



## **Guidance to Masters**



# Guidance to Masters

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# **Guidance to Masters**

## FOREWORD

We are delighted to be publishing a second edition of the *Gard Guidance to Masters* for the best reason in the world for a publisher – the last one is now “out of print”! The world has also moved on significantly both legally and for Gard since the first edition was published in 2000. In the case of the former the ERIKA and ISPS are just a few of the issues which have influenced maritime law and practice, while Gard has moved from being solely a provider of P&I insurance to offering Hull and Machinery, P&I and Energy products to the entire maritime industry. As a result, the new and revised edition of *Gard Guidance to Masters* now includes Hull and Machinery.

We are pleased to have worked again with Captain Ronald Wöhrn who undertook a major task in re-writing this edition and who has delivered a first class product. The structure of the first edition has been retained for the second – with short and precise guidelines written in simple language on how to respond in critical situations on board. We would like to thank him warmly for a job well done. In his Acknowledgement Captain Wöhrn mentions the individuals who contributed to this second edition and I would like to add my thanks to everyone who gave their time and expertise to this publication.

The identification of risks, and possible ways to reduce and prevent them, are key priorities for Gard and we have been distributing circulars on important loss prevention matters since the early 1950’s. We devote considerable resources to helping all our Members and clients in this area and the publication of this book is a key part of our activities.

Tangible measurements of success are often difficult to attribute to specific activities, especially in the prevention of loss, but if only one such case has been prevented through our efforts we would consider the investment a success. However, we realise that it is a never-ending effort as new areas on which we have to focus arise all the time. I am sure that this edition of the *Guidance to Masters* will become a valuable source of reference, providing useful information and guidance for readers as well as raising awareness and understanding topics that are important to us all.

August 2006

*Claes Isacson*, Chief Executive Officer, Gard AS

## **ACKNOWLEDGEMENT**

Once the manuscript for the first edition of Gard Guidance to Masters had been sent to the printers in late 1999, the public was shocked by the sinking of the MT ERIKA with its dramatic consequences for the maritime environment. And even more severe accidents followed, sadly combined with tragic losses of life. Thus, the need arose only four years after its publication to revise the first edition.

As before, an editorial committee was formed, headed by Gunnar Topland, who discretely but firmly steered this team through the rough waters of legislative changes and technical improvements which had taken place in the maritime industry since the previous edition was published. In addition, he was responsible for organising and structuring the contributions and meetings alongside his day-to-day responsibilities, as all members of the editorial committee continued carrying out their day-to-day responsibilities within Gard.

Leif Erik Abrahamsen and Reidar Ebbesvik are to be thanked for their contribution based on a wealth of Hull and Machinery claims handling expertise, as the 2nd edition certainly takes into account the expanded role of Gard AS in insuring and handling Hull and Machinery insurance matters.

Trygve Nøkleby provided invaluable advice on all aspects of loss prevention based on experience gained in his position as manager of the loss prevention department, the focal point for learning from the mishaps and serious incidents which had occurred in the past.

Mark Russell, already part of the team of the first edition, took particular care of the dry cargo section. In addition, Mark Russell provided valuable advice for improving the structure of the Cargo Ships and Cargo Operations sections and he also revised the Diversion – Deviation sections.

Jannike Rognøy Olsson and Gunnar Espeland expanded the liquid cargo section in an admirably concise and pragmatic way, based on their experience as tank ship officers.

Randi Gaughan cared for the precise grammar and terminology, an uphill struggle as she had to avoid changing the contents and meaning of the guidance provided.

Further contributions were received from Geir Sandnes, head of the Dry Cargo Claims Department, Bjarne Printz, head of the Personal Injury and Crew Claims Department, and Trond Denstad in respect of the improvement of the stowaway questionnaire.

Alf Martin Sandberg's expertise as senior technical adviser helped to streamline the Safe Working as well as Training and Drills sections, based on his experience in investigating often tragic accidents.

Special thanks go to Dr. Phil Anderson, President of The Nautical Institute, who worked in detail through the various drafts and who rendered very helpful advice on the interrelation between the application of sound seamanship and the stringent requirements of the ISM Code.

Finally, Gard's chief executive officer, Claes Isacson, is to be thanked for his continuing support of the decision to finally publish a second edition of this *Gard Guidance to Masters*. His encouragement and support enabled all of us to provide Masters and officers with a guidance, which aims to differ from voluminous instruction books, the contents of which is often not fully comprehended by all players in the maritime industry.

August 2006

*Ronald Wöhrn*, Lawyer, Master Mariner, FNI

## PREFACE

Not long after publication of the first edition of *Gard Guidance to Masters* it became necessary to print further copies due to the demand from all corners of the maritime industry: Masters and officers – who were and still are the main addressees of this guidance, claims handlers working within ship operators and insurance intermediaries, nautical training establishments and even maritime lawyers. Thus, it was no surprise that the need arose to revise the first edition, especially in view of the rapidly changing legal and technical environment of the maritime industry during the last five years.

Again, the emphasis was placed on simplicity and directness of the guidance provided. Some parts of the guidance had to be restructured, some relocated to consolidate subjects of a similar nature, others, such as the liquid cargo section, were expanded.

Additionally, the subject of security had to be dealt with in more detail. The aftermath of 11 September 2001 and subsequent new legislation in the form of the ISPS Code, imposed new burdens upon seafarers to an extent which could not have been imagined before. Although seafarers of all nationalities have an important role in the fight against terrorism, they are, nevertheless, often treated as unwanted aliens. Ships and crews have increasingly become the target of pirates and are seen as pawns in their criminal efforts to obtain money. In addition, seafarers are also increasingly criminalised for the slightest failure occurring on board the ship.

This development has to be seen against the increasing shortage of qualified and professional seafarers, as already mentioned in the preface to the first edition. In an attempt to compensate for the reduced number of crews, advanced electronic equipment has been developed and installed on vessels at a breathtaking speed. The legislative demand to make comprehensive use of an unaccountable number of navigational and engineering instruments and displays, distract Masters, officers and crews from the proper application of the basic skills of seamanship and human common sense.

Unfortunately, accidents which could have been avoided, and which must be avoided in future, still occur, often with fatal consequences. This is in spite of considerable efforts in loss prevention activities, such as Gard's '*gardyourship*'-concept, *Loss Prevention Circulars* and *Compilations*, backed up by their series



of *Guidance* and completed by the detailed *Gard Handbook of P&I Insurance* and the *Gard Handbook on Protection of the Marine Environment*. An international survey revealed that many seafarers admitted that they frequently breach safety instructions, bringing with it the risk of injury, death or damage to the marine environment or property. This demonstrates the continuing need for simple, easy to read and understandable guidance on how to prevent accidents and – if they nevertheless do occur – to be prepared to react appropriately. This is not only a mandatory requirement under the International Safety Management (ISM) Code, but a basic requirement in the safe operation of vessels.

The second edition of *Guidance to Masters* was written in an attempt to provide guidance and support to the Master and the officers, but not to interfere in any way with directives or instructions of the Company or any legislative requirements. It may be considered as a pragmatic description and illustration of complicated laws and circulars issued by the various safety agencies.

Part 1 describes the purpose and structure of this *Guidance to Masters*. In addition, the various loss prevention activities of Gard are also explained. In an attempt to shed some light on the complex distinctions between P&I and Hull and Machinery, a brief explanation is provided. For further details, please refer to the more voluminous *Gard Handbook on P&I Insurance*.

Part 2 constitutes the heart of this *Guidance to Masters* and focuses on loss prevention in the widest possible sense, taking into account the experience and expertise, not only of the entire editorial committee, but that of all of Gard and the writer's own experience. The sections were arranged in the sequence of the workflow: from taking over command or commencing service; care for proper crewing; providing a safe and secure environment; maintaining a technically fit vessel, including cargo holds and gear; describing the properties of selected cargoes; preparing for the voyage, including voyage management and watchkeeping, until something occurs which may affect the performance of the voyage – the latter of which will hopefully never happen.

And finally, Part 3 provides general as well as specific incident response advice, in alphabetical order, in respect of different scenarios. Again, Part 3 of the *Gard Guidance to Masters* is not intended to interfere with any Emergency Contingency Plan as provided by the Company or specific response plan as required by national or international authorities. It shall serve as a quick

indicator for what needs to be done and to be collected from an insurance point of view, to defend or reduce a claim made against the vessel and the Company.

As Gard has expanded to provide not only P&I, but also Hull and Machinery insurance cover, due consideration has been given to those aspects as well, as these are also of concern to the Master and the officers. Equally, the term ‘vessel’ was used to reflect the wider scope of cover for all types of floating devices provided by Gard.

It is again hoped that the Master and the officers may make use of this *Guidance to Masters* as a tool to prevent incidents and accidents. It should be read either before taking over command or commencing service or in conjunction with the progress of the voyage. It may also serve as training material in conjunction with the Company’s other training materials. In any case, this *Guidance to Master* should be readily available to all members of the crew assigned to take over responsibility for any shipboard operations which require concise knowledge for a proper and safe performance.

It is finally hoped that no Master or officer will be required to make use of Part 3 of this *Guidance to Masters*. But should this occur, nevertheless, Gard and the author trust that the Master and the officers will have a useful guide ready to hand to assist them through the demands of an incident, in order to reduce its consequences as much as possible.

October 2006

*Ronald Wöhrn*, Lawyer, Master Mariner, FNI

## INTRODUCTION

I consider it a very great honour and privilege to have been invited to prepare an introduction for this, the Second Edition, of the *Gard Guidance to Masters* published by Gard.

Since the launch of the first edition of this excellent book in 2000 I have been a great fan – and a well thumbed copy has never been far away from my desk top. This second, revised and updated, edition has made a first class publication even better!

The Master of a commercial ship seems to be on the receiving end of not only an apparent endless stream of legislation, rules and regulation with which he or she must comply but also increasingly severe punishment in the event of any failure to comply or other violation. It is perhaps worth reflecting for a moment upon the requirement of Section 1.2.3 of the ISM Code:

1.2.3 The safety management system should ensure:

- .1 compliance with mandatory rules and regulations; and
- .2 that applicable codes, guidelines and standards recommended by the Organization, Administrations, classification societies and maritime industry organizations are taken into account.

Whilst the primary obligation is upon ‘The Company’ to develop, implement and maintain the Safety Management System – it will be very much the responsibility of the Master to ensure onboard implementation. The ‘mandatory rules and regulations’ which are referred to in Section 1.2.3.1 of the Code will include not only the Legislation of the Flag State Administration – but also the laws, rules and regulations of each of the many different countries which the vessel might visit. Fortunately most maritime nations of the world tend to adopt and ratify IMO and ILO conventions which makes compliance somewhat more manageable. However, some countries – notably the USA and increasingly the European Union – introduce additional or different legislation – which increases the burden of compliance. However, such legislation can, perhaps with some difficulty at times, be identified and complied with. But what about Section 1.2.3.2? What should be included, or excluded, from those categories of guidelines and publication – which must be taken into account? I can certainly

imagine that, following some maritime incident, the Master will be criticised for not having taken into account a particular Code or set of guidelines or ‘industry publication’. This is a very real, practical, dilemma facing the modern day Master – and Company – basically there is so much out there to comply with and to ‘take into account’!

What I think the *Gard Guidance to Masters* does, more than any other single achievement, is to provide a passage plan to steer a navigable course through that dilemma. In other words it is a very practical and helpful filter to guide the Master as to where his/her attention should be focussed. Of course the Guide itself is not intended to replace any of the ‘mandatory rules and regulations’ or ‘applicable codes, guidelines etc.’ referred to in Section 1.2.3 of the ISM Code – but it will help to make them a little more manageable.

It is highly commendable therefore that one of the worlds leading P&I clubs took the initiative to produce such a publication. However, a real dilemma which must have confronted Gard is how to actually prepare such a set of guidelines and who would be suitably qualified and experienced to take on such an enormous task and responsibility.

Such an author, or general editor, would have to have the legal knowledge to be aware of the all the various rules and regulation – not only as a practicing maritime lawyer but also, ideally, having had experience working at a senior level within a Flag State Administration. The individual would, ideally, have had many years of practical experience of dealing with the whole range of maritime accidents and incidents which might occur during the commercial operation of vessels – a P&I correspondent in a large, busy, sea port would probably be the most suitable candidate. On top of that the individual MUST have had extensive seagoing experience on a range of vessels who would be in a position to empathise with the Masters dilemma and really understand the job of commanding a commercial vessel. Finally, the individual must not only promote and support the professionalism of the serving Master but must also have the enthusiasm and the ability to communicate and to motivate serving Masters to share in that professionalism and enthusiasm – to consult and follow the Guidelines provided. I know of only one person who could satisfy this almost impossible set of criteria – and Gard had already secured this Captain to steer their ship – Captain Ronald Wöhrn.

It is with great pride therefore that I extend my congratulations to Gard, Captain Ronald Wöhrn and the editorial support team who have worked so hard to produce this most valuable book. I know that their greatest reward will be the assurance that serving Masters are using the Guidelines to help them perform their day to day work of operating their ships safely and efficiently. Aspiring Masters as well as ship operators, maritime lawyers, surveyors, consultants and anyone else involved in the operation of vessels and in dealing with problems if things go wrong will also find the *Gard Guidance to Masters* an invaluable addition to their reference library.

1st May 2006

*Dr. Phil Anderson*, BA(Hons.), D.Prof., FNI, MEWI, AMAE, Master Mariner  
President – The Nautical Institute

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## **Part 1 – General**

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## 1.1 Purpose of the Gard Guidance to Masters

This *Gard Guidance to Masters* is not another set of instructions or another manual but aims to provide *practical* guidance to Masters and officers, containing advice on matters which may involve the liability of the company owning or managing the ship (the Company). It is mainly aimed at Masters and officers whose companies have taken out insurance cover with Gard AS for potential liabilities and damages to protect the ship, the crew, the Company, the cargo and the marine environment.

Whilst the Master may think that the ship is not responsible for an incident, there may, however, be a legal liability on the Company which may be minimised if the correct action is taken at the correct time.

The Company's liability may arise in all cases where

- an accident or incident has occurred, and/or
- a third party raises a complaint or a specific claim against the Company, the ship or her crew.

The Company's Hull and Machinery insurance cover may be involved if the ship's structure, machinery and/or fittings are damaged.

This guidance cannot and does not replace

- any advice and/or instructions from the Company, the Hull and Machinery or P&I insurer, or the correspondents, lawyers or surveyors instructed by these insurers for and on behalf of the Company or the vessel
- the Company's documented Safety Management System (SMS) as implemented under the ISM Code
- the Company's documented Ship Security Plan (SSP) as implemented under the ISPS Code



## General

- any International Convention, national law, regulation, guideline or statutory instrument, e.g. SOLAS, MARPOL, IMO resolutions and circulars
- any manufacturer's instruction and/or advice in the operation and/or maintenance of machinery, equipment or technical systems
- the Master's decision, made at the time. Each situation is different and requires a sound, pragmatic and professional approach by the Master
- the *Gard Handbook on P&I Insurance*. If detailed information on the principles of the P&I insurance cover is required, or if the Master and his officers are in any doubt, reference should be made to that Handbook.

This guidance is *not*

- another checklist
- intended to tell the Master and his officers how to run the ship
- exhaustive.

This publication is not meant to be read from cover to cover. It deals with various P&I and Hull and Machinery insurance issues and should therefore be used as a *reference* book.

The guidance is provided purely from a P&I and Hull and Machinery insurers' perspective and is based on Gard's experience from incident response and claims handling.

The Master and his/her officers should be reminded that no matter what is written in this publication:

**THE SAFETY OF THE SHIP AND CREW IS PARAMOUNT AT ALL TIMES**

## 1.2 Structure of the Gard Guidance to Masters

This publication is structured in such a way as to enable the Master to find an easy path to the different aspects of ship operations and claims that may arise. The guidance provided focuses on areas such as

- general loss prevention
- incident response advice from both P&I and Hull and Machinery perspectives.

Loss prevention is advice on how to prevent

- the safety of the vessel and crew being compromised
- damage to the marine environment and third party property.

The purpose of loss prevention is to

- prevent accidents to the ship and crew
- maintain safe operational standards
- prevent prosecution.

P&I response contains advice on how to

- respond when a P&I incident occurs, and
- reduce any liability exposure before assistance arrives from ashore.

Hull and Machinery insurance advice deals with how to

- possibly prevent damage, and
- how to minimise any damage already occurred.

Where the ISM Code or the SMS is referred to and the vessel concerned is not required to have a SMS, it is recommended that equivalent operating standards be applied.

Where the ISPS Code or the SSP is referred to and the ship concerned is not required to have a SSP, it is recommended that equivalent security measures be maintained.

## General

By applying the principles contained in this guidance – unless circumstances require an alternative approach – the Master and his/her officers will hopefully find the *Gard Guidance to Masters* a useful tool in supporting and maintaining the SMS of the Company and vessel, and the SSP of the vessel.

### 1.3 **Scope of insurance cover**

The general scope of the P&I insurance cover provided by Gard is defined in the

- *Gard Statutes and Rules*.

The specific scope of the insurance cover taken out by the individual Company is set out in the

- *Certificate of Entry*, a copy of which should be kept on board the ship.

The general scope of the Hull and Machinery insurance cover provided by Gard is defined in the

- insurer's Cover Note, and
- the underlying insurance clauses to be applicable, as agreed between the Company and Hull and Machinery insurer.

The main areas of the P&I cover involves liabilities arising out of

- liabilities to third parties arising out of a collision or damage to fixed and floating objects (FFO), if not otherwise covered under the Hull and Machinery insurance cover

- personal injury, illness or death
- damage to the marine environment
- cargo damage
- damage to third party property.

The main areas covered by the Hull and Machinery cover are

- damages to the vessel, her structure, machinery and fittings, and
- liabilities to third parties arising out of a collision or damage to fixed and floating objects (FFO), if not otherwise covered under the P&I Certificate of Entry.

In all cases, however, the Master should act to minimise any potential exposure of the Company as if the Company is not insured.

**Should the Master believe that the liability of the Company, and therefore the P&I or the Hull and Machinery insurers, may be involved, the Master must, when circumstances allow, immediately inform the Company and obtain instructions as to how to proceed.**

#### **1.4 Contacting Gard or the correspondent**

Gard AS provides a 24 hour contingency service. Expertise is pooled in a contingency team trained to handle major incidents.

The emergency telephone numbers are:

**For P&I:**

**International +47 90 52 41 00    National (Norway) 90 52 41 00**

**For Hull and Machinery:**

**International +47 90 92 52 00    National (Norway) 90 92 52 00**

## General

A *catastrophic incident* is defined as:

“A major threat involving personal injury, death, search or rescue, damage to property or to the marine environment”.

This could arise out of a collision, fire, grounding or pollution incident – the list is almost endless.

For all other incidents, the Master should, in addition to contacting the Company

- contact the P&I and/or Hull and Machinery correspondent as soon as possible, or
- contact one of Gard’s offices, or
- call one of Gard’s out of office hours numbers.

All contact details of Gard’s offices and employees, including direct e-mail addresses, can be found in

- *Gard Statutes and Rules*
- *Gard List of Correspondents*
- *Gard News*
- *Gard’s website [www.gard.no](http://www.gard.no).*

### 1.5 Gard publications

In addition to the *Gard Handbook on P&I Insurance*, practical advice may be found in Gard’s loss prevention related publications.

These publications include

- *Gard News*. This quarterly publication contains regular features and information on P&I and Hull and Machinery matters and legal developments worldwide. The information contained in *Gard News* is for general information purposes only.
- *Gard Handbook on Protection of the Marine Environment*. The sensitive subject of environmental protection is dealt with in detail in the *Gard Handbook on Protection of the Marine*

*Environment.* This handbook provides practical and technical advice on preventing pollution, damage to the environment or property, whether by oil or other substances.

- *Gard Guidance on Bills of Lading.* Although some general advice on issuing bills of lading is provided in this *Gard Guidance to Masters*, a separate Gard publication provides detailed guidance on the issuing of and problems associated with bills of lading; the *Gard Guidance on Bills of Lading*.

## 1.6 Loss prevention in Gard

Gard aims to provide vessel operators and crew with practical loss prevention advice.

Gard's vehicle for loss prevention is the "Gardyour..." concept, which consists of five distinct parts covering different areas. Every loss prevention product will belong to one of the following areas

- *Gardyourship: Navigation, hull and machinery*
- *Gardyourpeople: Crew and passengers*
- *Gardyourcargo: Cargo*
- *Gardyourseas: Pollution*
- *Gardyourclauses: Contracts and documents.*

Gard's two main products available for vessels are the *Loss Prevention Circulars* and the *Loss Prevention Compilations*.

- *Loss Prevention Circulars*

These circulars are brief notices provided for Members and clients relating to important loss prevention topics that are of immediate importance. They address issues that are of importance for P&I, Hull and Machinery and Energy claims prevention. The circulars are sent out to clients of a separate mailing list and are available on Gard's website.

## General

- *Loss Prevention Compilations*

The compilations are booklets with material relating to various topics. They can contain *Loss Prevention Circulars*, *Gard News* articles and other advice and recommended practises.

In the following parts of the book reference is made to various *Loss Prevention Circulars*, *Loss Prevention Compilations* and *Gard News* articles. Copies of this material can be obtained by contacting Gard's Loss Prevention department. The address for the department and some of the material is available on Gard's website, [www.gard.no](http://www.gard.no), in the loss prevention section.

### 1.7 **Gard's Website**

Gard AS maintains a website at <http://www.gard.no>

Many of the publications, including this *Gard Guidance to Masters* can be found on the website together with information on Gard's various covers as well as contact details for Gard's offices, employees and correspondents.

### 1.8 **The difference between P&I and Hull and Machinery insurance**

For more detailed information, please refer to *Gard News 178, The interface between Hull and Machinery insurance and P&I from the P&I claim handler's perspective* and Gard's website [www.gard.no](http://www.gard.no).

As Gard is offering insurance cover for liabilities, known as P&I cover, as well as for damages to the own ship, known as Hull and Machinery cover, a brief summary will be provided to explain the basic differences between these two types of cover.

P&I insurance is primarily intended to cover a shipowner's or operator's liability towards third parties and it generally excludes damage to the insured's own property or direct loss of the Company.

Hull and Machinery insurance is basically insurance of the client's vessel as its primary asset. The two types of insurance interact in the area of collision liability and liability for contact damage to third party property.

Hull and Machinery insurance and P&I insurance are often complementary when it comes to collision liability and liability for damage to piers, loading cranes and other third party property, generally known as damage to fixed and floating objects (FFO).

Hull and Machinery (H&M) insurance may include cover for liabilities towards third parties depending upon the type of policy and scope of cover of that specific policy. Under the standard English Hull and Machinery insurance terms (ITC Hulls – Institute Time Clauses Hulls), collision liability cover has, historically, been limited to 3/4ths of the own ship's liability towards the other vessel in a collision. However, under Norwegian and German Hull and Machinery insurance terms, the liability cover provided is for 4/4ths, i.e. 100%, of the own ship's liabilities towards the other vessel. Similarly, under the United Kingdom Hull and Machinery insurance terms, damage to so-called Fixed and Floating Objects (FFO), i.e. objects others than a vessel, is not covered at all whereas under Norwegian and German insurance terms these risks are covered 100%.

Some shipowners have placed full (4/4ths) collision liability under their P&I insurance. This collision liability cover would be the most comprehensive liability cover available, as all third party liability



## General

arising out of the collision would be covered in principle. However, the shipowner would still need his Hull and Machinery cover to deal with the loss of or damage to his own vessel.

Under Norwegian and German Hull and Machinery insurance conditions, cover is also provided in respect of liability arising out of the insured vessel striking third party property other than a vessel. The Hull and Machinery insurance covers loss or damage caused by the physical contact between the hull of the insured vessel, or equipment permanently affixed to the vessel, and third party property, for example a pier or buoy. Americans sometimes refer to such incidents as “allision” but this is not a term used universally. FFO (damage to fixed and floating objects) is the shorthand for striking damage under the English terms.

The situation is more complicated when oil escapes from the other vessel as a result of the collision. Under the Norwegian Hull and Machinery insurance conditions these liabilities are not covered, whilst they are covered under German Hull and Machinery insurance conditions.

The situation for damages and resulting liabilities becomes even more complicated if the vessel drags an anchor.

Remember, the cornerstone of the P&I cover is that it responds to liabilities that are *not* covered under the Hull and Machinery cover.

It is important that the Master and the ship’s officers have a full understanding of what is covered under the Hull and Machinery insurance policy as this determines what is covered by the P&I insurance. The Master will thus be in a position to understand whose insurer’s representative or correspondent should be contacted in any given incident.

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**2.1 GENERAL**

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**2.1.1 Seaworthiness – Safety – Security****2.1.1.1 Seaworthiness – Safety**

*Seaworthiness* and *safety* are terms widely used where vessels are concerned, and it is important to understand and appreciate their meaning, relevance and importance. Additionally, security has become an important aspect as it involves the operational and structural integrity of the vessel and the personal integrity of the crew.

In its broadest sense *seaworthiness* means the fitness of the vessel to encounter the ordinary perils contemplated for the voyage. The term is mainly used in the legal context and is often found in contracts entered into by the Company, e.g. charterparties and bills of lading. It is generally interpreted to mean that, to be seaworthy, the vessel “*must have that degree of fitness which an ordinary, careful and prudent owner would require his vessel to have, having regard to all the probable circumstances of the voyage*”. Fitness covers not only the physical condition of the vessel, e.g. stability and construction, and its equipment, but also the competence of the crew and adequacy of her stores and fuel. It also extends to having the proper documents required for the vessel to be able to complete the voyage.

The obligation to provide a seaworthy vessel may be supplemented by an express term in a charterparty, e.g. the NYPE form charterparty requires that the vessel be “*tight, staunch, strong and in every way fitted for the service*”. The time at which the obligation of the shipowner to provide a seaworthy vessel starts, depends on the terms of the charterparty, e.g. it may start from the commencement of the ballast voyage under a time charterparty, or from delivery of the vessel at a certain geographical position etc.

## 2.1 General

The Hague/Hague-Visby Rules, which apply either by law or by agreement, to the majority of contracts for the carriage of goods by sea also contain an obligation as to seaworthiness. Article 3.1 of these Rules provides that:

*“The carrier shall be bound before and at the beginning of the voyage to exercise due diligence to make the ship seaworthy, properly man, equip, and supply the ship, make the holds, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage and preservation.”*

This obligation of seaworthiness also extends to the fitness of the vessel to receive, carry and care for the intended cargo. This fitness is generally referred to as cargoworthiness. Claimants frequently try to argue breach of the seaworthiness obligation in claims against the Company, e.g. for damage/loss of cargo or in general average contribution. If there is evidence to support such an argument, liability for these claims may be unavoidable. The seaworthiness obligation cannot be delegated to another person. Under the above article of the Hague/Hague-Visby Rules, the carrier is responsible for exercising the due diligence of, e.g. the Master, a ship repairer and a classification society.

The Master should be aware that documents which may be produced as part of the SMS may provide claimants with a good basis on which they can pursue their argument of unseaworthiness in a court case.

Seaworthiness also comprises the state and working condition of the vessel's entire propulsion system. Lack of proper maintenance may lead to engine failure, either of the main or auxiliary engines or both. Insufficient fuel and lubrication may also cause the vessel to be unseaworthy and the cargo interests may refuse to pay their share in a general average.

Finally, seaworthiness includes the state and condition of the vessel's superstructure. Although the vessel's structure may be surveyed during the required classification surveys, deficiencies may nevertheless arise during the interim period. There may also be failures of the vessel's internal piping system, all of which need to be reported and repaired without undue delay to avoid providing third parties with evidence should a claim arise, as well as to avoid prejudicing the vessel's Hull and Machinery insurance cover.

Some countries may make seaworthiness a statutory obligation – the degree of fitness of the vessel being used as a measure of safety. However, it is more common for matters of *safety* to be governed by laws that establish minimum requirements. Most minimum safety requirements have been agreed at an international level through the IMO and incorporated in the national laws of individual states. For example, the SOLAS, MARPOL and STCW Conventions are incorporated into the laws of the majority of maritime states. To supplement these conventions, there are a number of IMO codes, recommendations, guidelines and circulars that the Master should familiarise him/herself with, depending upon the relevance of that information to the type of vessel, cargo and trade concerned. Whilst these codes may or may not be law in certain states, all efforts should be made to comply with these standards of practice.

The Master should be aware that the vessel's flag State and/or port States between which the vessel is trading may have different and/or additional requirements which need to be complied with.

Whilst safety is in many cases evidenced by a certificate, a certificate is only a record of facts apparent to the certifying body on a particular date. Actual and continuing compliance with the minimum requirements of the certificate is therefore very important. Non-compliance can, at the very least, result in disruption of the vessel's trading by the flag and port State authorities, and, in more

## 2.1 General

serious cases, it may even have the potential of criminal sanctions being imposed. Non-compliance may also prejudice the insurance covers if the cause falls within the insured risks. What is more dangerous is the fact that it can put the safety of the vessel, crew, other persons and the environment at risk. The Master should also remember that, although the vessel complies in excess of the minimum safety requirements, this does not necessarily ensure full safety. What is thought to be adequate may turn out not to be the case when put to the real test. The Master is well placed to advise his/her Company in this regard, particularly through training and drills which need to be properly documented.

Whilst seaworthiness and safety overlap, compliance with one does not necessarily mean compliance with the other. For example, the vessel's hatch covers may be sufficiently watertight to be safe, but may not be seaworthy, and a vessel with oil on the deck, which presents a hazard, may well be seaworthy but will not be safe. It is therefore important to treat these two terms separately but in parallel to each other. With an understanding of their meaning, relevance and importance, the Master can take the steps necessary to ensure that the vessel is both seaworthy and safe at all times.

### 2.1.1.2 *Security*

Security has always been of international concern but has taken on a new dimension since the terrorist attacks in New York on 11th September 2001. However, vessels have always been exposed to intruders, whether that be pirates or politically motivated attackers. Stowaways are a major worry and a genuine threat to the security of the vessel and her crew. On 1st July 2004, the International Ship and Port Facility Security (ISPS) Code came into force requiring every Company to have a Company Security Officer (CSO) and the vessel to have a Ship Security Officer (SSO) in charge of the vessel's security as laid down in an approved and successfully implemented Ship Security Plan (SSP).

Non-compliance with, or a sloppy attitude towards the SSP will undoubtedly affect not only the personal integrity of the crew and the structural and organisational integrity of the vessel, but will also create difficulties in ports of call where port facility operators are applying the internationally mandatory ISPS Code in the strictest sense of the meaning. The vessel may not even be allowed to enter the territorial waters or the ports themselves due to lack of compliance with the SSP. As a result of such non-compliance, the Company may suffer financially and/or be exposed to liabilities, costs and expenses. These may be substantial, for example, if cargo cannot be loaded or discharged or passengers disembarked or embarked.

### 2.1.2 **Instructions from the Company**

The Company should have standing instructions for the operation of the vessel, which must be followed by the Master. These would normally be set out in the Safety Management Manual or the Procedure and Instruction Manual of the Safety Management System (SMS). Any deviation from these instructions and/or orders should be recorded in writing, providing the reason for the deviation and the date and time the Company was notified of this deviation. The Master and the officers should bear in mind that an unreasonable deviation from, or non-compliance with the written procedures may have serious consequences, not only for the company but also for the individual concerned, particularly if it involves an accident or incident.

**If the Master is to take over the command of a vessel, he/she should familiarise himself with the company SMS, SSP and any other standing instructions prior to assuming full command.**



## 2.1 General

The Master should be fully familiar with

- the Company's documented SMS
- the lines of communication and responsibilities
- any particularities of the vessel's SMS
- the documented Ship Security Plan (SSP), and
- the lines of communication under the SSP.

Where there is no legal requirement for a SMS or a SSP, there should be operating and security standards of at least the same level of operation in place.

The vessel's SMS must be strictly adhered to. If non-conformities can be established by third parties, e.g. claimants or authorities, the Company and the insurers may be exposed to potential liabilities and criticism of their actions.

### 2.1.3 Instructions from charterers

The vessel is frequently let out on charter. The relationship between the Company and the charterer will be governed by the terms of a charterparty. The Master should

- be familiar with the identity and communication details of the charterer or – if provided – the sub-charterer
- be familiar with the terms and conditions of the charterparty and the letter of instructions issued by the charterer, as any misunderstandings may cause delay or have a detrimental affect on the Company legally and/or commercially
- seek input from the Chief Officer and Chief Engineer as to the ability of the vessel to perform to the charterer's requirements
- clarify with the Company any doubts about the ability to perform the charterer's requirements or about the meaning of the instructions prior to commencement of the voyage as well as during the voyage
- record in writing any additional instructions received from charterer and, if possible, for the instructions to be countersigned by the person giving them.

For special requirements under a charterparty, please see section 2.11.3 Cargo precautions under charterparty provisions.

If the charterers

- withhold essential information, e.g. the cargo manifest or the cargo details as required to be provided under the ISPS Code, or
- if they give instructions which contradict the terms of the charterparty and the charterers' letter of instruction, the Master should record it and immediately seek instructions from the Company.

## 2.2 Documentation

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### 2.2 DOCUMENTATION

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As a matter of good housekeeping and in compliance with the ISM Code all of the vessel's documents should be maintained and stored in an orderly manner.

#### 2.2.1 Certificates and documents

On taking over command, the Master should check all the vessel's trading documents as to

- validity
- expiry dates
- whether renewals or extensions are required to cover the forthcoming voyage
- whether they are complete.

Trading documents include

- the vessel's registration documents issued by the flag State administration
- the statutory certificates issued by a classification society in their capacity as a Recognised Organisation.

For crew documents please see section 2.3.2 Crew documents.

A list of the documents to be carried on board can be found in Annex 1. It is necessary for the Master and his/her officers to closely co-operate with the vessel's Chief Engineer, who may keep documents in respect of the vessel's engine and other installations that are not kept in the vessel's office.

If the vessel does not have valid trading documents

- the vessel may not be allowed to leave the port
- delays and difficulties may arise at the next port of call
- the vessel may not be allowed to enter the port
- fines may be imposed in some jurisdictions if certificates are invalid

- the Master may be held personally liable and be subject to criminal prosecution
- the insurance cover may be prejudiced.

Should the Company need to defend claims and/or provide evidence to third parties or the authorities to prove compliance with the SMS, full and proper records of ship borne activities will be essential, including test or inspection certificates, repair accounts, routine inspections etc.

### 2.2.2 Logbooks

Logbooks and similar records of ship borne activities should be up-to-date and maintained in a presentable manner. Pages should not be torn out of logbooks or any other record books. Corrections should be initialled and remain visible, i.e. not erased, so as to avoid suspicion if inspected.

False entries in the vessel's record books may in many countries constitute a crime and the Master and ship's officers can be subject to criminal prosecution, substantial fines and maybe even imprisonment. The vessel may also be delayed whilst investigations are being carried out. The Company may suffer financially and/or be exposed to liabilities, costs and expenses.

**Special care is needed for the entries in the oil record book. Errors or false entries will result in problems or investigations when discovered by a port State control officer or the US Coast Guard.**

**The Master must ensure that the crew member(s) responsible for completing the oil record book has adequate training and understanding of how to correctly complete the book. The Master should also ensure that all tanks identified in the oil record book are in accordance with the IOPP certificate.**

For more details on pollution please see section 2.16.3 Pollution.

## 2.2 Documentation

### 2.2.3 Reporting

When the Master and his/her officers are required to report, the quality of information provided is essential. Information must be true, reliable, rendering facts but no speculations.

Before releasing any information, the Master should verify the accuracy of the contents and the effect such information may have. It is important to focus on the main issue or incident being reported. The language should be straightforward, clear and unambiguous, rendering a true picture of the issue or incident.

Any report should clearly state the date and time when it was written as well as identifying the writer of the report. It should be properly signed and, if required, stamped with the ship's stamp.

When reporting to parties other than the Company or the insurers, the Master should contact the Company for further instructions before releasing any information.

The Master should bear in mind that reports provided to authorities and officials containing potentially misleading or false information, may in some countries constitute a crime and could lead to criminal charges, even imprisonment.

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### 2.3 CREW MANNING, DOCUMENTS, COMPETENCY AND FITNESS

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#### 2.3.1 Crew manning

The Master should ensure that sufficient qualified and certificated crew have been assigned to the vessel for the voyage

- in accordance with the flag State requirements
- in accordance with the Code and Convention on Standards of Training, Certification and Watchkeeping (STCW 95) if applicable, and
- to be able to perform the forthcoming voyage.

#### 2.3.2 Crew documents

Crew documents include

- certificates of competency
- flag State endorsements
- proper seafarers' identification
- training record book.

#### 2.3.3 Crew identity

Prior to the commencement of a voyage the Master must be fully satisfied that every crew member has proper identification, bearing in mind the requirements of the ISPS Code. Improper or incomprehensible identification may cause suspicion by national immigration authorities and could result in the ship being refused entry into port or the immediate repatriation of the crew member concerned. The Company may as a result suffer financially and/or be exposed to liabilities, costs and expenses.

## 2.3 Crew manning, documents, competency and fitness

### 2.3.4 Crew competency

Each individual crew member should have the appropriate training and experience to perform their allocated duties. Upon the arrival of newly assigned crew members, the Master should satisfy himself that the crew member

- possesses valid and authentic certificates of competency and relevant flag State endorsements (e.g. dangerous goods)
- is properly familiarised with their duties on board, particularly those involved with watchkeeping requirements as specified by the STCW 95, and
- is healthy and fit to withstand the physical and psychological demands of his/her assignment.

Any deficiency should be reported to the Company and reinforcements or replacements requested.

The Master may gain a quick overall impression of the qualifications of newly assigned crew members from their *ISF Personal Training and Record Book*, or any other similar documents, which should contain all the relevant information on their professional qualifications, training and service.

### 2.3.5 Crew fitness

The Master is advised to continually monitor the fitness and health of the crew during the voyage. This includes observing

- alcohol consumption
- drug abuse
- abuse of medications
- fatigue.

Accidents are often caused, or contributed to, by inattentive, intoxicated or fatigued crew. Should the Master, therefore, observe any of the above, he/she should take whatever necessary and

### **2.3 Crew manning, documents, competency and fitness**

appropriate corrective action without delay. Particular attention should be paid to mandatory resting times prior to watches, as required by the STCW 95, if applicable.

The Master should closely monitor indications of physical or psychological unfitness and should, if necessary

- review working hours/workloads of the relevant individuals
- initiate a medical examination
- inform the Company and request a substitution.

For further guidance please see section 2.6.4 Drugs and alcohol.



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### 2.4 FAMILIARISATION WITH THE VESSEL

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The Master should to the fullest extent and as soon as possible, familiarise himself with the vessel when joining the vessel and taking over command. This duty is imposed by the ISM and ISPS Codes which will be set out in the Company's SMS and SSP, respectively. This is a mandatory requirement as the Master has the overall command of the vessel and is therefore responsible for the crew, the vessel, the cargo carried and the environment. The Company's instructions and checklists for familiarisation contained in the SMS and SSP will provide a helpful tool and guide.

In order to be prepared for emergency or critical situations which may arise and which affect the vessel's safety and security, the Master should familiarise himself with the Emergency Response Plans under the vessel's SMS and the SSP under the ISPS Code.

Familiarisation is best described as

- to know your duties
- to know your vessel
- to know your company's procedures.

These points are dealt with in more detail in the sections below.

The Master should obtain as much relevant information as possible from the previous Master when joining a new vessel. This will be particularly important should there be an extensive crew change at the same time and all officers are newly assigned to the vessel.

The procedure of taking over command should be properly documented in the vessel's SMS records and acknowledged in writing by both the relieving and the relieved Master.

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### 2.5 MANAGEMENT AND COMMUNICATION

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#### 2.5.1 Teamwork – communication

The Master should create a working environment on board that emphasises teamwork with his/her deck and engine officers on whom he/she will depend heavily in ensuring safety and security on board the vessel. Key elements of teamwork are good communication and clear allocation of responsibilities. Well informed officers are better motivated and able to carry out their duties effectively.

Due to the composition of a crew with different nationalities and religions, the Master should be aware that thoughtfulness is required where crews of different religions and cultures are required to work in a team.

When the Master allocates certain responsibilities to an officer, the Master should not only be confident that the officer is able to carry out such tasks, but should also ensure that the officer has clearly understood his/her allocated duties.

Teamwork is not to be understood as a simple delegation of tasks and duties to exempt the Master from his/her own responsibilities. Teamwork involves leadership and its effect needs to be explained and relevant training be provided to ensure that every team member understands his/her individual role within the team.

To ensure that the team works efficiently the Master must exercise leadership skills and encourage each crew member to take responsibility for their own safety as well as that of their shipmates and the vessel generally. The investigations of accidents have shown that in many cases crew members suspected that something was wrong but did not dare to tell the Master, pilot or duty officer. Comments or questions from crew members should therefore be listened to sympathetically and be taken seriously.

## 2.5 Management and communication

The crew is, potentially, an important safety net for the officers if they at any point make the wrong decision or overlook important information.

Regular shipboard management meetings will assist the Master in achieving the best use of the entire ship's team. Any remarks, observations and reported non-conformities should be taken seriously and duly recorded in the vessel's documents. Corrective action should be taken immediately to ensure that the validity of the vessel's Safety Management Certificate (SMC) is not jeopardised.

Likewise, any remarks, observations, reasoned suspicions and reported non-conformities need to be rectified immediately under the vessel's Ship Security Plan to remain compliant with the requirements of the ISPS Code.

People appreciate praise and rewards for good performance. Where possible and appropriate, the Master should praise individual crew members in the presence of other crew members. Such practice will help the Master maintain morale and motivate the crew!

For more information about Bridge Resource Management please see section 2.13.4 Navigation in confined waters – Bridge Resource Management.

### 2.5.2 Routine is dangerous

Day to day operations of a vessel are based on experience, education and following procedures. There is, however, a hidden hazard facing the vessel, the crew, passengers, other persons, the cargo and the environment

**ROUTINE IS DANGEROUS!**

Procedures are necessary and must always be followed, no matter how familiar the operation, unless circumstances dictate a departure from the set procedures, or additional measures are required. Any departure from such procedures should be recorded in writing, clearly stating the reason for such a change of action. If the situation requires, the departure from operating procedures should be explained to the crew to avoid any misunderstandings or complacency of such procedural departures.

### 2.5.3 Discipline is essential

Discipline is the basis for the proper performance of duties and a prerequisite for the operational and functional safety of the vessel as

- any breaches of statutes, laws, and international conventions at sea or in port can have serious consequences for the person concerned, including criminal prosecution, for the vessel – including detention or confiscation and for the Company as well as for the insurers
- any deviation from Company policy, procedures and instructions may have severe implications
- compliance with instructions given by superiors is essential.

The Master should not forget that discipline begins with the appearance of each crew member, who should wear proper and adequate safety clothing, shoes and/or hard hats at all times. The right clothing is the best protection against personal injury. When approaching port or whilst in port each crew member need to display the appropriate identification for officials and other visitors to see.

## **2.5 Management and communication**

The best form of discipline comes out of respect. The Master must earn the respect of his/her officers and crew through his/her leadership and management skills and must lead by example, e.g. he/she should also wear the correct Personal Protective Equipment – please also see section 2.8.4.1 Safe working clothes – Personal Protective Equipment (PPE), comply with the no smoking policy etc.

### **2.5.4 Orders**

Any order given by the Master should be understandable, clearly worded and should not be ambiguous or misleading

- any verbal order should be repeated by the recipient to avoid misunderstandings
- standing orders should be written and displayed on the vessel's notice boards, showing the date the order was made and its period of validity
- bridge night orders should be written in the Bridge Night Order Book and acknowledged in writing by each officer taking over the watch
- orders which are no longer valid, should be removed and/or replaced to avoid confusion.

The Master should regularly check that orders are followed and are not deviated from. Any departure from or non-adherence to such orders needs to be documented in writing and justified by the person responsible for the action.

### **2.5.5 Procedures and reporting**

Clear communication is essential for mutual understanding and is an important factor in the safe and secure operation of the complex structure of a vessel. In accordance with the ISM Code, the Master should ensure that a common working language, understood by all on board the vessel, is used in all areas of the vessel.

Unless provided for in the SMS, procedures must be established for reporting

- daily operations such as
  - bilge soundings
  - checks on cargo lashings, temperatures, ventilation
  - bunkers and other consumables, tank conditions
  - performance, weather and crew
- special operations such as manoeuvring in deteriorating weather, entering coastal waters, narrows, confined waters, traffic separation schemes, ports etc.

Unless provided for in the SSP, procedures must be set up for reporting

- regular operations such as security rounds and watches, testing of alarms, security integrity, checking that the crew is complete
- special operations such as entering into areas or ports known to contain threats to the vessel's security such as attacks or other forms of violence etc.

The Master should ensure that written reports of the above operations are made in the relevant log books and maintenance files as required under the SSP.

### 2.5.6 Crew information

As with any team, it will be much more efficient if all the team members form a constructive part of the team under the strong, fair and clear leadership of the Team Captain – the Master. The Master should provide comprehensive information to the crew about the forthcoming voyage to enable them to understand the measures that need to be taken and the orders given. Information motivates and allows the crew to participate properly and fully in all operations. As regards safety and security, the crew will be more vigilant and attentive, if fully briefed.

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### 2.6 HEALTH

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#### 2.6.1 Living quarters – galleys – provision stores – water systems – swimming pools

An inspection of the entire accommodation including

- living quarters
- passengers quarters
- sanitary installations
- ship's galley and provisions stores,

provides a reliable impression of the general maintenance of the vessel. Untidy, dirty and unhygienic crew accommodation, showers and toilets, mess rooms and galleys are a serious threat to the safety of the vessel and require immediate corrective action.

Unhygienic surroundings may lead to outbreaks of food poisoning which can seriously affect the health of the crew. As today's vessels sail with a small number of crew on board, such outbreaks may seriously effect the safety of the vessel. A clean and tidy galley, provision stores and accommodation quarters are the best means to maintaining the health of the crew. Provision stores, including cooling and freezing stores, should be checked regularly and expiry dates for foodstuffs observed. Frozen food should be checked for freezer burn and any affected meat must be disposed of.

The water system of the entire vessel needs to be regularly checked and cleaned. Maintenance of the entire water pipe system, including ventilation and air condition installations, must take place at scheduled intervals to prevent the outbreak of bacterial infections such as legionnaire's disease, especially when trading in areas with mild temperatures.

If freshwater swimming pools are in use, regular water quality tests must be carried out and the results recorded in the appropriate logs.

The Master should be aware that there are various International Labour Organization (ILO) regulations which must be complied with and port State control officers may also inspect the vessel's accommodation, galleys and provision stores to check compliance and will take appropriate action, if required.

### 2.6.2 **Vessel's hospital and medicine**

The hospital should be

- regularly inspected
- expected to be found spotlessly clean and hygienic.

The hospital should not be used as a storage room or cabin!

A properly kept and detailed medicine log will evidence proper medical care and demonstrates to the authorities how medicine abuse is being prevented. Medicines may save lives. Prior to the commencement of the voyage the Master should ensure that

- all medicines required to be in the medicine stores are actually on board and are within their expiry dates
- out of date medication is replaced immediately.

If, during the voyage, any medicines expire, it needs to be stored separately, but must nevertheless be declared as such in any customs declaration.

Any surplus medicines not recorded in the vessel's medical stores list may arouse suspicions with authorities and such unrecorded items may have serious consequences, such as criminal prosecutions, for the Master.

Access to the medicine stores should be restricted to authorised personnel only and in accordance with the Company's or applicable flag State administration's rules.



## 2.6 Health

No crew member should be allowed to possess private medicines without the Master being notified. The crew should be requested to compile a list, to be verified by the Master or his/her officers, of private medicines carried on board. Possession of undeclared private medicines may in some countries constitute a breach of customs or other regulations, with the possibility of a fine being imposed on the Master and the individual crew member.

If a crew member has been prescribed medication, the original or a certified copy of the prescription should be carried together with the medicine.

### 2.6.3 Medical care

Medical care should be taken seriously. Infectious diseases are still commonplace. If the vessel is to trade to countries where infectious diseases are prevalent, the Master should ensure that sufficient supplies of appropriate medication are on board and recorded in the vessel's medicine stores list. Prior to arrival in any such country, the Master should ensure that

- all crew members are vaccinated as necessary or preventative medical treatment commenced, e.g. anti-malaria tablets
- the prescribed medication is taken
- air conditioning systems are set to internal recirculation
- shore leave is restricted if necessary.

The presence of any serious infection, including severe venereal diseases, may lead the Master to request the Company to arrange repatriation of the crew member concerned and ask for a substitute to prevent others being infected. The Master and/or the Company may receive a claim, should another crew member be infected due to lack of prompt action by the Master. There is also the risk of the vessel being quarantined, which may lead to the Company suffering financially and/or be exposed to liabilities, costs and expenses.

## 2.6.4 Drugs and alcohol

### 2.6.4.1 *Drugs and alcohol policy*

The Master should ensure that the Company's drugs and alcohol policy is strictly applied. Any deviation from the policy may have serious consequences for the safe and secure operation of the vessel and the safety and security of the vessel and crew.

### 2.6.4.2 *Drugs*

Comprehensive information should be provided to the crew on

- the drugs and alcohol policy of the Company
- the likelihood of the vessel being used as a drug carrier
- the consequences of any support of or conspiracy with drug dealers, or of the possession of drugs for personal use, e.g. criminal prosecution.

The Master should make it very clear to the crew that

- possession of drugs, and/or
- use of drugs,

seriously impair the safety and security of the vessel and crew and is likely to lead to instant dismissal, with all associated costs of repatriation and replacement deducted from the individual's salary. Drug warning notices should be displayed in prominent places on board the vessel.

### 2.6.4.3 *Alcohol*

The Master should make it clear to the crew that any breach of the Company's alcohol policy will have serious personal consequences – including possible instant dismissal. Although consumption of alcohol in moderation is considered a social pastime, consumption of alcohol on board may seriously jeopardise the safety and security of the vessel and her crew.

The Master's right to carry out breath or blood tests is subject to the regulations of the flag State and the terms of the crew contracts.

## 2.6 Health

This may at times be left to the Master's own judgment. The vessel may call at countries which require the Master to document that breath tests have been carried out.

The Master should note that in certain countries, alcohol consumption during a certain period, e.g. 24 hours, prior to entering port, constitutes a criminal offence. The crew need to be advised of such requirements and warned of the possibility that certain national authorities carry out random tests for drugs and alcohol consumption. Positive test results will have serious consequences and, in the event of an accident, criminal prosecution, including the imprisonment of individuals, may follow. The Company may suffer financially and/or be exposed to liabilities, costs and expenses.

The consumption of alcohol for a prescribed period prior to going on duty is often, quite rightly, strictly prohibited under a Company's alcohol policy.

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**2.7 TRAINING AND DRILLS**

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**2.7.1 The importance of training**

Training and drills are an essential part of developing and continuously maintaining emergency preparedness and the growth of a safety culture rather than mere complying with regulations, such as mandatorily required under section 8 of the ISM Code.

Training and drills involve familiarisation with emergencies and procedures, so that when the safety or security of persons, property and/or the maritime environment is at risk, the situation is managed in the best possible way. Training and drills also include familiarisation with, and awareness of, applicable rules and regulations. In a real emergency, when chaos threatens, people often become afraid. Experience shows that people who regularly train and exercise in safety drills

- are less frightened
- do not panic
- respond in a controlled manner
- do exactly what they have been trained to do
- handle the situation much better than before the training.

The Master should not forget that if he/she requires his/her crew to respond in a real emergency he/she must be prepared. He/she should bear in mind that

- there is no substitute for training and drills
- everybody on board should be familiar with the procedures to be followed in an emergency
- the individual emergency procedures need to be followed
- a well trained crew and their experience of and ability to manage emergencies will prove invaluable should it be needed.

## 2.7 Training and drills

The Master should

- strictly adhere to the frequency of lifeboat, abandon ship, fire, ship security and other drills as prescribed by international laws and conventions
- use every opportunity to improve the routines of such drills
- conduct training as frequently as possible
- ensure that everybody attend any training provided
- have the training conducted and supervised by experienced officers, to show commitment from the highest level.

All of the above should be followed up with a debriefing session where important lessons can be learnt and corrective action prescribed.

Training and drills should be

- as realistic as possible to minimise fear in a real emergency situation
- carried out wearing full emergency equipment, whenever possible, to familiarise the crew with such equipment
- recorded in writing in the appropriate log book.

### 2.7.2 Safe training

Before any training is undertaken or drills performed, the equipment to be used should be thoroughly examined to ensure that it is safe to use. There have been many tragic accidents, particularly during lifeboat drills and the utmost care must be exercised – please see section 2.8.5.1.D Safe working during drills and training.

Training and drills may reveal a need for further training ashore and this should be reported to the Company. Should the Master consider that additional training materials, e.g. videos, books, or posters are required, he/she should inform the Company accordingly.

The Master should not be too concerned if mistakes are made during training and drills as it is the best opportunity for each crew member to learn from their mistakes and to improve their skills.

Official inspections by port State control officers often focus on familiarisation with lifeboat and fire drills. The Master should ensure that the crew are not only well trained in these drills, but also well trained in operating emergency fire generators and pumps and are familiar with emergency procedures concerning

- hot work incidents
- galley emergencies
- electrical incidents
- incinerator problems
- oil leaks and spills.

### 2.7.3 Navigational training

There is a sharp increase in the number of accidents related to navigation. Both groundings and collisions are becoming more frequent. This is despite the introduction of high tech navigational equipment and SMSs.

One important factor to reverse this trend is to focus on navigational procedures and on board navigational training. The Master should allow his/her navigating officers to acquire the experience, under supervision, and provide any relevant and necessary training in both navigation in dense traffic and ship handling.

The following methods could be used

- well in advance of the actual passage, give the navigators the task of preparing a route the vessel will sail
- explain that this will be a supervised training session focusing on procedures and accuracy
- take careful notes of observations made during the exercise
- give detailed evaluation and feedback to the officer as soon as possible following the exercise.

## **2.7 Training and drills**

By providing this type of supervised training the Master will gain confidence in his/her officers, they will become better navigators and ship handlers and the Master will be more highly respected by his/her officers. It is also very important to prepare officers who are aspiring to become Masters themselves. The degree of guidance during training must be governed by the experience level of the officer.

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**2.8 SAFETY**

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**2.8.1 General**

Safety is the concern of everybody on board a vessel. Done properly it will prevent accidents and help protect the marine environment.

It includes

- the structure of the vessel
- the operation of the vessel, and
- good working practices.

Safety is achieved by creating a safe working environment in which safe working practices and equipment are employed at all times.

It is vitally important that safety is not neglected but is continuously maintained in an emergency; safety should become a way of life.

Should a crew member suffer an injury or fall ill

- it may cause permanent disability if severe – which will, in turn, affect his/her family, friends and ability to work
- substantial compensation may be payable under his/her crew contract and/or national law
- the safety of the vessel may be compromised as he/she is prevented from performing his/her duties
- an investigation into the cause of the accident is required, please see section 3.11 Personal injury, crew illness or death.

Works carried out on a vessel can be dangerous if

- safety equipment is defective or used improperly
- defective tools and materials are used
- sloppy working practices are employed
- safety precautions are not taken seriously
- hazards have not been adequately identified, and
- the risks involved have not been fully and properly assessed.



## 2.8 Safety

### 2.8.2 Safety signs – muster lists – safety plans – emergency exits

Safety instructions and signs for, e.g. emergency exits, muster stations, lifeboats and other safety-related equipment must be

- prominently displayed where necessary and as required by safety regulations
- in a language understood by every crew member
- in accordance with international regulations
- replaced if they become faded.

Muster lists, signed by the Master, exhibited in prominent places throughout the vessel and naming individual crew members should always reflect the actual present manning of the vessel and the duties allocated to each individual crew member.

Safety plans, e.g. fire control plans and other emergency instructions, must be exhibited in prominent places throughout the vessel in accordance with international regulations. Faded copies must be replaced.

Emergency escape routes and emergency exits must

- be clearly marked and free from any obstacles
- not be blocked by vessel's spares or equipment
- doors must be in working condition, and not locked from outside in order to provide a quick escape in the event of an emergency.

### 2.8.3 Safe working environment

#### 2.8.3.1 *General*

In general, it cannot be emphasised enough that personal injuries are less likely to occur on a well-maintained and tidy vessel. This is also reflected in the ISM Code. As slips, trips and falls continue to be the major causes of personal injury, the following precautions should be taken

- obstacles such as steps, sills, low overhead spaces, protruding handles etc., must be clearly marked

- the decks and alleyways of the vessel must be kept clean and free of any slippery substances
- hydraulic pipes on deck must be checked regularly to prevent leaking oil dripping onto the deck
- special attention must be paid to access areas to prevent slipping on ice in colder climates
- debris should be cleared from the deck
- defective anti-slip paint must be renewed
- sufficient lighting should always be provided
- handrails and grips must be in good condition
- appropriate warning signs should be provided as needed.

Cleanliness and good housekeeping all over the vessel not only provides the basis for a safe working environment but also reflects positively on both the crew and the vessel.

### 2.8.3.2 *Working areas*

Working areas that are dangerous should be

- fenced off
- sufficiently lit
- indicated by warning signs sufficient in size and colour to attract attention.

### 2.8.3.3 *Lighting*

Lighting, wherever required for safe ship operations, should

- be in working order
- be sufficiently bright
- be firmly fixed
- be technically fit for use
- have protected glass fittings and bulbs.

## 2.8 Safety

### 2.8.3.4 *Cargo holds*

The access openings in the cargo holds to the tween decks and open cargo hatches can be hazards which stevedores and crew members can fall down. To prevent such accidents occurring

- sufficient guard rails and/or fences should be in place
- rails, ladders and steps should be in good condition
- adequate lighting in the cargo holds.

Working near corrugated bulkheads is particularly dangerous and precautions must be taken to prevent crew members falling into the corrugated spaces.

### 2.8.3.5 *Engine and pump rooms*

The engine and pump rooms, including workshops, must be safe working environments. A permanent state of cleanliness is the key to preventing accidents. Careful maintenance in accordance with the manufacturer's and the Company's instructions is essential to avoid malfunctions or breakdowns which may affect the safety of the vessel, the crew, the cargo and the marine environment.

The following steps should therefore be taken

- these areas should always be kept clean and free from spilt oil
- the bilge under the engine room floor should be kept clean and free from spilt oil
- leaks should be rectified immediately
- completion of repairs should be recorded in the relevant log and Company forms according to the SMS.

The Master should satisfy himself that there are no by-passes of oily water-separation pipes. The next inspection by a port State control officer will undoubtedly discover such irregularity and appropriate steps will be taken by the authorities, not only causing delay to the vessel and incurring additional costs, but will also result in further investigations and possibly criminal prosecutions with fines or even imprisonment being imposed against the Master, the Chief Engineer and the person having arranged the bypass.

### **2.8.4 Safe working equipment**

#### **2.8.4.1 *Safe working clothes – Personal Protective Equipment (PPE)***

Safe working equipment includes suitable protective working gear as this is the first protective shield against personal injury. Safe working clothing includes

- properly fitting boiler suits
- non-slip boots with steel toe caps
- hard hats
- eye protection (goggles)
- ear protection
- work gloves (where appropriate)
- safety harnesses (where appropriate)
- high visibility vests.

High visibility clothing is particularly important on ro-ro vessels to protect crew and other personnel directing the drivers.

## 2.8 Safety

### 2.8.4.2 *Safe working tools*

Safe tools must be

- functioning properly
- free from oil or dirt
- fit for the intended use.

Special care needs to be taken when using power tools. These should be checked before use and

- power tools should only be handled by trained personnel
- safety guards must be in place
- when switched on, the power tool should not jump or move
- electric cables must be intact to prevent short circuiting or electric shocks
- there should be sufficient lighting and adequate ventilation in the work place
- a permit-to-work procedure should be in place for the use of power tools.

The Master and his/her officers should ensure that any crew member using power tools knows how to switch the power tool OFF before switching it ON!

The Master should ensure that all defective tools are either

- not used
- removed, stored away and marked as defective
- disposed of in a safe and responsible manner, or
- repaired.

## 2.8.5 **Safe working practices**

### 2.8.5.1 *Safe working practices at all times*

Proper and safe working practices and procedures should be employed at all times. Accident prevention schemes and codes of safe working practices as well as the procedures under the vessel's SMS must be followed at all times.

### A. *Safe work planning and supervision*

Any work carried out should always be

- properly planned together with the crew designated to carry out the works
- if appropriate, be the subject of a risk assessment and, where necessary, a full permit-to-work procedure
- supervised by a second crew member or even an officer, where necessary.

### B. *Safe working during cargo, lashing and securing operations*

For further details please refer to *Gard Loss Prevention Circular No. 03-04: Accidents involving crew and stevedores during cargo operations*.

During cargo operations, particular attention is required to prevent endangering the crew or others when they are entering the working area.

Upon completion of loading or before discharging containers, safe working practices must be employed in lashing and unlashings the containers to prevent slips and falls on slippery container surfaces. Lashing frames and lashing platforms should be used where available, to avoid having to climb onto the top of containers. The Master and his/her officers should not permit any person to be transported on top of a container or any other cargo during lifting operations as this may lead to severe and even fatal personal injuries.

Unlashing must not be undertaken whilst the vessel is still underway, to prevent crew involved in these tasks falling overboard. Lashing operations must be completed prior to leaving the berth.

## 2.8 Safety

Lifting operations are dangerous in themselves as slings may part, brakes fail or the lifted object may come into contact with other structures causing it to slip out of the slings. Safe working practices must include preventing people from standing directly underneath or near to such lifting operations if not operationally required.

Prior to working with cranes, it should be established that these are in proper working and serviceable condition. The limit switches must be operable, so that stevedores cannot override the same without written permission. The limit switch keys should be held by the responsible officer at all times and should not be handed over to stevedores.

The visibility of the crane driver may be restricted during crane operations. In such cases, the Master and his/her officers should ensure that a signal man is posted with proper communication to the crane driver.

On ro-ro vessels simple communication procedures should be established between the drivers and the crew or personnel directing the drivers. These must be strictly followed.

The operation of ramps on ro-ro vessels can pose considerable hazards to crew and other personnel. This needs to be identified and protective measures taken before the start of operations to prevent severe personal injuries or even deaths occurring. When operating ramps

- only trained and experienced personnel should be entrusted with the operational responsibility
- ensure the correct sequence of operation is followed to prevent jamming the ramp
- the operator's view must not be obstructed
- the operator must ensure that all personnel are cleared off the ramp before the commencement of any operation
- nobody should be allowed to stand below the ramps.

If crew members are driving tractors or forklifts, the driver should always have good visibility, keeping sight of persons working on the deck at all times.

### C. *Safe working during periods of heavy weather*

Special situations such as heavy weather require special measures. Crew members and passengers have, on occasion, been lost overboard in heavy weather. There should be a policy to

- prevent crew members or passengers walking or standing on deck in exposed areas during heavy weather
- prohibit working on deck except for essential safety operations during heavy weather
- make a public announcement to crew and passengers.

### D. *Safe working during drills and training*

Safe working practices must be followed during training and drills, such as launching lifeboats and man overboard boats/rescue boats if these are carried out.

For vessels built after 1 July 1986, davit suspended lifeboats are fitted with on load release hooks. There have been many accidents with such lifeboats, and seamen have been killed or injured during training and drills. Boats have fallen down due to being accidentally released at the time of the exercise. The reasons for such accidental releases have been found to be human error, lack of training, lack of understanding of how the hook release mechanisms worked, incorrect resetting of hooks the last time the boat was lifted, and lack of maintenance.

For further details please refer to

- *Gard News 183, The loss of lives in lifeboats with on-load release hooks.*



## 2.8 Safety

As different types of release systems are in use, only general advice can be provided in this publication

- manufacturer's instructions must be strictly followed at all times to ensure that the lifeboats and life rafts are properly secured and capable of release
- the crew should be familiar with the manufacturer's operating instructions from thorough and frequent training and drills
- the release systems must be regularly maintained in accordance with the manufacturer's instructions
- the lifeboats should first be firmly secured by short, strong wire slings fitted between purpose built strong points of the davits and the boat, to avoid the risk of an accidental release during examination and maintenance of the hook system
- prior to any drill, the release systems must be checked to ensure that the release hooks are properly set
- for lifeboat tests and drills, the lifeboat, davits, wires, sheaves blocks and the entire release mechanism should be carefully examined to ascertain that they are in proper working condition. In addition, the sea conditions should be considered. If in any doubt, the test should be postponed and, if permitted under the relevant port regulations, carried out in port rather than at sea.

Inflatable life rafts are subject to an annual inspection by an external service firm. The Master and his/her officers should ensure that the life rafts and the hydrostatic release mechanisms are correctly installed, enabling the rafts to be easily launched by the crew in an emergency or launched automatically if the vessels sinks and the raft becomes submerged.

The Master should bear in mind that only a well trained crew, fully familiar with the release mechanisms, can safely and properly operate the lifeboat release systems.

At no time during training and drills should the personal safety of any crew member be endangered. If such a situation arises, the training or drill must be aborted! The reason for abortion or waiver of the actual launch of the life boat need to be recorded in the vessel's log book to avoid the next port State control officer complaining of lack of training and drills.

New SOLAS regulations for the inspection and maintenance of "on-load-release" gear came into force on 1 July 2006, requiring, among other things, an annual inspection and test of such hooks by a representative of the manufacturer. It is imperative that these inspections are carried out by fully competent and authorised personnel, to limit future risks of further accidents with "on-load-release" hooks.

### *E. Safe working in unlit or dark stores, holds and rooms*

Safe working practices include sufficient lighting in enclosed workplaces to prevent accidents with machinery or tools, or falls or slips causing personal injury or even death. Crew members entering enclosed spaces from outside should allow some time for their eyes to adjust to the changing light conditions.

Where appropriate, a full permit-to-work procedure should be followed for entry into enclosed spaces. Please see section 2.8.5.7 Entry into enclosed spaces.

### *F. No smoking policy*

For further details please see *Gard Loss Prevention Circular 05-00: Fire in the Hold Smoking Policies Onboard Ship*.

Smoking should only be allowed in designated smoking areas.

## 2.8 Safety

Safe working practices include a strictly followed “onboard smoking policy”. There should be a policy of no smoking

- on all tank vessels
- on dry cargo vessels during cargo operations and when carrying dangerous goods on deck, even if stowed in containers
- on deck on all vessels in port
- in the holds and engine rooms of all vessels
- in the bunks in cabins.

“No smoking signs” should be large, legible and clearly visible.

### 2.8.5.2 *Safe access to the vessel*

Gangways and accommodation ladders should

- be intact
- be properly rigged with handrails
- have handrails set at a safe angle to the vessel
- have properly rigged safety nets
- have a lifebuoy in place
- be permanently manned with a security check in place to comply with the requirements of the SSP.

If the vessel is at the anchorage

- a gangway watch should also be in place
- a direct line of communication should be established with the officer of the watch.

For personnel entering or leaving by platforms to accommodation ladders, the platforms should be

- tightly rigged and secured
- properly fenced.

Particular attention should be paid to maintaining proper and safe rigging of the accommodation ladder when in tidal ports. The same applies if the accommodation ladder needs to be shifted due to cargo operations.

Pilot ladders and lifts should be rigged in accordance with the *International Maritime Pilots' Association (IMPA) Regulations* or equivalent standards.

There must be sufficient lighting of the entire area during the hours of darkness.

If access to the vessel is over the vessel's ramps, precautions have to be taken in accordance with the layout of the vessel and the ramp to prevent anyone falling over the ramp.

### 2.8.5.3 *On deck – mooring and unmooring*

Entering or leaving a port, berthing or anchoring are often dangerous manoeuvres. Particular care and attention is required during mooring or unmooring operations

- a responsible officer should oversee the mooring operation, directing the crew under his/her command
- heaving lines and mooring lines should be in sound and proper condition and laid out for running, unless already wound on a mooring winch
- mooring lines with apparent chafing should not be used and should be marked as such or removed
- lines should be properly coiled on a mooring winch
- bights, rope coils and running lines should be stayed off at a safe distance
- the correct Personal Protective Equipment – please see section 2.8.4.1 Safe working clothes – Personal Protective Equipment (PPE) – should be worn, including hard hats and properly fitted clothing to prevent a crew member becoming caught up in the lines
- communication equipment which does not interfere with other radio waves or bands should be used.

## 2.8 Safety

If lines are provided by tugs, the attending officer must pay particular attention to whether the lines show any indication of defects or damage. If so, the lines from the tugs should be rejected and the vessel's lines offered instead

- particular attention should be paid when other vessels pass by the moored vessel due to the increased strain and tension on the vessel's mooring lines caused by their surge
- the use of both wire and polypropylene ropes at the same time should be avoided as their elasticity differs
- winch operators should have an unobstructed view of the lines they are tending and should adjust lines as necessary to avoid excessive and sudden weight on the lines
- if the view of the winch operator is obstructed a signaller must be in attendance
- winch operators should not be responsible for any other tasks during mooring operations.

The failure of only one piece of equipment or a failure to follow proper procedures may result in severe personal injury or death. The Company will be exposed to claims by the injured party or their dependants. Individuals whose fault is involved may also face criminal investigations and possible prosecution.

The Master should ensure that sufficient crew members are available at all mooring stations to allow for swift and efficient arrival and departure. Insufficient or inadequate assistance of crew may be noted by attending officials and may, in some countries, result in large fines being levied against the Master and/or the vessel.

2.8.5.4 *Overside and underwater work – diver's work*

A. *Overside work*

Overside work should only be carried out

- based on a permit-to-work procedure
- subject to a special procedure contained in the Company's SMS
- whilst the vessel is in port or at anchor
- supervised by a competent person on board.

The persons working overside should

- always wear a safety harness
- be firmly connected to fixed vessel appliances on deck
- have access to a lifebuoy with a line ready for use.

Communication with a responsible officer must be maintained to enable the man-overboard exercise to be put into action should the person working outboard fall into the water.

If overside works have to be undertaken whilst the vessel is underway, such works should be carried out in accordance with the Critical Shipboard Operation Procedure in the SMS.

Utmost care and attention is required during such operations and should only be permitted

- in exceptional cases
- where the safety of the vessel, the crew or the cargo is at risk.

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### B. Underwater work – diver's work

Outboard underwater work by divers is highly dangerous and there have been fatal accidents involving divers. The following precautions need to be taken

- underwater work should be subject to a permit-to-work procedure
- subject to a special procedure in the Company's SMS
- only professional divers should be contracted
- underwater work must be carefully planned involving all officers on deck and in the engine rooms
- propellers and thrusters must be turned off
- protection shields must be in place
- warning signs must to be displayed outboard, on control levers for propeller and thrusters, the central electrical switchboard in the engine room and other prominent places
- communication needs to be established between the divers and the attending officer.

#### 2.8.5.5 Working aloft

Working aloft should only be carried out if it is

- based on the same principles as working overside – please see preceding section 2.8.5.4 Overside and underwater work – diver's work
- subject to a permit-to-work procedure, and
- possible radiation hazards from radars and antennas are checked and found acceptable.

If lifting gear such as cranes and derricks is used, their wires and rigging should be

- checked prior to use
- in perfect condition.

Baskets or frames should be

- suitable
- certified for carrying people.

Safety harnesses must be

- used
- firmly connected to fixed points outside the basket.

### 2.8.5.6 *Working in the engine room and machinery spaces*

Due to the increased noise level when engines and other large items of machinery are running, combined with the work space restrictions, working in the engine room and machinery spaces is hazardous.

Dangers can be reduced to a minimum by

- following safe working practices
- taking protective measures
- wearing Personal Protective Equipment – please see section 2.8.4.1 Safe working clothes – Personal Protective Equipment (PPE).

Particular care and attention is needed when carrying out work in engine rooms as

- communication is often difficult and sometimes impossible
- warning shouts may have no effect
- the work task may distract the person involved.

To reduce the likelihood of personal injury occurring whilst working in the engine room and working with electrical appliances, the following precautions should be taken

- work must be carefully planned and those involved or carrying out such work must be familiar with the plans made
- the working environment in the engine room must always be kept clean and free from oil, oily residues and oily rags, to prevent slips and falls
- communication by hand signals or similar means should be agreed beforehand



## 2.8 Safety

- devices should be installed on engines, auxiliaries, purifiers, pumps etc., undergoing maintenance or repair, making it impossible to run them and warning signs should be displayed
- areas of open casings, open bilges or similar should be clearly fenced off and warning signs displayed
- tools and materials used should be put back where they belong to prevent them becoming hazards or being left in gearboxes and causing damage to the engines and impairing the safety of the vessel.

### 2.8.5.7 *Entry into enclosed spaces*

For further details please refer to

- *Gard News 179, Dangers of enclosed space*
- *Gard News 179, A fatal tanker accident*
- *Gard News 179, Lack of air – the dangers of CO<sub>2</sub>*
- *Gard News 179, A surveyor's survival.*

Special care must be taken when entering enclosed spaces as lack of oxygen or the presence of toxic fumes may have fatal consequences for the persons entering. Every year seafarers fail to follow the correct procedures for entry into enclosed spaces and, as a consequence, a considerable number of deaths occur – all of which were avoidable. These tragic losses can be prevented if the crew or independent contractors carrying out such work strictly follow set procedures.

Entry into enclosed spaces should be subject to a permit-to-work procedure. Prior to entering any enclosed spaces, including cargo holds, even for a short period of time or a superficial inspection, the following guidelines should be followed as a minimum requirement

- careful planning according to the Critical Shipboard Operation Procedure under the Company's SMS
- the activity should be subject to a permit-to-work procedure

- work should only be authorised by the responsible officer after satisfactory completion of safety checks in accordance with the permit-to-work procedure
- the safety check results should be recorded in the appropriate forms
- all personnel involved should be made aware of the risks of entering enclosed spaces
- communication procedures must be agreed prior to entering
- additional lighting must be provided
- the atmosphere must be tested with properly calibrated instruments prior to entry
- ventilation of the space should be carried out before entry and maintained during the works
- breathing apparatus must be used if there is insufficient oxygen in the space
- full rescue and resuscitation equipment must be available for immediate use at the entrance to the space, along with a standby man with means of communicating with the responsible officer.

When conditions for entry have changed, especially where work has been interrupted for a period of time, the work permit previously issued is no longer valid and a new permit must be issued. The new permit must include the proper testing as described above.

Entry should only be allowed if all safety precautions have been taken. Authorisation to enter should only be given after the responsible ship's officer is satisfied that all precautions have been taken and are in accordance with the Company's procedures.

If someone does get into difficulty within an enclosed space, rescuers must not rush to their aid without first donning breathing apparatus.

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### 2.8.5.8 Hot work

For further details please see *IMO MSC Circ. 1084 Principles for Hot Work on board all types of ships*.

Any hazards inherent to hot work must either be eliminated or effectively controlled.

Hot work require special precautions and must be subject to

- a permit-to-work procedure
- careful planning where all safety measures are discussed and agreed
- only trained crew to be entrusted with carrying out hot work
- the wearing of correct Personal Protective Equipment – please see section 2.8.4.1 Safe working clothes – Personal Protective Equipment (PPE) – including special fire resistant clothing and a visor
- removal or protection of material which is likely to catch fire
- proper earthing for welding works
- a thorough check that electric cables and welding material are properly insulated
- fire extinguishers in place ready for use
- a direct line of communication being established with the officer of the watch.

For hot work in enclosed spaces there must be

- sufficient ventilation
- proper lighting of the work area.

Please see section 2.8.5.7 Entry into enclosed spaces.

The Master should never allow welding in cargo compartments where cargo is already loaded without all necessary precautions having been taken and the operation being continuously monitored by a responsible person. Following completion of the welding work, a fire watch must be maintained to monitor the situation and prevent any subsequent outbreak of fire.

### 2.8.5.9 *Work in accommodation, galleys and pantries*

Work in accommodation and particularly galleys and pantries may be dangerous if safety precautions are not taken and safe working practices not followed. The main causes of personal injury in galleys are slips and falls, burns caused by hot food or water and cuts from sharp objects

- the floors of galleys and pantries must be kept clean from grease or any other liquids which may cause somebody to slip
- whilst the vessel is at sea, rails/fiddles should be put up around the stoves to prevent pots and pans from moving
- heavy items should always be moved by two people rather than one
- appropriate Personal Protective Equipment – please see section 2.8.4.1 Safe working clothes – Personal Protective Equipment (PPE) – should be worn, particularly proper shoes with toe caps and non-slip soles
- doors of all kinds should have hooks to prevent slamming
- doors to refrigeration chambers should be able to be opened from the inside to prevent a crew member from becoming trapped inside.

## 2.8 Safety

### 2.8.6 Safe passenger environment

#### 2.8.6.1 *General*

Passenger vessels carry the most precious of cargoes, namely people. Owners of passenger vessels have their own standards of operation that must not only comply with strict international regulations but also with even stricter national regulations. The following guidance in respect of prevention of personal injury to passengers should be considered only as general guidelines and are not exhaustive. Every passenger vessel has a different design and layout and every company has particular instructions in its SMS and SSP that the Master and his/her officers must be thoroughly familiar with and follow strictly.

Passengers enjoying a holiday on board a vessel, whether a cruise vessel, ferry or cargo vessel, are exposed to an increased risk of personal injury due to

- less attention being paid to possible dangers due to the relaxed atmosphere
- increased alcohol consumption
- the movement of the vessel and an unfamiliar environment
- adverse weather conditions.

Not surprisingly, slips and falls as well as trapped fingers are the most common causes of claims on board passenger vessels. The sudden interruption of a holiday due to a personal injury is often accompanied by disappointment and discontent resulting in large claims, not only for the costs of medical care and treatment but also for pain and suffering. Claims for loss of enjoyment or frustration may also be brought in some jurisdictions, and national consumer legislation provides an ideal climate for such claims.

Although owners and operators of passenger vessels will each have a particular safety policy, some points are worth mentioning.

2.8.6.2 *Accident prone areas and circumstances*

Some specific areas where injuries to passengers are likely to occur include

- stairways
- lifts
- sliding or closing doors
- raised coamings
- areas with dimmed lighting such as bars and cinemas
- swimming pools
- areas adjacent to swimming pools and areas with slippery surfaces, such as open decks, particularly in adverse weather
- gangways and accommodation ladders
- cabin doors and bunk ladders.

Passengers are more likely to suffer injury in circumstances such as

- embarkation and disembarkation
- excursions
- sports activities on the vessel
- vessel movement in heavy weather causing loss of balance.

2.8.6.3 *Accident prevention*

The following steps should be taken to reduce the risk of accidents occurring

- on and under deck steps must be clearly marked, preferably painted in contrasting colours
- handrails must be intact on all stairs and walkways to provide a safe grip
- in areas with dimmed lighting, such as bars, there should be sufficient direct lighting to light up stairs and steps
- warning signs of an appropriate size and colour should be displayed where required, e.g. “Slippery when wet”
- the depths should be clearly shown on the sides of swimming pools
- empty swimming pools should be covered with safety nets to prevent unauthorised access and accidental falls

## 2.8 Safety

- dangerous or radio transmission areas must be fenced off to prevent unauthorised access
- intoxicated passengers should not be permitted to consume further amounts of alcohol
- wherever possible, personnel should be available to give a helping hand – a simple fall, particularly by an elderly passenger, may cause severe fractures requiring lengthy medical care
- platforms on accommodation ladders and ramps used for embarkation, disembarkation and boat transfers should be sufficiently railed and have a non-slip surface
- properly trained personnel should be available to assist
- lifebuoys should be in place, ready for use
- life jackets must be worn by everybody during excursions in open boats.

If the weather is expected to deteriorate warnings should be given and appropriate measures are to be taken by the vessel's command, such as

- prohibit access to the outer decks
- suspend all leisure activities
- instruct all passengers to stay in their cabins.

Seats, doors and bunk ladders need special attention

- secure and, where appropriate, lash all seating on the vessel
- clamps holding cabin doors should be in proper working condition
- closing or sliding doors should be provided with damped automatic door closures slowing the door down preventing fingers being trapped
- bunk ladders in cabins should be safely secured.

If an accident occurs, even a simple slip or fall, it is very important to show concern and provide immediate help and assistance – the ship's doctor should be called immediately.

## 2.8.7 Safe environment for persons other than crew or passengers

### 2.8.7.1 Pilots

Whilst pilots should be familiar with the environment of a vessel and its access points, accidents nevertheless do occur. These accidents may have fatal consequences or cause permanent disability necessitating the payment of substantial compensation.

The main causes of accidents suffered by pilots are

- improperly rigged pilot ladders
- insufficiently lit alleyways
- obstacles and hazards on deck
- residues of liquids creating a slippery surface
- frozen surfaces in winter
- open stairways to the bridge not being closed or fenced off during night-time pilotage.

Embarkation and disembarkation of pilots should be considered a critical shipboard operation under the Company's SMS and SSP for which special procedures should be in place. In addition, the Master should follow the IMPA and IMO recommended *Required Boarding Arrangements for Pilots*.

Pilot embarkation and disembarkation should be attended to by

- a responsible officer in charge
- professional and properly trained crew members ready to assist as required and be available in the event of an incident.

If the embarkation or disembarkation of the pilot appear to become too difficult in adverse weather conditions, the Master should not hesitate to abort and postpone the operation and wait for improved weather conditions.

Pilots should not be left unattended on proceeding to or leaving the bridge, or on their way to or from the pilot ladder. If a pilot slips or falls whilst accompanied by a member of the ship's crew, a helping



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hand should be given and the incident will have been witnessed by a ship's witness.

For helicopter operations, reference should be made to the Critical Shipboard Operation Procedure in the SMS. A safe descent and crew assistance must be provided from where the pilot is landed.

### 2.8.7.2 *Supercargoes*

Supercargoes are expected to be familiar with a vessel as they normally have seagoing experience as a ship's officer. Nevertheless, accidents do occur, mainly caused by carelessness or fatigue.

If a supercargo is attending the vessel, the Master should inform him of any peculiarities of the vessel and the cargo gear and draw his attention to potentially dangerous areas. If the supercargo is to sail with the vessel, he should undergo the basic familiarisation in accordance with the SMS. The supercargo should be requested to take the same precautions as would be expected from the crew, such as wearing appropriate Personal Protective Equipment – please see section 2.8.4.1 Safe working clothes – Personal Protective Equipment (PPE) – including hard hat and protective shoes.

### 2.8.7.3 *Surveyors*

#### A. *General*

If a surveyor is attending the vessel, he must duly identify himself, clearly stating

- by whom he was instructed
- for whose interest he is acting, and
- the scope of his instructions.

If a surveyor is not acting on behalf of the vessel, he should not be allowed to communicate with any member of the crew or be given access to the vessel's documents. The Company and/or the P&I and/or the Hull and Machinery insurer should be contacted immediately for further instructions.

The Master and his/her officers should closely co-operate with the surveyor instructed to act for the vessel. Unwillingness or a dismissive attitude of the Master or his/her officers makes the surveyor's task more difficult. If the Master or his/her officers have doubts about the surveyor's professionalism, the Company or the insurer's correspondent should be contacted.

Surveyors acting on behalf of national or local authorities may have a legal right to board the vessel and conduct an investigation. The Master and his/her officers should ascertain the legitimacy of such surveyors and inform the Company and the insurer's local correspondent accordingly.

In addition to the security records under the ISPS Code, the Master is advised to record visits of surveyors in the respective log listing the name and full address, task and duration of the visit.

### *B. Surveyor's safety*

For further details please refer to *Gard Loss Prevention Circular 04-02: Master's responsibility for the safety of surveyors*.

Surveyors should be familiar with the general layout and construction of a vessel, but it may be dangerous to assume that they have any seagoing experience and may consequently require a high level of supervision whilst on board. Accidents may therefore occur, mainly because the surveyor is unaware of any existing dangers. The surveyor may also be under time pressure or may be fatigued.

Surveys often involve inspections in some of the most hazardous places on the vessel, e.g. engine rooms, cargo holds, enclosed spaces etc. In such instances, the same principles should be applied as if a crew member is working in these locations, i.e. safe access must be provided and the area must be properly lit, please see section 2.8.5.1.E Safe working in unlit or dark stores, holds and rooms.

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When a surveyor attends on board the vessel the Master and/or his/her officers should

- seek information on the surveyor's experience from vessels
- ensure that he is wearing the appropriate Personal Protective Equipment, including suitable protective working gear, please see section 2.8.4.1 Safe working clothes – Personal Protective Equipment (PPE)
- ascertain that his equipment is in an approved safe condition for use
- a suitable officer or crew member should be assigned to accompany the surveyor.

### 2.8.7.4 *Relatives on board*

Some companies allow relatives of crew members on board.

A relative may be familiar with the position held by the crew member, but cannot be expected to be familiar with the vessel and its environment.

When persons other than crew or non-fare paying passengers travel with the vessel, it is recommended that a hold harmless agreement is obtained in the form set out in Annex 4.

If the Company does not have procedures for relatives on board, the Master should ensure

- a proper and full familiarisation with the vessel and shipboard operations, paying particular attention to any hazards
- relatives of crew members are kept away from all shipboard operations.

The relative of the crew member should confirm in writing that the above precautions have been taken.

### 2.8.7.5 *Stevedores*

Cargo operations are dangerous by their nature. Hazards exist and stevedores are just as prone to accidents as anyone else – often with fatal consequences. In some jurisdictions, particularly the United States, stevedore claims for personal injury are frequently substantial and may give grounds for criminal prosecution of the Master and the Company. To reduce the severity of or prevent such claims, it is very important to act quickly at the time of the alleged incident and to collect all available evidence, including witness details and photographs – see Part 3.

To prevent such accidents occurring, the principles for a safe working environment and safe working practices as set out in sections 2.8.3 Safe working environment and 2.8.5 Safe working practices should be followed.

### 2.8.7.6 *Ship's visitors, agents, contractors etc.*

Although agents may be familiar with the environment of a vessel, the main causes of accidents involving agents are

- insufficiently rigged access ladders to the vessel
- insufficient lighting in alleyways
- obstacles and hazards on deck
- slippery or icy surfaces.

If possible, agents should be accompanied by a crew member at all times whilst on board the vessel so they can be warned of any hazards or obstacles and receive immediate assistance if injured.

If contractors are assigned to work on board, the Master and his/her officers should ensure that the contractors have properly assessed the risks associated with such works. They also need to be warned about events taking place during their time on board which may affect their personal safety. The Master and his/her officers should ensure that the equipment used by contractors is in

## 2.8 Safety

good working order. The principles of safe working equipment and safe working practices as described in sections 2.8.4 Safe working environment and 2.8.5 Safe working practices above apply without exception to contractors as well.

Special works, such as disconnecting fuel hoses, must be performed by the vessel's engineers. Hot work must be supervised at all times. Please see section 2.8.5.8 Hot work.

Visitors are often unfamiliar with the dangers on board. Consequently, they are at greater risk than others of suffering a personal injury. Accordingly

- visitors' access to the vessel should be restricted
- visitors should never be left unattended, but should be accompanied by a member of the ship's crew at all times
- hazards and obstacles should be clearly marked and pointed out to the visitors by the accompanying crew member
- visitors should be provided with suitable Personal Protective Equipment, e.g. hard hats, and be instructed in its correct use, please see section 2.8.4.1 Safe working clothes – Personal Protective Equipment (PPE).

Apart from the personal injury suffered as a result of an accident, the consequences of a claim lodged against the Company and involving the P&I insurers must not be underestimated.

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**2.9 SECURITY**

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Maritime security amendments to Chapter XI of the SOLAS Convention and the associated International Ship and Port Security (ISPS) Code came into force on 1 July 2004. The Master should ensure that both he/she and his/her crew are familiar with all relevant vessel related ISPS Code requirements and that all appropriate documents, drill requirements and other relevant procedures are being followed as required.

Any guidance provided below should by no means be in conflict with any regulatory requirement related to the implementation of the ISPS Code.

**2.9.1 General access to the vessel**

Masters should ensure that the proper identification and credentials of all visitors are verified to ensure no unauthorised access in accordance with the SSP under the ISPS Code.

**2.9.2 Refugees**

In certain sea areas a more vigilant lookout should be maintained for refugee boats which are usually small and difficult to see. Refugees are mainly found close to areas of political and civil unrest. Should refugees be spotted, the Master and his/her officers should refer to the vessel's SMS and SSP. Further guidance on the handling of refugees can be found in section 3.13 Refugees.

**2.9.3 Stowaways****2.9.3.1 General**

People leave their homes for various economical and political reasons. Some sail to open waters in the hope of being picked up by passing vessels and others try to board vessels in ports and stow away.

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Even in times of heightened security it may not always be possible to prevent determined stowaways from coming on board. Masters and officers should be aware that

- stowaways may enter a vessel with the assistance of a third party, sometimes local stevedores
- crew members may sometimes be involved.

Whilst the Company may have insurance cover with the P&I insurer for costs and expenses directly or reasonably incurred in identifying, disembarking and repatriating stowaways and refugees, the time and trouble involved is substantial and is not generally covered by insurance.

### 2.9.3.2 *Problems caused by stowaways*

The Master, crew, Company and the P&I insurer may be faced with the discovery of one or more stowaways after the vessel has left port. The presence of stowaways on board

- creates considerable problems with immigration authorities en route
- imposes additional strains and stresses upon the crew, and
- may be deemed a breach of the ISPS Code.

If the stowaways outnumber the ship's crew and/or become violent they may endanger

- the safety of the vessel
  - the safety of the crew,
- and there may not be sufficient lifesaving equipment on board.

If the vessel's schedule involves ports where stowaways may be expected, the Master should

- familiarise himself with the intended port of call
- together with his/her officers and crew, consider tactical measures to keep stowaways away.

### 2.9.3.3 *Access to the vessel*

Access to the vessel should be restricted and controlled as required by the SSP.

Unidentified or unauthorised individuals should be denied access. The local correspondent may be able to assist where such individuals try to obtain access to the ship.

When a pass system is not viable, it may be helpful to keep

- a log with name, duties, name and rank of the person visited, time of boarding and disembarking, and
- a tally of the persons boarding and leaving.

It should be borne in mind that stowaways attempt to board a vessel not only by the normal access routes but also by

- climbing the mooring ropes or anchor chains
- coming alongside with boats and entering over the vessel's sides
- hiding inside containerised, palletised and other unitised cargo.

Consequently

- a close watch should be maintained at all times
- large effective rat-guards should be placed on mooring lines well out of reach of the vessel's side and jetty
- fairleads and hawse pipes should be sealed to prevent access
- access doors to the superstructure should be locked and sealed where possible – without compromising safety and evacuation in an emergency
- stores and other access doors on deck should be properly locked
- the vessel should be brightly lit.

Random checks during loading of palletised or unitised cargo may assist in discovering stowaways.



## 2.9 Security

### 2.9.3.4 *Measures prior to and upon departure*

Prior to departure

- a proper, systematic and extensive search of all parts of the vessel should be carried out to discover any stowaway who may be on board. Due to the different sizes and shapes of vessels, an exhaustive search list cannot be produced here. Any search conducted must be carried out in accordance with the vessel's own search list
- where available, shorebased search parties with dogs should be engaged
- announcements to be displayed at the vessel's access points stating that holds will be treated with gas prior to departure. The impression of injecting gas into the holds may be given by injecting pressurised air
- the vessel's next port of call should not be displayed, unless it is unattractive for a stowaway.

After departure, it is advisable to stop the vessel while still within port limits to carry out a second systematic and extensive search of all parts of the vessel including the stores and – if possible and accessible – the cargo holds. It may be easier to land stowaways found before the vessel has left territorial waters.

All the measures taken should be properly recorded in the vessel's log to evidence to the immigration authorities that all proper precautions were taken.

If stowaways are discovered upon departure, please refer to section 3.15 Stowaways.

### 2.9.4 Violent attacks and piracy

For guidance on how to prepare for and act in connection with violence and robbery attempts, please refer to

- the SSP under the ISPS Code
- section 3.18 Violent acts, piracy, robbery and others, and
- *Gard News 179, Piracy and armed robbery against ships today.*

#### 2.9.4.1 *Circumstances surrounding violent attacks*

In certain areas there is an increasing number of violent criminal attacks on vessels underway and the crews on board. Areas known for such violence are South East Asia, the East Coast of South America, some parts of the Caribbean and the West and East Coasts of Africa. Irrespective of the regions mentioned, the Master and the entire crew must be on constant guard wherever the vessel may be.

Targets are

- the vessel
- her crew
- her passengers
- cargo
- property on board.

Pirates entering a vessel are mainly targeting valuables, such as

- the vessel's safe and its contents
- cash belonging to the crew
- radio communication equipment
- cameras and binoculars
- laptops, electronic and entertainment equipment.

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Thieves are sometimes looking for the contents of particular containers. There have been recent incidents where a vessel's entire cargo has been targeted and the vessel hijacked.

Each violent act, from piracy attack, cargo theft, and pilferage to a politically motivated attack, requires different responses and solutions.

### 2.9.4.2 *Action to prevent attacks*

The SSP should contain strategies to protect the vessel when it enters, or is scheduled to enter or pass through areas known for violent attacks on vessels.

The Master should ask the local agents or correspondent for advice on security in that particular port or area and the reliability of official security authorities and private firms.

Direct lines of communication should be established – where possible and reliable – with the dock, police or security authorities.

#### *A. At anchor or alongside*

Depending on the type, layout and structure of the vessel, a strategy may include

- strict control at all gangways and accesses, allowing only authorised access
- fairleads and hawse pipes to be sealed to prevent access
- all upper deck lockers and doors to accommodation which are not strictly needed for the operation of the vessel to be locked bearing in mind all safety implications, including evacuation in the event of an emergency
- all upper deck lighting to be on full
- extra lighting over the vessel's sides including the bow and stern
- all ladders and ropes hanging outboard need to be taken onboard

- large effective rat-guards to be put on mooring ropes well out of reach of the vessel's side or jetty
- patrols of preferably no less than two crew members during the hours of darkness, equipped with powerful search or arc lights and in direct communication with the officer in charge.

### *B. Underway*

Depending on the type, layout and structure of the vessel, a strategy may include

- making passage through areas known to be dangerous in daylight, if possible
- using safe maximum speed
- maintaining a constant radar and visual watch, giving a wide berth to small objects, particularly when they show no lights
- during hours of darkness, ensuring the upper deck lighting is on full as well as extra lighting over the vessel's side and stern, provided this does not in any way impair the ability to maintain a safe and effective lookout
- charging fire hoses during the passage
- making constant rounds around the vessel by preferably no less than two crew, equipped with powerful search or arc lights and in a direct communication with the officer in charge.

### *C. No firearms!*

Firearms should not be used! To do so will

- expose the Master or crew to imprisonment or execution should a pirate be killed in a hostile port
- expose the vessel to arrest and security demands exceeding the amount of valuables the pirates could have taken from the vessel
- increase the risk that the pirates themselves will use firearms with the possibility that a crew member may be killed or injured.

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### *D. Piracy Reporting Centre (PRC)*

If the vessel has been the victim of a piracy or other violent attack, the Master is advised to report the attack to the PRC of the International Maritime Bureau (IMB) in Kuala Lumpur, Malaysia. The Centre can be contacted on a 24 hour basis. The key services of the PRC are

- to receive reports of suspicious or unexplained craft manoeuvres, boarding and armed robbery from vessels and to alert other vessels and law enforcement agencies in the relevant region
- to issue regular status reports of piracy and armed robbery via routine broadcasts on Immarsat-C through its safetyNETservice. Vessels can also obtain these status reports by contacting the PRC
- to collate and analyse all information received and issue consolidated reports to interested parties, including the IMO.

For further details and contact details of the PRC please see section 3.18 Violent acts, piracy, robbery and others.

### 2.9.5 Drug smuggling

For details please refer to

- the SSP under the ISPS Code
- *Gard News 171, Proficiency and patience win drug case in the US*
- *Gard News 134, Drug Smuggling – United States.*

#### 2.9.5.1 General

Ships are a preferred target for drug smuggling as the smuggler will remain undetected should the drugs be discovered and the blame will fall on the vessel and her crew. Utmost vigilance is required in all ports, day and night, where drug smuggling is known to occur.

Drugs may be smuggled

- inside the vessel's structure and accommodation
- inside the vessel's holds and amongst the cargo
- inside vessel openings in the hull, such as cooling water suction boxes
- divers are known to weld receptacles to the vessel's hull underwater and to conceal drugs in rudder trunks. Air bubbles in the water around the vessel may be an indication of any such activities.

#### 2.9.5.2 Motivate the crew to co-operate

The Master should impress on the crew that drug smuggling

- is a criminal act impairing the vessel's safety and integrity
- results in criminal prosecution world-wide.

The crew should be actively engaged in measures to prevent any attempt at drug smuggling. The Master may consider establishing an incentive scheme to encourage crew members to be alert.

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### 2.9.5.3 *National legal requirements*

Ships trading to areas where drug smuggling is likely to occur should comply with applicable national legal requirements, such as the US Customs-Trade Partnership Against Terrorism (C-TAPT), which has been signed by many companies to prevent amongst others the smuggling of drugs. The security measures required to be kept by the C-TAPT should form part of the vessel's SSP. Non-compliance with the measures laid down and agreed will have serious consequences for both the vessel and the Company. The vessel can even be confiscated under this agreement.

### 2.9.5.4 *Measures to prevent drug smuggling*

Whilst the SSP should, according to the ISPS Code, contain a strategy to prevent drug smuggling, there are some basic measures that can be taken in port or at anchorage as follows

- the Master should set up a detailed drug search list
- regular searches based on the above search list should be conducted prior to and upon departure from a port known for drug smuggling
- there should be sufficient lighting at night to light up the exterior of the vessel, the adjacent pier and water areas when in port
- all access doors to accommodation and stores which are not required for the operation of the vessel, should be locked and sealed if possible
- compartments which can be used to conceal drugs should be secured, locked and sealed if possible
- areas which cannot be sealed should be accessed by authorised personnel only
- a gangway security system should be in operation 24 hours a day
- prior to entering a port known for drug smuggling, empty containers should be locked and sealed with serially numbered seals.

Should drug smuggling activities or drugs be discovered please see section 3.6 Drug smuggling.

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**2.10 INSPECTION, MAINTENANCE AND REPAIR**

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**2.10.1 General**

The successful performance of any voyage is very much dependant upon the physical condition of the vessel. Despite time pressures and economic considerations, continuous inspections and maintenance is of the utmost priority to ensure that the vessel is fully operational and structurally sound to perform the voyage. The first impression of a vessel's condition is often the most reliable. Therefore, the Master should try to obtain a full and complete impression of the vessel prior to assuming command. Inspections should be undertaken at regular intervals, their results recorded and any repairs should be carried out at the first available opportunity.

Procedures should be in place within the SMS to ensure that the vessel is maintained in conformity with the relevant rules and regulations and as required under section 10 of the ISM Code.

**2.10.2 Vessel's seaworthiness**

After taking over the command of the vessel, and prior to the commencement of each voyage, the Master should satisfy himself that the vessel is maintained in a fully seaworthy condition for the safety of the vessel, crew, passengers and individuals as well as the safe carriage of the cargo. The provision of a seaworthy vessel, adequately manned and provisioned and capable of undertaking and withstand the voyage, is the fundamental obligation of every shipowner. As the Company's representative, the Master plays a vital role in meeting this obligation.

If the Master finds deficiencies which may affect the safety and/or seaworthiness of the vessel, he/she should immediately report these to the Company, even where the Master believes there may be insufficient time to rectify the deficiencies before the commencement of the voyage. However, the classification society



## 2.10 Inspection, maintenance and repair

and/or flag State administration may, nevertheless, require the deficiencies to be rectified, which may mean having to delay the commencement of the voyage.

Similarly, any non-conformity with maintenance procedures or relevant sections of the SMS should be reported and corrective action taken.

It is important to remember that records must be maintained of all maintenance and inspections.

Repairs to be carried out by the vessel's crew should be in accordance with

- the technical standards required
- the manufacturers' and suppliers' repair instructions.

### 2.10.3 Lifesaving equipment and fire fighting appliances

Particular attention should be paid to the state and condition of the

- lifesaving equipment and arrangements
- fire protection, detection and extinguishing appliances.

#### 2.10.3.1 *Lifesaving equipment*

Checks on lifesaving equipment should, amongst other things include

- the condition of the lifeboats, their equipment and launching arrangements
- ensuring that launching instructions are properly displayed and legible
- checking the expiry dates of life rafts and other lifesaving equipment, including whether they have been subject to regular inspection and/or testing as required by law
- checking that lifebuoys are in their designated places with heaving lines ready for use and not tightly coiled
- checking lifebuoys with lights, ensuring bulbs are in place, intact and their batteries are working

- checking that immersion suits and anti-exposure suits are regularly maintained, including verification of their water tight integrity, i.e. mandatory air tests should evidence that seams and closures are tight and no punctures evident
- checking lifejackets, when stored on deck they should be stored in unlocked and clearly marked easily accessible watertight containers, attention should be paid to the lifejacket's snap hooks, especially when made of metal, due to the danger of corrosion; battery operated lights on lifejackets are likely to corrode as well.

### 2.10.3.2 *Fire fighting documents and appliances*

Fire control plans should be

- up-to-date
- permanently displayed in designated, prominent places
- clearly readable; faded copies need to be replaced.

If fire control booklets are provided to each officer instead of displaying fire plans, the Master should ensure that each officer is in possession of a booklet.

The Master should also ensure that a copy of the fire control plan or booklet is stored in a prominently marked weather proof place outside the bridge to assist shore fire fighting personnel.

Further checks should include ensuring that the following are in good working order

- fire lockers and fire dampers
- automatic fire and watertight doors
- breathing apparatus
- any other fire fighting equipment.

## 2.10 Inspection, maintenance and repair

International mandatory regulations require regular inspections to ensure that the following are in place and in a proper working condition

- firemen's outfits
- fire extinguishers
- fire hydrants
- hoses and nozzles.

If fire fighting appliances are under repair the Master should ensure that suitable back-up appliances are in place.

In addition, the following must be functioning properly and be clearly audible and understood

- public address systems
- general alarm systems.

### 2.10.4 Safety and environmental protection equipment

The Master should be satisfied that the safety and environmental protection equipment is in good working order and easily accessible on board. Safety equipment includes

- firemen's outfits, including protective clothing, boots, gloves, helmets and safety lamps
- breathing apparatus or smoke helmets with integral air hoses and fireproof lines
- Emergency Escape Breathing Devices (EEBD).

Environmental protection equipment includes dispersants, rags and other equipment to contain a spill in the first instance.

### 2.10.5 Navigational aids and equipment – sea charts and publications

Attention should be paid to the navigational aids and equipment available on board. Although radar, echo sounders and communication equipment are usually switched off in port, the Master should nevertheless ensure that

- all electronic navigation aids are in good working condition and properly maintained
- recorders have sufficient paper supply
- electronic navigation systems such as GPS and ECDIS show the correct geographical position
- charts, list of lights, pilot books and other publications are updated to the last issue of Notice to Mariners or similar official publication
- sextants and magnetic compasses have valid calibration and deviation tables.

When familiarising himself/herself with the navigational instruments, the Master or his/her officers should not change the initial settings of the instruments, unless they discover that the settings do not accord with the manufacturer's instructions. If any settings need to be adjusted, this should to be recorded in the vessel's logbook.

### 2.10.6 Vessel's computers – integrated bridge systems – engine automation systems

For further details please refer to

- *Gard News 166, Computerisation of bridges and engine rooms – Progress or regression?*
- *Gard Loss Prevention Circular 11-02: Automated Cargo, Ballast Monitoring and Control Systems.*

## 2.10 Inspection, maintenance and repair

### 2.10.6.1 *General*

Computerised vessel bridges and engine rooms are becoming more commonplace. New vessels are so equipped and more and more of the existing ships are being outfitted with the latest Integrated Bridge System (IBS) and “total concept” engine room automation systems.

All vessels built after 1 July 2002 must be fitted with Voyage Data Recorder (VDR) and Automatic Identification System (AIS) and all tankers are required to have an AIS transponder fitted no later than the first safety equipment survey on or after 1 July 2003.

### 2.10.6.2 *Basic bridge configuration*

The basic bridge configuration includes

- thin film transistor/liquid crystal display screen radar (TFT/LCD)/ARPA
- voyage management system (VMS)
- electronic chart display and information system (ECDIS)
- duplicated GPS and DGPS
- doppler log
- gyrocompass
- steering console with adaptive autopilot
- echo sounder with playback memory
- wind sensor, voyage data recorder (VDR)
- automatic identification system (AIS).

### 2.10.6.3 *Voyage management system*

A typical voyage management system includes

- TFT electronic chart display with a choice of radar overlay
- conning information display (navigation, machinery and alarm status)
- voyage planning (ECDIS chart correction, route planning, weather routing and voyage optimisation)

- navigation/ECDIS interface (fully interfaced with autopilot and speed control systems)
- hull monitoring system (warning of excessive hull stress, acceleration and bottom slamming).

Passenger ships are being fitted with a duplicated system consisting of two independent IBS with all critical components duplicated.

### 2.10.6.4 *Engine room automation system*

Engine rooms are being equipped with tailor-made “total concept” state of the art automation systems incorporating

- Universal Monitoring & Control (UMS/UCS) with alarm and control panels in the accommodation and on the bridge
- Diesel Manoeuvring System (DMS) as a complete bridge control system offering fully automatic remote control of the main engine from the bridge and engine control room
- Diesel Protection System (DPS), the stand-alone diesel engine slowdown and shutdown safety system for automatic power reduction to protect the propulsion system against damage
- Electronic Governor System (EGS) for accurate control of speed in a fuel efficient manner even at low revolutions
- automatic overspeed prevention in heavy seas
- Propulsion Control System (PCS) to apply integrated machinery control and monitoring.

### 2.10.6.5 *Purpose of electronic systems*

The main purpose of these systems is to make maritime operations

- safer
- more reliable
- durable
- cost effective.

## 2.10 Inspection, maintenance and repair

### 2.10.6.6 *Causes of incidents*

Despite this advanced technological equipment being available to the Master, his/her officers, engineers and crew, collisions and casualties were, nevertheless, caused by mistakes due to

- the inability to operate the system or equipment correctly
- misunderstanding the limitations of the system
- complacency
- failure to carry out regular checks and planned maintenance of critical engine machinery
- unawareness of the “distraction” factor, and
- providing a false sense of security.

### 2.10.6.7 *Sufficient training required*

Sufficient training must be provided for personnel responsible for the safe on board operation, inspection and maintenance of such systems. Sufficient attention must be given to training the users of this equipment. Training involves

- identification
- analysis, and
- mitigation of hazards,

before they can affect the safe operation of the vessel.

The International Safety Management (ISM) Code, section 7, requires the Company to identify key shipboard operations that have an impact on safety and pollution prevention. Procedures covering these operations must be documented and effectively implemented. These procedures include defining and assigning tasks to qualified personnel.

In accordance with procedures, the training and familiarisation requirements of joining personnel, as regards their responsibilities must be identified and fulfilled as required under the ISM Code and the Code and Convention on Standards of Training, Certification and Watchkeeping (STCW 95). Operation and inspection of equipment by inexperienced and/or personnel having recently joined

the vessel should be supervised by personnel currently responsible for these tasks, until such time that the crew member is sufficiently familiar with the operation and/or inspection of the system.

The Master should ensure that personnel involved in the operation, inspection, repair or maintenance of such systems have a good understanding of any limitations of such systems and are aware of the “distraction” factor, with a special emphasis on the false sense of security that such advanced technological equipment may give.

### 2.10.7 Vessel's openings

For further details please refer to *Gard News 173, Tightness of hatch covers*.

Inspection rounds of the vessel should include a special check on the condition of

- watertight doors
- ventilation heads
- hatch covers
- hold access covers
- dogs and clamps
- side ports
- ramps and doors to the superstructure
- the condition of rubber gaskets.

Damaged, worn or compressed parts must be replaced immediately. Drainpipes and gutters on hatch covers and panels also require attention and need to be kept clean at all times.

On vessels with hatch covers, the Master should – if the vessel's cargo operations so allow – make a daylight test of the hatch covers to check whether they are tight. Hatch covers are the most vulnerable part of the vessel when it comes to water ingress during the voyage and can endanger the safety of both the vessel and the crew.



## 2.10 Inspection, maintenance and repair

Hatch cover quick acting cleats should be in good working condition and rust free. Worn parts should be replaced.

If the Master is in doubt as to the condition of the hatch covers, he/she should either

- have a hose test carried out, or
- call a surveyor to carry out an ultrasonic test.

Hatchways that do not need to be opened should be kept closed at all times. If a hatchway has to be kept open for work purposes, it should either be guarded or cordoned off by stanchions and ropes.

Ventilators on deck should be given particular attention as they frequently suffer from corrosion and lack proper strengthening. They are particularly vulnerable to ingress of water when heavy waves roll over the deck. Fire flaps in ventilators must be in working condition and function properly.

### 2.10.8 **Cargo holds and tanks, bulkheads and platings, structure and fittings**

Checks should include

- cargo holds
- tanks
- cofferdams
- sounding pipes
- air pipes
- bilges
- valves.

The Master and his/her officers should ensure that the probes and other measuring devices of water level detectors, if fitted, are free of debris and not clogged.

If a manhole cover has been removed, e.g. in connection with a tank inspection, the gaskets should be inspected and replaced if defective.

After closing the manholes pressure tests should be carried out on the tanktops.

The cargo lines on a tanker should be pressure tested if any repairs have been carried out on them.

Special attention should be paid to vulnerable or exposed spots, e.g. doublings, inserts, repaired and obscured areas.

### 2.10.9 Cargo gear and lashings

Particular attention should be paid to any cargo gear such as

- derricks
- cranes
- all standing and running rigging with fixtures
- lashing points
- container and cargo lashing gear such as bars, chains and turnbuckles, which should be sufficient in strength and number and must be compatible with each other.

To ensure safe loading operations of containers or other units, container cell guides and similar arrangements should be

- maintained and in alignment
- without any obstacles.

Where additional equipment such as stanchions are fitted on deck, careful inspection is required if the surrounding area shows any cracks as such equipment is subject to considerable tension or bending loads. If defects are discovered, these must be rectified immediately and the classification society notified.

It is advisable that the Master keeps records of certain special types of lashing gear which are subject to considerable strains, tensions or loads. Such material should be the subject of additional checks before being applied.

## 2.10 Inspection, maintenance and repair

### 2.10.10 Machinery – inspection, maintenance and repair

Whilst this publication is addressed to the Master and his/her officers, it should be emphasized that the Master is also finally responsible for compliance with the maintenance plans for the engine room as established under the Company's and the vessel's SMS. The highly automated propulsion systems and other machinery in particular require constant maintenance and vigilance. With today's engines incorporating automatic remote control from both the bridge and the engine control room by so-called 'Universal Monitoring & Controls (UMS/UCS)', and with alarm and control panels in the accommodation and the bridge, the Master should, in close co-operation with the Chief Engineer, ensure that inspections of these systems under the vessel's SMS are held at appropriate intervals as required by the ISM Code.

The reliability of equipment and technical systems, the sudden operational failure of which may result in hazardous situations, needs to be regularly checked and tested to prevent a breakdown and as such, a danger to the vessel, the crew, third party property and the marine environment. This is a requirement under the ISM Code, section 10.3.

The Master and the Chief Engineer should not be misled by the supposed reliability of electronic systems, as this may provide a false sense of safety and security.

Any deficiency noted during such checks and tests need to be rectified immediately to maintain the operational reliability of these systems.

For further details please refer to *Gard News 166, Computerisation of bridge and engine rooms – Progress or recession?*

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**2.11 CARGO VESSELS AND CARGO OPERATIONS**

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**2.11.1 Cargo – general advice**

Amongst the many risks for which the Company has taken out insurance, the risks involved in the carriage of cargo frequently produces the most costly claims, such as

- physical damage, whether during loading and stowage, en route or during discharge
- damage by wetting or moisture
- contamination by other sources, especially liquid and liquefied cargoes
- shortage, misdelivery or overcarriage
- loss of cargo overboard.

Not every type of cargo or type of cargo carrying vessel can be considered, however, the following remarks will assist the Master in

- making his/her vessel cargoworthy, thereby minimising the risk of damage and claims by third parties
- properly supervising the loading
- correctly signing bills of lading
- carefully transporting the cargo
- properly discharging and delivering the cargo.

The Master and his/her officers should be aware that cargoworthiness forms part of seaworthiness. A vessel which is not cargoworthy, is not seaworthy!

The fundamental obligations to exercise due diligence to make the vessel seaworthy and to properly load, stow, carry and deliver the cargo at its destination are laid down in the Hague Rules 1924 Article 3.1, please see section 2.1.1 Seaworthiness – Safety – Security. The Master should be guided by these principles at all times.

## 2.11 Cargo vessels and cargo operations

### 2.11.2 The vessel and cargo holds

#### 2.11.2.1 *Clean holds, dry and free from smell*

It cannot be emphasised enough that seaworthiness includes cargoworthiness, i.e. the fitness of the vessel to receive, carry and protect the cargo to be carried.

Prior to commencement of loading, the cargo holds should therefore be

- inspected to ensure that they are clean, dry, free from smell, remnants of previous cargoes and insects
- checked for small holes and cracks in the steel work to adjacent tanks as leaks from ballast or bunker tanks can cause large scale damage/contamination
- free from sweepings, fully washed and dry and any salt deposits removed, where applicable
- suitable for the cargo to be loaded in every respect.

The bilges should be dry, clean and free from smell; the non-return valves and the test alarms must be functioning.

Sockets and pots in the cargo holds must not be worn as a safe and secure lashing of cargo is otherwise not possible.

If deficiencies are found, the same must be rectified immediately and a corresponding record made by completing the relevant maintenance or repair form.

If the deficiencies found require repairs such as welding affecting the vessel's structure, the Master should consider obtaining approval from the classification society prior to the commencement of the repairs or call in the local Hull and Machinery correspondent to assist.

The Master should ensure that, following the completion of repairs to steelwork on adjacent tanks, the same is the subject of a pressure test.

Adjacent bunker tanks must not be heated unless sufficient insulation is provided.

If the cargo holds have recently been painted, they must be free from odour and properly cured.

It is advisable that the Master obtains a hold fitness report/certificate from shippers and charterers.

### 2.11.2.2 *Fumigation*

#### A. *General*

Fumigation may be required should an infestation be found anywhere on the vessel.

It may be necessary to fumigate the cargo in the vessel's holds, either prior to or after loading, to prevent an infestation or deterioration of the cargo.

If fumigation of the cargo spaces and/or cargoes takes place, the Master is advised to strictly adhere to the *IMO Recommendations on the Safe Use of Pesticides on Ships* and the procedures under the vessel's SMS, which contain detailed advice on

- regulations for the use of pesticides
- safety precautions
- first aid and special medical treatment emergency procedures
- types of fumigants
- methods of fumigation.

## 2.11 Cargo vessels and cargo operations

The Master should be aware that he/she has the absolute discretion as to

- whether or not a vessel or cargo is to be fumigated
- the manner in which the fumigation is performed
- whether or not to permit in transit fumigation.

Prior to any fumigation being carried out, which the Master is best advised to leave to professional personnel from ashore, large warning signs must be displayed in prominent places clearly indicating that the vessel is under fumigation and toxic gases are in use.

A gangway guard should be maintained to prevent access to the vessel whilst under fumigation.

### *B. Fumigation using ventilation in port*

Fumigation of cargo spaces using ventilation should always be carried out in port and the vessel should not be permitted to leave without a gas-free certificate. The crew should

- be landed ashore prior to the commencement of fumigation
- only be allowed to return after authorised personnel have issued a gas-free certificate.

A gangway guard should be maintained during the fumigation to prevent access to the vessel whilst under fumigation.

### *C. Fumigation in transit*

For details please refer to *Gard News 173, In-transit fumigation of bulk cargoes*.

Wherever possible, the Master should try to avoid fumigation in transit as this may pose an unnecessary threat to the crew's health.

Fumigation in transit is at the sole discretion of the Master. The Master should consult the flag State administration regarding any

regulatory requirements as well as the *IMO Recommendations on the Safe Use of Pesticides in Ships* and the *Code of Safe Practice for Solid Bulk Cargoes (BC Code)*. Section 3, *Safety of Personnel and Ship* and Section 6, *Grain under in transit Fumigation*, contain detailed advice as to the methods of fumigation and any safety precautions to be taken.

Prior to arrival in a port the Master should notify the harbour master and any other appropriate authorities that fumigation of the cargo has taken place in transit. The Master should ensure that the vessel's holds and its cargo are gas free upon berthing of the vessel. The entry into enclosed spaces procedures must be followed – please see section 2.8.5.8 Entry into enclosed spaces.

### 2.11.2.3 *Hatchcovers and other openings*

For further details please see *Gard News 173, Tightness of hatch covers*.

The vast majority of cargo claims are caused by ingress of water due to leaking hatch covers or accesses to holds. This may be due to

- defective rubber gaskets
- missing wedges
- poorly maintained pressing bars
- defective cleats and clamps, often in a heavily corroded condition.

These items require particular attention and continuous maintenance as required under the vessel's SMS in accordance with section 10 of the ISM Code.

### 2.11.2.4 *Pipes and manhole covers*

Sounding or air pipes running through the holds should be checked to ensure that they are sound and intact. Manhole covers that have been opened, should be pressure tested after closing to ensure that they are tightly closed. Manhole covers must be tight and, where necessary, covered with tarpaulins, burlap or polyethylene foil.



## 2.11 Cargo vessels and cargo operations

Special checks are required for small holes and cracks in pipework. In particular, checks for leaks at flanges, especially on pipes serving bunker tanks as leaking fumes can contaminate the cargoes.

If repairs to pipeworks have been carried out, these pipes should be the subject of a pressure test.

### 2.11.2.5 *Cargo gear*

If the vessel's cargo gear is used for loading and discharging operations, the gear should

- be in a proper working condition
- be regularly maintained in accordance with the vessel's planned maintenance schedule under the vessel's SMS
- be clearly marked showing the Safe Working Load (SWL) in sufficiently large markings
- have overload protection that cannot be overridden when in operation.

Blocks, shackles and all other gear should be well greased and properly maintained. Wires should be without hooks or protruding ends.

Cargo gear certificates should be valid for at least the entire forthcoming voyage.

If the vessel's cargo gear is used by shore labour, such operations should be only permitted if the Master is satisfied that such labour is fully familiar with the vessel's gear. The vessel's gear should be in a safe state of readiness before use by shore labour, who should not be permitted to operate the gear, especially outside the safety limits, without authorisation from a responsible vessel's officer. Limit key switches should not be left in the controls. The Master and his/her officers are advised to constantly monitor the operation, especially with a view to avoiding the SWL being exceeded. The competence of shore labour needs to be monitored and the operation should be

## 2.11 Cargo vessels and cargo operations

stopped if there are any concerns in this regard. The Master should keep a record of the operation of the cargo gear by the shore labour which should include the date, times and any incidents which occurred during operation.

The appropriate Personal Protective Equipment (please see section 2.8.4.1 Safe working clothes – Personal Protective Equipment (PPE)) should be worn by both shore workers and crew members.

### 2.11.2.6 *Cargo tackle*

If the vessel has to supply cargo slings, wires, nets, spreaders and other tackle, the Master must before use ensure that

- the crew carry out a careful check of the tackle and its condition under the supervision of a responsible officer
- corroded, apparently unfit or otherwise defective tackle is removed and not used.

Even if the vessel's tackle is only used once, the consequences may be fatal if a wire parts, a spreader is out of alignment, or the tackle is not strong enough to lift the load. During cargo operations

- constant monitoring is required of the state and condition of the cargo tackle used. Stevedores are sometimes less careful if the tackle belongs to the vessel rather than the stevedoring company
- defective tackle should be removed immediately and replaced with new.

If the cargo handling gear is damaged, the Master should immediately bring the matter to the attention of the stevedores' foreman and serve a written protest. The Master should also advise the Company and the charterers.

### 2.11.2.7 *Stowage and securing*

For further details please refer to *Gard News 173, Improper lashing and securing of cargo.*

## 2.11 Cargo vessels and cargo operations

The proper stowage and securing of the cargo is the basis for ensuring

- that the vessel is maintained in a safe condition
- the prevention of accidents
- the prevention of damage to the cargo.

Whilst stowage and securing is normally performed by stevedores, close supervision and the occasional intervention by the Master or responsible officers is necessary as the vessel remains responsible for the proper stowage and securing of the goods loaded. This principle applies irrespective of whether the vessel is trading for the Company's own account or under a charterparty. In addition, the terms of charterparties frequently stipulate that the ultimate responsibility rests with the vessel, even where the stevedores are employed by the charterers to load the cargo. Where the stowage plan received from the charterers is not appropriate, the Master and his/her officers should ask the charterers to present a different plan to ensure that the vessel's safety is not affected or impaired.

The proper stowage of the cargo requires careful planning to ensure

- vertical distribution of weight to maintain adequate stability during the voyage
- horizontal distribution of weight to avoid bending moments
- distribution of weight to maintain the maximum permissible deck loads.

For break bulk cargo the Master should instruct his/her officers to monitor the stowage and securing operations to ensure that

- kraft paper alone does not give sufficient protection to the cargo and additional protection is used
- there is a tight stow from wall to wall if feasible – void spaces into which stow can collapse need to be properly shored or filled
- special instructions are followed, e.g. to stow away from boilers
- there is sufficient dunnage between tiers

## 2.11 Cargo vessels and cargo operations

- adequate lashing, securing or chocking off without damaging the packing to avoid movement in any direction.

When cargo needs to be overstowed, which is often the case with break bulk cargo, the Master and his/her officer should ensure that the cargo in question can be safely overstowed, allowing for any forces that may be encountered in heavy weather. The weight needs to be evenly spread and compression damage avoided.

Dunnage on bulkheads and tank tops should be of sufficient thickness and coverage to prevent any contact between the steel and the cargo, allowing for moisture absorbing into the dunnage. The dunnage should allow for any moisture on the steel work to run freely to the bilges. The dunnage should not collapse under the weight of the stow, e.g. where laid over frames or corrugated bulkheads.

Incompatible cargoes must not be stowed together to avoid tainting damages.

Every cargo has different stowage requirements and no specific advice can therefore be provided. The Master and his/her officers should not only refer to the particular stowage requirements for the different types of cargo, but also to other relevant provisions, such as

- IMO guidelines and resolutions
- flag State requirements
- national provisions
- reference books,

as well as seeking further instructions from the cargo interests, which should be recorded in the appropriate log.

The Master and his/her officers must always refer to the vessel's individual Cargo Securing Manual prior to the commencement of stowage operations.

## 2.11 Cargo vessels and cargo operations

### 2.11.2.8 Ventilation

For further details please refer to *Gard News 173, Don't work up a sweat.*

Whilst the principles and knowledge of proper ventilation should have been part of the Master's and officers' education and training, damage to cargo often arises as a result of improper ventilation. Care is required when ventilating to avoid two main problems

- ship sweat
- cargo sweat.

Ship sweat occurs when air within the hold is cooled by the vessel's structure and occurs mainly on voyages from warmer to colder climates. If sufficient air space is left in the cargo hold, condensation can occur and ship's sweat may drip onto the surface of the cargo.

Cargo sweat occurs when air within the hold is cooled by the cargo and occurs mainly on voyages from colder to warmer climates. If the ventilating air flowing over the cargo has a higher temperature than the cargo itself, the air will be cooled and may condense on the cooler surface of the cargo.

Whether surface or through ventilation is required, depends upon

- the nature of the cargo and its packing
- climate changes during the voyage
- sea conditions.

Ventilation should only be carried out when the dew point of the ambient air is lower than the dew point of the hold air.

Cargoes fumigated before loading cannot be ventilated immediately and in some circumstances, e.g. heavy weather or humid ambient conditions preventing ventilation, some ship's sweat may be unavoidable. Cargoes with a high moisture content will also suffer

from moisture migration. In view of this, proper and effective stowage is essential to prevent the cargo from coming into contact with moisture.

The Master is advised

- to obtain instructions from the shipper as to the proper ventilation requirements for certain types of cargoes to be loaded
- to refer to any reference books.

Accurate temperature and ventilation records must be kept when there is ventilation of the cargo to defend the Company should a claim be lodged. The inspection of the cargo spaces must be recorded as well, with dates and times when this was undertaken.

### **2.11.3 Cargo precautions under charterparty provisions**

#### **2.11.3.1** *General*

The Master and his/her officers should give careful consideration to the charterparty terms relating to

- loading
- tallying
- stowage
- lashing/securing
- any other matters where liability may shift from the charterers to the Company.

#### **2.11.3.2** *Typed amendments*

The Master should pay particular attention to the provisions in the charterparty where typed amendments have been made, which may shift responsibility for cargo damage from the charterers to the Company. The Master should check with the Company if he/she is in doubt about the interpretation of any charterparty clauses.

## 2.11 Cargo vessels and cargo operations

### 2.11.3.3 *Dunnage and shifting boards provided by charterers*

For details please refer to *Gard Loss Prevention Circular No. 07-02: Use of dunnage air bags*.

If dunnage and shifting boards are provided by the charterers, the Master should ensure that they are of adequate strength and dimension for the cargo to be loaded. If there is any doubt as to the suitability of the dunnage delivered, the Master may consider asking for a certificate from the charterers as to the quality and moisture content of the dunnage. If dunnage and shifting boards are provided by the vessel, they should not only be of adequate strength and dimension, but must also be free from dirt, stains and dry to avoid contaminating the cargo.

If dunnage air bags are to be used, the Master should ensure that

- only dunnage air bags from reputable manufacturers are used
- the use of dunnage air bags is to be properly evaluated as to their suitability for the cargo and voyage in question
- only dunnage airbags of the appropriate type, size, strength and quality for the intended purpose should be used.

### 2.11.3.4 *Tallies, stowage, lashing and securing of cargo*

Where the charterparty provides for tallies to be done by the vessel, the Master should arrange for the same. If necessary, due to a reduced number of crew being available, tally companies from ashore should be engaged.

Whilst stowage of cargo is normally done by shorebased labour, provisions in the charterparty may provide that the Master must supervise the stowage. If this is the case, the Master should instruct his/her officers accordingly and intervene if the stowage is not to the satisfaction of the vessel's command.

## 2.11 Cargo vessels and cargo operations

If the stowage or lashing of the cargo is performed by shorebased labour, the Master and his/her officers may be forced to intervene if it is felt that the lashing or stowage is inappropriate. Any such intervention must be in writing to the stevedores and charterers and receipt acknowledged by the recipient.

However, where the Company is not responsible for the stowage and/or securing of the cargo under the charterparty and where the vessel's safety is not impaired, the Master and his/her officers should be careful with any intervention.

The Master and his/her officers should always remember that the ultimate responsibility for the safety and the seaworthiness of the vessel rests with the Master.

If lashing and/or securing is to be done by the ship's crew, the Master needs to record the extent of lashing performed by the crew and details of the lashing/securing methods and the materials used in the appropriate logs. This particularly applies if lashings are checked and re-tightened throughout the voyage.

It will be of assistance if any claims are presented at a later stage, if photographic evidence is taken, irrespective of who performs or is responsible for the stowage/securing.

Where the charterers are represented by a supercargo the Master and his/her officers should not be intimidated by the supercargo into accepting unsafe stowage or lashing systems.

### 2.11.3.5 *Ventilation of cargo – monitoring of cargo temperatures*

For further details please refer to

- *Gard News 173, Don't work up a sweat!*, and
- section 2.11.2.8 Ventilation.



## 2.11 Cargo vessels and cargo operations

Ventilation may be required to

- make the air in the holds less vulnerable to condensation
- remove heat
- dissipate gases
- remove taint.

Many charterparties stipulate special requirements for ventilation of the cargo. The Master is, therefore, advised to record in the relevant logs all ventilation measures taken, including timings, as well as the reason for not ventilating the cargo during adverse weather conditions. This will assist in defending claims for negligence or failure to ventilate, please see also section 2.11.2.8 Ventilation.

If the charterparty requires the vessel's crew to regularly monitor the temperatures of reefer containers, a record of

- the checks and results
- any observations as to variations in temperature
- any interruption of cooling periods or abnormalities
- any rectifying measures taken, including replacement of temperature recording discs.

### 2.11.4 Signing bills of lading – letters of indemnity

The problems, difficulties and liabilities arising out of issuing and signing bills of lading are so extensive that Gard has published a separate guidance covering this area, please refer to *Gard Guidance on Bills of Lading*.

The Master should refer to the P&I insurer and/or this publication for more detailed advice on bills of lading and related issues. The information in this section is of a general and limited nature.

#### 2.11.4.1 *General*

The bill of lading is a valuable legal document with three very important functions

- it is a document of title

## 2.11 Cargo vessels and cargo operations

- it is evidence of the contract of carriage between the Company and the cargo interests
- it is a receipt for the goods loaded.

It is therefore extremely important when signing the bill of lading to ensure that the information inserted into the blank bill of lading form is accurate. If the information is inaccurate or false this has serious consequences for the Company

- the Company may be exposed to possible claims from cargo interests, especially where the bill of lading has been endorsed to a third party consignee. Should the bill be negotiated whilst the vessel is proceeding to her discharge port, an innocent buyer will not be aware of the actual condition or quantity of the cargo. The details in the bill of lading are therefore considered to be conclusive evidence of the condition and quantity of the goods when shipped. The Company will therefore be unable to defend any claim if the actual condition or quantity of the cargo is not in accordance with that stated in the bill of lading
- the P&I cover may be affected as P&I Rules exclude cover for claims in certain circumstances where the information in the bill of lading is found to be incorrect.

Particular attention should be paid to the following

- the description of the apparent order, condition and quantity of the cargo
- the date of issue of the bill of lading.

### 2.11.4.2 *Description, condition and quantity of the cargo*

If the cargo and/or packaging is damaged or otherwise defective or inadequate, the bill of lading should be claused accordingly. Phrases such as “*clean on board*” and “*in apparent good order and condition*” should be avoided and the Master should mark the face of the bill of lading with details of the damage or, in the words of the Hague-Visby Rules, describe the “*apparent order and condition*” of the cargo.

## 2.11 Cargo vessels and cargo operations

If the cargo is seriously damaged, or if the Master is unsure of the extent of the damage, especially in the case of steel cargoes, the Master should contact the correspondent to arrange for a survey. Pre-loading surveys can be of considerable assistance to the carrier in defending a cargo claim or avoiding a dispute altogether in instances where there has been pre-shipment damage. If the shipper objects to the clausing of the bill of lading, the Master is free to request the shipper to replace the damaged goods, however, this may not always be practical.

If there appears to be no damage to the cargo but the Master cannot be sure, he/she should write on the bill of lading that the cargo was received “*in apparent good order and condition*”.

The bill of lading must also record the correct quantity of cargo loaded. If the vessel cannot determine the accurate weight of the cargo, the bill of lading should be claused “*weight and quantity unknown*” or “*said to weigh*”. The Master should note on the face of the bill of lading if the vessel’s figures differ from the shore figures.

### 2.11.4.3 *Date of issue*

A “shipped on board” bill of lading confirms that the cargo was loaded onto the vessel on a particular date. The date of shipment has often important implications, e.g. in the contract of sale between the shipper and receiver. If the date is incorrect the Company may face claims from the receiver. The bill of lading must therefore be signed and dated to accurately record the date when the cargo was actually loaded. The Master must *not* sign an ante/post-dated bill of lading.

### 2.11.4.4 *Authority on behalf of the Master to sign bills of lading*

When charterers or agents are authorised to sign the bill of lading on behalf of the Master, the Master should ensure that all the details he/she would have inserted into the bill of lading with regard to quantity, condition and date are inserted into the mate's receipt. The Master should ensure that the charterers and/or agents are instructed to sign the bill of lading only in accordance with the mate's receipt. If charterers and/or agents refuse to do so, the Master must issue a letter of protest and inform the Company immediately. The correspondent may also be able to assist.

### 2.11.4.5 *Letters of indemnity*

It is common for shippers to offer a letter of indemnity in exchange for a clean bill of lading or a bill of lading which is ante/post-dated. This type of letters of indemnity are unenforceable in most jurisdictions because the courts consider the carrier a party with the shippers to a fraud, i.e. the bill of lading is issued in the knowledge that it contains information on which the receivers will rely, but which is known to be incorrect.

A letter of indemnity is therefore not legally binding, and will offer the Company no protection if the shipper goes back on his promise. There will be no P&I cover available either as the P&I Rules exclude cover for claims arising from the issue of an ante/post-dated bill of lading or claims arising from the issue of a bill of lading known by the Master or the Company to contain an incorrect description of the cargo, its quantity or condition. The risks are therefore great in signing a bill of lading containing incorrect information.

Whenever the Master is requested to issue a clean or incorrectly dated bill of lading in return for a letter of indemnity, he/she should

- refuse, despite threats to delay the vessel or other pressures
- immediately contact the Company and/or the correspondent for advice and assistance.

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### 2.12 SELECTED CARGOES

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#### 2.12.1 General

Due to the fact that more and more goods are carried in containers packed by the shippers, expertise on the loading, stowage, securing, lashing and carrying of non-unitised cargoes is diminishing. This section will therefore provide some basic advice on the handling of certain types of cargoes not carried in containers. Nevertheless, a sub-section also deals with containers.

If a cargo is to be loaded on which there is no or very little information available, the Master and his/her officer should seek written advice from the shippers on the proper stowage, securing, lashing and carrying. In case of doubt, the Master and his/her officers should not hesitate to contact the local P&I correspondent.

#### 2.12.2 Bulk cargoes dry

For details please refer to *Gard News 176, Major claims analysis – Dry bulk and unitised cargo*.

##### 2.12.2.1 General

Dry bulk cargoes other than concentrates are likely to suffer damage from

- contamination by foreign matter caused by
  - poorly prepared holds containing remnants from previous cargoes
  - defective paint
  - rust and vapour
- deterioration caused by moisture from
  - rain or snow during loading
  - ingress of water during the voyage caused by defective hatch covers, other vessel's openings, defective sounding pipes, defective gaskets or leakage through defects in the steelwork
  - sweat during the voyage

- heating of the cargo due to excessive moisture or a exceedingly high fat content
- heating damage due to storage of cargo on heated tanks
- infestation of bulk grain, bagged rice etc.

### 2.12.2.2 *Condition of holds and portable bulkheads*

For bulk cargoes

- the holds should be free of all loose rust, paint and remnants of previous cargoes
- pipes leading through the holds should be checked prior to loading to ensure that they are sound and intact
- manhole covers and hold access covers should be tight and bilges and wells properly covered by burlap or other materials.

Portable bulkheads must be properly set up to avoid mixing different cargoes due to the cargoes running through the seams.

Special instructions need to be followed if foodstuffs are to be loaded and the requirements for a clean hold are far more stringent in such circumstances. In some cases, a lime wash may be required.

It is recommended that the Master obtains a clean hold certificate signed by a representative of the shipper prior to the loading of any bulk cargo.

### 2.12.2.3 *Loading and unloading dry bulk cargoes*

Prior to the loading and unloading of dry bulk cargoes the Master should agree a plan with the shore terminal, in line with the *Code of Safe Practice for the Safe Loading and Unloading of Bulk Carriers 1998 edition* and the procedures under the vessel's SMS to ensure that the permissible shear forces and bending moments are not exceeded. Such a plan should include

- the quantity, sequence and rate of loading or unloading
- the deballasting or ballasting capability of the vessel.

## 2.12 Selected cargoes

If the vessel's permitted stress limits are exceeded during loading, the Master should call the Company to arrange for a surveyor to attend and examine the vessel's structure.

The plan should be lodged with the appropriate authority of the port State. If the Master encounters any difficulties with the charterer or local authorities in submitting such a plan, he/she should contact the local correspondents for assistance.

During loading, an inspection to ascertain the condition of dry bulk cargo is essential to identify contaminated, wet or deteriorated cargo and taking any necessary and appropriate action, such as stoppage of loading, collecting evidence and, if required, unloading.

If portable bulk heads are required, reference should be made to the vessel's documents and stability information.

If different bulk cargoes are to be loaded in the same hold, appropriate separation material should be used. Particular care and attention is required to prevent stevedores damaging the separation material and causing admixture of the cargo.

### 2.12.2.4 *Shifting of moist bulk cargoes*

For details please refer to *Gard Loss Prevention Circular 11-05: Series of recent cases highlights dangers of liquefying Chinese fluorspar*.

Dry bulk cargoes may be liable to shift and cause severe stability problems, which could result in the vessel capsizing. Each dry bulk cargo has its own individual properties and hazardous nature. The Master should always refer to and follow the instructions and recommendations of the *IMO Code of Safe Practice for Solid Bulk Cargoes*. These are particularly important when testing moisture content and angle of repose to prevent serious problems occurring at a later stage.

Some dry bulk cargoes cannot be loaded without a certificate from the competent authority stating that the cargo is safe to load.

### 2.12.2.5 *Cargoes emitting gas*

If a bulk cargo that is likely to emit toxic or inflammable gases is to be loaded, the Master should ensure that suitable gas concentration measurement instruments are used. Crew handling such instruments should be familiar with their use and readings.

### 2.12.2.6 *Concentrates*

#### A. *Concentrates are dangerous*

Concentrates are particularly dangerous if loaded wet or if there is water ingress into the holds. Water ingress causes the cargo to shift which could lead to the vessel losing her stability and capsizing. Such cargoes should only be accepted for loading when the actual moisture content of the cargo is less than its transportable moisture limit (TML).

#### B. *Precautions prior to loading concentrates*

Prior to loading concentrates which may shift or liquefy, the Master should take the following precautions

- carrying out a visual examination to assess the extent and duration of exposure to moisture during storage
- obtaining and keeping properly labelled and sealed samples for possible testing later.

Prior to the vessel's arrival at the loading port, the Master should request from the shipper the following details about the cargo

- flow moisture point (FMP)
- TML
- moisture content
- angle of repose
- any chemical hazards and details which may require additional safety precautions.



## 2.12 Selected cargoes

If such information is not forthcoming in documented form, the Master should refuse to load the cargo and seek assistance from the Company.

Further precautions to be considered by the Master prior to loading are

- checking and verifying the shipper's declarations
- rejecting cargo with a moisture content above the TML
- filling cargo spaces as much as practicable, within stability, stress and deck loading constraints
- using longitudinal separation to limit the shifting distance of the cargo, the shift amount and forces involved
- trimming the cargo so it is level and trimmed out to all sides of the compartment
- not stowing other cargoes containing moisture in the same compartment
- not loading during rain
- ensuring that tanks adjacent to the compartment are empty
- maintaining an adequate and approximate metacentric height to prevent excessive rolling
- ensuring that bilges and wells are clean, empty and covered with burlap
- obtaining weather routing information to avoid areas of adverse weather conditions during the passage.

The Master is also advised to consult the relevant authorities in the ports of loading and discharge and the flag State administration to ascertain whether any stricter safety regulations apply than those internationally accepted.

2.12.2.7 *Heating of cargo*

A. *Heating of cargo due to its properties*

Some dry bulk cargoes are prone to heating. Prior to the commencement of loading operations, the Master should seek documents showing

- the properties of the cargo, such as fat and moisture contents
- the duration of storage prior to loading.

If the Master is in any doubt as to the authenticity of the documents, he/she should request assistance from the Company.

If cargo prone to heating is to be loaded, certain precautions should be taken, such as

- placing temperature probes vertically and horizontally in the cargo
- performing daily temperature checks, the results of which should be entered in the logbook or in the relevant ship's forms.

If direct reduced iron (DRI) in any form or cargoes with similar properties is to be loaded the Master need to obtain special instructions from the shipper and the Company for the loading and carriage of such a cargo.

For details please refer to

- *Gard News 178, Understanding the different direct reduced iron products*, and
- *Gard Loss Prevention Circular No. 07-03: The dangers of carrying Direct Reduced Iron (DRI)*.

## 2.12 Selected cargoes

### B. Heating of cargo stowed on or near fuel tanks

For details please refer to *Gard News 176, Major cargo claims analysis – Dry bulk and unitised cargo*.

When loading a dry bulk cargo the Master should agree the distribution of the cargo with the Chief Engineer to prevent the cargo heating or being damaged due to heating of bunker oil tanks below or adjacent to the cargo compartments. If, nevertheless, bunkers need to be heated, the calibrated temperature sensors will need constant monitoring. If possible, sheathing insulation should also be used.

Calibrated temperature monitoring recorder, steam heating lines and other equipment in the engine room need to be in proper working condition and need to be checked frequently.

#### 2.12.2.8 Draft survey

For further information please refer to

- *Gard News 176, Major cargo claims analysis – dry bulk and unitised cargo*
- *Gard News 172, Draft surveys*
- *Gard News 153, The importance of draft surveys in the defence of claims for shortage of bulk cargoes*
- *Gard News 153, Dry cargo surveys from the Club's perspective.*

A draft survey should be undertaken prior to the commencement of loading of any bulk cargo to assess the proper light weight of the vessel, bunkers, fresh water and stores. This is necessary in order to compare the figures with those assessed during a draught survey after loading. It is advisable to arrange a draft survey of the vessel after loading a bulk cargo to assess the actual weight loaded, particularly when

- the shipper's weight figures differ from the weight assessed by the vessel
- the shipper's weight figures differ from the weight provided prior to loading.

The local correspondent will be able to assist the Master in arranging and instructing a competent surveyor.

### 2.12.2.9 *Cargo sampling dry bulk cargoes*

For further details please refer to *Gard News 153, Cargo sampling*.

#### A. *General*

Cargo samples taken at load or discharge ports are important for

- the safety of the vessel, i.e. to establish the properties of cargoes likely to shift
- identifying vessel or cargo problems before and/or during loading and discharge, i.e. comparing shore with vessel figures and identifying any possible deterioration of the cargo or any malfunction of the vessel's installations
- the purpose of evidencing
  - the cargo's condition at load or discharge port
  - bad or suspect outturn at the discharge port.

#### B. *Sampling procedures*

Sample taking should follow the Company's written procedures.

When taking samples, the following points should be noted

- applicable industry guidelines and/or procedures should be followed
- safety precautions should be taken, which include
  - evaluation of the atmosphere in the tank or hold; please see section 2.8.5.8 Entry into enclosed spaces
  - Personal Protective Equipment should be used – please see section 2.8.4.1 Safe working clothes – Personal Protective Equipment (PPE)
  - safe sampling equipment.

## 2.12 Selected cargoes

### C. *Sampling equipment*

Sampling equipment

- should be appropriate and be compatible with the cargo to be sampled, and
- only thoroughly cleaned equipment should be used.

### D. *Sufficient number and amounts*

Representative samples and sufficient sample amounts need to be taken

- a number of samples taken at regular intervals and at different places within the cargo spaces or continually during loading/ discharging liquid cargoes
- more than one set of tests may be required.

### E. *Labelling and sealing*

Samples

- must be properly labelled and sealed in the presence of the other interested parties
- to be tested or retained, must be taken by ship's personnel or their representatives in the presence of the other interested parties.

### F. *Retention of samples*

Retention and storage of samples

- careful consideration should be given to which samples should be retained and for how long
- samples retained must be stored in a safe place where they cannot be tampered with
- samples taken must be stored in a dark, well ventilated place away from heat and other sources likely to interfere with the sample.

### G. *Sample logs – protests – no tampering*

A sample log should be kept recording which samples are stored where for the purposes of identifying samples at a later stage for testing or for safe disposal.

Written protests should be lodged when the other interested parties refuse to attend joint sampling, labelling and sealing.

A surveyor or analyst should be engaged when in doubt.

Samples should never be tampered with to prevent jeopardising the reliability of the sample and allegations of fraud.

Safety and environmental aspects should be fully considered when disposing of samples.

If the Master is in doubt or difficulties arise during joint sampling operations between the vessel and the other party, the Master should request assistance from the local P&I correspondent.

For sampling bulk liquid cargoes, please see section 2.12.2.2.E Cargo samples.

## **2.12.3 Liquid bulk cargoes**

### *2.12.3.1 General*

For further details please refer to

- *Gard News 177, Major cargo claims analysis – Liquid bulk, reefer unitised and containerised carriage*
- *Gard News 167, Value your bills like your pint of beer.*

Claims in relation to the carriage and delivery of liquid or liquefied cargo may arise due to

- shortage and/or cargo remaining on board after completion of discharge
- contamination by impurities or residues of previous cargoes

## 2.12 Selected cargoes

- leakage from adjacent tanks containing, for example, other grades of cargo or ballast
- improper operation of valves during loading/discharge
- improper temperature maintenance during the voyage
- damage caused by defective cooling/heating systems
- leakage from heating coils or hydraulic pumps
- leaking tank hatches
- cargo contamination due to transfer of vapour between cargo tanks
- shore side errors.

### 2.12.3.2 *Preparations prior to loading*

#### A. *General*

Due to the increased risks inherent in the carriage of liquid cargoes, the Master and crew must be aware of any regulatory and/or particular requirements in the charterparty regarding the carriage of the cargo to be loaded.

Prior to tendering notice of readiness and commencement of loading, the tanks should generally be clean, free from odour and any residues of previous cargoes carried and in all respects suitable for the next cargo to be loaded. For detailed guidance on the best cleaning methods, the Master and his/her officers should refer to

- the Company's standing instructions
- the standard industry guidelines
- the tank coating manufacturer's specifications and instructions
- the shippers'/charterers' instructions.

If loading or discharge operations involve ship to ship transfer at sea, it is strongly recommended that the same be carried out in accordance with the *Ship to Ship Transfer Guide (OCIMF/ICS)* or similar guidelines.

If the Master is requested by the shipper/charterer to carry out on board blending or commingling of cargoes, it is very important that approval to do so is sought from the shipowners before the commencement of any such operations.

### *B. Edible oils*

When involved in the carriage of edible oils it is important to comply with applicable regulations laid down under national law, European Union or industry standards such as the requirements stipulated by The Federation of Oils, Seed and Fats Associations (FOSFA), The National Institute of Oilseeds Products (NIOP) or similar trading organisations.

Previous cargoes must be carefully checked against the List of Acceptable Previous Cargoes and the List of Banned Immediate Previous Cargoes. Leaded petroleum or other leaded products shall not be carried as the three previous cargoes! When considering what the last immediate cargo was it should be noted that under FOSFA it is a requirement that the percentage of the last previous cargo in the tank to be loaded was not less than 60 per cent by volume of the tank.

Depending on the type of vessel the following items should among others be considered when planning a voyage

- are the previous cargoes acceptable
- health hazards/personal protection needed
- inert gas requirements
- cargo compatibility
- tank coating suitability
- heating/cooling requirements
- special cargo handling requirements under SOLAS/MARPOL/IBC/IGC/BCH
- trim and draft restrictions at both load and discharge ports.



## 2.12 Selected cargoes

The Master is responsible for properly and carefully loading, handling, stowing, carrying, keeping, caring for and discharging the cargo. He/she, together with the Chief Officer must carefully study the cargo orders received and ensure that the cargo care procedures do not depart from the latter or content of those instructions. If there is any doubt as to whether the proposed loading meets the requirements of the cargo orders, clarification must be requested.

### 2.12.3.3 *Tank inspection prior to loading*

A special check should be made of the tanks and the results recorded in the respective log or form under the SMS.

This may include

- tank atmosphere
- tank cleanliness/suitability for loading
- pipes, including manifolds
- if heating coils are to be used, these should be tested for leaks prior to loading
- crude oil washing system/tank washing system
- inert gas system, pressure/vacuum valves
- cargo valves settings
- packing and securing of all tank hatches
- manifolds and packing
- valves and gaskets
- if more than one grade is to be loaded, all segregation valves should be tested and blind flanges inserted where possible.

Consideration should also be given to the need for segregation of the vapour lines.

Precautions against hazards such as static electricity should be taken when handling static accumulating cargoes in a non-inert atmosphere. In particular, caution is required with regards to safe flow rate, ullaging, sampling and gauging procedures. For further details please see International Safety Guide for Oil Tankers and Terminals (ISGOTT).

2.12.3.4 *The loading of liquid cargo*

A. *The loading conference or key meeting*

Following completion of the pre-loading inspections of the vessel, the Master or Chief Officer should conduct a meeting with the vessel's personnel involved in the loading operations and the terminal. The purpose is to communicate the fullest information necessary to the vessel and the shore terminal personnel for the safe conduct of the loading operations. The names and respective employers and clients of all personnel attending the loading conference should be recorded.

B. *Information to be obtained from the terminal*

The vessel's officers (Chief Officer) should obtain the following information from the shore terminal

Cargo information

- grade(s) and quantity of the cargo(es) to be loaded
- cargo loading sequence
- specific gravity of the cargo(es)
- number of shore tanks to be loaded from and quantity, temperature and gravity of the cargo in each
- material data sheet for each cargo, including all hazards associated with handling of and treatment for exposure, inhalation and ingestion of this material
- if H<sub>2</sub>S cargo, the H<sub>2</sub>S concentration (ppm) by weight in oil
- cargo loading rates
- number of shore pumps to be used; will loading be started by pump or gravity flow
- shore pipeline displacements planned before, between and after loading/grades
- cargo loading stops required for shore tank changes or sampling and testing
- number and sizes of hoses/arms to be used
- operating envelope of the loading arms and any freeboard restrictions.

## 2.12 Selected cargoes

The communication system and phrases/signals to be used for

- placing the shore terminal operator on standby
- stopping the loading (while on standby)
- emergency stop.

Further essential information to be obtained and procedures to be agreed are

- the required standby time is to be provided in advance of stopping the shore pumps
- operation of emergency stop device (if provided)
- emergency telephone numbers of terminal management personnel, local hospitals, police and fire services
- work shift arrangement on the pier/dock.

A copy of any particular facility regulations which must be observed by the vessel's officers and crew, including

- pollution prevention procedures and rules
- procedures in the event of fire, explosion, injury, or other emergency.

Finally, the weather forecast should be obtained.

### *C. Information to be provided to the terminal*

The vessel's officers (Chief Officer) should provide the terminal representative with the following information

- copy of the ballast discharge (if applicable and allowed as per national regulations) and cargo loading plans
- information regarding the last cargo(es) carried and method of tank preparation used to prepare for the nominated cargo(es)
- maximum acceptable loading rates for starting, routine loading and topping off tanks
- maximum acceptable vapour pressures, temperatures and cargo manifold loading pressures
- condition of inert gas plant and condition of inerted tanks; venting procedures to be used while loading

- quantities of ballast or slops to be pumped ashore and contents of the slops
- preferred sequence of loading (if multiple grade cargo)
- procedures for changing grades of cargo
- any tank washing/flushing to be performed
- vessel's contingency plan for responding to an oil pollution incident
- procedure for authorising personnel from shore to proceed on board the vessel according to the SSP.

For a checklist for ship-terminal communications while loading, please refer to Annexes 3.1 and 3.2.

### *D. Loading plan and method of loading – operational agreement*

Based on the information obtained during the meeting with the terminal representative the Chief Officer should prepare a bar chart time diagram to illustrate the anticipated loading operation. He/she should review the time diagram with the Master and, after any necessary revisions, give a copy to the shore terminal and post a copy in the cargo control room (CCR).

The time diagram indicates graphically the sequence and timing of the various steps of the loading operation and provides an indication of the time when the operations should be completed.

The declaration of inspection, exchange of information and the loading plan together constitute an operational agreement for the loading of the vessel. This agreement is complete when and only when the person in charge of the shore terminal and the person in charge of the vessel have both signed the declaration of inspection.

## 2.12 Selected cargoes

### 2.12.3.5 *Cargo samples*

#### A. *General*

Cargo samples should be drawn at regular intervals during loading, preferably jointly in the presence of a representative of the shipper or terminal as follows

- vessel's manifold at the very beginning of loading and after scheduled and unscheduled stoppages for shore reasons
- first foot sample
- sample drawn at the manifold throughout the loading
- final tank sample
- tank samples drawn before commencement of discharge
- manifold sample at commencement of discharge.

The samples should be labelled, indicating where, when and by whom the samples were drawn. All samples taken must be sealed and kept in a designated place on board or delivered to appropriate storage facilities ashore. It is recommended that all samples are retained for at least one year after completion of discharge.

Samples are extremely important in the event cargo interests bring a claim against the Company regarding the condition of the cargo. As the vessel's responsibilities for the cargo normally starts and ends at vessel's manifold, samples drawn as referred to above will be very useful in establishing the cargo's condition throughout the voyage.

Manifold and first foot samples should immediately be checked visually for any foreign particles, water and colour. If there is any suspicion that the sample might be off specification, the terminal should be advised accordingly and loading operations should be stopped for further investigations.

For general principles of sampling, please see also section 2.12.2.9 Cargo sampling – dry bulk cargoes.

*B. Prepared samples*

The Master should *never* accept samples of the cargo which are already sealed and labelled as they might not be samples of the cargo actually loaded.

*C. Request for signing cargo samples*

The Master should *never* sign any receipt for a cargo sample unless he/she knows the details on the label to be accurate.

2.12.3.6 *Cargo quantity and signing bills of lading*

After completion of loading, ullage and temperature measurements should be carefully taken to accurately calculate the loaded quantity. For advice regarding the issue of the bills of lading, please see section 2.11.4 Signing bills of lading. The local correspondent should be contacted for assistance if in any doubt.

The bills of lading presented for signature will usually be evidence of the quantity of *cargo* loaded and it is important therefore to deduct from the vessel's ullage figures any "On-board-quantity" (OBQ) and any free water loaded with the cargo.

2.12.3.7 *The discharge of liquid cargo*

Following completion of the pre-transfer inspections of the vessel, the Master or the Chief Officer should conduct a meeting with the vessel's personnel involved in the loading operations and the terminal representatives. The purpose is to communicate the fullest information necessary to enable the vessel and the shore terminal personnel to conduct the discharge operations safely. The names and respective employers and clients of all personnel attending the pre-transfer conference should be recorded.

## 2.12 Selected cargoes

### A. *Information to be obtained from the terminal*

The vessel's officers (Chief Officer) should obtain the following information from the shore terminal

- shore cargo system information, including the
  - number and size of shore lines to be used to receive the vessel's cargo
  - length of shore lines
  - number of shore tanks to be discharged into, the altitude of the tanks and the level of cargo in each
  - type of floating roof installations in cargo tanks
  - maximum cargo pressure and transfer rates allowed
  - shore pipeline displacements before, between and after discharging grades
  - cargo loading stops required for shore tank changes or sampling and testing
  - availability of shore booster pumps and the minimum pressure which must be provided by the vessel to operate them
- number and sizes of hoses/arms to be used
- operating envelope of the loading arms and any freeboard restrictions imposed.

The communication system to be used and phrases/signals to be used for

- advising the ship/shore person in charge of the need to standby
- stopping the transfer (while on standby)
- emergency stop
- other emergencies, such as spill, fire, electrical storm, mooring failure etc.

Further essential information to be obtained and procedures to be agreed are

- emergency telephone numbers of terminal management personnel, local hospitals, police and fire services

- a copy of any particular facility regulations and local rules which must be observed by the vessel
- estimated time the shore terminal will be ready to receive cargo
- shore berth manning and shift arrangements.

### *B. Information to be provided to the terminal*

The vessel's officers (Chief Officer) should provide the terminal representative with the following information

- copy of the stowage plan indicating cargo distribution within the vessel
- copy of the cargo discharge, COW and ballasting plans
- information regarding the last cargo(es) carried and method of tank preparation used to prepare for the current cargo(es)
- maximum discharge rates anticipated for starting routine discharging and stripping tanks
- operation of the inert gas generator system
- material safety data sheet for the cargo(es) on board
- proposed sequence of discharging (if multiple grades of cargo)
- procedure for changing grades of cargo
- any tank washing/flushing to be performed
- vessel's contingency plan or vessel response plan for responding to an oil pollution incident
- bunkering and storing operations anticipated
- crew watch manning and shift arrangements; crew changes to be conducted (if permitted)
- vessel repairs to be completed while alongside (if permitted).

With multi-grade cargoes, a clear agreement must be reached as to the procedures to be employed to avoid cargo contamination. These procedures must be included in the Chief Officer's cargo orders or night orders.

For a checklist for ship-terminal communications while discharging, please refer to Annexes 3.3 and 3.4.



## 2.12 Selected cargoes

### C. *Revised discharging plan*

Based on the information obtained during the meeting with the terminal representative(s) the Chief Officer may amend his/her bar chart, time diagram of the discharge, COW and ballast water operations (if permitted under national regulations). He/she should review the time diagram with the Master and, after any necessary revisions, provide a copy to the shore terminal and post a copy in the CCR.

### 2.12.4 Containers

For further details please refer to

- *Gard Booklet Container transport – a compilation of Gard container related articles*
- *Gard News 179, P&I incident – Dangerous goods container overboard*
- *Gard News 173, Improper lashing and securing of cargo*
- *Gard News 171, Container stack collapse – overweight and unfit containers*
- *Gard News 159, Containers on non-cellular vessels*
- *Gard News 151, Container types and problems.*

#### 2.12.4.1 *General*

Whilst cargo stowed in containers appears less vulnerable to damage by external elements whilst on board the vessel, the containers themselves may cause damage to the vessel and the cargo holds

- during rough loading or discharging
- due to inadequate stowage, securing or lashing of cargo inside the containers.

#### 2.12.4.2 *Condition of containers*

If containers are not properly maintained, they are likely to damage their contents. Whilst it is difficult, if not impossible, for the Master or his/her officers to check whether the doors of the container are

watertight or if holes in the roof allow water to penetrate, close observation of cargo operations during loading of containers may give some useful indications.

Containers with apparently neglected exteriors should be closely inspected. This is particularly relevant to tank containers, as even tiny holes, defective valves or gaskets allow the liquid contents, often of a hazardous nature, to escape and create a dangerous air mixture. This can cause personal injury by contact, inhalation or cause an explosive air mixture. If an inspection raises any doubts as to the safety of the container, it should not be loaded and the loading superintendent/foreman and the Company should be notified.

### 2.12.4.3 *Seals and doors*

Loss of containerised cargo often occurs ashore prior to loading. The methods of theft are becoming more sophisticated and traces of unlawful opening of containers are very difficult to discover. In addition, there is a growing concern that containerised cargoes can pose a security risk where either the terrorists themselves or weapons of mass destruction can be transported.

The speed with which containers are loaded onto a vessel makes it difficult to check whether

- the seals are intact
- the seal numbers concur with the numbers listed in the cargo documents.

The Master should satisfy himself that the Company has in place a procedure for checking the container seals in compliance with the SSP. Any irregularities should be notified immediately to the stevedores or terminal operators responsible for the loading, as well as the vessel's agent and the Company. Seals should likewise be checked at discharge to evidence that they have remained intact whilst on the vessel.

## 2.12 Selected cargoes

When broken seals are discovered and replaced by the crew, a record should be made in the log book and the bill of lading together with the relevant seal numbers, and any relevant authorities should be notified in compliance with the SSP. Empty containers designated as empty should also be verified to be empty in compliance with the SSP.

On checking individual containers, whether ashore or on board, the crew should be instructed to look for defective or loose bolts on hinges and seal brackets and to identify any signs of interference. Any such observations must be reported immediately to the responsible officer so that appropriate action can be taken, such as a closer inspection or rejection of the container.

### 2.12.4.4 *IMDG labels*

The International Marine Dangerous Goods (IMDG) Code came into force on 1st January 2004. The Master and his/her officers are therefore advised to load cargoes classified by the IMDG Code in strict conformity with the requirements of the Code.

During loading, particular attention should be given to IMDG labels identifying dangerous goods. The labels on these containers should correspond to the descriptions in the dangerous goods manifest and dangerous cargo stowage or bay plan. Storage of these containers should always be in accordance with the dangerous goods stowage plan. If discrepancies are noted, the Master should ensure that the container is reloaded in the correct stowage position as planned.

### 2.12.4.5 *Flat racks*

If flat racks are loaded, the Master should ensure that the cargo on these units is properly lashed, secured and protected against external elements. This includes locating a suitable stowage position to avoid damage by the impact of waves. If the Master is in any doubt as to whether the cargo on the flat racks is sufficiently lashed,

he/she should call the Company to arrange for a surveyor to attend and check the securing of the cargo on the flat racks. Tarpaulins, if in use, should be tight and not torn and need to be checked and adjusted at regular intervals during the voyage. These checks should be recorded.

### 2.12.4.6 *Container weight and stability*

The weight of containers is sometimes not properly checked ashore or the tare weight has been disregarded which will affect the vessel's stability. The maximum container stack or tier weight may also be affected. If in any doubt the Master is advised to

- carry out his/her own stability tests
- re-check the vessel's stability calculations
- demand clarification from ashore
- unload and re-weigh the suspect containers.

### 2.12.4.7 *Lashing and securing of deck containers*

After loading containers on deck, particular attention should be paid to proper lashing. Only approved lashing materials of suitable strength and quality should be used in accordance with the vessel's approved container lashing plan and the Cargo Securing Manual as approved by the flag State administration.

Mixing different securing devices such as left and right handed twist locks and sockets, should be avoided.

During the voyage, the container securing arrangements should be checked regularly and tightened where necessary and such checks should be entered in the logbook or the relevant ship's forms.

### 2.12.4.8 *Unrestricted bridge visibility*

When loading a large number of containers on deck, attention should be given to ensuring unrestricted bridge visibility.

Mandatory regulations require that the sea surface 500 metres

## 2.12 Selected cargoes

forward of the bow must be visible from the bridge. If the Master is of the opinion that visibility may be impaired, he/she should request a restow of the containers.

### 2.12.4.9 *Special stowage instructions*

Although the stow is generally planned ashore, the Master and his/her officers should ensure that special stowage instructions from the shipper to avoid exposing the cargo to high temperatures are met. Containers with high value contents – if known – should be stowed under deck.

If containers are to be loaded on vessels not purpose built for their carriage, the vessel's individual Cargo Securing Manual must be referred to.

## 2.12.5 **General cargoes**

For further details please refer to *Gard News 175, Major cargo claims analysis*.

### 2.12.5.1 *General*

The most likely types of damage to exposed general cargo are

- pre-shipment damage due to rough handling or unprotected storage ashore
- physical damage due to rough handling during loading or discharging
- physical damage due to inappropriate stowage and/or insufficient lashing or securing
- wet damage before, during loading and during the voyage due to defective hatch covers and gaskets
- heating damage due to insufficient storage ashore with resulting excessive
  - temperatures during loading
  - fat content prior to loading
- heating damage due to storage of cargo on heated tanks.

Bagged cargo is likely to suffer damage

- during loading and discharge by
  - handling with hooks
  - contamination by foreign matter
  - moisture from rain or snowfall
  - high moisture content of the air in the cargo hold
  - use of stained, wet or contaminated dunnage
- during the voyage by
  - inadequate stowage and/or insufficient lashing or securing causing a shift or collapse of the stow
  - tainting
  - infestation
  - wetting either due to defective hatch covers and gaskets or vessel's internal leaks
  - moisture from the ship or cargo sweat due to improper/insufficient ventilation.

If bagged cargo becomes mouldy due to moisture ingress, some countries may deny discharge of the entire cargo and reject the same due to health and sanitary fears. Huge cargo claims may arise for non-delivery and the disposal of the rejected cargo incurs considerable costs.

All these types of damage are likely to result in claims by cargo interests against the Company and, subsequently, the P&I insurer.

Claims for shortage of bagged cargo are likely to be the result of improper and/or inaccurate tallies as well as pilferage.

Heavy items of cargo may shift during the voyage if not properly lashed, chocked or otherwise secured.

## 2.12 Selected cargoes

### 2.12.5.2 *Condition prior to shipment*

The Master should carefully note the condition of the cargo prior to loading

- if possible an inspection of the cargo to be loaded should be carried out whilst the cargo is still ashore
- attention should be paid to the storage place ashore. It may be that the cargo has been exposed to rain or snow or affected by foreign matter during storage
- random samples of bagged cargo may reveal the actual condition of the cargo. For cargo samples to be taken please see section 2.12.2.9 Cargo sampling – dry bulk cargoes.

Any apparently defective cargo or cargo affected by external elements such as moisture, rust or foreign matter should be rejected and be replaced by sound cargo. Mate's receipts and bills of lading may otherwise need to be claused – please see section 2.11.4 Signing bills of lading – letters of indemnity.

If the Master is in doubt about the condition of the cargo, the local P&I correspondent should be asked to assist.

### 2.12.5.3 *Damaged cargo*

For further details please refer to *Gard News 180, When can a master refuse to load damaged cargo?*

If cargo damage is noted after the cargo has been loaded into the vessel's holds, the Master should try to

- unload the cargo
- obtain replacement cargo from the shippers.

If this cannot be achieved, the Master should collect as much evidence as possible by

- taking photographs
- taking witness statements.

**If the Master is in any doubt, the local P&I correspondent should be called to assist**

**This principle applies to all cargoes which are loaded and which appear unsound, damaged or incomplete!**

### 2.12.5.4 *Damage caused by stevedores*

In instances of apparent rough or unsafe handling by stevedores, the Master should

- interrupt loading of the cargo
- advise the stevedore company accordingly – verbally and in writing
- ask for the damage to be put right
- obtain a written acknowledgement of the damage caused.

The written acknowledgement from the stevedore company should be obtained on, for example, the stevedore damage form. Evidence should also be collected as to how the damage occurred.

The Hull and Machinery cover may be affected if there is structural damage to the vessel. If the stevedore company does not carry out repairs, the Master is advised to call in the Hull and Machinery insurer's local correspondents to assist and to survey the damage.

When cargo is damaged by stevedores prior to loading, the bills of lading may need to be claused – please see section 2.11.4 Bills of lading.



## 2.12 Selected cargoes

### 2.12.5.5 *Photographic and video evidence*

Photographs or video should ideally be taken of both the loading and stowage operations. This will provide evidence of proper loading and stowage to defend any claim from cargo interests. Photographs and video must be properly marked and labelled with details of the location, date and time taken. Digital photographs must not be interfered with or be the subject of any processing, and, if possible, be stored on a separate clearly marked disc.

### 2.12.5.6 *No loading during rain or snow*

It is self-evident that loading should not take place during rain or snowfall. When rain or snowfall is expected, it will assist to keep a radar watch to enable the hatches to be closed in time. When loading in areas where sudden heavy rain rainfalls or showers can be expected (monsoon), only those hatch covers which are actually needed should be opened. If the Master is urged to continue loading during rain or snowfall, he/she should refuse, even if offered a “rain” letter of indemnity by the shippers or charterers. If in doubt, the Master should request the attendance of the local correspondent.

### 2.12.5.7 *Separation – marking of cargo*

If the shipper or charterer requires separation of the cargo by, for example, paint marks, the Master should ensure that this does not cause any harm to the cargo which may give rise to claims against the Company and ultimately their P&I insurer.

### 2.12.5.8 *Dunnage, lashing and separation material*

For further details please refer to *Gard News 173, Improper lashing and securing of cargo*.

If dunnage is used, the Master should ensure that only dry clean wood, free from odour, is used to avoid damaging the cargo. Some dunnage provided to the vessel may need to be treated prior to being used due to health and sanitary provisions in some countries. In certain countries the Master is advised to make enquiries before

accepting any dunnage. If the dunnage delivered raises any doubts as to its suitability, the Master may consider asking for a certificate from the charterers as to the quality and moisture content of the dunnage.

If bagged cargo is to be loaded and dunnage is used, it may be advisable to use kraft paper, although kraft paper alone is often not sufficient; please refer to *Gard News 174, The carriage of bagged rice from the Far East to West Africa*.

If the cargo needs to be lashed or separated, suitable and sufficient lashing and separation material should be provided unless the charterparty provides that this is the obligation of the charterer. The Master should ensure that

- the cargo is loaded, stowed and lashed in such a manner that it can be carried without being damaged and without causing damage to other cargo – please see comment in section 2.12.5.3 Damaged cargo
- the lashing is in accordance with the vessel's *Cargo Securing Manual* as approved by the flag State administration.

Failure to carry out any of the above precautions may result in cargo damage, which could give rise to a claim being presented by the cargo interests against the Company and the P&I insurer.

### 2.12.6 Heavy lift cargoes

#### 2.12.6.1 General

The carriage of heavy lift cargoes is a specialist operation for which the following is required

- skilled and highly experienced personnel
- sophisticated equipment
- specially designed vessels.

Every cargo operation on a heavy lift vessel is a specialist operation for which Critical Shipboard Operation Procedures should be in place under the Company's SMS.

## 2.12 Selected cargoes

### 2.12.6.2 *Loading, stowage and lashing plans*

If loading is carried out by shore personnel the Master should, prior to commencement of the loading operations, insist upon being provided with

- a written loading plan
- detailed stability calculations
- detailed drawings of lifting points and loading gear intended to be used
- lashing arrangements with lashing points indicated
- a feasibility study on the loading process from charterers and cargo interests.

The Master should not hesitate to query the plans and ask for clarification prior to the commencement of loading or discharging.

### 2.12.6.3 *Loading gear and tackle*

Utmost care should be exercised when preparing the vessel's gear and tackle for the loading and discharging operations. The general tackle must be sufficient in strength, dimension and quality. This is often calculated in advance by specialists attending to the cargo operations.

The Master should ensure that the working history of the vessel's loading gear and tackle can be traced in records to give a clear picture of any fatigue present. Any gear or tackle showing signs of fatigue, defects or chafing should be removed from use immediately.

If tackle is supplied from ashore the Master should ensure that it is suitable and strong enough for the job. He/she should check

- the condition of the material intended to be used
- the tackle's test certificates which should have been issued by recognised organisations.

### 2.12.6.4 *Co-operation during cargo operations*

Close contact, mutual confidence and trust are required between shipboard and shorebased personnel during cargo operations. Failure of a single loading device may result in the loading gear collapsing or the heavy lift cargo falling with the risk of fatal or serious personal injury.

If personnel from ashore is unable to communicate properly, the Master should insist on their replacement.

Close co-operation and exchange of information between all personnel involved, including engine room personnel is essential when ballast operations are required to maintain the vessel's stability. Properly functioning communication equipment is essential as well as commands given in a clear language.

Wind and swell conditions need to be considered, especially if loading on the roads.

Prior to loading, the strength of the securing points on the lift and the centre of gravity on the lift need to be verified.

### 2.12.6.5 *Completion of loading – lashing survey*

Upon completion of loading, careful lashing based on a calculated lashing plan must be carried out. If a lashing plan is not provided from ashore prior to loading, the Master should ask the Company to instruct a competent expert experienced in the loading and lashing of heavy lift cargoes to prepare a lashing plan for a safe passage.

A lashing survey

- ensures a safe passage
- provides evidence against possible cargo claims
- indicates that the utmost care was used in the preparation for the voyage.

## 2.12 Selected cargoes

### 2.12.7 On-deck cargoes

For details please refer to *Gard News 173, Improper lashing and securing of cargo*.

#### 2.12.7.1 *General*

Whilst the normal place for stowage of cargo on non-container vessels is in the holds, the vessel may nevertheless be required to carry cargo on deck. Such cargo may be voluminous, heavy lift cargo or dangerous goods classified under the International Maritime Dangerous Goods (IMDG) Code.

If any cargo is intended to be carried on deck the Master should ascertain that

- deck stowage is permitted by the shipper
- the particular cargo is suitable for carriage on deck
- the vessel is properly equipped to carry the cargo on deck
- the deck and/or hatch covers are strong enough
- it is customary to carry the cargo on deck
- the bill of lading will be appropriately claused to reflect carriage on deck and to exempt the Company from liability for damage/loss.

#### 2.12.7.2 *Clausing bills of lading*

If cargo is carried on deck without the shipper's authorisation and/or without proper clausing of the bill of lading, the Company will be exposed to greater liability in the event of damage/loss to such cargo. This liability may not be covered by the P&I insurer and it may therefore be necessary for the Company to take out additional insurance and the Master need therefore to advise the Company.

#### 2.12.7.3 *Lashing and securing*

Deck cargo is liable to shift resulting in damage to the cargo – often a total loss – and/or to the vessel. This may endanger the safety of the vessel and crew. Deck cargo should therefore be sufficiently

lashed using approved and certified lashing material only and secured in accordance with the *Cargo Securing Manual* as approved by the flag State administration.

### 2.12.7.4 *Timber deck cargoes*

The weight of some types of deck cargoes may be different from that shown in the cargo documents, e.g. timber deck cargoes. This may seriously affect the stability of the vessel. The Master is therefore advised to carefully check the weight of timber deck cargoes during loading by observing the vessel's draught and also by performing rolling tests from time to time to ensure that the weight conforms with the details given. When timber deck cargoes are to be loaded, the Master is advised to refer to the *IMO Code of Safe Practice for Ships carrying Timber Deck Cargoes (Res. A.715(17))*.

Stanchions used for the carriage of timber deck cargoes require special attention and checks prior to loading to ensure that neither the stanchions nor the adjacent area shows any defects such as cracks etc., in which case the Master should call in the local P&I correspondent to assist.

## 2.12.8 **Reefer cargo and reefer containers**

For further details please refer to *Gard News 177, Major cargo claims analysis – Liquid bulk, reefer unitised and containerised carriage*.

### 2.12.8.1 *General*

The main problem in the carriage of refrigerated goods is their end use. Such goods are generally destined for human consumption. Most countries have strict health and sanitary provisions prohibiting damaged cargo from being imported. The consequences of contaminated cargo can be disastrous as it may not only be very difficult to dispose of the cargo, but also very costly both for the Company and the P&I insurer.

## 2.12 Selected cargoes

Whilst the problems involved in the carriage of reefer cargo and cargo in reefer containers are numerous, the main causes of damage are

- malfunction of the reefer machinery
- deviation from the required cooling temperature
- improper stowage preventing proper air circulation.

The consequential damage is

- premature ripening of fruit, or
- thawing damage to meat and fish products.

### 2.12.8.2 *Reefer instructions from shippers*

The Master should obtain written instructions from the shipper prior to loading refrigerated cargo, in respect of any pre-cooling of the holds and the carrying temperature of the cargo. The Master should not, however, accept carriage instructions that the vessel will not be able to comply with. Should the Master have any doubt about the instructions, he/she should

- query the instructions in writing
- ask for specific confirmation that they are correct.

This is very important as even the slightest variation in the carrying temperature may result in a substantial claim. If in any doubt, the local P&I correspondent should be called in to assist.

### 2.12.8.3 *Refrigeration machinery and reefer compartments*

The Master should obtain a certificate from a class surveyor or other competent expert prior to loading refrigerated cargo, confirming the condition and suitability of the refrigeration machinery and reefer compartments for the carriage of the specific cargo in question.

### 2.12.8.4 *Reefer containers*

When containers with refrigeration units are to be loaded, the Master should, together with the engineer responsible, ensure that

the vessel's electricity output is sufficient for the supply of power during the entire voyage. To prevent a power failure occurring or insufficient power supply being available, attention should be paid when additional power will be required

- on entering and leaving port using the bow thruster
- during cargo operations in port, using the vessel's cargo gear.

The Master should ensure that

- all reefer containers are properly connected to the vessel's power sockets
- a daily check on the temperatures of the reefer containers is carried out if so required by the Company or the charterer to prevent damage to the cargo by insufficient cooling
- a daily written record is kept and retained for at least two years.

If the voyage is delayed whilst carrying reefer containers, the Master should seek instructions from the shipper via the Company.

### 2.12.9 **Ro-ro cargo**

Whilst it is acknowledged that operators of ro-ro cargo vessels have their own standards and practices in place, some general advice is nevertheless provided in this publication.

#### 2.12.9.1 *General*

The main hazards and causes of damage in the operation of ro-ro cargo vessels are

- instability of the vessel due to uneven distribution of the load
- insufficient lashing and securing of cargo on rolling stock
- insufficient lashing and securing of rolling stock and trailers on board the vessel
- wrongly declared or undeclared dangerous cargo loaded on trailers
- negligent closing of watertight doors and ramps.



## 2.12 Selected cargoes

### 2.12.9.2 *Negligent declaration of dangerous cargo*

Although the IMDG Code is mandatory, there is still considerable lack of knowledge and training, resulting into dangerous cargo being improperly declared. The chemical reaction of two dangerous cargoes can have catastrophic results.

If there is any discrepancy between the cargo documents and the cargo on the trailers, a closer inspection should be made, followed by a possible rejection of incorrectly declared cargo.

### 2.12.9.3 *Checking of cargo to be loaded*

Despite the hectic operation of loading and discharging rolling stock, the Master should ensure that his/her officers are in control and are carefully checking and monitoring the operation. This should include checking

- the marks, numbers and road signs on the trucks and trailers
- the cargo on the trailers, as far as accessible, visible and possible
- the labels on any dangerous goods being loaded
- the general impression of the rolling stock being loaded
- whether the information obtained corresponds with the loading lists.

Should any irregularities be noted, the Master should not hesitate to interrupt loading pending clarification.

### 2.12.9.4 *Trailers*

It is often difficult, if not impossible, for the Master and his/her officers to check whether the cargo is properly lashed within the trailers being loaded. Furthermore, the centre of gravity of a trailer cannot be checked due to the speed of loading and the fact that the cargo is covered by tarpaulins and sealed by customs.

If there is any indication of

- cargo pressing against the tarpaulin
- cargo having shifted during loading
- the trailer listing,

the trailer should be rejected if no inspection of the cargo can be carried out.

### 2.12.9.5 *Uneven distribution of weights – negligent lashing of cargo*

There may be an uneven distribution of cargo weight on the vessel if no proper scales are available prior to the trucks and trailers coming on board. Furthermore, lack of knowledge ashore of the forces experienced by a vessel at sea may result in

- cargo being insufficiently lashed onto the trailers
- the cargo's centre of gravity may be above the centre of the trailer, allowing the cargo to shift in adverse weather conditions.

Lashing points on trailers may be too weak and the lashing material used inadequate. If any irregularities are noted the Master and the vessel's officers should reject the cargo until it has been properly lashed or the deficiencies rectified.

### 2.12.9.6 *Negligent lashing on board the vessel*

Even the shortest voyage at sea may involve the greatest hazards to the safety of the vessel, crew, drivers and the cargo carried.

Time pressures in this tightly scheduled trade may lead to trailers and cargo being improperly or insufficiently lashed, which can lead to cargo shifting during sudden violent movements of the vessel. A sudden alteration in course may cause considerable heeling of the vessel, exposing rolling stock and cargo on trailers to significant danger.

## 2.12 Selected cargoes

To prevent accidents caused by the shifting of cargo or rolling stock, it is most important that proper lashing and securing devices are used. Due consideration must be given to the strength of the securing points and the lashings. The Master and his/her officers should refer to the

- *IMO MSC Circular 812, Amendments to the Guidelines for Securing Arrangements for the Transport of Road Vehicles on Ro-ro ships (IMO Resolution A.581(14))*, and the
- *Code of Safe Practice for Cargo Stowage and Securing (IMO Resolution A.714(17))*.

The vessel's Cargo Securing Manual should also be consulted to ensure that the lashings are of an appropriate size, strength and material.

If poor weather causes the vessel to roll the use of stabilisers should be considered.

### 2.12.9.7 *Improper securing of doors and ramps*

The most dangerous cause of accidents on a ro-ro vessel is the improper securing of watertight doors and ramps, allowing water to ingress the car deck impairing the stability of the vessel.

Although there are strict international, including European, mandatory regulations on the safety of ro-ro vessels, it cannot be emphasised enough that

- all watertight doors and ramps must always be properly secured prior to departure
- all gaskets, locking devices, hinges, clamps etc., must be maintained in first-class working order and safe condition.

It should be emphasised that trucks contain fuel as does some cargo on trailers. If fires start, they will quickly get out of control. The fixed fire fighting installations must therefore be in a perfect condition and the crew constantly drilled to enable them to respond effectively.

**2.12.10 Steel cargoes**

For details please refer to

- *Gard News 153, Steel pre-shipment surveys*
- *Gard compilation: The carriage of steel.*

*2.12.10.1 General*

Steel cargoes, although solid in appearance, require special attention and care

- prior to loading
- during loading
- during the carriage
- during discharge.

Steel is especially vulnerable to

- wetting resulting in rust
- physical damage
- contamination with foreign matter.

*2.12.10.2 Steel pre-shipment and outturn surveys*

Due to the vulnerability and value of steel cargoes, Gard recommends that surveyors are appointed to perform the cargo inspection, to advise on the safe stowage, lashing and securing of the cargo and furthermore, to assist the Master in clausuring the bills of lading where appropriate.

It is also advisable to perform an outturn survey which should ideally commence at the opening of the hatch covers to evidence any sea water ingress or shifting of the stow having occurred during the voyage.

## 2.13 Voyage preparation, planning and performance

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### 2.13 VOYAGE PREPARATION, PLANNING AND PERFORMANCE

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#### 2.13.1 Sufficient supplies – bunkers and stores

Seaworthiness includes having sufficient stores, fuel, water and provisions for the duration of the intended voyage plus a reasonable safety margin. The Master, together with the officers and engineers, should determine

- the amount of bunkers, diesel oil and lubrication oil needed, taking into consideration any instructions from the charterer as to speed, consumption and bunkering ports
- the amount of freshwater required, taking into account the vessel's own production and any replenishment facilities along the intended route. Any deviation to take on freshwater will not only result in additional costs and time but may result in a claim for unreasonable deviation
- the amount of provisions required, taking into account the anticipated climatic conditions and the supply available during the voyage
- whether original spare parts produced by the manufacturer are sufficiently available to replace any defective machinery parts, including the cargo gear, both in the engine room and on deck.

#### 2.13.2 Bunkering operations – bunker quality

##### 2.13.2.1 *General*

Bunkering operations should be Critical Shipboard Operations, or at least Special Shipboard Operations, under the vessel's SMS in accordance with the ISM Code. The slightest mistake may result in catastrophic pollution by fuel oil, which, in view of the chemical consistency and properties of fuel oil

- has a more serious impact on the maritime environment, and
- makes clean-up more difficult and expensive.

## 2.13 Voyage preparation, planning and performance

Consequently, the Company and the vessel should have developed and effectively implemented written procedures for

- bunkering operations alongside, and
- bunkering from a barge.

Many port authorities have special bunkering operations guidelines which must be followed to avoid any claims falling on the vessel, the Company and finally the P&I insurer for pollution or other damage caused during bunkering operations.

### 2.13.2.2 *Qualified and experienced personnel in attendance*

Irrespective of whether the bunkering operation takes place in port, alongside or at anchor, it requires the full attention of all crew members involved. Bunkering must be carried out in strict conformity with the Company's Shipboard Operations for Bunkering.

Section 6 of the ISM Code sets out the personnel requirements for bunkering operations such as providing qualified and experienced crew to safely carry out these operations

- having an understanding of the relevant rules, regulations, codes and guidelines applicable to such operations
- being properly trained and having the necessary knowledge of such operations and being familiar with the equipment to be used
- communicating effectively in a common language with the personnel delivering the bunkers.

### 2.13.2.3 *Equipment used*

The equipment used for bunkering operations must be inspected at appropriate intervals and maintained as required under section 10 of the ISM Code. Gauges and other sounding and measuring instruments must be properly calibrated before being used to avoid any incorrect measurements or soundings which may cause an overflow with catastrophic consequences.

## 2.13 Voyage preparation, planning and performance

### 2.13.2.4 *Bunker quality – proper sampling*

For details please refer to

- *Gard booklet: Bunkers and bunkering – a compilation of Gard bunkers related articles*
- *Gard News 174, Off-spec bunkers – some practical cases.*

It cannot be stressed often enough that proper sampling and testing procedures should be carried out before bunkers are taken on board. Sampling must be carried out with the utmost care. The taking of samples should follow the Company's written procedures and be in compliance with recognised industry standards.

If the quality of the bunkers taken is not within the required specification, this may have serious consequences not only for the engines but also for the safety of the vessel, crew and cargo. Main engine failures due to bunkers being off-specification may result in casualties with substantial financial consequences such as

- damage to the vessel's machinery
- delay of the vessel caused by
  - testing of the defective bunker
  - possible de-bunkering of off-specification bunkers
  - cleaning of the bunker tanks.

### 2.13.2.5 *Emergency Response Plan*

Incidents occurring during bunkering operations should be covered by the vessel's Emergency Response Plan or as required in some countries, the Vessel's Response Plan. The procedures for these types of situations need to be trained and drilled whenever possible to prepare the crew to minimise the effects of any incidents during bunkering operations. For further details please see section 3.12 Pollution.

## 2.13 Voyage preparation, planning and performance

### 2.13.2.6 *Bunkering from a tanker barge*

It would exceed the framework of this publication to establish a detailed checklist for such bunkering operations. Such checklists would most probably interfere with those developed and established by the Company and the vessel under the SMS. Nevertheless some key points should be mentioned.

The basis for a successful bunkering operation is the full exchange of information prior to the commencement of any such operation. This exchange of information should at least contain the following

- location, date and time of supply
- whether bunkering is to take place on the roads
- exact position where the bunker operation is to take place
- acceptable weather, tide and swell conditions
- exact specification and amount of bunkers required.

Prior to the transfer of personnel or equipment, the bunker barge must be safely moored alongside. There must be safe access and safe delivery at all times during the transfer operations. The respective freeboards of both the vessel and the bunker barge must be taken into account, as they change with the progress of the bunker operations.

A further exchange of information in writing should contain at least

- communication methods (VHF or walkie talkie)
- emergency arrangement
- bunker transfer sequence with quantities, grades and pumping rates
- sampling methods.

### 2.13.2.7 *Singapore Bunker Procedure (SBP)*

The Singapore Bunkering Procedure (SBP) may be a helpful tool for bunkering operations, irrespective of whether the bunkering takes place alongside or from a barge.



## 2.13 Voyage preparation, planning and performance

When taking bunkers from a barge SBP requires amongst others

- the vessel's officer or engineer responsible to confirm in the Bunker Requisition Form the details and specifications of the bunkers to be supplied
- the declaration of the bunker provider's officer regarding measurements and contents of the non-cargo tanks and spaces on board the bunker tank prior to commencement of the operations
- the invitation from the bunker tanker to the vessel's Chief Engineer to witness the opening gauge or reading and the taking of temperature of the cargo of all tanks prior commencement of the operation
- detailed tank gauging procedures
- the detailed sampling requirements and procedures for representative sampling before the commencement and during the bunkering operation
- to have a member of the vessel's crew supervising the entire bunkering operation
- after completion of bunkering, the vessel's Chief Engineer to witness the closing gauge or reading, and the taking of the temperature on board the bunker tanker
- if there is a dispute over the quantity, the bunker tanker's tanks are to be inspected and gauged by a surveyor.

Please see also sections 2.16.3.3.A Pollution by oil and 3.12 Pollution.

### 2.13.3 Passage planning – departure and arrival

#### 2.13.3.1 *General*

The main causes of accidents such as grounding or contact on departure or arrival are due to

- insufficient preparation
- lack of local knowledge
- failure to post a proper lookout
- failure to properly operate Bridge Resource Management (BRM).

### 2.13.3.2 *Proper passage planning from berth to berth*

The Master should ensure that the voyage is properly planned from berth to berth.

Passage planning should take into account

- clear arrangements as to which person in the wheelhouse is responsible for which navigational control equipment
- pre-set courses with sufficient and safe shore clearance – only safe transit lanes should be used for passages
- vessel's routing and traffic separation schemes
- anchorages and pilotage areas
- areas of high traffic density
- shore traffic control reporting points
- communication channels
- latest navigation warnings and chart/list of lights corrections
- any regulations applicable to the waters to be navigated, e.g. United States Under Keel Clearance Regulations
- prevailing tides, currents, weather and sea conditions to be expected, with anticipated movements of the vessel, such as parametric rolling – please see section 2.14.2.14 Ship's behaviour on passage – parametric rolling – and effective counter measures
- appropriate speed and calculation of squat effects in shallow passages
- sufficient water depths
- underwater obstacles
- oil, gas and water supply pipes
- ballast water management for the entire voyage taking into account any national requirements in respect of ballast water management, control and exchange, please also see sections 2.15.3 Ballast water exchange at sea and 2.16.3.3.F Pollution by ballast water.

The Master should not be afraid to change or abort the passage plan depending on the circumstances! However, a record should be kept of the reasons for the change as well as the details of the replacement passage plan put in place.

## 2.13 Voyage preparation, planning and performance

The passage plan for arrivals or departures should also focus on critical stages of navigation such as large course alterations or narrow bends, which may require exact rudder manoeuvres. Wind and current conditions need to be taken into consideration to avoid too early or too late “wheel over” orders – please see section 2.13.4 Navigation in confined waters – Bridge Resource Management.

Depending on the circumstances and the area, the Master should consider including back up plans and aborting positions, i.e. the last point at which manoeuvres can be safely aborted.

Passage planning is also relevant to the personnel in the engine room, particularly as they will need to know when the vessel may need engine power for full manoeuvring.

### 2.13.3.3 *Review of the passage plan before execution*

A common cause of accidents is lack of situational awareness. The departure or arrival plan should be reviewed immediately before it is about to be executed and the Master should invite his/her officers to express any concerns they may have. Circumstances or conditions may be different from when the plan was first made and new hazards may have developed, e.g. other vessel movements, the presence of dredgers etc.

### 2.13.3.4 *Unsafe port – unsafe berth*

The Master and his/her officers should be alert to the possibility that the port or berth may become unsafe to use at a particular time. If the Master fears that the vessel may be damaged, for example, due to prevailing weather conditions or the condition of the berth, he/she should take appropriate action immediately and contact the Company for assistance.

## 2.13 Voyage preparation, planning and performance

Prior to approaching a berth which gives an indication that there may be problems in using the berth, the Master or his/her officers should consider taking photographs from various angles and aspects to document the condition of the berth prior to berthing.

### 2.13.3.5 *Proceeding on critical revolutions over a longer period of time*

If the vessel needs to sail for a longer period of time within the critical revolutions range, the Master and his/her officers should notify the engine watch personnel in time to prevent damaging the vessel's propulsion system.

### 2.13.3.6 *Check of navigational instruments, propulsion and steering elements*

The Master should ensure that all navigation aids, including communication devices, are available, the vessel's propulsion and steering systems are fully operational and their operation and handling fully understood by the officers in charge. It is vital to check for any steering gear problems before the commencement of the voyage and before entering confined waters, to prevent a sudden failure and subsequent grounding, collision or damage to FFO. If the rudder does not respond to wheel over checks as it should do, there may be a problem and appropriate action must be taken.

### 2.13.3.7 *Adjustment of ship's clocks*

Prior to the commencement of the voyage, all the ship's clocks should be adjusted to the master clock on the bridge.

## 2.13 Voyage preparation, planning and performance

### 2.13.4 Navigation in confined waters – Bridge Resource Management

Navigation in confined waters carries extreme risks such as

- sudden failure of
  - navigational equipment
  - propelling or steering systems
  - the entire power system
- resulting in
  - grounding
  - damage to FFO
  - collision and contact with other vessels
  - damage to the marine environment.

These risks can be minimised if the Master operates proper Bridge Resource Management.

The principles of Bridge Resource Management are laid down in the *Bridge Procedures Guide* published by the International Chamber of Shipping (ICS). It contains guidance to best watchkeeping practice and guidance on Bridge Resource Management and the conduct of the bridge team including the pilot.

Bridge Resource Management focuses on the use and co-ordination of all the skills and resources available to the bridge team to achieve the optimum goals of

- safety, and
- efficiency.

Bridge Resource Management

- is more than good planning combined with adequate safety margins
- takes into account unforeseen events which may develop into a serious and difficult situation
- requires the skills, abilities and effective communication of all members of the bridge team
- includes the full involvement of a pilot, if in attendance!

## 2.13 Voyage preparation, planning and performance

The key to an effective Bridge Resource Management is teamwork and the Master would normally be the team leader.

Bridge Resource Management should take into account situational awareness. The following factors can affect situational awareness

- communication in more than one language
- cultural background
- operational atmosphere
- procedures
- fatigue of the crew
- climatic conditions.

When operating Bridge Resource Management the Master should be aware that

- navigation and pilotage is a shared task
- timely and accurate communication conveyed to all members of the bridge team is a key element.

Navigating in confined waters requires delegation of tasks. To avoid any uncertainty or irregularity which could have disastrous results

- the tasks should be clearly defined
- navigation information should be cross-checked
- navigation manoeuvres must be monitored
- information should be clearly confirmed by the recipient
- continuous progress reporting is required.

The Master should also consider training his/her officers to react in situations of sudden failure of equipment and technical systems, such as power failure or lack of steering.

**An effective bridge team is one where any one individual's concerns, no matter what their rank, can be raised and taken seriously.**

## 2.13 Voyage preparation, planning and performance

### 2.13.5 Pilot assistance

For further details please refer to *Gard News 160, Pilot on the bridge – role, authority and responsibility*.

#### 2.13.5.1 General

The main cause of accidents when leaving and entering a port under pilotage is improper Bridge Resource Management due to

- insufficient communication between the pilot and the bridge team
- lack of proper preparation by the vessel and the pilot of the berthing or unberthing manoeuvre
- insufficient information provided by the vessel to the pilot
- insufficient evaluation of the Master's or pilot's passage plan
- failure by the Master to monitor the pilot and overrule him if necessary.

#### 2.13.5.2 Responsibility rests with the Master

The Master and his/her officers should not forget that the boarding of a pilot is not the time to relax but to become most vigilant! The Master has the responsibility and authority to override the pilot at any time, except in the Panama Canal. The Master should ensure regular communication between the officer on watch and the pilot to ensure that safety is maintained at all times.

#### 2.13.5.3 Pilot assistance and SMS

Navigation under pilot assistance should be carried out in strict conformity with the vessel's SMS and the procedures described therein.

#### 2.13.5.4 Pilot's experience and competency – intervention where required

Prior to the commencement of the pilotage, the Master should satisfy himself that the pilot is experienced and competent.

The Master and his/her officers should

- supervise the pilot's performance
- not hesitate to question the pilot's intentions or actions

## 2.13 Voyage preparation, planning and performance

- intervene with and overrule the pilot's decision where and when the situation requires.

If there is any problem with the pilot's performance, the Master should reject the pilot and demand substitution.

### 2.13.5.5 *Operational information to be relayed to the pilot*

Prior to commencement of a pilotage the Master and/or officers should complete the *Pilot Card* – please refer to Annex 5 – and hand it to the pilot. The pilot must be informed about

- any bridge equipment which is not fully operational
- any abnormal helm or engine response which may be anticipated, including information on critical engine revolutions.

### 2.13.5.6 *Information to and close observation of the pilot*

In order to be aware of the situation at all times, the Master should

- closely monitor the navigation upon leaving and entering a port under pilot assistance
- provide the pilot in advance with a duly completed *Ship to Shore Master/Pilot Exchange (MPX) form*, please see Annex 6, setting out all essential manoeuvring details for the vessel
- discuss and agree the manoeuvres and the passage with the pilot
- enquire with the pilot about any special navigational rules
- collect from the pilot a duly completed *Shore to Ship Master/Pilot Exchange (MPX) form*, please see Annex 7, setting out information about the intended pilotage passage
- not allow the pilot to take over the helm himself, unless circumstances so require, or change the settings of an autopilot
- ensure that the pilot's directions are given directly from the pilot to the ship's officer of the watch rather than to the helmsman or other crew members
- take immediate and appropriate action to safely navigate and manoeuvre the vessel if the Master is in any doubt about the pilot's capability.



## 2.13 Voyage preparation, planning and performance

### 2.13.6 Sufficient tug assistance – tug operations

The main cause of damage to locks, port installations and the vessel is insufficient tug assistance, particularly in prevailing strong tides and winds. Due consideration should be given by the Master to engaging sufficient tug assistance to enable the vessel to safely depart from and arrive at a port or berth.

Most standard towage contracts allocate liability to the tow. The tow carries all the risk even when there is no fault or negligence on the part of the vessel. It is often difficult to prove fault or negligence by the tug as most contracts are based on the principle that the tug is the servant of the tow, even when navigation is conducted by the tug. A claim for any damage suffered by the tug is often lodged after completion of the towage.

Thus, the Company and ultimately the P&I insurer may be held liable when a tug is damaged or cause damage whilst berthing, unberthing or under tow. Likewise, damage to the own vessel affects the Hull and Machinery cover, as liability of the tug is excluded under nearly every standard towage contract.

Prior to engaging tugs, the Master should consider not only the number of tugs required, but also that sufficient bollard pull is available. In case of doubt the Master should not hesitate to order additional tug power. Also, the power and the bollard pull of the tugs engaged need to be evenly distributed to avoid damaging the own vessel such as torn bollards.

Prior to commencement of a tow, whether in open sea or approaching or leaving a berth or lock, the manoeuvres should be discussed as part of the passage planning – please see above section 2.13.3 Passage planning – departure and arrival. The Master should insist that the pilot's directions to the tugs as well as ship-

## 2.13 Voyage preparation, planning and performance

shore communication be given in a language understood by him, to enable the Master to have a full understanding of the manoeuvres undertaken at all times.

If towing lines are provided by the tug, the officers on stations should carefully check – if possible – the condition of the towing lines and inform the Master immediately in order to rectify the situation if the lines are not suitable.

Replacement towing lines of a sufficient breaking load and in good condition should be available on the vessel and be ready to be deployed if the tug's line parts or must be rejected due to its poor condition.

As a general rule, whilst under tow, the Master and his/her officers should

- be vigilant and alert when any manoeuvres are carried out by the tug or the vessel
- always be aware of the tugs' positions
- continuously monitor the vessel's own speed to avoid overrunning the tug
- co-operate with the pilot and tug master.

When manoeuvring under tow, the vessel's own bow thrusters may be used to prevent any difficulties occurring. Transverse movements of the vessel supported by the tug's pull may be underestimated.

The names of the tugs and the time the tugs were taken on or started to tow should be recorded in the bridge bell book or other appropriate logs.

If any incidents occur during tug operations, the action to be taken and documents to be collected can be found in section 3.17 Towage – damage cause to or by a tug.

## 2.14 Watchkeeping and navigation

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### 2.14 WATCHKEEPING AND NAVIGATION

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For further details please also refer to *ICS Bridge Procedures Guide*.

#### 2.14.1 General

Watchkeeping, either underway, at anchorage or in port is a fundamental duty in the operation of a vessel, for the safety of life and property and the protection of the marine environment. Watchkeeping is not only governed by the *Code and Convention on Standards of Training, Certification and Watchkeeping (STCW 95)*, but should form an essential part of the vessel's SMS under the ISM Code. Whilst the Master is in command of the vessel, the Officers of the Watch (OOW) are at all times responsible for the safe navigation of the vessel and compliance with the *International Regulations for Preventing Collisions at Sea (Collision Regulations)*.

#### 2.14.2 Watchkeeping underway

##### 2.14.2.1 Watchkeeping performance

The proper planning of watchkeeping by the Master must take into account

- trading area of the vessel
- turnaround schedule of the vessel
- workload of the individual officers
- weather conditions en route
- navigational hazards en route requiring additional navigational duties
- design and layout of the navigational instruments including the automatic steering.

The Master and the responsible OOW must ensure that every watchkeeper is sufficiently rested prior to taking over a navigational watch to prevent fatigue. The mandatory rest times required by the *Code and Convention on Standards of Training, Certification and Watchkeeping (STCW 95)* must be strictly observed. If these

requirements cannot be met, procedures must be in place to ensure that the vessel remains in a place of safety, which may require delaying the vessel's departure.

After commencement of the voyage the Master should ensure that every officer performs his/her watchkeeping duties and obligations with the utmost care and foresight. Careful preparation of the watch is essential, particularly when approaching confined waters or when manoeuvres such as embarkation of pilots are expected.

The Master should not hesitate to

- frequently check the performance of his/her officers
- alert the officers to omissions or non-conformities and require corrective action to be taken.

Any indication of alcohol abuse, intoxication and fatigue should not be tolerated and corrective action must be taken immediately.

The Master needs to ensure together with the Chief Engineer, that a proper engine watchkeeping is maintained on non-automated vessels. This also applies to periods of 'stand by engine' on unmanned machinery space vessels (UMS).

### 2.14.2.2 *Master's orders and instructions*

The Master should also ensure that his/her written orders are properly counter-signed by the officer of the watch. Failure to do so may indicate a lack of information and represent a real hazard to the vessel and crew.

## 2.14 Watchkeeping and navigation

### 2.14.2.3 *Handing over the watch*

The Master should instruct his/her officers not to hand over the watch

- if the relieving officer or other watch members appear unfit
- until the relieving officer is fully briefed
- until the relieving officer is satisfied that the contents of any specific instructions are understood
- until the vision of the relieving watch members is fully adjusted to the light conditions
- unless the vessel's position, course and speed are clear
- until the relieving officer is aware of the navigational situation and the traffic
- until manoeuvres initiated immediately prior to handing over the watch have been completed and the situation is clear.

If an officer of the watch is in charge and the Master attends the bridge, the Master should clearly state when he/she

- takes over from the watchkeeping officer, or
  - handing navigational command back to the watchkeeping officer.
- Such a takeover or hand back needs to be reported in writing in the relevant log.

### 2.14.2.4 *Taking over the watch*

The Master should instruct his/her officers to take over the watch only if

- the vessel's position has been verified, including the vessel's intended course and speed
- the traffic situation at the time of taking over the navigational watch has been properly assessed
- the expected weather, tides, currents, visibility have been taken into account
- any expected dangers of navigation during the forthcoming watch have been noted and precautionary measures taken
- the status of all bridge equipment including the settings of the bridge and engine controls have been verified

- the Master's written orders are fully understood and acknowledged
- appropriate instructions have been given to the other members of the navigational watch.

### 2.14.2.5 *Proper lookout*

The Master should instruct his/her officers to ensure that a proper lookout is maintained. The watchkeeping officer needs to be assisted by a lookout, especially in periods of darkness or restricted visibility. Some jurisdictions impose hefty fines if a collision or grounding is attributed to lack of a proper lookout and certificates of competency may be suspended or cancelled as a result thereof.

The helmsman – if used – should not be considered to be a lookout, as his/her duties are separate, unless

- on small vessels
- an unobstructed all round view is provided from the steering stand, and
- there is no impairment of night vision.

The provisions for proper lookout in the *Code and Convention on Standards of Training, Certification and Watchkeeping (STCW 95)* must be observed.

The Master should check frequently to ensure that a proper lookout is posted, when required. The logbook should show the names and periods of the posted lookout.

The lookout should be encouraged to report any concerns arising during watchkeeping to the officer of the watch. Any observations by the lookout should be taken seriously and appropriate acknowledgements should be made and actions taken.

## 2.14 Watchkeeping and navigation

### 2.14.2.6 *Compliance with Collision Regulations and Traffic Separation Schemes*

#### A. *General*

The *International Regulations for Preventing Collisions at Sea (Collision Regulations)* and Traffic Separation Schemes must be strictly followed. Any deviation from the rules and regulations may

- seriously impair the safety of the own vessel and other vessels
- result in considerable fines, penalties and even jail, which can be imposed on the Master and the officer of the watch long after the contravention took place
- result in certificates of competency being suspended or cancelled.

The Master should instruct his/her officers that any reasonable deviation from the rules and regulations should be properly reported to the supervising coastal authorities and their permission obtained beforehand.

In instances of fines being levied on the vessel, the Master or the crew please see section 3.7 Fines.

#### B. *Safe speed – use of engines*

The Master should encourage and emphasise that all officers should maintain a safe speed at all times. The Master should also ensure that the OOW is fully aware of the vessel's manoeuvring characteristics, including stopping distance so that proper and effective action can be taken at all times to avoid a collision.

The OOW must always make use of the vessel's engines to reduce the speed, whenever the situation requires, which gives more time to assess the situation.

### C. *Frequent navigational fixes*

The Master should ensure that frequent navigational fixes are taken by the OOW during the watch to assess the proper position of the vessel. Fixes should be taken by more than one method. Officers should avoid relying on the Global Positioning Systems alone but should verify the position fixes by other methods.

### D. *Use of radar and AIS – limited use of VHF*

Radars and Automated Identification Systems (AIS) should be used by the OOW irrespective of the state of visibility to become fully familiar with the systems in use. The Collision Regulations require the OOW to make use of all navigational equipment at all times to assess whether the situation can develop into a collision.

Before the OOW intends to make use of the VHF to verify the situation, the AIS should be used to its fullest extent. The uncoordinated use of VHF may shorten the valuable time available to properly assess the situation and take evasive action.

#### 2.14.2.7 *Weather reports*

The Master should ensure that weather reports are received regularly and are properly evaluated. It may be useful to review weather charts and synopses with the officers for training purposes, and to encourage them to regularly collect weather reports.

#### 2.14.2.8 *Keeping proper logs*

The proper and complete keeping of mandatory as well as additional logbooks is essential. Should a dispute arise a properly kept log is the best evidence to support the Company's position.

#### 2.14.2.9 *Distractions by domestic radios and entertainment devices*

The Master should ensure that the watchkeeping personnel must not be distracted by the use of domestic radios, CD players, television sets, mobile phones and similar devices to ensure that they concentrate fully on the duties of a navigational watch.



## 2.14 Watchkeeping and navigation

### 2.14.2.10 *Regular soundings*

If the vessel is not equipped with automatic sounding gauges, regular – at least daily – soundings of all tanks, bilges and wells should be taken and recorded in the ship's records to evidence regular monitoring of the vessel's condition.

Proper soundings will indicate any irregularity in the vessel's state and condition and may prevent disastrous consequences to the vessel, the crew and the cargo.

### 2.14.2.11 *Vessel's behaviour during passage – parametric rolling*

For further details please refer to *IMO MSC/Circular 707 Guidance to the master for avoiding dangerous situations in following and quartering seas*.

Handling a vessel in extreme conditions is a matter of experience combined with basic knowledge of the laws of physics. The Master should ensure that his/her officers always monitor the behaviour of the vessel in heavy weather. If heavy weather is anticipated, the Master should carefully plan together with his/her officers how to monitor the vessel's behaviour and what actions may be required bearing in mind the prevailing circumstances.

Heavy weather causing damage to the vessel may not only affect the vessel's safety but that of the crew, the cargo and, in the case of structural failure, the marine environment. The officers should also be made aware of particular areas where extraordinary high waves may occur.

Continuous observation of changes in trim and/or the vessel's rolling periods is required to avoid excessive rolling, known as *parametric rolling*. This is an unstable phenomenon which can quickly generate large angles of roll coupled with significant pitch and yaw motions when the following elements are present

- the vessel is in head or near head seas
- the natural period of rolling
- the wave length is of the order of the vessel length
- the wave height exceeds the critical level (the height which will allow the vessel's natural pitch/roll cycle to harmonise with the period of oncoming waves)
- the roll damping is low.

Roll damping is dependent on speed. Bow seas result in lower speeds, thus lower roll damping which results in larger roll motions.

The Master should refer to the Company's SMS and the underlying procedures when navigating in heavy weather.

### 2.14.3 Anchoring – watchkeeping at anchorage

For further details please refer to *Gard News 177, Anchoring – Getting into a safe haven or into a potential disaster?*

#### 2.14.3.1 General

Anchoring or lying at anchor should be carefully prepared with the same vigilance and awareness as berthing or unberthing. The consequences of an anchor not holding ground can be disastrous and may result in damage to the vessel, the environment and finally a costly salvage operation, if not the total loss of the vessel itself.

## 2.14 Watchkeeping and navigation

### 2.14.3.2 *Anchoring as part of the passage plan*

Anchoring should be part of the vessel's passage planning.

Following key factors need to be taken into consideration prior to any anchoring manoeuvre and must be communicated to the crew involved in such operations

- bottom conditions and depth of water versus length of anchor chain
- draft of the vessel
- the importance of detailed maps and local knowledge
- how to handle inaccurate or lack of information
- positioning aids used, precision and errors
- prevailing and any change in the weather conditions such as winds, currents, tides
- traffic density
- the point of no return off the lee shore.

### 2.14.3.3 *Proper selection of anchorage*

When selecting a proper anchor position, the following points need to be taken into account

- designated anchor positions
- restraints imposed by the coastal state or port authority
- topography both ashore and underwater
- nature of anchorage surface
- winds, currents and swell
- duration of stay at anchor
- density and proximity of other traffic
- state of engines and anchor equipment.

### 2.14.3.4 *Watchkeeping at anchorage*

The Master should ensure that, whilst the vessel is at anchorage the same principles are applied to watchkeeping as en route in addition to the requirements under the vessel's SMS and the SSP. This is particularly important at anchorages which are exposed to sudden

changes in the weather requiring immediate action to avoid the anchor dragging or similar problems, damaging the vessel and/or third party property.

A contingency plan must be in operation whilst at anchor in case of a shift in weather or other conditions. Watchkeepers should be alert to the slightest indication of a change in position or noises or vibrations coming from the anchor cable and should immediately initiate the contingency plan.

The watchkeeping officer should be able to immediately call upon a lookout, e.g. in times of poor visibility.

Whilst at anchor an alert watch must be maintained, i.e.

- constant monitoring of the vessel's position
- carefully monitor for drag
- watching the radio communication
- observing the movements of other vessels
- the surrounding area
- carefully observe any change in the weather, which may necessitate the watches to be strengthened or leaving the anchorage in time.

If another vessel is approaching on a collision course and avoiding action cannot be taken

- warning must be given immediately – light and sound
- the engines brought on stand by
- the Master called, and
- the anchor crew mustered.

## 2.14 Watchkeeping and navigation

### 2.14.3.5 *Maintenance of anchor gear*

The importance of maintaining the entire anchor gear in good condition cannot be over-stressed. The condition of the gear must be carefully checked prior to anchoring. The anchor brake lining must not be worn and additional chain stoppers must be in proper shape and fit for use. The maintenance of the anchor gear should be in accordance with the maintenance plan under the vessel's SMS.

### 2.14.3.6 *Securing of anchor gear during passage*

After leaving the anchorage the lashing and securing of the anchor gear must be performed with the utmost care for the forthcoming voyage. All chains must be in place, shackles secured and the brakes tight to avoid accidental running out of the anchor with the anchor

- slamming against the vessel's structure causing structural damages to the shell plating, or
- dragging unnoticed over the ground and damaging power and/or telephone cables and other supply lines.

Regular safety rounds should – if the weather permits – include the condition of the anchor gear.

## 2.14.4 **Watchkeeping in port**

For further details please refer to *Gard Loss Prevention Circular No. 04-03: Typhoon season precautions*.

The Master should ensure that, whilst the vessel is in port, the same principles are applied to watchkeeping as en route, in addition to the requirements under the vessel's SMS and SSP. This applies especially to ports exposed to a sudden change in the weather conditions requiring immediate action, to avoid lines parting or similar problems damaging the vessel and/or third party property.

Any necessary maintenance should not prevent the operation of safety systems and other systems required in port, e.g. for cargo handling.

Whilst in port safely moored alongside, the vessel's navigational lights need to be switched off to avoid confusing other vessels under movement. Leaving the navigational lights alight whilst moored alongside contravenes the Collision Prevention Rules and may incur a liability if another vessel is confused and causes damage.

### **2.14.5 Stay in shipyard or dry-dock**

When the vessel is to stay in a shipyard or a dry-dock, the Master and his/her officers should maintain the same safety and security standards as if in port. The Master and his/her officers should request that the same level, if not increased, safety precautions and safe working practices should be strictly applied by the dockyard workers to prevent not only personal injuries but also damage to the vessel itself, such as a fire or stability accidents. Close co-operation between the vessel's deck and engine officers and the shipyard engineers is required.

Dry-docking and undocking should be a critical procedure under the Company's SMS and need to be carefully planned and executed in strict conformity with these procedures.

## 2.15 Ballast water operations

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### 2.15 BALLAST WATER OPERATIONS

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#### 2.15.1 General

Ballast Water Management has become a matter of international concern. The Master is advised to obtain detailed information for all countries of call or passage to ensure compliance with national legislation and international recommendations such as the *IMO Resolution on Guidelines for the control and management of ship's ballast water to minimize the transfer of harmful aquatic organisms and pathogens (A20/Res.868)*. Non-compliance with national legislation may result in large fines being imposed on the Master and the vessel's officers and delay to the vessel with costs being incurred and possible claims made by the charterers.

#### 2.15.2 Automated cargo, ballast monitoring and control systems

For further details please refer to *Gard Loss Prevention Circular 11-02: Automated Cargo, Ballast Monitoring and Control Systems*.

Computerisation of vessel bridges and engine rooms is becoming more commonplace. Improper operation of advanced technology cargo and ballast monitoring and control systems can

- lead to unintended listing
  - excessive stresses on the structure
  - loss of positive stability,
- which may result in
- structural damage
  - pollution
  - damage to property on board and ashore.

Ballast water operations require careful planning and co-operation between deck and engine room personnel

- detailed instructions, preferably in writing, should be given before commencing any such operations
- proper and effective communication between the deck and engine room personnel is required.

Lack of regular inspections and breach of recommended testing and maintenance procedures can cause damage to cargo, ballast monitoring and control systems.

Section 7 of the International Safety Management (ISM) Code requires the Company to identify key shipboard operations that may have an impact on safety and pollution prevention. Procedures covering these operations must be documented and effectively implemented. These procedures include defining and assigning tasks to qualified personnel.

Sufficient training needs to be provided, for personnel responsible for the safe onboard operation, inspection and maintenance of such systems. The training and familiarisation requirements for joining personnel in respect of their responsibilities must be identified and fulfilled as required by the ISM Code and Code of Convention on Standards of Training, Certification and Watchkeeping (STCW 95). The operation and inspection of equipment undertaken by inexperienced and/or personnel recently having joined the vessel should be directly supervised by responsible personnel until such time that the person concerned is sufficiently familiar with the operation and/or inspection of the system.

The Master should ensure that the personnel involved in the operation, inspection, repair or maintenance of such systems have a good understanding of any limitations of the system and are aware of the “distraction” factor with special emphasis on the false sense of security that such technologically advanced equipment may provide.

If, for example, the vessel’s actual draft readings differ from those indicated by the automated cargo and control system, the Master and personnel involved should immediately verify the cause of the difference and take corrective action. The measures taken need to be recorded in detail in the appropriate log.



## 2.15 Ballast water operations

### 2.15.3 Ballast water exchange at sea

Ballast water exchanges at sea may be necessary to prevent the introduction into the sea of unwanted aquatic organisms from the vessel's ballast water and sediment discharges. Although there are no international regulations yet in force, many national regulations require

- ballast water exchange prior to arrival
- documented ballast water control procedures
- production of a ballast water exchange report upon arrival.

Failure to comply with the above regulations may result in large fines.

For further information on the prevention of the introduction of Aquatic Nuisance Species (ANS) please see section 2.16.3.3.F Pollution by ballast water.

Ballast water exchange at sea may

- cause critical situations, e.g. vessel's stability
- require procedures to be prepared by the Company.

The Master is advised to strictly adhere to the procedures and safety precautions provided in the SMS.

Safety issues involved in such operations include

- prevention of over and under pressurisation of ballast tanks
- free surface effects on stability
- weather conditions
- maintenance of adequate intact stability
- permissible seagoing strength limits of shear forces, bending moments and torsional forces
- maximum permitted draughts.

Any ballast water exchange must be carefully and constantly monitored and controlled, and contingency procedures should be in place to deal with any emergencies which may arise.

### 2.15.4 Ballast water exchange in freezing conditions

Ballast water exchange at sea in freezing weather conditions should be avoided as discharge arrangements, air pipes and ballast system valves may freeze and impair the entire operation and thus the safety of the vessel.

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### 2.16 MATTERS AFFECTING VOYAGE PERFORMANCE

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#### 2.16.1 Providing security – Letter of Undertaking

The P&I insurer is sometimes requested to provide a P&I Club Letter of Undertaking (LOU) to prevent the vessel being arrested by a claimant. This situation may arise when

- persons other than the crew are injured whilst on board the vessel
- when cargo is damaged during the voyage
- pollution has occurred and has caused damage to the environment or third party property
- there has been a collision between the own vessel and another vessel.

Claimants may threaten to arrest the vessel in order to seek security for their alleged claim. To prevent the vessel from being delayed, the P&I insurer usually provides a LOU, if certain conditions are fulfilled, e.g. the claim must fall under the P&I cover provided, the premiums be fully paid up etc. It should, however, be noted that the P&I insurer is not obliged to do so.

In most jurisdictions, the claimants accept a LOU rather than insisting upon being provided with a bank guarantee or security posted in the form of cash. A LOU can often be provided within a very short time, whereas providing a bank guarantee or posting security in the form of cash can often be very time consuming as well as costly. There is also the fact that in some countries posting cash as security may lead to a wait of several years before the security is released, and may in the meantime have lost value due to currency fluctuations.

The P&I insurer may also be requested by claimants to provide a P&I Club LOU to cover liability that should more properly fall on the hull underwriters, e.g. in a collision case where the hull underwriters cover three-fourths of the liability.

One reason for such a request is that a LOU from an International Group P&I Club is often more widely accepted than a LOU from the hull underwriters, and can also be arranged more quickly and with less costs involved. Gard's policy in these circumstances is that a P&I Club LOU can be injected as security for liabilities covered by the hull underwriters if Gard Marine & Energy has the claims lead on the Hull and Machinery policy. Gard P&I may do so against countersecurity in the form of a letter of indemnity from Gard Marine & Energy, covering all hull underwriters.

Gard P&I as P&I insurer and Gard Marine & Energy as Hull and Machinery insurer are together in the position of being able to provide the full range of insurance covers and services the shipowners may need when it comes to collision and FFO risks.

### 2.16.2 Fines

In most jurisdictions, the vessel, the Master and his/her crew are all subject to fines if a shore official observes the slightest irregularity. Fines may range from insignificant to extraordinarily large amounts. It is not uncommon for fines to be considered part of a country's national budget in some jurisdictions. Therefore, the Master and his/her crew must closely adhere to all international conventions, national laws and regulations to prevent any fines being imposed.

Fines may be imposed on the vessel, the Master, officers and/or crew for a wide range of violations including

- contravention of Collision Prevention Regulations and national waterway regulations
- contravention of traffic directives given from ashore
- expiry of the vessel's trading documents
- irregularities in customs forms, manifests and crew lists
- discrepancies in ship's stores, medical stores and crew's personal effects declarations
- outdated medicines in the ship's medicine stores

## 2.16 Matters affecting voyage performance

- in some countries, out of date provisions on board
- pollution of the marine environment, irrespective of pollutant
- breach of MARPOL regulations
- the presence of stowaways on board.

Forms and lists to be presented to national authorities upon entering a port should be completed with the utmost care and attention, these include

- crew list
- customs declaration list
- stores, food and provisions list
- medicines list
- manifests
- oil record book.

Some countries require a separate declaration for any medicines containing narcotics, strong, psychotropic or poisonous substances and also separate safe storage of the same.

The slightest irregularity may lead national authorities to impose a fine or initiate criminal prosecutions. The P&I insurer does not cover any fine that results from any wilful act or omission of the Company, the Master or the crew, such as smuggling, carrying contraband or intentionally misleading entries in the vessel's logbooks.

Landing of material or equipment from the vessel, or luggage or spares without prior written declaration and permission from the competent customs authorities may, in some countries, lead to a fine being imposed on the Master and/or the vessel. The Master is advised to contact the ship's agent before discharging any item.

For further details please refer to *Gard News 178, Declaration of medicines on board*.

For the imposition of fines on the vessel, the Master or the crew and how to respond to the same, please see section 3.7 Fines.

### 2.16.3 Pollution

#### 2.16.3.1 General

Due to the increased global focus on environmental issues, pollution, irrespective of the substance and cause involved, not only attracts immediate public attention but constitutes a criminal offence in most countries, often with severe personal consequences for the Master and the ship's personnel involved.

As pollution has far reaching consequences reference should always be made to the *Gard Handbook on Protection of the Marine Environment*.

Every aspect of pollution is dealt with in detail in the above Handbook. Information can be found on

- general environmental issues
- major causes of marine pollution
- pollution prevention
- reducing pollution
- contingency planning
- international and national historical and legislative background
- MARPOL 73/78, including all Annexes
- other relevant environmental conventions
- national response systems
- liability and compensation schemes.

Due to the current focus on pollution some aspects are briefly dealt with in this section.

## 2.16 Matters affecting voyage performance

### 2.16.3.2 *Pollutants*

Different types of substances, and operations or accidents can cause pollution of the environment. Major pollutants are

- oil and oily substances – bunker oil, lube oil and oil cargoes
- cargoes such as
  - noxious liquid substances in bulk
  - harmful substances carried in packaged form
- sewage
- garbage and waste
- air pollutants such as soot and sulphuric acid from the ship's exhaust
- ballast water.

### 2.16.3.3 *Types and causes of pollution*

**The Master should always seek immediate assistance if his/her vessel has caused pollution, irrespective of the type of pollution involved!**

For further details please see section 3.12 Pollution.

#### A. *Pollution by oil*

Pollution by oil and oily substances causes considerable harm to animals and plants as well as damage to third party property during clean-up. Some affected property cannot be cleaned or repaired and must be replaced. Pollution by oil cargoes receives a lot of attention in the media but is actually a minor contributor to oil pollution world-wide. The most common type of pollution is caused by bunker heavy fuel oil. Pollution by heavy fuel oil is serious due to its chemical consistency and properties thus

- having a more harmful impact on the maritime environment
- making clean-up more difficult and expensive.

Pollution by fuel oil can occur

- during bunkering operations
  - alongside the berth
  - on the roads
  - in the open sea
- during shipboard operations such as re-pumping and/or ballasting measures
- due to an accident
  - collision
  - contact with FFO
  - grounding
  - structural failure of the vessel
- as a deliberate act of discharging oil or oily substances into the sea, which may constitute a criminal act.

During bunkering operations, whether in port, alongside or at anchor, utmost care and attention is required by all crew members involved. Bunkering must be carried out in strict conformity with the Company's Shipboard Operations for Bunkering.

The prevention of pollution by oil is covered by MARPOL 73/78 Annex I.

### *B. Pollution by noxious liquid substances*

Pollution by noxious liquid substances in bulk, i.e. chemicals, is rare and occurs mainly during cargo operations or as a consequence of an accident such as a collision or structural failure. However, the damage to the environment may be catastrophic, depending on the nature of the chemicals escaping from the vessel, and the effects are immediate and long lasting. The prevention of pollution by noxious liquid substances is covered by MARPOL 73/78 Annex II.



## 2.16 Matters affecting voyage performance

### C. *Pollution by harmful substances – dangerous goods*

Pollution by harmful substances carried by sea in packaged form occurs occasionally by accident when cargo is lost overboard and to a lesser extent during cargo operations. The prevention of pollution by harmful substances carried by sea in packaged form is covered by MARPOL 73/78 Annex III.

### D. *Pollution by sewage*

Pollution by sewage has become a problem due to the increased awareness of protection of the marine environment. More stringent regulations to prevent pollution by sewage and thus avoid detrimental effects on the marine environment and its flora and fauna have been required due to the increasing number of passengers carried by sea. MARPOL 73/78 Annex IV sets out regulations for the Prevention of Pollution by Sewage from Ships.

### E. *Pollution by garbage*

Pollution by disposal of ship's garbage is not only prohibited under MARPOL Annex V but also constitutes a criminal offence similar to pollution by oil in most jurisdictions.

Pollution by garbage is mainly caused by careless or intentional disposal overboard. It has various impacts on the environment. Garbage not only pollutes beaches and estuaries but also harms marine fauna. It can seriously disrupt factories which are located on waterways and use water for cooling purposes, by blocking their suction cages.

In ports with garbage disposal facilities, garbage disposal should be carried out in accordance with the vessel's Garbage Management Plan.

Garbage includes

- ship's domestic waste
- wrappings from provisions and stores delivered on board
- remnants and sweepings from the cargo holds.

The prevention of pollution by garbage is covered by MARPOL 73/78 Annex V. The Master and his/her officers are advised to refer to Annex V for a detailed definition of "garbage".

### F. *Pollution by ballast water*

Ballast water from vessels is one of the major sources of the global introduction and spread of harmful aquatic organism and pathogens.

On 1 December 1997, the IMO Assembly adopted *Guidelines for the Control and Management of Ship's Ballast Water to Minimize the Transfer of Harmful Aquatic Organism and Pathogens* (A20/Res.868).

On the basis of this resolution and the US National Invasive Species Act of 1996, the US Coast Guard introduced both regulations and voluntary guidelines on 1 July 1999, to control the invasion of aquatic organism and pathogens which

- amend existing regulations for the Great Lakes Ecosystem
- establish voluntary ballast water management guidelines for all US waters
- establish mandatory reporting for nearly all vessels entering US waters.

A Master trading to the US or areas where similar regulations are in force should make enquiries with the local agents before entering the relevant Exclusive Economic Zone (200 nautical miles) regarding how to comply with the ballast treatment programme in force.

## 2.16 Matters affecting voyage performance

The Master should ensure that he/she is familiar with all relevant local and international requirements in force. Certain port States have imposed significant control procedures, detentions and fines on vessels discharging ballast water in their jurisdictions. For example, ballast water cannot be discharged in some countries without permission and the authorities in others often impose large fines for discharges of clean water.

### G. *Air pollution*

Air pollution is caused by deficiencies in vessels' exhaust pipe filters when burning heavy fuel oils. Air pollution from exhaust gases is said to contribute to global warming and can only be reduced by achieving a more efficient combustion of fuel oils.

Although less prevalent today, pollution of air by soot from the ship's funnel may still occur. In such instances, the consequences are often far reaching as soot particles can be carried for miles and damage third party property. Furthermore, clean-up is labour intensive and thus costly.

Annex VI to MARPOL 73/78 sets out regulations for the prevention of air pollution and came into force on 19 May 2005. The Master, his/her officers and engineers are advised to consider and comply with MARPOL 73/78 as well as any national regulations.

In April 1999, the European Union (EU) issued a directive (1999/32/EC) which came into force on 1 July 2002, stating that a sulphur cap is in place on inland use of middle distillate fuels with a similar cap being placed on the marine use of such products. In summary, the directive puts a sulphur cap on all grades of fuel within Table 1 of ISO 8217:1996. The EU directive includes a sulphur cap of 0.2 per cent by mass on marine diesel oil (MDO).

This EU directive places considerable restrictions on the use of MDO, particularly for transit between EU ports. Therefore, the Master, his/her officers and engineers should ensure that he/she has up to date information on the specific requirements of the EU which may be more stringent than those under MARPOL, Annex VI.

### 2.16.3.4 *Control and measures to avoid pollution*

#### A. *Familiarisation with the SMS and MARPOL 73/78*

The Master, his/her officers and all shipboard personnel likely to be involved in essential shipboard operations relating to the prevention of pollution by oil should acquaint themselves not only with the operations laid down in the Company's SMS but also with the provisions of MARPOL 73/78 and its latest amendments.

Any deviation from international and national rules for the prevention of pollution is considered a criminal offence in most jurisdictions and has far reaching personal consequences for the Master, officer or engineer concerned.

#### B. *Special areas*

When entering Particular Sensitive Sea Areas (PSSA) the Master and his/her officers are advised to carefully comply with the special regulations in force, such as

- the absolute prohibition of discharge of oil, oily substances or ship's grey water, the latter permitted only by strict compliance with special requirements, and
- the proper notification to the competent authorities before entering PSSAs.

Any contravention of these regulations not only constitutes a criminal offence, but may have serious financial consequences for the Company and sometimes the P&I insurer.

## 2.16 Matters affecting voyage performance

### C. *Accuracy of records*

The Master and his/her officers are advised to keep proper and accurate records in the *Oil Record Book* and *Garbage Record Book*. The slightest irregularity in these records may lead an authority to not only carry out a more detailed inspection but to also impose a fine on the person responsible as well as the Master. Irregularities in these record books may, in some countries, constitute a criminal offence and could even lead to imprisonment.

### D. *Port State control inspection*

Under MARPOL, port State control officers may at any time carry out an inspection when there are clear grounds for believing that the Master or crew are not familiar with their obligations under MARPOL. Such inspections may result in the vessel being detained without notice until steps have been taken to rectify the situation.

### E. *Co-operation with authorities – no voluntary admission of liability*

If pollution has occurred, the Master and/or engineers should co-operate with the authorities to limit any consequences thereof. Before any admission of liability is made by the ship's personnel, the P&I insurer and the correspondent, or the lawyers representing the Company should be consulted.

If the Master, however, feels his/her vessel is wrongly accused or any response action taken by the authorities is incorrect, he/she may make a note of protest, but should seek advice from the P&I insurer and the correspondent or the lawyers representing the Company before doing so.

### F. *Pollution not caused by the own vessel*

If the Master or any of his/her crew discover pollution of air or water not caused by the own vessel, the Master is advised to gather as much evidence as possible of the pollution and its suspected

source. The Master should in any case request assistance from the correspondent to prevent a fine being imposed against the own vessel.

In the event of pollution please see section 3.12 Pollution.

### 2.16.4 Collision

#### 2.16.4.1 *Causes of collision*

For further details please refer to

- section 1.8 Difference between P&I insurance and Hull and Machinery insurance
- *Gard News 178, The interface between Hull and Machinery insurance and P&I from the P&I claim handler's perspective*
- *Gard News 173, Collisions – why do they occur?*

Despite the fact that more and better navigation aids are available, collisions nevertheless do occur. The causes are often

- over reliance on the navigation aids available
- mistaken evaluation of the information provided by such aids
- wrong conclusions drawn from given situations
- too narrow safety margins
- underestimating the prevailing tides and currents
- overestimating the vessel's manoeuvrability
- insufficient reduction of speed in restricted visibility
- failure to post and maintain a lookout
- insufficient knowledge or wrong assessment of the ship's position
- incorrect identification of VHF traffic causing confusion between two vessels
- poor communication between the Master and the officer of the watch as to who is actually in command of the watch
- insufficient engine or rudder manoeuvre in adequate time
- sudden failure of navigational equipment, propulsion or steering systems.

## 2.16 Matters affecting voyage performance

The best precautions to prevent collisions are

- constant vigilance and attention
- proper and clear communication by and between everybody in charge of the navigation of the vessel
- proper application of the Collision Prevention Regulations.

### 2.16.4.2 *Insurance cover*

In terms of insurance, a collision requires contact between two vessels. Under some insurance arrangements the liability for damage to the other vessels can fall

- fully under the Hull and Machinery insurance cover
- fully upon the P&I insurer
- under the English ITC hulls rule – 25 per cent with the P&I insurer and the remainder with the Hull and Machinery insurer, in which case, the P&I insurer normally takes the lead in the investigation and any resulting proceedings.

Please also refer to section 1.8 Difference between P&I insurance and Hull and Machinery insurance.

### 2.16.4.3 *Collision at sea*

Despite vessels being constructed to provide sufficient buoyancy if one or more of the vessel's compartments are flooded, the sequence and impact of a collision can never be foreseen as there may be an immediate loss of sufficient buoyancy. In such circumstances, knowledge of the vessel's Emergency Contingency Plan is vital. Survival of the crew can only be ensured if the crew is trained to such an extent that every crew member is able to carry out his/her emergency role. It cannot be emphasised enough that proper familiarisation with lifeboat exercises is in many cases vital for the survival of the crew and subsequent rescue by other vessels. The only help that may be available at sea is often the other vessel involved in the collision.

Collision drills and exercises are important as the Master and his/her officers are made aware of what can be expected in a real emergency situation. These drills include all the elements involved in making the vessel watertight.

The Master and his/her officers should always take early action to avoid a situation which may result in a collision. As a general rule the Master and his/her officers should act before the Collision Regulations apply.

The use of VHF for meeting or overtaking arrangements should be avoided if possible. If VHF is used, it should only be used after positive identification has been established. The communication must be clear, concise and timely to prevent wasting valuable time which would be needed for evasion manoeuvres. Misleading arrangements with another vessel on meeting or overtaking, such as passing against the Collision Regulations (e.g. green to green) must be avoided.

### 2.16.4.4 *Collision in confined waters*

Collisions in confined waters, such as rivers and canals, often occur with a pilot in attendance. In many cases the collision can be attributed to the lack of proper communication between the Master and pilot, or unauthorised interference by the pilot. Constant attention to the pilot's navigation is therefore the best advice to prevent a collision occurring. If the Master is in any doubt about any of the pilot's recommendations as to speed in reduced visibility, coming from either the pilot or the Vessel Traffic Service System (VTSS) ashore, the Master should not hesitate to intervene.



## 2.16 Matters affecting voyage performance

Collisions in confined waters may also be caused by the incorrect identification of other vessels when using VHF. Clear and concise communication between vessels is essential, and where applicable stating the vessel's name, call sign and position as identified by the AIS. Another cause for collisions in confined waters is loss of control of the vessel.

### 2.16.4.5 *No use of GSM or other mobile telephones*

There have been reported incidents where the use of GSM mobile telephones has

- distracted the Master or officer of the watch from his/her navigational duties, or
- caused a sudden failure of the vessel's steering system.

Although the effect of GSM mobile telephones on the vessel's equipment may have been investigated previously, the Master should prohibit the use of mobile telephones whilst manoeuvring in confined waters.

### 2.16.4.6 *Collisions may constitute a criminal offence!*

In an increasing number of jurisdictions, collisions between vessels may constitute a criminal offence for which the Master and the officer concerned may be subject to criminal prosecution. Fines are imposed in most jurisdictions, however, the Master and officer may also be detained and possibly arrested even where no personal injury or oil pollution has occurred. Detention cannot always be averted despite lawyers being instructed to protect the interests of the Master, the officer, other crew members concerned and the Company.

After a collision has occurred and the vessel has arrived in port, the Master and crew are advised not to discuss the collision with anyone unless the correspondent or lawyer appointed by the Company, Hull and Machinery or P&I insurer is present.

### 2.16.4.7 *Note of protest after collision*

It is advisable to lodge a note of protest or sea protest in some jurisdictions, to protect the right to claim against the other vessel. The Master should seek advice from the correspondent or lawyer instructed.

For further measures to be taken in collision cases, please see section 3.3 Collision.

## 2.16.5 **Damage to fixed and floating objects (FFO)**

### 2.16.5.1 *Insurance cover*

Damage to FFO involves contact between the vessel or the vessel's gear and the damaged object – which excludes another vessel. Liability may be covered either by the Hull and Machinery insurer or the P&I insurer. The standard insurance terms may be amended and the vessel's insurance certificates will state who covers the vessel for damage to FFO.

### 2.16.5.2 *Objects likely to be damaged*

A wide range of objects may fall into this category, such as

- shore gantry cranes
- supply pipes, e.g. water and gas
- piers
- jetties
- locks and lock gates
- navigational aids such as buoys and even lighthouses
- fishing gear and aqua farms, particularly near the coastline.

Damage to FFO tends to occur in confined waters mainly when a pilot is in attendance. To ensure vigilance at all times, the Master should

- closely monitor the navigation of the vessel on leaving and entering a port under pilot assistance
- provide the pilot with the completed MPX form, please see Annex 6

## 2.16 Matters affecting voyage performance

- collect from the pilot the MPX form, please see Annex 7
- refuse to let the pilot take over the helm (unless necessary in the circumstances).

Please see also section 2.13.5 Pilot assistance.

Damage to berths and jetties can in many cases be prevented if sufficient tug assistance is used. In circumstances where there are strong currents and tides or strong winds, the Master should always consider using tug assistance or delaying the manoeuvre until the prevailing situation improves.

When swinging off the berth before berthing, the Master should ensure that the tugs have brought the vessel under control sufficiently far off the berth before final approach.

Replacement towing lines should be available on the vessel and ready to be deployed if the tug's line is rejected due to its poor condition or if the tug's line parts.

On leaving or entering a berth where container or other gantry cranes are located close to the quayside, the Master should

- verify the vessel's highest point (air draught), i.e. aerial or mast
- verify with the pilot the air clearance of the gantry cranes
- reduce speed in time on approach to the shore installation
- avoid coming into contact with the shore installation.

### 2.16.5.3 *Damage to lock gates and walls*

If lock gates are damaged to the extent that the locks cannot be operated, this may result in

- vessels being delayed and thus exposing the Company to a claim for detention in some jurisdictions
- pier operators claiming commercial losses due to loss of use of the pier.

In many cases, in addition to the costs of reconstruction, compensation is claimed for consequential losses, detention and loss of use.

### 2.16.5.4 *Damage to navigation aids*

Damage to navigation aids such as light buoys can have disastrous consequences. Contact with a buoy may go unnoticed and if the buoy is not replaced, another vessel may be misled and run aground. Courts in some jurisdictions award generous compensation to those whose property is damaged in such circumstances.

### 2.16.5.5 *Damage to aqua farms and fishing gear*

The costs of physical damage to aqua farms and fishing nets are relatively insubstantial but claims for consequential losses may be considerable. Particular attention should be given to the navigation in areas where fishing nets are thought to be located. It may be advisable to post a lookout equipped with a powerful searchlight on the forecastle and to establish a proper chain of communication.

An anchorage must be carefully selected to prevent the vessel from drifting into aqua farms or fishing gear. When anchored close to such areas

- a careful watch should be kept at all times
- constant bearings must be taken.

## 2.16.6 **Damage to other property**

### 2.16.6.1 *Insurance cover*

Insurance cover for loss of or damage to property other than FFO is a complex subject. Such claims may fall under the Hull and Machinery insurance or the P&I insurance. As a general rule, incidents involving loss of or damage to property not belonging to the vessel and where there is no contact with the vessel's hull will, in most cases, be covered by the P&I insurer.

## 2.16 Matters affecting voyage performance

### 2.16.6.2 *Damage caused by manoeuvring the vessel*

Some hull policies cover damage caused to other vessels when manoeuvring the own vessel, e.g. wash damage. Damage arising out of a manoeuvres which cause another vessel to run aground, collide with another vessel, or damage a FFO is covered by the P&I insurer subject to the individual certificate of entry.

Such damage is likely to occur in confined waters when approaching estuaries or pilotage areas. Wash damage can occur when a vessel has a poor trim or proceeds at excessive speed in confined waters, e.g. rivers. Claimants include marinas and the yachts and boats using them. There may also be damage to river banks and the vessels and barges tied up alongside, including newbuildings berthed at shipyards. The risk of wash damage is greater in tidal rivers where the mooring arrangements of other vessels may be inadequate. Whilst manoeuvring alongside moored vessels, special attention should be paid to vessels such as tankers, reefers or ro-ro vessels using fixed installations, such as chic-sans, flexible pipelines, booms, banana elevators or ramps. The slightest movement of such vessels may cause extensive damage and commercial losses.

An erratic or unexpected manoeuvre may cause another vessel to run aground, collide with a third vessel, or damage a FFO which may result in substantial claims. To prevent such situations arising, the Master should ensure that

- there is always a safe distance between vessels
- vessels involved are clearly identified when exchanging VHF messages.

When overtaking, being overtaken or meeting another vessel in rivers and canals, manoeuvres should be commenced only

- after clear and precise information is exchanged as to which sides the vessels will pass
- if there is safe clearance between the two vessels to avoid contact
- if there is safe clearance to the river or canal banks.

### 2.16.6.3 *Damage caused by the vessel's anchors or mooring lines*

Whether near the coast, in rivers, canals or open sea, considerable care must be taken when anchoring. An anchor may drop on, pick or become entangled with a range of underwater pipelines and cables such as fresh water pipes, gas pipes, electricity and communication supply lines etc. In such circumstances

- the damage can be extensive
- in some jurisdictions claims may be brought for consequential damages, such as loss of fresh water supply and commercial losses suffered by consumers.

By way of precautionary measures the Master should therefore

- carefully plan the location of an anchor manoeuvre
- satisfy himself that the seabed is free of cables and pipes
- after weighing the anchor, only make headway after the anchor is well aweigh or, better still, out of the water
- ensure that the entire anchor gear is secured to avoid the anchor cable running out unnoticed when proceeding to sea
- take in mooring lines before making headway.

### 2.16.6.4 *Damage to shore installations and property*

Damage to shore installations and property may be caused by

- the vessel's equipment such as cranes and derricks coming into contact with shore installations
- ranging alongside which may cause
  - mooring lines to part
  - discharging or loading hoses to break resulting in oil or chemical spills and consequently pollution
  - equipment such as rented gangways or conveyor belts etc., to break and/or fall into the water.

## 2.16 Matters affecting voyage performance

If container gantry cranes are damaged, the terminal operator will be deprived of their use which may result in substantial financial losses. Accordingly, the vessel's derricks, cranes and other hoisting equipment should only be moved

- by the vessel's crew subject to a permit-to-work procedure
- provided a responsible officer is supervising the operation.

All mooring lines should be kept tight at all times to prevent the vessel ranging alongside and tidal conditions must be taken into account.

In the event of damage to third party property or FFO please see section 3.4 Damage to FFO – property damage.

### 2.16.7 General average – grounding and salvage – fire

#### 2.16.7.1 General average

The Master should understand that a general average in terms of the York-Antwerp Rules arises only when:

*“Extraordinary sacrifice or expenditure is intentionally or reasonably made or incurred for the common safety for the purpose of preserving from the peril the property involved in a common maritime adventure.”*

(York-Antwerp Rules 2004 Rule A).

Examples of events giving rise to a general average declaration could be

- fire on board
- grounding
- major collapse of cargo
- jettison of cargo
- main engine breakdown
- loss of rudder or propeller
- serious structural failure.

## 2.16 Matters affecting voyage performance

These incidents may result in extraordinary sacrifices, such as

- flooding a full cargo hold to confine a fire
- jettisoning deck cargo to regain stability.

It may be necessary to

- request a salvage tug to attend to save the vessel or to keep her away from the shoreline
- have the vessel towed into a port of refuge.

The parties who contribute in general average are the parties with an owning interest and usually an insurable interest in the adventure: the owners at risk for the vessel, cargo, bunkers and freight.

An incident leading to general average affects in all instances the Hull and Machinery insurer as well as the cargo insurer. Such an incident may often include elements such as pollution, threat of pollution, personal injury or other risks falling under the P&I insurance. Accordingly, the P&I insurer or its correspondent should be contacted without delay in order to assess the situation. A surveyor needs to be appointed for the Hull and Machinery insurer to investigate the cause and extent of the accident and a general average surveyor will frequently be appointed on behalf of all the interested parties. In addition, a surveyor for the P&I aspects of the incident may have to be appointed to investigate the extent of their involvement. The Company will, in co-operation with its Hull and Machinery insurer and the appointed general average adjuster, take the steps necessary to obtain a general average bond or guarantee and a non-separation agreement if required, prior to the discharge of the cargo and consider any further steps to secure the interests in general average. Cargo interests often try to deny their legal obligation to contribute their share in general average based on allegations of unseaworthiness and breach of contract of affreightment.



## 2.16 Matters affecting voyage performance

The Company and the P&I insurer may also be liable for the costs of the measures undertaken to prevent or minimise damage to the environment as such costs are only allowed in general average in certain circumstances.

Due to the complex nature of general average and the mechanism for the allocation of expenses, the Master is best advised to keep a detailed chronological record of all actions taken, so that the Company and the P&I insurer can justify their position to the various interests contributing in the general average.

For further information on general average please refer to section 3.9 Grounding and salvage – General average.

### 2.16.7.2 *Grounding and salvage*

For further details please refer to Gard Circular to Members No. 05/2000.

A grounding can be caused by

- the vessel losing her manoeuvrability
- underestimating natural forces such as wind and tidal currents
- manoeuvring to avoid collision with another vessel
- losing control of the vessel
- uncharted underwater obstructions
- incompetent navigation
- dragging of anchor
- negligent passage planning not considering water depths
- improperly corrected sea charts
- ‘edge cutting’ on passage
- fatigue and falling asleep
- negligent watchkeeping
- intentionally, in an emergency, to prevent the vessel sinking.

## 2.16 Matters affecting voyage performance

Salvage assistance in the form of a salvage tug is necessary if the vessel has lost her ability to manoeuvre or is firmly aground.

As the salvage costs are covered by the Hull and Machinery cover, the Master should immediately contact the Hull and Machinery insurer enabling them to send a surveyor to the scene to assist with the salvage or refloating efforts.

Under the ISM Code the Master has the overriding authority and responsibility to make decisions with respect to safety and pollution prevention – section 5.2 of the ISM Code. Therefore, the Master himself may have to make the decision to engage a tug. Under the Lloyd's Standard Form of Salvage Agreement (LOF 2000) the salvor is entitled to claim special compensation in addition to the salvage reward for efforts to minimise or prevent damage to the environment. If this special compensation is not covered by the Hull and Machinery insurer, the P&I insurer may become involved. The salvors may advise the Master that they intend to invoke the SCOPIC Clause (Special Compensation P&I Clause), which means that the salvor will be entitled to a fixed compensation from the P&I insurer for his efforts to minimise or prevent damage to the marine environment.

In such instances, the Master should immediately inform the Company and the P&I insurer enabling them to send a representative to monitor the activities and expenditure of the salvors. The P&I insurer may also become involved generally, as salvage in most cases results in a general average.

In circumstances where the vessel has run aground, please see section 3.8 Grounding and salvage – general average.

## 2.16 Matters affecting voyage performance

### 2.16.7.3 Fire

For further details please refer to *Gard News 175, Facing the challenge of fire at sea.*

Fire on board a vessel is one of the most dangerous situations for both crew and passengers. A fire on board may result in the total loss of the vessel. The Master and crew must be trained and drilled to react professionally to any fire. A well-trained crew is often able to contain a fire or even put it out, not only saving lives but also the vessel itself and the cargo.

The success of effective fire fighting is dependant upon a quick response

- immediately assess the source of the fire
- alert the entire fire fighting team and equip them ready to respond
- close all the vessel's openings as quickly as possible.

It is essential that all members of the crew and other persons not directly involved in the fire fighting operation are evacuated as quickly as possible.

It is a mandatory requirement under section 8 of the ISM Code to be prepared for such an emergency.

As in any marine accident, the vessel should not be abandoned hastily, without the Master and his/her officers having evaluated the stability of the vessel.

To prevent a fire occurring, safe working practices and smoking restrictions must be observed

- on all tank vessels
- on dry cargo vessels during cargo operations and when carrying dangerous goods on deck, even if stowed in containers
- on deck on all vessels whilst in port

## 2.16 Matters affecting voyage performance

- in the holds and engine rooms of all vessels
- and in the cabin bunks.

Please also see section 2.8.5 Safe working practices.

The Master should ensure that the entire crew is aware of the risks of

- smoke – irrespective of its source
- pipe leakage
- storage of combustible materials in confined spaces
- defective insulation and electrical wiring
- cargo remnants in the holds or spaces on deck forming a dangerous mixture likely to combust.

In addition, sufficiently large and clearly marked NO SMOKING signs must be displayed in prominent places on board and observance of the no smoking policy must be monitored. All personnel and visitors must be made aware of the smoking restrictions.

In case of fire please see section 3.8 Fire.

### 2.16.8 Diversion – deviation

A vessel may divert from the planned course or schedule to

- land ill or injured crew members, passengers, stowaways, refugees or persons rescued from the sea
- call at a port of refuge if the safety of the vessel is endangered
- carry out emergency repairs at a port of refuge
- replenish bunkers, fresh water, stores etc. – although a diversion for such activities should not under normal circumstances occur as an unplanned event.

Diversion needs to be distinguished from deviation. A diversion from a course or route may be justifiable if necessary, e.g. to save life; a deviation is usually unjustified and may deprive the Company

## 2.16 Matters affecting voyage performance

of defences or rights of limitation that might otherwise be available. The P&I insurance normally covers the Company for certain extra costs incurred in diverting a ship to land an injured or sick person, search for a person missing from the ship and for the purposes of saving persons at sea. The Company will often be under a duty to divert the vessel in such cases and if it does not the Company may be exposed to liability.

P&I cover for cargo liability may also be prejudiced if such liability arises from a deviation. There is an implied duty under contracts of carriage to prosecute the cargo voyage by the usual and customary route and with reasonable dispatch. If the carrier intentionally commits a deviation and is not excused from doing so by either custom, agreement or statute there is a risk that certain defences or rights of limitation will not be available to the carrier, which may otherwise have been available under the contract.

Although most, if not all, contracts of carriage contain a *liberty clause*, which seeks to expand what is to be considered “usual and customary”, e.g. “*to call at any ports in any order*”, the courts will generally restrict the carrier’s ability to rely on such clauses and if the deviation is committed purely for the carrier’s own benefit it is unlikely to be considered justified, even within the context of a *liberty clause*. In many cases, the P&I insurer can arrange additional insurance for deviations on the Company’s behalf and at their expense. If a diversion from the planned route is intended, the Master, or more usually the Company, should seek prior authorisation from the P&I insurer.

Please refer to *Gard Guidance on Bills of Lading*.

## **Part 3 – Incident response advice**

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**3.1 GENERAL RESPONSE ADVICE**

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**3.1.1 Company's and vessel's Emergency Contingency Plan**

When an incident occurs, the Master and his/her officers should always refer to the Company's Emergency Contingency Plan as required by the ISM Code. This Emergency Contingency Plan may have a different name under the safety management system implemented by the Company and the vessel. Such a plan should contain the Company's and the vessel's effective response to potential emergency situations.

When reporting to the Company following an incident, there may be forms in existence which most probably differ from those set out in this Part.

**3.1.2 Purpose of Incident Response Advice**

The purpose of Part 3 differs from the Company's reporting requirements. This Part 3, covering "Incident Response Advice" is intended to serve

- as a quick pathfinder, and
- helpful tool
- to collect comprehensive evidence, and
- retain important documents.

**The list of actions to be taken, evidence to be collected and documents to be retained as set out in this section is only a guide and should not be considered a conclusive checklist as each and every case is different!**



## 3.1 General response advice

### 3.1.3 Be prepared!

Even on the best run vessels accidents may still occur. If this happens, the consequences of an accident need to be and can be reduced if the Master and his crew are trained and prepared to respond in a professional manner and can be minimised by

- the first steps taken, i.e. the initial response
- collection of evidence
- documents to be retained.

The ability to react to a developing situation should be trained and drilled wherever and whenever appropriate in accordance with the vessel's Emergency Contingency Plan as required by the ISM Code, section 8 – please also see section 2.7 Training and drills.

If the Master and his crew know what to expect, they will not be surprised or caught out!

### 3.1.4 The Master is the leader!

Leadership is needed when an incident occurs. The Master is the person on the spot whose professional judgement and skill must be used to deal with the situation to protect life, property and the marine environment.

### 3.1.5 Do not underestimate an incident!

The Master and his officers should never underestimate an incident. It may look trivial, but its consequences can be serious.

The Master may be of the view that his vessel is not responsible for the incident or that any damage to the vessel or her machinery is minimal; however, this may not turn out to be the case. Alternatively, things may not turn out to be as they seemed at the time of the incident – a concerned or involved party may initially not complain or may play down the incident; a cargo with only slightly damaged packaging may have badly damaged contents; and the structure or foundations of a pier wall may be damaged even though

the wall itself shows only traces of chafing. Any available evidence must therefore be collected and preserved immediately after the incident has occurred, even before assistance arrives from ashore.

The Master should always consider

- contacting the correspondent or a surveyor via the correspondent
- making notes and taking photographs or video of the incident or affected area
- keeping a record of the sequence of events
- reporting the incident as soon as possible
- record any eye witness accounts.

#### 3.1.6 **Contacts and instructions**

Once an overview of the situation has been obtained and the initial measures have been initiated, the Master should take immediate instructions – as laid down in the Company’s and the vessel’s Emergency Contingency Plan – from

- the Company
- the P&I insurer and/or the Hull and Machinery insurer, as the case may be
- the correspondents or lawyers instructed by the insurers for and on behalf of the Company.

Gard AS provides a 24 hour contingency service. Expertise is pooled in a contingency team trained to handle catastrophes.

**The emergency telephone numbers for Gard AS are:**

**For P&I:**

**International +47 90 52 41 00    National (Norway) 90 52 41 00**

**For Hull and Machinery:**

**International +47 90 92 52 00    National (Norway) 90 92 52 00**

In any case, the Master should take the necessary action as is appropriate for the particular situation.

### 3.1 General response advice

#### 3.1.7 Reporting the incident

When reporting an incident or when assistance is required, it is important that the Master, as soon as possible, provides the Company, the P&I and/or Hull and Machinery insurer or the correspondent with accurate information about

- the incident
- the type of assistance required.

Only accurate reporting to the Company or the insurers, will enable them to instruct a surveyor with the appropriate expertise. When reporting, the Master should clearly state

- his name and position
- the vessel's and Company's names
- the agent's name in the port or intended port of call
- the position/location of the vessel
- the nature of the incident
- the urgency of the incident
- any personal injury involved and the extent thereof
- the attitudes shown or actions of protestors, claimants, authorities or appointed surveyors
- any threatened detention or arrest
- the refusal to take delivery of the cargo
- any notice or statement in which the vessel is held responsible
- the vessel's arrival/departure times
- contact details for the Master and the vessel.

See also section 2.2.3 Reporting.

### 3.1.8 Securing evidence

Claims will usually follow as a consequence of an accident or incident. Repairs to the vessel or machinery may need to be carried out. It is very important to collect the best possible evidence of the

- nature
- cause
- extent,  
of any loss or damage.

**As a fundamental rule, the Master must never interfere, destroy, tamper with or dispose of any evidence.**

Even insignificant items can be of fundamental importance.

Evidence can be collected by

- retaining all relevant paper documentation and electronic data
- taking photographs and video and labelling them with details of
  - the date and time taken
  - the persons involved
  - the property damaged
  - the area concerned
- retaining damaged equipment or parts – keep these in an appropriate place to avoid deterioration or corrosion and locked to prevent unauthorised access
- retaining cargo samples – to avoid deterioration, keep these in appropriate containers or bottles – please also see section 2.12.2.9 Cargo sampling dry bulk cargoes
- noting the names, addresses and contact details of any eye witnesses
- taking statements from any eye witnesses
- filing sea protests and letters of protest
- arranging for a survey through the correspondent.

### 3.1 General response advice

When retaining physical evidence, the Master should personally take the responsibility of properly labelling and preserving such items, and ensuring they are not thrown away.

The Master should ensure that a digital camera, with fully charged batteries ready for use, is always available on the bridge and/or in the vessel's office, to take photographic evidence as described above.

#### 3.1.9 Access to the vessel, crew and documentation

##### – no admission of liability

Accidents not only attract the attention of the public and the media, but also potential claimants. Access to the vessel should only be granted in accordance with the Company's and the vessel's SSP under the ISPS Code. Therefore, nobody should be allowed access to the vessel unless they are

- authorised by law (national or local authorities, ambulance, police etc.) and have properly identified themselves
- authorised to act for or on behalf of the Company or the P&I or Hull and Machinery insurers and have properly identified themselves.

All persons allowed on board should be accompanied by a crew member at all times, preferably an officer, or a surveyor instructed to act for the vessel.

The Master and the crew should not talk to anyone unless the individual person produces proof that they are authorised to act for and on behalf of the Company or the insurer. This applies in particular to people claiming to be “underwriter's representatives” or “surveyors”. Any representatives of the media should be referred to the Company.

The Master should never show, disclose or hand out documents to anybody except those authorised by and identified to act for the Company or the insurer.

**The Master should never admit liability on behalf of the company, vessel or crew unless expressly authorised to do so by the company, the insurer or the Company's own lawyer.**

#### 3.1.10 Correspondents – surveyors – lawyers

Should the Master require assistance he/she should refer to *Gard's List of Correspondents* which indicates where local assistance can be obtained.

The situation may require the correspondent to appoint a surveyor or lawyer. The surveyor or lawyer must provide the Master with proof that he has been instructed to act on behalf of the Company or the insurer, whereupon the Master should provide

- all possible assistance
- full co-operation
- all information and documentation requested.

When the Master and his officers are required to report, the quality of the information provided is essential. Information must be true, reliable and rendering facts, not opinions or speculations.

The Master should report to the correspondent or lawyer

- the factual background to the incident and details of the incident itself
- what mitigating action has been taken
- what evidence has been preserved and where it is stored
- which witnesses (including names and contact details) are available.

### 3.1 General response advice

#### 3.1.11 Giving statements to the representatives of the insurer

Following an incident the Master, his officers and crew are likely to be asked to provide signed statements. The person providing the statement should remember that the representatives of the insurers are trying to establish the facts and causes of an incident, not to criticise or undermine the individual. Any statement provided must be truthful.

#### 3.1.12 Issuing and receiving protests in connection with an incident

##### 3.1.12.1 *Issuing a protest*

The issue of a protest may serve the purpose of either

- recording a disagreement with another party, e.g. rough handling of cargo by the stevedores
- reporting a specific event, such as heavy weather.

Issuing a protest may be required either

- by the flag State's law, or
- by national law, i.e. the place of the incident or the vessel's next port of call.

Issuing a protest may be appropriate and required either

- after an incident has occurred
- to pursue a claim against a third party.

It is required to hold another party responsible in writing to protect the Company's, the Master's, the crew's, and the insurer's legal position. Examples of instances where such notices should be issued would include when

- a collision has occurred
- a tug has damaged the vessel or third party property
- a stevedore has damaged the vessel, its equipment or cargo
- the vessel has suffered damage due to the berth being unsuitable
- and in any other instances where acts or omissions of another party may expose the Company to any liability, cost or expense.

Different forms, formalities and procedures may be required depending upon where the protest is issued. Issuing a simple protest is sufficient in some jurisdictions, whilst in others the protest may be required to be sworn before a court of law or a notary public. The Master is therefore advised to contact the local correspondents or the instructed lawyers for assistance and advice.

If an incident has occurred where the Master considers noting a protest, he/she should do so and, for the protest to be effective, he/she should do so as soon as practicable.

#### 3.1.12.2 *Receiving a protest*

Utmost care should be exercised when

- receiving a protest which the Master is requested to sign
- making a statement following an incident.

If the contents of the protest received cannot be verified and the Master is not satisfied that it reflects the facts, he/she should always clause the protest “for receipt only and without admission of contents”.

Should the Master be requested to sign a statement following an incident, he/she should contact the local correspondents of the P&I or Hull and Machinery insurers for assistance prior to signing.



## 3.2 Cargo damage or loss

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### 3.2 CARGO DAMAGE OR LOSS

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If there is damage to or loss of cargo, the cover provided by the P&I insurer may be involved and the Company, the P&I insurer or their local correspondent should be contacted.

If the cargo has damaged the vessel, please refer to section 3.16 Structural failure.

#### 3.2.1 Action to be taken

##### 3.2.1.1 *Cargo damage*

The following actions must be taken if there is damage to the cargo

- call the local correspondent to appoint a surveyor
- take mitigating steps to prevent further deterioration of the cargo
- protect the damaged cargo, e.g. cover with tarpaulins
- stop any leakage/spillage of the cargo
- should any pollution occur, refer immediately to the *Shipboard Oil Pollution Emergency Plan (SOPEP)* or *Vessel's Response Plan (VRP)*.

##### 3.2.1.2 *Cargo lost overboard creating a hazard to navigation*

Should cargo which may be a hazard to navigation, e.g. containers, be lost overboard, the Master should

- immediately refer to the Emergency Contingency Plan
- broadcast a navigation warning and report to the nearest coastal state, and
- inform the Company and the P&I insurer.

### 3.2.2 Evidence to be collected

In the event of loss of or damage to the cargo the following evidence should be obtained

- date, vessel's time, UTC (Co-ordinated Universal Time) and location of the incident
- weather and visibility at the time of the incident (keep any weather records)
- description of the events leading up to the incident
- description of the cargo affected, e.g. commodity, numbers, marks, packing, weight
- description of the nature and extent of the loss of or damage to the cargo
- description of stowage place
- description of type, size and pattern of lashings applied
- description of who performed the lashing
- location of the cargo concerned (if already discharged ashore)
- description of vessel's gear, tackle or equipment involved or used during the incident
- broken or damaged vessel's equipment
- broken or damaged lashing material used
- names and contact details of persons and their employers involved in the incident, including vessel's crew involved
- names and contact details of eye witnesses to the incident, including vessel's crew involved
- eye witness statements, including vessel's crew involved
- statements by cargo interests
- specific stowage, carriage, ventilation or handling instructions from third parties, e.g. supercargo and/or cargo interests
- photographs or video of the incident or the damaged cargo
- sketches and drawings including measurements and distances
- cargo samples – please also see section 2.12.9 Cargo sampling dry solid cargo.

## 3.2 Cargo damage or loss

### 3.2.3 Documents to be retained

The following documents or electronic data must be kept if relevant/available

- bill of lading
- mate's receipt
- manifest
- tally sheets
- outturn report
- partlow chart of reefer container
- temperature and atmosphere related records
- ventilation records
- stowage plan(s)
- lashing and securing plan(s)
- lashing and stowage certificates issued
- stability and stress calculations at the commencement of the voyage and at the time of the incident
- voyage/carriage instructions
- reefer instructions
- cleanliness inspection certificates
- weather reports during the voyage
- complete logbook extracts (or copies from the logbook)
- sounding reports of bilges, wells and tanks
- letters of protest received or issued
- cargo analysis certificates
- survey reports
- cargo calculations for the voyage
- empty tank certificate after discharge
- pumping log
- OBO/ROB calculation reports.

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**3.3 COLLISION**

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Due to the fact that both the P&I and Hull and Machinery covers may be involved, it is important to consider both aspects, i.e. the damages to the own vessel and the other vessel. The Company, the P&I and the Hull and Machinery insurer should therefore be contacted.

**3.3.1 Action to be taken****3.3.1.1 *Emergency Contingency Plan***

Should a collision occur the Master should immediately refer to the Emergency Contingency Plan.

If oil has escaped from the own or the other vessel involved, the Master must notify the appropriate authorities immediately!

**3.3.1.2 *General***

The Master has the overriding authority and responsibility to make decisions with respect to safety and pollution prevention. The Master should therefore be in overall charge of decisions and should

- immediately initiate a damage assessment
- check the watertight integrity of the vessel, and
- ensure the safety of the crew and passengers.

Reversing the engines after a collision, but prior to an initial damage assessment, may have catastrophic results as one of the vessels may suddenly lose her buoyancy and sink. The Master is therefore advised to ascertain the extent to which the other vessel needs assistance before reversing the engines.

### 3.3 Collision

After taking the steps outlined below, the Master should encourage all witnesses on his/her vessel to immediately record their observations and memories of the events leading up to the collision. The Master should encourage witnesses to give a true and accurate account of the circumstances, even if it is to the detriment of the vessel. Additionally, any photographs or video taken by crew members should be collected and retained. Suitable initiatives by crew members who have collected valuable evidence could be rewarded.

As radar sets are not always provided with a data recorder, plotting sheets should be kept and/or sketches made of the radar observations prior to the collision by those having been on radar watch at the material time. A record of how the radar settings and data were used will also be helpful in reconstructing the course and proving that a proper radar watch was maintained at the time.

A record of any VHF traffic between the vessels involved or with shore installations prior to the collision should be provided in writing to establish what information or warnings of manoeuvres were conveyed.

If the vessel is equipped with ECDIS or other electronic sea charts, these should be stored as soon as possible, if this is not automatically done by the system.

#### 3.3.1.3 *Reporting*

The Company, the P&I and Hull and Machinery insurers and the local correspondents should be informed immediately, providing the following information

- name, IMO number, call sign of the vessel
- name of the Company
- date and time of the collision, local and UTC (Co-ordinated Universal Time)
- position/location of the collision

- any fatality/personal injury on board
- pollution or risk of pollution
- extent of damage sustained by the vessel
  - structural damage
  - damage to cargo
  - condition of the vessel (water ingress or stable)
- own vessel's destination and ETA
- the other vessel's name, flag and call sign
- any fatality/personal injury on other vessel
- extent of damage sustained by other vessel
  - structural damage
  - damage to cargo
  - condition of other vessel (water ingress or stable)
- other vessel's destination and ETA
- amount of oil – carried as cargo or fuel – escaped from own vessel and/or from other vessel
- any loss of cargo overboard as a result of the collision impact
- prevailing weather conditions at the time of the collision (keep any weather records)
- estimated angle of blow.

#### 3.3.1.4 *Personal injury*

If any personal injury occurred as a result of the collision please see section 3.11 Personal injury.

#### 3.3.1.5 *Cargo damage*

If there is any cargo damage as a result of the collision please see section 3.2 Cargo damage or loss.

#### 3.3.1.6 *Pollution*

If there is any pollution as a result of the collision please see section 3.12 Pollution.

### 3.3 Collision

#### 3.3.2 Evidence to be collected

##### 3.3.2.1 *General information*

- Date and exact time of the collision as recorded on the bridge and any discrepancy between the times noted by the bridge and the engine room, local and UTC (Co-ordinated Universal Time)
- position/location of the collision
- courses (chart course, steered course, gyro and magnetic compass) at the time of the collision
- speed, propeller revolutions or propeller pitch of the vessel at the time of the collision
- bow and/or stern thruster in operation and rate of power switched to
- was the helm in manual or automatic at the time of the collision
- rudder position at the time of the collision
- any alteration to course and/or speed immediately before the collision, including exact time of the alteration
- any communications, including orders given to the engine room
- any signals – acoustic or visual – given by the vessel or heard from the other vessel prior to the collision
- any communications between the vessel and the other vessel and/or between both vessels and shore radio stations or traffic control centres
- if under pilotage, any communications between the pilot and the vessel's command, including the helmsman, prior to the collision
- if under pilotage, any communications between the pilot, tugs or shore radio stations or traffic control centres
- navigation lights shown on the respective vessels at the time of the collision
- description of how the navigation lights appeared prior to the collision and any changes
- any compass and/or radar bearings/distances taken and recorded between the vessels prior to the collision
- any helm or engine manoeuvres before and after the collision and the times of such manoeuvres

- prevailing weather, wind, sea state, visibility conditions at the time of the collision
- tide and current at the time of the collision
- draughts of the respective vessels at the time of the collision
- names and call signs of any other vessels having witnessed the collision and their approximate positions.

#### 3.3.2.2 *Navigation and communication equipment in use at the time of the collision*

- Radars – short description of radar settings and changes to the settings with exact times prior to the collision
- GPS systems – position recorded after button pressed (if done)
- VHF – short description of its location on the bridge and the channels being operated at the time of the collision, any switches to other channels with exact times prior to the collision
- electronic chart display – short description of the chart used and when last updated
- any other navigation or communication equipment used to be described as above.

#### 3.3.2.3 *Persons involved*

Name, rank, duties, whereabouts and contact details of

- all persons attending the bridge at the time of the incident
- any lookouts not on the bridge and their positions
- any other eye witnesses to the collision
- engine room personnel at the time of the collision
- any person suffering a fatality or personal injury on board
- any person suffering a fatality or personal injury on the other vessel
- any pilot on board at the time of the collision, times of embarkation/disembarkation.



### 3.3 Collision

#### 3.3.3 Documents to be retained

- Chart used (paper or electronic) – do not tamper with or erase any marks/data
- deck logbook
- bridge bell book or scrap log
- engine logbook
- engine bell book or scrap log
- manoeuvre/course recorder printouts
- deviation log
- STCW records of working and rest hours of the Master, officers and crew on duty.

Copies of the above together with copies of other trading documents will be taken by the lawyer or correspondent instructed on behalf of the Company or the insurers.

### 3.4 Damage to FFO (Fixed and Floating Objects) and other property

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#### 3.4 **DAMAGE TO FFO (FIXED AND FLOATING OBJECTS) AND OTHER PROPERTY**

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Due to the fact that both the P&I and the Hull and Machinery covers may be involved, it is important to consider both aspects, i.e. the damage to the own vessel as well as the object damaged – please see section 1.8 Difference between P&I insurance and Hull and Machinery insurance. The Company, the P&I and the Hull and Machinery insurer should therefore be contacted.

##### 3.4.1 **General – Reporting**

If a fixed and floating object (FFO) or other third party property is damaged by

- manoeuvring the vessel
- the vessel's anchors or mooring lines
- wash damage,

any claim is often lodged at a later stage when it is difficult to take measures to minimise losses and to collect the evidence necessary to defend the claim. Accordingly, as soon as an incident occurs the P&I and/or Hull and Machinery insurer and correspondent should be informed.

If there has been damage to third party property, the Master is advised to consider notifying the nearest competent local authority or National Operational Contact Point as well, depending on the nature of the incident.

Wash damage often goes unnoticed by the vessel's command and a claim may only be lodged at a much later stage. Therefore, as much evidence as possible should be obtained to defend any such claim.

### 3.4 Damage to FFO (Fixed and Floating Objects) and other property

The following information should be provided

- short description of the incident
- date and vessel's time of the incident, local and UTC (Co-ordinated Universal Time)
- position/location of the incident
- extent of damage sustained by the own vessel
- extent of damage sustained by the FFO/third party property
- prevailing weather conditions at the time of the incident (keep any weather records)
- any fatality or personal injury, please see section 3.11 Personal injury
- any pollution, please see section 3.12 Pollution.

#### 3.4.2 Action to be taken

- Make immediate reference to the vessel's Emergency Contingency Plan
- inform the relevant local authority or owner or operator of the damaged object ashore
- inform the Company, the P&I insurer or the insurer's local correspondent to arrange a survey.

#### 3.4.3 Evidence to be collected

##### 3.4.3.1 *General information*

- Date and exact vessel's time of the incident, local and UTC (Co-ordinated Universal Time)
- position/location of the incident
- extent of damage sustained by the vessel
- details of the object damaged and the damage sustained
- extent of damage to the third party property
- position of own vessel in relation to the damaged object
- names and flags of other vessels involved
- weather conditions prevailing at the time of the incident (keep any weather records)
- tide and current prevailing at the time of the incident
- other vessels' name(s) and positions

### 3.4 Damage to FFO (Fixed and Floating Objects) and other property

- courses (chart course, steered course, gyro and magnetic compass) at the time of the incident
- speed, propeller revolutions or propeller pitch of the vessel at the time of the incident
- any alteration to course and/or speed immediately before the incident including the exact time of the alteration
- any helm or engine manoeuvres before and after the incident and the times of such manoeuvres
- any communications including orders given to the engine room
- any communications exchanged between the vessels or between both vessels and shore radio stations or traffic control centres
- if under pilotage
  - any communications between the pilot and the vessel's command including helmsman prior to the incident
  - any communications between the pilot, tugs or shore radio stations or traffic control centres
- any signals given by the vessel or heard from the other vessels prior to the incident
- navigation lights and/or shapes shown at the time of the incident of the vessel and the other vessels
- any compass and/or radar bearings and distances taken and recorded between the vessels prior to the incident
- draught of the vessel and other vessels (if known) at the time of the incident
- photographs or video of the damaged object to be taken, alternatively sketches or drawings to be made of the object and its location.

If there has been any wash damage

- whether the pilot had made the Master or any of his officers aware of any speed restrictions in the area
- whether the Master or any of his officers were aware of any speed restrictions in the area
- whether the pilot was made aware of any speed restrictions by the Master or his officers.

### 3.4 Damage to FFO (Fixed and Floating Objects) and other property

#### 3.4.3.2 *Navigation and communication equipment in use at the time of the incident*

- Radars – short description of radar settings and any changes to settings with exact times prior to the incident
- GPS systems – position recorded after button pressed (if done)
- VHF – short description of its location on the bridge and channels operated at the time of the incident, any switches to other channels with exact times prior to the incident
- electronic chart display – short description of the chart used and when last updated
- any other navigation or communication equipment used, to be described as above
- manoeuvre/course recorder printouts to be marked and retained and electronic data to be retained
- records of exchange of traffic control communications to be kept, e.g. hand-written notes or tape
- failure of any navigation equipment to be noted.

#### 3.4.3.3 *Persons involved*

Names, ranks, duties, whereabouts and contact details of

- persons witnessing the damage to the vessel
- all persons attending the bridge at the time of the incident
- any lookouts not on the bridge
- any other eye witnesses
- engine room personnel
- any person having suffered personal injury on the vessel, please see section 3.11 Personal injury, crew illness or death
- names and contact details of pilots on board the vessel at the time of the incident, times of embarkation and disembarkation.

If possible, statements should be taken from any eye witnesses.

### 3.4 Damage to FFO (Fixed and Floating Objects) and other property

#### 3.4.3.4 *Documents to be retained*

- Chart used (paper or electronic) – do not tamper with or erase any marks/data
- ECDIS (or similar) and AIS data stored
- deck logbook
- bridge bell book or scrap log
- engine logbook
- engine bell book or scrap log
- manoeuvre/course recorder printouts
- deviation log
- STCW records of working and rest hours of the Master, officers and crew on duty
- copies of any third party reports to be retained.

Copies of the above together with copies of other trading documents will be taken by the lawyer or correspondent instructed on behalf of the Company or the P&I and/or Hull and Machinery insurers.

Should any pollution occur please see section 3.12 Pollution.

### 3.5 Diversion – deviation

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#### 3.5 DIVERSION – DEVIATION

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##### 3.5.1 Diversion – deviation

A diversion, e.g. from the usual and customary route, may at times be unavoidable. If a diversion is intended, and if the circumstances allow, the Master must, in the first instance, seek instructions from the Company so that an assessment can be made as to whether the diversion could amount to a deviation, as explained in section 2.16.8 Diversion – deviation.

The Company may need to take out a separate deviation insurance covering cargo or passengers carried on board. The Company must, therefore, be informed to enable them to advise the insurers accordingly.

As substantial sums of money are often involved in connection with the deviation and claims may follow from the charterer or cargo interests for delay in delivery or any deterioration of the cargo, the Master is advised to keep

- a detailed log from the time the deviation commences until the vessel is in the same or equidistant position
- details of all the measures taken.

##### 3.5.2 Justifiable diversions

A diversion from the usual and customary route will normally be considered justified if necessary to land ill or injured crew members, passengers, stowaways, refugees or persons rescued from the sea or to save life or property at sea. The Company will often be under a duty to divert in such cases and there are international regulations which oblige the Master to render every possible assistance to save life and property at sea, e.g. a vessel in distress.

The P&I insurance normally covers the Company for certain extra costs incurred in justifiably diverting a ship in the circumstances described above. If circumstances allow, the Master must seek instructions from the Company and the P&I insurer before diverting the vessel. Assistance can also be sought from the P&I insurer's local correspondent. All the circumstances that cause the Master to divert the vessel should be recorded.

#### **3.5.3 Diversion to undertake repairs**

In case of damage to or failure of any part of the vessel's engines or other parts which require repairs at a port en route, both the Hull and Machinery and P&I covers may be involved. Consequently, the Company must be informed, enabling them to contact both insurers. The Hull and Machinery insurer may wish to instruct a surveyor to inspect the damage. An assessment as to whether the diversion could amount to a deviation, may also be necessary, as explained in section 2.16.8 Diversion – Deviation.

#### **3.5.4 Action to be taken (in all cases of diversion – deviation)**

If a diversion – deviation is undertaken, the Master should immediately refer to the Emergency Contingency Plan. The Company and the P&I insurer or Hull and Machinery insurer, as the case may be, must be informed immediately and the following information provided

- intended port of call and ETA
- position, course and speed
- information about the incident causing the diversion – deviation, e.g. any fatality, personal injury or vessel in distress etc.



### 3.5 Diversion – deviation

#### 3.5.5 Evidence to be collected (in all cases of diversion – deviation)

- Date and exact time (vessel’s local and UTC (Co-ordinated Universal Time)) of the commencement of the diversion – deviation
- position where the vessel commenced the diversion – deviation
- speed, propeller revolutions or propeller pitch of the vessel en route to the intended port of call/position
- amount of bunkers, other fuels and consumables on board at the commencement of diversion – deviation
- any records of events having caused the diversion – deviation, including names of persons, vessels, authorities etc. involved
- date and time of arrival (vessel’s local and UTC (Co-ordinated Universal Time)) in the port of call or intended position
- duration of stay in the port of call or intended position
- date and time of departure (vessel’s local and UTC (Co-ordinated Universal Time)) from the port of call or intended position
- course and speed until the vessel arrived back in the same or equidistant position
- amount of bunkers, other fuels and consumables at the time the vessel was back in equidistant position
- courses steered.

#### 3.5.6 Documents to be retained (in all cases of diversion – deviation)

- Copies of any communications with the Company or the P&I insurers on the intended and performed diversion – deviation (paper or electronic)
- chart used (paper or electronic) – do not tamper with or erase any marks/data
- deck logbook
- bridge bell book or scrap log.

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**3.6 DRUG SMUGGLING**

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**3.6.1 General**

The cover provided by the P&I insurers may be in jeopardy when there is drug smuggling or allegations of smuggling. The Company, the P&I insurer or its local correspondent should therefore be contacted immediately. Actions should be taken and evidence collected to protect the Company and the crew members.

**3.6.2 Action to be taken**

The Master should immediately refer to the Emergency Contingency Plan under the ISM Code or the Ship's Security Plan under the ISPS Code.

**Any guidance provided below should by no means be in conflict with any regulatory requirement related to the ISM and/or ISPS Code(s).**

Should drugs be found on board the vessel, broken container seals discovered or sealed lockers be broken into – please see section 2.12.3.3 Seals and doors. The following precautions should be taken until the authorities arrive

- the drugs must not be touched
- inform the local authorities, the P&I insurer and the local correspondent
- photograph or video the location where the drugs were found
- leave the area untouched
- seal off the area to prevent unauthorised access.

When broken seals are discovered and replaced by the crew, a record should be made in the logbook and the bill of lading together with a note of the relevant seal numbers. The relevant authorities should be notified in compliance with the SMS and/or SSP. Empty containers designated as empty should also be verified to be empty in compliance with the SMS and/or SSP.

## 3.6 Drug smuggling

### 3.6.3 Criminal investigations

Drug smuggling constitutes a very serious crime almost anywhere and will lead to criminal investigations being conducted by the authorities. Although the Master and any other persons involved may have the right to remain silent and the right to seek advice from a lawyer before responding to any questions from the authorities, the Master is nevertheless advised to co-operate to the fullest extent with the investigating authorities. He/she should confirm his/her willingness to co-operate but should also ask for a lawyer to accompany him/her during the investigation.

**The Master should not direct the crew to lie, destroy, tamper with or hide evidence.**

If the Master does so, he/she may be charged with obstruction of justice. If the Master or any other person involved on board is uncertain as to their rights and responsibilities in a criminal investigation, advice should be obtained from the local correspondent or local law office.

### 3.6.4 Evidence to be collected

- Date and time of the alleged incident
- position/location of the vessel at the time of the alleged incident
- names of persons alleged to be involved and statements taken from these individuals, preferably in the presence of lawyers instructed by the Company to act for the Company or the suspected individual
- names of eye witnesses to the alleged incident and statements taken from them
- circumstances of the alleged incident.

**3.6.5 Documents to be retained**

- Deck logbook
- bridge bell book
- engine logbook
- engine bell book
- oil record book
- chart used (paper or electronic) – do not tamper with or erase any marks/data
- itinerary of last ports of call with all details, such as
  - date and time of arrival and departure
  - tug boats in assistance on arrival and departure
  - pilots in attendance on arrival and departure
  - agents of the ports
  - names of suppliers, repairers, visitors and other persons logged as having attended the vessel during the stay in port.

Disclosure of the vessel's documents, statements or reports should not be made without the prior authority of the Company, the P&I insurer, correspondent or lawyer instructed on behalf of the Company. Nevertheless there must be full co-operation with the authorities.

### 3.7 Fines – Criminal investigations

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#### 3.7 FINES – CRIMINAL INVESTIGATIONS

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When a fine is imposed or threatened to be imposed, the cover provided by the P&I insurance may be involved. The Company, the P&I insurers or their local correspondent should therefore be contacted.

##### 3.7.1 General

If fines are imposed upon the vessel or a person on board the vessel, action should be taken and evidence collected to protect the interests of those involved, provided their personal safety is not endangered.

##### 3.7.2 Criminal investigations

If the Master is investigated by the authorities for criminal misconduct, he/she, or any other person involved, may have the right to remain silent and the right to seek advice from a lawyer before responding to any questions from authorities.

**The Master should not direct the crew to lie, destroy, tamper with or hide evidence.**

If the Master does so, he/she may be charged with obstruction of justice. If the Master or any other person involved on board is uncertain of their rights and responsibilities in a criminal investigation, advice should be obtained from the local correspondents or a local law office.

##### 3.7.3 Action to be taken

If a demand for payment of a fine or a request for a guarantee is made

- the Master should notify the Company and the local correspondents seeking their assistance

- if the fine is not supported by official documents from a relevant authority or court, the demand should be politely but firmly rejected.

**No admission of liability should be made without consulting the company, the P&I insurer, the correspondents or lawyers instructed on behalf of the Company and the crew member involved.**

### 3.7.4 Evidence to be collected

- Date and time of the alleged incident
- position/location of the vessel at the time of the alleged incident
- names of individuals alleged to be involved and statements taken from them, preferably in the absence of any officials
- names of eye witnesses to the alleged incident and statements taken from them
- circumstances of the alleged incident.

### 3.7.5 Documents to be retained

- Deck logbook
- bridge bell book
- engine logbook
- engine bell book
- oil record book
- chart used (paper or electronic) – do not tamper with or erase any marks/data.

Disclosure of the vessel's documents, statements or reports should not be made without the prior authority of the Company, the P&I insurer, correspondent or lawyer instructed on behalf of the Company.

## 3.8 Fire

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### 3.8 FIRE

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In an outbreak of fire the cover provided under both the P&I and the Hull and Machinery covers may be involved. Contact should therefore be made with the Company, both insurers and/or their respective local correspondents.

If the fire affects the structure of the vessel, it will primarily be the Hull and Machinery insurance which will be involved. In all other instances, where the fire affects the cargo or causes injury or death to individuals, the cover provided by the P&I insurer will be involved.

Should there be an outbreak of fire, the following action must be taken and evidence collected.

#### **3.8.1 Immediate action to be taken**

##### *3.8.1.1 Emergency Contingency Plan*

Reference must be made to the Emergency Contingency Plan.

##### *3.8.1.2 Reporting*

###### *A. In port or at anchor*

If the vessel is in port or at anchor the Master should immediately inform

- the local fire brigade (possibly via the port authorities)
- the Hull and Machinery and/or P&I insurers or local correspondents
- the Company.

###### *B. At sea*

If the vessel is underway but near the coast, the appropriate Maritime Rescue Centre and/or Coast Guard should be notified, as set out in the Emergency Contingency Plan.

**3.8.2 Evidence to be collected**

- Date and vessel's time of the fire, local and UTC (Co-ordinated Universal Time)
- vessel's position/location at the time of the fire
- the vessel's course and speed, if underway
- weather and visibility at the time of the fire (keep any weather records)
- prevailing tide or currents
- time and location where the fire was discovered
- name, rank and duties of the person(s) who discovered the fire
- statement of the person(s) who discovered the fire, including whether they observed any other persons in the vicinity and what they were doing
- name, rank and duties of the vessel's fire fighting team
- measures initiated to combat the fire
- means/methods used to extinguish the fire
- if CO<sub>2</sub> was released, record the quantities used
- objects, items, areas damaged by fire
- time assistance arrived from ashore
- measures taken by assistance from ashore
- name, rank and duties of any shore based fire fighting team involved
- name and rank of any persons injured in the fire. If there is any personal injury, please see section 3.11 Personal injury, crew illness and death
- whether medical assistance from ashore was required and when it arrived
- when and where any injured persons were brought ashore.



### 3.9 Grounding and salvage – general average

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#### 3.9            **GROUNDING AND SALVAGE – GENERAL AVERAGE**

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##### 3.9.1            **Grounding**

A grounding may primarily involve the Hull and Machinery insurers and not necessarily P&I. It may nevertheless, result in a general average and/or salvage, which may involve the P&I insurer as well. The Company, the Hull and Machinery insurer and/or the P&I insurer or their respective local correspondents should therefore be contacted. Appropriate action must be taken and evidence collected.

##### 3.9.1.1        *Action to be taken*

###### A. *Immediate action*

- Reference should be made to the Emergency Contingency Plan
- watertight integrity of the vessel should be assessed
- all tanks must be sounded to check for water ingress
- make an assessment of the forces on the vessel's structure taking into account cargo distribution and prevailing tides and weather
- proper navigation lights or shapes must be displayed
- radio warnings should be broadcast to vessels in the vicinity of the grounding site to keep clear
- consider attempting to refloat.

###### B. *Reporting*

The Company, the Hull and Machinery and/or P&I insurers and the local correspondents should be informed immediately, providing the following information

- date and vessel's time of the grounding
- position/location of the grounding
- extent of damage sustained by the vessel
- description of the part of the vessel aground
- depth of water around the vessel
- cargo distribution
- prevailing weather conditions at the time of the grounding (keep any weather records)

### 3.9 Grounding and salvage – general average

- prevailing tide and current
- consistency of the seabed
- any pollution arising as a result of the grounding, please see section 3.12 Pollution
- confirmation of notification to the nearest local authority or the National Operational Contact Point of the grounding.

#### C. *Salvor in attendance*

Whenever a salvor is in attendance, the Master should keep a detailed, chronological record of the following

- weather, wind, sea and tidal conditions from commencement of the refloating operation
- names and position of tugs attending
- times the tugs commenced the refloating operation
- all activities undertaken and progress achieved
- materials used by the salvor
- personnel involved
- any damage and/or risk of damage to the salvor's equipment and property
- any discussions with the salvors.

During the refloating operation the Master should keep a detailed record of the vessel's expenses and excess costs incurred in respect of

- crew involvement (name, time and activity involved)
- fuel used (heavy fuel, diesel and lubrication oil)
- vessel's equipment used and damaged.

### 3.9 Grounding and salvage – general average

#### 3.9.1.2 Evidence to be collected

##### A. General information

- Date and exact time of the grounding as recorded on the bridge and in the engine room, vessel's local time and UTC (Co-ordinated Universal Time)
- position/location of the grounding
- description of the part of the vessel aground
- description of the area of the seabed where the grounding took place
- courses (chart course, steered course, gyro and magnetic compass) at the time of the grounding
- speed, propeller revolutions or propeller pitch of the vessel at the time of the grounding
- rudder position at the time of the grounding
- any alterations in course and/or speed immediately before the grounding and the exact time of such alteration
- any communications including orders given to the engine room
- any communications exchanged between the vessel and shore radio stations or traffic control centres
- if under pilotage, any communications between the pilot and the vessel's command including helmsman prior to the grounding
- if under pilotage, any communications between the pilot and tugs or shore radio stations or traffic control centres
- any compass and/or radar bearings and distances to shore taken and recorded prior to the grounding
- any helm or engine manoeuvres before and after the grounding and the times of such manoeuvres
- prevailing weather conditions at the time of the grounding (keep any weather records)
- prevailing tide and current at the time of the grounding
- draught of the vessel at the time of the grounding
- depth of water around the vessel

### 3.9 Grounding and salvage – general average

- records of soundings of all vessel's tanks taken prior to and after the grounding
- cargo distribution at the time of the grounding and any subsequent changes.

#### *B. Navigation and communication equipment in use at the time of the grounding*

- Echo sounder and echo sounder trace – description and range used
- radars – short description of radar settings and changes to settings with exact times prior to the incident
- GPS systems – position recorded after button pressed (if done)
- VHF – short description of its location on the bridge and channels operated at the time of the incident, any switches to other channels with exact times prior to the incident
- electronic chart display – short description of the chart used and when last updated
- any other navigation or communication equipment used to be described as above.

#### *C. Persons involved*

Name, rank, duties, whereabouts and contact details of

- all persons attending the bridge at the time of the grounding
- any lookouts not present on the bridge
- any other eye witnesses to the grounding
- engine room personnel on duty at the time of the grounding
- any pilot on board at the time of the grounding, times of embarkation/disembarkation
- other vessels/traffic in the vicinity.

### 3.9 Grounding and salvage – general average

#### *D. Documents to be retained*

- Deck logbook
- bridge bell book or scrap log
- engine logbook
- engine bell book or scrap log
- manoeuvre/course recorder printouts
- chart used (paper or electronic) – do not tamper with or erase any marks/data
- echo sounder trace printouts
- deviation log
- weather reports and logs
- STCW records of working and rest hours of the Master, officers and crew on duty.

Copies of the above together with copies of other trading documents will be taken by the lawyer or correspondent instructed on behalf of the Company, the Hull and Machinery and/or the P&I insurers.

#### **3.9.2 General average**

A general average may primarily concern the Hull and Machinery and cargo insurers. However, in the end it may also involve the P&I cover. The Company, the Hull and Machinery insurer and the P&I insurer should therefore be contacted.

##### *3.9.2.1 General*

If general average has been declared, the Master should keep a detailed chronological record of all actions taken, sacrifices and/or expenditures made and any support received from third parties, such as salvors, including details of any discussions or agreements reached.

## 3.9 Grounding and salvage – general average

### 3.9.2.2 *Action to be taken*

If the Master has been advised that general average has been declared, he/she should immediately

- contact the Company, the Hull and Machinery and/or P&I insurers
- contact the local correspondents for assistance.

### 3.9.2.3 *Evidence to be collected*

In most cases, a general average surveyor will be appointed by the average adjuster to keep an accurate record of all the actions taken together with any expenditure. Until a general average surveyor arrives on the scene the following information should be collected

- date and vessel's time, local and UTC (Co-ordinated Universal Time)
- vessel's position/location
- condition of the vessel – aground, damaged
- precise amount of bunkers, other fuels and combustibles on board (sounding of tanks is required)
- names, ranks and actions of crew members involved in the general average
- detailed, chronological description of actions and measures taken
- details of any pollution caused by the incident, please see section 3.12 Pollution
- details of any personal injury, please see section 3.11 Personal injury, crew illness and death
- records of any discussions or conversations.

## 3.9.3 **Salvage**

### 3.9.3.1 *General*

As the salvage costs are mainly the concern of the Hull and Machinery and cargo insurers, the Master should immediately contact the Company and the Hull and Machinery insurer enabling them to decide what actions to take.

### 3.9 Grounding and salvage – general average

The cover provided by the P&I insurers may, nevertheless, be involved, especially if there is damage to the marine environment or third party property as a result of pollution. Therefore, actions need to be taken and evidence collected.

Under the ISM Code, the Master has the overriding authority and responsibility to make decisions with regard to safety and pollution prevention – section 5.2 of the ISM Code. The Master may therefore have to make the decision himself to engage a tug – please see section 2.16.7.2 Grounding and salvage.

#### 3.9.3.2 *Reporting*

When salvage becomes necessary the Master must immediately inform

- the Company
- the Hull and Machinery insurer
- the P&I insurer
- the local correspondent.

He/she should provide the following information

- short description of the incident
- date and vessel's time of the incident
- position/location of the incident
- extent of damage sustained by the vessel
- name, IMO number and extent of damage sustained by the other vessel if involved or extent of damage to FFO if involved
- prevailing weather, current and tidal conditions at the time of the incident (keep any weather records)
- any fatality or personal injury on board the vessel, please see section 3.11 Personal injury
- any pollution caused by the incident, please see section 3.12 Pollution.

#### 3.9.3.3 *Action to be taken*

Reference should be made to the Emergency Contingency Plan.

#### 3.9.3.4 Evidence to be collected

##### A. General information

- Date and exact time recorded on the bridge and in the engine room of the incident resulting in the salvage, vessel's local time and UTC (Co-ordinated Universal Time)
- position/location of the incident
- courses (chart course, steered course, gyro and magnetic compass) at the time of or prior to the incident
- speed, propeller revolutions or propeller pitch of the vessel at the time of or prior to the incident
- rudder position at the time of or prior to the incident
- any alteration of course and/or speed immediately before the incident, including the exact time of the alteration
- any communications including orders given to the engine room (if applicable)
- any communications exchanged between the vessel and shore radio stations, traffic control centres or other vessels
- if under pilotage, any communications between the pilot and the vessel's command including the helmsman prior to the incident
- if under pilotage, any communications between the pilot and tugs, shore radio stations, traffic control centres or other vessels prior to the incident
- any compass and/or radar bearings and distances to shore taken and recorded prior to the incident
- any helm or engine manoeuvres before and after the incident and the times of such manoeuvres
- prevailing weather conditions at the time of the incident (keep any weather records)
- prevailing tide and current at the time of the incident
- draught of the vessel at the time of the incident
- records of soundings taken prior to and after the incident
- soundings of all tanks (fuel and water)
- assessment of damage sustained by the vessel.



### 3.9 Grounding and salvage – general average

#### *B. Navigation and communication equipment in use at the time of the incident*

- Radars – short description of radar settings and changes to settings with exact times, prior to the incident
- GPS systems – position recorded after button pressed (if done)
- VHF – short description of its location on the bridge and channels operated at the time of the incident, times of switching to other channels prior to the incident
- electronic chart display – short description of the chart used and when last updated
- echo sounder and echo sounder trace – description and range used
- any other navigation or communication equipment used to be described as above.

#### *C. Persons involved*

Name, rank, duties, whereabouts and contact details of

- all persons attending the bridge prior to or at the time of the incident
- any lookouts not present on the bridge
- any other eye witnesses to the incident
- engine room personnel on duty prior to or at the time of the incident
- any pilots attending the vessel prior to or at the time of the incident, times of embarkation/disembarkation
- any other persons involved
- other traffic/vessels in the vicinity.

#### *D. Documents to be retained*

- Chart used (paper or electronic) – do not tamper with or erase any marks/data
- deck logbook
- bridge bell book or scrap log
- engine logbook
- engine bell book or scrap log
- manoeuvre/course recorder printouts
- echo sounder trace
- deviation log
- weather reports and logs.

### 3.10 Persons overboard or missing

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## 3.10 PERSONS OVERBOARD OR MISSING

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When somebody has fallen overboard or has gone missing, the cover provided by the P&I insurers is involved. The Company, the P&I insurer or their local correspondents should therefore be contacted.

### 3.10.1 Actions to be taken

There should be a procedure under the vessel's SMS dealing with actions to be taken when somebody has fallen overboard or is reported missing. Reference should also be made to the vessel's Emergency Contingency Plan.

### 3.10.2 Evidence to be collected

- Date and vessel's time of the incident, local and UTC (Co-ordinated Universal Time)
- all persons attending the bridge at the time of the incident
- exact location on board from where the person fell or the time and place the missing person was last seen
- vessel's position at the time of the incident or when the person was reported missing
- course and speed at the time of the incident or when the person was reported missing
- prevailing weather and visibility at the time of the incident or when the person was reported missing (keep any weather records)
- prevailing tide and currents at the time of the incident or when the person was reported missing
- name, rank and duties of the person having fallen overboard or gone missing
- STCW records of working and rest hours of of the person having fallen over board or gone missing
- last activity carried out by the person having fallen overboard or gone missing

### 3.10 Persons overboard or missing

- question the officer/other crew supervising/assisting the person having fallen overboard or gone missing
- check whether the work was authorised under the permit-to-work system
- name, rank and duties of the person(s) who last saw the person having fallen overboard or gone missing
- the impression given when last seen as to appearance and mental state, of the person having fallen overboard or gone missing
- any indications that the person having fallen overboard or gone missing was suicidal
- measures and actions taken and duration of the search/rescue of the person having fallen overboard or gone missing
- results of the measures and actions taken
- exact time and contents of radio messages transmitted to and received from the coastal search and rescue station
- exact time and contents of radio messages transmitted to and received from other vessels in the vicinity
- names and positions of other vessels with which messages were exchanged
- names of other vessels involved and duration of their active participation in the search and rescue exercise.

### 3.11 Personal injury, crew illness and death

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#### 3.11 PERSONAL INJURY, CREW ILLNESS AND DEATH

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If a personal injury, crew illness or death occurs, the cover provided by the P&I insurers will be involved. The Company, the P&I insurer or their local correspondents should therefore be contacted.

##### 3.11.1 Personal injury

###### 3.11.1.1 *General*

Personal injury is the most serious kind of incident as it affects people. Whilst structural damage can generally be repaired, injury to a person cannot always be compensated by money. To minimise the consequences of personal injury claims the following actions should be taken and evidence collected.

###### 3.11.1.2 *Action to be taken*

###### A. *Emergency Contingency Plan*

The vessel's Emergency Contingency Plan or the procedures under the vessel's SMS should be referred to immediately.

###### B. *Further actions to be taken*

- Ensure that the best qualified and most experienced person on board provides medical care to the injured person
- if there is risk of internal injury, do not move the injured person until an experienced medical person is present
- seek medical advice over the vessel's radio and through other means of communication
- the Master should consider deviating for medical assistance if close to the coast
- if in port or at anchor, call an ambulance and/or the local correspondent
- consider landing the injured person ashore
- the Company, the P&I insurer and local correspondent must be informed if the Master decides to deviate
- all radio messages exchanged should be recorded.

If a crew member hospitalised ashore is unable to return to the vessel, the Master should take following actions

- record and pack all personal effects of the injured crew member, preferably in the presence of two officers, and deliver them to the agent for forwarding to the hospital, together with a copy of the inventory list
- request the correspondent to inform the injured person's local consulate
- consider substitution of the crew member.

#### 3.11.1.3 *Evidence to be collected*

- Leave the area untouched until photographs and video have been taken as evidence
- mark the photographs and videos with the date and time they were taken
- if no cameras are available, make drawings and sketches depicting the location and position in which the person was found, together with any other matters which may be of importance
- recordings of all radio messages exchanged.

Further evidence includes

- name, gender and duties of the injured person
- date and exact vessel's time when the accident occurred, local and UTC (Co-ordinated Universal Time)
- position/location of the vessel
- prevailing weather conditions (keep any weather records)
- any sudden movements of the vessel
- light conditions at the time of the accident, e.g. daylight, darkness, artificial light
- exact location on the vessel where the accident occurred
- conditions of the surrounding area, e.g. dry, wet, slippery, icy
- work or activity the injured person was engaged in
- time the work or activity was commenced by the injured
- STCW records of working and rest hours of injured

### 3.11 Personal injury, crew illness and death

- was the work authorised under the permit-to-work system
- was protective gear worn at the time of the accident
- names, ranks, duties and other details of any witnesses
- details of the hospital or doctor who treated the injured person ashore
- provide information on the general physical condition of the injured
- medical treatment given and by whom
- indications of fatigue
- records of the resting and working hours of the injured person before the accident
- indications of intoxication or drug abuse
- detailed and complete eye witness statements should be taken immediately
- the Master should make it clear to any witnesses that the purpose of the statements is to ascertain the cause of the accident so as to prevent further accidents rather than to apportion any blame.

#### 3.11.2 Stevedore injury

The following additional steps should be taken when a stevedore suffers an injury whilst working on the vessel.

##### 3.11.2.1 *Action to be taken*

- The local correspondent must be informed immediately
- the local authority and emergency services must be called immediately
- the foreman or stevedore's employer must be informed immediately.

##### 3.11.2.2 *Evidence to be collected in addition to section 3.11.1 Personal injury, above*

- Date and time the stevedore boarded the vessel and commenced work
- any irregularity noted during the stevedore's presence on board, e.g. unsafe working practices

- the activity in which the stevedore was engaged, e.g. loading, stowing, lashing
- any action taken or support given by the stevedore's fellow workers
- address of the stevedore's employer.

#### **3.11.3 Passenger injury**

##### *3.11.3.1 Actions to be taken*

After consulting the Company or the P&I insurer and obtaining instructions, the tour operator (if relevant) should be informed.

##### *3.11.3.2 Evidence to be collected in addition to section 3.11.1 Personal injury, above*

- Date, vessel's local time and UTC (Co-ordinated Universal Time) and port of embarkation of the injured passenger
- date and port of scheduled disembarkation
- personal details and home address of the injured passenger
- cabin number of the injured passenger
- personal details of persons accompanying the passenger
- any other matter which may be of interest which was noted while the passenger was on board, e.g. excessive sporting activities or alcohol consumption
- any action taken or support provided by other passengers after the accident
- any activity in which the passenger was involved
- did the injury occur during an excursion ashore (details of the scheduled excursion, means of transportation, names of accompanying shipboard personnel etc.)
- did the injured passenger consult the vessel's doctor at any point during the voyage
- the vessel's doctor's records of any consultation
- any support, medical or otherwise, provided to the passenger after the accident
- details of persons providing such support.



### 3.11 Personal injury, crew illness and death

#### 3.11.4 Illness

In the event of illness, a claim could follow for negligence by the person having fallen ill, irrespective of whether a crew member or passenger is involved. The following actions should, therefore, be taken and evidence collected.

##### 3.11.4.1 *Actions to be taken*

- Ensure that the best qualified and most experienced person on board provides medical care to the sick individual
- seek medical advice over the vessel's radio and through other means of communication
- the Master should consider deviating for medical assistance if close to the coast
- if in port or at anchor, call an ambulance and/or the local correspondents
- consider landing the sick person ashore
- the Company, the P&I insurer and the correspondent must be informed if the Master decides to deviate
- all radio messages exchanged should be recorded
- if a sick crew member is landed ashore and has to be left behind, record and pack all personal effects of the crew member, preferably in the presence of two officers, and deliver them to the agent for forwarding to the hospital, together with a copy of the inventory list
- request the local correspondents to inform the sick person's local consulate
- consider compliance with relevant manning regulations and a possible need for substitution of the crew member.

##### 3.11.4.2 *Evidence to be collected*

In addition to regulations requiring entries to be made in the vessel's medical log when somebody falls ill, including details of the medication provided, the following further evidence should be collected

- name, gender and duties of the person having fallen ill

### 3.11 Personal injury, crew illness and death

- date and exact vessel's time when the illness was first reported and by whom
- position/location of the vessel
- prevailing weather conditions (keep any weather records)
- any sudden movements of the vessel
- work or activity the person was engaged in prior to falling ill
- time the work or activity was commenced by the person falling ill
- was the work authorised under the permit-to-work system
- names, ranks, duties and other details of any witnesses
- details of the hospital or doctor who treated the sick person ashore
- information about the general physical condition of the sick person
- medical treatment given prior to and after the person fell ill and by whom
- indications of fatigue, intoxication or drug abuse
- record of the working hours of the person before falling ill.

#### 3.11.5 Death

If a person dies on a vessel there is not normally a doctor on board able to immediately examine the deceased and determine the probable cause of death. Should the circumstances indicate death by accident or other unnatural causes, a post-mortem examination will almost certainly be required once the body is landed ashore and investigations will be carried out by the local/national police authorities.

##### 3.11.5.1 *Actions to be taken*

###### A. *Emergency Contingency Plan*

In all instances of death on board, the Master should make immediate reference to the vessel's Emergency Contingency Plan.

### 3.11 Personal injury, crew illness and death

#### *B. Further actions to be taken*

- The Master should always consider seeking medical advice over the vessel's radio or other means of communication to ascertain how to establish with certainty that the person is dead
- the Master should seek instructions how to preserve the corpse – if such instructions are not part of the procedures under the vessel's SMS
- if the deceased is to be carried to the next port, the body should be kept cool in an empty reefer compartment
- if preservation is not possible for whatever reasons, the Master should seek further instructions from the Company and the P&I insurer regarding
  - deviating to land the body ashore if close to the coast, or
  - burial at sea
- the Company, the P&I insurer and the correspondent must be informed if the Master decides to deviate, enabling them to assist and inform the relevant authorities as required by the laws of the relevant country
- if a burial at sea is permitted, the Master should seek advice from the P&I insurers or local correspondent concerning any religious requirements
- if in port or at anchor, call a doctor and/or the local correspondents immediately, enabling them to assist and inform the authorities as required by the laws of that particular country
- all medical radio messages exchanged prior to the death should be recorded
- the Company should be contacted requesting that the next of kin be informed
- all personal effects of the deceased should be recorded and packed, preferably in the presence of two officers, and delivered to the agent to be sent to the Company together with a copy of the inventory list, for forwarding to the next-of-kin
- the correspondents should be requested to inform the deceased's local consulate
- replacement of the crew member should be considered.

#### 3.11.5.2 *Evidence to be collected*

- Take photographs and video of the place where the deceased was found
- mark photographs and video with the time and date
- if no cameras are available, make drawings and sketches depicting the location/position in which the deceased was found as well as other matters of importance
- evidence such as wires, shackles and tools which may have caused the death should be collected as evidence, marked, labelled and retained in a safe place. These items should not be tampered with or disposed of.

Further evidence includes

- name, gender and duties of the deceased
- date and exact vessel's time the death occurred
- position/location of the vessel
- prevailing weather conditions (keep any weather records)
- any sudden movements of the vessel
- light conditions, e.g. daylight, darkness, artificial light
- exact location where the deceased was found
- conditions of surrounding area, e.g. dry, wet, slippery, icy
- work or activity the deceased was engaged in
- time the work or activity was commenced by the deceased
- STCW records of working and rest hours of the deceased if a crew member
- was the work authorised under the permit-to-work system
- was protective gear worn at the time of death
- names, ranks, duties and other details of any witnesses
- details must be recorded of the hospital or doctor who attended the deceased ashore
- information about the general physical condition of the deceased
- medical treatment given to the deceased before death and by whom
- indications of fatigue
- record of the working hours of the deceased before death

### **3.11 Personal injury, crew illness and death**

- indications of intoxication or drug abuse
- detailed and complete eye witness statements should be taken immediately
- the Master should make it clear to any witnesses that the purpose of the statements is to ascertain the cause of death so as to prevent further deaths rather than to apportion any blame.

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**3.12 POLLUTION**

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**3.12.1 General****3.12.1.1 Insurance cover**

The cover provided by P&I insurers is involved when pollution occurs. The Company, P&I insurer or their correspondents must therefore be contacted immediately.

If the pollution is caused by the escape of oil from the other vessel following a collision, the cover provided by the Hull and Machinery insurers – other than on UK standard insurance conditions – may be involved – please see also section 1.8 Difference between P&I insurance and Hull and Machinery insurance. If this is the case, the Hull and Machinery insurers or their correspondents must also be contacted.

**3.12.1.2 Reference and national contact points**

**The Master should always seek assistance if his vessel has caused pollution, irrespective of the type of pollution!**

If there is pollution, the Master should refer to and implement the relevant SOPEP for the particular jurisdiction in which the pollution has occurred.

Every pollution case is different, demanding an individual response in each case, and the Master should therefore also refer to the *Gard Handbook on Protection of the Marine Environment*.

**3.12.1.3 Co-operation with authorities – no admission of liability**

If the Master feels that his/her vessel has been wrongly blamed for the spill, or any of the response actions taken by the authorities is incorrect, he/she should make a note of protest after consulting the

### 3.12 Pollution

P&I insurer, the correspondents or the lawyers acting on behalf of the Company – please see section 2.16.3.4.F Pollution not caused by the own vessel.

Before any admission of liability is made by the vessel's Master and/or crew, the P&I insurer and the local correspondents must be consulted.

#### 3.12.2 Pollution by oil

In most instances pollution by oil or oily substances causes considerable harm to animals and plants as well as damage to third party property. The initial damage may be caused by the pollutant itself. Clean-up operations may in some instances add to the damage and some affected property cannot be cleaned or repaired and must be replaced.

Depending on the amount of oil spilled and the extent of the pollution, the chemicals used by the authorities for dispersing the oil may increase the extent of the damage. In any case, measures to restrict the pollution and the subsequent clean-up should be left to the national authorities or the contractors engaged by the Company or its representatives, as the case may be in some countries, e.g. USA. These contractors have the experience to deal with pollution as well as the necessary equipment and manpower. However, this does not prevent the P&I insurer or the Company from becoming involved in monitoring the clean-up, which will normally be undertaken by experts appointed by the P&I insurer or the correspondents for and on behalf of the Company.

### 3.12.3 **Pollution by noxious liquid substances carried in bulk – chemicals**

Due to the often catastrophic effects of pollution by noxious liquid substances in bulk – chemicals – any activity which deals with containing pollution and clean-up should be left to the local authorities unless national law requires the Company to instruct contractors to carry out these operations – as the case may be in some countries, e.g. USA. Monitoring of such operations will usually be carried out by experts appointed by the P&I insurers.

### 3.12.4 **Pollution by harmful substances in packaged form – dangerous cargoes**

If pollution has occurred, the Master should seek the co-operation of the authorities to minimise the consequences.

### 3.12.5 **Pollution in non US waters – underway, alongside or at anchor**

Pollution occurring in the open sea may nevertheless affect the environment and the coastline of a neighbouring state. The Master is therefore advised to immediately notify

- the competent administration of the nearest coastal state
- the Company
- the P&I insurer
- the nearest correspondent, whose number can be found in the *List of Correspondents*.

If the vessel is at anchor, in the port area or alongside and pollution occurs, the Master is advised to also notify the vessel's local agent.

Until such time that support from ashore arrives, the Master, together with the vessel's designated spill officer or safety officer must

- immediately evaluate the situation
- determine how best to contain the spill
- limit the pollution.



## 3.12 Pollution

### 3.12.6 Pollution in US waters

#### 3.12.6.1 *Immediate notification and contacts*

Should pollution occur in US waters – irrespective of the type of vessel involved – the Master should be familiar with the Vessel Response Plan, which will contain the contact information for the individuals and authorities which must be notified immediately

- Qualified Individual (appointed under OPA'90 legislation)
- US Coast Guard National Response Centre  
Telephone +1 800 424 8802 or +1 202 267 2675, or
- US Coast Guard Marine Safety Office closest to the spill
- vessel's local agent
- the Company
- local correspondents whose number can be found in the *Gard List of Correspondents*.

Delayed notification or failure to give notice can have serious financial consequences including the imposition of large fines on both individuals and the Company.

#### 3.12.6.2 *Criminal investigations*

If the authorities decide to conduct a criminal investigation, the Master and the officers and/or engineers involved may have the right to remain silent and the right to seek advice from lawyers before responding to any questions from the authorities. However, the Master should make it clear to the authorities that he/she will co-operate fully with their investigations, but requires a lawyer to be in attendance during any enquiries or interviews.

**The Master should not direct the crew to lie, destroy, tamper with or hide evidence.**

If the Master does so, he/she may be charged with obstruction of justice. If the Master or any other person involved on board is uncertain about their rights and responsibilities in a criminal investigation advice should be obtained from the local correspondents or a local law office.

### **3.12.7 Co-operation with contractors**

When pollution occurs, the Master should ensure that the crew is co-operating fully and supporting

- all contractors combating the spill
- the authorities
- the correspondents.

### **3.12.8 No chemicals to be used unless approved!**

Chemical dispersants must not be used following an oil spill, unless and until their use has been approved by the local or national authorities!

### **3.12.9 Vessel's plans**

If the spill was caused by damage to the vessel's structure, all relevant blueprints of the vessel's structure should be readily available. The Master should ensure that an officer from the vessel is assigned to the task of providing assistance when necessary in interpreting the blueprints.

## 3.12 Pollution

### 3.12.10 Evidence to be collected

In addition to keeping a continuous record of all events and actions taken, the following evidence must be collected.

#### 3.12.10.1 *Description of the incident*

- Date and exact time of pollution recorded on the bridge and in the engine room, vessel's local time and UTC (Co-ordinated Universal Time)
- type of pollution
- operation during which pollution occurred, e.g. bunkering, collision
- pollutant
- approximate amount spilled (in case of oil or chemical pollution)
- vessel's position/location
- courses (chart course, steered course, gyro and magnetic compass) at the time of the spill – if pollution occurred at sea
- speed, propeller revolutions or propeller pitch of the vessel at the time of the spill – if pollution occurred at sea
- any compass and/or radar bearings and distances to the coastline taken and recorded – if pollution occurred at sea
- prevailing weather conditions (particularly wind direction and force) at the time of spill (keep any weather records)
- tide and current at the time of the spill
- draught of the vessel at the time of the spill.

#### 3.12.10.2 *Description of the operation during which pollution occurred*

- Type of operation, e.g. bunkering, transfer
- commencement of operation – date and vessel's time
- persons involved in the operation
  - on deck
  - in the engine room
  - ashore or on bunker barge
  - names, ranks, duties
- details of attending supervising officer.

3.12.10.3 *Other companies involved in the pollution – bunker and other suppliers*

- Name and contact details of the company
- names and contact details of the company’s personnel involved in the operation
- duties of the personnel involved in the operation
- name of bunker vessels/bunker barges
- if the pollution was caused during bunkering
  - whether any procedures had been agreed, e.g. commencement, rate of flow, interruptions
  - how communications were effected
- were there any difficulties in communicating, e.g. language, noise
- were there any difficulties as such with the operation.

3.12.11.4 *Property damaged by pollution*

- Description
- location
- extent of pollution.

Copies of documents referred to above together with copies of other trading documents will be taken by the lawyer or correspondent instructed on behalf of the Company or the P&I insurer.

### 3.13 Refugees

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#### 3.13 REFUGEES

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If refugees have been picked up, the cover provided by the P&I insurer will be involved. The Company, the P&I insurer or their local correspondent should therefore be contacted.

**Any guidance provided below should by no means be in conflict with any regulatory requirement related to the ISPS Code.**

##### 3.13.1 General

If refugees are picked up at sea, the Master should bear in mind that they may have been at sea for several weeks and may be suffering from exposure, hunger, dehydration, seasickness and fatigue. The *UNHCR Guidelines for the Disembarkation of Refugees* provide a scheme for the reimbursement of certain costs involving in landing refugees. This scheme may not cover a deviation for the purposes of landing the refugees. Therefore, the Master must consult the Company provided time allows, if he/she is considering deviating the vessel.

##### 3.13.2 Action to be taken

The Master should refer to the procedure in the Emergency Contingency Plan and the vessel's SSP when encountering refugees at sea. When refugees are taken on board the vessel the following action should be taken

- report to the Company and the P&I insurer that refugees are on board so that the Company Security Officer (CSO) can inform the appropriate authorities such as the Port Facility Security Officer (PFSO), at the next port of call
- once a decision has been made to land the refugees, inform the Company's agent and the correspondent in the landing port
- prepare accommodation on board for the refugees, including blankets and beds
- prepare provisions for the refugees
- seek medical advice from ashore if necessary.

### 3.13.3 Information to be provided

The following information should be provided to the Company and the P&I insurers

- date and vessel's time, UTC (Co-ordinated Universal Time) and position when the refugees were encountered
- date, vessel's time, UTC (Co-ordinated Universal Time) and position when the refugees were taken on board
- ETA of the next scheduled port of call
- ETA of the next port of call if a deviation is undertaken to land the refugees
- number of refugees on board and their personal details
- the medical condition of the refugees and whether medical assistance is required. If immediate medical assistance is required, the Master should refer to section 3.11 Personal injury, crew illness and death.

### 3.13.4 Evidence to be collected

As the UNHCR Guidelines for the Disembarkation of Refugees provide for the reimbursement of the costs incurred in taking refugees on board, the Master and his officers must collect evidence in support of such a claim as follows

- date, vessel's time, UTC (Co-ordinated Universal Time) and position when the refugees were encountered
- date, vessel's time, UTC (Co-ordinated Universal Time) and position when the refugees were taken on board
- date, vessel's time, UTC (Co-ordinated Universal Time) and position when the vessel deviated from her scheduled course, if refugees are to be landed at a port different from the scheduled port
- fuel on board at the time of deviation
- calculation of the fuel for the deviation
- fuel used for the deviation
- record of all communication expenses, e.g. charges for each message received or transmitted via a radio station
- copy of the deck log book and other relevant logs, including engine room log.

### 3.14 Stevedore damage – damage to the own vessel caused by third parties

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#### 3.14 STEVEDORE DAMAGE – DAMAGE TO THE OWN VESSEL CAUSED BY THIRD PARTIES

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##### 3.14.1 General

Damage to the own vessel may be caused by

- stevedores during cargo operations
- shore terminal operators with cranes
- contractors during works
- truck drivers on ro-ro vessels, or
- any other person being on or next to the vessel, such as supercargo, agents, visitors etc.

##### 3.14.2 Reporting

As it is not certain whether any such damage can be fully recovered from the third party having caused and being responsible for the damage, the cover provided by the Hull and Machinery insurance may be involved. Therefore, the Company and the Hull and Machinery insurer must be contacted.

As in the case of any other damage it is important to collect the necessary evidence as soon and as complete as possible in order for the Company to be able to pursue the claim. Accordingly, as soon as an incident occurs the Hull and Machinery insurer and the correspondent should be advised. The following information should be provided

- short factual description of the incident
- date and vessel's time of the incident
- position/location of the incident
- extent of damage sustained by the vessel
- prevailing weather conditions at the time of the incident (keep any weather records)
- any fatality or personal injury, please see section 3.11 Personal injury
- any pollution, please see section 3.12 Pollution.

### **3.14 Stevedore damage – damage to the own vessel caused by third parties**

#### **3.14.3 Actions to be taken**

- Make immediate reference to the vessel's Emergency Contingency Plan (if this particular type of damage is described in the plan)
- notify the responsible person within the stevedore's company
- inform the relevant local authority or ashore
- inform the Company and correspondent to arrange a survey.

#### **3.14.4 Evidence to be collected**

- Date and vessel's time of the incident
- vessel's position/location at the time of incident
- draught of the vessel at the time of incident
- prevailing weather and visibility (keep any weather records)
- tide and currents
- details of the object damaged on board the vessel
- extent of damage
- photographs or video of the damaged object to be taken
- sketches or drawings to be made of the object and its location
- names, ranks and duties of those on the watch
- witnesses' names and contact details
- statements of eye witnesses
- relevant logs and order books valid at the time of incident to be retained
- names, addresses and contact details of the person having caused the damage
- name, address and contact details of the employer of the person having caused the damage
- object (crane, fork lift, bobby cat etc.) which caused the damage
- snapped wires or loading gear used when the damage occurred
- photographs or video of the object causing the damage
- details of the truck – if applicable.



### 3.15 Stowaways

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#### 3.15 STOWAWAYS

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When stowaways are discovered on board, the cover provided by the P&I insurers is involved. Contact should therefore be made with the Company, the P&I insurer or their local correspondent.

**Any guidance provided below should by no means be in conflict with any regulatory requirement related to the ISPS Code.**

When stowaways are discovered on board the vessel, the Master should refer to the procedure contained in the Emergency Contingency Plan under the vessel's SMS.

#### 3.15.1 Actions to be taken

- The discovered stowaway should be placed in a locked cabin. The stowaway should not be allowed to roam freely about the vessel
- if more than one stowaway is found, they should – if possible – be accommodated separately
- the place where the stowaway was found should be searched for further stowaways and any documents left behind
- the place the stowaway was found should be photographed or video taken
- the place the stowaway was found must be thoroughly searched for drugs, as stowaways can be used as drug couriers. If drugs are found, the place should be left untouched and sealed off. Photographs and/or video should be taken of the location where the drugs were found
- the stowaway should be searched for identity papers. These documents, if found, must be confiscated as stowaways often try to hide their identity or destroy their identity papers
- the stowaway should be thoroughly searched for drugs. If drugs are found on the stowaway, take photographs and/or video and make a note of the circumstances in which the drugs were found
- the stowaway should be questioned in detail as to when and where the boarding took place

- for interrogation purposes a detailed Stowaway Questionnaire can be found in Annex 8
- if there is more than one stowaway they should be questioned individually as to
  - whether they knew each other prior to boarding
  - how they came on board
- the stowaway should be questioned as to why he/she has stowed away and the circumstances under which his voluntary return may be possible
- if the stowaway agrees to return voluntarily it should be made clear that unless he/she co-operates repatriation may be impossible
- the person questioning the stowaway, preferably the Master, should explain that if economical reasons are behind stowing away, no other country will accept them and repatriation will be inevitable
- immediately notify the Company and the P&I insurer enabling the CSO to inform the appropriate authorities at the next port of call, such as the PSSO – for reporting please refer to Annex 8, Stowaway Questionnaire
- notify the correspondent and the vessel's agents in the next port of call or the port of embarkation, so that they can prepare for identification and repatriation of the stowaway. Generally, repatriation cannot be carried out if advance notice of the stowaway has not been provided
- if it is impossible to communicate with the stowaway, an interpreter should be engaged ashore in order to gain an initial impression and obtain some basic information about the stowaway
- the stowaway should be treated humanely and not threatened with or exposed to any violence whatsoever as this will incur severe criminal penalties. There is no P&I cover for the defence of any person acting with violence
- video evidence of the treatment of the stowaway should be taken during the course of the voyage.

### 3.15 Stowaways

#### 3.15.2 Evidence to be collected

- Date, vessel's time, UTC (Co-ordinated Universal Time) and port where stowaway came on board
- date, vessel's time, UTC (Co-ordinated Universal Time) and location the stowaway was discovered on the vessel
- place/location where the stowaway hid
- duration the stowaway was concealed
- physical condition of the stowaway
- date, vessel's time, UTC (Co-ordinated Universal Time) and position of the vessel when the stowaway was discovered
- was there a gangway watch at the port where the stowaway embarked
- names and ranks of those on the watch when the stowaway boarded
- were guards employed at the port where the stowaway embarked and details of the company
- was any search carried out prior to departure, details of its extent, who was involved and the results thereof
- were any stowaways found during the search, how many, location where they were found and where delivered ashore
- records of the stowaway's treatment during the voyage, e.g. frequency and types of meals, accommodation, times allowed out and sanitary arrangements.

### 3.16 Structural failure – loss of propulsion and/or steering – call for assistance

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#### 3.16 STRUCTURAL FAILURE – LOSS OF PROPULSION AND/OR STEERAGE – CALL FOR ASSISTANCE

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##### 3.16.1 General

Whilst any damages to a vessel caused by structural failures can be of a wide variety, only general advice can be provided here. The same applies for a sudden loss of propulsion or any steering problems. All these problems may involve immediately calling for assistance or even to, in the end, abandoning ship.

##### 3.16.2 Action to be taken – Emergency Contingency Plan

In any case, the vessel's Emergency Contingency Plan should be referred to immediately and the procedures described therein followed.

##### 3.16.3 Reporting

Structural failures and a subsequent call at a port of refuge may involve the P&I insurers as well as the Hull and Machinery insurers. The Master should therefore immediately contact the Company, the P&I insurer and the Hull and Machinery insurer.

Such a first report should contain

- short description of the incident
- date, vessel's time and UTC (Co-ordinated Universal Time) of the incident
- position/location of the incident
- extent of damage sustained by the vessel
- status of watertight integrity
- status of cargo (e.g. loss over board, shifted or similar)
- prevailing weather, current and tidal conditions at the time of the incident (keep any weather records)
- any fatality or personal injury on vessel, please see section 3.11 Personal injury
- any pollution caused by the incident, please see section 3.12 Pollution.

### 3.16 Structural failure – loss of propulsion and/or steering – call for assistance

#### 3.16.4 Evidence to be collected

##### 3.16.4.1 *General information*

- Date and exact vessel's time and UTC (Co-ordinated Universal Time) recorded on the bridge and in the engine room of the incident
- position/location of the incident
- courses (chart course, steered course, gyro and magnetic compass) at the time of or prior to the incident
- speed, propeller revolutions or propeller pitch of the vessel at the time of or prior to the incident
- rudder position at the time of or prior to the incident
- any alteration of course and/or speed immediately before the incident including the exact time of the alteration
- any communications including orders given to the engine room (if applicable)
- any communications exchanged between the vessel and shore radio stations, traffic control centres or other vessels
- if under pilotage, any communications between the pilot and the vessel's command including the helmsman prior to the incident
- if under pilotage, any communications between the pilot and tugs, shore radio stations, traffic control centres or other vessels
- any compass and/or radar bearings and distances to the shore, taken and recorded prior to the incident
- any helm or engine manoeuvres before and after the incident and the times of any such manoeuvres
- prevailing weather conditions at the time of the incident (keep any weather records)
- tide and current at the time of the incident
- draught of the vessel at the time of the incident
- changes in draught and list after the incident
- records of soundings taken prior to and after the incident
- soundings of all tanks (fuel and water)
- works carried out on deck or in the engine rooms, which may have contributed to the incident
- assessment of damage sustained by the vessel.

### 3.16 Structural failure – loss of propulsion and/or steering – call for assistance

#### 3.16.4.2 *Navigation and communication equipment in use at the time of the incident*

- Radars – short description of radar settings and changes to the settings with exact times prior to the incident
- GPS systems – position recorded after button pressed (if done)
- electronic chart display – short description of the chart used and when last updated
- any other navigation or communication equipment used to be described as above
- echo sounder and echo sounder trace – description and range used
- any other navigation or communication equipment used to be described as above.

#### 3.16.4.3 *Persons involved*

Name, rank, duties, whereabouts and contact details of

- all persons attending the bridge prior to or at the time of the incident
- any other lookouts not on the bridge
- any other eye witnesses to the incident
- engine room personnel prior to or at the time of the incident
- any pilots attending the vessel prior to or at the time of the incident, times of embarkation/disembarkation
- any other persons involved
- other traffic/vessels in the vicinity.

### **3.16 Structural failure – loss of propulsion and/or steering – call for assistance**

#### **3.16.4.4 Documents to be retained**

- Chart used (paper or electronic) – do not tamper with or erase any marks/data
- deck logbook
- bridge bell book or scrap log
- engine logbook
- engine bell book or scrap log
- manoeuvre/course recorder printouts
- echo sounder trace
- deviation log
- weather reports and logs.

If any pollution has occurred due to the structural failure, please refer to section 3.12 Pollution.

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**3.17 TOWAGE – DAMAGE CAUSED TO OR BY A TUG**

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**3.17.1 Actions to be taken**

If a claim is lodged by a tug or towage company, or if there is contact with a tug or any other incident which may give rise to a claim, both the P&I and Hull and Machinery covers may be involved. The Master should therefore inform the Company and the correspondent in order for them to instruct a surveyor in order to assess the nature and extent of the damage.

**3.17.2 Evidence to be collected**

To assess whether there is a liability on the Company, evidence of the following should be collected

- date, vessel's time and UTC (Co-ordinated Universal Time) of the incident
- exact position of the vessel and the tug(s) at the time of the incident
- course and speed of the vessel at the time of the incident
- draught of the vessel at the time of the incident
- prevailing weather and visibility (keep any weather records)
- tide and currents
- name of tug involved
- extent of damage suffered by the tug
- extent of damage to the vessel (if any)
- exact position and time at the commencement of the towage
- position and duties of the tug at the commencement of the towage
- position of the tug at the time of contact/damage
- description of the towing arrangement at the time of contact/damage
- photographs or video to be taken of the tug
- sketches or drawings to be made of the towing arrangements and positions of the vessel and the tug on commencement of the towage, and when the contact/damage took place



### 3.17 Towage – Damage caused to or by a tug

- names, ranks and duties of those on the bridge and at mooring stations from where the tug was being attended
- names, ranks and duties of those in the engine room
- pilot name and contact details (if in attendance) and statements
- any communications exchanged between
  - the vessel and the tug
  - the vessel and traffic control centres
  - the pilot and any of the above
- any orders from the pilot given to the vessel including the helmsman prior to the contact with/damage to the tug
- radars – short description of radar settings and changes to the settings with exact times prior to the collision
- VHF – short description of its location on the bridge and channels operated at the time of the collision, any switches to other channels with exact times prior to the collision
- electronic chart display – short description of the chart used and when last updated
- chart used (paper or electronic) – do not tamper with or erase any marks/data
- statements of eye witnesses
- manoeuvre printer/course recorder printouts to be marked and retained and electronic data to be stored
- relevant logs and order books valid at the time of the incident to be retained
- failure of any navigation equipment to be noted
- should any personal injury occur, refer to section 3.11 Personal injury, crew illness or death
- should any pollution occur, please see section 3.12 Pollution
- details of the towage contract.

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**3.18 VIOLENT ACTS, PIRACY, ROBBERY AND OTHERS**

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Both the P&I and Hull and Machinery covers may be involved and contact should therefore be made with the Company, the P&I insurer and the Hull and Machinery insurer.

**3.18.1 General advice**

Attacks may range from piracy attacks to theft of cargo to pilferage, each requiring a different response. The Company should ensure that issues related to violent acts, piracy, robbery and other similar incidents are covered within the Company Security Plan and the vessel's Ship Security Plan (SSP) under the ISPS Code. The SSP, which will provide further guidance on how to respond, should be referred to in the event of this type of incident.

**3.18.2 Do not risk life defending property!**

In this type of situations it will be of considerable assistance if the Master, his officers and crew have been advised and trained by security experts on how to act and react during any attack.

**Under no circumstance must any person on board put his own life or that of any of the crew members at risk defending property or attempting to resist violence!**

**3.18.3 Reporting**

*3.18.3.1 General*

In any such instances the Master should, in accordance with the vessel's SSP, immediately inform the Company, the P&I insurer and local correspondent and request assistance. If the vessel is in port or at anchor, the Master should also inform the competent local authority such as the Port Facility Security Officer (PFSO) and call for help.

### 3.18 Violent acts, piracy, robbery and others

#### 3.18.3.2 *Use of radio signals by vessels under attack*

To keep the risk to each crew member's personal safety to a minimum, the following advice on the use of radio signals should be followed, subject to procedures as laid down in the vessel's SSP.

#### 3.18.3.3 *Pirates detected prior to boarding the vessel*

Provided the vessel has not been ordered by the pirates to maintain radio silence, contact should immediately be made with other vessels in the vicinity, authorities ashore and the Piracy Reporting Centre (PRC) by sending a "Piracy/armed robbery attack" message. The PRC is based in Kuala Lumpur and can be contacted on a 24 hour basis.

**Anti piracy helpline numbers:**

**Telephone +60 3 201 0014**

**Telefax +60 3 238 5769**

**email [ccskl@imbkl.po.my](mailto:ccskl@imbkl.po.my)**

If the report is to be made in writing the Piracy and Maritime Violence Incidence Report in Annex 9 of this publication should be used and sent to

IMB Piracy Reporting Centre  
International Maritime Bureau  
PO Box 12599, 50782 Kuala Lumpur, Malaysia.

#### 3.18.3.4 *Pirates boarded unnoticed*

When pirates have boarded the vessel unnoticed and the vessel is ordered to maintain radio silence, non-compliance can result in physical violence or even death. Any such order must, therefore, be strictly complied with, particularly as the pirates may carry radio/satellite detection equipment. After the attack, the Master should report the attack to the PRC.

#### 3.18.4 Evidence to be collected

If an attack has taken place the following evidence should be collected

- date, vessel's time and UTC (Co-ordinated Universal Time) the attack occurred
- the vessel's position/location at the time of the attack
- prevailing weather and visibility at the time of the attack (keep any weather records)
- draught and freeboard of the vessel at time of the attack
- if underway, the course and speed of the vessel
- precautions taken to prevent attacks
- type of attack
- number of persons involved in the attack
- description of attackers
- description of attackers' vessels
- how attackers gained access to the vessel
- whether the attackers gained access to the accommodation
- whether threats were made by the attackers and against whom
- whether attackers were armed and with what
- whether attackers used violence against any persons
- names of crew members and other persons on board injured in the attack
- type of injuries suffered
- damage caused by the attackers, e.g. to container doors or the vessel's safe, including photographs thereof
- items stolen
- whether attackers communicated with other persons not on board the vessel, if so with whom
- which languages were spoken by the attackers
- names, ranks, duties and exact location of persons on the bridge at the time of the attack
- names, ranks, duties and exact location of any eye witnesses
- statements from eye witnesses
- other observations made by crew or persons prior the incident.



## **Part 4 – Annexes**

- Annex 1      Certificates and documents required  
to be carried on board ships**
- Annex 2      List of abbreviations**
- Annex 3      Communications while loading  
and discharging**
- Annex 4      “Hold harmless” visitor agreement**
- Annex 5      Pilot Card**
- Annex 6      Ship to shore master/pilot exchange (MPX)**
- Annex 7      Shore to ship master/pilot exchange (MPX)**
- Annex 8      Stowaways questionnaire**
- Annex 9      Piracy and maritime violence incidence report**



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**ANNEX 1 CERTIFICATES AND DOCUMENTS REQUIRED TO BE CARRIED  
ON BOARD SHIPS**

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(Note: All certificates to be carried on board must be originals)

Note: This list is compiled in accordance with  
FAL. 2/Circ. 87 – MEPC/Circ. 426 – MCC/Circ. 1151 of 17 December 2004  
(for details please refer to this publication) and other industry publications.

**1 All ships Reference**

- Certificate of Registry
- International Tonnage Certificate (1969)
- International Load Line Certificate
- International Load Line Exemption Certificate
- Intact stability booklet
- Damage control plans and booklets
- Minimum safe manning document
- Certificates for Masters, officers and ratings
- Certificates of medical fitness
- Table of shipboard working arrangements
- Records of hours of work or rest of seafarers
- Fire Control plan/booklet
- On board training and drills record
- Fire safety operational booklet
- Certificates for masters, officers or ratings
- International Oil Pollution Prevention Certificate
- Oil Record Book
- Shipboard Oil Pollution Emergency Plan
- International Sewage Pollution Prevention Certificate
- International Air Pollution Prevention (IAPP) Certificate
- Garbage Management Plan
- Garbage Record Book
- Voyage data recorder system-certificate of compliance
- Cargo Securing Manual
- Document of Compliance



## **Annex 1 Certificates and documents required to be carried on board ships**

- Safety Management Certificate
- International Ship Security Certificate (ISSC), or
- Interim International Ship Security Certificate
- Ship Security Plan and associated records
- Continuous Synopsis Record (CSR)
- Declaration of Security (DoS)
- Record of ship security levels

### **2 In addition to the certificates listed in section 1 above, passenger ships shall carry**

- Passenger Ship Safety Certificate
- Exemption Certificate
- Special Trade Passenger Ship Safety Certificate
- Special Trade Passenger Ship Space Certificate
- Search and rescue co-operation plan
- List of operational limitations
- Decision support system for masters

### **3 In addition to the certificates listed in section 1 above, cargo ships shall carry**

- Cargo Ship Safety Construction Certificate
- Cargo Ship Safety Equipment Certificate
- Cargo Ship Safety Radio Certificate
- Cargo Ship Safety Certificate
- Exemption Certificate
- Document of authorization for the carriage of grain
- Certificate of insurance or other financial security in respect of civil liability for oil pollution damage
- Certificate of insurance or other financial security in respect of civil liability for oil pollution damage (1992 CLC Convention)
- Enhanced survey report file
- Record of oil discharge monitoring and control system for the last ballast voyage
- Cargo Information
- Bulk Carrier Booklet

## **Annex 1 Certificates and documents required to be carried on board ships**

- Ship structure access manual
- Dedicated Clean Ballast Tank Operation Manual
- Crude Oil Washing Operation and Equipment Manual (COW Manual)
- Condition Assessment Scheme (CAS) Statement of Compliance, CAS Final Report and Review Record
- Hydrostatically Balanced Loading (HBL) Operational Manual
- Oil Discharge Monitoring and Control (ODMC) Operational Manual
- Subdivision and stability information

### **4 In addition to the certificates listed in sections 1 and 3 above, where appropriate, any ship carrying noxious liquid chemical substances in bulk shall carry**

- International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk (NLS Certificate)
- Survey report file
- Ship structure access manual
- Cargo record book
- Procedures and Arrangements Manual (P & A Manual)
- Shipboard Marine Pollution Emergency Plan for Noxious Liquid Substances

### **5 In addition to the certificates listed in sections 1 and 3 above, where applicable, any chemical tanker shall carry**

- Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk
- International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk

### **6 In addition to the certificates listed in sections 1 and 3 above, where applicable, any gas carrier shall carry**

- Certificate of Fitness for the Carriage of Liquefied Gases in Bulk
- International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk

## **Annex 1 Certificates and documents required to be carried on board ships**

- 7 In addition to the certificates listed in sections 1, and 2 or 3 above, where applicable, any high-speed craft shall carry**
  - High-Speed Craft Safety Certificate
  - Permit to Operate High-Speed Craft
  
- 8 In addition to the certificates listed in sections 1, and 2 or 3 above, where applicable, any ship carrying dangerous goods shall carry**
  - Document of compliance with the special requirements for ships carrying dangerous goods
  
- 9 In addition to the certificates listed in sections 1, and 2 or 3 above, where applicable, any ship carrying dangerous goods in packaged form shall carry**
  - Dangerous goods manifest or stowage plan
  
- 10 In addition to the certificates listed in sections 1, and 2 or 3 above, where applicable, any ship carrying INF cargo shall carry**
  - International Certificate of Fitness for the Carriage of INF Cargo
  
- 11 In addition to the certificates listed in sections 1, and 2 or 3 above, where applicable, any Nuclear Ship shall carry**
  - A Nuclear Cargo Ship Safety Certificate or Nuclear Passenger Ship Safety Certificate, in place of the Cargo Ship Safety Certificate or Passenger Ship Safety Certificate, as appropriate.

## **Annex 1 Certificates and documents required to be carried on board ships**

### **Other certificates and documents which are not mandatory**

#### *Special purpose ships*

- Special Purpose Ship Safety Certificate

#### *Offshore support vessels*

- Certificate of Fitness for Offshore Support Vessels

#### *Diving systems*

- Diving System Safety Certificate

#### *Dynamically supported craft*

- Dynamically Supported Craft Construction and Equipment Certificate

#### *Mobile offshore drilling units*

- Mobile Offshore Drilling Unit Safety Certificate

#### *Wing-In-Ground (WIG) Craft*

- Wing-in-ground Craft Safety Certificate
- Permit to Operate WIG Craft

#### *Noise levels*

- Noise Survey Report

## Annex 2 List of abbreviations

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### ANNEX 2 LIST OF ABBREVIATIONS

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AIS	Automated Identification System
ANS	Aquatic Nuisance Species
ARPA	Automatic Radar Plotting Aid
BC	Bulk Carrier Code
BCH	Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk
BRM	Bridge Resource Management
C-TPAT	US Customs-Trade Partnership Against Terrorism
CCR	Cargo Control Room
Circ.	Circular
CLC 69	International Convention on Civil Liability for Oil Pollution Damage, 1969
CLC 92	1992 Protocol to the International Convention on Civil Liability for Oil Pollution Damage, 1969
COW	Crude oil washing
CSC	International Convention for Safe Containers, 1972
CSO	Company Security Officer
DGPS	Digital Global Positioning System
DMS	Diesel Manoeuvring System
DPS	Diesel Protection System
DRI	Direct Reduced Iron
EC	European Community
ECDIS	Electronic Chart Display and Information System
EEBD	Emergency Escape Breathing Device
EGS	Electronic Governor System
ETA	Estimated Time of Arrival
EU	European Union
FFO	Fixed and Floating Objects
FOSFA	The Federation of Oils, Seed and Fats Associations
FMP	Flow Moisture Point
GC	Gas Carrier Code
GMDSS	Global Maritime Distress and Safety System
GPS	Global Positioning System

## Annex 2 List of abbreviations

GSM	Global Satellite Mobile Phone
Hagues Rules 1924	International Convention for the Unification of Certain Rules of Law relating to Bills of Lading, 1924
Hague-Visby Rules 1968	1968 Protocol to amend the International Convention for the Unification of Certain Rules of Law relating to Bills of Lading, 1924
HSC Code	International Code for High Speed Crafts
H&M	Hull and Machinery (insurance, insurer)
IBC Code	International Code Bulk Chemical Code
ICS	International Chamber of Shipping
ID Card	Identification Card
IGC Code	International Gas Carrier Code
ILO	International Labour Organisation
IMB	International Maritime Bureau
IMDG	International Marine Dangerous Goods Code
IMO	International Maritime Organisation
IMPA	International Maritime Pilots Association
IOPP	International Oil Pollution Prevention Certificate
ISF	International Shipping Federation
ISGOTT	International safety guide for oil tankers and terminals
ISM	Code International Safe Management (ISM) Code
ISO	International Standardization Organization
ISPS	Code International Ship and Port Facility Security (ISPS) Code
ITC	Institute Time Clauses
LCD	Liquid Crystal Display
LL	International Load Line Convention, 1966
LOF	Lloyd's Open Form
LOU	Letter of Undertaking
LP	Loss Prevention
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78)

## Annex 2 List of abbreviations

MEPC	Marine Environment Protection Committee of the IMO
MDO	Marine Diesel Oil
MPX	Shore-to-Ship Master/Pilot Exchange Form
MPX	Ship-to-Shore Master/Pilot Exchange Form
MRCC	Maritime Rescue Coordination Centre
MSC	Maritime Safety Committee of the IMO
NIOP	The National Institute of Oilseeds Products
NLS	Noxious Liquid Substances
NYPE	New York Produce Exchange (Charter Party) Form
OBQ	On board quantity
OCIMF	Oil Companies International Marine Forum
OOW	Officer of the watch
OPA 90	Oil Pollution Act 1990
ORB	Oil Record Book
PCS	Propulsion Control System
PPE	Personal Protective Equipment
Ppm	parts per million
PRC	Piracy Reporting Centre of the International Maritime Bureau
PSSA	Particular Sensitive Sea Area
PSSO	Port Facility Security Officer
P&I	Protection and Indemnity
Res.	Resolution
SBP	Singapore Bunker Procedure
SCOPIC 2000	Special Compensation P&I Clause
sec.	Section
SMC	Safety Management Certificate
SMS	Safety Management System
SOLAS	International Convention for the Safety of Life at Sea, 1960
SOPEP	Shipboard Oil Pollution Emergency Plan
SSTP	Protocol on Space Requirements for Special Trade Passenger Ships, 1973
SSO	Ship Security Officer

## Annex 2 List of abbreviations

SSP	Ship Security Plan
STCW	Code and International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978
STCW 95	1995 amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978
STP	Special Trade Passenger Ships Agreement, 1971
SWL	Safe Working Load
TFT	Thin Film Transistor
TML	Transportable Moisture Limit
UCS	Universal Control System
UMS	Unmanned Machinery Space
UNHCR	United Nations High Commissioner for Refugees
US	United States
UTC	Coordinated Universal Time
VDR	Voyage Data Recorder
VHF	Very High Frequency
VMS	Voyage Management System
VRP	Vessel's Response Plan
VTSS	Vessel Traffic Service System



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**ANNEX 3 COMMUNICATIONS WHILE LOADING AND DISCHARGING**

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**3.1 Ship-to-terminal communications while loading**

*Communications procedure*

Each communication between the ship and the shore terminal must begin with the identification of the station being called and the identity of the calling station, just as if it were a marine traffic call on bridge-to-bridge VHF. Consistent application of this radio discipline will ensure that there is no confusion between ships and different berths in the same terminal or same port area.

*Communication objective*

The objective of good ship-terminal communications is a steady flow of exchange which focuses the operators on the status of the ship and the next event likely to occur.

*Communication difficulties – Phrase sheet*

When there are language difficulties between the terminal and the ship, the cargo watch officer on the ship must be provided with a phrase sheet of the terms and orders to be used in the shore's language and corresponding translations in his own language. This arrangement is a poor substitute for adequate language fluency between shore and ship and it should only be used as a last resort. A crew member should be stationed at the ship's manifold to watch the shore operator. He should confirm the operator's actions in response to request by the ship's cargo officer.

*Chief Officer's loading orders*

Following the pre-loading conference, the chief officer may amend his loading plan, will prepare supplementary loading/night orders and complete any directions necessary to ensure full control of the start of the loading operations.

### Annex 3 Communications while loading and discharging

#### *Communication contents*

The ship should communicate at least the following to the terminal

- When all fast to the pier
- When customs formalities are complete
- When loading hoses have been connected
- When ballast discharge is completed
- When tank inspection is complete
- Acknowledgement of all communications received from the terminal
- When the ship is ready to receive cargo
- When cargo has started entering the tanks
- When loading rate may be increased to full rate
- When the watch is changed in the CCR and on deck
- Any problems with mooring lines, cargo hoses or the shore gangway
- Standby to reduce rate for topping off
- Order to reduce the cargo loading rate for topping off
- Advice that topping off tanks has begun
- Advice when topping off is complete and rate can be increased
- Hourly advice of the loading pressure and temperature at the ship's manifold and rate at which cargo is being received
- Advice to standby on receiving a fire detection, gas detection, or other significant alarm; followed by advice to ship down if a fire is found, or to continue loading if the alarm is false
- Advice of setting or changing the sailing time of the vessel
- Advice and time that pilots and tugs have been ordered
- Standby to finish loading a grade (or cargo)
- Instruction to stop pumping a grade (or cargo)
- Advice that the ship is ready for gauging and sampling
- Advice that ship is ready to drain and disconnect hoses
- Time that hoses are disconnected
- Time that all crew members are on board
- Time that vessel will begin testing radars and main engine for departure
- Time that gauging/sampling is complete
- Time that cargo documentation is complete.

### **3.2 Terminal-to-ship communications while loading**

#### *Communications procedure*

Each communication between the shore terminal and the ship must begin with the identification of the station being called and the identity of the calling station, just as if it were a marine traffic call on bridge-to-bridge VHF. Consistent application of this radio discipline will ensure that there is no confusion between ships and different berths in the same terminal or same port area.

#### *Communication objective*

The objective of good terminal-ship communications is a steady flow of exchange which focuses the operators on the status of the ship and the next event likely to occur.

#### *Communication difficulties – Phrase sheet*

When there are language difficulties between the terminal and the ship, the cargo watch officer on the ship must be provided with a phrase sheet of the terms and orders to be used in the shore's language and corresponding translations in his own language. This arrangement is a poor substitute for adequate language fluency between shore and ship and it should only be used as a last resort. A crew member should be stationed at the ship's manifold to watch the shore operator. He should confirm the operator's actions in response to request by the ship's cargo officer.

#### *Communication amount*

This amount of communications from the shore will be provided if the chief officer makes clear during the pre-loading conference that is both expected *and* essential, and if during the loading operation the ship provides a corresponding amount of information as indicated in Annex 3 **“Ship to terminal communications while loading”**

#### *Chief Officer's loading orders*

Following the pre-loading conference, the chief officer may amend his loading plan, will prepare supplementary loading/night orders and

complete any directions necessary to ensure full control of the start of the loading operations.

#### *Communication contents*

The shore terminal should provide to the ship the following

- Advice of when they will be ready to connect hoses
- Advice when they are ready to load cargo (grade)
- Advice that cargo (grade) has been started on hose/manifold No. ...
- Acknowledgement of all communications received from the ship
- Advice regarding the condition of the moorings and/or gangway
- Hourly readings of the loading rate, total quantity delivered to ship and ship's draft readings forward and aft (if they can be conveniently observed)
- Advice if cargo loading is stopped for any reason
- Advice of a fire in the terminal
- Advice of any communications or parcels received for delivery to the ship
- Weather advice received
- Notice of returning crew members who may appear to be intoxicated.

### **3.3 Ship-to-terminal communications while discharging**

#### *Communications procedure*

Each communication between the ship and the shore terminal must begin with the identification of the station being called and the identity of the calling station, just as if it were a marine traffic call on bridge-to-bridge VHF. Consistent application of this radio discipline will ensure that there is no confusion between ships and different berths in the same terminal or same port area.

#### *Communication objective*

The objective of good ship-terminal communications is a steady flow of exchange which focuses the operators on the status of the ship and the next event likely to occur.

### **Annex 3 Communications while loading and discharging**

#### *Communication difficulties – Phrase sheet*

When there are language difficulties between the ship and the terminal, the cargo watch officer on the ship must be provided with a phrase sheet of the terms and orders to be used in the shore's language and corresponding translations in his own language. This arrangement is a poor substitute for adequate language fluency between ship and shore and it should only be used as a last resort. A crew member should be stationed at the ship's manifold to watch the shore operator. He should confirm the operator's actions in response to request by the ship's cargo officer.

#### *Communication contents*

The ship should communicate at least the following to the terminal

- When all fast to the pier
- When customs formalities are complete
- When transfer hoses have been connected
- When tank inspection is complete
- Acknowledgement of all communications received from the terminal
- When the ship is ready to begin discharging cargo
- When cargo pumps are started or stopped (naming cargo grade)
- When transfer rate is increased to full rate
- When the watch is changed in the CCR and on deck
- Any problems with mooring lines, cargo hoses/arms or the shore gangway
- Reduction of pumping rate for changing tanks or tank stripping
- Resumption of full pumping rate
- Advice when discharge of a grade of cargo is completed
- Hourly advice of the discharging pressure and temperature at the ship's manifold and rate at which cargo is being transferred
- Advice to stand by on receiving a fire detection, as detection, or other significant alarm; followed by advice to shut down if a fire is found, or to continue transfer if the alarm is false
- Advice of setting or changing the sailing time of the vessel
- Advice and time that pilots and tugs have been ordered
- Advice that the ship intends to begin ballasting (SBT)
- Advice that the ship is ready for tank inspection/ROB measurement

- Advice that the ship will begin ballasting (CBT)
- Advice that the ship is ready to drain and disconnect hoses
- Time that hoses are disconnected
- Time that all crew members are on board
- Time that vessel will begin testing radars and main engine for departure
- Time that tank inspection/ROB calculation is complete
- Time that cargo documentation is complete.

### **3.4 Terminal-to-ship communications while discharging**

#### *Communications procedure*

Each communication between the shore terminal and the ship must begin with the identification of the station being called and the identity of the calling station, just as if it were a marine traffic call on bridge-to-bridge VHF. Consistent application of this radio discipline will ensure that there is no confusion between ships and different berths in the same terminal or same port area.

#### *Communication objective*

The objective of good terminal-ship communications is a steady flow of exchange which focuses the operators on the status of the ship and the next event likely to occur.

#### *Communication difficulties – Phrase sheet*

When there are language difficulties between the terminal and the ship, the cargo watch officer on the ship must be provided with a phrase sheet of the terms and orders to be used in the shore's language and corresponding translations in his own language. This arrangement is a poor substitute for adequate language fluency between shore and ship and it should only be used as a last resort. A crew member should be stationed at the ship's manifold to watch the shore operator. He should confirm the operator's actions in response to request by the ship's cargo officer.

### **Annex 3 Communications while loading and discharging**

#### *Communication amount*

The amount of communication from the shore will be provided if the chief officer makes clear during the pre-transfer conference that it is both expected and essential and if during the transfer operation the ship provides a corresponding amount of information as indicated below.

#### *Communication contents*

The shore terminal should provide to the ship the following

- Advice of when they will be ready to connect hoses
- Advice when the shore valve is open and they are ready to receive cargo (grade)
- Advice that cargo (grade) is being received on hose/manifold No
- Acknowledgement of all communications received from the ship
- Advice regarding the condition of the moorings and/or gangway
- Hourly readings of the transfer rate, total quantity delivered by ship and ship's draft readings forward and aft (if they can be conveniently observed)
- Advice if cargo transfer must be stopped for any reason
- Advice of a fire in the terminal
- Advice of any communications or parcels received for delivery to the vessel
- Weather advice received
- Advice of the arrival of visitors, or of returning crew members who appear to be intoxicated.

**ANNEX 4 "HOLD HARMLESS" VISITOR AGREEMENT**

**Important:** Please read and sign this document in return for visiting the ship. You will not be allowed on board unless you sign and agree to these terms. Please note that in signing it you will be bound by its terms which you should note provide a hold harmless to the ship, master, crew and owners in respect of your visit on board the ship. If you do not understand English then you must ask for a translation or to have the terms explained to you.

**Definitions:** In this agreement the term "Ship" means \_\_\_\_\_ [name of ship], and "Owners" includes the Shipowners, Disponent Owners, Managers, Charterers, Agents, Master, Mariner or other Servants of the Ship. The term "Visitor" includes the person signing this visitor agreement, any and all person(s), including minor children, accompanying the person so signing, and, insofar as concerns disputes in relation to loss of life, any and all dependants and/or legal representatives of the deceased.

To the Master of the \_\_\_\_\_ [name of ship]  
 In consideration of allowing the Visitor \_\_\_\_\_ [name of visitor in capital letters]  
 to board the vessel at \_\_\_\_\_ [port and/or date of boarding]  
 and/or to follow the Ship from \_\_\_\_\_ [port and/or date of embarkation]  
 to \_\_\_\_\_ [port and/or date of disembarkation]

the following conditions are hereby irrevocably and unconditionally accepted:

- 1 This agreement is in every respect, including questions of Owners' liability, governed exclusively by \_\_\_\_\_ [applicable law] law. Any dispute arising out of this agreement is to be decided exclusively by the \_\_\_\_\_ [country of jurisdiction] Courts to the exclusion of the courts or tribunals of any other jurisdiction. Should for any reason proceedings in relation to this agreement and/or to the passage agreed herein be instituted elsewhere, whether in rem or in personam, then such proceedings shall be stayed pending a final and unappealable decision of the \_\_\_\_\_ [country of jurisdiction] Courts.
- 2 This clause serves to give explicit notice to the Visitor that the Ship is not a passenger ship. No warranty whatsoever is given by the Owners that the Ship is fit for the carriage of passengers. Any undertaking as to seaworthiness that might otherwise exist is hereby expressly waived.
- 3 The Visitor expressly agrees that Owners shall be under no liability whatsoever to the Visitor in respect of loss of life, illness, injury or loss of or damage to personal effects, luggage or other property, by reason of having allowed the Visitor to follow the ship as agreed above. The Owners shall be exonerated from such liability even if the loss of life, illness, injury or loss of or damage to personal effects, luggage or other property is caused by the Owners' negligence. Accordingly, the Visitor expressly agrees to assume any and all risks concerning loss of life, illness, injury and loss of or damage to personal effects or luggage or other property whilst on board and during embarkation and disembarkation.
- 4 Insofar as concerns loss of life, illness or injury, whether or not caused by negligence of the Owners, the Visitor undertakes to pay any and all expenses for medical treatment, maintenance, transportation, repatriation, burial and/or other expenses incurred by reason thereof. To the extent that Owners nevertheless are held liable by any third party to pay for any or all such expenses, the Visitor expressly undertakes to indemnify Owners for all such expenses.
- 5 This clause serves to give explicit notice to the Visitor that, in view of the fact that the Visitor has assumed any and all risks as expressed under (3) and (4) above, it may be in the best interest of the Visitor to purchase travel insurance which provides adequate cover for such risks.
- 6 The Visitor warrants full compliance with all quarantine, passport and other regulations for all ports of call at all times and undertakes to indemnify Owners for all additional expenses which they may incur by reason of non-compliance on the part of the Visitor, whether negligent or not, including but not limited to additional harbour, tonnage and light dues, fines and expenses arising out of delay or detention of the ship.
- 7 This clause serves to give explicit notice to the Visitor that the Ship is at all times at liberty to deviate from the advertised route for commercial or other reasons, and as a consequence, the Ship may not proceed to the intended port(s) of destination mentioned above. If the Ship does not call at the intended port(s) of destination, Owners are under no obligation whatsoever to transport the Visitor to the intended port(s) of destination or to pay for such transportation, and the Visitor hereby expressly waives any and all rights to claim damages, refund of expenses or any other kind of compensation as a consequence thereof. Any money paid by the Visitor on signing this contract is to be considered as fully earned by Owners and non-returnable.
- 8 No servant or agent of Owners, nor any independent contractor employed by Owners from time to time shall in any circumstances whatsoever be under any liability to the Visitor for loss of life, illness, injury or loss of or damage to personal effects, luggage or other property of the Visitor howsoever arising.
- 9 If Owners are held legally liable to the Visitor by virtue of rules of law which supersede or set aside any or all the preceding provisions of this agreement, such liability shall be based on the provisions contained in the *1974 Athens Convention on Carriage of Passengers and Their Luggage by Sea*.

Name of Visitor: \_\_\_\_\_  
 Address of residence: \_\_\_\_\_  
 Name(s) of accompanying minor child(ren): \_\_\_\_\_  
 Passport number(s): \_\_\_\_\_

Date and place: \_\_\_\_\_ Signature of beneficiary: \_\_\_\_\_

I confirm I read and understand English.

In signing this agreement I confirm that I agree to its terms and that I am bound by those terms and that I have read and understood them.

- 10 This clause is to be completed when the Visitor disembarks from the vessel and has completed his/her period on board.

The Visitor hereby agrees and confirms that, during his/her time on board, he/she has not been involved in any incident which has caused, or which may have caused, him/her to suffer any illness, injury or loss of or damage to personal effects, luggage or other property.

Date and place: \_\_\_\_\_

Visitor's signature: \_\_\_\_\_ Master's signature: \_\_\_\_\_



**ANNEX 5 PILOT CARD****SHIP'S PARTICULARS**

Name		Call sign	
Displacement	Gross tons		Year built
Length OA	m	Breadth	m
Max. draught	m	Air draught	m
Port anchor	shk (1 shk = 27.4 m/15 fathoms)	Stb anchor	shk (1 shk = 27.4 m/15 fathoms)

**ENGINE**

Type		kw	HP
Full ahead, loaded	kts	Full ahead, ballast	kts
Half ahead, loaded	kts	Half ahead, ballast	kts
Slow ahead, loaded	kts	Slow ahead, ballast	kts
Dead slow ahead, loaded	kts	Dead slow ahead, ballast	kts
Full astern	(% of full ahead power)	Engine critical RPM	
Time full ahead to full astern	(sec.)	Max no. of consecutive starts	

**STEERING**

Rudders	Number	Type			Max angle		
Propellers	Number	Direction of turn	Port	Stb	Controllable pitch	YES	NO
Thrusters	Number	Bow power	kW / HP		Stern power	kW / HP	
Steering idiosyncrasies							

**EQUIPMENT CHECKED AND READY FOR USE**

X-Band radar (3 cm)	ARPA	
S-Band radar (10 cm)	ARPA	
Speed log	WATER / GROUND	SINGLE AXIS / DUAL AXIS
Electronic position fixing	Type available	
Compass system	Gyro compass error	
Steering gear	Number of power units	

**EQUIPMENT OPERATIONAL DEFECTS**

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Date	Master's signature	Pilot's signature

**ANNEX 6 SHIP TO SHORE MASTER/PILOT EXCHANGE (MPX)****A SHIP IDENTITY**

A1	Ship's name	A2	Call sign
A3	Flag		
A4	Ship's agent	A5	Year built
A6	Type of ship	A7	IMO no.
A8	Cargo type	A9	Last port

**B ADDITIONAL COMMUNICATION INFORMATION**

B1	Fax no.	B2	Telex no.
B3	Other		

**C PILOT BOARDING (state which, if there are more than one)**

C1	Date and ETA at pilot station	C/LT
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**D SHIP PARTICULARS**

Salt water draft			
D1	Forward	D2	Aft
D3	Midships	D4	Aft draft
D5	Length OA	D6	Beam
D7	Displacement	D8	Deadweight
D9	Gross tonnage	D10	Net tonnage

**E ANCHORS**

Shackles or metres of cable available			
E1	Starboard	E2	Port

**F MANOEUVERING DETAILS (at current condition), speeds at:**

F1	Max. full speed	F2	Half speed
F3	Slow speed	F4	Min. steering speed
Propeller details			
F5	Right/left turning	F6	C/P YES / NO
F7	Number		
F8	Thrusters fwd	F9	Thrusters aft

**G MAIN ENGINE DETAILS**

G1	Turbine/motor/other
G2	Maximum number of engine starts (if applicable)
G3	Time from full ahead to full astern

**H EQUIPMENT DEFECTS**

H1	
H2	
H3	

**I ANY NOTABLE CHARACTERISTICS, e.g. berthing restrictions, or manoeuvring peculiarities etc.**

I1	
I2	
I3	

**ANNEX 7 SHORE TO SHIP MASTER/PILOT EXCHANGE (MPX)\*****A SHIP REQUESTING PILOTAGE DETAILS**

A1	Ship's name	A2	Call sign
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**B ORIGINATING AUTHORITY**

B1	Name	B2	VHF channel
B3	Other means of contact		

**C PILOT BOARDING INSTRUCTIONS**

C1	Date and time of arrival at pilot boarding station	UTC/LT
C2	Position pilot will board at	
C3	Embarkation side	
C4	Approach course and speed to boarding station	
C5	Requested boarding arrangements	

**D BERTH AND TUG DETAILS**

D1	Intended berth, if inbound and berthing prospects
D2	Port/starboard side alongside
D3	Estimated transit time to berth
D4	Tug rendezvous position
D5	Number of tugs
D6	Tug securing arrangement
D7	Total bollard pull

**E LOCAL WEATHER AND SEA CONDITIONS AT PILOT BOARDING STATION**

E1	Tidal information (height and times)
E2	Current information
E3	Forecast local weather

**F DETAILS OF PASSAGE PLAN, including abort points and emergency plans**

F1	
F2	
F3	
F4	

**G LOCAL REGULATIONS, including VTS reporting, max. allowable draft, etc.**

G1	
G2	
G3	

**H OTHER RELEVANT INFORMATION, including navigational hazards, etc.**

H1	
H2	
H3	

\* During pilotage, particularly on long passages, circumstances may change which require an alteration from the information provided.

**ANNEX 8 STOWAWAYS QUESTIONNAIRE**

This questionnaire consists of two pages. Both pages to be completed as accurately as possible once a stowaway is found.  
For each stowaway use a separate questionnaire.

Vessel:
Owners:
Managers:

**PERSONAL INFORMATION**

01	Surname:	19	Seaman's book no.:
02	First names:	20	When issued:
03	Other name:	21	Where issued:
04	Date of birth:	22	Issued by:
05	Place of birth:	23	Emergency passport no.:
06	Nationality:	24	When issued:
07	Religion:	25	Where issued:
08	Tribe:	26	Issued by:
09	Chief:	27.1	When embarked:
10	Sub-Chief:	27.2	Where embarked:
11	Passport no.:	28.1	When discovered:
12	When issued:	28.2	Where discovered
13	Where issued:	29	When landed:
14	Issued by:	30	Where landed:
15	ID card no.:	31	Address (house no., street, city, PO box, tel. no.):
16	When issued:		
17	Where issued:		
18	Issued by:		

**PHYSICAL MARKS AND CHARACTERISTICS**

32	Height (cm):	37	Colour of skin:
33	Weight (kg):	38	Marks (scars, tattoos):
34	Complexion:	38.1	
35	Colour of eyes:	38.2	
36	Colour of hair:	38.3	

**MARITAL STATUS**

39	Married:	42	Place of birth:
40	Name of spouse:	43	Address:
41	Date of birth:		

**CHILDREN**

44	Name:	Date of birth:	Place of birth:
44.1			
44.2			
44.3			

**PARENTS**

45	Surname of father:	50	Surname of mother:
46	First names of father:	51	First names of mother:
47	Date of birth (age):	52	Date of birth (age):
48	Place of birth:	53	Place of birth:
49	Address:	54	Address:

Questionnaire to be continued on next page.

## Stowaways questionnaire – continued

**SIBLINGS**

55	Brothers: Name	Date of birth:	Place of birth:
55.1			
55.2			
55.3			
55.4			
55.5			
56	Sisters: Name	Date of birth:	Place of birth:
56.1			
56.2			
56.2			
56.3			
56.4			
56.5			

**OTHER RELATIVES**

57	Relationship, names, date of birth, place of birth, address:		
	Name	Date of birth:	Place of birth:
57.1			
57.2			
57.3			
57.4			
57.5			

**PROFESSIONAL CAREER, EDUCATION**

58	Profession/s:	62	School (name of school, address):
59	Languages spoken:	62.1	
60	Languages written:	62.2	
61	Employer:	63	Headmaster:
61.1		64	Teachers:
61.2			

**OTHER INFORMATION**

65	Reason for stowing away:
66	Intention (willing to be repatriated?):
67	Remarks/history:

Date of completion of questionnaire:	Interviewer:
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**ANNEX 9 PIRACY AND MARITIME VIOLENCE INCIDENCE REPORT** (I.C.C. International Maritime Bureau)**DATE**

Year	Day
Month	Time – local

**PLACE**

Latitude & longitude	
Nearest country(ies)	
Last port of call	Next port of call

**VICTIM VESSEL**

Name	Flag
Vessel type	Date built and GRT
Owner	Operator/manager
Further information	

**RAIDING PARTY**

Number	Appearance
Language	Weapons
Distinctive details	
Craft used	Method of approach
Duration of attack	Aggressive/violent

**PROPERTY STOLEN**

The fullest possible details should be given, using over the page if necessary
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**AREAS OF THE SHIP ATTACKED**

Bridge	Radio room	Engine room
Crew accommodation	Cargo spaces	

**DETAILS OF ANY INJURIES**

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Submitted by	Date
To	