

COMPARISON STUDY SUMMARY

Comparison of propulsion systems on expedition cruise vessel

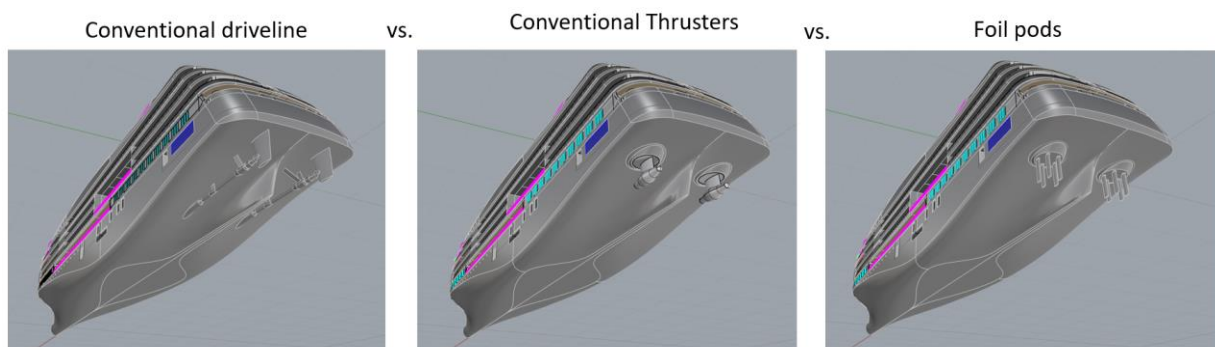
By OSK-ShipTech A/S

This paper summarizes the comparison results between selected propulsion systems as studied by OSK-ShipTech A/S

Case studied

OSK-ShipTech compared the engine power demand and fuel consumption of a LOA 125 m cruise ship design equipped with different propulsion solutions. Conventional propulsion drive line (propeller with shaft), conventional azimuthing thrusters and ABB Dynafin™ propulsion driven by ABB Onboard DC Grid were compared.

Annual operating hours of 4320 h and engine SFOC 185 g/kWh were used when calculating the fuel oil consumption.



Results Summary

In the studied case the brake power demand from the main engines was 3963 kW in the case of shaftline solution, 3804 kW for conventional azimuthing thrusters and 3110 kW in the case of ABB Dynafin™ propulsion. With the given SFOC and operating hours the corresponding annual fuel consumption changes from 3167 tons (shaftline) to 3040 tons (conventional azimuthing thrusters) and finally to 2486 tons with ABB Dynafin™. This translates into a 22 % lower fuel consumption with ABB Dynafin™ against the shaftline and 18 % lower consumption against the conventional azimuthing thrusters.

Source

Comparison of propulsion systems on 260 Pax Expedition Cruise Vessel (Loa 125 m) by OSK-Offshore A/S, dated 1.5.2023