



## Marine, Scientific and Technical Consultants and Surveyors

### ANDREW GORDON WORRALL

#### Naval Architect

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Andrew Worrall is a Consultant Naval Architect with a Bachelor of Engineering Honours degree in Naval Architecture and Small Craft Engineering. He joined Brookes Bell in March 2008 from Lloyd's Register.

After graduating from Strathclyde University, Andrew joined Lloyd's Registers Ship Emergency Response Service (SERS) in 1995 as a Technical Assistant. He progressed through a variety of roles and in 2003 was appointed Naval Architect, Head of Ship Modelling.

SERS provides technical information on damage stability, damage longitudinal strength, grounding and oil outflow and during his time there Andrew generated 3D computer models using Naval Architectural software packages for a variety of ship types ranging from large passenger vessels to FPSO's. This work involved the analysis and interpretation of many ships' plans and documents including stability booklets, loading manuals, construction plans, general arrangements and damage control/safety plans.

Andrew has considerable experience of Naval Architecture, particularly regarding the capabilities of hull designs as determined from co-ordinating the development and maintenance of ship models from plans and drawings.

He has produced ship and client specific technical reports for all computer models generated and has performed checks on reports and models generated by both his colleagues and external subcontractor companies to ensure compliance with QA procedures.

As a member of the SERS on-call team Andrew investigated many casualties including groundings, collisions, pollution and fire/explosion involving a wide range of vessels including tankers, bulk carriers, RO-RO vessels and container ships. Key aspects of the casualty investigations were analysing stability and strength for intact and damaged conditions, in particular the assessment of flooding as related to hull damage, quantifying/minimising oil outflow, calculating grounded forces, repair voyage conditions and offloading sequences for damaged/grounded vessels.

Andrew has also prepared and delivered training courses on Emergency Response and Emergency Preparedness to clients in both the UK and Greece.

Since joining Brookes Bell Andrew has worked on several casualty investigations including global hull girder failures of a container ship and an oil tanker, capsize and sinking of a vehicle carrier, cargo shift and grounding of a Ro-Ro cargo vessel and partial sinking of a general cargo ship. He has also worked on bulk carrier cargo loading disputes, damage to ship-to-shore cargo discharge gantry and reefer vessel heavy weather damage.

Andrew has prepared reports on technical issues (casualty investigation, stability and strength) and has given expert witness evidence at maritime arbitration in London.

### **Qualifications**

- Bachelor of Engineering Honours degree in Naval Architecture and Small Craft Engineering
- Member of the Royal Institute of Naval Architects
- Member of the Society of Consulting Marine Engineers and Ship Surveyors
- Currently pursuing Chartered Engineer status with RINA

### **Employment History**

- 1995-2008 Lloyd's Register  
Ship Emergency Response Service
- 2008- Naval Architect  
Brookes Bell

### **Nature of Work Undertaken Recently**

- Container ship cell guide damage investigation
- Small craft stability analysis
- Damage stability and strength analysis of container ship casualty
- Stability and causation analysis for general cargo ship with shift of timber deck cargo
- Longitudinal strength analysis for oil tanker casualty where vessel broke in two.
- Bulk carrier heavy cargo loading dispute between owners and charterers, (class and statutory regulations)

**Experience of Naval Architectural Software packages**

Seasafe/Gstab

Napa

Heccsalv