

### What sets us apart?

- Carefully assessing design and feasibility to ensure structural industry standards
- Dedicated software ensures safe and effective modifications
- Engineers can be onsite within 24 hours, providing flexible and quick responses
- Committed to sustainability by using reclaimed materials
- Ensuring project success through expert handling of complexities



### From sketch to integration

Ships are regularly modified and upgraded to meet future requirements. Based on the specific project or vessel role, structural modifications such as the implementation of a crane pedestal, mooring equipment, or additional deck housing are executed as permanent changes. Saltwater Engineering is your partner for integrating structural components onto the deck. During the concept phase, a feasibility study is conducted to determine if the upgrade is viable.

Based on the results, a design conforming to industry standards is engineered. Our experts perform finite element analyses (FEM) to ensure the structural modifications can withstand the operational loads once the vessel resumes its tasks. Upon approval of the design, a comprehensive drawing package is developed, including fabrication and production drawings.



### Agility is in our DNA

Many vessels do not have accessible construction drawings and documents, creating early project obstacles. To avoid delays, our engineers can conduct onboard measurements and produce a 3D scan. Furthermore, adding structural elements like extra deckhouses can alter the vessel's total weight. If this surpasses regulatory limits, we carry out an inclination test and supply clients with comprehensive information. Additionally, we notify clients if current HVAC or electrical systems interfere with the integration process.

Saltwater engineers are renowned for their flexibility and quick responses. Our engineers can be onsite within 24 hours to assist in determining the optimal solution for deck integration and equipment implementation. In collaboration with Saltwater Marine Services, we have extensive contacts with local suppliers of materials, equipment, and expertise, ensuring the best possible service for our customers.

### Taking responibility

Saltwater Engineering is dedicated to sustainability and the principles of the R9 framework, which emphasizes reusing and repurposing of materials. Whenever feasible, the engineers integrate second-hand materials into our construction project, particularly in areas where components are not subjected to high loads or stresses. This approach not only reduces waste but also conserves resources and minimizes the environmental impact or our projects. By prioritizing the use of reclaimed materials, Saltwater Engineering is able to contribute to a more sustainable future while maintaining high standards of quality and safety in our engineering solutions.

### Tackling challenges with expertise

During a project that involves deck integrations a set of challenges arise that require careful consideration and expertise to successfully complete the project.

At Saltwater Engineering we understand the complexity involved in integration components such as crane pedestals, deck housing, equipment and other installations into structures. Some of the challenges include the following:

Navigating these challenges demands a comprehensive approach that combines technical proficiency, planning, regulatory standards, and proactive risk management. At Saltwater Engineering, we leverage our expertise and commitment to quality to overcome these challenges and deliver exceptional results during our deck integrations.

#### **Time constraints**

Tight deadlines necessitate efficient planning and execution.





### Safety protocol

Integrating heavy equipment and structures poses inherent safety risks during assembly and installation. Risk assessments are key.

#### **Structural limits**

Ensuring integrated components meet structural requirements and do not exceed maximum allowables.



Saltwater's approach



# Weight distribution and stability

Managing the weight distribution of the integrated components is critical to maintaining stability and operational safety.

### **Compatibility and precision fit**

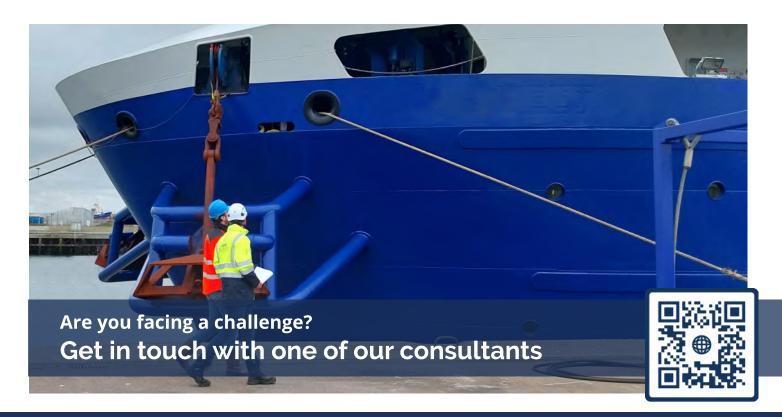
Achieving seamless integration without interference or misalignment requires precise measurements and attention to detail.





### **Communication and coordination**

Effective communication and coordination among project teams are vital for successful projects.





## Partner up with Saltwater

# **Everything Is Possible**



Saltwater provides customized engineering solutions for the naval and offshore industry. Understanding your challenges enables us to deliver practical, quality products and clever solutions.

### Mission

Our mission at Saltwater is to engineer and develop maritime solutions that reduce the environmental impact and support a low carbon footprint. We are committed to provide innovative and efficient engineering services that meet the needs of our clients while guaranteeing safety and quality.

### Vision

At Saltwater, our vision is to be a leading force in the maritime engineering industry, striving for positive change through socially responsible practices. We envision a future where our engineering solutions help to create a healthier and more sustainable world. We are committed to ship conversions and new vessel designs, encouraging a culture of young innovators and collaborating with our partners and clients to achieve our shared goals.

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