P&I Claims Analysis

Check the conclusion at page 22

Read about Safety Culture at page 21

2012
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive summary</td>
<td>3</td>
</tr>
<tr>
<td>Definitions</td>
<td>4</td>
</tr>
<tr>
<td>Introduction</td>
<td>4</td>
</tr>
<tr>
<td>Cargo</td>
<td>5</td>
</tr>
<tr>
<td>Introduction</td>
<td>5</td>
</tr>
<tr>
<td>Type of claims</td>
<td>5</td>
</tr>
<tr>
<td>Underlying causes</td>
<td>5</td>
</tr>
<tr>
<td>Bulker</td>
<td>6</td>
</tr>
<tr>
<td>Introduction</td>
<td>6</td>
</tr>
<tr>
<td>Type of claims</td>
<td>6</td>
</tr>
<tr>
<td>Underlying causes</td>
<td>6</td>
</tr>
<tr>
<td>Preventive measures</td>
<td>8</td>
</tr>
<tr>
<td>Container</td>
<td>9</td>
</tr>
<tr>
<td>Introduction</td>
<td>9</td>
</tr>
<tr>
<td>Type of claims</td>
<td>9</td>
</tr>
<tr>
<td>Underlying causes</td>
<td>9</td>
</tr>
<tr>
<td>Preventive measures</td>
<td>10</td>
</tr>
<tr>
<td>Tanker</td>
<td>11</td>
</tr>
<tr>
<td>Introduction</td>
<td>11</td>
</tr>
<tr>
<td>Type of claims</td>
<td>11</td>
</tr>
<tr>
<td>Underlying causes</td>
<td>11</td>
</tr>
<tr>
<td>Preventive measures</td>
<td>12</td>
</tr>
<tr>
<td>Illness</td>
<td>14</td>
</tr>
<tr>
<td>Introduction</td>
<td>14</td>
</tr>
<tr>
<td>Type of claims</td>
<td>14</td>
</tr>
<tr>
<td>Underlying causes</td>
<td>14</td>
</tr>
<tr>
<td>Preventive measures</td>
<td>16</td>
</tr>
<tr>
<td>Injury</td>
<td>17</td>
</tr>
<tr>
<td>Introduction</td>
<td>17</td>
</tr>
<tr>
<td>Injuries on Bulker, Container and Tanker</td>
<td>18-19</td>
</tr>
<tr>
<td>Type of claims</td>
<td>19</td>
</tr>
<tr>
<td>Underlying causes</td>
<td>19</td>
</tr>
<tr>
<td>Preventive measures</td>
<td>20</td>
</tr>
<tr>
<td>Causes</td>
<td>21</td>
</tr>
<tr>
<td>Safety Culture</td>
<td>21</td>
</tr>
<tr>
<td>Conclusion</td>
<td>22</td>
</tr>
</tbody>
</table>
# Executive summary

## Cargo

### Type of claims
The most expensive cargo claim is contamination. This type of claim is most common for chemical tankers and bulk vessels. Due to a high frequency, wet damage is the most costly type of claim for container vessels.

### Underlying causes
- **Contamination** - mainly caused by:
  - insufficient cleaning prior to loading
  - poor maintenance of cargo holds
  - mixing of incompatible cargoes
  - cargo being contaminated prior loading

- **Wet damage** - mainly caused by:
  - leaking cargo hatches
  - pipes and valves in poor condition

## Illness

### Type of claims
The most common illness is cardiovascular disease.

### Underlying causes
Cardiovascular disease - mainly caused by:
- obesity
- poor diet
- smoking
- physical inactivity

## Injury

### Type of claims
The three most common claim types are slips and falls, struck by falling object and caught in machinery.

### Underlying causes
- **Slips and falls** - mainly caused by:
  - equipment on deck
  - poor lightning
  - damaged catwalks and grating

- **Struck by falling object** - mainly caused by:
  - equipment not secured for sea

- **Caught in machinery** - mainly caused by:
  - not issuing or following work permit and risk assessment
  - taking short cuts

## Recurring issues

- Lack of planning
- Lack of experience
- Not recognising a dangerous situation
- No clear guidelines
- Not following company procedures
- Procedures are unclear, not extensive enough or have not been implemented correctly
- Not being assertive
- Disregarding own safety and well-being
- Poor communication
- Poor Maritime Resource Management (MRM)
P&I Claims Analysis

Definitions

Claim categories:
- Cargo
- Illness
- Injury

Claims interval:
- USD 5,000 - USD 3,000,000 (Cargo, Illness and Injury)

Number of vessel/years:
6,252

Total number casualties:
7,468

Type of vessels:
- Bulker
- Container
- Tanker

Introduction

The Swedish Club is closely monitoring the frequencies of different types of claims. It is a priority for us to identify patterns and trends derived from our loss statistics. Another priority is of course to share this "expensive" experience with our membership and business partners.

Merely observing is not good enough – we need to analyse why things happen and how we can help our members to prevent recurrence. In this publication you will find a number of measures to adopt to prevent casualties from happening.

To make this study and analysis conclusive, we have narrowed down the types of vessel to: bulker, container and tanker. These vessels represent 75% of our insured vessels. For the same reason, we have restricted the number of claim categories in order for them to be representative of the Club's overall claims experience. The chosen claim categories are: cargo, illness and injury. These categories represent the highest frequency. Other categories, such as pollution and other P&I (including wreck removal liabilities) show a much higher severity on average.

Fortunately, these claims are infrequent and their scarcity makes it difficult to establish a trend or pattern.

Another important factor decisive as to whether or not a "like-for-like" comparison between the vessel and claim types can be made, is whether the vessels trading pattern and number of crew onboard are similar. For bulker, container and tanker they are. There has been an increase in claim frequency since 2009 for the chosen claim types. As we can see from graph 1, the trend for cost is, however, stable over the past ten years.

So why do we see this increase in frequency? One reason driving this increase in respect of cargo claims is the rise in world trade. A factor which influences the average cost and the frequency of crew-related claims (injury and illness) is the lack of experienced seafarers. We also believe that more intense trade with less time onboard to prepare for critical operations results in a higher number of crew-related incidents.

Graph No 1
2002-2011 Bulker, Container, Tanker - Cargo, Illness, Injury - Average claims cost and frequency
Cargo

Introduction

As we can see from graph 2, there is a steady increase in frequency over the years. The frequency has more than doubled since 2009 while the average claim cost has fallen.

Even though the increase in frequency is, of course, a source of concern, it is to some extent balanced by the reduced average claim cost. Frequency is important to monitor and address as it is the most important driver behind the overall claims cost.

Graph No 2.1 - Cost per loss code

- Grounding
- Improper cargo handling, ship side
- Leaking vents
- Flooding of hold
- Leaking hatch covers
- Improper cargo handling, shore side
- Heavy weather
- Collision
- Insufficient cleaning
- Damage prior loading

Graph No 2.2 - Frequency per loss code

- Improper cargo handling, shore side
- Improper cargo handling, ship side
- Flooding of hold
- Heavy weather
- Damage prior loading
- Poor tally
- Leaking hatch covers
- Poor monitoring/maintenance of reefer unit
- Multiple
- Insufficient cleaning

Type of claims

The most expensive cargo claim is contamination. The cause of contamination can be for many different reasons, but the most common are incorrect cargo handling and flooding of cargo holds. Contamination is most common for chemical tankers and bulk vessels. Due to a high frequency, wet damage is the most costly type of claim for container vessels.

Underlying causes

- incorrect cargo handling
- adverse weather
- ignoring Safety Management System (SMS) procedures
Bulker

Introduction
Bulker has the highest average claim cost of the three vessel types. This is mainly caused by collisions and groundings that are defined as navigational claims. To be able to prevent navigational claims it is essential to have a good safety culture, because a serious navigational accident is likely to involve multiple claims. For a more comprehensive analysis about navigational claims, please refer to our publication Collisions and Groundings.

Looking at specific cargo claims that are not caused by navigational error, it is obvious that the problem is improper cargo handling. This leads to very expensive contamination, wet damage and shortage claims.

Graph No 3
2002–2011 Cargo: Bulker – Average claims cost and frequency

Graph No 3.1 – Cost per loss code

Graph No 3.2 – Frequency per loss code

Type of claims
Contamination is an expensive type of claim on bulkers; the claims are not very frequent but when they occur they are quite severe. The most common claims are shortage and wet damage.

Underlying causes
Contamination – mainly caused by:
- inefficient cleaning prior loading
- poor maintenance of cargo holds
- mixing of incompatible cargoes
- cargo being contaminated prior to loading

Wet damage – mainly caused by:
- cargo being wet when loaded
- leaking cargo hatches

Shortage – mainly caused by:
- loaded or unloaded cargo not being properly calculated
- incorrect cargo handling ship-side or shore-side
Hatch covers
Leaking hatch covers are unfortunately causing many wet damage claims. One of the most common tests prior to loading to ensure that the cargo hatches are not leaking, is the water hose test. The crew put fire hoses under pressure and spray the hatches. Unfortunately it seems that the hose test is of little value for ensuring proper sealing on a vessel at sea. Possibly the master can get an indication of the condition of the transverse joints, but the horizontal seals on the coamings are far more difficult to address. It is quite obvious that the pressure of the sea on the covers can hardly be simulated with a fire hose.

Much more effective, is to use an ultrasonic device, which is designed for this purpose. The advantages of using this type of equipment are evident, since sealing tests can be carried out in a loaded condition without risking cargo damage and also the possibility of an assessment in sub-zero temperatures.

To address this issue it is important there are SMS procedures about what checks are required to ensure the hatch covers are in a proper condition. It is even more important that these checks are included in the PMS (Planned Maintenance System) in combination with extensive maintenance jobs. It is imperative that there are specific jobs regarding the seals, coamings and pads. A risk assessment needs to be in place regarding the different issues about leaking hatch covers.

Liquefaction
One major concern with bulk cargoes is misdeclaration of cargoes which can lead to liquefaction, for example with nickel ore and iron ore. Liquefaction is fortunately not very common but when it occurs the consequences can be severe. Issues such as loading in wet conditions, loading from open barges, masters presented with inaccurate documentation and owners who are not allowed to do independent cargo tests, are unfortunately a concern that is not getting better but worse. It is imperative that the (IMSBC) International Maritime Solid Bulk Cargo Code is followed, which is not always the case.

Because of the highly competitive market there are risks that owners are not seeking expert assistance, or even worse, are not allowed to seek expert assistance. This can lead to unnecessary risks being taken. The major concern is that the moisture content of the cargo is not tested properly before loading and the transportable moisture limit is exceeded. The IMSBC Code requires that the shipper shall provide certification to the master to confirm the TML (Transportable Moisture Limit) and actual moisture content of the cargo, before loading can commence. Only if the cargo has a moisture content that is less than the TML can it be offered for safe carriage by sea. The company needs to have SMS procedures addressing these issues.

Since December 2010, there have been four total losses because of cargo liquefaction. This is unacceptable and the IG (International Group), as well as all member clubs, have issued circulars with new member requirements regarding the loading of nickel ore and iron ore. Further information can be found on our website under topical issues.
Preventive measures

**Concerns on bulker**
- Leaking hatch cover (coamings/rubber seals)
- Heat damage
- Contamination (cargo hold cleaning)
- Shortage (common depending on cargo and geography)
- Maintenance of sounding and vent pipes
- Liquefaction
- Flooding of cargo holds (manhole covers for ballast and bunker tanks have not been secured correctly – after yard visit)

**Specific prevention for bulkers**
- Agree on a stowing plan.
- Stow in accordance with the IMSBC code.
- Before loading commences cargo holds should be clean, dry and odourless.
- Hatch covers and seals must be in a good and watertight condition.
- If any damaged cargo is loaded, always clause the bill of lading and mate's receipts accordingly.
- Conduct a survey of the cargo condition throughout the entire loading operation. Take samples.
- During loading have your own surveyor carry out a draught survey, always insert “weight and quantity unknown” in the bill of lading and mate's receipts, if not already stated.
- Conduct a draught survey at the discharge port before opening the hatch.
- Accurate and reliable tallying should be carried out when loading bagged goods.
- Refrain from loading during snow or rain.
- Wet cargo or snow/rain during loading will result in high humidity levels inside the holds and should be avoided. Clause “wet before shipment” should be inserted on Bills of Lading if such goods are loaded.
- Condensation must be considered when carrying certain cargoes. Ventilate if the dew point in the air is lower than the dew point in the cargo space.
- Cargoes which are classified as class A under the IMSBC code are capable of liquefaction. Before loading it is essential that the moisture content of the cargo is tested.
Container

Introduction
In the same way as Bulker, navigational claims are a major concern on container vessels and especially groundings. For a comprehensive analysis about groundings please refer to our publication *Collisions and Groundings*.

On container vessels, heavy weather is another major worry. These claims are often caused by masters not reducing speed when encountering heavy weather, or the company doesn’t use weather routing. Addressing these issues in the SMS is very important. Pipes and valves in a poor condition also cause many wet damage claims. It is essential that this is addressed in the PMS (planned maintenance system) and monitored by the company.

Graph No 4
2002-2011 Cargo: Container – Average claims cost and frequency

Type of claims
Wet damage is the most expensive claim on container vessels. The most common causes are physical damage and wet damage to the cargo.

Underlying causes
Physical damage – mainly caused by:
- incorrect cargo handling shore-side
- adverse weather

Wet damage – mainly caused by:
- leaking cargo hatches
- pipes and valves in poor condition

It is very difficult for a shipowner to influence problems that occur shore-side, but there are examples of shipowners who have blacklisted shippers that have declared dangerous cargo incorrectly.
Design

The wide beam of many container vessels usually results in large GM values. In some cases, where the vessels were partly laden, the metacentric heights (GM) appear to have been excessive. This can become very problematic if the vessel is caught in severe weather causing securing arrangements to break and containers to fall overboard.

It is essential to monitor the weather during the entire voyage and if the vessel cannot avoid severe weather it is essential to take remedial actions such as reducing speed and/or altering course.

Maintenance/operational errors

Looking specifically at wet damage claims on container vessels, the average claim cost for wet damage is significantly higher than the average cargo claim. The usual causes are leaking - pipes, valves and manholes. There are cases where ballast lines have been wrongly marked, cracks in ballast tanks and cases where bilge alarms have been ignored causing water to enter the cargo hold. These issues are mainly because crew members have ignored procedures and not carried out proper maintenance on pipes, valves and pumps.

There are other occasions when the bilge pumps have been full of debris, which indicates that the systems have not been properly tested and maintained. Leaking manholes from either ballast or bunker tanks is also a recurring problem causing flooding of the cargo hold. This is common after a yard visit when tank inspections have been carried out.

It is essential that the crew is aware of this greater risk and ensures that all manholes are secured. It is essential that the company reviews their cargo procedures and at least addresses these issues.

Preventive measures

<table>
<thead>
<tr>
<th>Concerns on container vessels</th>
</tr>
</thead>
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<tr>
<td>• Not securing containers as per the cargo manual</td>
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<td>• Charterers' loading plan is not as per the vessel's cargo plan</td>
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<td>• Cargo manifest is not correct and does not include all IMDG cargo</td>
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<tr>
<td>• Reefer containers need to be monitored during the voyage because small changes in the temperature can ruin the cargo.</td>
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<tr>
<td>• Bilge alarms not maintained and tested properly</td>
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<tr>
<td>• Not avoiding adverse weather</td>
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<tr>
<td>• Excessive speed in adverse weather</td>
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<th>Specific prevention for container vessels</th>
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<tr>
<td>• Check and verify that the lashing methods follow the requirements as outlined in the vessel's cargo securing manual.</td>
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<td>• The cargo securing manual should be applicable for the stowage arrangements and lashing equipment used, written in a language readily understood by the crew and other people employed for securing the cargo.</td>
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<tr>
<td>• Lashing equipment and securing points must be maintained regularly and inspected for wear.</td>
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<td>• Reduce the vessel's GM when necessary.</td>
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<td>• If possible, check that the container seals are intact and that serial numbers concur with numbers in cargo documents.</td>
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<td>• Do not mix high cube containers with standard height containers in stacks. This does not allow bridging pieces to be fitted between stacks.</td>
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<tr>
<td>• Ensure that weights are declared and that maximum stack mass and height limits are not exceeded.</td>
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<tr>
<td>• Consult IMDG code for characteristics of commodities.</td>
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<tr>
<td>• The crew need to investigate bilge alarms in the cargo holds as even a small amount of water can cause serious damage.</td>
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<tr>
<td>• Weather routing should be used to avoid adverse weather.</td>
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<tr>
<td>• In adverse weather, adjust course and speed to ease the ship's motion.</td>
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### Tanker

#### Introduction

Serious navigational claims are not common on tankers, fortunately. The most costly claims have been for contamination. These claims are usually caused by poor procedures or the crew ignoring company procedures. It is essential to have sufficient SMS procedures and that the crew is continually trained in the importance of following company procedures. A proper safety culture must be established.

Since 2009, there has been a significant increase in claims’ frequency. Fortunately the average claim cost has continued to fall. The increase in frequency needs to be monitored, because a high frequency can potentially affect the overall claims costs negatively.

#### Type of claims

Contamination is the major issue for chemical and product tankers as it is both the most frequent and costly type of claim.

#### Underlying causes

**Shortage** - mainly caused by:
- loaded or unloaded cargo not properly calculated
- ship-side or shore-side incorrect cargo handling

**Contamination** – mainly caused by:
- insufficient tank cleaning
- mixing of mismatched cargoes
- cargo contaminated prior to loading
Contamination

Even if cleaning has been completed and a certificate of cleanliness issued, cargo can still be contaminated. This is often because water is left in the lines and they have not been blown and cleaned properly.

Other common reasons are ingress of seawater, cracks between cargo tanks, insuffi- cient cleaning of tanks and lines, incorrect valve operation and failure of mechanical devices such as pumps and pipes. The cost of a claim differs vastly depending on whether the off spec or contaminated cargo is discovered at full tank or during the initial cargo sample. It is not only the cost for spoiled or even worthless cargo that affects the total cost of the claim. Delay and demurrage costs will also contribute significantly to the overall cost.

Sampling of cargo

The importance of always taking a first cargo sample is imperative. Analysis of manifold samples is important in the investigation into the cause of the contamination. It is still common practice that a vessel is only provided with samples of the shore tanks before loading and samples from the vessel's tanks after loading. These samples only provide information about the condition of the cargo in the shore tank and in the vessel's tanks. It does not provide the essential information about the condition of the cargo in which it arrives on board the vessel.

It is not unusual that the cause for the contamination is because of contaminated shore lines. It is assumed that most chemical/product tankers are fitted with drain cocks or sampling plugs in the crossover lines at the manifold station. If these are not fitted, it is a simple modification.

Before sampling, one must ensure that the drain cock or ullage plug is properly flushed, because they are liable to retain remnants of previous cargoes. It goes without saying that the drain cocks or sampling plugs must be completely clean.

For sampling the cargo when it arrives at the ship's manifolds, there are two crucial stages. The first and very important stage is the condition of the cargo when loading begins. Any remnants of previous cargoes and/or any other contaminants (water) in the shore line, liable to affect the cargo adversely, will best appear in a manifold sample drawn immediately upon starting loading.

The second stage is to ascertain whether contaminants may have found their way into the cargo in the shore line in the course of loading. This can be done by drawing samples from the manifold at regular intervals.

Preventive measures

Concerns on chemical/product tanker

- Gaskets on tank hatches in poor condition
- Incorrect cargo cleaning
- Failure to close valves after tank cleaning operations often causes contamination of cargo
- No proper draining of old cargo
- No proper loading plan addressing which valves and lines to be used
- Poor sampling procedures
- Not following charter's instructions
- Not maintaining required cargo temperature
- Incorrect soundings
- Palm, vegetable, and coconut oils lead to expensive claims as these have little value once contaminated
Specific prevention for chemical/product tanker

Cleaning
- Plan and document the different steps during the cleaning process. Stick to charter’s instructions.
- Clean - cargo tanks
  - cargo lines
  - drop lines
  - circulation lines
  - stripping lines
  - ventilation lines
  - vapour return lines
- Drain all tanks and lines.
- Dry all tanks and lines.
- Before starting loading, the tanks should be clean free from odour and remnants of previous cargoes.

Cargo sampling
- Cargo sampling at manifold during commencement of loading each parcel.
- Cargo sampling of 1st foot loading at each cargo tank.
- Cargo sampling from each tank when loading completed.
- Cargo sampling from each tank before discharge commence.
- Cargo sampling at manifold during discharge of each parcel.
- All cargo sampling to be carried out together with the cargo interest surveyor.

Segregation
- Plan and document the lining-up of valves, blinds, etc.
- Inert lines and vapour return lines to be segregated as well if applicable.
- Valves that should not be operated during loading/discharge to be locked.
- Install blinds to deck heat exchangers and heating coils if applicable.
- Blow heating coils and pump stack cofferdams.
- Double check the complete line up before loading commence.

Loading/discharging
- Detailed plans for loading/discharging to be made and followed in detail and documented.
- Document all phases during operations including start/stop and reasons, max rates, pressure at manifolds etc.
- In the event of a discrepancy between the loading or discharging figures between the terminal and vessel, always clause the bill of lading accordingly.

Transportation
- Follow charter’s instructions for circulation, temperatures and padding etc. Must be properly documented.
Illness

Introduction
The frequency of illness has increased continuously since 2006. The average cost has historically been low even though we can see a rise in costs over the last ten years – the overall exposure is at present manageable. As previously stated though, a high frequency is a warning sign and this category needs to be closely monitored going forward. The ever-increasing problem for the industry to find experienced and properly trained seafarers is another reason to keep a close watch, as this seems to be here to stay.

It appears that the vessel type is of minor significance, as all the three vessel types attract a similar number of illness claims. To this end we have decided not to present the statistics separately for each of the three vessel types (bulker, container and tanker).

Graph No 6
2002-2011 Illness: Bulker, Container, Tanker – Average claims cost and frequency

Graph No 7 – Cost per loss code

Graph No 8 – Frequency per loss code

Type of claims
The most common illness is cardiovascular disease.

Underlying causes
Cardiovascular disease - mainly caused by:

- obesity
- poor diet
- smoking
- physical inactivity
Cardiovascular disease

One of the causes to coronary heart disease that cannot be prevented is high serum cholesterol levels which increases for men around 45 to 50 years. This means that crew members over 45 years-old are running a greater risk of suffering from cardiovascular disease.

This coupled with a predicted shortage of officers in the near future, could lead to an increase in cardiovascular disease. BIMCO and the International Shipping Federation (ISF) has a publication called *BIMCO/ISF 2010 Update on the Worldwide Demand Supply of and Demand for Seafarers* published every five years, where it predicts the future demand and supply. In the latest study from 2010, it states that there will be a worldwide officer shortage of 5% by 2015. A predicted shortage could lead to older officers continuing serving onboard, as it will be even more difficult for shipowners to find replacements.

It is important that shipowners are aware of the risk factors that can cause heart disease and stroke which include raised blood pressure, high cholesterol and glucose levels, inadequate intake of fruit and vegetables, overweight, obesity, smoking and physical inactivity. Addressing these issues is essential.

Crew members over 45 years-old are running a great risk of suffering from cardiovascular disease.

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**Graph No 9**

*2002–2011 Cardiovascular illness: – Claims for the most common nationalities*

**Graph No 10 – Top nationalities of seafarers**
Preventive measures
Identified risks
To prevent illness and ensure that the crew is fit and healthy, the normal medical examination seems unfortunately inadequate. It will take years of unhealthy living for a serious illness to develop. This is also true for an illness that is not obvious at first. If the warning signs can be identified and preventive measures taken at an early stage, it is likely that this could prevent a lot of suffering and even premature death.

To this end, the Club has developed its own PEME (Pre Engagement Medical Examination) which is much more comprehensive than the normally required medical examination.

At the moment two clinics in the Philippines have been approved to do the PEME examination on behalf of the Club. If the PEME is followed correctly a serious illness is more likely to be discovered.

The number of claims caused by illnesses which could and should have been detected in a thoroughly conducted pre-engagement medical examinations, has increased substantially both in number and cost.

The best hope of reversing the increase in illness is to develop much wider recognition of the problem by the company’s management, coupled with more emphasis on thorough PEME.

For the owners, it is essential that they know that their crew members are fit and healthy. A serious illness can cause so many other concerns besides the person’s own illness. The vessel can be delayed to the next port, delayed in port, there can be problems finding replacement crew and the stress this will cause onboard and ashore is difficult to measure in monetary terms.

To be able to further prevent these problems the owner can promote a healthier diet, ensure there are exercise facilities onboard, discourage smoking and drinking and support crew members who wish to change their lifestyle, and offer a PEME to their crew members.

Risk assessment can be made by considering the following properties:
- Age
- Sex
- Blood pressure
- Cholesterol including high density lipids
- Family history of CVD
- Smoking
- Diabetes
- Important having a PEME as many things can be detected which are not work-related.

A PEME examination will result in the following benefits:

Medical
- the possibility of a more precise evaluation of the health status and the cardiovascular risks,
- reduction of the possibility of allowing unfit crew to go to sea,
- overall healthier crew,
- less deaths at sea through cardiovascular disease, for example,
- fewer helicopter evacuations which are always a high risk.

Can prevent following issues:
- sudden disembarkation of crew on health grounds,
- hospitalization abroad,
- difficult and risky repatriation,
- death at sea,
- loss of a qualified worker.
**Injury**

**Introduction**

As can be seen from graph 11, injuries have increased substantially since 2009. The average cost, in common with some of the other claims categories accounted for above, have been stable even though we note a slight increase.

Again, it is the frequency that is a warning sign, which we need to address. The increased frequency might be explained by a greater awareness of the right to make a claim and secondly the level of the potential financial compensation.

There are, however, many other factors in operation. These include greater demands on the individual onboard the vessel, an increase in stress-related conditions and the erosion of social interaction in the lifestyle at sea. Seafarers are under pressure to deliver high performance for sustained periods and they have fewer outlets for the vital social and leisure activities enjoyed by their counterparts ashore.

**Graph No 11**

2002–2011 Injury: Bulker, Container, Tanker - Average claims cost and frequency

**Graph No 12 - Cost per loss code**

- Slips and falls: 33%
- Struck by falling object: 9%
- Caught in machinery or equipment: 10%
- Burns and explosions: 2%
- Suffocation / Asphyxiation: 2%
- Strain by pulling or pushing: 2%
- Strain by lifting: 2%
- Tool injury (Non-powered): 2%
- Struck/caught by object(s): 2%
- Struck by vehicle: 1%

**Graph No 13 - Frequency per loss code**

- Slips and falls: 35%
- Struck by falling object: 7%
- Caught in machinery or equipment: 3%
- Burns and explosions: 2%
- Strain by lifting: 2%
- Tool injury (Non-powered): 1%
- Struck/caught by object(s): 1%
- Strain by pulling or pushing: 1%
- Power tool injury: 1%
- Suffocation / Asphyxiation: 1%
Injuries on Bulker, Container and Tanker

BULKER

Graph No 14
2002-2011: Average claims cost and frequency

Graph No 15 – Cost per loss code
- Struck by falling object
- Slips and falls
- Caught in machinery or equipment
- Burns and explosions
- Tool injury (Non-powered)
- Suffocation / Asphyxiation
- Strain by pulling or pushing
- Struck by vehicle
- Electric shock
- Drowning

Graph No 16 – Frequency per loss code
- Slips and falls
- Struck by falling object
- Caught in machinery or equipment
- Burns and explosions
- Tool injury (Non-powered)
- Suffocation / Asphyxiation
- Strain by pulling or pushing
- Strain by lifting
- Struck by vehicle
- Electric shock

CONTAINER

Graph No 17
2002-2011: Average claims cost and frequency

Graph No 18 – Cost per loss code
- Slips and falls
- Struck by falling object
- Burns and explosions
- Caught in machinery or equipment
- Strain by lifting
- Strain by pulling or pushing
- Drowning
- Struck/caught by object(s)
- Struck by vehicle
- Tool injury (Non-powered)

Graph No 19 – Frequency per loss code
- Slips and falls
- Struck by falling object
- Burns and explosions
- Caught in machinery or equipment
- Strain by lifting
- Strain by pulling or pushing
- Power tool injury
- Chemical exposure
- Tool injury (Non-powered)
Graph No 20
2002–2011 Average claims cost and frequency

Graph No 21 – Cost per loss code

Graph No 22 – Frequency per loss code

Type of claims
The locations onboard where most injuries occur are the cargo deck area, machinery room and open deck areas. Most injuries happen during normal maintenance, which normally requires a work permit and risk assessment. There are normally procedures in the SMS addressing these jobs. The concern is that these procedures have been ignored.

The three most common claim types are slips and falls, struck by falling object and caught in machinery. This is similar to all three vessel types. One concern is that almost 60% of all slips and falls occur on container vessels. The reason for this might be that there are a lot of stevedores involved in loading a container vessel and a lot of equipment lying on deck when containers are in port.

Underlying causes
Slips and falls – mainly caused by:
- equipment on deck
- poor lightning
- cat walks and grating damaged during loading and unloading

Struck by falling object – mainly caused by:
- equipment not secured for sea

Caught in machinery – mainly caused by:
- not issuing or following work permits and risk assessments
- taking short cuts
Preventive measures

Risk assessment

In many accidents it is common that risk assessments or work permits have been ignored or not followed as intended, as the individual might believe that the preventive matters are unimportant or believe that it will take too much time to comply with the requirements. This can lead to serious injuries with fatal consequences.

The purpose of a risk assessment is to make a careful examination of shipboard operations to verify that there are adequate controls in place which will make the risk levels acceptable. Since 1 July 2010, there has been an ISM requirement for companies to have shipboard operational procedures that are based on risk assessments. The procedures for how the risk assessment should be completed and used are addressed in the companies’ SMS.

To be able to do a correct risk assessment there first has to be a risk analysis, which uses all available information to identify hazards and to estimate the risk to the environment, property or individual. The risk assessment evaluates the risk arising from a hazard and evaluates if the controls in place are sufficient and if the risk is acceptable.

A proper risk assessment will be a cooperation between the office and the vessel. The office should provide a generic assessment and the vessel should make a detailed assessment of the critical job. To achieve the best result there should be cooperation between the office and the vessel to utilise the experience from both to compile a useful database. It should be easy to access the database for specific jobs or planning of jobs. The database could also be useful for training. It is imperative that all onboard are aware of how to access the database and how to use it.

If the risk assessment has been completed correctly it is likely that most risks will be addressed. If a work permit has also been issued for the specific job it should be obvious to crew members how to safely complete the job. This will also mean that all concerned departments have been informed about current jobs in progress and which equipment, for example, has been isolated and how long the job will take. The reason why the risk assessment has been ignored is usually because the company has not been able to explain the importance and benefit of following the requirements. This also means that there are deficiencies about the safety culture onboard.
Causes

So why do accidents happen? Have the crew not received enough training? Do they lack experience? Are they suffering from fatigue? Maybe, they are ignoring procedures? Or perhaps the company has not clearly explained what is expected of their employees?

There are usually many reasons why an accident happens, but the cause is usually obvious. Most people can identify a dangerous situation but, for some reason, we believe the risk is acceptable.

We hear about these miscalculations everyday in the news. The problem with a vessel is that the consequences of a too great risk appetite can be serious and even fatal.

Recurring issues

- Lack of planning
- Lack of experience
- Not recognising a dangerous situation
- No clear guidelines
- Not following company procedures
- Procedures are unclear, not extensive enough or have not been implemented correctly
- Not being assertive, Disregarding own safety and well-being
- Poor communication
- Poor MRM

The above issues are similar to the immediate causes in the Collisions and Groundings study which we published in 2011. This is expected, as the failure will most likely be from human factors. This again emphasises the importance of a good safety culture and improving the knowledge about human factors, which MRM (Maritime Resource Management) is all about.

Safety Culture

One of the difficulties when implementing a good safety culture is that “safety” will be defined in as many different ways as the number of different people you ask.

To establish a proper safety culture is a difficult and time-consuming task, but the reward of preventing a serious accident will be worth the time and effort. It has been said many times previously, but it is worth mentioning again. To establish a proper safety culture there has to be a belief from top management. If top management requires that all employees follow the company’s safety culture, it is likely that it will be implemented correctly. In a well-functioning safety culture, most people realise the importance of procedures and are aware of the consequences of not sticking to them. The procedures should be seen as something positive that will benefit working conditions and make them safer. The feeling should be, amongst others, that it is worth the effort of donning a safety harness, filling out a work permit correctly and following the actual requirements of the risk assessment.

To change negative attitudes, it is imperative that all onboard know what is expected of them. Shore-side needs to be clear about its policies and have a defined company culture.

All employees need to have proper training about what is required of them, as new SMS procedures will most likely not be enough. The company should provide the master with sufficient tools to ensure that the crew onboard has easy access to the SMS and that they understand the importance of the procedures. It is at this point that a comprehensive and detailed SMS will be most beneficial.

This kind of attitude training is what is addressed in MRM and can be further learnt via company seminars, newsletters, masters’ reviews and discussed during the monthly safety meeting onboard the vessel. These procedures need to be verified during internal audits and superintendent’s visits.

In a positive safety culture, mistakes are allowed but negligence and ignoring procedures are not. It is difficult and time consuming to establish a positive safety culture – the payback, however, is substantial.
Conclusion

There are usually several reasons why an accident happens. The complexity of the underlying causes sometimes makes it difficult to do a proper analysis.

Accidents are caused by human error and seldom stand alone through technical or equipment failure. Injuries and cargo claims usually occur because the crew did not follow SMS procedures. Alternatively, procedures were inadequate or simply did not address the situation at hand. The SMS includes work permits and risk assessment procedures that, if followed correctly, should be able to prevent accidents and mistakes.

For some reason crew members often ignore procedures when accidents occur, or did not identify the risks. One reason for this might be because they did not see the benefit in following procedures. This means that the company has not been able to establish a safety culture onboard that emphasises the importance and benefits of approved procedures.

Illness claims are a little different compared to injury and cargo claims. To prevent illness it is essential that the company has established preventive measures before the crew member joins the vessel and that they promote healthy living on their vessels. It is also very important to have comprehensive new hire procedures, to be able to ensure that the new crew member is healthy. It is unfortunate that the normal health certificate appears to be insufficient. A more extensive health certificate is required. Of course there is also a need for procedures that ensure that all the crew in the company are healthy. The best prevention is to do a pre-engagement medical examination.

Illness can strike at any time but by trying to identify problem areas and risks before they occur is good loss prevention and minimises the exposure in this respect.

It is apparent from the statistics that tankers perform better than bulkers and container vessels in all claim categories. It is a well-known fact that tankers have a lot of pressure from charterers because of vetting inspections. This has forced tanker operators to improve their standards to compete on the market. The difference between tankers and bulkers/containers in claim performance underpins the importance of investing in safety. It also emphasises the significance of implementing a sustainable safety culture onboard. A successful approach in this respect will, over time, reduce both claim frequency and severity.

Investing in training employees, implementing MRM onboard vessels and carrying out comprehensive audits as well as inspections is money well spent and, in comparison with a catastrophe – quite cheap too!
Loss Prevention

The Loss Prevention unit is placed within Risk & Operations and provides active loss prevention support, analysis, reports as well as advice to members.

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