

Bachelor of Marine Engineering: Job Function.

Engineering department[\[edit\]](#)

The engineers are also called technical officers. They are responsible for keeping the ship and the machinery running. Today, ships are complex units that combine a lot of technology within a small space. This includes not only the engine and the propulsion system, but also for example, the electrical power supply, devices for loading and discharging, garbage incineration and fresh water generators.^[4]

Chief engineer[\[edit\]](#)

The chief engineer on a merchant vessel is the official title of someone qualified to oversee the engine department. The qualification for this position is colloquially called a "Chief's Ticket".

The Chief Engineer, commonly referred to as "The chief", "cheng", or just "chief", is responsible for all operations and maintenance that have to do with all engineering equipment throughout the ship. He may be paid on par with the captain, although he is never responsible for the action of ship. The chief engineer cannot assume command and the command always rests with the deck officers unless it is clearly mentioned within the safety management system.

Second engineer/first assistant engineer[\[edit\]](#)

The second engineer or first assistant engineer is the officer responsible for supervising the daily maintenance and operation of the engine department. He or she reports directly to the chief engineer.

On a merchant vessel, depending on term usage, "The First" or "The Second" is the marine engineer second in command of the engine department after the ship's chief engineer. The person holding this position is typically the busiest engineer aboard the ship, due to the supervisory role this engineer plays and the operations duties performed. Operational duties include responsibility for the refrigeration systems, main engines (steam/gas turbine, diesel), and any other equipment not assigned to the second assistant engineer/third engineer or the third assistant engineer/fourth engineer(s). If the engine room requires round the clock attendance and other junior engineers can cover the three watch rotations, this officer is usually a "day worker" from 0630-1830.

Third engineer/second assistant engineer[\[edit\]](#)

The third engineer or second assistant engineer is junior to the second engineer/first assistant engineer in the engine department and is usually in charge of boilers, fuel, auxiliary engines, condensate, and feed systems. This engineer is the third highest marine engineer in rank. Depending on usage, "The Second" or "The Third" is also typically in charge of fueling or bunkering, if the officer holds a valid Person In Charge (PIC) endorsement for fuel transfer operations.

Fourth engineer/third assistant engineer[\[edit\]](#)

The fourth engineer or third assistant engineer is junior to the second assistant engineer/third engineer in the engine department. The most junior marine engineer of the ship, he or she is usually responsible for electrical, sewage treatment, lube oil, bilge, and oily water separation systems. Depending on usage, this person is called "The Third", or "The Fourth", and usually stands a watch. Moreover, the fourth engineer may assist the third mate in maintaining proper operation of the lifeboats. In the U.S. fleet, it is not uncommon for the third engineer to carry the nickname "Turd Third" due to his/her sewage treatment responsibilities.

Engineering cadet[\[edit\]](#)

A trainee engineer officer normally reports to the second engineer. Their role as trainee is to observe and learn, while helping out where possible. As they have no 'ticket' a cadet can not hold a watch, but will likely assist one of the qualified engineers with their watch. Typical duties may include preparing the engine room log or preparing the tea and coffee at breaks (if asked) for the engineering team. The engineer cadets epaulette is purple, as with the other engineers, however has only one gold horizontal strip (UK system).

Electrical department[\[edit\]](#)

Electrotechnical Officer[\[edit\]](#)

The electrotechnical officer is in charge of all the electrical systems on the ship. Electrical engineer is one of the most vital positions in the technical hierarchy of a ship and engineer is responsible for his assigned work under the chief engineer's instructions.

Some shipping companies do not carry electrical officers on their ship to cut down the manning cost and the electrical duties are carried by some one from the engineer's side, normally third engineer. However, many companies realized that electrical and electronic system requires some extra attention and therefore require an expert to attend them.

As the technology is advancing, more and more automations and electronic circuit is replacing conventional and electrical systems. Hence the international Maritime Organisation (IMO) amended STCW 95 on 25th June 2010 known as Manila amendment, to introduce a certified position of Electro-technical officer in place of electrical officer.