

# Hawkins | Marine

Leaders in forensic investigation

## MARINE INCIDENTS

Providing forensic engineering, investigation and expert witness services for incidents relating to all aspects of the shipping and marine industries.

Cargo Contamination | Cargo Spoilage/Damage | Crane & Gantry Collapse | Hull Damage | IMSBC Cargo | IMDG Cargo Liquefaction | Marine Coating Failures | Materials Failure/Corrosion on Board

ROB/OBQ Inspections | Salvage & Wreck | Ship/Shore Cargo Contamination Specification

**[www.hawkins.biz](http://www.hawkins.biz)**



Established in 1980, Hawkins specialises in forensic investigation and root cause analysis for the insurance, legal and risk management professions. Our clear, concise and timely reports will provide the understanding you need to make the correct decisions on your risks.

With a recognised and growing global presence, we have over 150 experts providing worldwide coverage from offices in Europe, MEA, and Asia, as well as key locations across the UK & Ireland.

Our experts can advise, investigate, and assist at any stage of an incident, including pre-loss prevention and risk assessment, root cause analysis, post-failure remediation advice and expert witness services.

All our experts are highly experienced forensic scientists, consulting engineers, and quantity surveyors from a wide range of disciplines with proven expertise and practical experience.



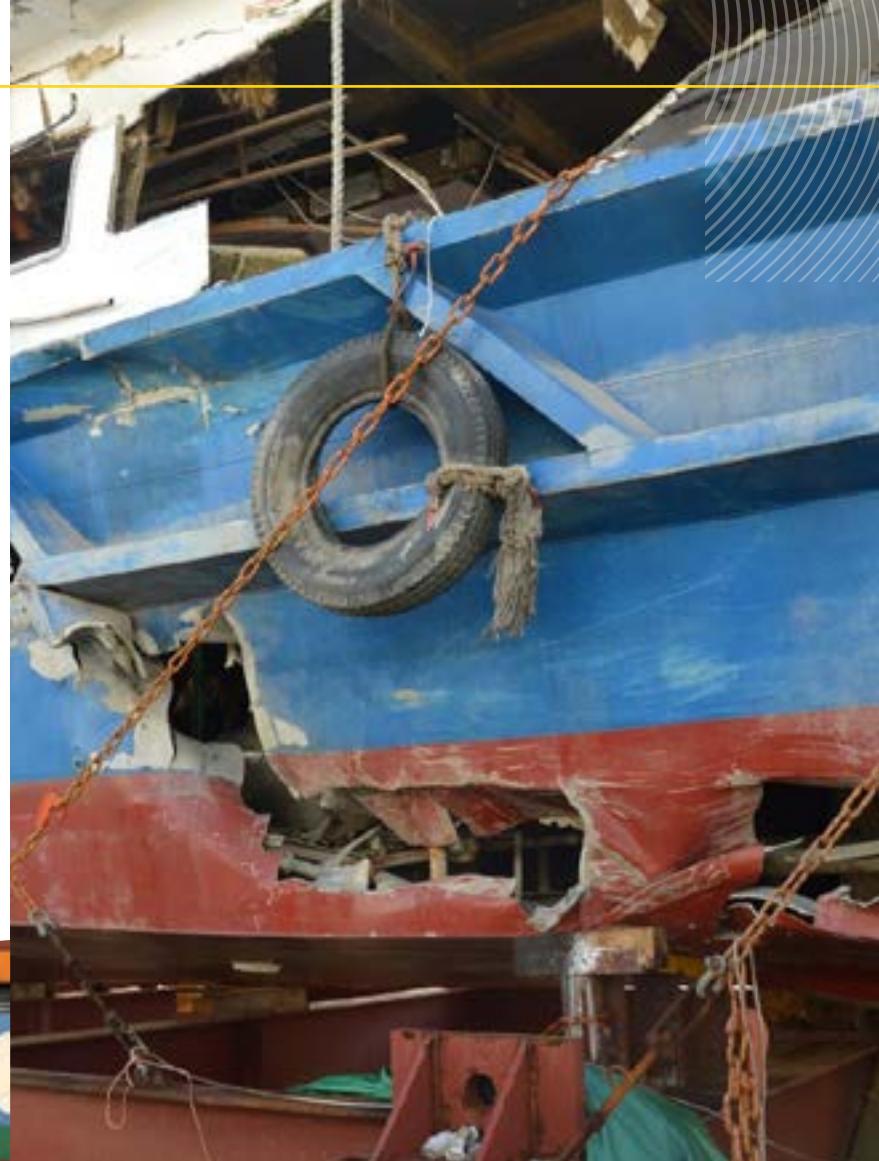
Hawkins can assist with incidents and problems relating to fires, explosions, cargo contamination or degradation, machinery or materials failure and liquefaction. The team includes biologists, chemists, materials scientists, mechanical engineers, fire experts and a master mariner.

Our reporting is flexible and can be tailored to your needs, depending on the scale and urgency of the investigation.

When needed, a court-compliant report can be prepared for the support of legal action, which may require more extensive investigation.

*“Clients come back to Hawkins because of our honesty and integrity. Our subject matter experts have sound technical knowledge and expertise, married with a real commercial awareness of what our clients need. Hawkins provides a rapid response, giving timely, accurate advice and communication of the evidence in a way our clients can act upon.”*

Dr Andrew Prickett, Managing Director, Hawkins





# What we do



## PRE-FAILURE RISK MANAGEMENT

Guidance on regulations and the testing and loading of cargo to ensure safety, compliance, and risk reduction.



## ROOT CAUSE ANALYSIS

Scientific investigation into all aspects of an incident to determine what happened, why and in what sequence.



## EXPERT WITNESS SERVICES

Independent and impartial technical advice, including quantum & delay services to assist Counsel during all aspects of litigation.



## POST-FAILURE ADVICE

Consultancy advice to reduce, mitigate and prevent risks associated with similar events happening in the future.



## MAJOR & COMPLEX LOSS

Global resources and multidisciplinary teams, armed with the knowledge, equipment and facilities to manage and investigate major and complex incidents.

# We Investigate...

## CARGO CONTAMINATION

The cleanliness of holds or tanks is key to preventing valuable cargoes from being contaminated by residues from the previous cargo(es) carried by a ship. Hawkins can help to determine the root cause of cargo contamination by analysing samples in our laboratories and reviewing documentation related to the ship and the cargoes. We can then advise our client on liability and risk mitigation issues based on their needs at the time.

## CARGO SPOILAGE/DAMAGE

Many agricultural cargoes such as corn and soybeans are shipped in bulk. Such commodities have a limited safe storage period before quality deteriorates. Disputes over cargo quality at discharge are common and our experts can assist in determining whether damage was more probably sustained before loading or while the cargo was on-board. We also advise on perishable cargoes carried in regular and refrigerated containers.

## CRANE & GANTRY COLLAPSE

Our mechanical and structural engineers gather evidence at the scene, carry out structural analysis and design/loading reviews to investigate the cause of collapses. The team have experience investigating failures in a wide range of maritime and offshore structures.

## HULL DAMAGE

A loss of integrity in a ship's hull may be caused by corrosion of the material used in its construction, or by fracture due to overload, or as a result of an accident such as collision, contact or grounding. At Hawkins we have failure analysts who can investigate the cause of such damage by means of visual examination on site and, if permissible and feasible, laboratory inspections of any sectioned pieces.

## IMSBC CARGO

The understanding and management of bulk cargo falls within the remit of the International Maritime Solid Bulk Cargoes (IMSBC) Code. At Hawkins we can help minimise and mitigate damage and subsequent losses to bulk cargoes such as Group A and Group B products, steel, agriculture, and project cargo, by ensuring that all parties involved comply with the requirements of the IMSBC Code. We can provide live assistance and advice, or attend cargo operation on board to ensure that the bulk cargo is handled appropriately and any damage is assessed in compliance with the relevant guidelines.



## IMDG CARGO

The understanding and management of containerised dangerous cargo falls within the remit of the International Maritime Dangerous Goods (IMDG) Code. Many fires and explosions are caused by the transport of such dangerous containerised goods, particularly when they are mis-declared. Our marine team can help advise our clients on steps to be taken prior and during loading, during the voyage, and discharging, to minimise the risk of problems associated with these cargoes, in compliance with the requirements of the IMDG code.

## LIQUEFACTION

Liquefaction is a process by which a Group A bulk cargo, such as nickel ore and/or bauxite, can lose stability and become highly mobile. Cargo which shifts in this way can have a dangerous effect on the stability of a vessel and in severe cases can lead to capsizing and foundering. Cargo liquefaction may occur if the material properties of the ores are not investigated appropriately prior to loading, or if the IMSBC Code requirements are not met. At Hawkins we can provide advice on suitable sampling methods and testing in the laboratory, both of which will assist in determining whether or not the cargo is safe for loading. We can also attend on-board to conduct the sampling, to ensure that the work is done in compliance with the requirements of the IMSBC Code.

## MARINE COATING FAILURES

Marine paint (coating) is typically made from specialised resins and additives that provide durability, flexibility, water and/or cargo resistance, UV resistance, and anti-fouling properties. It is a complex material that has to withstand the very harsh conditions of the sea, plus various cargoes and cleaning between grades. Coatings require resilience and durability of service over the lifespan of a ship. Marine coatings tend to fail as a result of one or more of the following scenarios: poor surface preparation, poor application, inadequate curing, and subsequent inadequate inspections/failure to comply with the relevant guidelines and standards. Hawkins has the expertise to determine the most likely scenarios to account for coating damage on vessels.

## MATERIALS FAILURE/CORROSION ON BOARD

Failure analysis is an interdisciplinary field of materials science and mechanics which attempts to predict the conditions under which materials fail under the weight of loads. We investigate materials failure onboard ships which include, but are not limited to, incidents associated with the anchor chain, rudder assembly, cranes, wire ropes, fixtures/bolts, and stanchions. Aside from identifying the mode of failure, we also have the skills and expertise to recognise the signs and causes of corrosion on board, which includes that found in bulk steel cargoes (rods, coils, plates) as well as that observed along the surfaces of the ship itself (deck, hull, holds/tanks).



## ROB/OBQ INSPECTIONS

The material remaining on-board (ROB) in vessel tanks/void spaces and the on-board quantity (OBQ) which includes water/oil/slops/oil residue, both fall within the remit of a specific survey that encompasses the quantity of all liquids on-board the vessel. Hawkins can inspect the cargo tanks, determine the tanks are suitably emptied, and verify that they are in a suitable condition for reloading.

## SALVAGE & WRECK

In maritime law, salvage is the rescue of a ship or its cargo on navigable waters from a peril that, except for the rescuer's assistance, would have led to the loss or destruction of the property. At Hawkins, we have a unique appreciation of the importance of crisis management and the need for risk and cost mitigation throughout a salvage or wreck removal case.

## SHIP/SHORE CARGO CONTAMINATION SPECIFICATIONS

If cargo on board tankers is found not to have met specification while loading, during the voyage or at the time of discharge, there are two main sources for this. Either, contamination occurred within the shore system or within the ships system. To determine which scenario is more likely, appropriate sampling in accordance with industry practice and guidelines needs to be conducted within the shore tank and line systems and on the vessel, within the cargo line tank and system. We have the expertise to conduct this type of sampling and to determine the sources of contamination by considering the ship and shore operations as documented.

## Key Contacts

Hawkins' team of experts has the ability to respond rapidly to various types of shipping forensic investigations including fires (vessel and/or cargo), mechanical engineering, structural and material failures, cargo issues etc. worldwide. Hawkins have the equipment to assist with gas monitoring of cargo holds and can provide in-person or remote advice for live fires on board vessels.

If you wish to make an enquiry or instruct us, please contact the office closest to the incident location and you will be put in touch with the relevant expert. Details can be found on the back cover of this brochure. Alternatively, you can contact any of our key contacts directly. Their details are on the following pages, arranged by location.

### HONG KONG



Dr Sophie Parsons  
Regional Director & Head of Marine  
[sophie.parsons@hawkins.biz](mailto:sophie.parsons@hawkins.biz)

Dr Sophie Parsons is a Chartered Engineer and a Fellow of the Institute of Materials, Minerals and Mining (IOM3) and has been working in forensics for over 20 years, conducting failure investigations in criminal and civil cases in the UK and Hong Kong, which included providing expert testimony in legal proceedings.

## DUBAI



Dr Chris Wareham  
Regional Director  
[chris.wareham@hawkins.biz](mailto:chris.wareham@hawkins.biz)

A Regional Director based in our Dubai office, Dr Chris Wareham has investigated cargo, machine space and accommodation fires, including those on container ships and tankers and in ports. He has also provided advice involving bulk cargoes.

## LONDON



Mr Nico Zurcher  
Principal Associate  
[nico.zurcher@hawkins.biz](mailto:nico.zurcher@hawkins.biz)

Having previously been Regional Director of our Hong Kong office before returning to the UK, Mr Nico Zurcher has taken on many cases in Asia and further afield. He investigates fires on container and general cargo vessels as well as the spoilage of bulk agricultural commodities such as corn, wheat, soybeans and seedcakes. He regularly advises clients on the carriage of IMDG and IMSBC cargoes. Nico is fluent in German.

## SINGAPORE



Dr David Rose  
Regional Director  
[david.rose@hawkins.biz](mailto:david.rose@hawkins.biz)

Dr David Rose is Hawkins' Singapore Office Regional Director, and was previously the lead of Hawkins' shipping team. He has travelled world-wide investigating fires and explosions involving cargoes and machinery spaces. He regularly provides clients with advice relating to the carriage of DG Cargoes and assistance with live ship cases such as those involving self-heating of coal cargoes or direct reduced iron.



Capt Stewart Horan  
Master Mariner  
[stewart.horan@hawkins.biz](mailto:stewart.horan@hawkins.biz)

Captain Stewart Horan is a Master Mariner, who has investigated a wide range of marine claims and incidents. These include: ship operations; cargo contamination and damage (both liquid and dry bulk cargoes); liquefaction; self-heating; and fires involving cargo and machinery. Stewart has given live advice, assistance, and risk management recommendations on all manner of ship and cargo operations, including self-heating/methane emission, liquefaction and loss control.



# Hawkins' Expertise

With a recognised and growing global presence, we have over 150 experts providing worldwide coverage from offices in Europe, MEA, and Asia, as well as key locations across the UK & Ireland. Our expertise covers a vast number of specialist areas including:

## ACOUSTICS & AUDILOGY

Our experts assess and advise on acoustic design in the planning stages, and provide mitigation strategies post-construction in the event of a noise dispute.

## ARCHITECTURE

We investigate building defects to determine whether design or workmanship is the root cause. With experience in many sectors and across all RIBA stages from inception to occupation, we can provide advice tailored to your project.

## THE BUILT ENVIRONMENT

Our civil, structural, geotechnical and fire engineers provide expert investigation of defects and failures in the built environment, including water ingress, structural collapses, storm damage and personal injuries, especially on construction sites.

## CHEMISTRY & CHEMICAL ENGINEERING

Hawkins' team of highly qualified and experienced chemists and chemical engineers provide expert opinion on problems associated with chemical processes in a wide variety of industries, including: post incident investigation, goods handling, environmental concerns, hazardous substances and personal injury.

## CONTAMINATION

Our team of highly qualified and experienced chemists can investigate a wide range of contamination and spillage incidents.

## DIGITAL FORENSICS

Hawkins experts collect, authenticate and preserve original evidence. We discover the source of a digital event or attack, how it occurred, and what information may have been lost or compromised.

## ELECTRICAL

We investigate incidents including failures and injury involving most types of electrical equipment, from micro-electronics and domestic electrical appliances through to high voltage generation and distribution.

## ESCAPE OF WATER, GAS, OIL AND OTHER FLUIDS

We can provide system failure analyses for incidents involving all fluids and gases in industrial and domestic settings with onsite and laboratory investigations.

## FIRE & EXPLOSIONS

As a leader in forensic fire investigation, Hawkins has the necessary knowledge and experience to investigate the full scale of losses globally, and advise on recovery, liability and risk management.

## FIRE ENGINEERING

Hawkins has the necessary competencies to advise on fire engineering matters including compliance with fire safety legislation and guidance, investigation of fire spread and building fire safety design, construction and management.

## FRAUD

We compare physical evidence with witness accounts to establish if the evidence is commensurate with a suggested sequence of events or actions. This applies to both small and major losses.

## HYDROLOGY

Our expert hydrologists and engineers have years of experience identifying the cause(s) of complex flooding incidents.

## MARINE INCIDENTS

We assist on a wide range of incidents including agricultural cargoes, liquefaction, fires, explosions and chemical contamination.

## MATERIALS

From medical implants to satellites, our experts are on hand to establish the cause of failure of manufactured items.

## MECHANICAL

Losses often involve the failure of multi-component mechanical systems. We have the knowledge and experience to identify the cause, no matter how complex.

## PERSONAL INJURY

We provide independent and expert assistance with all types of personal injury, including specialised and complex areas like slips, trips and falls, and noise-induced hearing loss.

## PLANT PATHOLOGY

At Hawkins, plant pathology encompasses agricultural, horticultural, forestry, marine and contamination claims. Our experts are experienced in investigating the causes of plant diseases, crop failures and spoilage of fresh produce and agricultural cargoes.

## POWER & ENERGY

We investigate all aspects of failures in traditional thermal power, oil and gas, and renewable energy sources. As well as incidents such as electric shock, gas leaks, power failure, over-voltage, equipment failure and poor design and maintenance.

## PROCESSES

Our engineers help identify the cause of a problem and advise on liability and future prevention.

## PRODUCT LIABILITY

We are experts in the field of product liability and often deal directly with UK Trading Standards offices or similar statutory bodies.

## QUANTITY SURVEYING

We provide cost consultancy, dispute resolution, and quantum & delay expert witness services through our two specialist subsidiaries. Services include insurance reinstatement valuations, pricing proposed works assessing the quantum of claims, and the impact of delays.

## RAILWAYS

We have investigated incidents including derailments, unintended runaways and accidents at level crossings.

## ROAD TRAFFIC COLLISIONS

Our investigators identify all contributory factors and analyse issues such as vehicle speed, visibility, human factors, CCTV, road positioning, weather, vehicular faults and damage assessments.

## VEHICLE, PLANT & MACHINERY

We investigate fires and failures involving all types of vehicles and plant. We routinely review designs and maintenance practices to provide recommendations to our clients.



## QUANTITY SURVEYING SERVICES

We provide market leading Quantum & Delay expert witness services through our specialist subsidiaries A Lamb Associates (ALA) and Morham and Brotchie Partnership (M+BP).

### ALA

Our team is comprised of highly qualified industry leading experts. ALA has considerable experience across all major building and engineering sectors, with particular expertise in cross country pipelines, energy and major infrastructure projects. Blue chip multinationals, Tier 1 contractors and specialists all turn to ALA for reliable authoritative and accurate expert opinion.

### M + BP

M+BP are an established Chartered Professional Quantity Surveying practice, whose clients include individuals, corporate bodies, insurance companies, and trusts. M+BP provide QS services for all sectors with specialism in listed historic building projects and one-off complex builds. M+BP prepare bespoke cost plans to suit clients, funders, and insurance bodies, to provide the best service and most accuracy.

Our team of specialist experts provide Expert Quantum and Expert Forensic Delay Analysis and have a wide range of experience, including:

- One-off complex projects for high-net-worth individuals
- Residential builds (new/alterated/extended)
- Visitor centres and museums
- Whisky distilleries
- Hospitality, including restaurants, theatres and cinemas
- Commercial fit out
- Education, government, and local authority

## SERVICES

Our team of expert in-house Quantity Surveyors provide a range of services including:

### INSURANCE REINSTATEMENT VALUATIONS

Our experienced team provides reinstatement valuations, with expertise in historic or listed properties. These often feature unusual or difficult to price items, such as masonry vaults, elaborate fireplaces, and traditional building methods. Using generic rates to calculate these valuations is seldom best practice, which is why M+BP advocate providing detailed costings when undertaking these exercises

### PRICING PROPOSED WORKS

Our experts provide support pricing proposed works. This includes pricing proposed remediation options so that an informed decision can be made on the most cost-effective solution.

### ASSESSING THE QUANTUM OF CLAIMS

We investigate and assess the reasonableness of claims received. Our experienced team will review all costs to determine if costs have been reasonably and properly incurred. We assess whether a reasonable procurement process has been followed, whether rates represent market value and whether work pricing reflects the scope. We are able to make adjustments for betterment, inflation or other relevant matters.

### THE IMPACT OF DELAYS

The duration of a project can have a significant impact on the amounts claimed. Our experienced team of Forensic Planners can assess the cause of any delays to progress, determining whether all costs claimed are properly due.

# HAWKINS OFFICES

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