



# Marine Engineer Officer in Defence/ Navy

## Overview of career pathway

A career as a Marine Engineer Officer within the defence sector involves working on the design, construction, operation, and maintenance of naval vessels, submarines, and other marine systems within royal or naval forces. Careers will typically follow a structured pathway although there may be some variations depending on the specific requirements, training programs, and organisational structures of each country's navy.

## Summary of career stages:

- Cadet/ Junior Engineer
- Marine Engineer
- Senior Marine Engineer
- Chief Marine Engineer

## Cadet/ Junior Engineer

Example job titles: Junior Marine Engineer, Assistant Marine Engineer Officer, Naval Engineer Trainee, Cadet Officer, Apprentice Marine Engineer

As an entry level into marine engineering, a Cadet/ Junior will mainly focus on learning and applying basic engineering skills whilst under the supervision of senior engineers. This involves hands-on work with propulsion, electrical, and auxiliary systems on naval vessels to maintain and operate ship systems.

### Milestones

Key accomplishments to gain within role to progress to the next career stage:

<b>Academic achievements and training and experience</b>	<b>Experience to gain</b>	<b>How IMarEST can support you throughout your career journey</b>
Complete up to 3 years of naval engineering training. Qualifications and training required will vary by Navy but this could include: <ul style="list-style-type: none"> <li>• A cadetship, apprenticeship, or cooperative education programme</li> </ul>	Complete up to 3 years to develop practical experience working within shipyards, defence contractors, and/or the Navy directly as well as complete required training.	<ul style="list-style-type: none"> <li>• Join as a free student member and access learning resources, events, webinars, dedicated student sections, and a digital library with 130 years' worth of knowledge. Also stay up to date with the latest industry news and</li> </ul>

<ul style="list-style-type: none"> <li>• A bachelor’s degree in marine engineering or naval architecture or a related field</li> </ul>		<p>connect with the wider community for expert support and guidance</p> <ul style="list-style-type: none"> <li>• Explore and join Special Interest Groups (SIGs) for further learning and networking opportunities with other keen professionals</li> </ul>
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## Marine Engineer

Example job titles: Marine Engineer Officer, Naval Architect, Systems Engineer

A Marine Engineer will be responsible for areas such as managing complex repairs, leading small teams, and overseeing the operation of critical systems like propulsion and electrical systems. It will also involve more independent responsibilities such as ensuring systems meet safety and operational standards.

### Milestones

Key accomplishments to gain within role to progress to the next career stage:

<b>Academic achievements/ training</b>	<b>Experience to gain</b>	<b>Enhance your prospects and opportunities further</b>
<p>Qualifications and training required will vary by Navy but this could include:</p> <ul style="list-style-type: none"> <li>• Advanced or specialised training and certifications in specific areas e.g. nuclear propulsion, operating submarines etc.</li> </ul>	<p>Complete 1 to 5 years within Navy to build extensive experience in marine engineering operations and skills and a record of successfully completed projects and innovations.</p>	<ul style="list-style-type: none"> <li>• Gain industry recognition with: <ul style="list-style-type: none"> <li>○ Associate Member grade (AMIMarEST)</li> <li>○ Engineering Technician professional registration (EngTech/ MarEngTech)</li> </ul> </li> <li>• Connect and share your experiences with a professional community through your local membership branch</li> <li>• Develop skills, professional reputation, and network through volunteering opportunities and SIG engagements</li> </ul>

## Senior Marine Engineer

Example job titles: Senior Marine Engineer Officer, Lead Naval Architect, Project Engineer

A Senior Marine Engineer will be leading engineering departments on ships or at naval bases, managing major maintenance and upgrade projects, and contributing to ship design and development programs. This will also lead to opportunities for taking on strategic planning and leadership responsibilities.

### Milestones

Key accomplishments to gain within role to progress to the next career stage:

Academic achievements/ training	Experience to gain	Enhance your prospects and opportunities further
Qualifications and training required will vary by Navy but this could include: <ul style="list-style-type: none"> <li>• A master's degree in marine engineering, naval architecture, or a related field (e.g. MEng, MSc)</li> <li>• Advanced certifications in project management and/or specialised naval engineering fields</li> <li>• Training to gain security clearance to work on high-level projects</li> </ul>	Complete up to 10 years within Navy to build towards a strategic leadership role, including completing complex projects and/or developments while leading and co-ordinating a variety of teams and specialisms.	<ul style="list-style-type: none"> <li>• Gain industry recognition with:               <ul style="list-style-type: none"> <li>○ Member grade (MIMarEST)</li> <li>○ Incorporated Marine Engineer professional registration (IEng/IMarEng)</li> </ul> </li> <li>• Develop leadership capabilities and shape the future of maritime through mentoring opportunities</li> <li>• Engage with cross-disciplinary SIGs to expand knowledge and specialisms</li> </ul>

## Chief Marine Engineer

Example job titles: Chief Marine Engineer Officer, Commander, Naval Engineering Manager, Program Manager

A Chief Marine Engineer will be responsible for overseeing the entire engineering divisions and/or major projects, such as new ship designs or fleet-wide upgrades. This role involves a high-level of management for resources, personnel, and strategic planning for the naval engineering department, including future planning for new or evolving technology.

### Milestones

Key accomplishments to gain within role to progress to the next career stage:

Academic achievements/ training	Experience to gain	Enhance your prospects and opportunities further
Qualifications and training required will vary by Navy but this could include:	Utilise experience and skills towards designing and planning large-scale naval engineering projects,	<ul style="list-style-type: none"> <li>• Gain industry recognition with:               <ul style="list-style-type: none"> <li>○ Fellow membership grade (FIMarEST)</li> </ul> </li> </ul>

<ul style="list-style-type: none"> <li>• Executive leadership training (which could lead towards a Master's degree or MBA)</li> <li>• Specialised training e.g. international cooperation, advanced systems management, cybersecurity, crisis management etc.</li> </ul>	<p>managing resources and budgets, and leading on innovation and technological developments. This may also include representing the Navy for high-level discussions and conferences with government or other agencies.</p>	<ul style="list-style-type: none"> <li>○ Chartered Marine Engineer registration (CEng/ CMarEng)</li> <li>• Strengthen expertise and reputation through presenting at events and webinars, engaging with SIGs, contributing to publications, and/or delivering training</li> <li>• Have your say in shaping the industry through technical leadership or high-level volunteering roles (e.g. become a board member, council rep)</li> </ul>
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