Guide to Prevention and Handling Accidents
The Korea P&I Club is endeavoring at all times to become reliable safety guard for the development of Korean shipping industry. Through handling several thousands of marine accidents and claims in last 16 years I have realized again that it was impossible to develop firmly Korean shipping industry without the pains and devotion of Korean seafarers doing their best in the front line of the industry, and on the base of such recognition I hereby come to publish “Ship’s Accident Prevention Manual” together with the best experts in shipping business in order to give practical assistance for field workers.


I would like to give my heartful thanks to the professors (Youngmo Kim, Youngsin Hwang, Sohyun Cho) of Korea Institute of Maritime and Fisheries Technology, Captain Seonhong Kim - Pilot of Ulsan Port, and Mr. Taebeom Park - the president of UMD Shipping Company, who did not sparing themselves for writing manuscript. I also would like to give thanks to Hanjin Shipping company for taking photographs used in this guidance.

As this book is the first trial of binding various special fields into one volume synthetically, there would be some dissatisfaction. The Korea P&I Club listens carefully to the requests and advices of relevant personnel concerned at all times, and promises to supplement this book continuously.

Reminding again that a lot of loss of human lives and properties we have experienced so far could be prevented mostly with a small concerns before the occurrence of accidents, I hope this book would be of a little help for ships to prevent various accidents on board.

Thank you again for everybody caring for and concerning in the Korea P&I Club.

August, 2015

Gyungjae Lee
Chairman of the Korea P&I Club
Preface

As the sea has unexpected and potential dangers at all times in its origin, the person in charge of safe ship operation is caring always about any accident that could be occurred during her voyage.

Through the development of communication we can ask the company for advices on post measures to be provided promptly in case of having any accident on board. However, if the person in charge of the ship recognizes the situation properly, collects necessary evidences in advance or asks core advices, the damages by the accident could be minimized as much as those.

The Korea P&I Club has arranged to publish a book composing the thorough knowledge to be kept in order to prevent accidents during ship operation and the measures to be taken in order to minimize the damages in case of having any accident on board.

We, joint authors of this book, have written this guide book on practical knowledges learned in industry fields and academic world so far. Theoretical knowledges are minimized and this book is composed with many case studies and matters to be taken in practical jobs. In this time we have arranged guidances to five sections considered to be necessary in preference such as Guide to Prevention and Handling Accidents, Safe Maneuvering, Handling Ship's Fuel Oil, Container Securing and Prevention of Charter Party Disputes, and we will expand the sections in future.

Due to the lack of time there would be a regret for insufficient delivery of information, but we have a plan to supplement this book so as to make a substantial guide book if occasion offers.

We hope this guide book help the person in charge of ship security, safety operation and prevent accident, and give thanks to Mr. Gyungjae Lee, the chairman, Mr. Byungil Moon, executive director of the Korea P&I Club for supporting the publication of this guide book.

August, 2015

Joint Authors of the Book
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This guidance aims at enumerating briefly the actions to be taken by the master of a ship in case of having an accident, incident or problems that may cause claims against the shipowner or manager of the vessel insured to the Korea P&I Club.

This is a guidebook only concerned with the risk of Protection and Indemnity (P&I) including advices on how to protect his/her owner’s interests in case of having a problem.

This guidance does not substitute any existing standing instructions on accidents, procedures or reporting and etc. of the company.
1. Overview of the Protection and Indemnity Club

1.1 What is the P&I Club?

Protection and indemnity insurance is a form of mutual maritime insurance provided by a P&I Club in order to provide shipowner, charterer, and others concerned with a protective shield against various risks existed in ship operations. The core of P&I Club is the mutual association that the club member to advance a claim by a “call” or premium is the assured and the underwriter. Whereas the hull insurance is designed to cover the assured against the loss of ship, the P&I Club compensates the shipowner for releasing the legal responsibilities generated in the process of ship operation.

1.2 History of the P&I Club

Middle of the 19th century was a time of great renovation in social and technical field, and as it was a time of increasing the scale, complexity and value of ships and cargoes, the shipowner’s potential responsibilities corresponding to such changes also were increased.

In the UK Marine Insurance Act 1745 the shipowner was prohibited to have his/her ship insured in liability insurance with the insured amount exceeding the ship’s price. In 1836, as the court had judged that the compensation paid by shipowner to third parties caused by a ships collision accident cannot be included in the scope of mortgage, the increased responsibilities threaten shipowners. As a respond to the judgment the underwriter had decided to compensate 3/4 of the responsible indemnity incurred by ships collision, but the shipowner was faced
with no insurance against 1/4 of indemnity, responsibility exceeding the agreed insured amount, death and injuries, and ship’s responsibility for fixed or floating objects other than ships.

The act concerning with the limit of liability as 15 pounds per ship’s tonnage was established, but this legal system could not give any reduction of shipowner’s burden as the market prices of ships were lower than 15 pounds per ship’s tonnage.

By this reason the association for mutual protection, the Shipowners' Mutual Protection Society, was formed in 1855 for the first time, and in the beginning the society compensated loss of life, injuries and ships collision risks that were excluded from marine insurance policies beyond the monetary limit of these policies.

Later, several acts adding potential responsibilities to shipowners were established, and the judgment on the matter not covered by shipowner’ exemption clauses in charter party were made, which have expanded gradually the scope of compensation by P&I Club up to those of nowadays.

The Korea P&I Club was established on 26 January 2000 for the purpose of providing Korean shipowners with liable P&I insurance in accordance with the Shipowners’ Mutual Protection & Indemnity Insurance Club Act. Through firm support by the Korean government and shipping industry, the Korea P&I club has been developed continuously and has become a club having 983 memberships now and insured ships of 22,770,000 gross tons or more during last 15 years.
1.3 Indemnity of P&I Insurance

P&I Club covers the liability of shipowner and ship management company for third parties during ship operation. P&I Club does not cover damages of ship's hull and machinery itself.

In order to cover various and complicated compensation liabilities derived from ships, the member companies of P&I Club are expanding gradually their business targets to overall maritime enterprises such as charterers, terminal operators, ship management companies and subsidiary companies of ships, and etc. in recent days.

The contents of risk covering by P&I club are stipulated in detail on the club rule book on board. The scope of risk covered by each P&I club varies according to the capability of security and management, but those are as follows in general:
(1) Liabilities in respect of Seamen;
(2) Liabilities in respect of Passengers;
(3) Liabilities in respect of Illness or Injury or Death of Third Parties;
(4) Liabilities in respect of Stowaways or Persons saved at Sea;
(5) Liabilities arising out of Collision with Other Ships;
(6) Loss of or Damage to Property;
(7) Liabilities in respect of Pollution;
(8) Towage Liabilities;
(9) Contracts with Third Parties;
(10) Quarantine Expenses;
(11) Cargo Liabilities;
(12) General Average;
(13) Fines; and
(14) Defence Costs, etc.

2. Basic Attitude to Accident Prevention

2.1 Risk Management

All ships have the risk of accident at anytime and anywhere. However, in case of a ship in operation under good management, the possibility of occurring an accident would be recognized at all times, and in case of occurring an accident actually, the accident which could be leading to a big accident can be prevented in advance through prompt and proper respond.
A large number of causes of accidents arising at the sea are similar in its natures, and most of them could be preventable. Therefore, in this chapter we seek to the method capable of preventing an accident before providing a guide to responding accidents which is the object of this chapter.

1) Risk Assessment

One of the methods to identify potential danger on board is to conduct the risk assessment which is the process to recognize systematically all work practices, activities, situations and etc. that could lead to accidents or injuries.

Risk assessment entails:
(1) Identifying a hazard;
(2) Ascertaining severity of harm (low, medium, high);
(3) Determining possibility of occurring accident; and
(4) Establishing and performing the countermeasures to reduce the risk until the risk reaches to permissible level.

2) Risk Assumption

Risk assumption can be computed by combination or multiplication of the possibility of (Table 1) and the severity of (Table 2)

\[
\text{Risk} = \text{Possibility of Occurring Accident} \times \text{Severity of the Result of Accident}
\]
### [Table 1] Possibility (Frequency)

<table>
<thead>
<tr>
<th>Possibility</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequent</td>
<td>• High possibility of occurrence (occurring frequently)</td>
</tr>
<tr>
<td></td>
<td>• Actual time exposed to hazardous risk factors is 6 hours or more daily</td>
</tr>
<tr>
<td>Probable</td>
<td>• Having the possibility of occurrence (occurred at times)</td>
</tr>
<tr>
<td></td>
<td>• Actual time exposed to hazardous risk factors is 2–6 hours daily</td>
</tr>
<tr>
<td>Remote</td>
<td>• Low possibility of occurrence (few occurrence; negligible level)</td>
</tr>
<tr>
<td></td>
<td>• Actual time exposed to hazardous risk factors is less than 2 hours daily</td>
</tr>
</tbody>
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### [Table 2] Severity (Strength)

<table>
<thead>
<tr>
<th>Severity</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious</td>
<td>• Accident capable of inviting death</td>
</tr>
<tr>
<td></td>
<td>• Exceeding exposure tolerance (recommended standard) of chemicals, dust, noise, &amp; etc.</td>
</tr>
<tr>
<td></td>
<td>• Handling carcinogenic, mutagenic, raw food toxic substances</td>
</tr>
<tr>
<td></td>
<td>• Occurrence of patient having occupational disease in diagnostic view</td>
</tr>
<tr>
<td>Usual</td>
<td>• Accident capable of inviting injuries such as loss of eyesight, cutting and etc.</td>
</tr>
<tr>
<td></td>
<td>• Accident requiring medical treatment by medical institution</td>
</tr>
<tr>
<td></td>
<td>• In case the exposure tolerance (recommended standard) of chemicals, dust, noise, &amp; etc. is exceeded 50% or more.</td>
</tr>
<tr>
<td>Minor</td>
<td>• In case of an accident capable of inviting near miss accident</td>
</tr>
<tr>
<td></td>
<td>• In case the exposure tolerance (recommended standard) of chemicals, dust, noise, &amp; etc. is less than 50%.</td>
</tr>
</tbody>
</table>
3) Execution of risk assessment
(1) Work on deck in heavy weather conditions;
(2) Work at high elevation and overboard;
(3) Work in enclosed space;
(4) Hot work;
(5) Discharging or loading cargoes of difficult handling; and
(6) Special work.

4) Matters of confirmation by master
(1) Ensure the correct and appropriate equipment is available and used;
(2) Ensure crew are wearing appropriate footwear, gloves, helmets and clothing; and
(3) Ensure safety appliances are provided and dressed where necessary.
※ Remember safety of life is the most important consideration

2.2 Guide to Responding Accident
In the event of an incident or allegation that gives, or may give, rise to a P&I problem, there are certain actions that should be taken necessarily and certain actions that should never be taken.

1) Actions always to be taken

(1) Keep your owner or manager informed;
(2) Call the local P&I correspondent;
(3) Investigate every allegation of injury, damage, or pollution;
(4) Collect any evidence or documents relating to the incident, including any defective equipment. Store it in a safe place and clearly label it;
(5) Take photographs relating to the incident;
(6) Instruct witnesses to make notes of what they saw or heard and to draw a diagram, if appropriate. This should be done as soon as possible after the incident. Make personal notes about the incident yourself;
(7) Ask an advice of the P&I correspondent before issuing a written statement or report;
(8) If an injury has occurred, complete your company’s accident report form and make an entry in the ship’s logbook; and
(9) Report should be made on the basis of facts excluding personal opinions or hearsay.

2) Actions never to be taken

(1) Allow a surveyor or lawyer on board the ship, or to interview crew members, until he/she discloses his/her identity and proved as he/she is duly authorized to act for your shipowner or your P&I Club;
(2) Allow surveyors or lawyers acting for opposing parties on board, unless accompanied by a surveyor or lawyer acting for your shipowner;

(3) Give written material or physical evidence to opposing lawyers or surveyors. If indoubt, do not hand over anything to anybody;

(4) Make comments or opinion, especially in the accident report, as to who or what was responsible;

(5) Allow crew members to express his/her opinions. Everything should be stuck to the facts;

(6) Admit liability, either verbally or in writing;

(7) Put signature on a document in spite of acknowledging it contains incorrect information; and

(8) Think the problem will be solved if you do nothing.

3. Collection of Evidence

3.1 Necessity for Collecting Evidence

The fact that the evidence relating to an incident is likely to be found on board the ship and will be needed by the Club to defend claims received from injured persons, the owners of damaged cargo or property, or from a terminal operator, should be kept in mind.

Ships’ masters have an important role in the collection of evidence that will help the Club evaluate the damage and establish liability. Evidence should be collected, recorded and preserved.
Memories will be faded away. It is therefore imperative to make notes on how the incident occurred as soon as possible after the event. This guidance will help you to determine what information is needed and to whom it needs.

### 3.2 Importance of Producing Evidence

Legal disputes concerned with vessels are one of the most inherent risks occurring mostly in shipping business where the vessels are owned or chartered. It is not too much to say that whether the shipowner wins or loses in those disputes is depended entirely upon collecting decisive evidences at the time of accident.

In cases where the relevant information and documents are available, claims can usually be resolved quickly, avoiding lengthy legal wrangles and crippling legal costs. If good, clear and logical records have been produced, the judges and arbitrators will infer that the vessel was operated by experienced and skillful ship master and are likely to lead a favorable judgment for the shipowner.

One of the reasons for the lack of evidences from the ship is that ship’s crew were unaware of required evidences from the ship through their judgment of having no fault of their own, and more importantly, they were unaware why such evidences were required.

### 3.3 Master’s Role

The master and officers can be of great assistance to lawyers, surveyors, or other consultants instructed by shipowners and their insurers to go on board the vessel
to investigate an accident. When an accident occurs, valuable information may be destroyed or lost inadvertently before the lawyer or surveyor is able to come on board the vessel. So, the master and officers should gather all the relevant information and documents together for the lawyer or surveyor, so as to examine when they come on board.

Also, there are many minor incidents and disputes which arise during the normal course of a vessel’s trading. Although the claims may be relatively small but occurs frequently, they tend to be collective and they may present a substantial amount of money. Therefore, the information recorded by the master and officers on a regular and routine basis will be essential in defending these claims.

An increased awareness of the type of evidence required to defend a claim will also lead to an increased awareness of potential problems which could arise on a vessel, and therefore it could lead to greater care being taken by the master and officers in the management of ship operation.

3.4 Type of Evidences

1) Deck/Engine-room Logbook

It is important that entries of every daily record books on board should be made thoroughly and in order. Entries in the logbooks should always be written neatly in ink. If a mistake is made in writing, a single line should be drawn through the relevant passage. Words should never be erased, either by rubbing out, or by painting with erasing fluid. Erasures appear suspicious when logbooks are examined by the opposing party to a dispute, and in any event techniques are available and erased words can be
read. Furthermore, the opponent examining a logbook having many erasures and is untidy may draw adverse inferences about the way that a vessel is generally maintained.

2) Daily notebook
Masters and officers often keep their own diaries of events on board the vessel. These notebooks are of great evidential value. If any part of the notebook is relied upon as evidence, the entire notebook must be made available to all the parties to legal proceedings. Therefore, the master should ensure that entries in the notebook are of an objective and factual nature and should avoid his personal views. In some cases, the shipowner may be embarrassed by the master’s notebook and such fact may adversely affect the owners’ interest. Therefore, it is necessary to confirm shipowner’s view by the master regarding the contents of records in advance, if necessary.

3) Photographs and Videos
Photographs and videos can provide essential evidences. As an example, shipowners were able to defeat a claim for cargo shortage by producing photographs as evidence that showed grain cargoes, which had been discharged into road trucks, spilling out of the backdoor of the trucks. Photographs and videos can also show heavy weather conditions, inadequate fenders, how cargo was secured, or the general condition of the vessel. Similarly, sketches and drawings are of immense value in depicting certain incidents. If photographs, videos or sketches are to be used to support the master’s written report, they should be clearly labelled to indicate the date, time, and place and initialled by the master.

4) Reports
The master’s report should be limited to a factual and objective account of the
incident. The master, as far as possible, should avoid giving his opinions on how an incident occurred, but for the purpose of investigating the incident, the master’s views are extremely important. Therefore, the master’s opinion should not be included in the master’s report. The master should also avoid making entries of the incident in the general voyage reports to owners as that document will almost certainly be made available to all the parties.

4. Safe Navigation of the Vessel

4.1 Securing Seaworthiness

1) Needs for securing seaworthiness
   At the first provisions of the rules concerning the ship, the shipowner is imposed with an obligation to take good care of securing ship’s seaworthiness. As the master represents the shipowner on board the vessel, it is important for him/her to be aware of the precise meaning of the term seaworthiness, so that in the event a problem arises he/she should know what kind of evidence will be required to enable owners to defend any claims brought against them.

2) A Seaworthy Ship
   According to the Hague Rules in 1924, the carrier shall have due diligence before and at the beginning of the voyage as follows:
   (1) the hull and fittings shall be strong enough and endurable for the voyage(ship’s capabilities);
   (2) the ship shall be a state to complete the voyage (ship's operation capabilities); and
   (3) ship’s cargo holds shall be a state to carry the cargoes safely (cargo carrying capabilities).
4.2 The Exercise of Due Diligence

Under the rules, the carrier is obliged to exercise due diligence to make the ship seaworthy before the ship is put into the sea. If problems arise on board during the course of a voyage, it is important for the carrier whether the following tests were exercised or not to make the ship seaworthy as follows:

① If the defect have come to light by the careful checking of the ship before the voyage began? and
② if so, did the shipowner mend it after loading before the ship comes to sea?

The master and the crew should not rely on the findings of the outside examiners such as classification society or underwriters’ surveyors. These surveyors have different interests and do not usually work to the same guidance, standards or requirements.

All the checks and regular maintenance works carried out by the crew should be properly recorded and documented. If something does go wrong and cargo is lost or damaged, then the presumption will be that the carrier has not taken good care to make the vessel seaworthy.

The carrier must produce evidences in the form of logbooks, work schedules, work specifications, accounts, standing instructions, reports, and state at the time to show that good care has been taken to make the vessel seaworthy.
**Case Study: Unseaworthiness**

1. **Summary of Accident**
   Bulk carrier BR of DWT 26,589, registered at Jeju, Korea, laden with iron ore in bulk of about 16,992.5M/T, left Penang, Malaysia at about 1530 hours 13 November, 2011 and bound for Richao (off Hong Kong), was capsized and sunken during the voyage on 21 November, 2011 around 1513 hours in South China Sea.

2. **State of Accident**
   1) **Presumed Causes of Accident**
      The presumed causes of capsizing and consequently sinking of the vessel are one or combination of the following factors:
      (1) The vessel was not in a suitable condition to complete the intended voyage at the time of sailing from the loading port, taking into consideration the condition of the cargo before loading operation (which might result in instability of the vessel following possible shifting or liquefaction – free surface effect, etc. in transit, which might lead to capsizing of the vessel).

      (2) Defect(damage) to the bulkhead between Nos. 2 & 3 cargo holds and side shell plating near No. 3 cargo hold, which might spread to adjacent area in transit due to shifting (or free surface effect) of the cargo or would accelerate such phenomenon.

      (3) At the time of accident, the evaluation of prevailed situations of the vessel such as discharging/taking ballast waters to avoid ship’s capsizing and consequently sinking was failed.
2) Negligence of Parties

(1) Inadequate cargo

The cargo was iron ore of powder and loaded in heavily wet. Before commencement of loading operation, the cargo had already been heavily affected by rain because cargoes piled up out in the open storage yard without any covers.

(2) No information of cargo from shipper

The shipowner and master should had known that the cargoes were dangerous. Although the shipper had given the information about dangerous cargoes to shipowner in accordance with the IMSBC code, but the information given by the shipper was insufficient.

(3) Liability of charterer

The charterer may have failed to know the information of loading, stowing and trimming of cargo like shipper, but the shipowner should had known those information necessarily.

(4) Condition of ship's hold

Flooding of water through defected (or cracked) bulkhead between Nos. 2 & 3 cargo holds and corrosion of side shell plating near No. 3 cargo hold might accelerate shifting of cargoes.

3. Learning from Accident

1) Correction of ship's defects

The cracked parts of cargo holds should be repaired necessarily before sailing.
2) Remarks on the Mate's Receipt

The master should make entries of the condition of cargo (wet by rain, stowed at open yard without coverage, etc.) on the Mate's receipt without fail.

3) Needs for securing relevant evidences

Following evidences are necessary to disclose who is liable for:
- all the pre/post-fixture exchanges between the shipowner and the charterers and fixture memo of last contract;
- information exchanged among shipowner, shipper and charterer against cargo condition and characteristics of cargo at the time of loading at loading port;
- all information exchanged between the master and the shipowner/charterers/shippers about the nature and condition of the cargo including details of any oral discussions as well as written communications; and
- full details about the extent of the involvement of the master and crew in the loading, stowing and trimming of the cargo, if any.

4) Exercise of due diligence

In case the accident was caused by unseaworthiness, the shipowner or master can be exempted from the obligation of negligence in navigation by producing evidences that he/she was not negligent clearly. Therefore, the shipowner or master should pay efforts in exercising due diligence so as to secure ship’s seaworthiness.
4.3 Deviation

The carrier is obliged, in the absence of any agreement to the contrary, to carry the cargo directly to its destination. And the carrier is also under an obligation to ensure that the vessel proceeds promptly to her destination. Any unnecessary delay will be treated in the same way as a deviation from the contractual voyage.

A deviation is justifiable in the following three situations only:

① If there is a real or immediate danger, the carrier may deviate for the purpose of protecting and preserving the cargo. In certain circumstances, if the well being of the cargo so demands, it may be the carrier’s duty to deviate;

② The carrier may deviate for the purpose of saving human life. However, he may not unnecessarily delay the vessel at the scene of a casualty; and

③ The contract of carriage may permit a deviation from the contractual voyage if it contains a “liberty of deviation” clause.

In the event the vessel deviates from the agreed, direct, or customary route, or in the event of delay in the prosecution of the voyage, the master should notify owners immediately. In addition he/she should ensure that the precise and detailed reasons for the deviation or delay are fully and accurately recorded, and documents such as the logbook, ship to shore communications, course recorders, and nautical charts must be made available to his/her shipowner.
4.4 Unsafe Ports

1) Meaning of Safe Ports
   ① Ports must be safe to approach and depart from;
   ② Ports must be safe to use; and
   ③ Ports must be free from potential danger by good navigation and ship
   maneuvering skills.

2) Charter Party and Safe Ports
   (1) Time charter
   Time charterers have the option to nominate a safe port within a certain range.
   Charterers’ obligation to nominate a safe port arises at the time when the order is given.

   In case the port nominated by the charterer is unsafe at the master’s judgment,
   the master should immediately contact owners, explain in detail the reasons for his
   judgment and request further instructions.

   The master, before proceeding to the nominated port according to the charterer’s
   voyage instructions related with the port, should consider carefully voyage instructions
   given by the charterer.

   (2) Voyage charter
   Voyage charterers are under an obligation to nominate safe ports to approach, use and
   leave during the time specified in the charter party.
Case Study: Safe Port

1. Summary of Accident

M/V Eastern City was chartered for voyage and dropped anchor after arriving at the port of Mogador in Morocco, but got aground caused by strong wind. The shipowner claimed damages against the charterer in violation of the contract clause – no nomination of safe port.

2. Causes of Accident

In the port of Mogador, Morocco large ships such as M/V Eastern City are required to drop anchor within designated anchorage. However, the trial judge discovered that no vessel dropped anchor at the anchorage could be protected from southwest wind and swell. In particular the anchorage of the port of Mogador has very strong wind between December and next March. The vessel was at the anchorage at the end of December, and the master of the vessel had ordered to avoid danger after heaving up anchor but the vessel got aground on rocks.

The judge of the first trial concluded that the port of Mogador is not a safe port for large vessels such as M/V Eastern City in the view of using anchorage in winter season. In the trial on appeal case the lawsuit of claimant was rejected and the court concluded the trial as follows;
Preferentially, the anchorage is required to forecast climatic change in advance and to have the ability to avoid danger other than anchorage facilities capable of responding sufficiently to climatic change, so it is difficult to view that the charterer had nominated safe port in this trial.

Synthetically, a port can be regarded as safe port in case the port has secured all of buoys in channel, towing ships, pilots, proper anchorage, forecasting facilities for sudden attack of strong wind, shelter, and etc. This case has expanded the concept of safe port to the fact it has the capability of forecasting climatic change as well as physical facilities.

3. Learning from Accident

1) Weather condition, peculiar geographic condition of a port are important factors for the safe port, but the administration of port authority also is recognized as an important factor for safe port. So, the administration system of a port authority for ISPS Code or infectious disease and etc. should be checked.

2) As the safe port should be judged in consideration of ship’s characteristics, specifics of situation and etc. other than usual standards, it should be checked whether it has any predictable risk or not until ship’s departure as well as the time of nomination as safe port.

3) The vessel secured with seaworthiness should be operated under the master having sufficient experience.
5. Accident of Casualties and Injuries

Shipowners are under an obligation to maintain a safe working environment on board the vessel for preventing accidents of human life at all times. If any crew, passenger, or shore personnel concerned are injured on board the vessel or in the vicinity of the vessel as a result of the failure to maintain a safe working environment, shipowners will be held liable.

5.1 Injury to Ship’s Crew

If a member of the crew is injured, the master should ensure that a record is made of the cause and details of the injury.

Usually, in case any member of crew is injured, assistance will be rendered on board the vessel. If the vessel is in port, the crew member may be sent ashore for treatment usually. The master also should ensure that a note is kept of the type of treatment administered to the crew member on board, the treatment administered to him ashore, by whom the treatment was administered, and the exact time the treatment was given.

In the event that the injury was caused by a failure of a part of the ship’s equipment, the master should ensure that the damaged part is retained for future inspection. If the item of ship’s equipment is seriously damaged, the master should request owners to call in a surveyor to inspect the damaged part.

5.2 Injury to Stevedores and Non-crew Members

Claims for personal injury to a stevedore or other person who is not a member of the
crew may be submitted months and even years after an incident. Therefore, in the event of an incident on board the vessel or in the vicinity of the vessel, the master should ensure that the contents of incident are properly recorded.

The master also should identify the position of the injured party and discover the reason why the person is on board. And the master should make a note of whether the circumstances of the accident were appropriate for the original visiting purpose of the injured party or not.

The master should complete a standard accident form of the company and record details of the treatment administrated on board the vessel or retain any piece of ship’s equipment which may have caused the accident.

5.3 Securing Evidences

The master should prepare a report of the accident as well as a standard accident report.

The reports should include the following information:

1. Details of the circumstances surrounding the incident;
2. The conditions at the time of the accident and whether they contributed to the accident;
3. Whether or not the injured party in any way contributed to the accident or whether there was any obvious negligence on the part of a third party;
4. Names and position of the witnesses to the accident, including crew members; and
5. A drawing or photograph of the scene where the accident occurred.
5.4 Measures to Be Taken

Whenever there is a death, injury or even an allegation of injury on board or in the vicinity of the ship, always inform the local Club correspondent of the fact, regardless of whether or not the injured person is a crew member and the following measures should be taken:

① Investigate at all times and complete your company’s accident report form (for all accidents, not just for crew injuries);
② Report the incident to your shipowner or manager;
③ Do not give any statement to other persons except the lawyer appointed by the Club;
④ Do not express an opinion as to what happened;
⑤ In case of having an accident of injuries;
   - in port, notify your shipowner or manager and the P&I correspondent and have the injured received medical treatment;
   - at sea, notify your shipowner or manager, and obtain radio medical advice;
⑥ As well as completing the accident report, write a detailed description of what happened (these notes will help to refresh your memory during the subsequent interview with your lawyer);
⑦ Ask witnesses to write a detailed description of what they saw or heard (you will need a special form for this which is normally supplied by your shipowner or manager);
⑧ If the ship’s equipment or the ship’s structure was involved in the injury, examine the equipment, take photographs of the place where the accident occurred, record the time and the date of photographs, and retain and properly
label every evidence. Obtain a copy of the maintenance record of the equipment and any applicable test certificate;

Inspect the scene where the accident occurred with the Club’s appointed surveyor or local correspondent; and

Keep always detailed records of all medical treatments given on board and any external advice received.

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**Case Study: Accident of Casualties**

1. **Summary of Accident**
   General cargo ship JP of DWT 7,209 registered at Jeju, Korea had arrived at out anchorage of the port of Fukuyama in Japan at about 1800 hours 6 June, 2012 and waited her berth. Second officer of the ship was dropped into No. 2 cargo hold due to poor visibility and found dead during heaving up anchor for berthing at about 0045 hours 7 June the next day.

2. **State of Accident**
   The ship left Incheon, Korea in ballast and arrived and anchored at out harbor of the port of Fukuyama at 1800 hours 6 June, 2012, and all hatch covers of the ship were opened to load cargo by the request of ship’s agent.

   At about 0045 hours 7 June the boatswain and one deck sailor were attended at heaving up anchor in order to come alongside at No. 2 Export Terminal of JFE Steel in Fukuyama, and then they moved to
starboard side of No. 2 hatch for waiting her shifting after heaving up anchor. On around the time of accident they saw the second officer was moving to winch room after passing the exit of accommodation located at rear side of No. 2 hatch, and they heard suddenly the scream of second officer and run to the scene. They found the second officer was dropped into No. 2 hold floor of which height is 8.5 meters.

The master received the accident, stopped the ship immediately and inform Japan Coast Guard Agency of the fact.

3. Presumed Causes of Accident
   In order to arrange mooring lines for berthing in early morning the second officer went to the winch room for power-on. During his moving to the winch room, the second officer might be dropped into No. 2 cargo hold where the hatch cover was removed already. It is presumed that the second officer could not see the state of removed
hatch cover and dropped into the hatch caused by poor visibility.

4. Learning from Accident
1) Minimum necessary illumination should be made for safety even sailing at night time.
2) In case of entering into an enclosed space as the winch room and etc. two persons at least should move together.
3) Give every crew the matters of cautions for moving at night time.

6. Issuance of Bill of Lading

6.1 Function of B/L

In the viewpoint of carriers and shippers the bill of lading certifying the quantity of cargoes being carried on board and the apparent order and condition of the cargoes at the time of loading is a vitally important document.

The bill of lading also represents the cargo itself, and possession of the original bill indicates who is entitled to receive the cargo at the discharge port.

Generally bill of lading has following three functions:
① Document of Title;
② Receipt of Goods; and
③ Evidence of Contract of Carriage.
6.2 Checking Entries of B/L

If any description of cargoes on the issued bill of lading are inaccurate, the carrier may have serious damages by it, therefore the master should check all entries of the bill of lading in detail and carefully.

Typical discrepancies with bills of lading are as follows:

① Port/date is/or incorrect;
② Quantity of cargo is incorrect;
③ Description of cargo are incorrect; and
④ Condition of cargo is incorrect.

The master should check the details on the bills against tally sheets, mate’s receipts, boat notes and draft surveys, and should make a note on the bills any details of damaged or short-delivered cargo, or any other discrepancies. If in doubt, call the P&I correspondent and ask for a surveyor.

6.3 Signature of B/L

The master should not state anything on the B/L which he believes to be inaccurate. If the B/L does contain inaccurate information, the master should correct it with an appropriate clause before signing it.

The master never put signature on the bill of lading in the following cases:

① To sign on bills having wrong date;
② To sign clean bills for damaged cargo or for cargo that is not in apparent good order and condition; and
③ To sign bills for cargo that has not been loaded;

Endorsements on the B/L, such as “Shipper’s figures”, “Figures as per shore tally”, “Quantity and condition unknown” or “Said to be ...”, will seldom absolve the carrier of blame if he, being able, has failed to check the particulars of the cargo to his own satisfaction.

6.4 Cargo Delivery by B/L

The master never deliver cargo in the following cases:
① To deliver cargo without presentation of the original bill; and
② To discharge cargo against a letter of indemnity without your owner’s or manager’s or the Club’s agreement.

If it is agreed to retain one original bill of lading on board against which the cargo may be delivered, the shippers’/charterers’ instructions for procedures at the discharge port must be strictly followed. In such a case, to protect the shipowner from a claim for mis-delivery of the cargo, all original bills of lading should be endorsed as follows:

“In order to deliver the cargo properly in accordance with the instructions received from shipper/charterer one original bill of lading should be retained on board.”
6.5 Notification

The master should notify the shipowner or manager and the P&I correspondent immediately in the following cases:

① If the shipper objects to the bills being claused;
② If you suspect that the agents have signed bills on your behalf without checking the mate’s receipts or without noting on the bills any remarks that are in the mate’s receipts;
③ If the delivery of cargo is requested by the person who has not presented the bills at the discharge port;
④ If cargo condition and quantities or any problem is happened on B/L; and
⑤ If there is any deviation related with loading/discharging cargo.
Combined Transport Document
7. Cargo Loss or Cargo Damage

7.1 The Importance of Cargo Handling

P&I clubs do not directly insure the cargo itself, but they do insure shipowners or managers for their liability to cargo owners for loss or damage arising while the cargo is in the custody of the ship. Many cargo claims can be prevented by good maintenance and careful handling, stowage and transportation.

The obligation on the carrier is to do everything necessary to deliver the cargo to the receiver in good condition as much as when it was entrusted to the carrier. The carrier, therefore, must ensure that all cargo handling operations including the loading, custody, transportation and discharging are performed properly and carefully.

The master should be fully aware of any matters demanding special attention that the cargo may require. Information and instructions with regard to the treatment of cargoes should be acquired in written form from the shipper. In case the master has not acquired this information, he/she should request the assistance of owners or their local agents who may appoint an independent surveyor or expert.

It is necessary for the master to ask an advice of shipowner’s local agent or local P&I club correspondents regarding local law, regulations and customs for specific cargo handling.

The carrier’s obligation is to take care of the cargo properly and carefully. So, the cargo transportation performed according to usual customary practices can not become
a proper defence against cargo claims. In order to certify that the cargo has been discharged safely and properly, the master should make correct entries of cargo works and every operation to be documented.

7.2 Loading Port

The carrier should take care and custody of cargoes properly in order to keep the cargoes as the same condition at the time of loading.

1) Damage before loading
   Cargo is often damaged before shipment. In case clean bills of lading have been issued without discovering the damage before its shipment, the consignee may claim against for pre-existing cargo damage.

   If cargo is being loaded that shows signs of damage, stop loading and call the P&I correspondent. The mate’s receipts and bills of lading are specified with such a state of cargo.

2) Damage by rain
   Stop loading and close the hatch covers during rain. Record the periods of rain when the hatch covers were open in the rain. In some times wet cargoes have to be discharged if necessary.

   The responsibility for the wet damage of cargo varies by who have required to work in rainy weather. If the work was requested by cargo owner, the master must enter following remark on the mate’s receipt.
“Rainy work by shipper, no responsible for wet damage of cargoes.”

3) Damage by stevedore
If cargo is roughly handled by stevedores, protest against it and a note of the damage should be made.

4) Damage by unclean cargo hold
The responsibility for damage by unclean cargo hold will be rested with the shipowner in general. Therefore, chief officer should make sure that cargo holds or tanks are clean and ready to receive the cargo and, where possible, inspect the loading spaces before loading.

5) Damage by inappropriate stowage
Cargo can be damaged during the ocean voyage because of inappropriate stowage or loading in wrong place, and the shipowner is responsible for such a damage in general. Therefore, the method of cargo stowage should be checked before loading and the stowage state should be supervised at all times, and in case of arising cargo damage by stowage it should be claimed for changing stowage. If in doubt, call the local P&I correspondent and ask for a surveyor to examine the stowage.

7.3 During the Voyage

Damage occurs often during the voyage because of moisture or cargo shifting.

1) Securing cargo
Check lashings before departure and during the voyage. If any loose cargoes were
secured, ship’s master should make entries of the fact in the logbook.

2) Ventilation
Ventilation condition and cargo temperature during carriage should be checked with the charterer. In case of convincing the correct condition the ventilation is carried out and the fact is recorded in the logbook.

7.4 Discharging Port

If cargo is found damaged on arrival at the discharge port, you should carry out following matters:

① notify your owner or manager;
② immediately call the P&I correspondent and arrange for the attendance of a surveyor and survey;
③ delay discharge until the nature and extent of the damage is found; and
④ in case short delivery or contamination of cargo is alleged, contact the P&I correspondent. You may need a surveyor to witness any sampling or to calculate the shortage.
Case Study: Cargo Claim

1. Summary of Accident

Hot coil of 4,853 M/T which arrived at Antwerp on 7 May, 2012 by general cargo ship IT of DWT 42,001 registered at Jeju, Korea were found to have rusted and deformed.

2. State of Accident

The vessel loaded steel cargoes in the Tianjin (twice call), Qinhuangdao and Bayuquan (twice call), and dropped at Singapore for taking bunkers. The cargoes were loaded on board the vessel by stages in several ports, sometimes loaded for long periods due to short of cargoes and most importantly with remarkable temperature variations, from which cargo damage is inferred.

From the logbook we noted that air temperatures during loading of different steel cargoes varied from +11°C to −12°C, but that most of the time air temperature was low and freezing temperatures were recorded. When entering the port of Singapore for bunkering, air temperature reached up to +28°C and increased up to +33°C later.
The vessel opened the hatch covers for ventilating the cargo hold and chief officer inspected the cargo on a daily basis, but there was no description of any inspection and ventilation in the vessel’s logbook.

The vessel eventually arrived at Antwerp via Jeddah, Sagunto and Bilbao ports where parts of the cargo were discharged, but no stevedore damages had been recorded in each different loading and/or discharging ports by chief officer, only with the exception at the port of Antwerp the stevedore damage report was issued by the master in Korean language.

During the voyage from the Far East to Europe, adverse weather condition were recorded with wind forces up to Beaufort scale 8 and shipped sea sprays on deck and hatch covers. No intake of sea water was noted at the inspection in any of the holds, and the inside of the hatch coaming plating was found dry without any rust streaks. Instead some pieces of watertight rubber packings of the hatch covers were replaced in part.

[Figure 4] Packings Replaced Partly
The steel pipes were loaded on the top of the steel coils in almost of the cargo holds without covers and some pipes were covered up with snow.

Also the steel coils were loaded in double tiers or triple tiers, from which deformation of steel coils are inferred.

The steel cargoes had been loaded on board under the supervision of the charterer’s supercargo, but no protest was made by the ship’s master.

3. Learning from Accident

1) Letter of protest should be submitted immediately when the cargo has been loaded with damage;
2) Photographs should be taken whether the cargo is in good condition or not;
3) Letter of certificate should be received by shipper or charterer;
4) Letter of certificate should be received by the person in charge of stevedore company regarding the cargo condition;
5) Remove snow on the cargo before loading;
6) Ventilation should be carried out thoroughly when the vessel is passing in an area with highly different air temperature;

7) Ventilation operation should be recorded in the logbook necessarily;

8) Letter of Protest should be written in English and needs signature from opponent; and

9) If any rubber packing of hatch covers are abnormal, repair it.

8. Collision and Property Damage

8.1 The Role of P&I Club in Collision Accident

P&I clubs do not cover the damage of the ship itself – that is the responsibility of the hull and machinery underwriters.

If a collision only results in damage to your ship, your Club will probably not be involved financially but may still assist the owner related with settling the accident. However, the damage caused to the other ship in a collision may be insured by the Club or by the hull underwriters or by both of them.

In case of occurring a collision accident the master should inform immediately your shipowner or manager, the relevant authority and the P&I correspondent of the fact. Advise them of the other ship’s name and port of registry, details of the property
damaged, the date, time and location where the incident occurred, rough extent of the damage and whether injury or pollution has occurred or not.

The Club will invariably investigate the incident to find out the causes of accident and who is to be blamed. Depending upon the damage caused by the collision, a survey of the ship’s damage or of the cargo or an accident investigation may be necessary – the Club or the P&I correspondent in charge will arrange these surveys.

8.2 Preventive Measures to Avoid Collision

Many accidents and collisions are caused by a failure of observing established procedures, and particularly caused by a failure of complying with the regulations for preventing collisions.

Basic matters to be observed by officers of the watch on bridge for preventing collisions are as follows:

① To keep safe speed appropriate for the prevailing conditions;
② To reduce ship’s speed in early time when approaching a pilot station, anchorage or berth;
③ To keep a proper lookout, and do not leave the bridge unattended even for short periods;
④ To observe ship’s position at all times, even under pilotage;
⑤ To keep radio contact with other ships and local competent authorities;
⑥ A good communication between master and pilot is crucial. The pilot should be made aware of any particular ship characteristics, including
maneuvering at low speed, and the master should ascertain details of specific hazards and proposed ship’s route including strong tidal streams;

⑦ Proper supervision is essential, and a risk assessment performed prior to commencing even routine tasks could prevent an accident; and

⑧ As fatigue may cause an accident, it is important to monitor the hours of rest and ship’s crew should be well trained and educated.

### 8.3 Securing Evidence

1) Prior to collision

Data recorded daily on board the vessel will be crucial in determining how and why a collision was occurred. It is imperative, therefore, that all sections of the logbook are recorded and completed fully and accurately at all times.

Nautical charts used for the voyage and bell books are important evidence which have particular relevance in collision investigations.

(1) Charts

The master should ensure that chart positions are left precisely as plotted and that positions which do not match others are not erased. The master should also pay special attention to marking ship’s positions on the charts during her transit of passage under the command of pilot.

(2) Bell book

The master should ensure that bell books are recorded in ink and that any correction
are made in ink, signed, and dated by the person corrected. The record deleted should be scored out with a single line leaving the writing underneath legible. The use of correction fluid should not be permitted.

The master should also ensure that times are recorded accurately. Also he should ensure that printer outputs from telegraph recorders and the engine room are retained as part of the bell book.

(3) VDR

Voyage data recorder (VDR) is a data recording system designed for all vessels required to comply with the requirements of IMO’s SOLAS Convention in order to collect data from various sensors on board the vessel, and the last 24 hours of stored data can be recovered and replayed. If an accident occurs, VDR should be stopped by force in order not to overlap the records.

2) After collision

If possible, the master and the officers should collect, record, and preserve as much detail of the collision as they can do immediately after an accident.

Major items of evidence to be prepared by the vessel are as follows:

① The vessel’s position at the time of the accident;
② The exact time of the collision;
③ Ship’s heading at the time of the collision;
④ Estimated collision angle of other vessel to my vessel or my ship’s angle to the other ship;
⑤ Any change of course or ship’s speed before the time of the collision;
⑥ VDR data;
⑦ Copies of the navigation charts on which details of the courses and positions for a period of at least 60 minutes before the collision are shown;
⑧ Printouts, with times, from the AIS, GPS, course recorder, engine log, echo sounder;
⑨ Notebook on bridge, radar, gyro, radio and weather charts;
⑩ Standing orders/night order book;
⑪ The passage plan;
⑫ Make entries of the names and the position of tugs that are ‘made fast’ or ‘in attendance’, and the time when each tug arrived;
⑬ To check the synchronization of bridge, engine room and other clocks; and
⑭ Photographs of any damage to your ship and the other ship or structures.

Instruct those on watch (on the bridge, deck and in the engine room) and any other potential witnesses on board to make personal statements regarding the incident as soon as possible, noting only the facts and times.

Also, identify whether there was any witness of third party on the collision.

The master also should ensure that any independent witnesses to the incident are identified.

The master should record the names of all the vessels in the vicinity and attempt to
obtain the names and addresses of the officer of the watch of these vessel by VHF.

Finally, the master should ensure that any scraps of paper which have been disposed in the garbage can on the bridge are retained as these may contain the key as to why and how a collision occurred.

Remember not to admit liability when questioned (in most collision cases investigated by the Club, both parties, to a greater or lesser extent, have been found to be at fault), and take special care to prevent unauthorised surveyors and lawyers from boarding the ship.

Brief crew members to stick to the facts and instruct them not to discuss the incident with anybody.

3) Under pilotage
The master should secure the name of the pilot on board (if concerned) including any additional information exchanged between the master and pilot.

The master should also ensure that the watch keeper, helmsman, the look-out, and any other persons on the bridge at the time of the collision make a complete record of events.

The pilot also should be requested to make a written account of the events before he leaves the vessel. A note should be made of the pilot’s name, address, and telephone number.
The master should record speed log readings and make a note of the state of the tide at the time of collision. Estimation of the tide and tidal current are to be made by tide tables though not correct.

4) Vessel at berth

It is generally the view that unless there is evidence that the moored or anchored vessel contributed in some way to the collision, the vessel underway is liable for the damage.

The master should secure the following evidences regardless his/her vessel is offender or not:

① Whether or not the moored vessel or an adjacent vessel was testing her main engines in such a way as to contribute to the accident;
② Whether or not the moorings on the moored vessel were defective, slack, or ineffective in any way;
③ An estimate of the tidal direction and strength;
④ The identity of witnesses on shore (company and name);
⑤ Photographs of damage to own vessel, and if possible, of the damage to the other vessel;
⑥ VDR data; and
⑦ If the damage has been caused by a ship’s wake of sloping effect, make a list of all other ships that passed at or near the time of the incident. If possible, estimate their course, speed and distance from your ship.
8.4 Damage to Fixed and Floating Objects

Damage caused by a vessel to fixed or floating objects often gives rise to large claims which owners have great difficulty in defending. The damage may be caused by a vessel coming into direct contact with, for example, a harbour, dock, pier, jetty, buoy, or crane, or the damage may be caused by the vessel’s close pass-by.

In most instances, claims for the damage caused by the vessel will be covered by the vessel’s P&I insurance.

1) During entering a port
Damage to fixed and floating objects usually occurs when a vessel is entering or leaving a port. If damage occurs when a vessel is entering a port, the master should report the accident as soon as possible to owners.

If possible, the master also should contact the local P&I representatives and request them to attend and assist.

2) During leaving a port
If the damage occurs when the vessel is leaving a port, the master should resist any temptation to ignore the accident in the hope that the damage will be minimal and there were no witnesses. However, incredible claims could be instituted later. Therefore, the master should notify it to shipowner as soon as possible in order that enquiries may be made to ascertain the extent of the damage.
3) Collecting evidence

If damage is occurred, shipowners and their insurers will appoint expert surveyors to assess the extent of any damage and repair.

In order to assist the surveyors, who may not arrive at the scene immediately, it is essential that the master assembles as much contemporaneous evidence as possible.

The master should note that it is not only major accidents which require vigilance.

The master should ensure that the report of the accident which he/she prepares includes the following information:

① The date, time, and location of the accident in detail;
② The condition prevailing at the time (for example, day or night, weather condition, visibility, sea state, direction of swell, state of tides and currents, and etc.);
③ Details of the vessel's manoeuvres (for example, arrival or departure, use of tugs, pilot on board, and etc.);
④ Names and addresses of all crew members, pilots, tug crews, shore workers, or any other persons who witnessed the accident. If time allows, the master should attempt to obtain from the witnesses their statements of the accident; and
⑤ Details of the damaged object.
Case Study : Collision

1. Summary of Accident

Korean container ship XT of GT 8,503 collided with Chinese bulker JH of GT 36,986 off Ningbo port in China. XT laden with 805TEU of container cargo left the Ningbo, China at 0825 hours on 6 December, 2013 and bound for Shanghai port. The vessel left the port with 2 pilots on board and 3 deck crew were kept look out at forecastle deck due to low visibility of about 0.6 miles and the weather was in state of the Beaufort scale 3 at the time.

While en-route in channel, the pilot ordered to put the rudder to hard-a-starboard in order to avoid approaching vessel JT at the distance of 0.3 miles off. But she came into collision with JH at about 0936 hours in local time on 6th December, 2013.
2. Causes of Accident

The collision between two vessels happened underway under the reduced visibility of about 0.5 miles. The master of XT vessel was absent on the bridge and did not pay keen attention to the safe navigation during his stay on the bridge, but he put much more focus on his other works i.e. communicating with head office and discussion with chief officer on the stowage plan, etc. In the above circumstance, he could not acknowledge even the presence of the other vessel during his stay on bridge, so he could not take any preventive actions for avoiding collision in early stage.

As the vessel JT navigated in zig zag crossing the separation zone, the pilot of XT ordered 10 degrees of helm to avoid JT and the pilot
on XT misunderstood that the vessel JH was entering along the South Channel because she was navigating along the traffic separation zone. Additionally the vessel JH did not take any action to avoid approaching vessel XT.

As a result of the accident, the vessel XT sustained great damage to bulbous bow, bow thruster room and fore peak tank, and the vessel JH sustained serious damage to cargo holds, fuel oil tank and accommodation.

All the claims including fishery claims and etc. would be about USD 35 million.

3. Learning from Accident
1) In case the vessel is navigating in restricted visibility, the master should stay on the bridge and have responsibility for vessel’s maneuvering even though the pilot is on board;
2) The officer of the watch should pay keen attention to the navigation only;
3) Proper communication should be made between master and pilot;
4) Vessels should observe navigation rules in the traffic separation zone;
5) Vessel should keep safe speed under the restricted visibility; and
6) When the stand-on vessel judges that it is difficult to avoid collision by keeping her own course, the stand-on vessel should take physical measures like as reducing speed and etc.
9. Pollution

9.1 The Importance of Marine Pollution Prevention

Pollution includes accidental or operational discharges involving oils, chemicals, packages containing marine pollutants, sewage, garbage and vapour. The most common type of pollution is by oil; however any pollution originated from the ship or caused by the ship can be covered under P&I rules.

The result of oil pollution disrupts environment and marine ecological systems and gives effects in wide range, so most countries in real deals severely with the vessel which discharges even small quantities of oil in their territorial waters.

[Figure 8] Oil pollution accident

1) Sources of oil spills

There are four main sources of marine pollution:
collision, fire, explosion, or grounding which result in the release of oil from the ship's bunker tanks and/or from the cargo tanks;

② discharge of oils or oily wastes during the pumping of bilges, or deballasting from cargo tanks, or tank washings;

③ accidental spills while transferring fuel or cargo from ship to ship, or from ship to shore, and accidental spillage resulting from the incorrect operation of valves on shipboard or at oil terminal; and

④ oil spills through air ventilation pipes or machinery oils from hydraulic power plants in rainy weather.

2) Causes of reducing liability in case of oil pollution accident

In case the pollution was not caused by the fault of the vessel and/or all reasonable measures were taken to minimize or prevent the following pollution, fines or other penalties for the master may be reduced or waived:

① An act of God;

② An act of war;

③ An act of the competent government in which the oil spill was occurred; and

④ An act or omission of a third party.

9.2 Pollution Prevention from Oily Water Separator

When the oil-contaminated water is to be discharged into the sea through the oily water separator from ship’s machinery space, the following procedures should be observed:

① Before discharging, check whether the discharging conditions are coincided with
the relevant regulations of the Marine Pollution Prevention Act or not;
② Check the oily water separator thoroughly and make sure the equipment is operated correctly;
③ Oil-contaminated water should be transferred to the storage tank necessarily and the oil should be separated from the storage tank first before discharging water. If possible, the mixtures should pass through the oil filtering system before it reaches the separator;
④ In order to monitor the discharge and to identify oils visually the discharge should be checked regularly along the ship’s wake. If any doubt exists, pumping should be stopped immediately;
⑤ Never use detergent or other emulsifiers to decompose the oil in the effluent before it is discharged; and
⑥ Ensure that the oil record book entry is timely and accurate. It should be signed by the master and the responsible engineer of the watch who supervised the discharge.

9.3 Treatment for Oil Spill Accident

1) Basic attitude
If you see or suspect pollution in the vicinity of your ship, no matter how small the pollution may be, the golden rule is to take action even though you are unsure whether the pollution is originated from your ship.

The master also should ensure that steps are taken to clean up the spill and prevent further spillage.
In the event of an oil spill, however minor, the master should immediately consult the local P&I club representative. Then the representative will inform the local authorities of the fact and will advise you on the steps that should be taken, and will make arrangements for legal representation and attendance of surveyors if necessary. The representative will also assist the master in dealing any problem with the local authorities.

If the authorities request permission to come on board the vessel, the master should attempt to obtain the advice of a legal representative (P&I club local representative or lawyer) before granting permission. In this case the master should make entries of the names of persons on board, the department of competent authority, any action and/or measures taken and etc.

**Do not** try to cover up or dispose of records or evidence, because this could jeopardize your owner’s P&I cover and lead to prosecution of shipowner and crew.

Finally, the master should ensure that before the use of any emulsifiers or detergents the permission of its use from local authority should be obtained, as indiscriminate use of such materials may be harmful to environment.

2) Procedures for preventing marine pollution:
   ① If pollution by liquid is suspected around your ship, immediately stop all pumping operations and close all valves of bilge water, ballast water, bunkering and cargo systems;
   ② As a preparatory activity, investigate every allegation of pollution;
   ③ Identify the source and cause of the pollution, if possible;
④ Inform port control, your shipowner or manager and the P&I correspondent, and ask for a surveyor (if the local authority is carrying out an investigation, ask for a lawyer as well);

⑤ Always follow the shipboard oil pollution response, preparedness and coordination (OPRC) plan (for tankers) and for others observe the guidelines of SOPEP;

⑥ Identify other ships and underwater pipelines in the vicinity;

⑦ Take photographs of the pollution state;

⑧ Collect samples and seal and date them. If the pollution is not from your ship, take individual samples from the ship’s tanks for comparison;

⑨ Co-operate fully with the authorities in all cases;

⑩ If in any doubt about your rights, seek professional advice through your P&I correspondent before making any statements;

⑪ If pollution originates from your ship, obtain and document the information as soon as possible from everyone involved;

⑫ If the pollution has been caused by defects of the ship’s equipment, assemble details of recent examinations, maintenance or tests, plus a certificate of test for any flexible hose; and

⑬ All defective parts should be labelled and retained on board for examination.

9.4 Evidence Required from the Vessel

① Deck logbook recording on the use of scupper plug and drip tray etc.;

② Engine logbook recording the member of the crew in charge of bunkering operation and load/discharge rates and ullages during loading and discharging operations;
③ Copy of the bunker supplier’s instruction having approved loading rate or delivery note;
④ Records of stocks of pollutant removers such as sprayers and absorbent material;
⑤ Samples of any oil which has been discharged from the vessel;
⑥ Photographs or video films showing the extent of the spill;
⑦ Records on the quantity of pollutant;
⑧ If the pollution was caused by broken equipment on board the vessel, the broken parts should be preserved;
⑨ Accounts of the events from all the members of the crew involved in the accident;
⑩ Oil record book;
⑪ Cargo loading/discharging plan;
⑫ Shipowner/charterers’ instructions;
⑬ Tank and piping arrangement;
⑭ Sounding pipe and ullage hole arrangements;
⑮ Shipboard oil pollution emergency plan; and
⑯ All communication related such as telex, telegrams, and etc.

Case Study : Oil Pollution Accident

1. Summary of Accident
On 25 May 2012 about 1730 hours, Panama-registered 82,861 M/T bulker carrier M/V DS overflowed bunker and polluted overboard during suppling bunker oils at the anchorage of Jinhae port, Korea.

2. State of Accident
1) Causes of Accident
On 25 May 2012, M/V DS was to be supplied with bunker, 450 MT of heavy fuel oil (MF380) and 30 MT of diesel oil at port of Jinhae. All HFO tanks except settling and service tanks were empty at that time.

At about 1700 hours of the same day the bunkering vessel GD11 commenced supplying bunker to the DS whilst she was lying at anchor. At about 1730 hours one of the crew found the oil was overflowing from the air ventilation pipe of No. 3 HFO tank (P) on upper deck and asked immediately the bunkering vessel stop pumping. The overflowed oil was accumulated on upper deck but some of the oil had been spilled into the sea.

Before bunkering, the chief engineer ordered the second engineer to receive all quantity of HFO in No. 2 HFO tank (P&S). As the total capacity of these two tanks was more than twice the quantity of the HFO to be taken on board, oil spill would not have occurred if the two tank valves were opened as ordered by chief engineer.

However, as a matter of fact, the second engineer inadvertently opened the valve of No. 3 HFO tank (P) instead of No. 2 HFO tank (P). As the capacity of No. 3 HFO tank (P) was only 110.6 MT, the bunker oil became to overflow.
2) Oil spillage and Control

Korea Coast Guard estimated the quantity of spilled oil was about 190 liters. The spilled oils on upper deck were cleaned by the ship's crew and oiled side shell plating was cleaned by a professional pollution control company for two days, and the vessel left Jinhae for Vancouver, Canada at about 1906 hours 30 May, 2012.

3. Learning from Accident

1) Master and chief engineer should establish a bunkering plan before receiving the bunker and should brief every crew on the bunkering plan in advance;
2) Chief engineer should assign every person participating the bunkering for definite duty;
3) When receiving tank for fuel oil is to be open or close, it should be double checked;
4) The engineer in charge of measurement should conduct the measurement periodically and in case of having any question it should be confirmed to the responsible person immediately; and
5) Officer of the watch should make watch patrol thoroughly during the bunkering operation and in case of having oil spillage he should stop the transferring bunker and take measures immediately for preventing overboard spillage.

10. Stowaway

10.1 Regulations for Controlling Stowaway

1) Definition of stowaway
A stowaway means a person who secretly boards a vehicle, such as an aircraft, bus, ship, cargo truck or train, to travel without paying and without being detected.

The costs for repatriating stowaways are covered by the Club. As repatriation of stowaways can be difficult, time-consuming and expensive and may result in unnecessary delays and diversions, it gives a lot of burden to the master and shipowner.

2) Cover for stowaway expense
The costs for repatriating stowaways are covered by the Club. Major costs are as follows:

① Expenses necessary for personal identification;
② Provisions expenses on board;
③ Airfares for repatriation;
④ Additional transport fee;
⑤ Escort fee;
⑥ Agency and representative fee; and
⑦ Deviation cost when the vessel deviates for disembarking stowaway.
Case Study : Stowaway

1. Summary of Accident

A stowaway was discovered on M.V. OA registered at Hong Kong during her voyage from Chittagong, Bangladesh to Colombo, Sri Lanka.

2. State of Accident

The vessel arrived at the port of Chittagong at 1254 hours on 22 June, 2012 and left the port at 1418 hours on 27 June.

Whilst on voyage from Chittagong to Colombo, the able seaman of the watch discovered a stowaway in the mess room at about 0130 hours on 30 June, 2012, and immediately informed to the officer of the watch and the master. The stowaway run away upon discovering.

Search was carried out until the stowaway was found at 1450 hours on 30 June, 2012 on the top of a container at Bay Location 10 07 86.

The master treated him with some water and food after lowering him down from top of the container and tried to interview him, but as the stowaway was unable to speak or read in English the master could not get any information from him.

The vessel arrived and anchored at Colombo port at 1400 hours on 30 June, 2012. At 0110 hours on 1 July, 2012 the anchor was aweigh
and proceeded to pilot station and pilot came on board at 0430 hours 1 July then vessel was berthed to South Asia Gateway Terminal at 0530 hours 1 July, 2012.

At 0545 hours on 1 July, 2012 P&I Surveyor boarded the vessel along with authorities and investigation was carried out. However, authorities were unable to get any information from the stowaway as he could communicate in his native Bangladesh language only. Since the stowaway was not keeping any identification documents (such as passport, identification card and etc.) authorities only collected the master’s statement and advised the master to keep him onboard and disembark at the port of Chittagong.

Upon the time of ship’s departure the authorities, master and P&I Surveyor managed to contact the agent of last port and some information was obtained through the agent as follows;

Name of the stowaway : Marsood
Mother’s name : Saleyah
Father’s name : Dular
Residence at Dhakah
Boarding method: Overpass vessel’s side
P&I Surveyor took photographs and fingerprints of the stowaway.

At the time of investigation the stowaway Marsood was stayed on top the container(10 07 86) where he was hidden. He was complaining a stomachache due to climbing up to three tiers of containers, but the master checked his medical status and found normal. Nevertheless, P&I Surveyor advised the master to arrange a doctor for medical assistance at the port.

When discharging of cargo was completed, the ship was scheduled to return to the port of registry, and the P&I surveyor asked the master take care of the stowaway carefully until his disembarkation.

3. Learning from Case Study
1) In case of entering a port where any stowaway is expected to come on board, the master should perform preventive education against stowaways for all ship’s crew;
2) The master should make rounds of inspection thoroughly to find out stowaways before leaving the port;
3) After leaving a port every place where a stowaway could be hidden should be checked; and
4) In case of discovering a stowaway on board, the stowaway should be provided with proper foods and sleeping place during his/her stay onboard for keeping his/her health, and his/her human rights should not be infringed.
10.2 Prevention of Stowaway and Measures to be Taken Upon Discovering

1) Procedures for preventing a stowaway
(1) Keep the watch at gangway/access at all times.
(2) Search all spaces of vessel before sailing.
(3) Expected spaces where stowaways can be hidden are as follows:
   ① On deck;
   ② Cargo holds, car decks;
   ③ Ship’s cranes;
   ④ Lifeboats;
   ⑤ Other storage spaces;
   ⑥ Stacked containers; and
   ⑦ Funnel etc.

2) Measures to be taken in case of discovering a stowaway
(1) The stowaway should be isolated in a safe place and guardsmen should be posted during the ship’s stay in a port.
(2) Take photographs of the stowaway.
(3) Search them and their places of concealment for identifying their identification papers, weapons or drugs and etc.
(4) In case no identification papers are found, interview the stowaways and endeavor to ascertain the following information:
   ① Name of stowaway, date and place of birth and nationality;
   ② Name, date and place of birth of either or both parents;
   ③ Postal and residential address of the stowaway and either or both parents;
   ④ Passport number together with date of and place of issuance; and
5. Matters of kin, if different from above.

(5) Advise your shipowner or manager immediately and the P&I correspondent at the next port as soon as possible.

(6) Try to find out the total number of persons originally attempting to board (this will assist in the search for additional stowaways).

(7) Treat them firmly, but humanely, allowing adequate sustenance.

(8) Do not add them to the crew list.

(9) Make a note of any pre-existing illness or injury.

3) Treatments for stowaways while on board

(1) The stowaway should be guarded as closely as possible while the vessel is at port to prevent them from jumping ship.

(2) Stowaways should not be put to work. If working, they will be at an increased risk of injuries which may lead to significant medical and deviation expenses and even claims for compensation.

(3) Contact with the crew should be kept to a minimum.

(4) The stowaway should be provided with proper foods and sleeping place for keeping their health.

11. Smuggling of Drug

11.1 What is Smuggling of Drugs?

1) Problems of drug trafficking

As a large-scale transportation means, the drug trafficking is increasing greatly through ships between production districts and consumption districts especially for the
drug traffickers wishing to enter into the illegal drug trafficking markets of high profits. Drug traffickers know that it is much easier to smuggle drugs through merchant ships rather than speed boats or aeroplane with little cost and at low risk of discovering.

There are no "safe" shipping routes where operators can be quite certain that there are no illicit substances on their ships.

The largest markets of drug smuggling are North America and Europe. If drugs are found on the vessel, heavy fines are to be levied on the vessel and in some cases the vessel is to be detained or forfeited. On the other hand the possible involvement of crew members in drug abuse threatens the safety of the vessel.

2) Risk cover
Although confiscation of the vessel and fines for criminal offences are outside the traditional covers provided by P&I insurance, the clubs may cover shipowners in cases where there has been no complicity by the shipowner and their employees.

11.2 Measures to Be Taken in Case of Discovering Drugs

In case of discovering drugs ship’s master should take following measures:

① The shipowner or manager of the ship should observe the rules and regulations of the country concerned;
② Inform your shipowner or manager, the appropriate authorities and the P&I correspondent at the next port of call immediately;
③ Take photographs of the drugs at their place of concealment;
④ Draw back the drugs at the presence of witness and keep in a safe place, if possible in the safe of the ship;
⑤ Minimize all contact with the substances and DO NOT attempt to taste or smell them; and
⑥ Make entries of the discovery in detail and subsequent procedures in the logbook, and make a written report based on those later.

[Figure 12] The drugs were found on board

12. Pirate and Armed Robber

Case Study: Hijacking of M/V SD

1. Summary of Accident
Korean oil tanker M/T SD, registered at Marshall Is. laden with crude oil from Iraq and bound for the United States of America, was hijacked by Somalian pirates on 4 April, 2010. At the time of hijacking the vessel was manned by 24 crew: five South Koreans and nineteen Filipinos.
2. State of Accident

M/T SD was located at outside of the area being escorted by the Chonghae military unit in Aden Bay. The vessel discovered the approaches of pirate ship, but ship’s speed was only 13.5 knots and the speed of pirate ship was 20.6 knots. The vessel was hijacked in half an hour after discovering the pirate ship.

The shipowner of the vessel, S Shipping in Korea said a pirate source named Mohamed had said the vessel was heading for Haradheere known as the pirates' base where many vessels were held during ransom negotiations.

In the beginning the pirate had demanded the money of thirty million US dollars equal to 1/10 of the total amount of ship’s price and the crude oil loaded, but the vessel was released finally after paying about nine million US dollars of ransom on 6 November, 2010 after 217 days of detention.
M/T SD was arrested on its arrival in Hong Kong on 18 October 2010. According to the paper the South China Morning Post the vessel was asked to sell out with the price over the non-payment of bank loans, but the shipowner of the vessel located in Busan, Korea had filed for bankruptcy protection as ran out of cash.

The M/T SD was built in 2002, and has been renamed as Skopelos by its new shipowner.

The ransom of M/T SD is known as the highest amount.

3. Learning from Accident

1) When a ship is to enter the high risk area by pirates, the preventive measures against pirate’s attack should be established thoroughly and the vessel should carry out drills according to the Best Management Practice(BMP) of the IMO.

2) In case it is unavoidable to have pirates on board, the fact should be informed to the authority concerned immediately and every crew should escape to Citadel rapidly.

3) Through deliberation with the company, the PCASP is to be arrange to come on board.

4) In case of hijacking by pirates or armed attack under unavoidable circumstances, every person should endeavor to keep himself healthy condition in mind and body.
12.1 ISPS Code

The International Maritime Organization’s International Ship and Port Facility Security (ISPS) Code came into effect in July 2004. The code requires ships and ports to have appropriate security systems in place to prevent unauthorised persons and cargoes from coming on board the ship.

The ISPS Code requires that seagoing ships have a Ship Security Plan (SSP) and a trained Ship Security Officer (SSO). Ship’s staff are also required to have appropriate security training prior to joining the ship.

The master should be well aware of the current IMO regulations in relation to the current ISPS Code and ensure that his/her ship complies with these regulations appropriately.

12.2 Preparation against Pirates and Armed Robbers

1) Thorough preparation

In order to avoid the attack of pirates it is essential to practice responding drills in advance, and the master and crew should make thorough preparation and exercises, and be well aware of anti-boarding equipment and facilities before entering the high piracy risk area.

Especially, it is important for the master and officers as well as all crew members to practice emergency response drills against the attack of pirates in advance through instructional videos and manuals on how to cope with pirates.
2) Security watch in port

Unauthorised boarding the ship can be prevented by the following measures:

① Maintain a proper gangway/access watch at all times;
② Lift up pilot ladder, overboard ladders and gangways if not in use;
③ Keep a record of all visitors on and off (including stevedores wherever possible);
④ Conduct deck watches at night, especially at anchor or when cargo operations are suspended;
⑤ Monitor any underwater activity around or near the ship;
⑥ Monitor the activities of small boats operating in the vicinity of the ship;
⑦ Conduct stowaway searches before/after ship sailing;
⑧ Ensure that all holds and spaces that the searching was finished already or are not in use are closed and sealed;
⑨ Restrict access to the accommodation and engine room through a single entrance (however, ensure that people inside can get out in an emergency);
⑩ Lock up deck store rooms and accesses when not in use; and
⑪ Check and seal empty containers.

Measures to be taken vary according to type of ship, number of crew, available capabilities, and etc.

3) Countermeasures in case of facing attack by pirates

When a suspicious boat is approaching, the master should identify situation rapidly.

The master should take several countermeasures and respond in accordance with the manuals when attack is commenced. Finally, when it comes under the unavoidable situation of boarding by pirates, rapid evacuation of all crew members to shelters could be the best way to minimize damages.
4) Vulnerable vessels against the attack of pirates
   ① Vessel of slow speed;
   ② Vessel of low freeboard;
   ③ Vessel not provided with emergency response plan;
   ④ Vessel appeared as having non-self defence measurements;
   ⑤ Vessel having insufficient response as warning by alarm/whistle and etc.; and
   ⑥ Vessel responding slowly against the attacking pirates.

5) Measures against approaching suspicious boat
   ① Increase to maximum speed;
   ② The master should give order to all crew to tighten the guard;
   ③ Immediately report the situation to the organization that you believe will response quickly at the moment; and
   ④ If there is time to spare, call other organizations for help too.

6) In the event a pirate ship is convinced
   ① Activate the Ship Security Alert System (SSAS) and Automatic Identification System (AIS);
   ② All crew, except those essential for the bridge and engine room, should escape to the crew shelter;
   ③ Immediately report to maritime security organizations by satellite telephone; and
   ④ If there is time to spare, change the bunker oils of main engine, generator engine and boiler.
7) In the event pirates have boarded the ship
   ① Remove the engine control panel so as not to be controlled by pirates
   ② All crew members escape to the crew shelter;
   ③ Officers on watch should take satellite phone, two-way VHF and transceiver; and
   ④ Send a message to the maritime security organizations that all crew members are escaped to the crew shelter.

8) Matters kept in mind in crew shelter
   ① Send a message that all crew members are escaped to the crew shelter;
   ② Maintain close radio contact with maritime security agency;
   ③ Identify ship’s crew from pirates; and
   ④ Report the number of pirates and their location on the ship.

9) Behavior in a hostage state
   ① If you caught in a hostage state, the pirates do not want your life but ransom; and
   ② Therefore, efforts are necessary for survival than respond recklessly against pirates.
[Figure 14] Placard for Defeating Pirates
13. Salvage and General Average

13.1 Salvage

1) Meaning of Salvage
When a ship is in imminent danger following a casualty or catastrophic failure, it will be necessary to make quick and positive decisions under pressure.

The basic criteria to be regarded as salvage are as follows:
① The subject of the salvage should be in danger, although no necessarily imminent danger;
② The services rendered by salvors must be beneficial to the saved property; and
③ The services rendered must be successful.

2) Lloyd’s Open Form
You are most likely to be faced with a demand to sign a salvage contract when least prepared to deal with it.

The Lloyd’s Open Form (LOF) 2000 is the salvage contract that is most widely known, and has the advantage of being on a ‘no cure no pay’ basis. This means that the salvage award payable to a successful salver will be determined at a later stage, and you should not negotiate it on board.

The LOF contract may incorporate a SCOPIC clause, which provides a financial safety net to the salver, and encourages them to ‘have a try’ in difficult or environmentally sensitive cases.
3) The salvage contract

A LOF contract is suitable where the dangers facing the ship are both serious and imminent. However some salvors may prefer to be paid a lump sum for the salvage. If possible, we would recommend that, prior to signing any salvage contract, you contact your shipowners, the club or hull underwriters with a view of getting pertinent advice.

However, in case of absolute urgency, the master himself may negotiate the terms of the salvage agreement with the salvor, subject to the owners’ standing instructions. Although the master comes to an agreement with salvors without the authority of the interested parties, these parties may collect the share of salvage from shipowners.

4) Evidence secured by the master

The evidence required from the vessel will be depend on the circumstances in which salvage services are rendered and special circumstances are discussed and etc.

(1) Ensure that an accurate record is kept of any conversations relating to a salvage agreement. If an agreement is reached for salvage by radio, making notes of the content of agreement is requested to an independent and unprejudiced third party.

(2) Ensure that a precise record is kept of the time of the commencement of salvage services, the times of any communications relating to salvage agreements, and time of arrival of salvage vessels.

(3) The officer in charge of making notes should make entries correctly in writing by taking photographs or other available methods.
(4) Ensure that entries of deck, engine, and radio logbooks are accurate and in particular the deck logbook contains regular recordings of the vessel’s position.

5) Entries in ship's collision case

The record keeper should keep a note of items listed below when collision accident has occurred:

① The condition of the vessel and the extent of damage;
② If there is making sea waters, the place where flooding is made, the attempts made to prevent flood, whether the doors were watertight or not;
③ Whether there is risk of sinking or not;
④ Detail specifications of the output of equipment used by salvors; and
⑤ A copy of any reports made by surveyors or naval architects.

13.2 General Average

1) Meaning of General average

General average is a system to compensate for the property with a common interest in shipping business in case the property has to be sacrificed or expenditure has incurred for avoiding common risk.

The York-Antwerp Rules define that a general average act is concluded when, and only when, any extraordinary sacrifice or expenditure is intentionally and reasonably made or incurred for the common safety for the purpose of preserving from peril the property involved in a common maritime adventure.
2) Interested parties

The interested parties are normally shipowner, the cargo owner and the charterer.

3) Contributory Value

The shipowner’s interest in the venture is determined by the current value of the vessel at the termination of the venture. Time charter hire is normally excluded from owner’s total interest, but in voyage charters the amount of bunkers onboard would be included in the shipowner’s valuation.

The time charterer’s interest in the venture is determined by the value of bunkers remaining onboard at the time of the accident, plus the freight at risk on the voyage.

The cargo owner’s interest is determined by the sound market value of the cargo on the last day of discharge.

4) General average adjuster

The average adjuster is appointed by the shipowner to collect all the facts surrounding the accident, to collect guarantee from various parties before cargo is discharged, and to ensure payment of the contributions.

5) Declaration of general average

The declaration is normally made by the shipowner. A declaration must be made before the delivery of the cargo. The general average to be declared, a collective risk must be present, both to the ship and the cargo. Shipowners usually will allow delivery of the cargo when the other interested parties to the venture provide suitable security (usually in the form of average bonds), sufficient to cover their contribution.
6) The master’s role

The master’s evidence will be crucial as it is usual for a long period to elapse between the accident and issuance of the statement of general average.

① Apart from good seamanship and reasonable judgement, the master must ensure that the history of the accident is recorded accurately and fully;
② The record should include details of all actions taken by the various parties involved and include their names and organizations;
③ The master should ensure that a photographic record of the events is made, if possible;
④ If salvage services are involved, the master should ensure that a full record is made of the salvor’s actions and the equipment used; and
⑤ The master should ensure that a clear and accurate account of events is given to surveyors, because the main evidence used for the adjustment is obtained from the various survey reports in most cases of general average.

Case Study : General Average (1)

1. Summary of Accident

Towing ship 108DH owned by BW Shipping in Korea left Nagasaki port in Japan on 7 November, 2002 to tow a barge No. 50 SK to Hanlim port in Jeju Is., Korea, and drifted near Japan caused by engine trouble which resulted in constructive total loss, and finally general average was declared for repairing costs of the main engine.

2. State of Accident

1) Declaration of General Average
After main engine trouble, the towing ship and barge were rescued by Japan Coast Guard and returned to Sasebo port, Japan, and the towing ship was towed to Busan port later.

Regarding the extent of damage to the towing ship, the repair costs were exceeded the insured value of the towing ship by adjustment company in Korea, so the accident treated as constructive total loss.

The owner of towing ship declared general average, which accident costs 96,907,104 Korean won for repairing main engine. The underwriter of the barge indemnified to the owner of barge distribution expenses of general average, but requested lawsuit to the owner of towing ship that the towing ship had been in unseaworthy condition.

2) Cover by Insurance
The P&I Club insured by the owner of towing ship rejected the compensation for distribution amount because that general average did not come into existence between towing ship and barge, and the towing contract itself was not approved by the club in advance.

3. Learning from Accident
1) Efforts should be paid for securing seaworthiness before ship’s sailing from a port;
2) In case of making a towing contract, the fact should be informed to
the P&I Club joined in advance and should receive the approval for the contract; and
3) In case of having marine accident, every documentary evidence that will clarify responsibility relationship later should be secured.

**Case Study : General Average (2)**

1. **Summary of Accident**
   Container ship M/V MN run aground at outer harbor of Ghana, Africa, got into danger of the ship and cargoes, and the shipowner had declared the general average for the ship and cargoes.

2. **State of Accident**
   The shipowner of M/V MN, ST MS Shipping chartered out her vessel on time basis to AP MM. On 20 July 2007, whilst on a laden voyage from South East Asia for discharging cargoes to various ports in South and West Africa, the vessel got aground off the port of Tema, Ghana. There were 1,139 containers on board at the time, stuffed with goods owned by a variety of cargo interests and consigned to a variety of destinations.

   The vessel and cargoes run into danger of damage and as it came under the condition of general average, general average was declared by the shipowner on 25 July 2007. The vessel suffered serious bottom damage as a result of the grounding, and the cost of repairing this
damage is not recoverable in general average. At that time, no body could not know whether ship’s rudder and propeller were damaged or not.

Between 20 July and 31 August in 2007 eight attempts were made to refloat the vessel by salvage company. On 31 August, following cargo lightering operations, she was refloated by the salvor. During the refloating process, the vessel suffered further bottom damage, including damage to her rudder and propeller.

There was a dispute between both parties as to whether the cost for additional damage during refloating process to be included or not in the general average, but the final adjustment was published on 10 January, 2012 that 82.17 per cent of the bottom damage and all of the damage to the propeller were sacrificial damage, and the total sacrificial amount was US $4,254,985.53.

3. Learning from Accident

1) When navigating in narrow channel or entering a port, the passage plan should be established thoroughly and monitored, so as to prevent marine accidents;
2) In case of having a marine accident, cautions for taking rescue measures should be taken in order to prevent additional damages; and
3) In case of having a marine accident, every documentary evidence that will clarify responsibility relationship later should be secured.
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