

46ESS-25: Ship Propulsion - Propellers

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For over centuries, the majority of merchandises and people use marine vessels to travel through the world. In order to achieve a good propulsion system, several means of power production have been developed throughout the years and today, gas turbine and diesel engines are the most widely used in this industry even if some alternatives are being investigated (wind energy, electric motors, ...).

To provide the momentum to the ship, propellers are usually connected to these power generators. Depending of the situation and the application, different types of propellers are used: screw propellers are the usual propellers used in marine application but also for example controlled pitch propellers if the issue of manoeuvrability of the vessel is the major concern of the design.

In this work, a guide of the several means of marine propulsion will be carried out. Then a comprehensive display of the major configurations and applications of the propellers will be showcased. And at last, the challenges (conditions and environment of use) and a few future developments will be displayed.