Where Have All the Maritime Engineers Gone?

Addressing the Lack of Qualified Employees

BY RICHARD MUELLER, *CEO/President of* NETSCo and SNAME President 2025-26

If you are in the business of engaging new employees for your firm, you know that hiring is tough right now, no matter what industry you're in, but if you are specifically trying to find an experienced naval architect or marine or ocean engineer, it can feel downright impossible. It seems like the pool of available seasoned professionals is shrinking, and every company in the maritime sector is fishing in the same small pond. You're not imagining it; finding the right talent has become a significant challenge for the entire industry.

This scarcity isn't just a minor inconvenience. It is a bottleneck that can slow down our projects and restrain advancements, and it puts an ever-increasing strain on our existing teams. Then when you finally do find a candidate who looks good on paper, he or she sometimes lacks the practical, hands-on experience needed to hit the ground running. So, what's really going on? Why has it become so hard to find the experts we desperately need?

The Evolving Maritime Workforce

The maritime industry is facing the perfect storm of demographic shifts and educational trends. Market demographics show that a significant percentage of the most experienced naval architects and marine engineers are approaching retirement age. This means that a wealth of institutional knowledge is getting ready to or is already walking out the door, and there isn't sufficient new talent to replace them. These are the professionals who have seen it all—from the transition to digital design to the implementation of new environmental regulations. Their departure leaves a void that simply cannot be filled by a textbook or a university course.

At the same time, the number of young people choosing to pursue a career in naval architecture and marine engineering has not kept pace with demand. While many top universities have excellent programs, the overall enrollment numbers are simply not enough to replenish the ranks of retirees. Engineering is a very competitive field, and we see that many students are drawn to trendier engineering sectors like aviation, computers or software development, which often promise not only more flexible work environments, but often eye-popping salaries as well. The maritime industry, with its reputation for being traditional and demanding, struggles to compete for the brightest young students.

This creates the generational gap that many of my colleague executives are seeing today. On the one hand, you have a dwindling group of seasoned experts. On the other hand, you have a smaller-than-needed influx of recent graduates who, while academically bright, lack the years of practical problem-solving experience that define a senior engineer. The mid-career professionals who normally would be asked to bridge this gap are in incredibly high demand, making them difficult to attract and retain.

The Experience Gap

The problem goes deeper than just a shortage of people. In my opinion, there is often a growing disconnect between the skills taught in some academic programs and the real-world demands of the job. Modern naval architects need to be more than just good at math and physics. They need to be proficient in advanced design software, understand increasingly complex regulatory requirements and have a handle on project management. This practical experience is something that can only be gained through time and exposure to a variety of projects.

A junior engineer might be able to run a stability analysis, but an experienced one knows what to do when the results don't look right. He or she has the awareness to spot potential issues before they become major problems and the confidence to make critical decisions under pressure. This kind of wisdom is learned in the shipyard, on sea trials and during troubleshooting sessions with more experienced engineers, not in a lecture hall.

Unfortunately, the industry's project-based nature also contributes to this experience gap. Engineers often specialize in specific types of vessels or projects. Someone who has spent a decade designing offshore supply vessels might not have the experience needed to work on a container ship. This specialization makes the talent pool for any given project even smaller.

At NETSCo, we've felt this pressure firsthand. With recent retirements and others who felt it was time to move on, we are actively engaged in recruiting top, mid-level talent. While we've been fortunate enough to build a team of highly experienced professionals, we recognize that finding them has been no easy accomplishment. It requires a proactive approach to recruiting and a commitment to creating an environment where top talent wants to work, which it turns out, doesn't look the same for everyone. We are also proud members and supporters of the Society of Naval Architects and Marine Engineers (SNAME). This organization has been very helpful to us in supporting our recruitment efforts, as it plays a vital role in developing the next generation of maritime engineers and promoting lifelong learning within the industry.

Mapping Out a New Course

The shortage of experienced naval architects and marine engineers isn't a problem that will solve itself. Recognizing the issue is a start, but resolving it will require a combined effort from everyone in the maritime industry. Companies will need to invest more in training and mentorship programs to help bridge the gap between graduation and true professional competence, which can be five years or more. Offering strong internships and/or co-op programs can give students the practical exposure they need and create a pipeline of future employees.

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We also need to do a better job promoting the maritime industry as an exciting and rewarding career path. It's a field where you can work on incredible projects, solve complex challenges and have a real impact on global trade and transportation. By highlighting what is happening in areas like green shipping and autonomous vessels, we can attract a new generation of engineers who are passionate about the use of technology to achieve true sustainability.

Finally, retaining the talent we already have is just as important as attracting new people. This is an area where we are all still learning that one size does not fit all. Creating a positive work culture, offering competitive compensation and providing opportunities for professional growth are all crucial, but they are not all-inclusive. Finding what motivates everyone is critical because when an experienced engineer feels valued and engaged, he or she is more likely to stay and, just as importantly, to pass knowledge on to junior colleagues.

The ships of tomorrow—greener, smarter and much more efficient—can be designed and built only by the talented minds of today. Ensuring that this talent is available, nurtured and retained is not just a recruitment goal; it is an essential investment in the future of global trade. ■