process improvement idea, or simply just want a board to bounce ideas off? Discuss your idea with your Supervisor. If additional resources are required for implementation, your Supervisor can contact Crystal Sherman at csherman@gdeb.com.

Application Period Now OPEN for EB's Summer High School Intern Program (SHIP)

The application period is officially open for Electric Boat's Summer High School Intern Program (SHIP)!

If you know of any high school juniors who would be interested in this eight-week, paid summer internship, we encourage you to send them the below information. **The application period will close on Thursday, April 20, 2023**.

Program Overview:

Local high school juniors will be offered eight-week-long summer internships with Electric Boat. Each intern must be at least 16 years of age, a U.S. citizen and have completed their junior year of high school. Interns will work side-by-side with trained mentors who have years of shipbuilding experience. The internship will run June 26, 2023 – August 18, 2023.

Internships will be available for the following:

- **Quonset Point Operations:** Electrical, Machining, Pipefitting and Welding

Requisitions:

- **QP Trades:** 2023-9478

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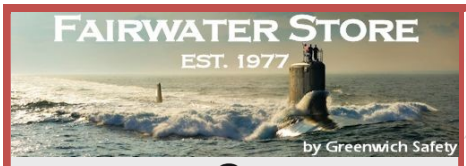
Send resume to Kathy Partington at kpartington@neit.edu or
Call the SAMI office for more information at 401-739-5000 ext 3660



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