Hydrodynamics - Commercial Vessels

Designers, builders, owners and operators of a wide range of vessel types all have an interest in efficient vessel design. The BMT Hydrodynamic Team offers cost effective hull design, optimisation and assessment services for a number of commercial vessels including cruise liners, container ships, LNGs, bulk carriers and tankers, planing craft, ferries, offshore support vessels.

Experience

- We cover hull form development, appendage design, design optimisation and model test validation. Using BMT’s in-house hullform database and tools such as CFD programs, we analyse and interpret results in order to specify optimum dimensions or to increase vessel efficiencies.
- The collective model test and hull design experience at BMT provides an in-depth understanding of all hull design issues.
- The BMT hull form database contains ship geometry, hydrodynamic data and a wide range of regression techniques.
- It also provides special in-house empirical formulations for hull design work on over 5,000 different vessels.

Hull Form Development

By taking into account dimensional constraints, including any critical design ‘hard’ points and stability requirements, BMT provides optimum hull lines for given dimensions and displacement, or establishes what the optimum dimensions are for a given vessel requirement. Using in-house potential flow codes and experience, minimum power requirement designs can be prepared while still giving good seakeeping and manoeuvring properties against given commercial or operability targets.
Bow Design
Design changes for speed and operational draught requirements can be achieved using BMT’s extensive experience in optimising the hull shape/bow design combination. Through this we aim to provide maximum in service performance whilst using minimum power.

Stern Design and Flaps
Stern design is important in achieving good powering, low cavitation, low noise and vibration. BMT has access to a range of tools to help with single skeg, twin skeg design or open shaft and bracket designs. Various ranges of flaps and wedges can also be designed depending on requirements.

Model Test Validation
BMT has vast practise in specifying, performing and interpreting model tank tests either through in-house capabilities or via specially commissioned tests at third party establishments. Tests include resistance, propulsion, seakeeping, manoeuvring and cavitation.