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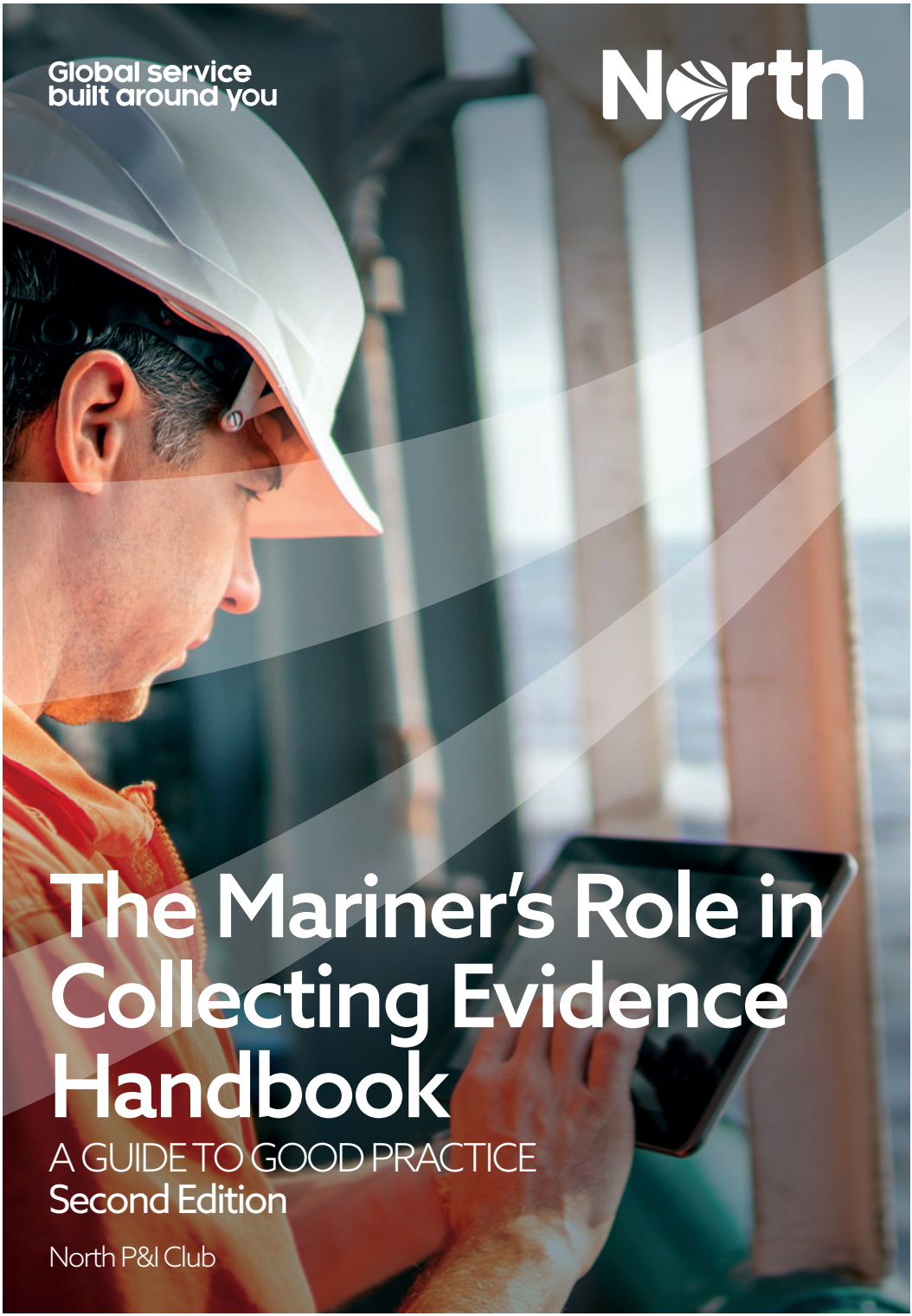

The Mariner's Role in Collecting Evidence Handbook

A GUIDE TO GOOD PRACTICE

Second Edition

North P&I Club

Global service
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First edition published in 2010 ISBN 978-0-9558257-6-7
Second edition published in 2020 by The North of England P&I Association Limited
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ISBN 978-0-9955653-5-7

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Printed and bound in the UK

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Chapter 1

Collecting and preserving factual evidence

FACTUAL EVIDENCE

There are two main types of evidence:

- factual evidence: what a witness **actually** said, did or saw at the time of an incident
- opinion evidence: what a witness **thought** about what happened.

This handbook is about collecting and preserving **factual evidence**. It is intended to give guidance to mariners about the different types of factual evidence relevant to the more common incidents and accidents on board ships. This will help mariners to collect and preserve the very best evidence.

Example checklists of evidence for the more common incidents are included in this handbook. The checklists are not exhaustive, but they provide comprehensive guidance to the nature and extent of evidence that may be required.

Why is factual evidence needed?

The most important reason for providing good factual evidence is to establish what really happened and how it happened.

Once these facts are known, they can be used for different purposes, typically:

- learning: preventing it from happening again and identifying improvements that can be made
- demonstrating compliance: proving that the vessel acted in accordance with regulations and procedures
- determining liability: identifying which party was at fault for the purposes of pursuing or defending a claim.

Following an incident, evidence could be used by many different people, not all of who will be familiar with shipboard life and operations. Evidence will often be looked at by doctors, insurers, statisticians, civil servants, lawyers and judges, and they may need to be informed about the background to the incident under investigation to understand it properly. This is one reason why it is advisable to collect a lot of background evidence, such as logbooks, ship's particulars, passports, certificates and the relevant extracts from operational and safety management systems.

TYPES OF EVIDENCE

The best factual evidence speaks for itself, whether it is automatically recorded data from the engine room or wheelhouse, photographs and samples of damaged cargo, or a clear, contemporary, statement of facts by witnesses.

Documentary evidence

Traditionally, documentary evidence meant paper documents. But digital versions of these documents have become more prevalent. These typically include:

- ship's certificates
- official logbook
- deck logbooks
- engine logbooks
- rough or scrap notes
- crew details
- movement (bell) books
- stability information
- maintenance records – planned and unplanned
- service technician reports
- cargo documentation
- oil and environmental record books
- safety equipment inspection records
- safety training records, including emergency drills
- incident reports
- surveyor reports
- witness statements
- individual's notebooks – remember that any notebooks which are related to work are not considered private documents
- equipment manufacturers' instructions, manuals and service bulletins.

Electronic evidence

This concerns data from electronic or digital recording devices and systems, such as:

- voyage data recorder (VDR)
- digital photographs and videos
- electronic chart display and information system (ECDIS) saved data and screenshots
- details of any vessel traffic services (VTS) involvement
- automatic identification system (AIS) data to show position of vessel and any other nearby vessels
- any available closed-circuit television (CCTV) footage of the incident from cameras on board the vessel or requests to receive footage from the port's or nearby facility's CCTV system
- engine room alarm and event recorder
- bridge alarm and event recorders
- ship–shore data exchange systems
- shore long-range identification and tracking (LRIT)

- social media posts
- personal messages from WhatsApp and other messenger apps.

Physical evidence

It is important to collect any relevant damaged material as it may be needed for further examination. It is even more important to retain this evidence if a failed piece of equipment led to a casualty.

Examples of physical evidence include:

- damaged parts and equipment
- damaged tools
- debris
- cargo samples (liquid or bulk)
- fuel and lubricating oil samples.

VISUAL EVIDENCE

People rightly say that 'a picture is worth a thousand words'. Most mobile phones, tablets and computers have digital cameras that can take reasonably high-quality photographs and videos. It is also common for a vessel to have a digital video camera on board. These devices are very useful for collecting visual evidence of an incident and the consequences of that incident.

But it is important to make exactly clear what the image or recording shows. Its context and scale must be made apparent. For example, a photograph of a hole in steel plating is of little value as evidence if there is nothing to indicate the location of the hole within the structure, the orientation of the structure, the size of the hole and when the image was recorded.

The following points should be remembered to ensure photographs and video footage have the maximum value as evidence.

- **Act quickly**: take the photographs and videos as soon as possible after an incident, before the scene is altered or things moved.
- **Set the resolution as high as possible**: photographs and videos should be clear and detailed when viewed at full size on a monitor. Low-resolution, out-of-focus or poorly lit images and recordings have less value. High resolution photos of damaged items and close-ups of failure points can help expert analysis on the nature of failure, such as identifying material fatigue or defective welding.
- **Time stamp it**: ensure the correct date, time and time zone appear on the image or video.
- **Add a description**: a note within the shot provides context and can help describe what is being shown. The note should be signed and dated by the person taking the photograph or video and include simple details such as the position of the camera (for example: 'Hold no.3, looking forward, starboard side, frame no. x').
- **Scale it**: where the size of the subject matter is relevant (for example, an area of damage) the image should include something to indicate scale. If accuracy

is important, use a ruler or tape measure. Remember, a tool, a hand or foot or even a whole person in the shot can provide a useful comparison of size.

- **Save it**: Keep photographic and video records safe and secure. Transfer them onto a computer or flash drive as soon as possible to prevent accidental deletion.
- **Provide context:** where appropriate, include some background images, such as of the ship, the berth or the port.
- **Be sensitive:** take particular care if the images are sensitive, for example following a death or serious injury. Carefully control distribution of the images as, quite clearly, they might cause distress and offence. Transfer sensitive images and files onto a single, secure drive before deleting the originals from the camera or device.

Visual evidence does not always need to be hi-tech; sometimes a pen and paper can provide excellent evidence. Hand-drawn sketches of the incident location can prove helpful, especially when they are well-annotated with dimensions and distances.

WITNESS STATEMENTS

Statements from witnesses should be taken as soon as possible after the event. There are good reasons for this.

- **Memories fade:** the ability to accurately recollect what happened fades with time.
- **People corroborate**: a witness's versions of events can change after they have had the opportunity to discuss it with others. There can be a tendency to amend their version to match others; either subconsciously or through coercion.
- **More legal value:** contemporaneous evidence carries more weight in a court of law. For example, a court may hold a statement made just after the incident in higher regard than a statement made several weeks later.

When taking statements from witnesses, remind them that facts are required and not opinions. Opinion evidence can be difficult to deal with because so much will depend on the personality of the witness and their interest in the incident.

INCIDENT REPORT FORMS

A very important item of documentary evidence is the onboard incident or accident report, which is usually completed by the vessel's master or safety officer.

It must contain factual information. Avoid adding any opinion, but if it must be included then it should be clearly identified as such. Reports should be completed and submitted as soon as possible following the incident as they not only act as valuable contemporaneous evidence, they can dictate how the situation is subsequently managed.

An example of this is when the shore-based vessel manager or the P&I club receives a scant, inaccurate or illegible onboard incident report form. This can lead to an underestimation of the seriousness of the incident and a subsequent failure to investigate or follow up properly.

When completing incident report forms, keep the following in mind:

- make sure they are sufficiently detailed and completed as fully as possible
- make sure they are legible and easy to understand
- avoid poor use of language that might lead to misinterpretation
- do not use incident report forms for political gain or trying to force a point – stick to the facts and the issue in hand.

Incident reports must be reviewed by shore management upon receipt and any discrepancies addressed immediately. It is difficult to get clarification on information that was written several months earlier, particularly if the crew member who wrote it is no longer on board.

LEGAL PRIVILEGE

Sometimes reports and documents carry legal privilege, which means they do not have to be disclosed to third parties.

No report from a ship will carry legal privilege unless the dominant purpose of writing the report is for use in legal proceedings. For example, a report **cannot** be privileged if it is required by:

- the safety management system
- under a charterparty
- as part of an insurance claim
- at the direction of a competent authority.

The best way of asserting legal privilege over witness evidence is by making a formal, written statement to a lawyer. Even then, other reports on the same incident that are required, for example, under the safety management system, will not be privileged.

If a detailed report on an incident is required when a lawyer is not available, the report should be confined to facts as much as possible and it should begin with the following words:

> **'Confidential report prepared only for the company's legal advisors for the purpose of obtaining legal, professional advice on pending, anticipated or threatened proceedings.'**

However, use these words with care. They should not be put on any report required by the safety management system, by regulation or requested by a competent authority as they would serve no purpose and may attract unnecessary suspicion.

PRESERVING EVIDENCE

Good quality evidence is valuable so treat it with great care. It is important to protect evidence from becoming devalued through:

- being tampered with or falsified
- becoming lost
- being concealed or disposed of
- becoming degraded or damaged.

Where possible and if safe to do so, preserve the scene and evidence as soon as possible. Bear in mind that in the event of a very serious incident, port state officials and local police may be on board and exercise control of the scene.

Samples and items of physical evidence can take many different forms. But in all cases, they must be treated with care and properly documented. If possible, store the samples in bags (or suitable bottles for liquids) which are then sealed and labelled before storing in a safe and secure location.

Items of physical evidence that are prone to degradation should be suitably protected. A typical example is failed metal components – they must be stored in a dry environment as any exposure to moisture might degrade them so that any subsequent laboratory analysis or testing will not be accurate.

Never attempt to falsify or alter evidence. Deliberately falsified or altered records are easily identifiable. There are many well-established forensic methods by which investigators can date and verify written, photographic and physical evidence as well as identify any subsequent alterations.

Just one falsified or altered item of evidence will cast doubt on all other evidence. The act of falsifying or altering evidence may also be a criminal act with potentially serious consequences for the individuals involved.

Recording evidence

It is good practice to maintain a log of the evidence, recording what was collected and any relevant identification or seal numbers. To ensure the locations of the items of evidence are properly tracked, a system of chain of custody should be established. As each party takes responsibility for the evidence – such as an agent, surveyor or courier – it should be recorded and signed for. When sending evidence to another party, use the safest and most secure method possible and not just ordinary post. Copy original documents before sending.

Disposing of evidence

A claim could arise several years after an incident, depending on time bars which vary by country, or it may take years to settle finally. Evidence might need to be retained for the full duration of this period.

Therefore, always err on the side of caution and do not destroy or dispose of anything that might be relevant. If in doubt, preserve the evidence until proper advice can be obtained on whether it needs to be kept. Make a record of when destroying or disposing of evidence, including details of which party instructed its destruction. Save any correspondence related to the disposal of the evidence.

Chapter 2

Evidence required for most incidents

GENERAL EVIDENCE

Every incident that requires investigation will involve the collection of **general evidence** and **specific evidence**.

This section covers the general evidence that is required in most investigations. Chapters 3 to 8 include the additional, incident-specific evidence that will be required following common shipboard incidents involving people, cargo and the ship and its equipment.

Most general evidence will be readily available in the official documents and certificates on board the vessel or found in the ship's safety management system.

General information on the vessel can also be found in online databases, such as:

- Equasis
- Lloyd's Intelligence
- IHS Markit Sea-web.

General evidence serves several purposes, including:

- it puts the incident into context: it helps provide an accurate picture of the vessel and its trade, such as its ownership, management and manning, as well what the vessel was doing at the time and in what environment
- it makes the specific evidence more complete: it can provide answers to questions that might later arise – for example, a crew list might shed light on how many people were available to do a certain task, or the general arrangement plan could tell an investigator more about the onboard location of the incident
- it gives an insight into how well record-keeping is carried out on the ship: if the general evidence is complete, up-to-date and accurate, it will reflect well on the crew and the ship operator in any subsequent investigation.

Evidence checklist for most incidents

In the event of almost any incident onboard or potentially caused by a ship, mariners should record details and make copies of the following.

GENERAL – CHECKLIST OF EVIDENCE REQUIRED FOR MOST INCIDENTS	
Vessel particulars	
Vessel name	
International Maritime Organization (IMO) number and / or official number	
Type of vessel (e.g. bulk carrier, container ship, product tanker)	
Year built	
Building yard	
Port of registry	
Flag state	
Classification society	
Length overall	
Summer draught	
Beam	
Gross tonnage	
Net tonnage	
Summer deadweight	
Ownership and management	
Registered owner	
Commercial operator	
Technical manager	
International Safety Management (ISM) Code managing company	
Crewing manager	
Capacity	
Details of holds, tanks or other cargo spaces as applicable	
Details of number and type of hatch covers if applicable	
Additional means of capacity measurement (e.g. TEU, vehicles, passengers and cabins)	
Machinery	
Details of main engine(s) model and type	
Details of auxiliary engine(s) model and type	
Navigation	
Type and details of VDR	
Vessel drawings	
General arrangement plan (layout which includes the distribution of all spaces and the position of the ship's equipment)	
Tank plan (the distribution of tanks and their capacities)	

Vessel certificates (details, issuing authority, date of last endorsement and date of expiry)	
Certificate of registry	
Load line certificate	
Minimum safe manning certificate	
Cargo ship safety certificate(s) or passenger ship safety certificate	
Stability booklet	
Tonnage certificate	
Certificate of classification (noting any conditions, recommendation or exemptions)	
Classification society survey status or quarterly status report	
ISM document of compliance	
ISM safety management certificate	
Vessel operational records	
Relevant extracts from the official logbook	
Deck logbook (fair and rough)	
Engine logbook (fair and rough)	
Records of daily hours of rest for the relevant period	
Details of persons on board	
Crew list (full name, rank, date of birth, nationality etc.)	
Passenger list	
List of supernumeraries and contractors	
Certificates of competency including endorsements	
Details of senior officers' seagoing experience (years at sea and years in rank)	
Details of senior officers' vessel-specific experience (years on this vessel and years with current company)	
Passport details	
Seaman's discharge book details	
Incident details	
Date and time of incident (UTC and local)	
Description of incident location	
Vessel speed, course and navigational status (e.g. underway, manoeuvring, in port)	
Ship's position	
Summary of incident with subsequent consequences and actions	
Details of wind and weather conditions at time of incident (include photographs and video evidence)	
Details of sea conditions at time of incident (include photographs and video evidence)	

Visibility and light conditions	
Air temperature	
Sea temperature	
Barometric pressure	
Persons involved in incident and witness accounts	
Full name	
Date of birth and age	
Rank, rating or position	
Name of employer	
Details of certificate of competency or appropriate professional licence (including grade, date of issue/expiry, issuing authority)	
Date joined	
Experience on ship	
Experience on similar ships	
Experience on other types of ship	
Experience in current rank	
Experience in other ranks	
Known medical issues and details of any medication	
Alcohol consumption in the previous 24 hours	
Ingestion of any non-prescribed drugs	
Records of drug and alcohol tests	
Documentary evidence	
Master's report	
Statement of facts	
Witness accounts	
Onboard incident report form	
Company incident investigation report	
Visual evidence	
Photographs, videos and/or sketches of the incident	
Photographs, videos and/or sketches of the results of incident (including physical damage and personal injury)	
Physical evidence	
Physical evidence or samples relating to incident	

Chapter 3

Evidence for incidents involving people

PEOPLE EVIDENCE

Although almost every incident will have human involvement, this section looks at incidents and claims that directly impact a person.

In most circumstances, this will concern an injury or illness to a person. But there are also other instances to consider, such as when rescuing persons in distress or finding stowaways on board.

Who is involved?

It is important to distinguish the person(s) affected or involved. They can usually be defined as one of the following categories.

- **Crew:** people who have 'signed on' in accordance with the ship's articles and are therefore under a crew contract.
- **Passengers:** people travelling under a valid passenger ticket.
- **Supernumeraries:** people who sail with the ship but not under a crew contract or a passenger ticket. Most supernumeraries fall into two main categories:
  - families of crew
  - people who are on board for occasional work purposes, such as riding gangs or personnel from the owner's offices.
- **Third parties:** people who do not travel with the ship but are somehow affected by it, such as surveyors, port agents, superintendents and stevedores.

Initial actions

The health and safety of people is paramount. Ship operators owe a duty of care to everyone on board their ship and to those people ashore who are directly affected by the ship. This duty extends to the provision of reasonable medical care irrespective of the cause of illness or injury until professional assistance can be obtained.

Suitably qualified ship's staff should always administer appropriate medical assistance to anyone who is injured or becomes ill on board.

When injury or illness occurs, the ship operator should be told as soon as possible so that all involved parties can be notified and allow the necessary arrangements to be made ashore.

If the injury or illness is serious, which includes any uncertainty, the master should obtain immediate medical advice before administering any drugs or procedures.

Try to answer all questions on the onboard incident report form, but it is acceptable to leave some parts blank if they really are not relevant to the circumstances of the incident. Where the ship's standard form covers both illness and injury, make it clear which is applicable.

Injured and ill people should be asked for as much information as possible including their medical history, any allergies, details of any prescribed medication, changes in their diet and any trips ashore. Colleagues, friends and family may be able to provide valuable background information.

Fatalities at sea

The action to be taken in the event of a fatality will depend on whether death resulted from an illness or an injury.

If it was from an illness which might be contagious, it will be necessary to take advice on the appropriate handling and storage of the body.

Keep the body in a suitable cool room on board until it can be taken ashore. A temperature of 4°C is recommended; any colder and there is a risk of frost damage to the internal organs, which will make it difficult to perform a proper post-mortem examination.

PERSONAL INJURY

In addition to the onboard incident report form required by the safety management system, the flag state or local authorities may also require the reporting of any accident and will often have their own type of report form.

Where practicable, these forms should be completed only in consultation with the ship operator and, if necessary, after taking appropriate professional advice.

It is common for a workplace accident to include an element of lack of care by a particular party, such as a supervisor or the injured person. For example, the injured person may not have been wearing the correct personal protective equipment (PPE). Under these circumstances take care not to apportion blame for the incident and especially do not say that the injured person was responsible.

The best approach is to keep the incident report form strictly to the facts. For the above example, accurately list and describe the clothing worn by the injured person without commenting on whether that was the correct PPE. If the full facts are provided, experts will be able to give a correct opinion.

If a passenger is injured, it will affect their enjoyment of the trip. If they are not cared for properly and kept fully informed, they might be encouraged to pursue a claim – whatever the cause and whoever may have been at fault.

Incidents involving third parties tend to occur when the ship is in port or at anchor. It is common for a ship's crew to be completely unaware of an accident involving

a third-party or they may be under the impression that it was only minor. If a crew member learns of an accident, they should immediately inform the master so it can be reported and properly investigated.

Substantial claims are commonly brought against ship operators for injuries that were not taken seriously at the time and are subsequently difficult to defend without contemporary evidence.

Evidence checklist for personal injury

The specific evidence to collect and report in the event of an injury, in addition to the general evidence checklist in Chapter 2, is listed below.

PEOPLE – PERSONAL INJURY EVIDENCE CHECKLIST	
Factual record of the accident	
Date and time of the event that led to injury	
Date and time of when first aware of the injury	
Date when company informed of injury	
Date when the injured person stopped work	
Date when the injured person resumed work	
Task or activity which was being performed (describe what the injured party was doing)	
Description of incident location	
Description of the local environmental conditions (lighting, safe access, slip and fall hazards, deck conditions etc.)	
Clothing worn by the injured person	
Details of any third parties involved	
Details of PPE that was used (include type, age, inspection and certification history)	
Details of supervising persons	
Medical treatment	
Details of all treatment and medication administered	
Details of any medical advice requested and received (including details of any radio medical advice and of all radio exchanges and any subsequent action taken)	
Hospital or clinic records	
Medical history	
Details of any pre-existing injury or underlying health issues	
Details of any known allergies	
Details of medication taken prior to the incident	

Documentary evidence	
Relevant procedures and permit-to-work requirements (what procedures were in place and were they followed)	
Record of safety meeting minutes (history of any similar incidents, non-compliances or previous complaints)	
Training records (was the injured party suitably trained for the task)	
Employment or service contracts	
Physical evidence	
Retained parts of any defective equipment and other relevant items	

PERSONAL ILLNESS

Most illnesses can be broadly categorised as:

- individual: personal to the individual, such as a heart condition
- environmental: brought on by something in the environment, such as tainted food or exposure to chemicals.

Shipboard illnesses can be very serious and, if contagious, there could be grave consequences, even affecting the safety of the ship. By the time an illness has come to the attention of the master, the patient may already have been suffering for some time.

Many crew members undergo a pre-employment medical examination (PEME) before joining. This should always be consulted if a crew member becomes ill, as it should detail any pre-existing condition and any medication the patient is taking.

Take particular care where a passenger or supernumerary is a child; treatment could depend on their age and be aware of any child vaccinations they have received.

Generally, illnesses amongst third parties such as stevedores and other visitors to the ship are less likely to be notified to the ship and will be taken care of ashore. However, serious incidents can still occur to third parties on board, for example poisoning from fumigation procedures, entry into enclosed spaces and handling of toxic materials. Such incidents will require the same investigation, evidence and reporting as incidents involving crew or passengers.

Evidence checklist for personal illness

In addition to the general evidence checklist in Chapter 2, the specific evidence to be collected and reported for an illness is as follows.

PEOPLE – PERSONAL ILLNESS EVIDENCE CHECKLIST	
Factual record of the accident	
Details of when and where the symptoms first appeared	
Description of observed symptoms	
Task/activity which was being performed (describe what they were doing when they fell ill)	
Date and time of when first aware of the illness	
Date when company informed of illness	
Date when the ill person stopped work	
Date when the ill person resumed work	
Details of anyone similarly affected	
Details of PPE that was in use (to include type, age, inspection and certification history)	
Details of accommodation and cabin (search the cabin for medicines and any anomalies which may be causative)	
Movements prior to illness (such as details of shore leave and who they may have been in contact with)	
Medical treatment	
Details of all treatment and medication administered	
Details of any medical advice requested and received (including details of any radio medical advice and of all radio exchanges and any subsequent action taken)	
Hospital or clinic records	
Medical history	
Details of any pre-existing injury or underlying health issues	
Details of medication taken prior to the incident	
Details of any known allergies	
Record of preventative medication (in certain parts of the world it is recommended to take preventative medication such as anti-malarial drugs – if the ship is, or has recently been, in such a region, details of whether the patient has been taking the necessary medication)	
Record of vaccination certificates (can also be helpful in ruling out certain causes of illness)	
Pre-employment medical examination certificates (these are more likely to be kept ashore, but if the crew member has a copy, it may be helpful when obtaining medical treatment)	
Documentary evidence	
Relevant procedures and permit-to-work requirements (what procedures were in place and were they followed)	

Record of safety meeting minutes (history of any similar incidents, non-compliances or previous complaints)	
Training records (was the ill person suitably trained for the task)	
Employment or service contracts	
Physical evidence	
Retained parts of any defective equipment and other relevant items	

DISCIPLINARY ACTION

The role of a master includes maintaining order on board and this may result in having to warn crew members or other people about their conduct. This may range from a minor misdemeanour to serious misconduct that endangers the vessel, those on board or the environment.

Most ship operators will have formal disciplinary procedures in place. These generally follow flag state requirements.

What starts as an apparently minor matter can sometimes escalate and, therefore, however informal the first warning may be, it must be properly and accurately recorded.

Evidence checklist for a disciplinary incident

The specific evidence to collect and report for a disciplinary incident, in addition to the general evidence checklist in Chapter 2, is listed below.

PEOPLE – DISCIPLINARY INCIDENT EVIDENCE CHECKLIST	
Date and time of alleged violation	
Date and time of when the master became aware of the alleged violation	
Date of reporting to company	
Crew or employment contract of the person subject to disciplinary action	
Details of any prior warning(s) given to the person subject to disciplinary action	
Details of any persons attending the disciplinary hearing	
Description of the nature of the violation that led to disciplinary action	
Supporting evidence depending on the nature of the offence (such as witness statements from those who were present at time of the violation)	

INDUSTRIAL ACTION

Labour disputes can arise between workers and their employers. If they cannot be resolved, any resulting industrial action may affect ship operations.

Although uncommon, there is the possibility that a master may face some form of labour dispute on board. These disputes normally relate to terms of employment,

the employment of different nationalities under different terms, conditions on board, allocation of duties and disciplinary issues.

Industrial action ashore can also affect the vessel. This is most likely to involve strike action by stevedores, but there are other shore workers who can cause vessel operations to be delayed if they are engaged in some form of dispute – even where the vessel is not directly involved.

It is important to keep an accurate record of any incidents of industrial action as it could result in commercial disputes with charterers or claims made by cargo interests.

Evidence checklist in the event of industrial action

The specific evidence to collect and report in the event of industrial action, in addition to the general evidence checklist in Chapter 2, is listed below.

PEOPLE – INDUSTRIAL ACTION EVIDENCE CHECKLIST	
Crew disputes	
Outline of the dispute	
Date and time industrial action started	
Date and time industrial action ended	
Details of personnel involved in taking industrial action	
Details of any verbal exchanges regarding the dispute and any action taken	
Record of communications relating to the dispute (ensure dates are clearly shown)	
Record of payment of wages	
Records of all work carried out on board	
Details of all crew contracts	
Shore disputes	
Outline of the dispute	
Date and time industrial action affected vessel operations	
Date and time industrial action ended	
Details of parties involved in taking industrial action	
Record of any advice received in relation to the industrial action which may affect ship operations (details of the individuals who provided the advice, with dates and times)	
Advice received from agents and P&I club correspondents	
Record of communications relating to the dispute (ensure dates are clearly shown)	
Details of mitigating action taken to minimise any potential cargo claims	
Official port notices	
Independent verification of the dispute (such as local press reports)	

STOWAWAYS

A stowaway is someone who tries to sail with a vessel without the master's permission, generally by hiding on board. Stowaways often show ingenuity and nowhere can be discounted as a possible hiding space.

Some stowaways may come aboard with the cargo, quite often in containers. They may even be helped by local shore staff such as stevedores.

Disembarkation and repatriation can be very challenging. Attitudes of port states are hardening towards the handling of stowaways, and as such the costs of dealing with a stowaway can be surprisingly high.

Having stowaways on board may be seen as evidence of a breach in the ship's security arrangements and that the ship is not in compliance with the International Ship and Port Facility (ISPS) Code. This may well lead to further difficulties in disembarking stowaways.

Although the ship is likely to be responsible for arranging the eventual removal of stowaways, if it can be clearly demonstrated that they boarded with the cargo it may be possible to recover costs from the charterer. Therefore, it is important to have as much evidence as possible to help demonstrate:

- how the stowaways got on board
- that the ship made reasonable efforts to prevent stowaways boarding
- that the ship made reasonable efforts to search for any stowaways who succeeded in hiding on board.

The master should try to interview the stowaways individually to obtain as much information as possible in respect of the stowaway's alleged identification. Ideally, use an appropriate stowaway questionnaire such as that provided by North.

Be aware, that many stowaways will deliberately provide false details in order to hamper repatriation.

Except in an emergency, do not depart from the planned voyage to seek disembarkation of a stowaway unless advice has been sought from the ship operators.

Keep contact between stowaways and crew members to a minimum. Stowaways should not be put to work.

Evidence checklist in the event of finding stowaways

The specific evidence to collect and report in the event of stowaways being found, in addition to the general evidence checklist in Chapter 2, is as follows.

PEOPLE – STOWAWAYS EVIDENCE CHECKLIST	
Details of all preventative measures taken	
Watch keeping details	
Deck patrol arrangements	
Gangway watch arrangements	
Restrictions in place to prevent access on to the vessel (gangway, shell doors, ramps, ladders and ships' side)	
Restrictions in place to prevent access and movement within the vessel (accommodation, holds, stores and machinery spaces)	
Lighting arrangements and status	
Shore security arrangements	
Company procedures on prevention of stowaways	
Cargo checking arrangements (specific to cargo type: containers, bulk vehicles etc.)	
Details of stowaway searches carried out (include record of completed stowaway checklists)	
Details of stowaways found	
Number of stowaways found	
Date and time found	
Onboard location where found	
Personal details of each stowaway	
Full name	
Take a passport type photograph	
Place of birth	
Date of birth and age	
Nationality	
Religion	
Gender	
Languages spoken	
Height	
Weight	
Complexion	
Hair	
Eyes	
Form of face	

List of marks or characteristics (e.g. birthmarks or tattoos)	
Home address	
Father's name and place of birth	
Mother's name and place of birth	
Parent's address	
Marital status	
Name of spouse	
Nationality of spouse	
Spouse's address	
Occupation	
Employer's name and address	
Date and time found	
Place of hiding	
Port of boarding	
Date and time of boarding	
Method of boarding	
Reasons for boarding	
Identity document (type, number, place of issue, date of issue and date of expiry)	
List of possessions (state whether these were on their person or found after a further search)	
Details of action taken after finding stowaways	
Company procedures on dealing with found stowaways	
Details of the efforts made to establish their identities	
Record of food, water, clothing and bedding provided to the stowaways	
Details of the state of health of stowaways	
Records of any medical treatment administered	
Record of where the stowaways were kept and the security arrangements in place	
Details of any additional security arrangements put in place (e.g. employment of shore security guards)	
Witness statements (including statements from those who discovered the stowaways and any further information offered by the stowaways)	
Record of communications relating to stowaways (including efforts to disembark and repatriate)	

PERSONS IN DISTRESS

For centuries, seafarers have considered it their duty to assist fellow mariners in peril on the high seas. The tradition of going to the aid of persons in distress at sea continues to this day. However, this tradition is now more than just a moral obligation, it is enshrined in international law.

Any ship may encounter people in distress, whether by chance or because the ship has been tasked by a search and rescue authority.

Distressed persons may come from a ship or a fishing vessel that has sunk but they may also be migrants or refugees who are attempting to cross the sea in small boats, often in an overcrowded or unseaworthy condition.

The situation will vary depending on the circumstances but once people are on board it is likely to be very similar to that for stowaways. Immigration authorities may be helpful and automatically make all necessary arrangements for disembarkation and possible repatriation, but this is not always the case.

A vessel proceeding to the assistance of persons in distress will incur additional expenses including those of fuel, wages and stores. Expenses will also be incurred in looking after the persons on board after they have been rescued.

The master should collect similar evidence as in the case of stowaways.

Evidence checklist in the event of aiding persons in distress

The specific evidence to collect and report in the event of rescuing people in distress, in addition to the general evidence checklist in Chapter 2, is listed below.

PEOPLE – PERSONS IN DISTRESS EVIDENCE CHECKLIST	
Date and time and ship's position of receiving any search and rescue calls	
Date and time and ship's position of rescue	
Description of events leading up to the rescue and the rescue itself	
Number of persons in distress	
Number of persons rescued	
Personal details of each person rescued	
Full name	
Passport type photograph taken	
Place of birth	
Date of birth and age	
Nationality	
Religion	
Gender	

Languages spoken	
Height	
Weight	
Complexion	
Hair	
Eyes	
Form of face	
List of marks or characteristics (e.g. birthmarks or tattoos)	
Home address	
Father's name and place of birth	
Mother's name and place of birth	
Parent's address	
Marital status	
Name of spouse	
Nationality of spouse	
Spouse's address	
Occupation	
Employer's name and address	
Identity document (type, number, place of issue, date of issue and date of expiry)	
List of possessions (state whether these were on their person or found after a further search)	
Details of action taken after embarkation	
Details of the efforts made to establish their identities	
Record of food, water, clothing and bedding provided	
Details of their state of health	
Records of any medical treatment administered	
Record of where the persons were kept and the security arrangements in place	
Details of any additional security arrangements put in place (e.g. employment of shore security guards)	
Record of communications relating to the incident (including efforts to disembark and repatriate)	

GEOGRAPHICAL DIVERSIONS TO SAVE LIFE

If the ship is authorised to divert for humanitarian reasons – for example, to rescue or land seriously injured people, those who are ill or persons in distress – all details of the diversion should be recorded. In such cases, the shipowner should be able to recover the net costs of the diversion from the P&I club.

Remember that if the ship has cargo on board, such a diversion may constitute a deviation from the contract of carriage. P&I club cover for potential cargo liabilities will be affected if the diversion is for any reason other than saving or attempting to save life or property at sea.

In such cases the shipowner may need to make special additional insurance arrangements. The shipowner should notify the P&I club immediately of an actual or intended deviation so that shipowner's liability (SoL) insurance may be arranged.

Evidence checklist in the event of a diversion

The specific evidence to collect and report in the event of a humanitarian or any other diversion, in addition to the general evidence checklist in Chapter 2, and the relevant specific evidence relating to the people involved, is listed below.

PEOPLE – DIVERSION EVIDENCE CHECKLIST	
Details of reason for diversion	
Record of communications (with ship operator and other parties in relation to the diversion, including notes of any telephone conversations)	
Record of position, date and time diversion commenced	
Record of distance travelled, and time taken to reach diversion destination	
Record of position, date and time diversion completed	
Record of distance travelled, and time taken to return to original voyage plan	
Details of any port and pilotage expenses incurred	
Record of oil and water quantities from point of diversion to regaining original voyage	
Details of fuel used during diversion	
Details of stores and provisions used during the diversion	
Details of seafarers' wages	
Details of all cargo owners	
Cargo manifest	
Bills of lading	

Chapter 4

Evidence for incidents involving cargo

DEFENDING CARGO CLAIMS

Claims against the carrier may arise following an allegation of damage to or loss of a cargo, most commonly:

- physical impact damage
- wetting damage through water ingress or condensation
- contamination with foreign matter or another product
- loss of cargo during passage
- shortage in quantity noted at out-turn.

When defending cargo claims, a carrier will often want to be able to produce evidence that their servants and employees took steps to ensure the seaworthy condition of the vessel and to show cargo was properly cared for during the voyage.

Seaworthiness

The Hague and Hague-Visby Rules, which are the principal international conventions relating to the carriage of goods by sea, require carriers to exercise due diligence to make ships seaworthy before they are put to sea.

Seaworthiness means that the ship, its crew and its equipment are fit to encounter and withstand the ordinary perils of the contemplated voyage.

The ship must also be suitable to receive and carry the intended cargo. This involves more than the integrity of a ship's hull and machinery – it must also be properly equipped and manned with a competent crew who are well-trained in all shipboard procedures.

In modern times, the concept of seaworthiness has been extended to cover matters such as the state of working charts and passage planning as well as ensuring the security of the ship's computer systems.

A ship may be unseaworthy even if the crew are unaware of a defect, provided an ordinary, careful owner would, hypothetically, have resolved that problem before sending the ship and its cargo to sea. In such circumstances, the carrier will only be able to defend a cargo claim if it can demonstrate that its servants and employees nonetheless took proper steps to ensure the vessel was in a suitable condition to perform the voyage and carry the cargo.

Care of cargo

In addition to an obligation to make the ship seaworthy, the Hague and Hague-Visby Rules require the carrier to take proper care of cargo from the time it is entrusted to them until it is delivered to a receiver.

Those on board must adopt a proper system for the safe carriage of carriage of cargo. They must then apply that system carefully. If a cargo is lost or damaged at the time of delivery, carriers may have to explain how the loss or damage occurred.

Utmost dispatch

While not an aspect of the care of cargo, carriers must also perform voyages as described in a contract of carriage.

Under the Hague and Hague-Visby Rules, carriers are obliged to carry a cargo directly to its destination unless there is an agreement to the contrary. The route of a voyage is crucial. Any unjustifiable deviation from an agreed, direct or customary route will be a breach of the contract of carriage and may prejudice a ship owner's P&I insurance cover.

The duration of a voyage may also be crucial as any unnecessary delay will be treated in the same way as a deviation from the contractual voyage.

CONTRACTUAL RESPONSIBILITY

There are likely to be at least two types of contract involved in any shipment of cargo. Firstly, there is the contract of carriage evidenced by a bill of lading or similar transport document. Secondly, there may also be a charterparty between the shipowner and a time charterer.

Bill of lading

Documents that evidence the quantity and condition of cargo carried on a ship are essential – and the bill of lading (or a similar transport documents such as a waybill or delivery order) is the most important of these.

The Hague and Hague-Visby Rules provide that the bill of lading must record the quantity of cargo and its apparent order and condition at the time it is entrusted to the carrier. Under most bills of lading, the carrier is likely to be the shipowner.

The quantity of cargo is to be provided by the shipper, but it is the master's sole responsibility to use their skill and expertise to determine and describe the apparent order and condition of cargo at the time it is received by the carrier. Carriers may also verify the quantity of cargo and its identifying marks at the time it comes into their custody and care.

The master should not state anything in the bill of lading that they reasonably believe to be inaccurate – the consequences can be extremely costly for the carrier.

If the bill of lading contains inaccurate information, the master may insert a remark to that effect or, if there is a problem with the apparent good order and condition of the cargo, should insert an appropriate clause before signing. The master owes the shipper and receiver a duty of care when clausing a bill of lading to ensure any adverse statement about the condition of the goods is accurate.

The master may also be entitled in some circumstances to refuse to issue an inaccurate bill of lading.

It is therefore essential that all information on the face of a bill of lading is checked carefully. A master should ensure proper arrangements are made for this and should seek clarification from the ship operator if there is any doubt.

If the shipper or charterer insists that a bill of lading is issued that does not accurately reflect the quantity or condition of the cargo or the date it was loaded, it is essential the master obtains clear instruction and advice from the ship operator before issuing the documents.

Once a bill of lading has been issued, this contract of carriage will be between the holder of the bill and the carrier.

Charterparty

A 'cargo responsibility clause' within the charterparty will show whether the shipowner or the charterer is responsible for loading, stowing and discharging cargo.

In the absence of such a clause, the shipowner is responsible for cargo operations. This is important because the chosen party will usually bear ultimate responsibility for any cargo claims arising during the course of loading and discharge.

Even where the charterer, or its agents, bear responsibility for cargo operations, if the master or crew intervene to take control of those operations, this may transfer contractual responsibility back to the shipowner.

There may be more than one charterparty in existence and, under many forms of bills of lading, the terms from one of the charterparties in a chain may be incorporated into the bill of lading contract. In some cases, a carrier may need to demonstrate it complied with obligations relating to the care of cargo arising under both the bill of lading and a charterparty.

If the master is uncertain of who has responsibility for cargo operations, they should contact the ship operator for instructions and guidance.

INCIDENTS INVOLVING DRY CARGO

Dry cargoes can be very broadly categorised as follows.

Break-bulk cargoes

These are usually carried on general cargo ships and bulk carriers, typically consisting of several types of different commodities, often in the same hold and

less commonly on deck. Examples include steel products, bagged cargo and machinery or equipment.

Typical claims concern impact damage to the cargoes, often through shifting during the sea passage and primarily caused by poor standards of stowage and securing at the load port.

Steel cargoes are water sensitive as well as being vulnerable to mechanical damage. Water ingress through non-weathertight hatch covers, leaking ballast tank lids or overflowing bilge wells can result in costly wet-damage claims.

IMSBC Code bulk cargoes

These cargoes are usually carried in the holds of bulk carriers. Their carriage must be in strict accordance with the IMO International Maritime Solid Bulk Cargoes (IMSBC) Code, which categorises these cargoes into three groups:

- Group A: liable to liquefy
- Group B: liable to possess a chemical hazard (e.g. a propensity to self-heat)
- Group C: not liable to liquefy or possess a chemical hazard.

Commonly carried cargoes include ores (typically iron and nickel ore), mineral concentrates, fertilizers and seed cakes such as soya bean meal.

The nature of damage claims is often dependent on the nature and characteristics of the cargo. For example, water ingress can trigger the self-heating process of seed cakes. Shortage claims are common, many of which are 'paper shortages' due to errors in quantity measurement from either poorly calibrated weighbridges or inaccuracies in draught surveys.

Bulk grain cargoes

Typical cargoes include wheat, corn (maize) and soya beans. These are also carried on bulk carriers and their carriage must be in accordance with the IMO Grain Code.

Damage claims commonly concern the deterioration of the cargo on passage, which usually results in mould growth. This may be caused by improper ventilation of the holds, non-weathertight hatch covers, or the inherent instability (vice) of the cargo itself. As with IMSBC Code bulk cargoes, shortage claims at out-turn arise regularly at some ports.

Evidence checklist for incidents involving dry cargo

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving dry cargo should include relevant parts of the following evidence checklist.

CARGO – DRY CARGO INCIDENT EVIDENCE CHECKLIST	
Vessel's documents	
Copy of the relevant charterparty or charterparties (including addenda and fixture arrangements)	
Record of voyage instructions from the ship operator	
Record of instructions issued by the charterer or shipper in respect of the cargo or the voyage	
List of previous cargoes carried (including bills of lading, shipper's declarations and cargo manifest)	
Details of ship operator's procedures and ship's standing orders relating to the cargo to be carried	
Details of ship operator's procedures and ship's standing orders relating to loading, securing and discharging of cargo	
Copy of the vessel's cargo securing manual	
Copy of the vessel's grain stability booklet (if carrying grain cargoes)	
Details of cargo hold preparation and cleaning (including cleaning chemicals used)	
Document of compliance for the carriage of dangerous goods (if carrying Group B cargo)	
Details of any maintenance carried out in the cargo holds (including paint coatings used)	
Inspection, testing and maintenance records of cargo cranes, cargo gear and securing equipment	
Inspection, testing and maintenance records of hatch covers	
Inspection, testing and maintenance records of the cargo hold bilge system and high-level alarms	
Inspection, testing and maintenance records of the hold ventilation system	
Inspection, testing and maintenance records of reefer control systems	
Calibration checks and certificates of sensors, monitoring equipment and alarms	
Arrival at load port	
Load port information	
Details of the terminal, berth and the facilities in use	
Details of any relevant port regulations or restrictions in place	
Port agent's instruction and advices	
Size and draught restrictions in place	
Date and time of tendering notice of readiness	
Date and time of arrival	
Stability and stress calculations	
Preloading	
Record of any ship–terminal information exchange	
Shipper's cargo declaration and supporting documents (e.g. transportable moisture limit and moisture content certificates for IMSBC Code Group A cargoes)	

Laboratory certificates and any applicable material data safety sheets (MSDS) for the cargo	
Condition of cargo prior to loading (inspect stockpiles ashore if possible)	
Record of sampling of cargo prior to loading	
Pre-stowage plan and loading sequence	
Details on loading equipment used (both ship and shore)	
Details of any shore labour involved and who appointed them	
Details of any dunnage and packaging used	
Record of isolation procedures for fuel, ballast or other cargo	
Survey reports on hold condition or cleanliness	
Initial draught survey by crew and attending surveyors	
Record of the ship's constant over the last five voyages	
Notes of any pre-loading meetings between master, the representatives of the charterer or shipper, and stevedores	
Details of any fumigation requirements (type, quantity and by who)	
During loading	
Dates and times of cargo operations	
Record of stoppages (including details of reasons for any stoppages)	
Record of any problems encountered during loading operations	
Cargo record book	
Details of any meetings where the master raised concerns or objected to a particular method of stowage	
Record of any exchanges with charterer, shipper, terminal or supercargo on any deviation from pre-agreed quantities, stowage plan, loading sequence or securing arrangements.	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Damage reports issued by third parties	
Details of cargo samples taken (include details on its custody)	
Records of cargo temperatures	
Record of hold atmosphere measurements	
Details of lashings used or other cargo securing arrangements (type, number, positions, safe working load (SWL) etc.)	
Record of visitors (record of surveyors and terminal, port, local and national authorities that attended on board the ship, ideally with business cards)	
Record of ballasting and deballasting operations	
Completion of loading	
Details of trimming	
Final stowage plan	
Stability and stress calculations	
Compliance certificates issued by terminal, port, local or national authorities	

Mate's receipt(s)	
Bill(s) of lading	
Cargo manifest	
Cargo quality certificates	
Cargo quantity certificates	
Statement of facts	
Time sheets	
Daily and final tally reports	
Details of any hatch cover sealing	
Final draught survey by crew and attending surveyors	
Sea voyage	
Voyage plan (berth-to-berth)	
Details of routeing advice from ship operator and charterer	
Contemporaneous evidence of any heavy weather experienced	
Details of any steps to minimise or avoid adverse weather conditions	
Record of transfers of bunkers, slops and cargo	
Record of soundings (ballast, bunkers, freshwater, bilges and slops)	
Record of ballasting and deballasting operations	
Hold bilge pumping records (quantity and pH)	
Hold ventilation records	
Ambient air and seawater temperatures	
Record of any action taken to re-secure or re-stow or transfer cargo	
Records of cargo temperatures	
Records of hold atmosphere measurements	
Arrival at discharge port	
Load port information	
Details of the terminal, berth and the facilities in use	
Details of any relevant port regulations or restrictions in place	
Port agent's instruction and advices	
Size and draught restrictions in place	
Date and time of arrival	
Date and time of tendering notice of readiness	
Stability and stress calculations	
Permission to discharge from terminal, port, local and national authorities	
Prior to discharge	
Discharge plan and sequence	
Record of any ship–terminal information exchange	
Notes of any pre-discharge meetings between master, the representatives of the charterer or shipper, and stevedores	

Details on discharging equipment used both ship and shore	
Details of any shore labour involved and who appointed them	
Record of isolation procedures for fuel, ballast or other cargo	
Unsealing of hatch covers	
Initial draught survey by crew and attending surveyors	
Description of cargo condition upon opening hatch covers	
During discharge	
Dates and times of cargo operations	
Record of stoppages (including details of reasons for any stoppages)	
Record of any problems encountered during discharge operations	
Cargo record book	
Record of any exchanges with charterer, shipper, terminal, supercargo or others on any deviation from pre-agreed out-turn quantities, discharge sequence, un-securing (and re-securing, in case of multiple discharge ports)	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Damage reports issued by third parties	
Record of visitors (record of surveyors and terminal, port, local and national authorities that attended on board the ship, ideally with business cards)	
Survey reports from any attending surveyors	
Record of ballasting and deballasting operations	
Details of cargo samples taken include details on its custody	
Upon completion of discharge	
Final draught survey by crew and attending surveyors	
Cargo quantity certificates	
Empty hold certificates	
Time sheets	
Statement of facts	
Daily and final tally reports	
Action upon discovery of loss, shortage, damage or contamination of the cargo	
Record of communications with the ship operator in relation to the incident (including notes of any telephone conversations)	
Record of communications with the charterer or shipper in relation to the incident (including notes of any telephone conversations)	
Details of any loss, shortage, damage or contamination	
Details of any tests for presence of seawater contamination (e.g. silver nitrate test)	
Details of cargo samples taken (include details on its custody)	
Reports issued concerning the loss, shortage, damage or contamination (including transmission and receipt details)	
Record of any delay to the ship while the loss, shortage, damage or contaminated was investigated and addressed	

Reports from joint inspections (including the parties involved and their representatives)	
Retained parts of any defective equipment and other relevant items	
Record of discharge operations and storage arrangements of any damaged or contaminated cargo	
Details of any attempt to segregate damaged cargo from sound cargo	
Details of any cargo abandoned	
License to destroy or dispose from environmental and customs authorities	
Certificate of destruction or disposal	
Salvage invoice	
Calibration certificates for shore weighbridges or scales	

INCIDENTS INVOLVING LIQUID CARGO

This section considers liquid cargoes carried on tanker vessels, such as petroleum products, crude cargoes, chemical cargoes, vegetable oil cargoes or other liquid products.

Claims and disputes can arise on both the quality and the quantity of the cargo.

Shortage claims

This is the difference between the out-turn quantity and the amount stated on the bill of lading issued upon completion of loading.

Many shortage claims might be considered as 'paper shortages', caused by inaccurate quantity measurement; perhaps through difficulties faced in measuring tank levels or poorly calibrated equipment.

A claim might also arise due to unpumpable volumes remaining in the ship's cargo tanks after discharge operations.

Shipboard losses are usually limited to evaporation via the installed venting system, or possibly through leakage to non-cargo spaces. Although very rare, losses also include the deliberate retention of cargo for illicit purposes.

Contamination claims

Cargo quality claims generally arise from contamination of a product by a previous cargo or another grade being loaded at the same port. However, they can also arise from an inherent instability of the product being shipped due to poor processing or other deficiencies in product blending or preparation by the supply terminal.

Claims against the vessel usually follow allegations of inappropriate cleaning, improper carriage or other forms of contamination during the voyage.

Evidence checklist for incidents involving liquid cargo

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving liquid cargo should include relevant parts of the following evidence checklist.

CARGO – LIQUID CARGO INCIDENT EVIDENCE CHECKLIST	
Vessel's documents	
Copy of the relevant charterparty or charterparties (including addenda and fixture arrangements)	
Pooling agreement (if applicable)	
Tanker chartering questionnaire (for example, Intertanko form Q88)	
Record of voyage instructions from the ship operator	
Record of instructions issued by the charterer or shipper in respect of the cargo or the voyage	
List of previous cargoes carried (including bills of lading, shipper's quantity and quality certificates, cargo manifest and report of cargo remaining on board from previous discharge)	
Details of ship operator's procedures and ship's standing orders relating to the cargo to be carried	
Details of ship operator's procedures and ship's standing orders relating to loading and discharging cargo	
Details of cargo tank preparation (including chemicals used)	
Tank washing log (showing pressure, temperature, times, wash sector and angle)	
Line washing plan (including times and valve movements)	
Purging – gas freeing log (showing times, gas measurements and lower explosion limit as applicable)	
Details of any maintenance carried out in the cargo tanks (including coatings used)	
Details of cargo line pressure tests	
Calibration checks and certificates of sensors, monitoring equipment and alarms	
Cargo pumping and pipeline plan	
Details of maximum pumping rates (loading and discharge)	
Inspection, testing and maintenance records and certificates for cargo gear and machinery	
If ship-to-ship transfer operation	
Relevant cargo information from the discharging ship to the receiving ship	
Tanker chartering questionnaire for other ship	
Ship inspection questionnaire used in conjunction with the ship inspection report programme for other ship	
Arrival at load port	
Load port information	
Details of the terminal, berth and the facilities in use	
Details of any relevant port regulations or restrictions in place	
Port agent's instruction and advices	
Size and draught restrictions in place	
Date and time of arrival	
Date and time of tendering notice of readiness	
Stability and stress calculations	

Preloading	
Record of any ship–terminal information exchange	
Ship–shore checklists	
Notes of any pre-loading meetings between master, the representatives of the charterer or shipper, and terminal	
Shipper's cargo declaration and supporting documents	
Laboratory certificates and any applicable MSDS for the cargo	
Initial cargo tank ullage reports	
Initial sounding report for ballast, bunker and other tanks	
Cargo tank inspection report	
Certificate of slops	
Loading plan and loading sequence	
During loading	
Cargo record book	
Running time sheets indicating stoppages or deviation from pre-agreed and planned operation	
Hourly pumping log indicating cargo tank and ship status	
Record of any problems encountered during loading operations	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Damage reports issued by third parties	
Record of visitors (record of surveyors and terminal, port, local and national authorities that attended on board the ship, ideally with business cards)	
Record of ballasting and deballasting operations	
Completion of loading	
Final cargo tank ullage reports	
Final sounding report for ballast, bunker and other tanks	
Stability and stress calculations	
Mate's receipt(s)	
Bill(s) of lading	
Cargo manifest	
Cargo quality certificates	
Cargo quantity certificates	
Statement of facts	
Time sheets	
Details of any tank sealing	
Sealing record for overboard valves and connections	
Record of shore tank samples placed on board	
Record of cargo tank samples kept on board and landed	
Reports of any independent surveys that may have been carried out	

Sea voyage	
Voyage plan (berth-to-berth)	
Details of routeing advice from ship operator and charterer	
Contemporaneous evidence of any heavy weather experienced	
Details of any steps to minimise or avoid adverse weather conditions	
Cargo tank ullage record	
Record of transfers of bunkers, slops and cargo	
Record of soundings (ballast, bunkers, freshwater, bilges and slops)	
Record of ballasting and deballasting operations	
Ambient air and seawater temperatures	
Cargo temperature heating records	
Records of any venting that has been carried out	
Arrival at discharge port	
Load port information	
Details of the terminal, berth and the facilities in use	
Details of any relevant port regulations or restrictions in place	
Port agent's instruction and advices	
Size and draught restrictions in place	
Date and time of arrival	
Date and time of tendering notice of readiness	
Stability and stress calculations	
Permission to discharge from terminal, port, local and national authorities	
Prior to discharge	
Initial cargo tank ullage reports	
Initial sounding report for ballast, bunker and other tanks	
Discharge plan and sequence	
Ballast operation plan	
Cargo tank vapour management plan	
Crude oil washing plan, if applicable	
Record of any ship–terminal information exchange	
Notes of any pre-discharge meetings between master, the representatives of the charterer or shipper, and terminal	
Ship–shore checklist	
Record of receiver's or charterer's instructions on discharging	
Record of any load port samples landed ashore	
Sample analysis results, if made available	
Cargo tank unsealing certificate	
During discharge	
Cargo record book	
Dates and times of cargo operations	

Record of stoppages (including details of reasons for any stoppages)	
Record of any problems encountered during discharge operations.	
Hourly pumping log indicating cargo tank and ship status	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Damage reports issued by third parties	
Record of visitors (record of surveyors and terminal, port, local and national authorities that attended on board the ship, ideally with business cards)	
Record of ballasting and deballasting operations	
Details of cargo samples taken include details on its custody	
Upon completion of discharge	
Final cargo tank ullage reports	
Final sounding report for ballast, bunker and other tanks	
Cargo quantity certificates	
Certificate of slops	
Time sheets	
Statement of facts	
Sealing record for overboard valves and connections	
Record of any samples of cargo remaining on board (from cargo tank and pump sumps) that may have been obtained	
Survey reports from any attending surveyors	
Action upon discovery of loss, shortage or contamination of the cargo	
Record of communications with the ship operator in relation to the incident (including notes of any telephone conversations)	
Record of communications with the charterer or shipper in relation to the incident (including notes of any telephone conversations)	
Details of any loss, shortage, damage or contamination	
Reports issued concerning the loss, shortage, damage or contamination (including transmission and receipt details)	
Record of any delay to the ship while the loss, shortage, damage or contaminated was investigated and addressed	
Reports from joint inspections, including the parties involved and their representatives	
Retained parts of any defective equipment and other relevant items	
Record of discharge operations and storage arrangements of any damaged or contaminated cargo	
Details of any attempt to mitigate the damage to the cargo	
Details of any cargo abandoned	
License to destroy or dispose from environmental and customs authorities	
Certificate of destruction or disposal	
Salvage invoice	
Calibration certificates for shore quantity measuring devices	

INCIDENTS INVOLVING CONTAINERISED CARGO

Containers are used to carry a whole array of different cargoes.

Most containers shipped around the world are standard dry boxes that are carrying non-dangerous goods. However, a container ship will also likely carry containers packed with dangerous goods, as designated by the IMO International Maritime Dangerous Goods (IMDG) Code, and perishable or temperature-sensitive cargo in refrigerated ('reefer') containers.

Less common types of containerised transport units include tank containers or 'tanktainers' (for liquid cargoes) and flat-racks (typically for project or out-of-gauge cargoes).

The types of claims experienced can depend on the type of container and the nature of the cargo. But some risks apply to all, regardless of type. Typical cargo claims involving container ships and containerised cargo are described in the following sections.

Damage to container and its contents

The container can become physically damaged, which in turn leads to loss of its integral strength or its ability to protect its contents from the elements. Therefore, the cargo within the container can become damaged.

Container damage mostly occurs through rough handling, or as a consequence of a stow collapse on board the carrying vessel.

The contents of a container may also become physically damaged due to poor standards in packing or 'stuffing'. A poorly packed container can result in its cargo shifting when in heavy seas or being transferred.

Wet damage

Hold flooding typically follows from a failure to monitor bilge water levels or failing to act on bilge alarms. Ingress is usually through leaking ballast tank lids, leaking vents, or a backflow of the bilge system, which can then cause wet damage to the container contents.

Loss of container

Every year, a significant number of containers are lost overboard during a sea passage, usually in heavy weather.

It is, however, rare to attribute heavy weather as the sole cause of losing a container overboard, whether it is the loss of a single container from the top tier of an outboard row or the loss of several containers following the collapse of a stow. Investigations often find other apparent causal factors, usually related to a failure to comply with the vessel's cargo securing manual. This includes excessive stack weights, stowing heavy containers on top of light, an excessive metacentric height (GM) and inadequate lashing.

Other possible contributory factors can include the loosening of lashing bars – either insufficiently tightened on loading, subsequent slackening on passage or a failure to regularly check the lashings before and after each departure.

Another commonly observed problem is the mis-declaration of the weight of a container. The shipper is obliged to provide a container's verified gross mass (VGM) prior to loading, but there are still instances of containers being found to be heavier than that declared.

Refrigerated cargo – temperature abuse

Reefer containers require close monitoring throughout shipment. If the required temperature is not being maintained, prompt action is needed to prevent damage to the cargo.

Typical claims involving reefer containers usually result from one of the following:

- malfunction of the reefer unit
- failure to maintain a power supply
- incorrect setting of the temperature, airflow or controlled atmosphere.

A common finding is a failure to properly monitor the reefer container, which although not causing the defect, it resulted in no mitigating action being taken. Reefer containers are generally checked twice daily whether in the terminal or on board the carrying vessel, and the temperatures and atmosphere conditions recorded. There have been numerous instances where these records indicated the reefer was in good working order, which is then contradicted by the unit's data download, suggesting logs were falsified.

Dangerous goods

Dangerous goods must be carried, as a minimum, in strict accordance with the IMO IMDG Code, which, amongst other things, instructs on where a particular cargo can be stowed on board and the requirements on its segregation from other dangerous goods.

Improperly stowed and inadequately segregated containers carrying dangerous goods can – and have – resulted in devastating fires on board container ships.

A ship's master relies on the declaration by the shipper on the contents of each container. Investigations into these fires often find cargoes that were either mis-declared or undeclared as dangerous goods by the shipper.

Evidence checklist for incidents involving container cargo

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving containers should include relevant parts of the following evidence checklist.

CARGO – CONTAINER CARGO INCIDENT EVIDENCE CHECKLIST	
Vessel's documents	
Copy of the relevant charterparty or charterparties (including addenda and fixture arrangements)	
Consortium and slot charter arrangements and contracts	
Record of voyage instructions from the ship operator	
Record of instructions issued by the charterer or shipper in respect of the cargo or the voyage	
Details of ship operator's procedures and ship's standing orders relating to the cargo to be carried	
Details of ship operator's procedures and ship's standing orders relating loading, securing and discharging cargo	
Document of compliance with the special requirements for ships carrying dangerous goods	
Copy of the vessel's cargo securing manual (CSM)	
Details of any maintenance carried out in the cargo holds (including paint coatings used)	
Inspection, testing and maintenance records of hatch covers	
Inspection, testing and maintenance records of the cargo hold bilge system and high-level alarms	
Inspection, testing and maintenance records of cargo cranes, cargo gear and securing equipment	
Inspection, testing and maintenance records of reefer power and control systems	
Record of reefer spares carried on board	
Calibration checks and certificates of sensors, monitoring equipment and alarms	
Details of loading computer and its software (include details of type approval)	
Arrival at port	
Port information	
Details of the terminal, berth and the facilities in use	
Details of any relevant port regulations or restrictions in place	
Port agent's instruction and advices	
Size and draught restrictions in place	
Date and time of arrival	
Stability and stress calculations	
Pre-stow and loading plan (details of planned cargo stowage arrangements and schedule)	
Record of communications with the central planner	
Reefer manifest and full specials list	
Dangerous goods declarations and manifest	

Details of dangerous goods stowage and segregation arrangements in compliance with the requirements of the IMDG Code	
Details on loading equipment used (both ship and shore)	
Details of shore labour involved and who appointed them	
Notes of any pre-loading meetings between master, terminal planner, the representatives of the charterer or shipper, and stevedores	
Equipment interchange reports	
During cargo operations	
Dates and times of cargo operations	
Record of stoppages (including details of reasons for any stoppages)	
Record of any problems encountered during loading operations	
Cargo record book	
Details of any meetings where the master raised concerns or objected to a particular method of stowage	
Record of any exchanges with charterer, shipper, terminal or supercargo on any deviation from pre-agreed quantities, stowage plan, loading sequence or securing arrangements.	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Damage reports issued by third parties	
Details of lashings used or other cargo securing arrangements (type, number, positions, SWL etc.)	
Record of visitors (record of surveyors and terminal, port, local and national authorities that attended on board the ship, ideally with business cards)	
Record of ballasting and deballasting operations	
Completion of cargo operations	
Final stowage plan	
Record of draughts calculated and actual	
Stability and stress calculations for departure condition	
Stability and stress calculations for expected arrival at next port	
Mate's receipt(s) (if possible)	
Bill(s) of lading (if possible)	
Final cargo manifests	
Statement of facts	
Time sheets	
Any other documentation given prior to departure related to the cargo loaded	
Location of twist lock bins on deck prior to departure	
Record of hatch cover checks prior to departure	
Record of lashing checks completed prior to departure	

Sea voyage	
Voyage plan berth-to-berth	
Details of routeing advice from ship operator and charterer	
Contemporaneous evidence of any heavy weather experienced	
Details of any steps to minimise or avoid adverse weather conditions	
Record of fuel transfers of ballast, bunkers, slops and cargo	
Record of ballasting and deballasting operations	
Hold bilge pumping records	
Ambient air and seawater temperatures	
Record of soundings (ballast, bunkers, freshwater, bilges and slops)	
Record of any action taken to re-secure or re-stow cargo	
Reefer cargo temperature and atmosphere records (if applicable)	
Record of inspecting cargo securing arrangements (after departure and during voyage)	
Record of heavy weather checks	
Record of any repairs carried out on reefer containers	
Record of checks on project cargo on passage	
Action upon discovery of loss or damage of the cargo	
Record of communications with the ship operator in relation to the incident (including notes of any telephone conversations)	
Record of communications with the charterer or shipper in relation to the incident including notes of any telephone conversations	
Details of any loss or damage (including vessel's damage reports and, for reefers, temperature deviation reports)	
Reports issued concerning the loss, shortage, damage or contamination (including transmission and receipt details)	
Alarm list from loading program	
Reports from joint inspections, including the parties involved and their representatives	
Remote monitoring reefer temperature and atmosphere records (held on board or ashore, if applicable)	
Service technician reports for any repairs to reefer containers (if applicable)	
Retained parts of any defective equipment and other relevant items	
Record of any delay to the ship while the loss or damage was investigated and addressed	
Record of discharge operations and storage arrangements of any damaged containers	
Details of any attempt to segregate damaged cargo from sound cargo	
Details of any cargo abandoned	
License to destroy or dispose from environmental and customs authorities	
Certificate of destruction or disposal	
Salvage invoice	

Chapter 5

Evidence for pollution incidents caused by the vessel

TYPES OF POLLUTION INCIDENTS

Pollution is often taken to mean oil pollution of the sea. However, other forms of environmental pollution are as important, and these include noxious and harmful substances, sewage, garbage, air pollutants and ballast water.

Major pollution incidents are rare. But they have such a far-reaching effect on the environment and on international opinion that most countries now act severely against vessels that discharge even small quantities of pollutant within their jurisdiction.

The IMO Code for the Investigation of Marine Casualties and Incidents categorises 'severe pollution' as a 'very serious casualty' and all other pollution (regardless of quantity) as a 'serious casualty'. Any pollution incident is likely to be investigated by the flag and coastal states involved.

Under the principle of 'the polluter pays', the owner and insurer of a ship which causes pollution will almost certainly pay for the consequences, whether or not the master or crew were in any way to blame. Sometimes other parties may contribute, for example the other ship involved in a collision.

In pollution cases evidence may be needed to:

- assess the nature of the pollutant and the quantities discharged
- assist any required clean-up operation
- minimise fines or other penalties
- assess losses suffered by claimants and any other parties.

OIL POLLUTION

The source of oil pollution from vessels can be broadly considered to be:

- the loss of containment of an oil cargo on a tanker vessel
- the loss of containment of fuel oil bunkers (which can happen on all vessel types)
- the accidental or illegal discharge of operational oily waste, such as bilge water or sludge (all vessel types).

Oil pollution incidents mostly stem from routine operations, such as cargo and bunker operations, followed by those arising from marine casualties, such as collisions and groundings. Others include the illegal discharge of oil contaminated bilge water.

In all cases, the ship's oil record book is a particularly important piece of evidence which will be examined closely following any oil pollution incident. The requirements for completing and maintaining the oil record book are set out in Annex I of the IMO International Convention for the Prevention of Pollution from Ships (MARPOL).

It is very important that the oil record book is kept up to date and that the entries are correct and accurate. If it is even suspected that the oil record book contains inaccurate information, this can cause considerable problems for the ship operator as well as the crew. In some countries submitting inaccurate or falsified records carries similar serious penalties as pollution itself.

The oil record book should be updated upon completion of each relevant operation that requires recording.

Evidence checklist for oil pollution incidents caused by ship

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving oil pollution should include relevant parts of the evidence checklist below.

POLLUTION – OIL POLLUTION EVIDENCE CHECKLIST	
All oil pollution incidents	
Details of the operations being carried out at the time of the incident	
Date and time of the incident (UTC and local time)	
Date and time of first report from the vessel	
Details of grades and types of pollutant involved	
Quantities of pollutant spilled on deck	
Quantities of pollutant spilled overboard	
Tank quantities before and after spill	
Details of the extent of pollution (the area covered by the pollutant and whether it has affected other property or ships – take photographs and videos)	
Rate of spill, if continuing	
Details of the actions taken on board the ship to contain and clean up the pollutant	
Details of the actions taken on shore to contain and clean up the pollutant	
Details of personnel involved in operation (including responsible person-in-charge)	
Retained parts of any defective equipment and other relevant items	
Inventory of the cleaning materials, dispersants and absorbent material on board the ship	

Details of equipment and material used to contain and clean up the pollutant	
Details and quantity of dispersant or any other chemicals used	
Other reports of the pollution incident	
Record of communications	
Details of any other ships in the vicinity when the pollution occurred	
Cargo record book	
Records of the use of scupper plugs and drip trays	
Record of pollution drills and related exercises	
Details of any other pollution incident witnessed by shipboard staff (whether or not own ship is involved)	
International oil pollution prevention (IOPP) certificate	
Oil record book part I	
Oil record book part II (tanker oil cargo operations)	
Vessel response plan (VRP)	
Shipboard oil pollution emergency plan (SOPEP) or shipboard marine pollution emergency plan (SMPEP)	
Tank and pipeline diagrams including sounding pipe and ullage plug diagrams	
Details of relevant policy and procedures from the vessel's safety management system	
Details of any relevant onboard standing orders	
Record of oil spill drills and related exercises	
Records of external audits including any port state control and oil-major inspections	
Records of internal audits	
Additional for loss of containment of oil cargo	
Details of cargo tanks or spaces breached or point of failure	
Details of cargo tanks or spaces liable to be breached	
Supplier's (or terminal's) instructions on loading and agreed loading rate	
Vessel's cargo loading or transfer procedures and completed checklists	
Terminal's cargo loading or transfer procedures and completed checklists	
Record of ullages taken during cargo operations	
Record of cargo tank alarms activated during period	
Details of methods of activating emergency stops for cargo operations	
Inspection and maintenance history of the equipment used in cargo operations (e.g. pumps, valves and gauges)	
Testing, calibration and maintenance records of high-level alarms	

Additional for pollution incident during bunkering operations	
Details of where spill originated or point of failure	
Bunker supplier's instructions including agreed loading rate	
Vessel's bunkering procedures and completed checklist	
Supplier's bunkering procedures and checklist	
Record of soundings or ullages taken during bunkering operations	
Record of bunker tank alarms activated during period	
Agreed methods of effecting emergency stop for bunkering operations	
Inspection and maintenance history of the equipment used in bunkering operations (e.g. pumps, valves and gauges)	
Testing, calibration and maintenance records of high-level alarms	
Additional for discharge of bilge water with oil content greater than 15 ppm	
Details of oily water separator (OWS), oil content monitor (OCM) with manufacturers' manuals	
Maintenance, inspection and testing records for OWS and OCM	
Line diagrams for bilge, OWS and waste oil systems	
Policy and procedures relating to the bilge system, OWS operation and waste oil processing	
Bilge and waste oil transfer records in addition to the oil record book part I	
Details of any anti-tampering devices	
Record of seals used on system overboard valves	
Record of seals applied on flanges of OWS and bilge pump overboard pipework	
Record of bilge system high level alarms	
Record of communications between ship staff and shore relating to the OWS and bilge system	

NOXIOUS AND HARMFUL SUBSTANCE POLLUTION

Liquids other than oil carried in bulk may also be a potential source of pollution. The quantity of noxious substances carried at sea is only a fraction of the amount of oil transported each year. However, the environmental threat which some of these substances represent may be out of proportion to the amount carried and can also be extremely hazardous to people.

Control of pollution by such noxious liquids is covered in Annex II of MARPOL.

Harmful substances are dealt with under Annex III of MARPOL and are those substances identified as marine pollutants in IMDG Code. Such goods are frequently carried in freight containers (see Chapter 4 evidence checklist for container cargo incidents).

The packaging and the relevant paperwork must accurately describe the goods, including its UN number and the correct labelling according to the IMDG Code. If the goods pose a potential pollution risk, then an additional 'marine pollutant' label should also be attached.

Evidence checklist for noxious liquid substance pollution incidents caused by ship

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving noxious liquid substance pollution should include relevant parts of the evidence checklist below.

POLLUTION – NOXIOUS LIQUID SUBSTANCE POLLUTION EVIDENCE CHECKLIST	
Details of the operations being carried out at the time of the incident	
Date and time of the incident (UTC and local time)	
Date and time of first report from the vessel	
Details of types of pollutant involved	
Quantities of pollutant spilled on deck	
Quantities of pollutant spilled overboard	
Tank quantities before and after spill	
Details of the extent of pollution (the area covered by the pollutant and whether it has affected other property or ships – take photographs and videos)	
Rate of spill, if continuing	
Details of the actions taken on board the ship to contain and clean up the pollutant	
Details of the actions taken on shore to contain and clean up the pollutant	
Details of personnel involved in operation (including responsible person-in-charge)	
Retained parts of any defective equipment and other relevant items	
Inventory of the cleaning materials, dispersants and absorbent material on board the ship	
Details of equipment and material used to contain and clean up the pollutant	
Details and quantity of dispersant or any other chemicals used	
Other reports of the pollution incident	
Record of communications	
Details of any other ships in the vicinity when the pollution occurred	
Cargo record book	
Records of the use of scupper plugs and drip trays	
Record of pollution drills and related exercises	

Details of any other pollution incident witnessed by shipboard staff (whether or not own ship is involved)	
International pollution prevention certificate for the carriage of noxious liquid substances in bulk	
Cargo record book	
Procedures and arrangements manual	
VRP	
Shipboard marine pollution emergency plan	
Tank and pipeline diagrams (including sounding pipe and ullage plug diagrams)	
Details of relevant policy and procedures from the vessel's safety management system	
Details of any relevant onboard standing orders	
Record of oil spill drills and related exercises	
Records of external audits including any port state control and oil-major inspections	
Records of internal audits	
Details of cargo tanks or spaces breached or point of failure	
Details of cargo tanks or spaces liable to be breached	
Supplier's (or terminal's) instructions on loading and agreed loading rate	
Vessel's cargo loading or transfer procedures and completed checklists	
Terminal's cargo loading or transfer procedures and completed checklists	
Record of ullages taken during cargo operations	
Record of cargo tank alarms activated during period	
Details of methods of activating emergency stops for cargo operations	
Inspection and maintenance history of the equipment used in cargo operations (e.g. pumps, valves and gauges)	
Testing, calibration and maintenance records of high-level alarms	

SEWAGE POLLUTION

The requirements for sewage pollution prevention and control are set out in Annex IV of MARPOL. However, some countries and regions have additional restrictions on the discharge of treated sewage, untreated sewage and greywater (wash-water from showers and galley etc.)

Depending upon the approved arrangements on board the vessel, it is likely that sewage will be treated on board and the treated effluent discharged only in specific areas.

Claims related to sewage pollution generally concern the levy of financial penalties by local authorities or port state control officers. This usually follows when:

- receiving an observation or report of a visible discharge (e.g. solids) in the water
- there are concerns on the operation or efficacy of the sewage treatment plant, such as malfunctioning sludge return lifts
- there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of pollution by sewage.

Inspectors may also take samples from the sewage treatment plant and test the effluent against the performance criteria in MARPOL Annex IV (e.g. e-coli and coliform count).

Evidence checklist for sewage pollution incidents caused by ship

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving sewage pollution should include relevant parts of the evidence checklist below.

POLLUTION – SEWAGE POLLUTION EVIDENCE CHECKLIST	
Details of the operations being carried out at the time of the incident	
Date and time of the incident (UTC and local time)	
Date and time of first report from the vessel	
Details and quantities of types of pollutant involved treated sewage, untreated sewage or greywater	
Record of operation of the sewage treatment plant and times	
Retained parts of any defective equipment and other relevant items	
Other reports of the pollution incident	
Record of communications	
Details of any other ships in the vicinity when the pollution occurred	
International sewage pollution prevention certificate	
VRP	
Sewage system line diagrams	
Details of relevant policy and procedures from the vessel's safety management system	
Details of any relevant onboard standing orders	
Inspection and maintenance history of the sewage treatment plant and equipment	
Testing, calibration and maintenance records of sewage treatment plant alarms	
History of effluent sample testing results	
Details of sampling procedure and where samples were drawn	

GARBAGE POLLUTION

Pollution includes uncontrolled, unauthorised and indiscriminate dumping of garbage. Where, when and if garbage can be discharged are set out in detail in Annex V of MARPOL.

Claims related to garbage pollution generally concern the levy of financial penalties by local authorities.

The types of garbage subject to the discharge provisions of the revised MARPOL Annex V are:

- food waste comminuted or ground
- food waste not comminuted or ground
- cargo residues not contained in wash water
- cargo residues contained in wash water
- cleaning agents and additives contained in cargo hold wash water
- cleaning agents and additives in deck and external surfaces wash water
- carcasses of animals carried on board as cargo and which died during the voyage.

The discharge of all other garbage including plastics, synthetic ropes, fishing gear, plastic garbage bags, incinerator ashes, clinkers, cooking oil, floating dunnage, lining and packing materials, paper, rags, glass, metal, bottles, crockery and similar refuse is prohibited.

The vessel must have a garbage management plan which must be followed by the crew. The plan provides written procedures for minimising, collecting, storing, processing and disposing of garbage, including the use of the equipment on board.

Each discharge into the sea or to a reception facility, or a completed incineration, must be recorded in the garbage record book and signed for on the date of the discharge or incineration by the officer in charge.

Evidence checklist for garbage pollution incidents caused by ship

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving garbage pollution should include relevant parts of the evidence checklist below.

POLLUTION – GARBAGE POLLUTION EVIDENCE CHECKLIST	
Details of the operations being carried out at the time of the incident	
Date and time of the incident (UTC and local time)	
Date and time of first report from the vessel	
Details and quantities of types of garbage involved	
Record of operation of the garbage processing plant and incinerator with times	
Retained parts of any defective equipment and other relevant items	
Other reports of the pollution incident	

Record of communications	
Details of any other ships in the vicinity when the pollution occurred	
Garbage record book	
VRP	
Details of relevant policy and procedures from the vessel's safety management system	
Details of any relevant onboard standing orders	
Inspection and maintenance history of the garbage processing plant and incinerator	
Testing, calibration and maintenance records of incinerator alarms	
Details of any posted official warning placards (note position and take photographs)	
Receipts obtained from reception facilities	
Record of quantities and types of garbage retained on board and accumulated	

AIR POLLUTION

The release of pollutants into the atmosphere from ships is not limited to engine emissions. Annex VI of MARPOL also addresses pollution by ozone-depleting substances (e.g. refrigerants) and oil cargo generated volatile organic compounds (VOCs).

Emissions from internal combustion engines, typically the main engine(s) and auxiliary engines, are subject to limits on:

- nitrogen oxides (NOx) – engines must meet NOx performance criteria by design and/or use of abatement technology
- sulphur oxides (SOx) and particulate matter (PM) – engines must burn fuel with a maximum sulphur content of 0.5% by mass or use approved equivalents, such as an exhaust gas cleaning system (EGCS), also known as a scrubber.

MARPOL Annex VI also allows certain areas to be designated as emission control areas (ECA) where more strict limits on NOx or SOx emissions apply. For example, the sulphur ECAs currently require that the sulphur content of fuel used must not exceed 0.1% by mass.

Some countries and regions have introduced emissions rules that exceed those of MARPOL Annex VI, such as the European Union 'at-berth' regulation and China's domestic ECAs.

If a vessel is found to be in non-compliance with the sulphur cap regulation in force, it may be detained by port state control (PSC) and the owner subject to a financial penalty. In some countries, the ship's master and chief engineer could face criminal action.

Enforcement of the sulphur cap varies around the world, but since the reduction of the global cap to 0.5% on 1 January 2020, PSC authorities may pay close attention to this. Typically, the attending PSC officers will first review the ship's documents relating to its bunkers, such as the bunker delivery notes provided by the bunker supplier and the vessel's consumption records. If there are clear grounds to suspect non-compliance with Regulation 14 of Annex VI, samples may be drawn from the engine supply line and tested for sulphur content. Additionally, port and flag state authorities may require that the MARPOL delivered sample (drawn at time of bunkering) is tested.

A vessel fitted with an EGCS may be asked by PSC to provide records to prove that it is fully operational and was in full operation for the period under review.

Evidence checklist for air pollution incidents caused by ship

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving air pollution should include relevant parts of the evidence checklist below.

POLLUTION – AIR POLLUTION EVIDENCE CHECKLIST	
All air pollution incidents	
Details of the operations being carried out at the time of the incident	
Date and time of the incident (UTC and local time)	
Date and time of first report from the vessel	
Retained parts of any defective equipment and other relevant items	
Record of communications	
International air pollution prevention (IAPP) certificate	
VRP	
Details of relevant policy and procedures from the vessel's safety management system	
Details of any relevant onboard standing orders	
Nitrogen oxides (NOx) emissions	
Relevant extracts from the vessel's NOx technical file	
Details and purchase orders of NOx-affecting engine components	
Sulphur oxides (SOx) emissions	
Bunker delivery notes	
Details of any disputes with the bunker supplier	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Record of communications with supplier and time charterer	

Notifications to flag and port states	
Copies of submitted fuel oil non-availability reports	
Received advice from flag and port states	
Received advice from lawyers	
Laboratory analysis reports of fuel oil samples (for this and previous stems)	
Bunker sample details including seal numbers and location of sampling	
Oil record book part I	
Fuel transfer, usage or consumption records	
Details of in-use sampling and location of sampling point	
Records of any fuel sampling and testing carried by authorities	
Records of any fuel sampling and testing carried by any other third parties	
Fuel changeover procedures	
Record of fuel change-overs (e.g. when entering ECAs)	
Exhaust gas cleaning systems (scrubbers)	
Record of EGCS operation including times and ship's position	
EGCS operational data for the period under review	
Inspection, testing and maintenance history for the EGCS and its ancillary services	
Calibration checks and certificates of sensors, monitoring equipment and alarms	
Equipment type approval certificates	
Operation parameters and commissioning data	
Record of communications with port or flag state relating to operational issues or defects	
Volatile organic compounds	
VOC Management Plan	
Details of the vapour emission collection system	
Ozone-depleting substances	
List of equipment containing ozone depleting substances	
Details and estimated quantities of the released pollutant	
Details of the related or affected component, equipment or machinery	
Inspection, testing and maintenance history of the affected equipment	
Refrigerant quantities on board	
Ozone depleting substances record book	

BALLAST WATER POLLUTION

The IMO International Convention for the Control and Management of Ships' Ballast Water and Sediments – more commonly known as the Ballast Water Management (BWM) Convention – was adopted by IMO in 2004.

It requires all ships of 400 GT and above trading internationally to manage their ballast water and sediments to certain standards and maintain a ship-specific ballast water management plan.

There are two performance standards:

- D-1 which is based on ballast water exchange
- D-2 which addresses ballast water treatment systems and specifies the levels of viable organisms that are allowed to remain in the water after treatment.

Following the entry into force in 2017, vessels with keels laid on or after 18 September 2017 must comply with the D-2 standard. However, a period of transition currently exists which allows existing vessels using the D-1 method ballast water exchange as the method of compliance to continue this way. Existing vessels have up until the next International Oil Pollution Prevention Certificate renewal survey to comply. After this the vessel must meet the discharge standard D-2 by using a type-approved treatment plant.

The United States (US) is not a signatory to the BWM Convention and enforces its own regulations. The authority to regulate ballast water management is given to two separate federal government agencies – the Coast Guard (USCG) and the US Environmental Protection Agency (EPA).

Other countries and geographical regions have adopted additional requirements and restrictions on ballast water discharge. Some of these countries may not be signatories to the IMO BWM Convention whereas others may be signatories but have adopted more stringent measures above and beyond those of the Convention.

The IMO BWM Convention states in Article 8 that a vessel violating the convention could be subject to action by both the flag state and the country in which it took place. Penalties and sanctions are therefore determined by the relevant jurisdiction.

In the US, federal penalties are addressed in 33 CFR Part 151 (Subpart D) and states that a person who violates is liable for a civil penalty not to exceed $35,000. Each day of a continuing violation constitutes a separate violation. Also, any persons who knowingly violate the regulations are guilty of a class C felony.

A vessel could very well be subject to additional penalties imposed by the US state in which the violation occurred.

Evidence checklist for ballast water pollution incidents caused by ship

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving ballast water pollution should include relevant parts of the following evidence checklist.

POLLUTION – WATER POLLUTION EVIDENCE CHECKLIST	
Details of the operations being carried out at the time of the incident	
Date and time of the incident (UTC and local time)	
Date and time of first report from the vessel	
Details and quantities of ballast water involved	
Record of operation of the garbage processing plant and incinerator (with times)	
Retained parts of any defective equipment and other relevant items	
Other reports of the pollution incident	
Record of communications	
Details of any other ships in the vicinity when the pollution occurred	
Line diagram of ballast system	
International ballast water management certificate	
Any applicable extension or exemption certificates	
Ballast water record book	
Ballast water management plan	
VRP	
Details of relevant policy and procedures from the vessel's safety management system	
Details of any relevant onboard standing orders	
Type and details of the ballast water treatment system	
Performance criteria and type approvals for the ballast water treatment system	
Operational limits of the ballast water treatment system	
Ballast water treatment system manufacturer's manual	
Ballasting and deballasting pumping rates (design, warranted as per charterparty and actual)	
Inspection, testing and maintenance history of ballast system and the ballast water treatment system	
Testing, calibration and maintenance records of alarms	
Details of retained ballast water samples	
Details of ballast water samples taken by authorities (including location of sampling point)	

Chapter 6

Evidence for incidents caused by the vessel

SHIP-RELATED INCIDENTS

Ship-related incidents include collisions, groundings and damage to third-party property, such as quays, shore cranes and terminal equipment.

These claims often involve significant sums of money, involving not only the costs of repair or replacement of damaged third-party property but also the consequential losses incurred, typically loss of use.

This section considers the following types of incident:

- collision
- contact damage to third-party property (fixed and floating objects (FFO))
- non-contact damage to third-party property
- grounding, stranding or sinking
- salvage and general average.

Several different incidents may flow from one casualty. For example, after a collision there may be injuries (see Chapter 3), damaged cargo (Chapter 4) and pollution (Chapter 5).

The ship operator will need to collect evidence for insurance claims as well as evidence to bring and defend claims from third parties.

All major claims are likely to initiate a number of different internal and external investigations, very likely involving surveyors, lawyers, the ship's classification society, and port state and flag state administrations. There may even be criminal proceedings.

In most ship-related incidents, the most valuable piece of evidence is the saved data from the VDR. It is hugely important that the 'SAVE' function on the VDR is activated, following the correct procedures from the manufacturer. This must be done as soon as possible because many systems only store data for as little as 24 hours, after which it is automatically deleted from the recording equipment

Importantly, never attempt to falsify or amend records after the event. Records and logs should be kept in ink, and any essential alterations made in ink, signed and dated by the person making the alteration. Deletions must be made with a single strike-through line, leaving the writing underneath legible – never use correction fluid.

COLLISION

Collision generally means a physical contact or 'running down' of one ship by another; a ship being any floating structure that is capable of and intended for navigation. It does not matter whether the vessels are underway, not under command, at anchor or alongside.

In the event of a collision, a shipowner's liabilities that arise are generally covered between hull and machinery (H&M) underwriter and its P&I club.

It is extremely rare for one vessel to be wholly to blame for a collision. The liabilities for a collision between two ships will be subject to the apportionment of fault, which is based on the degree of fault. This is usually expressed in percentage. For example, it may be determined that one ship is 60% to blame and the other 40% to blame. This is commonly referred to as 60 / 40 in favour of the latter ship.

The IMO Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS) often provides the basis for this assessment, therefore each party will need to provide evidence in their favour to try and reduce their apportionment.

Some of the main contributory factors in collisions include:

- watchkeeping officers' lack of understanding of the COLREGS and their application
- failing to keep a proper lookout
- improper use of ECDIS, radar and automatic radar plotting aid (ARPA)
- not proceeding at a safe speed
- confusing radio communications between the vessels during a close-quarters situation.

Evidence checklist for collision damage

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving collisions should include relevant parts of the evidence checklist below. In the event of injuries or the release of a pollutant following a collision, refer also to the relevant checklists in this handbook.

VESSEL – COLLISION DAMAGE EVIDENCE CHECKLIST	
IMPORTANT: Press 'SAVE' on the VDR	
Data saved from the ship's VDR (recorded from ECDIS, radar systems, AIS, voice recordings etc.)	
Saved data from ECDIS	
Data from telegraph recorders	
Data from course recorders	
Data from depth recorders	

Navigation records	
Voyage plan (berth-to-berth)	
Deck logs (fair and rough)	
Details of bridge procedures that address:	
• bridge watchkeeping and bridge team management	
• navigation in coastal waters	
• passage planning	
• under-keel clearance (static and dynamic calculations)	
• when to call the master	
• duties of the master	
• duties of the watchkeeping officer	
Master's standing orders (signed by all deck officers)	
Master's night order book	
Record of hours of rest (master and watchkeepers)	
Navigational charts in use (do not alter after the event – positions that do not match, or any other marks must not be erased)	
Record of chart corrections	
Record of notice to mariners (temporary and preliminary)	
Movement (bell) book	
Records of radars in use and the range scales they were set	
ECDIS details (layers in use, alarm status and scale)	
ECDIS training records	
Details of position fixing system(s) in use and intervals between fixes	
Record of steering gear status (auto/manual mode and number of steering motors is use)	
Pilotage details (applicable if vessel under pilotage at time of incident)	
Details of pilots on board (names, experience, nationality)	
Details of master-pilot exchange	
Pilot briefing card	
Details of pilot's attendance (time embarked and disembarked and any other noteworthy observations on the pilot's performance and behaviour)	
Record of pilot's instructions	
Details of any communication or language difficulties between pilot and navigation officers	
Bridge team details	
Details of personnel on bridge immediately before incident and their duties	

Personnel records of the master and watchkeeping officer(s), including:	
• recruitment	
• training	
• certificates of competency (plus endorsements)	
• previous seagoing experience	
• appraisals	
• employment contracts	
Engine room records	
Engineers' notebooks	
Oil record book part I	
Data from engine recorders	
Incident details	
Record of true courses steered for four hours prior to collision	
Details of last position fix before sighting the other ship	
Details of first observation of other ship:	
• by what means (e.g. visual, radar, ARPA)	
• time	
• distance and bearing	
• lights and shapes observed	
• aspect	
• apparent course	
• apparent speed	
• position, course and speed of own ship at time of first observation	
• action taken by own ship at time of first observation	
Details of first visual sighting of other ship:	
• time	
• distance and bearing	
• lights and shapes observed	
• aspect	
• apparent course	
Record of subsequent observations:	
• time	
• distance and bearing	
• lights and shapes observed	

Details of steps taken to plot other ship (e.g. formal plot)	
Record of actions of own ship up to the time of the collision (e.g. times and engine movements)	
Observed or known actions of the other ship up to the time of the collision (e.g. times and engine movements)	
Record of sound signals made and heard (include times)	
Details of any communications between ships before collision (e.g. light signals or VHF communications)	
Details of any VTS involvement	
Record of time of collision (state accuracy of the clocks on the bridge and in the engine room verified along with accuracy of watches of witnesses and accuracy of automatic recorders, such as course recorders, telegraph loggers and data loggers)	
Position of collision (state how this position was obtained)	
Record of heading of own ship at time of collision (it is important that the course recorder is marked in ink to indicate the time when the ship collided, although care should be taken not to spoil the trace – if a course recorder is not available, the heading of the ship should be determined by some other method which also should be recorded)	
Details of speed and angle of blow (derive from witness' records of the ship's speed and heading at the moment of impact and the relative angle between the ships, supported by photographs or drawings)	
Details of which parts of each ship first came into contact	
Record of draught of own ship at time of collision	
Record of action taken after collision, including:	
• assistance offered and rendered by each vessel	
• description of movements of both ships after collision	
• details of communications after collision	
• details of other ships in vicinity when collision occurred	
• record of communications with other ships in vicinity	
• checks on watertight and structural integrity (e.g. soundings of double bottom tanks, voids and cofferdams)	
• post-incident stability calculations	
Collision with moored or anchored ships	
Details of whether the other ship was operating its main engine(s)	
Description of the moorings of all ships involved	
Details of whether own ship was dragging anchor (if so, how much chain was out and if additional anchor or chain was released or surged)	
Details of whether the other ship was dragging anchor	
Details of other ships dragging anchor in the vicinity at the time of the incident	

DAMAGE TO FFO

Damage to property other than a ship, such as a berth, pier, navigational aid, crane or gantry, is often referred to as damage to fixed and floating objects (FFO).

Damage caused by a ship to third-party property can often give rise to large claims which ship operators have great difficulty defending. If the ship is moving and the object is stationary, there is effectively a presumption of fault on the part of the ship.

Such claims fall into two major categories, physical damage and consequential losses (such as loss of use). The law of the place where the accident occurs invariably governs liability for damage to property.

If damage occurs when the ship is leaving a port, the master should resist any temptation to ignore the incident in the hope that the damage will be minimal and there were no witnesses. Ship operators should be notified as soon as possible so that enquiries may be made to ascertain the extent of the damage.

Occasions arise where a ship moors to a berth or property that has already suffered damage or is in poor condition. In such cases, this pre-existing damage should be recorded, ideally taking photographs and sketches, and immediately inform the berth operator or port authority of any observed deficiencies.

A failure to report and record any pre-existing damage can provide the port authority with the opportunity to blame the vessel for causing this damage or exaggerate a claim against the vessel for any new damage it caused.

Many damage incidents occur when a pilot is employed as part of the bridge team. But in the vast majority of places around the world, the presence of a pilot on the bridge does not relieve the master or officer in charge of the watch from their duties or obligations for the safety of the ship. The master – in consultation with the bridge team – should assess any instruction given by the pilot to make sure that if the pilot's instruction is carried out, the vessel will be safe.

Evidence checklist for damage to FFO

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving damage to FFO should include relevant parts of the evidence checklist below. In the event of injuries or the release of a pollutant following contact, refer also to the relevant checklists in this handbook.

VESSEL – DAMAGE TO FFO EVIDENCE CHECKLIST	
IMPORTANT: Press 'SAVE' on the VDR	
Data saved from the ship's VDR (recorded from ECDIS, radar systems, AIS, voice recordings etc.)	
Saved data from ECDIS	
Data from telegraph recorders	
Data from course recorders	

Data from depth recorders	
Navigation records	
Voyage plan (berth-to-berth)	
Deck logs (fair and rough)	
Details of bridge procedures that address:	
• bridge watchkeeping and bridge team management	
• navigation in coastal waters	
• passage planning	
• under-keel clearance (static and dynamic calculations)	
• when to call the master	
• duties of the master	
• duties of the watchkeeping officer	
Master's standing orders (signed by all deck officers)	
Master's night order book	
Record of hours of rest (master and watchkeepers)	
Navigational charts in use (do not alter after the event – positions that do not match, or any other marks must not be erased)	
Record of chart corrections	
Record of notice to mariners (temporary and preliminary)	
Movement (bell) book	
Records of radars in use and the range scales they were set	
ECDIS details (layers in use, alarm status and scale)	
ECDIS training records	
Details of position fixing system(s) in use and intervals between fixes	
Tidal data	
Arrival navigational information and guidance received (from agent, port authority etc.)	
Record of steering gear status (auto/manual mode and number of steering motors is use)	
Pilotage details (applicable if vessel under pilotage at time of incident)	
Details of pilots on board (names, experience, nationality)	
Details of master-pilot exchange	
Pilot briefing card	
Details of pilot's attendance (time embarked and disembarked and any other noteworthy observations on the pilot's performance and behaviour)	
Record of pilot's instructions	

Details of any communication or language difficulties between pilot and navigation officers	
Bridge team details	
Details of personnel on bridge immediately before incident and their duties	
Personnel records of the master and watchkeeping officer(s), including:	
• recruitment	
• training	
• certificates of competency (plus endorsements)	
• previous seagoing experience	
• appraisals	
• employment contracts	
Engine room records	
Engineers' notebooks	
Oil record book part I	
Data from engine recorders	
Incident details	
Date and time of the incident (UTC and local time)	
Date and time of first report from the vessel	
Full details of the object damaged, including:	
• approximate age of the damaged object or structure (is it old or new?)	
• condition of the damaged object or structure (does it look well used?)	
• whether it was well illuminated and marked	
• whether there were any signs of pre-existing damage or defects to the object (details on observed damages other than that caused by the ship)	
Description of the ship's manoeuvres and engine operation	
Details of any VTS involvement	
Description and status of the berth, including (provide photographic evidence and sketches):	
• berth and mooring arrangements (include the fender positions and location of moorings and leads)	
• condition of concrete apron, fenders and dolphins	
• arrangement and condition of other berths and fenders (for comparative purposes)	
• approaches to locks, condition of fendering for entry and within (if appropriate)	
• condition of locks and evidence of any previous damage	
• areas of berth particularly exposed to swell	

• other ships affected by adverse conditions	
• any lack of room to manoeuvre in port	
• inaccuracies in the information provided by the port or pilot	
Details of whether the berths were equipped with operational berthing speed indicators	
Details of whether other ships had encountered similar problems on same berth or in same port within last year	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Detailed records of all services supplied by third parties (including reports of services provided by third parties, verified by the master)	
Record of communications (together with any hand-written notes of oral, radio or telephone communications)	
Record of any strong currents in rivers, ice, and other hazards	
Details of tugs employed (names, number, type of propulsion, horsepower, bollard pull)	
Information from the port and pilotage authorities	
Record of radar surveillance data	
Record of AIS system data	
Audio tape of port working radio communications channel	
Details of latest survey information of port or channel	
Details of port authority instructions to pilots	
Pilots' report	
Report(s) of local inquiries into the incident	
Damage reports issued by third parties	
Best scale plan of area of incident	
Details of positions of adjacent moored and moving ships	
Record of ship movements in the area	
Details of previous incidents	
Details of available tugs	
Summary of pilotage arrangements in the port, including:	
• whether pilots are independent or employed	
• pilots' training and qualifications	
• workloads and rotas	
• local law on the liability of pilots and the port authority	
• pilotage contractual terms and conditions	

NON-CONTACT DAMAGE

Sometimes ships may cause damage without actual physical contact. The most usual scenario is wash damage, with one ship travelling along a river or canal, perhaps at excessive speed, where the wash causes ranging damage to a moored ship. In extreme cases moorings may break.

However, the reason why a vessel on a berth ranged may have been due to its mooring lines being slack at the time of the incident. A local surveyor can be appointed, and they will try and establish whether this was the case.

Another example of non-contact damage is where one ship hampers another ship in its manoeuvres, which results in the other ship grounding, colliding with a third ship or contacting some object.

In non-contact incidents, it is often the case that the passing ship was not aware it had caused any damage. It is also possible that the ship suffering damage did not obtain details of the passing ship but, by noting the time of the incident, it is often possible to identify the offending ship.

The master should take any written protest seriously and immediately advise the owner of the situation, giving details of the incident and any claim made against the ship, or contact the local P&I club correspondent as soon as possible.

Evidence checklist for non-contact damage

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving non-contact damage should include relevant parts of the evidence checklist below.

VESSEL – NON-CONTACT DAMAGE EVIDENCE CHECKLIST	
IMPORTANT: Press 'SAVE' on the VDR	
Data saved from the ship's VDR (recorded from ECDIS, radar systems, AIS, voice recordings etc.)	
Saved data from ECDIS	
Data from telegraph recorders	
Data from course recorders	
Data from depth recorders	
Navigation records	
Voyage plan (berth-to-berth)	
Deck logs (fair and rough)	
Details of bridge procedures that address:	
• bridge watchkeeping and bridge team management	
• navigation in coastal waters	
• passage planning	

• under-keel clearance (static and dynamic calculations)	
• when to call the master	
• duties of the master	
• duties of the watchkeeping officer	
Master's standing orders (signed by all deck officers)	
Master's night order book	
Record of hours of rest (master and watchkeepers)	
Navigational charts in use (do not alter after the event – positions that do not match, or any other marks must not be erased)	
Record of chart corrections	
Record of notice to mariners (temporary and preliminary)	
Movement (bell) book	
Records of radars in use and the range scales they were set	
ECDIS details (layers in use, alarm status and scale)	
ECDIS training records	
Details of position fixing system(s) in use and intervals between fixes	
Tidal data	
Arrival navigational information and guidance received (from agent, port authority etc.)	
Record of steering gear status (auto/manual mode and number of steering motors is use)	
Pilotage details (applicable if vessel under pilotage at time of incident)	
Details of pilots on board (names, experience, nationality)	
Details of master-pilot exchange	
Pilot briefing card	
Details of pilot's attendance (time embarked and disembarked and any other noteworthy observations on the pilot's performance and behaviour)	
Record of pilot's instructions	
Details of any communication or language difficulties between pilot and navigation officers	
Bridge team details	
Details of personnel on bridge immediately before incident and their duties	
Personnel records of the master and watchkeeping officer(s), including:	
• recruitment	
• training	
• certificates of competency (plus endorsements)	

• previous seagoing experience	
• appraisals	
• employment contracts	
Engine room records	
Engineers' notebooks	
Oil record book part I	
Data from engine recorders	
Incident details	
Date and time of the incident (UTC and local time)	
Date and time of first report from the vessel	
Details of any observed damage to the other ship or third-party property	
Details of port movements (VTS and AIS data)	
Details of all other ships manoeuvring in the vicinity	
Details of whether the other ship contributed to the incident (such as testing main engines, adjusting mooring ropes etc.)	
Details of the mooring arrangements of the other ship, including fenders (were they defective, slack or ineffective in any way?)	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Record of communications (together with any hand-written notes of oral, radio or telephone communications)	
Detailed records of all services supplied by third parties (including reports of services provided by third parties, verified by the master)	
Record of any strong currents in rivers, ice, and other hazards	
Details of tugs employed (names, number, type of propulsion, horsepower, bollard pull)	
Description of the ship's manoeuvres	

GROUNDING, STRANDING AND SINKING

Grounding, stranding and sinking incidents are covered here together as they are similar enough so far as collecting evidence is concerned.

The definitions of each incident type are:

- grounding – when a ship makes contact with the seabed
- stranding – bottom-contact which prevents a ship from moving: normally an involuntary act, but it also occurs when a ship is intentionally run ashore to avoid a greater peril
- sinking – sometimes called foundering, is when a ship loses all positive buoyancy.

The reasons why a vessel may run aground or become stranded are varied. It may be through an error in navigation (including failing to comply with the COLREGS), improper use of navigational aids (such as the vessel's ECDIS) or failure to observe the requirement to keep a minimum under-keel clearance. Also, the charts in use may show inaccurate depths or unmarked obstructions. This could be a failure of the local state to maintain channels or survey their waters, but it could also be a failure of the crew to correct their charts. Or it could be the result of a main engine failure, allowing the vessel to drift into danger.

There have been instances where the master made a deliberate decision to ground the vessel to prevent a more serious incident occurring, typically when there has been a loss of stability.

Evidence on the nature, cause and effect of grounding, stranding or sinking incidents will be needed for:

- insurance claims
- assessing wreck removal orders and environmental claims from the coastal state if the ship is a hazard to navigation or a pollution risk
- flag state and port state investigations.

Evidence checklist for grounding, stranding and sinking incidents

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving grounding, stranding and sinking incidents should include relevant parts of the evidence checklist below. In the event of a salvage operation, injuries, cargo damage or loss, or the release of a pollutant following the incident, refer also to the relevant checklists in this handbook.

VESSEL – GROUNDING, STRANDING AND SINKING EVIDENCE CHECKLIST	
IMPORTANT: Press 'SAVE' on the VDR	
Data saved from the ship's VDR (recorded from ECDIS, radar systems, AIS, voice recordings etc.)	
Saved data from ECDIS	
Data from telegraph recorders	
Data from course recorders	
Data from depth recorders	
Navigation records	
Voyage plan (berth-to-berth)	
Deck logs (fair and rough)	
Details of bridge procedures that address:	
• bridge watchkeeping and bridge team management	
• navigation in coastal waters	

• passage planning	
• under-keel clearance (static and dynamic calculations)	
• when to call the master	
• duties of the master	
• duties of the watchkeeping officer	
Master's standing orders (signed by all deck officers)	
Master's night order book	
Record of hours of rest (master and watchkeepers)	
Navigational charts in use (do not alter after the event – positions that do not match, or any other marks must not be erased)	
Record of chart corrections	
Record of notice to mariners (temporary and preliminary)	
Movement (bell) book	
Records of radars in use and the range scales they were set	
ECDIS details (layers in use, alarm status and scale)	
ECDIS training records	
Details of position fixing system(s) in use and intervals between fixes	
Tidal data	
Arrival navigational information and guidance received (from agent, port authority etc.)	
Record of steering gear status auto/manual mode and number of steering motors is use	
Pilotage details (applicable if vessel under pilotage at time of incident)	
Details of pilots on board (names, experience, nationality)	
Details of master-pilot exchange	
Pilot briefing card	
Details of pilot's attendance (time embarked and disembarked and any other noteworthy observations on the pilot's performance and behaviour)	
Record of pilot's instructions	
Details of any communication or language difficulties between pilot and navigation officers	
Bridge team details	
Details of personnel on bridge immediately before incident and their duties	
Personnel records of the master and watchkeeping officer(s), including:	
• recruitment	

• training	
• certificates of competency (plus endorsements)	
• previous seagoing experience	
• appraisals	
• employment contracts	
Engine room records	
Engineers' notebooks	
Oil record book part I	
Data from engine recorders	
Incident details	
Date and time of the incident (UTC and local time)	
Date and time of first report from the vessel	
Record of ship's position (by latitude and longitude and/or distance and direction from known landmark)	
Description of the ship's manoeuvres and engine operation	
Details of contacted surface or seabed (e.g. sand, sediment, rock, mud, coral)	
Record of soundings taken around the ship at regular intervals (measure water depths around the ship including forward, aft and several on each side, or as appropriate to the situation)	
Record of full set of draughts taken at regular intervals (include angle of list and whether vessel is hogging or sagging)	
Record of tidal data (including times and heights and tide information at the time of the grounding)	
Assessment on whether the ship is being driven further aground or moving while aground	
Details of the prospects of re-floating the ship unassisted	
Details on the operational status of the auxiliary and main engines	
Estimation on area of hull that is aground (with reference to frames and estimated distances from centreline or side, if possible)	
Assessment of damage to the ship (including any divers' reports on underwater condition)	
Details of damaged stability calculations	
Record of condition and contents of tanks at regular intervals (including details of all known tanks that are damaged, noting whether the flooding is from the sea or from other tanks)	
Record of communications (together with any hand-written notes of oral, radio or telephone communications)	

Detailed records of all services supplied by third parties (including reports of services provided by third parties, verified by the master)	
Details of all vessels offering or rendering assistance	
Coastal state involvement, including:	
• persons in attendance	
• vessels and aircraft used	
• orders given by authorities	
• assistance given by authorities	
Details and time records of all efforts to refloat	
Details of tugs employed (names, number, type of propulsion, horsepower, bollard pull)	
Details of lightering operations, including:	
• number of gangs used	
• the names of lightering vessels	
• the ship's draught on commencement and completion of lightering	
• the amount of cargo discharged	
• details and cause of cargo lost or damaged during transfer	

SALVAGE AND GENERAL AVERAGE

'Salvage' is voluntary assistance which helps to preserve life and property at risk at sea. A successful salvor is entitled to a reward, which is paid by the owner and insurer of the property preserved.

'General average' is a means of compensating parties with a common, or shared, interest in a maritime adventure. A general average incident may occur if property has to be sacrificed or expenditure incurred, to save the venture as a whole.

If general average is declared, then salvage payments should be treated as general average.

Many salvage operations are performed under contract, with Lloyd's Standard Form of Salvage Agreement – generally known as the Lloyd's Open Form (LOF) – being the most common. Other salvage operations are performed without any contract but, either way, the reward will generally be assessed by reference to the criteria set down in the International Convention on Salvage 1989.

Under early versions of salvage contracts, salvors were originally only entitled to compensation based on the 'no cure – no pay' principle, under which there was no reward if the salvage was not successful. This meant that prospective salvors were unlikely to attempt pollution-prevention operations when there was no prospect of receiving payment for salvaging the ship and cargo.

The situation led to the incorporation of the 'Special Compensation P&I Clause' (SCOPIC) in later versions of the Lloyd's Open Form, which when invoked provides a simplified framework for pollution-prevention compensation intended to promote a fast response to casualties. The clause also provides compensation to salvors when the salvage is likely to be unsuccessful to encourage them to take steps to control pollution.

The rights of the shipowner are looked after during such salvage operations by a 'special casualty representative' (SCR). When appointed, the SCR is responsible for collecting the majority of evidence required to address salvage claims but there is a lot the master and crew can do before the SCR arrives and while the salvage operation is underway.

It is very important that the master keeps an accurate record of all discussions and communications concerning a salvage contract. A master might agree to or sign a salvage contract but there are still cases of misunderstanding over salvage services and these will often turn on who said what to who. Common misunderstandings include:

- doubt over whether a contract has been agreed
- when a routine service turns into a salvage operation because of unexpected dangers from weather or machinery breakdown
- tugs and pilots presenting a 'receipt' which incorporates a salvage contract
- uncertainties about how 'standby' tugs are to be paid for.

After most salvage operations, the owner and insurer of the salved property will also engage specialist lawyers and surveyors to investigate the circumstances of the salvage operation and to assess the likely reward. These experts may also investigate the original cause of the problem but, with regard to the salvage, are only concerned by the dangers of the situation and the efforts made to avoid or minimise those dangers, including the mitigating actions taken by the crew prior to the salvor's attendance on site.

Evidence checklist for salvage acts

In addition to the general evidence checklist in Chapter 2, evidence for incidents involving salvage acts should include relevant parts of the following evidence checklist.

This should be used in conjunction with the checklist(s) relevant for the incident that led to the need for salvage.

VESSEL – SALVAGE EVIDENCE CHECKLIST	
Description of the condition of the ship from the beginning of the casualty until the time salvage services began	
Details of the mitigating actions by the master and crew	
Salvage contract agreed	
Date and time of invoking SCOPIC	
Details of all discussions and communications concerning the salvage	
Record of time salvage services began	
Detailed, chronological record of events taking place during a salvage operation including:	
• the condition of the ship and cargo	
• use of assisting ships, people and equipment including those on standby	
• persons coming on board the ship	
Details of any firefighting efforts (including all equipment used)	
Details of condition of the ship's main and auxiliary machinery	
Record of ship's position at taken at frequent intervals	
Details of loading plans, distribution of weights, draughts and stress calculations	
Cargo manifests (including dangerous goods manifest)	
Details of measures taken for the preservation of specific cargoes	
Details of all ships in the vicinity, whether assisting or not	
Casualty reports prepared by the master, salvage master and others	
Survey reports from any attending surveyors	
Record of fuels and stores consumed	
Record of labour used	
Details of tow arrangements, including:	
• tow lines and connections	
• record of ship's gear and tug's gear used	
• details of tugs employed (names, number, type of propulsion, horsepower, bollard pull)	
• towage voyage status (reports on how far travelled and distance to go)	
• speed and course	
• weather and sea conditions	

Chapter 7

Evidence for H&M incidents

H&M INSURANCE CLAIMS

Hull and machinery (H&M) insurance provides a shipowner with insurance cover for physical damage to the ship itself (hull) and the equipment on board (machinery), which includes the main and auxiliary engines, cargo handling gear and navigation equipment.

The insurance may also provide cover for the consequences of H&M damage, including stoppage, delay and impairment of the ships' efficiency, as well as cover for contributions to general average and salvage and a proportion of liability for collision damage to another ship.

Most H&M policies cover losses and damages to the vessel and its equipment caused by perils such as heavy seas, fire, shifting cargo and machinery failure. Damage can also occur as a consequence of a collision or grounding, for which additional evidence is required as set out in Chapter 6.

There is usually a clause in the policy that puts an obligation on the shipowner to exercise due diligence to make the vessel seaworthy. Cover may be affected if the loss or damage resulted from a want of due diligence; and the shipowner may require evidence to prove they have acted with due diligence.

In the event of an incident that is likely to lead to a H&M claim, the shipowner has a duty to take reasonable measures to avert or minimise any loss or damage for which the H&M underwriter would have been liable. The costs of these measures are known as 'sue and labour' charges and the shipowner will be reimbursed these costs by the insurer.

Although H&M damage would be expected to be covered under the shipowner's H&M policy, if the time-charterer is responsible for the damage, then they may be liable for the cost of repairs. Charterers can therefore be provided with 'damage to hull' (DTH) cover for these liabilities.

A common type of DTH claim concerns damage to the main engine and auxiliary engines caused by the bunkers provided by the charterer under the terms of the time-charterparty. If the fuel is found not to meet an agreed specification or not suitable for use by the ship's machinery, then the charterer can find itself liable for any attributed engine damage. Much of the evidence in such claims revolve around proving whether the fuel supplied by the charterer was indeed suitable for use.

Evidence checklist for H&M incidents

In addition to the general evidence checklist in Chapter 2, evidence for H&M incidents should include relevant parts of the following evidence checklist.

H&M EVIDENCE CHECKLIST	
All damage claims	
Details of the damaged equipment, machinery and part(s)	
Description of damage (with supporting photographs)	
Description of the events leading to the incident and action taken afterwards	
Previous on-hire and off-hire survey reports	
Last drydocking report	
Record of attendance of classification society and flag state surveyors	
Record of communications with classification society and flag state	
Conditions of class imposed as a result of the incident	
Details of any loss or damage to cargo caused by the incident and during any emergency response (e.g. during fire-fighting operations)	
Survey reports issued by attending surveyors and superintendents relating to both temporary and permanent repairs	
Master's and chief engineer's periodical reports to the superintendent	
Record of communications with H&M insurer and its appointed surveyor	
Details of recommendations on temporary repairs required	
Details of any temporary repairs carried out	
Details of any necessary diversion to a place of safety or port where temporary repairs can be carried out	
Repair specification sent for tender	
Repair method statements	
Received repair quotes	
Full itemised schedule of repair costs supported with purchase orders and invoices (include actual costs, disbursements, port costs, crew costs, overtime paid, spare parts used, currency exchange rates used, off-hire periods)	
Report of repair works carried out (e.g. service technician reports)	
Additional for damage to ship's hull	
Ship's plans, general arrangement and relevant line drawings (showing details of damage)	
Steel thickness and frame dimensions in way of damaged area	
Details of the condition of all tanks and spaces that have lost structural or watertight integrity	
Details of all equipment either directly damage or affected by the damage (particularly safety equipment, including pumps, sounding pipes, inert gas equipment, watertight doors and bulkheads)	
Alarm printouts	
Details of coating system (specification, date of application and record of repairs)	
Additional for damage to ship's machinery or equipment	
Photographs of the damaged equipment both in place and after disassembly	
Retained parts of the damaged equipment (including consumables such as filters, old seals and broken bolts)	

Planned maintenance system job history records relating to damaged equipment (planned and unplanned)	
Planned maintenance system job descriptions or work orders relating to the damaged equipment	
Manufacturer's recommendations on maintenance (including intervals)	
Testing history of safety shutdown systems and emergency stops	
Lubricating oil service history (including test results, dates of changing, post-incident analysis and corrective action)	
Any other records relating to the damaged equipment showing running hours, or evidence of previous inspections or surveys	
Cooling water treatment records	
Condition monitoring records (including vibration analysis)	
Alarm printouts	
Additional for damage to internal combustion engines	
Photographs of the damaged equipment both in place and after disassembly	
Retained parts of the damaged equipment (including consumables such as filters, old seals and broken bolts)	
Retained debris accumulated in system filters	
Part numbers and serial numbers of the damaged components	
Engineers daily workbook	
Planned maintenance system job history records relating to engine and its services (planned and unplanned work carried out on engine and ancillary systems such as lubricating oil, cooling and start air)	
Planned maintenance system job descriptions or work orders relating to the engine and its services	
Manufacturer's recommendations on maintenance (including intervals)	
Manufacturer's service bulletins issued (and whether they were followed)	
Testing history of safety shutdown systems and emergency stops	
Lubricating oil service history (including test results, dates of changing, post-incident analysis and corrective action)	
Lubricating oil treatment plant details and operational status (centrifugal separators, filters)	
Any other records relating to the damaged equipment showing running hours, or evidence of previous inspections or surveys	
Condition monitoring records (including vibration analysis)	
Alarm printouts	
Fuel system arrangements and line diagrams (from storage tanks to engine inlet and spill return)	
Fuel treatment plant details and operational status (centrifugal separators, filters)	
Fuel quality history (bunker delivery notes, laboratory test results, onboard testing results)	
Fuel storage history (storage temperature, consumption records and tank use)	
Fuel transfer, usage or consumption records	

Fire or explosion	
Details of discovery of fire (time and by who)	
Times of raising of alarm, activating shutdown systems, mustering, fire team entries, extinguishing etc.	
Description of the operations being carried out at time of alarm	
Details of extent of damage (including soot and smoke damage)	
Details of the source or origin of the fire (material, location etc.)	
Cargo manifests (including dangerous goods manifest)	
Details of any cargo damage	
Details of attempts made to contain the fire (which shutdown and isolating systems were activated)	
Details of attempts made to contain and extinguish the fire	
Fixed-firefighting systems employed (system type, time activated, effectiveness)	
Record of calculation of the ship's stability to determine which firefighting options were available	
Details of any combustible or flammable material on board (include type, quantity, location and if affected by the fire)	
Record of explosimeters readings, if available	
Record of whether there was a danger of explosion	
Record of whether tanks were gas free and or inerted	
Details of any firefighting tugs and other firefighting craft on scene and their involvement	
Record of guidance and instruction received from shore-based fire experts and fire services	
Stoppage or delays	
Record of fuel remaining on board at the beginning and end of the stoppage	
Details of any diversion caused by the incident	
Record of any towage, including:	
• tow lines and connections	
• record of ship's gear and tug's gear used	
• details of tugs employed (names, number, type of propulsion, horsepower, bollard pull)	
• towage voyage status (reports on how far travelled and distance to go)	
• speed and course	
• weather and sea conditions	
Statement of facts from port agents	
Details of all shore assistance attributable to damage	
Record of surveyors who have attended the ship with full details of the organisation they represent	
Details of additional time taken	
Details of additional fuel and consumables used	
Details of the extra labour and equipment used and a record of times when they were used	
Record of communications and copies of messages sent or received, particularly those directed to port agent, charterer or other third party	

Chapter 8

Evidence for commercial disputes

COMMERCIAL DISPUTES

Commercial disputes can arise in connection with the ownership and operation of a ship. These disputes can be particularly costly for a ship operator or a charterer and, in contrast to P&I and H&M incidents, it is their own money at stake.

There are many different types of commercial and contractual disputes, ranging from newbuilding warranty issues to disputes over a vessel's performance and consumption of bunkers. Many claims arise after the events in question have occurred and often the crew will not even be aware there is a problem, let alone be able to obtain or preserve contemporaneous evidence.

Fortunately, much of the relevant evidence needed to pursue a claim or defend a dispute is found in routine shipboard records, such as deck and engine logs, notes of protest, reports to the office and documents required by the vessel's safety management system.

If in any doubt, the master should consult the shipowner or operator so that shore staff can obtain guidance from the P&I club or legal costs (FD&D) insurer. It is always better to assume that a dispute will arise and therefore prepare by collecting the best evidence without delay.

NEWBUILDING WARRANTY DISPUTES

When a ship is built, it is usual for the builder to give a warranty of quality for the ship and its equipment and to accept responsibility for any defects that may arise during a certain period after delivery.

The builder will normally make good any 'guarantee defects' identified. Usually the warranty lasts 12 months from the date of delivery and there will be strict requirements and time limits for giving notice of defects to the builder. It is the shipowner's responsibility to deal with warranty claims and give notice to the builder, but ship's staff have an important role to play.

The crew must treat any problem with the ship or its equipment that arises within the first 12 months of its life as a potential warranty claim. It is important that the issue or defect is reported to the shore-based management team as soon as possible. The importance of prompt reporting increases as the first anniversary approaches.

The ship's master and chief engineer must also ensure that any defects are fully documented, and any evidence collected in connection to the claim is preserved.

Evidence checklist for newbuilding warranty disputes

The evidence required is dependent on the nature of the defect or problem. However, it is important that it is documented in as much detail as possible. In addition to the general evidence checklist in Chapter 2 and possibly the evidence listed for an H&M claim in Chapter 7, the evidence for a newbuilding dispute should include relevant parts of the checklist below.

COMMERCIAL – NEWBUILDING WARRANTY DISPUTE EVIDENCE CHECKLIST	
Description of the defect (with a chronology of its development)	
Details of any remedial steps taken on board	
Details of repairs carried out or parts replaced (with purchase orders and invoices)	
Retained parts of failed or damaged equipment that was replaced	
Details and records of pre-delivery tests and checks	
Details of the shipowner's newbuild team, including:	
• number of personnel	
• qualifications of attending personnel	
• record of attendance	
• record of inspections and acceptance criteria	
Record of instructions to the newbuild team from the shipowner	
Record of attendance of classification society and flag state surveyors	
Record of communications with classification society and flag state	
Record of communications with shipbuilder or their representatives	

PORT DELAY DISPUTES

Delays in port can result in time lost and incurring additional expenses, which invariably leads to disputes between the shipowner and the charterer over who is to pay for that time.

To solve these disputes, it is important to identify the reason for the delay and provide supporting evidence.

Delays in port generally fall into three categories, as described in the following sections.

Delays relating to the availability of the berth

The most common reason a berth will not be available is congestion. The causes of port congestion vary, from simply too many ships to extraordinary congestion as a result of a strike, go-slow or political unrest. Congestion always gives rise to disputes and evidence can be difficult to obtain after the event.

Delays relating to the accessibility of the berth

The reasons a ship might not be able to access a berth might include a temporary obstruction, such as lack of water, bad weather or a strike by pilots. It may also be because the ship or the berth has been mis-described in the charterparty, which is addressed later in the chapter.

Delays upon reaching berth

It is not uncommon for cargo operations to be interrupted upon reaching berth. Quite often this is due to cargo-related issues or performance of stevedores.

Evidence checklist for port delay disputes

In addition to the general evidence checklist in Chapter 2, evidence for port delay disputes should include relevant parts of the evidence checklist below.

COMMERCIAL – PORT DELAY DISPUTE EVIDENCE CHECKLIST	
Congestion and restricted accessibility	
Record of orders or directions given to ship by port authorities	
Record of movements by ships on and off the port's berths (include times and how these movements were observed)	
Date and time of tendering notice of readiness	
Details of ship line-up particulars from both agent and port authority	
Particulars if a ship has lost its turn to berth	
Details of any reasons given by port and agents for delays	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Record of communications with all parties in relation to the delays	
Record of charterer's instructions	
Details of any obstructions preventing access to the port or berth	
Details of any failure by third parties or the port authorities to provide services necessary to access the berth	
Details of any strikes affecting the port	
Slow cargo operations	
Record of stoppages (including details of reasons for any stoppages)	
Record of times of hatch closing	
Record of ballasting and deballasting operations	
Details of public holidays	
Statement of facts	
Time sheets	
Daily and final tally reports	
Details of crane, conveyor and cargo availability	
Details of who was carrying out the cargo operations	
Details of any strikes affecting cargo operations	
Photographs and/or video of stevedore performance	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Record of communications with all parties in relation to the delays	
Record of charterer's instructions	

PERFORMANCE WARRANTY DISPUTES

Almost all time charterparties contain a clause that states the speed a vessel is capable of in both the loaded and ballast condition and its corresponding fuel oil consumption. There will also usually be a statement of the ship's in-port consumption, both at idle and when working cargo.

This warranted speed and performance is usually qualified to apply only to 'good weather conditions', which are usually defined by reference to wind and sea state conditions and, sometimes, the effects of ocean currents.

Weather and sea state encountered during voyage

Charterers or sub-charterers often instruct a weather routeing company to monitor the vessel's performance on each sea leg. The company collects weather data from a wide variety of sources and provides route advice to the vessel. The master provides the weather routeing company with vessel status reports daily at noon, typically advising of distance steamed, fuel consumptions and observed weather conditions.

At the end of the voyage or charter, the weather routeing company will issue a report, assessing whether the vessel achieved the warranted speed and performance during the periods of 'good weather'. Based on this report, the charterer or sub-charterer may raise a claim for under-performance of the vessel, which usually comes hand-in-hand with a claim for over-consumption of fuel.

Defence of such claims requires accurate and comprehensive data to be collected by the vessel. Most importantly, the ship's officers should record the observed weather and sea state in the ship's log. A careful record should be kept of the currents encountered on the sea passage (both adverse and beneficial) as these can have considerable effect on a ship's observed performance. It is possible to determine the currents from:

- record of ground speed calculated by appropriate position fixing or Doppler log
- record of 'distance run' calculated from ship's revolution tables
- record of charts and directions included in the ship's passage plan.

However, it is often found that the weather and sea conditions recorded by the vessel differ from those collected by the weather routeing company. Disputes can therefore arise over which weather data should be preferred – that from the ship or that from the weather routeing company.

Although it is uncommon for a charterer to question the competency of officers to observe weather accurately, charterers will frequently make the point that it is difficult for anyone to distinguish with accuracy between a strong force 4 wind (which would usually constitute 'good weather' for the purposes of assessing a ship's performance) and a weak force 5 (which would not). This point is often made where the log entry is 'Beaufort force 4/5'.

The charterers might also ask how the weather and sea conditions were measured. For example, was the wind speed observed or taken from an anemometer reading? If the latter, where is the anemometer located? It is

generally accepted that there is a 15% difference between wind speeds at 5 m weather buoy height and winds at 30–40 m elevation on the vessel's bridge.

Similarly, what period of weather has been observed – is the log entry a snapshot of weather at the time taken or is it a perceived average over a four-hour or even twelve-hour period?

When presented with a claim based on the observations and calculations of a weather routeing company, the shipowner should scrutinise the issued report. Sometimes the methodology used by these companies to assess the speed and consumption of the ship is not endorsed by English law and may therefore be challenged.

Hull fouling

The accumulation of marine growth on a vessel's hull and propeller(s) can have a significant effect on speed and performance. The additional frictional resistance caused by fouling will impact efficiency, which can result in loss of time and increased fuel consumption.

Fouling occurs mostly when the vessel is stationary, particularly in tropical waters. This is because the anti-fouling coatings applied to the hull are only effective when the vessel is moving. Charterparties may include a clause that places a limit on the time a vessel can remain stationary when in tropical waters, requiring the charterer to arrange hull cleaning if this period is exceeded.

Hull coating systems, which consists of an anti-fouling topcoat, are generally designed to last for five years – typically the period between drydockings. If the coating system is found to be in poor condition, with little of the anti-fouling topcoat intact, charterers may allege this is the cause of any observed hull fouling.

Diversions

If the master decides to divert from the route advised by the weather routeing company, this may have implications and may need to be justified at some time in the future.

For example, the master may decide to divert if the suggested passage is through or near to areas of high risk of piracy. This in turn may result in a longer passage and additional fuel consumption. The resulting routeing report may conclude that the ship under-performed, and the charterer will then consider a claim against the owner. It is important that the master can justify their decision.

Under SOLAS and English law, the master has an overriding duty to ensure the safety of the ship, crew and cargo and are entitled to use their discretion to take such steps as necessary to ensure this duty is safeguarded. Whether or not the steps are reasonable is an objective test.

Also, the charterparty may contain express provisions such as a 'liberty to deviate' clause or 'clause paramount' (Article IV, Regulation 4 of the Hague-Visby Rules). See Chapter 3 for evidence checklist for diversions.

Evidence checklist for performance warranty disputes

In addition to the general evidence checklist in Chapter 2, evidence for performance warranty disputes should include relevant parts of the evidence checklist below.

COMMERCIAL – PERFORMANCE WARRANTY DISPUTE EVIDENCE CHECKLIST	
Navigation	
Record of weather and sea conditions at a four-hour period (including wind speed, sea state, current etc.)	
Record of ship's speed (through water and over ground)	
Record of distance run each day	
Details of factors affecting the performance, including:	
• slowing down in areas of high-density traffic (e.g. straits, traffic separation scheme, fishing grounds and coastal routes)	
• alterations in course for traffic avoidance	
• periods of slow steaming	
• stoppages	
Record of communications with the charterer (including instructions to slow steam or increase speed)	
Record of communications with the weather routeing company	
Engine	
Engine logs recording the following:	
• main engine load setting (or combinator setting)	
• main engine speed (RPM)	
• propeller RPM	
• propeller slip	
• bunkers remaining on board at noon (for all fuel types e.g. very-low sulphur, ultra-low sulphur)	
• daily fuel consumption for main engine(s) (for all fuel types)	
• daily fuel consumption for boiler (for all fuel types)	
• daily fuel consumption for auxiliary engines (for all fuel types)	
• daily fuel consumption for incinerator	
Record of fuel flow meter readings	
Record of fuel tank soundings	
Record of fuel change-overs (e.g. when entering ECAs)	
Details of periods of increased fuel consumption, including:	
• increased load from air conditioning plant	
• high electrical load	
• use of tank cleaning equipment	

• use of cargo gear	
• cargo heating	
• use of ballast water treatment system	
• use of incinerators	
Details of any engine or machinery defects or factors affecting performance	
Quarterly engine performance test records	
Operational status of EGCS, if installed	
Record of ballast water operations	
Oil record book part I	
Hull fouling	
Details of last hull cleaning (include diver's reports)	
Details and age of hull coating system	
Apparent condition of hull coating system (how much anti-fouling topcoat is intact)	
Record of periods of time the vessel at anchorage (check maximum allowable period in charterparty)	

PORT AND BERTH SAFETY DISPUTES

Charterparties often contain a warranty that a port or berth will be safe. This means that the charterer must nominate a port or berth which, at the time of nomination, a particular vessel can approach, use and depart from without the vessel and its crew being exposed to danger.

A port or berth will not be unsafe if:

- the danger is an abnormal occurrence, something that is not a normal characteristic of the port – for example sudden war, an unusual storm or another vessel stranded in a channel
- the danger can be avoided by ordinary good seamanship and navigation.

Whether a port or berth is unsafe will depend upon the facts of the individual case including:

- physical aspects of the ship
- location, layout and physical characteristics of the port or berth
- the systems in place at the port to assist safe navigation
- the systems in place at the port to keep the ship updated on the weather conditions.

It will not always be immediately apparent whether a shipowner can claim for breach of a safe port or berth warranty. Therefore, whenever damage occurs to a vessel on the approach to or departure from a port (such as river channel voyages) or while in port or at the berth, it is important to gather as much evidence as possible to assist the shipowner's position.

It is better to collect too much evidence rather than not enough.

Evidence checklist for port and berth safety disputes

In addition to the general evidence checklist in Chapter 2, evidence for port and berth safety disputes should include relevant parts of the evidence checklist below.

COMMERCIAL – PORT AND BERTH SAFETY DISPUTE EVIDENCE CHECKLIST	
General	
Record of communications with charterer and its agents regarding voyage orders and assurance of port safety	
Record of all other relevant communications	
Voyage plan (berth-to-berth)	
Port details	
Port information	
Advice from guide to port entry	
Port layout (showing breakwater(s) and berths)	
Record of communications and advice received from port agent or other sources	
Record of ship movements in the area	
Hydrographic data	
Navigational charts in use (do not alter after the event – positions that do not match, or any other marks must not be erased)	
Port maintenance (e.g. dredging programmes, positioning and monitoring of buoys or buoyed channels)	
Pilotage details	
Details of pilots on board (names, experience, nationality)	
Details of master-pilot exchange	
Pilot briefing card	
Details of pilot's attendance (time embarked and disembarked and any other noteworthy observations on the pilot's performance and behaviour)	
Record of pilot's instructions	
Details of any communication or language difficulties between pilot and navigation officers	
Moorings – on board	
Mooring arrangement plan (identifying station, rope material and size)	
Details of anti-chafe measures	
Mooring rope or wire maintenance and condition (inspection records, invoices, test certificates, repairs, when first used)	
Inventory of lines on board	
Details of mooring line storage arrangements	
Details of mooring winches and maintenance history	

Details of whether auto-tensioning winches were being used	
Record of mooring advice from pilot, berthing master and port authority	
Details of crew involved in mooring operations	
Details of damaged or parted line (where parted and how secured)	
Retained parts of failed or damaged equipment that was replaced	
Moorings – ashore	
Details of bollards and arrangement (including type and distance apart)	
Details of mooring line lengths and leads	
Details of mooring gangs	
Record of mooring arrangements approval by port authority and terminal operator	
Details of the port's mooring plan for prevailing conditions	
Weather services – on board	
Details of radio weather services monitored	
Details of weather reporting and forecast areas monitored	
Details of weather equipment such as facsimile, Navtex or VHF, including:	
• status	
• performance	
• stations used	
Radio log	
Record of weather forecasts received	
Record of communications on weather with port authority, agents, pilotage, authority and other vessels	
Weather services – ashore	
Port information booklet	
Details of port weather service	
Record of weather reports provided by local radio	
Record of any warnings provided to ships by port authority or agents	
Record of any specific advice on arrival about local weather characteristics	
Details of any storm signals monitored and observed	

BUNKER QUALITY DISPUTES

Significant disputes can arise amongst shipowners, charterers and bunker suppliers where off-specification fuel has been supplied, potentially leading to serious engine or mechanical problems. Removing this fuel can also be a time-consuming and costly exercise.

In the event of engine damage caused by fuel, the shipowner is likely to allege that the bunker supplier (or time charterer if obliged under the terms of the

charterparty) provided the vessel with harmful fuel. This is often countered by the supplier (or time charterer) with an allegation of poor standards of fuel treatment or management on board the vessel.

The shipowner must be able to produce evidence that not only proves the fuel was off-specification, but also that the fuel was properly managed on board and the treatment plant (centrifugal separators, filters etc.) was fully operational and set-up optimally.

Sampling and analysing fuel oil is one of the most important aspects of bunkering and fuel management. As well as giving valuable information to the vessel's engineers, it provides the most important piece of evidence in any bunker quality dispute.

When bunkering, the receiving vessel should always draw its own samples from the bunker manifold. The samples must be representative of the whole fuel stem and sufficient is collected to fill at least four sample bottles. Sample bottles should be clearly labelled, sealed and preserved. All samples should be treated with care if they are to provide the evidence bunker quality disputes require.

The shipowner should be able to verify the source of any samples and demonstrate how they were obtained to show that they fully represent the fuel oil delivered. The use of an automatic or manual continuous drip sampler is recommended.

It is common practice for both the receiving vessel and bunker supplier to collect samples, with a view to exchanging one bottle upon completion. Prior to commencing bunkering, each party should inspect the other's sampling arrangements and arrange to witness each other's sampling. The bunker supply contract will specify which sample will be binding in the event of a commercial dispute; usually this is the sample drawn by the supplier during bunkering.

The MARPOL delivered sample drawn during bunkering must only be used for verifying compliance with MARPOL Annex VI sulphur limits under the direction of the flag or port state (or their competent authority). It cannot be used for the purpose of settling a dispute on quality that has arisen under contract.

Certain circumstances can dictate the need for further sampling and analysis of fuel already on board the vessel, such as when checking the suitability of the fuel for consumption, verifying the efficiency of the onboard treatment plant or when requested by port state officials. Samples may need to be drawn direct from the vessel's bunker storage tanks or from the fuel supply system.

The samples obtained during bunkering or taken directly from the fuel system can be sent to a reputable laboratory to test against the parameters of ISO 8217 and any other relevant characteristics. Some contaminants are only likely to be identified by additional specialist tests which are not included in ISO 8217, namely gas chromatography–mass spectrometry (GC-MS).

Independent laboratory analysis results provide valuable guidance to the vessel's engineers on how to store, handle and burn the fuel as well as being important evidence in the event of a bunker-related dispute. Simple onboard tests can

provide a vital early alert of problems before using the fuel. Both onboard and laboratory testing play an important role and shipowners should use them to their best effect.

It is important that the shipowner or charterer acts quickly to notify its P&I club or FD&D provider. Many bunker suppliers incorporate very short time bars in their contracts, and it is vital that any protest is registered within the specified time frame. If the vessel's engines or boilers have been damaged, hull underwriters or the charterer's DTH underwriter should be notified.

Evidence checklist for bunker quality disputes

In addition to the general evidence checklist in Chapter 2, evidence for bunker quality disputes should include relevant parts of the evidence checklist below. In cases of engine damage, refer to the list of evidence for H&M incidents in Chapter 7.

COMMERCIAL – BUNKER QUALITY DISPUTE EVIDENCE CHECKLIST	
Fuel system information	
Fuel oil tank plan (tank capacities and line diagram from bunker station to storage tanks to settling tanks)	
Fuel oil treatment system line diagrams (from settling to service tanks)	
Fuel oil heating and pushing system line diagrams (from service tank to engine or boiler inlet plus spill returns)	
Debunkering arrangements	
Ship policy and procedures	
Safety management system (SMS) policy and procedures on bunkering operations	
SMS policy and procedures on fuel sampling and testing	
SMS policy and procedures on fuel segregation, storage and internal transfers	
SMS policy and procedures on fuel treatment (centrifugal separators and filtration)	
SMS policy and procedures on engine and boiler fuel supply	
Bunker tank cleaning history	
Planned maintenance system records for fuel treatment plant (e.g. centrifugal separators and filter maintenance history and work orders)	
Planned maintenance system records for fuel pushing system (e.g. pump, heater, viscotherm maintenance history and work orders)	
Details of procedures from engine manufacturer's manual on fuel specifications	
Manufacturer's service bulletins issued (and whether they were followed)	
Bunkering operation	
Location and times of bunkering	
Bunker loading plan	

Details of which tanks received the alleged substandard bunkers and in what order they were loaded	
Details of the fuel oil that was already on board prior to bunkering the alleged substandard fuel (quantity, grade and location)	
Record of personnel involved in bunkering	
Details of bunker supplier (company and details of supplying vessel or barge)	
Bunker requisition form	
Copy of the bunker supply contract	
Bunker specification provided prior to bunkering	
Completed bunker checklists	
Bunker delivery notes	
Oil record book part I	
Fuel transfer, usage or consumption records	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Record of ship's bunker history (records of previous bunkering operations, including bunker delivery notes and bunker requisition forms)	
Sampling and testing	
Details of bunker samples drawn by supplier and receiving vessel (how and where they were drawn, were they witnessed and include seal numbers)	
Details of tank samples or in-use samples (how and where they were drawn and include seal numbers)	
Laboratory analysis reports of fuel oil samples (for this and previous stems)	
Copies of any advisories issued by the testing laboratory on using the fuel	
Record of shipboard fuel tests (for this and previous stems)	
Retained samples of sludge generated in centrifugal separators and filters	
Details of action taken	
Record of communications with bunker supplier	
Record of fuel-related communications with charterer	
Details of any fuel additives used or recommended	
Advice received from fuel expert	
Record of attendance of classification society and flag state surveyors	
Record of communications with classification society and flag state	
Record of communications with port state of destination	

BUNKER QUANTITY DISPUTES

Disputes concerning the quantity of fuel generally relate to a disagreement on the amount remaining on board after bunkering or at the time of redelivery of the vessel after a charter period. The strength of a party's claim depends on the evidence proving the remains on board were measured and calculated properly and accurately.

These disputes can arise from an innocent mistake in measuring, calculating or recording quantities. However, there are instances where it stems from a deliberate act, such as crew concealing bunkers during a redelivery survey or a short-delivery by the supplier – the so called 'cappuccino effect', where air is blown through the delivery hose to froth up the fuel and temporarily increase its volume.

It is therefore very important that the ship's officers and any attending surveyors follow the correct procedures. Tank measurements (soundings, ullages or gauges) and volume calculations should be undertaken methodically and with care.

Common errors include:

- misreading the tank level due to using a cropped or damaged sounding tape
- misreading the tank level during sounding due to an obstruction in the sounding pipe
- incorrect use of the vessel's sounding (tank calibration) tables, giving an inaccurate volume
- failing to account for trim and heel
- inaccuracies in calculating the weight (mass) from the observed volume, for example applying incorrect density and temperature correction factors.

It is important for the ship's engineers to identify any quantity discrepancy at the time the supply is made, particularly where the supplier is insisting on its quantity figure(s) being inserted into the bunker delivery note. There will otherwise be a lack of contemporaneous evidence in support of the shipowner's position.

Where chief engineers are unable to verify their calculations with the supplier, then the ship's figure(s) should be inserted into the bunker delivery note or receipt. Where that is not possible, a letter of protest should be immediately issued by the ship, alleging the discrepancy in the quantity of fuel oil loaded.

As with bunker quality disputes, the shipowner or charterer should promptly notify its P&I club and/or FD&D provider. Again, the claims handler or lawyer will review the contracts in play that directly relate to or reference bunkers, scrutinising the warranties and conditions.

It may be appropriate to instruct a surveyor to carry out a bunker survey to provide an independent calculation of the remains on board.

Evidence checklist for bunker quantity disputes

In addition to the general evidence checklist in Chapter 2, evidence for bunker quantity disputes should include relevant parts of the following evidence checklist.

COMMERCIAL – BUNKER QUANTITY DISPUTE EVIDENCE CHECKLIST	
Fuel system information	
Fuel oil tank plan (tank capacities and line diagram from bunker station to storage tanks to settling tanks)	
SMS policy and procedures on bunkering operations	
Bunkering operation	
Location and times of bunkering	
Bunker loading plan	
Record of personnel involved in bunkering	
Details of bunker supplier (company and details of supplying vessel or barge)	
Bunker requisition form	
Copy of the bunker supply contract	
Bunker specification provided prior to bunkering	
Completed bunker checklists	
Bunker delivery notes	
Oil record book part I	
Fuel transfer, usage or consumption records	
Letters of protest issued by the master (and confirmation of receipt)	
Letters of protest received by the vessel (and confirmation of receipt)	
Bunker survey reports from any attending bunker surveyors	
Shipboard bunker history (records of previous bunkering operations)	
Quantity assessment	
Bunker calculations that provide details of the following for the vessel and – if related to a bunkering operation – the bunker supplying vessel:	
• manual sounding, ullage or gauge reading of every tank	
• observed quantity of water in each tank	
• volume of tank contents as determined by sounding (tank calibration) tables	
• temperature of tank contents	
• density of fuel in each tank	
• volume correction factors used	
• weight corrections factors used	
• draughts, trim and heel	
Bunker flowmeter readings	
Relevant extracts from vessel's official sounding (tank calibration) tables	
Details of action taken	
Record of communications with bunker supplier	
Record of fuel-related communications with charterer	

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The Mariner's Role in Collecting Evidence Handbook

A GUIDE TO GOOD PRACTICE
Second Edition

North P&I Club

There are two main types of evidence: 'factual evidence', which is what a witness actually said or did or saw at the time of an incident and 'opinion evidence', which is what a witness thought about what happened.

This handbook is about collecting and preserving factual evidence, which is vital in establishing what really happened and how it did happen. It is intended to give guidance to mariners about the different types of factual evidence relevant to the more common incidents and accidents on board ships. This will help you collect and preserve the very best evidence.

Example lists of evidence for the more common incidents are included in this handbook. The lists are not exhaustive, but they provide comprehensive guidance to the nature and extent of evidence that may be required.

ISBN: 978-0-9955653-5-7

North P&I Club
North is a leading global marine insurer with over 160 years history in the industry. Its primary purpose today remains as it was on its inception in 1860: to enable its shipowner and ship operator members to trade with confidence. Its targeted loss prevention initiatives provide members with information, support and guidance to help them avoid having to make a claim, and to equip them with the right tools to help shape their own internal programmes.