Demo Case

Large Diameter Propeller for General Cargo Vessel

Large Diameter propeller for a 25000TDW General Cargo ship

- Ultra large diameter propeller with optimised ship design
- High efficiency
- Slow revolution drive train
- Full basic vessel design

Scale model tests

- Test performance in ice
- Investigate ventilation and cavitation characteristics
- Perform seakeeping and overall performance tests

CFD simulations

- Full pressure pulse simulation for small gap between hull and propeller
- Cavitation simulations
- Performance simulation in different sea states
- Comparison between model tests and CFD simulations

Conclusion

- The selected ultra large diameter propeller has the potential to reduce required shaft power by 15-20%, reducing fuel consumption and emissions significantly.

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Model tests indicate clear benefits by significantly reduced shaft power requirements.

Risk assessments and design guidelines enable the Large Diameter Propeller technology to be utilised in new ship designs.

The Large Diameter Propeller is a step change technology in ship design with potential of significant reduction in fuel consumption and emissions.

Results and exploitation

Model tests and CFD simulations show promising results for ventilation, cavitations and sea state performance.

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