

# 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.

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

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



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.

We have over 120 experts in the UK & Ireland, Dubai, Hong Kong, and Singapore and provide worldwide service from these bases. 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 and engineers from a wide range of disciplines with proven expertise and practical experience.



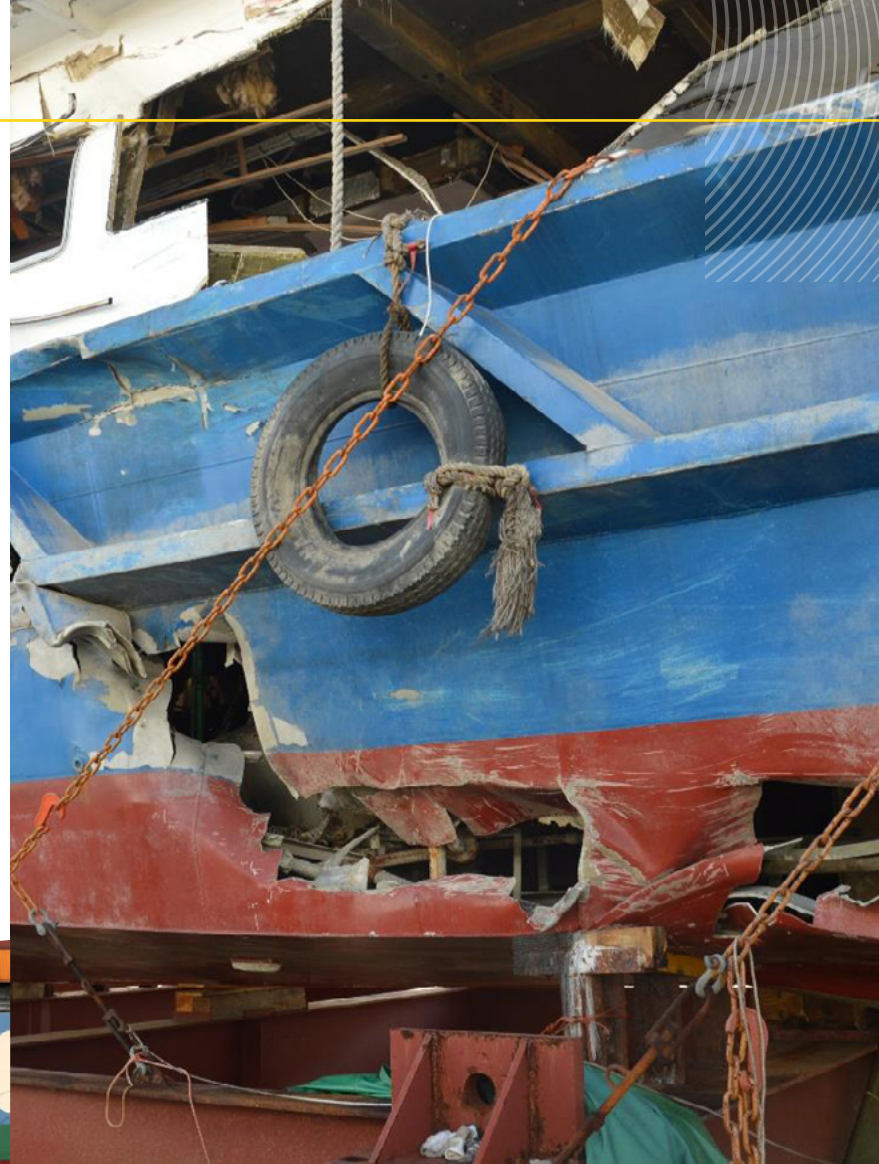
Hawkins can assist with incidents and problems relating to fires, explosions, cargo contamination or degradation, machinery or materials failure and liquefaction. The team includes biologists, chemists, materials scientists, mechanical engineers, fire experts and a mater mariner.

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





## Service Types



### 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 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

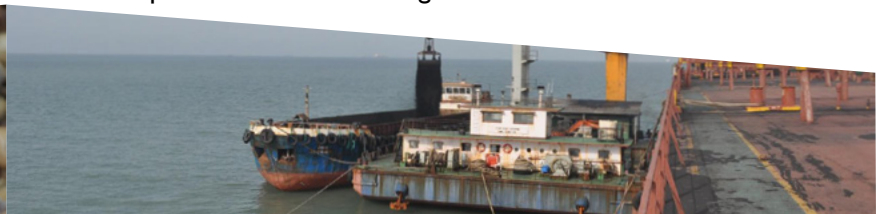
Our mechanical and structural engineers gather evidence at the scene, carry out structural analysis and design/loading reviews to investigate the cause of collapses. The team have experience investigating failures in a wide range of maritime and offshore structures.

## 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 capsize 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



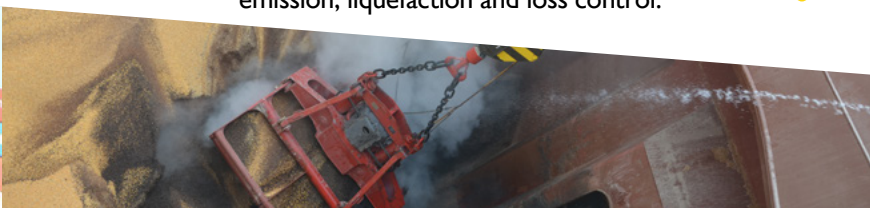
Dr David Rose  
Regional Director  
[david.rose@hawkins.biz](mailto:david.rose@hawkins.biz)

Dr David Rose is Hawkins' Singapore Office Regional Director, and was previously the lead of Hawkins' shipping team. He has travelled worldwide 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 the 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.





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