SIMON MACKAY
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Senior Naval Architect

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Simon is a Chartered Naval Architect with a Master's degree in Naval Architecture and Small Craft Engineering. Simon joined Brookes Bell Safety at Sea Limited in 2011 and became an Associate in 2015, having previously worked for Babcock Integrated Technology at Rosyth Dockyard, providing engineering support to the refit projects within the yard.

Since joining Brookes Bell Safety at Sea Limited, Simon has worked on a number of technical investigations into the causes of marine failures and new build disputes, including flooding analyses and structural failures. He has attended salvage and wreck removal operations, providing support and assessing the strength and stability of the casualty throughout the re-float process. Simon also has experience of conducting structural damage surveys, draught surveys and incline experiments.

Simon has extensive structural analysis experience, applying Classification Society and other regulatory rules for verification of new build designs and vessel modifications. Simon is an experienced user of Finite Element Analysis (FEA) software to analyse a wide variety of marine structures, against design rules and also to determine residual strength post damage.

Professional Qualifications

UK CAA approved commercial UAV (Drone) pilot

BOSIET qualification for UK and Norwegian offshore sectors

Academic Qualifications

MEng with Distinction in Naval Architecture and Small Craft Engineering - The University of Glasgow and The University of Strathclyde, Glasgow

Member of the Royal Institution of Naval Architects

Chartered Engineer, The Engineering Council

Previous Employment History

Babcock Integrated Technology, Rosyth Dockyard - Naval Architect

Surveying and Consultancy Experience

With expertise in both structural and stability aspects of ship and marine structures, Simon has experience from both a design perspective as well as investigating failures and marine casualties.

Simon has prepared stability submission documentation for Flag State approval and has conducted reviews of such documentation on behalf of Owners. He also has conducted several incline experiments, on various vessel types, and performed draught surveys to determine cargo weights. Simon has attended marine casualties to provide technical expertise during salvage and re-floating. From an investigative perspective, he also has experience of conducting flooding simulations and cargo shift analyses.

Projects

- Vessel upgrades for compliance with the stability criteria of SOLAS '90/STOCKHOLM Agreement
- Attendance and management of model tests
- Managed and conducted incline experiments onboard a RO-RO ferry, superyacht, semi-submersible rig and naval vessels
- Flooding simulations of a capsized barge under tow
- Attendance at salvage operations of a 170m RO-RO passenger vessel
- Hull Girder FEA analysis of a chemical carrier to CSR rules
- Attendance at the flooding and de-watering of a 90m bulk carrier
- Survey and structural analysis of an AHTS vessel's damaged propeller nozzle
- Analysis and investigation following failure of cargo securing arrangements, including vessel motion simulations
- Provided technical advice and attended the wreck removal of a 165m bulk carrier
- Structural analysis of buckled pedestal crane and bearing
- 3D laser scan of superyacht following shaft alignment issues
- Review of draught surveys following reported cargo shortfall
- Structural and flooding analyses of bulk carrier following collision and subsequent sinking
- Structural analysis (FEA) of pulley wheel bearing
- Initially completed a Graduate training scheme and then held a permanent position in the engineering department. Simon provided engineering support to Dockyard activities from both stability and structures perspectives. Tasks included overseeing of vessel dry dockings, providing advice on structural repairs and upgrades, and conducting incline experiments. A considerable amount of time was spent surveying vessels.