



Marine Engineer Officer in the Merchant Navy/ Commercial

Overview of career pathway

A career as a Marine Engineer Officer in the merchant navy involves the operation, maintenance, and repair of the machinery and equipment on board commercial vessels, such as cargo ships, tankers, and passenger ships. This can also include systems and equipment such as cranes, heavy lift equipment, liquid cargo pumps, hotel services machinery etc. Through working with key members of the crew within their duties a Marine Engineer Officer will ensure the smooth and safe operation of a ship's engine room and all associated mechanical systems.

Summary of career stages:

- Cadet Officer/ Apprentice
- Fourth/ Third Engineer
- Second Engineer
- Chief Engineer

Cadet Officer/ Apprentice

Usually, the beginning stage of a career in marine engineering, a Cadet Officer/ Apprentice will undergo formal training both ashore and onboard ships to learn the knowledge and practical skills needed to safely operate and maintain the ship's machinery and equipment. The level of training and sea-time needed will vary depending on the power, size/type, and operational profiles of the ships being worked on.

Milestones

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

Academic achievements and training and experience	Experience to gain	How IMarEST can support you throughout your career journey
Complete the marine engineering cadetship programme/apprenticeship which may include: <ul style="list-style-type: none"> • A certificate, diploma and/or a bachelor's in marine or mechanical engineering (e.g. BEng, BSc) • Standards of Training, Certification and 	Complete at least 12 months of sea time service plus academic studies to learn the engine and auxiliary machinery operations, maintenance procedures and safety protocols.	<ul style="list-style-type: none"> • 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 connect with the wider

Watchkeeping (STCW) for cadets		community for expert support and guidance <ul style="list-style-type: none"> • Explore and join Special Interest Groups (SIGs) for further learning and networking opportunities with other keen professionals
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Fourth/ Third Engineer

A Fourth and/ or Third Engineer is usually responsible for managing specific machinery and overseeing the operation and maintenance of vital equipment. This role will include assisting senior engineers with the operation and maintenance of the engine room before moving to an intermediate level, which includes playing a key role in emergency repairs, supervised major repairs and troubleshooting. Where watches (i.e. shifts) are kept, a Fourth/ Third Engineer will be responsible for a particular watch period in the engine room.

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
Complete and maintain: <ul style="list-style-type: none"> • Advanced Standards of Training, Certification and Watchkeeping (STCW) certifications To prepare for advancement to next level, complete: <ul style="list-style-type: none"> • Certificate of Competency (CoC) for second engineers e.g. Second Engineer Officers of the Watch 	Complete at least 18 months of sea time managing and maintaining assigned machinery and taking on further responsibilities towards the operation and safety of the ship. This can include responsibility for air compressors, cooling systems, pumps, generators, purifiers, and boilers.	<ul style="list-style-type: none"> • Gain industry recognition with: <ul style="list-style-type: none"> ○ Associate Member grade (AMIMarEST) ○ Engineering Technician professional registration (EngTech/ MarEngTech) • Connect and share your experiences with a professional community through your local membership branch • Develop skills, professional reputation, and network through volunteering opportunities and SIG engagements

Second Engineer

The Second Engineer works as a deputy to the Chief Engineer and is responsible for the day-to-day operation of the entire engine room. This includes leading the engineering team, supervising junior engineers, ensuring compliance with safety regulations, and managing the maintenance schedule to keep all machinery in optimal condition.

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
<p>Complete and maintain:</p> <ul style="list-style-type: none"> Management level Standards of Training, Certification and Watchkeeping (STCW) certifications for second engineers and if applicable, chief engineers. <p>To prepare for advancement to next level, complete:</p> <ul style="list-style-type: none"> Certificate of Competency (CoC) for chief engineers e.g. Chief Engineer Officers of the Watch 	<p>Complete at least 18 months of sea time to develop management and leadership skills as well as a fully comprehensive understanding of all engineering aspects of the ship and associated safety and operational regulations.</p>	<ul style="list-style-type: none"> Gain industry recognition with: <ul style="list-style-type: none"> Member grade (MIMarEST) Incorporated Marine Engineer professional registration (IEng/IMarEng) Develop leadership capabilities and shape the future of maritime through mentoring opportunities Engage with cross-disciplinary SIGs to expand knowledge and specialisms

Chief Engineer

The Chief Engineer is the highest-ranking engineer on board and holds ultimate responsibility for the ship's technical operations. This includes managing the entire engine department, overseeing all machinery onboard, ensuring safety and compliance, and coordinating with the ship's captain/master on operational matters.

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
<p>Complete:</p> <ul style="list-style-type: none"> Specialised training relevant for the role e.g. strategic leadership, new technology, new policy or regulations etc. <p>Maintain:</p>	<p>Utilise all knowledge and experience gained over the years to make important and critical decisions affecting the ship's performance, safety, and management.</p>	<ul style="list-style-type: none"> Gain industry recognition with: <ul style="list-style-type: none"> Fellow membership grade (FIMarEST) Chartered Marine Engineer registration (CEng/ CMarEng) Strengthen expertise and reputation through

<ul style="list-style-type: none"> • Management level Standards of Training, Certification and Watchkeeping (STCW) certifications for chief engineers 		<p>presenting at events and webinars, engaging with SIGs, contributing to publications, and/or delivering training</p> <ul style="list-style-type: none"> • Have your say in shaping the industry through technical leadership or high-level volunteering roles (e.g. become a board member, council rep)
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