

DISSERTATION
ON
THE ISM CODE: DEVELOPMENT,
IMPLEMENTATION AND LEGAL
ASPECTS

MERCHANT MARINE ACADEMY OF
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ΘΕΜΑ

The ISM Code: Development, Implementation and Legal Aspects

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Abstract:

The origins of the ISM Code go back, internationally, to the late 1980s when there was mounting concern about poor management standards in shipping. It is estimated that a high proportion of maritime accidents (80%–90%) are attributable to human error. Investigations into accidents highlighted shortcomings on the part of ship management both at sea and ashore. In 1987 the IMO Assembly adopted Resolution A.595 which called upon the Maritime Safety Committee to develop guidelines concerning shipboard and shore-based management to ensure the safe operation of roll-on/roll-off (Ro-Ro) passenger ferries. The tragic loss of the *Herald of Free Enterprise* in 1987 was a catalyst in this process.

Following this, regulations were introduced requiring that such ships carry a book (called the operations book) containing instructions and information for safe and efficient operation; and Owners of ships nominate a person (known as the Designated Person) to oversee the operation of their ships and to ensure proper provisions are made so that the requirements of the operations book are complied with. These requirements are also fundamental provisions of the ISM Code.

This dissertation looks at the development and implementation of the ISM Code, as well as certain legal aspects that arise, taking examples from UK and the practices followed by MCA.

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.2 The ISM Code.

The International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) was adopted by the IMO as Resolution A.741 (18), in November 1993. It came into force on 1 July 1998 as SOLAS Chapter IX, “Management for the Safe Operation of Ships”. The ISM Code provides an international standard for the safe management and operation of ships and for pollution prevention.

The ISM Code requires that Companies establish safety objectives and in addition that companies develop, implement and maintain a safety management system which includes functional requirements.

The application of the ISM Code should support and encourage the development of a safety culture in shipping .Success factors for the development of a safety culture are, inter alia, commitment, values and beliefs.

1.3 Why is there an ISM Code?

The origins of the ISM Code go back, internationally, to the late 1980s when there was mounting concern about poor management standards in shipping. It is estimated that a high proportion of maritime accidents (80-90%) are attributable to human error. Investigations into accidents highlighted shortcomings on the part of ship management both at sea and ashore. In 1987 the IMO Assembly adopted Resolution A.595 (15) which called upon the Maritime Safety Committee to develop guidelines concerning shipboard and shore-based management to ensure the safe operation of roll-on/roll-off (RO-RO) passenger ferries. The tragic loss of the Herald of Free Enterprise in 1987 was a catalyst in this process.

Ships must carry a book (called the operations book) containing instructions and information for safe and efficient operation, and Owners of ships nominate a person (known as the Designated Person) to oversee the operation of their ships and to ensure proper provisions are made so that the requirements of the operations book are complied with. These requirements are also fundamental provisions of the ISM Code. The ISM Code seeks to address the human element of ship operations.

After the loss of the Estonia in 1994 the Council of the European Union adopted Council Regulation (EC) No. 3051/95 of 8 December 1995 on the safety management of roll-on/roll-off passenger ferries. From 1 July 1996 this regulation made compliance with the ISM Code mandatory for seagoing passenger RO-RO ferries operating a regular service to, or from a port of an EU Member state. The Merchant Shipping (ISM Code) (RO-RO Passenger Ferries) Regulations 1997 (S.I. 1997 No

3022) provide for the enforcement of this Council Regulation. At the Conference of Contracting Governments to the 1974 Safety of Life At Sea (SOLAS) Convention, held in May 1994, a new chapter (Chapter IX) was added to the Convention which made compliance with the ISM Code mandatory, from either 1 July 1998 or 1 July 2002 depending on ship type. The ISM Code itself was adopted on 4 November 1993 under Resolution A. 741 (18).

1.4 IMO measures towards Safe Management of Ships

As a result of the major incidents detailed above, a number of measures were taken both nationally and internationally:

- Resolution A.596 entitled “Safe Management and Operation of Ships” was adopted in 1987
 - The UK implemented the Merchant Shipping (Operations Book) Regulations, S.I. 1988 No. 1716 (now superseded)
- Resolution A.647 “IMO Guidelines on Management for Safe Operation of Ships and for Pollution Prevention” was adopted in 1989 (superseding A.596)
- A further Resolution, A.680, entitled “IMO Guidelines on Management for the Safe Operation of Ships and for Pollution Prevention” was adopted in 1991, superseding A.647; and
 - Resolution A.741 “International Management Code for the Safe Operation of Ships and for Pollution Prevention”, the ISM Code, was adopted in 1993.

1.5 Principles and Objectives of the ISM Code

Given that no two shipping Companies or ship managers are identical and that ships operate under a wide range of different conditions, the ISM Code is expressed in broad terms and based on general principles and objectives. This provides Companies with the scope to develop their own safety management system (SMS) whilst meeting the provisions of the ISM Code. The Code imposes no prescriptive measures and takes a holistic view of a Company and the way in which it operates its ships.

The objectives of the ISM Code are to ensure safety at sea, prevention of human injury, loss of life and the avoidance of damage to the environment, in particular to the marine environment. The ISM Code requires owners and operators of ships to set in place a Safety Management System (SMS). The introduction of a SMS requires a Company to document its management procedures to ensure that conditions, activities and tasks, both ashore and afloat, affecting safety and environmental protection, are planned, organized, executed and checked in accordance with legislative and

Company requirements. The mandatory application of the ISM Code will help to ensure:

- Compliance with mandatory rules and regulations related to the safe operation of ships and protection of the environment; and
- The effective implementation and enforcement thereof by Flag State Administrations.

1.6 The Safety Culture

The Code aims to support and encourage the development of a safety culture within the shipping industry whilst improving compliance with the requirements of international conventions. The Code requires that Companies establish safety and pollution prevention objectives and that they develop, implement and maintain a SMS and a systematic approach to the safe management of ships by those responsible, both ashore and afloat.

1.7 The Safety Management System (SMS)

The SMS allows a Company to measure its performance against parameters set within a documented system. The SMS will enable a Company to identify areas for improvement in safety practice and pollution prevention measures. The effective implementation of a safety culture should lead to an improvement in safety consciousness and safety management skills.

1.8 The Audit for Compliance

The audits will be carried out within the scope of the “Guidelines on Implementation of the ISM Code by Administrations”, IMO Resolution A.788 (19). In addition, the International Chamber of Shipping in association with the International Shipping Federation, has produced “Guidelines on the Application of the IMO International Safety Management (ISM) Code”. It is recommended that surveyors become familiar with both these publications as they establish underlying principles for verifying that a shipping Company’s SMS complies with the ISM Code.

1.9 Index of Documents

The following documents are particularly relevant to the ISM Code:

- The ISM Code: IMO Resolution A.741 (18), adopted in November 1993.
- Guidelines on the implementation of the ISM Code by Administrations:
- IMO Resolution A.788 (19), adopted in November 1995.
- Guidance to Companies operating multi-flagged fleets and
- Supplementary Guidelines to Administrations: IMO MSC/Circ. 762 of 11 July 1996.
- Council Regulation (EC) No 3051/95 of 8 December 1995 on the safety management of roll-on/roll-off passenger ferries.
- The Merchant Shipping (ISM Code) (Ro-Ro Passenger Ferries) Regulations 1997 (S.I. 1997 No. 3022).
- Guidelines on the application of the IMO International Safety Management (ISM) Code, third edition, published jointly in 1996 by the ICS/ISF.
- The Merchant Shipping (International Safety Management (ISM) Code) Regulations 1998 (S.I. 1998 No. 1561).

CHAPTER 2 DEVELOPMENT

2.1 Triggering events and actions

The ISM Code was designed by the IMO to provide a vehicle for shipowners to create their own programs individually tailored to meet comprehensive international standards for safety and pollution prevention in the operation of vessels. For the first time, the responsibilities of shore-based safety personnel, up to the highest levels of management, and shipboard personnel are integrated in a system designed to eliminate accidents caused by human error.

The stated purpose of the ISM Code is to establish minimum standards for safety management and operation of ships and for pollution prevention. In the preamble, the drafters emphasize that the Code is purposefully based on general principles and objectives and is expressed in broad terms so that it is conducive to widespread application. They also state clearly that the Code is responsive to the need for a shore-side management organization, which is able to respond to the needs of those aboard ships with respect to safety and environmental protection. The objectives of the Code are to ensure safety at sea, prevent human injury and avoid damage to the environment and to property. The Code does not create specific operating rules and regulations, but provides a broad framework for vessel owners and operators to ensure compliance with existing regulations and codes, to improve safety practices and to establish safeguards against all identifiable risks. It also sets forth the safety management objectives, which "should" be adopted by companies.

Dramatic developments in technology and communication in the last quarter of this century have greatly enhanced the ability of vessels to prevent casualties of all kinds. The fact that accidents still happen is now often attributable to human error. The reduction of human error through training, communication and accountability is one of the main goals of the ISM Code.

The ISM Code appears to be a radical change in an industry where, historically, there were few written instructions and many decisions were, by necessity, delegated to vessel masters. However, as a practical matter, increased attention to safety and regulation of various aspects of shipping by flag and port states and the advent of instant communications have resulted in increased corporate control of vessel operations and safety, and increased record keeping. The ISM Code provides the company with a framework for a system for integrating many existing elements of safety management as well for the articulation and implementation of new policies.

In the late 1980's there were many accidents on vessels which were caused by human errors. In hindsight many errors and failures were caused by lack of management guidelines and rules. One of the accidents which led to the development of the first guidelines and later on the ISM Code was the capsizing of the RORO ferry

MS Herald of Free Enterprise. The ferry capsized a few moments after it left the Belgian port of Zeebrugge on March the 6th in 1987. The ferry capsized and 193 passengers and crew drowned. The cause of the capsizing was that the bow-door wasn't closed when leaving the port, which caused flooding of the decks and the capsizing of the ferry. The person responsible for closing the bow-door was the assistant boatswain, only he was asleep in his cabin. This was a human error, only after further investigation it became clear that there was also a lack of communication and a poor general culture in the ferry company, P&O European Ferries.

After having gathered information about the cause and nature of many accidents involving poor management, the IMO (International Maritime Organization) made guidelines on how to manage the safe operation of ships, including the prevention for pollution. The goal of these guidelines was to limit accidents and casualties caused by the lack of management onboard and from the shipping companies. The first resolution A.596, was made in 1987 and only contained guidelines for the safety of passenger ferries. In 1989, IMO adopted a new resolution A.647, which contained guidelines on management for the safe operation of ships and for pollution prevention "to provide those responsible for the operation of ships with a framework for the proper development, implementation and assessment of safety and pollution prevention management in accordance with good practice." (Quote IMO) These guidelines became the foundation for the ISM Code.

The IMO had two committees, the Maritime Safety Committee and the Marine Environmental Protection Committee, who had meetings in which they reviewed the guidelines to find ways to improve them. By implementing the guidelines many new ways were found to improve the safety onboard, so the guidelines were revised and a new resolution, resolution A.680, was made in November 1991. This resolution was also reviewed for two years and in November 1993 a new resolution was adopted which contained the ISM Code. The guidelines and the ISM Code were in the beginning mere recommendations, but the committees found out that the best way to improve safety at sea and to protect the environment was to make the ISM Code mandatory. The committees decided to add the ISM Code to the Safety of Life At Sea Convention of 1974 (SOLAS 1974). At first the Code became mandatory on July the 1st in 1998 for passenger ships, high speed crafts, oil and chemical tankers and gas and bulk carries. Four years, on July the 1st in 2002, the ISM Code became mandatory for all other vessels and offshore units at sea.

2.2 Environmental approach for cost estimation

The calculation of the cost for the accidental pollution of the environment is quite difficult due to several reasons. Actually the society is harmed in almost all cases registered. First of all we speak about the spill of oil into the sea in every form. After several researches it is more that sure that the sea is highly impaired by the oil and its products. It takes many years to bring the sea state back to its original condition after a serious oil spill. Also there is a strong possibility that might never come back to the

exactly same condition. Serious is considered any quantity more than ten barrels according to IACS. During the last decade, by ignorance, the public believes that the major source of pollution is the tanker ships. The following graph designates all sources of marine pollution.

Since 1974 the ITOPF (International Tanker Owners Pollution Federation) is registering and studying all accidents caused by ships involving oil spills. Among 10,000 accidents, the 85% is referred in quantities less than 7 metric tons. For the same period it is observed that the total number of accidents resulting oil spillage bigger than 700 tones, has reductive rate. Actually during the 90's these accidents are reduced into 1/3 compared to the 70's.

The absolute accident number is not of great importance since a major one may overcome many small ones. According to the latest studies, the total number of the accidents during the period where the ISM Code was initiated, 1997-2003 was decreased four times than in the period 1990-1996. This is the result of the introduction of the double hull tankers.

After the year 1990 where a serious and well known accident occurred at Alaska's coastline (Exxon Valdez), the perception of oil transportation was completely changed particularly for the United States. Although this accident was not one of the biggest regarding the amount of oil leaked into the sea (37,000 tones), the American society and the environmental protection organizations pressed the local shipping community to enforce laws about the requirements for the ships calling the US ports. As a result apart of the technical requirements (only double hull vessels may approach) a very strict federal law was enforced pressing charges directly to the polluter even if it is hard to find (off shore owning companies). The liability of the manager assigned by the owner of the ship is huge compared to the past and the penalties are extremely high.

2.3 Evolution of Safety in the Maritime (Shipping) Sector.

Safety has never ranked very high in the scale of priorities of those who own ships. Their main priority has always and will perhaps always be making money by generating profit. Today's system for ensuring maritime safety is of relatively recent vintage although some elements of these provisions existed in the distant past. These elements are those that were established by the Lloyd's Register of British and Foreign Shipping, which was created in 1834, thereby institutionalizing the concept of safety and risk analysis. Since these rules were initiated by insurance organizations with the aim of ensuring that the ships were fit for purpose, Cahill (1990) argues that they often seemed to encourage ship owners to ignore operational safety considerations. The attitude therefore seemed to "not interfere" in the knowledge that they were covered by their insurers.

All that changed when the now infamous Titanic sunk in 1912. This is a ship that had set sail with every one thinking it was unsinkable, and yet it did. Consequently

questions had to be asked about the design and safety provisions (in particular the life-saving appliances on board) of the ship to begin with. In response, the international community at that time convened a conference and concluded an International Convention to determine uniform rules with respect to Safety of Life at Sea (SOLAS). This Convention covered areas such as safety of navigation, construction, radiotelegraphy, life-saving appliances and fire protection and its primary concern was safety of human life at sea (IMO, 1998). It initiated the widely known reactive and prescriptive approach to adoption of maritime safety regulations which is still in place and at the core of shipping safety today.

This approach has resulted in a multitude of regulations and the IMO is, today, the depository of more than 50 conventions regulating international shipping and 11 of them deal directly with Maritime Safety, as listed below. The IMO is a permanent international body capable of and competent to adopt legislation on all matters related to maritime safety. However, implementation and enforcement of the conventions is the responsibility of the member states. The following is the list of Conventions relevant to maritime safety:

- International Convention on Load Lines (LL) 1966
- International Convention on the Safety of Life at Sea (SOLAS) 1974
- Convention on the International Regulations for Preventing Collisions at Sea (COLREGS), 1972
- International Convention for Safe Containers (CSC), 1972
- International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978
- Special Trade Passenger Ships Agreement (STP), 1971
- International Convention for the Safety of Fishing Vessels (SFV), 1977
- Protocol on Space Requirements for Special Trading Passenger Ships, 1973
- Convention on the International Maritime Satellite Organization (INMARSAT), 1976
- International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (STCW – F) 1995
- International Convention on Maritime Search and Rescue (SAR), 1979.

Although other conventions regulating maritime safety are considered to be supplementary to SOLAS, which is widely regarded as the most important as far as safety at sea is concerned, another convention namely the International Convention on the Prevention of Marine Pollution from Ships 1973/78 (MARPOL) classified by the IMO as dealing with marine pollution does contain provisions that set design standards for certain types of ships (tankers); to improve the safety of these particular ship types. It is worth noting that whenever a ship fails because of the safety hazards that it faces while at sea and sinks, or its shell is breached, it could in turn become a

hazard to the marine environment by releasing pollutants into the sea. This makes maritime safety and marine environmental protection inextricably linked.

The common theme in all the above regulations is that they prescribe for the ship owner what to do in order to achieve required or minimum levels of safety. SOLAS and LL deal directly with the design of the ship. They have been at the core of safety management in the shipping sector for decades, though it results from regulations initiated by classification societies and individual governments and not by ship owners or ship managers. The standards are aimed at making the ships safer by designing safety “into” them.

It is a widely quoted historical fact that each major accident leads to new regulations / requirements with the Titanic leading to SOLAS, Exxon Valdez leading to the Oil Pollution Act, Amoco Cadiz leading to MARPOL and STCW. All these new regulations and requirements usually contain provisions for more stringent ship design standards. This state of affairs shows that a wide range of regulations to prevent maritime accidents, though effective, have been adopted and passed without any systematic risk assessment as would be required of any proactive safety measures. Instead they have been a result of accident investigation reports and public outcry. The latter is of particular concern because it leads to a social amplification of the risk associated with shipping. Essentially what happens here is that due to information processes, institutional structures and individual responses to an adverse event, the risk associated with a particular technology or industry can be amplified, thereby leading to more stringent regulation.

Furthermore, the prescriptive regulatory approach tends to provide more “answers” before all the “questions” have been posed because many ship operators will satisfy rules and regulations before all hazards have been identified. It has to be added that, the above practice of prescribing regulations and technical standards after a major accident was not and is not unique to the maritime sector as some maritime authors would have you believe. As discussed above, the move to safety management across all industries was initiated by government regulations in the middle of the last century. And such incidents as Chernobyl (1986) contributed much to safety innovation and management in their sectors as did the Titanic and the Herald of Free Enterprise to the maritime sector. Also, many industries are dependent on the technical expertise for their very existence and it is hence unsurprising that technical thinking has a predominant role in determining the safety level of such industries. Therefore, the maritime industry through its technical regulations prescribed by the IMO should not be expected to be any different.

The reactive approach to safety in the maritime sector that has been so widely publicized is also not a unique “maritime sector trait”, but was also in accordance with the traditional approaches in other industries. It has always been a general trend in whichever sector because it is after a major incident the cost of the necessary safety measures can easily be justified and in case of governmental regulations, it is only then that safety can get the necessary attention.

CHAPTER 3 LEGISLATIVE REQUIREMENTS

3.1 Definitions

“International Safety Management (ISM) Code” means the International Management Code for the Safe Operation of Ships and for Pollution Prevention as adopted by the International Maritime Organization (IMO) by Resolution A.741(18), as may be amended by the Organization.

“Company” means the owner of a ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the shipowner and who, on assuming such responsibility, has agreed to take over all duties and responsibility imposed by the ISM Code.

“Administration” means the Government of the State whose flag the ship is entitled to fly.

“Safety Management System (SMS)” means a structured and documented system enabling Company personnel to effectively implement the Company’s Safety and Environmental Protection Policy.

“Document of Compliance (DOC)” means a document issued to a Company which complies with the requirements of the ISM Code.

“Safety Management Certificate (SMC)” means a document issued to a ship which signifies that the Company and its shipboard management operate in accordance with the approved SMS.

“Safety Management Audit” means a systematic and independent examination to determine whether the SMS activities and related results comply with planned arrangements, whether these arrangements are implemented effectively and whether they are suitable to achieve the objectives of the ISM Code.

“Observation” means a statement of fact made during a Safety Management Audit and sustained by objective evidence.

“Objective evidence” means quantitative or qualitative information, records or statements of fact pertaining to safety or to the existence and implementation of a SMS element, which is based on observation, measurement or test and which can be verified.

“Non-conformity” means an observed situation where objective evidence indicates the non-fulfilment of a specified requirement of the ISM Code.

“Major non-conformity” means an identifiable deviation which poses a serious threat to the safety of personnel or the ship or a serious risk to the environment that requires immediate corrective action and includes the lack of effective and systematic implementation of a requirement of this Code.

“Designated Person” means a person or persons ashore having direct access to the highest level of management. The responsibility and authority of the designated person or persons should include monitoring the safety and pollution prevention aspects of the operation of each ship and ensuring that adequate resources and shore based support are applied, as required.

“Ro-Ro passenger ferry” means a seagoing passenger vessel with facilities to enable road or rail vehicles to roll on and roll off the vessel and which carries more than twelve passengers.

“Anniversary date” means the day and month of each year that corresponds to the date of expiry of the relevant document or certificate.

“Convention” means the International Convention for the Safety of Life at Sea, 1974, as amended.

3.2 International Legislation

The new Chapter IX of SOLAS '74, Management for the Safe Operation of Ships, requires the mandatory application of the ISM Code on ships engaged on international voyages.

3.3 European Union Legislation

The council of the European Union adopted Council Regulation (EC) No. 3051/95 in December 1995, which required advance mandatory application of the ISM Code for all sea going passenger roll-on/roll-off ferries operating a regular service to or from a port of a Member State of the European Community, regardless of the vessel's flag. The Regulation entered into force on 1 July 1996.

3.4 The Document of Compliance (DOC)

A Document of Compliance (DOC) will be issued to a Company when the shore side aspects of the Safety Management System are found to fully comply with the requirements of the ISM Code. The DOC is specific to the ship type(s) operated by the Company and for which the SMS is implemented at the time of the audit. A DOC should be accepted as evidence that the Company's shore-side management structure complies with the requirements of the Code. A copy of the DOC should be placed on board each of the company's ships, it is unnecessary for this copy DOC to be authenticated in any way.

3.5 The Safety Management Certificate (SMC)

Subsequent to a successful audit a Safety Management Certificate (SMC) will be issued to each individual ship provided that the company holds a valid DOC.

A copy of each SMC should be retained in the company's office records, the original being placed on board and filed along with all other statutory certificates.

CHAPTER 4: LEAD AUDITORS AND CONDUCTION OF ISM AUDITS

4.1 Document Review and Planning

The purpose of the document review is to verify that the Company has a documented SMS that addresses the requirements of the ISM Code prior to an Initial DOC audit. Following the receipt of an application requesting an Initial DOC audit and the appropriate fees, the MCA will review the SMS documentation as part of the pre-audit assessment. The document review may take one of two forms and the decision generally rests with the Company:

- A pre-audit visit to the Company's principal place of business to review documents on site; or
- Submission of documents and manual(s) to MCA QA.

The documents used to define and implement the SMS may be described as the Safety Management Manual. It may be more than one Manual and take the form that the company considers most appropriate. As a basis for planning the audit, the auditor should review the Safety Management Manual to determine the adequacy of the SMS in meeting the requirements of the ISM Code. The documents submitted should be the latest revision issued by the Company. The document review should take place at least two weeks prior to the proposed audit. If it is established that the System is inadequate, the audit may be delayed until the Company has undertaken corrective action. The document review will provide an overview of the management structure and SMS used by the Company and assist the auditor(s) in developing an audit plan.

The KISS (Keep it Short and Simple) principle should be fully embraced as excessive documentation may hinder the effectiveness of the SMS. Care should be taken to limit the SMS documentation to that needed to adequately cover its application to safety and environmental protection. Companies should structure their documentation in the way they find most effective and ensure that its implementation is demonstrated by objective evidence.

The ISM Code presents a challenge to the management of ships, both ashore and afloat, it must provide a reasonable balance of procedures and records etc. If there is insufficient, the requirements of the SMS will not be adequately met; if it is too burdensome, the SMS will overwhelm the users and be counterproductive to safety.

When a SMC audit has been requested for a ship which operates under a DOC issued by, or on behalf of another Administration, a copy of that DOC and sufficient previous DOC Audit Reports should be obtained for review prior to the audit. In addition, copies of the SMS Manuals may be requested. If all is considered to be in order, a Letter of Acceptance of the DOC may be issued. In the event that the UK flag

is the predominant flag in the fleet a UK DOC will be issued subsequent to a satisfactory audit being conducted.

4.2 Initial Audits

Initial audits will generally be in two phases:

- An audit of the Company's shore-based management organization for compliance with the requirements of the ISM Code. Following the satisfactory completion of this audit a Document of Compliance (DOC) will be issued to the Company.
- An audit of the Company's ships in order to verify compliance with the requirements of the ISM Code. This will include a verification that the DOC for the Company, which is responsible for the operation of the ship, is applicable to that particular type of ship and that a copy is held on board. Upon successful audit of each ship a SMC will be issued.

In general an Initial or Renewal audit can be expected to run to two man-days. The timescale will vary in accordance with the size and nature of the company.

4.3 The Declaration of Audit and issue of certificates

On successful completion of the DOC audit a Declaration shall be completed by the Lead Auditor and the DOC issued. All ships are required to hold a copy of the DOC, this copy need not be certified in any way (Section 13.6 of the ISM Code refers).

Similarly, subsequent to a successful SMC audit, a Declaration shall be completed and the SMC issued. The original shall be retained on board and a copy in the office files. Companies should acknowledge the safe receipt of DOCs and SMCs.

The Lead Auditor should complete an audit report—see paragraphs 4.11, 4.12 and 1.13 of these Instructions.

4.4 The Document of Compliance (DOC) Audit

The DOC audit will take place at the company's principal place of business. This will normally be the office from which the Designated Person operates. If a Company operates from more than one location where different safety management functions are performed then these other locations may need to be visited. All records within the Company should be available for examination during an assessment. These can

include records of all relevant ship types operated by the Company, statutory and classification records, personnel records and records of ship maintenance etc.

The purpose of the audit and the task of the auditor is to assess the ability of the SMS to meet the provisions of the ISM Code and to ensure that these are fully implemented and understood at all levels within the Company. These include:

- Compliance with mandatory rules and regulations; and
- That Codes, guidelines and standards recommended by the IMO, MCA, or other industry bodies have been taken into consideration. These documents may be incorporated into the Company's SMS.

The auditor should also be satisfied that personnel, both ashore and afloat, have received training and are competent to perform their duties within the SMS. The manner in which the auditor assesses the ability of the Company to meet the objectives of the ISM Code is as follows:

- By a review of the Company's documentation i.e. the SMS;
- By discussion and interview with members of staff at all levels of the management team holding responsibility for functions within the SMS;
- By observation of objective evidence (e.g. records, log books, checklists and reports); and
- By observation of working practices.

A DOC will be issued following a successful audit of the shore side aspects of a Company's SMS. Objective evidence should be available to demonstrate that the Company has been operating the SMS ashore for a minimum of three months and for a period of three months on at least one ship of each type operated by the Company.

Records of internal audits will be included in the audit scope.

The development of prescriptive management or packaged systems produced by consultancy firms should be discouraged. Such systems may result in Companies implementing requirements which are not suited to their operation and in so doing undermining the philosophy of the ISM Code.

Auditors are reminded that they are attending for the purpose of verifying compliance with the ISM Code and not to criticize the methodology a company has adopted in doing so.

A DOC is issued in respect of the type(s) of ship(s) operated by the Company at the time of initial verification. Should the Company wish to extend the scope of management to include additional ship types a further audit should be carried out and, if successful, the DOC replaced. See section 3.9 of these Instructions.

The renewal verification should include an assessment of each element of the SMS and its effectiveness in meeting the objectives of the ISM Code. A renewal audit is required prior to the expiry date of the existing DOC.

When a major non-conformity is raised a DOC or SMC cannot be issued. Similarly, an existing certificate cannot be endorsed for either annual or intermediate verification and may be withdrawn until sufficient corrective action has been taken to either correct the major non-conformity completely or to downgrade it to minor status.

When minor non-conformities are found a timescale for the implementation of corrective action should be agreed. Several minor non-conformities in the same area of operation may be raised as a single major non-conformity. Similarly a number of observations under the same section of the Code may be issued as a single minor non-conformity.

The following arrangements, if put in place by the Company, will assist the auditor(s) in carrying out the audit;

- The appointment of an individual, who is fully conversant with the Company's SMS, to act as audit guide. It is anticipated that the guide should make any introductions necessary, arrange for meetings and interviews with Company personnel, act as a guide around the offices and make available the Company's files, reports and other documents as requested.
- The allocation of office space, ideally separate from that used by company personnel, for use by the auditor(s).
- Access to all relevant documents. Where documentation is stored electronically access to a computer terminal is essential.

4.5 Companies operating a multi-flagged fleet

When a Company operates a multi-flagged fleet it should propose a plan of action to the relevant Flag Administrations and secure a consensus on the audit process. A single DOC should be issued by one of the Flag States, a consensus having been reached by the other Flags involved. The IMO has issued a MSC Circular entitled "Guidelines to Companies operating multi-flagged fleets and Supplementary Guidelines to Administrations" (MSC/Circ. 762).

4.6 Amending the DOC to include new ship types

When a company decides to expand its scope of operations to include additional ship type(s) an Interim audit will be required prior to the expansion of operations. This audit is intended to ensure that the necessary provisions are in place within the SMS to manage the additional ship type(s). Following a successful audit an Interim DOC, valid for no more than 12 months, should be issued to cover the new ship

type(s). The existing DOC will remain unaffected for the period of validity of the Interim DOC.

When sufficient objective evidence has been compiled to prove that the SMS is effectively implemented in respect of the new ship type(s), the Company should be revisited prior to the expiry of the Interim DOC. Following a successful audit, both the Interim and full term DOC's should be withdrawn and a new DOC issued that includes the additional ship type(s). The expiry date of the new DOC should coincide with the expiry date of the original full term DOC.

During the period of validity of the Interim DOC the new ship types will carry a copy of the Interim DOC together with their Interim SMC's. It must be noted that only an Interim SMC can be issued on the back of an Interim DOC. The existing ships of the fleet will be unaffected and will hold copies of the full term DOC.

4.7 The Safety Management Certificate (SMC) Audit

The audit for the issue of a Safety Management Certificate (SMC) should only be carried out on a ship operated by a Company which holds a DOC relevant to that ship type. Objective evidence should be available to demonstrate the effective implementation of the Company's SMS over a period of at least three months. This should include records of the Company's internal audit of the vessel.

In the UK, co-operation between the MCA and the Company/ships is essential in order to establish an audit timetable which is convenient to all parties concerned. In order to assess the implementation of the Safety Management System on board, sufficient time must be allowed in order for an effective audit to be conducted. The scope of the SMC audit will cover all aspects of the vessel's operation and will include compliance with documented procedures, the interview of a random sample of personnel, the examination of documentation and records etc.

The SMC is valid for five years, however, an intermediate verification is required between the second and third anniversaries. The intermediate audit should determine the effective functioning of the SMS and ensure that any amendments made since the previous verification comply with the requirements of the ISM Code. Depending on the nature of any non-conformities identified the MCA may consider it necessary to increase the frequency of intermediate verifications. The Company should conduct audits of its ships at a frequency, dependent on the size of the fleet, which allows for a meaningful assessment of the effectiveness of its SMS. The renewal verification should include an assessment of each element of the SMS pertaining to that vessel and the effectiveness of the SMS in meeting the objectives of the ISM Code. The fees charged for ISM audits should be based on the time taken by surveyors to complete all aspects of the work at the hourly rates as applicable at the time of audit. Estimated fees are payable in advance of audits.

4.8 Interim DOC and SMC

An Interim DOC may be issued to facilitate initial implementation of the Code when:

- A company is newly established,
- New ship types are to be added to an existing DOC an Interim SMC may be issued
- To new ships on delivery,
- When a company takes on responsibility for the operation of a ship which is new to the company; or
- When a ship changes flag.

An Interim DOC, valid for a maximum of twelve months, may be issued provided that the Company can demonstrate that its SMS meets the objectives of paragraph 1.2.3 of the ISM Code. The Company will need to prove that measures are in place to implement the full requirements of the ISM Code within the period of validity of the Interim DOC. When conducting Interim DOC audits consideration should be given to Section 14.4 of the ISM Code that stipulates the requirements in respect of Interim SMC audits.

An Interim SMC, valid for not more than six months, may be issued to a new ship on delivery and when a Company takes on responsibility for the management of a ship which is new to the Company.

In special circumstances the Interim SMC may be extended for a further six months.

Before an Interim SMC is issued the auditors should satisfy themselves that:

- The DOC or Interim DOC is relevant to that ship
- Key elements of the ISM Code have been included in the shipboard SMS and have been assessed during the audit of the Company's SMS
- The Master and officers are familiar with the SMS and arrangements for its implementation
- Instructions which have been identified as being essential have been provided prior to sailing
- There are plans in place for the Company to audit the ship within three months
- Relevant information on the SMS is given in a working language understood by the ship's personnel.

4.9 DOC or SMC Renewal Audit

The audit for the renewal of a DOC or SMC should be carried out prior to the expiry date of the existing certificates. If the renewal audit is conducted within three months of the expiry date of the existing certificate, the new certificate will run from that date for a period of no more than five years.

In this case a certificate may appear to have been issued with a validity of more than five years. The auditor must ascertain the circumstances under which the certificate was issued. If the audit is conducted more than three months prior to the expiry date of the existing DOC or SMC then the new certificate will be valid for a period of no more than five years from the date of the audit.

The renewal DOC or SMC audit should include an assessment of all elements of the SMS relating to the ship and shore management, address all sections of the ISM Code and evaluate the effectiveness of the SMS in meeting the objectives of the ISM Code.

A Full Term SMC cannot be issued if the company holds an Interim DOC only.

4.10 Annual Verification (DOC) and Intermediate Verification (SMC) Audits

A DOC is valid for a period of up to five years and is subject to annual verification in order to ensure that the Company is continuing to operate its SMS in accordance with the requirements of the ISM Code and to verify any amendments made to it. The verification should include the examination of statutory and class records relating to at least one ship of each type to which the DOC applies. All sections of the Code must be addressed. The Annual Verification must be carried out within a six month envelope that falls three months either side of the anniversary date of the DOC. In general annual and intermediate verification audits will follow the same process and methodology as the Initial or renewal audits. The main difference being that a smaller sample of records will be taken, thus either of these audits should take about 8 to 10 man hours.

CHAPTER 5 CONDUCTING THE AUDIT

5.1 The Safety Management System

In order to comply with the requirements of the ISM Code every Company should develop, implement and maintain a SMS. The SMS should embrace the objectives of the Code to ensure safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment, in particular, to the marine environment, and to property. Compliance with the requirements of the ISM Code should be verified by determining:

- that the SMS meets the requirements of the ISM Code; and
- that the objectives laid down in paragraph 1.2.1 of the ISM Code are met.
- that personnel have received the appropriate training and familiarization in the tasks for which they are responsible
- that they are carrying out their work in accordance with the Company's procedures
- that tasks are being carried out with due regard for safety.

5.2 The Audit Plan

In preparation for the audit the lead auditor should prepare and agree an audit plan with the Company.

The audit plan should include the following:

- The dates and times at which the audit will be carried out
- The location of the office(s) to be audited
- Timing of the Opening Meeting
- Company personnel to be interviewed
- areas to be audited
- Members of the audit team and
- Timing of the Closing Meeting.

An example of an audit plan can be found at Annex H. The auditors should examine the Company's documentation, files and procedures taking into consideration that auditing is a sampling process and that not every file and procedure can be examined within the time allocated for the audit. In addition to the audit of

files and other appropriate documentation, time must be allocated for interviews and discussions with members of the management team. The time allocated for the audit will be dependent upon the size and complexity of the Company and the number of ships in the fleet.

5.3 Responsibility of Lead Auditor

The responsibilities of the lead auditor include the following:

- liaising with the Company
- ensuring fees are received prior to audit
- reviewing the Company's documentation
- raising the company /ship file
- preparing an audit plan
- selecting the audit team, including verifying their auditor qualifications
- chairing the Opening Meeting
- co-coordinating the audit
- chairing the Closing Meeting

Agreeing corrective action with the Company and the timescale for completion

- completing the declaration
- preparing the certificate(s) for issue
- preparing the audit report
- completing the Job Control Sheet
- returning the file complete with all necessary paperwork to HQ for quality control
- ensuring compliance with service standards.

5.4 Typical Agenda for Opening and Closing Meetings

A typical Opening Meeting Agenda will include the following elements and be applicable to both DOC and SMC audits. The meeting should be chaired by the lead auditor. Introductions should be made between members of the audit team and the Company's management. A record of Company personnel who attended the meeting should be kept and included in the Audit Report. The purpose and scope of the audit should be explained e.g. the ISM Code. The authority of the MCA to conduct the

audit on its own behalf, or on behalf of another Flag State, should also be emphasized. The audit plan, drawn up in advance, should now be approved and any changes agreed. This will include, but not be limited to, the sites to be visited, persons to be interviewed, documentation to be reviewed and the timing of meetings and meal breaks. Flexibility is essential. It should be made clear that the audit will work around the demands of the Company, movements of personnel, meetings and any other requirements. The method of carrying out the audit should be outlined and will include, but not be limited to, the following:

- Interviews with key members of the management team as laid down in the audit plan
- a detailed examination of the SMS; familiarity with and understanding of the safety and environmental policy, manuals, procedures and instructions, working practices, recruitment and training records, management reviews, internal audits, classification records, accident and non-conformity reports
- Discussions with members of staff at all levels
- The raising of non-conformities and that they should be drawn to the attention of a Company representative at the time that they are identified
- The categories of non-conformities should be explained

Confidentiality of the audit between the Company, MCA and any other responsible Administration(s) should be confirmed. This is important as the auditor(s) will require access to a wide range of files and documents which support the SMS. The disclaimer should be clearly explained in as much as that if no non-conformities are identified in a particular area it does not necessarily mean that none exist. Similarly if nonconformities are raised it does not necessarily mean that these are the only ones in that particular area. Auditing is a sampling process and the auditor(s) may not identify all existing non-conformities. Company representatives should be given an opportunity to raise questions. The meeting should be formally closed.

5.5 Assessing the Safety Management System

The objective of the audit is to verify that the SMS has been effectively implemented within the Company's management structure both ashore and on board. The methodology of the assessment will include the verification of compliance with procedures by means of interviews with personnel at all levels within the organization and the examination of records etc. During the course of the audit the auditor(s) may raise non-conformities against the SMS. Non-conformities are identifiable deviations within the SMS. All non-conformities and observations must be supported by irrefutable objective evidence. Any perceived non-conformities and observations must be discussed with the Company's representatives before a Non-Conformity Note is raised. Non-conformities fall into three categories, details of which are outlined below and in "Definitions".

5.6 Human Element

As the objectives of the ISM Code are to ensure safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment, in particular, to the marine environment and to property. The achievement of these goals is heavily dependent on the human element i.e. the people who operate the system. The knowledge and experience of the officers and crew, their familiarity with the Company's SMS, their training and records thereof should be checked by observation and interview. Where practicable, the auditor(s) should witness as many on board procedures as practicable and these may include, but are not limited to:

- Pre arrival and departure checks on the Bridge and in the engine control room
- securing the vessel for sea
- Voyage planning
- Navigational briefing
- Mooring stations fore and aft
- Bridge procedures in harbor
- Engine room operations
- Preparation of machinery for sea
- Machinery maintenance including system preparation
- anchor stations
- bunkering operations
- Pilot embarkation/disembarkation
- Passenger musters and handling
- Cargo operations/handling
- watch handover
- Onboard training
- New joiner (crew) instructions
- Emergency drills
- Safety committee meetings
- Routine inspections
- Navigation under pilotage; and
- Watchkeeping at sea.

In the normal course of events a General Inspection will be conducted in parallel with the SMC audit so for this purpose an emergency drill must be witnessed.

5.7 Observation

An observation means a statement of fact made during a safety management audit and substantiated by objective evidence.

5.8 Non-Conformity

Non-conformity means an observed situation where objective evidence indicates the non-fulfillment of a specified requirement of the ISM Code.

5.9 Major Non-Conformity

A major non-conformity means an identifiable deviation which poses a serious threat to the safety of personnel or the ship or a serious risk to the environment and requires immediate corrective action and includes the lack of effective and systematic implementation of a requirement of the ISM Code.

5.10 Non-Conformity Note

Non-conformities should be recorded on the form MSF 1902 (“International Safety Management Code DOC/SMC Audit Non-Conformity Note”). The form is in triplicate. The top copy should be given to the Company, the second copy to the ship (where appropriate) and the third copy is for the MCA’s file.

5.11 Audit Report

An audit report should be completed to record the audit findings. The report is confidential between the Company, MCA and any other responsible Administration(s). When the MCA has been requested to carry out the audit on behalf of another Administration the report should be copied to that Administration. The report provides useful information for future audits. The Company should receive a copy of the report and a further copy should be held on the appropriate MS file (for

DOC audits) or the CM file (for SMC audits). When another Administration requests a copy of the report, as might be the case with a multi-flagged fleet, it should be issued providing the Company is in agreement. The file must then be sent to MCA QA in Headquarters.

5.12 Audit Report for Document of Compliance Audit

The report should include the following:

- A list of the audit team members
- A list of personnel interviewed and positions held within the Company
- An assessment of compliance with each relevant section of the ISM Code
- The types of ships managed by the Company
- The operational patterns of the Company's ships; and
- Any non-conformities and observations raised

5.13 Audit Report for Safety Management Certificate Audit

The report should include the following:

- Names and ranks of auditees
- Names of audit team members
- An assessment of compliance with each relevant section of the ISM Code
- The type of ship and employment patterns; and any non-conformities and observation raised

5.14 Close-out of Major and Minor Non-Conformities

When a major non-conformity is raised corrective action must be implemented before a new certificate can be issued or an existing certificate endorsed at annual (DOC) or Intermediate (SMC) verification. A major non-conformity may be downgraded to a minor as soon as appropriate initial corrective action has been taken. Corrective action against this minor non-conformity may then be agreed and a corrective action time-scale agreed. A significant number of minor non-conformities identified against the same section of the ISM Code may be issued as a single major non-conformity. When an auditor identifies a major non-conformity, agreement

MUST be sought immediately from the head of the department concerned since it may be possible for corrective action to be implemented prior to the conclusion of the audit.

When an auditor identifies a potential minor non-conformity, agreement must be reached with the manager of the department or area concerned that the perceived non-conformity actually exists. Agreement should be reached prior to the closing meeting. Suitable corrective actions and appropriate corrective action time-scales must also be discussed and agreed with the company.

Auditors are reminded that corrective action times cannot exceed three months. In the event that a company cannot complete a corrective action within the maximum time of three months, the nonconformity note is to be closed out and another raised (National Audit Office instructions).

5.15 Corrective Actions

The Company is responsible for ensuring that the agreed corrective actions are completed by the agreed dates. Failure to correct non-conformities may affect the validity of certificates. Corrective actions and possible follow-up audits should be completed within the agreed timescale.

Closing-out of minor non-conformities will not normally require a revisit by an auditor. Written notification of the completion of corrective action, accompanied where possible by objective evidence, shall be forwarded to the lead auditor through the Designated Person. This should be accompanied by the appropriate copy of the Non-Conformity Note. When the lead auditor is satisfied that the agreed corrective action has been completed the Non-Conformity Note will be closed out, stamped, signed and returned to the Designated Person. During annual audits the opportunity should be taken to confirm that non-conformity notes raised at the previous audit have been closed out on time. The corrective actions may also be verified. In the case of SMC audits the foregoing may be achieved during either the next Intermediate audit or a General Inspection.

5.16 Cancellation or Suspension of DOC or SMC

Only the issuing Administration may cancel or suspend a DOC or SMC. When a major non-conformity has been identified the Administration may either suspend or cancel the DOC and require such a certificate to be surrendered. In this case all SMCs associated with the DOC will likewise be invalidated rendering the ship(s) liable to detention. If the MCA considers that a Company, notwithstanding that it holds a Document of Compliance, is unable to operate ships without creating a risk of:

- Serious danger to safety of life or

- Serious damage to property or
- Serious harm to the environment or that
- The Company does not hold a Document of Compliance

An authorized person (S.I. 1998 No.1561 Reg. No. 16(b)) may suspend the operation of ships by that Company until such time as any such risk is removed or a valid Document of Compliance is held.

5.17 Confidentiality of Audit

The audit and the subsequent reports are confidential between the Company and any other Flag State Administration on whose behalf the MCA may have been requested to act. A statement to this effect should be made at both the Opening and the Closing Meetings. However, the auditor should not sign the Company's confidentiality forms or contracts.

CHAPTER 6 IMPLEMENTATION

A number of authors (e.g. Anderson, 2003) have written about the ISM Code, its implementation and how the safety management system should be structured.

The objectives of the ISM Code of continuous improvement in safety management should establish the climate in which a well-trained, healthy seafarer can properly adopt a safety culture necessary to the successful completion of any maritime adventure. This can only be achieved with the proper understanding of the SMS, not being a means of complying with legal obligations (under ISM) but rather as a tool to ensure safe and quality ship operations which make good business sense.

In addition, very little is available on occupational safety in shipping and how it is connected to the Code, despite the Code clearly stating it as one of its objectives. A safety and environmental protection policy does not and should not exclude occupational safety. If an argument is put forward that occupational safety is beyond the realm and mandate of the IMO, it might require a different system to manage occupational safety to be implemented, say, in accordance with the recently published ILO (2001) guidelines. It is also not right to compare the ISM Code and the STCW convention, because the convention is just like any other convention save for the fact that it is implemented mainly by the Flag State.

This fragmented analysis only shows that there is no holistic approach irrespective of what arguments may be presented about the existence of a body of knowledge on the Code and its required management system. A holistic approach should encompass occupational health, safety and environmental protection. This implies taking into consideration provisions from the ISM Code, to implement the prescriptive regulations and recommendations from IMO and ILO. Land based industry has had standards on occupational safety for a number of years, though there is a lack of an international standard as is the case for other quality and environmental management systems since land based industries are governed by national standards.

For this reason therefore, despite the fact that the ISM Code literally calls for the implementation of a safety management system, what it actually calls for is the implementation of an Occupational Health, Safety and Environment Management System (OHSEMS). This is particularly borne out in sections 1.2, 1.4 and 6 of the Code. The standards to which these three functions of an organisation are supposed to be managed are set out in various IMO conventions and the International Labor Organisation's (ILO) conventions. So the shipping organisation does not set its own minimum standards. It would not be visible to expect separate implementation of different management systems to comply with the conventions from the two international organizations or any other recommendations from any stakeholder, hence the OHSEMS.

From the context of looking at the required system in the Code to be an Occupational Health, Safety and Environmental Management System (OHSEMS), the definitions are narrow and misleading for this particular purpose. In fact, not

including human health in the definition of the SMS is one the main reason why discussions on the Code are usually centered on the safety of the ship and not necessary seafarer health and safety.

An OHSEMS is a systematic, structured and documented system to ensure that occupational human health, the environment and safety are managed in a proactive and explicit manner in accordance with the company health, safety and environment protection policy.

This type of management system combining all these three organizational functions has successfully been implemented in the oil and gas industry. The system however started safety management systems to manage safety, even prior to the Piper Alpha accident, successfully and this was later extended to include occupation health and environment management.

The ISM code consists of the original resolution, Resolution A.741, and has been amended by four other resolutions, namely: MSC.104, MSC.179, MSC.195 and MSC.273. In these resolutions several aspects of the original resolution were changed to achieve a better overall understanding or to improve the way in which the code is implemented. The ISM code depends on the competence and commitment of everyone who is involved with it on all levels; within the companies and on board of vessels. A group of independent experts have done an analysis of the contribution of the ISM code to the overall safety on the maritime industry. This group developed questionnaires for all the people in the maritime industry who are involved with the ISM code. All the data was gathered and compared by the WMU (World Maritime University).

The group analyzed the data and found out that the people associated with the ISM code were very supportive of it and that it was a good step towards the main goal of the ISM code; a step towards a safer culture on board and to a safer environment. One thing that they also found out was that the compliance of the ISM code could be made easier in the administrative process. Examples of this are: reducing the paperwork, reducing the cost of compliance and involving and motivating seafarers in the entire process. This generally means that the way in which the ISM code is implemented is a continuous process. This process must be critically viewed to find new ways in which the ISM code can be improved to achieve for the whole industry operational, financial and safety advantages.

Problems and difficulties which have appeared in the implementation phase of the ISM Code. The most difficult problems are resistance to change, lack of human resources, insufficient knowledge of procedures, lack of inter-departmental communication, low level of education, frequent staff turnover and time pressure to obtain registration of the SMS.

Also Anderson (2003) listed the problems and difficulties with the implementation of the safety management system. Anderson identified certain common factors which describe the unsatisfactorily implemented safety management systems. Anderson found out that there was too much paperwork due to voluminous documentation; a typical situation when a company has bought an off-the-shelf safety management

system. Many irrelevant procedures and irrelevant checklists are involved in these systems. In these cases, safety management was usually realized through paperwork exercises and the personnel could not develop any feeling of involvement in the system. The company did not provide support for the personnel. The vessels have suffered from a lack of resources and insufficient training for the new requirements of the ISM Code.

So the motivation for safety management of the personnel is low. Also, Anderson paid attention to the turnover of the personnel. Anderson emphasized that establishing a safety culture is not easy when the turnover of the crew is high. Too often, the new employee has been familiarized too poorly (Anderson, 2003). On the other hand, Anderson identified the success factors of a very well-functioning safety management system which entail for example leadership and commitment from the top management, i.e., from the ship owner, or the personnel can have a sense of ownership of the safety management system and are empowered to safety.

Othman compared the compliance of the shipping companies' safety management systems with particular elements of the ISM Code. He detected that almost 80 per cent of the companies had effectively implemented the requirements of the ISM Code into their safety management systems (Othman, 2003). Othman observed that the major gap found between the implemented safety management system and the requirements of the ISM Code was related to system documentation. Over 40% of the cases indicated that the documentation process was non-compliant with the ISM Code. Hahne analyzed the prevailing safety culture in the late 1990s. In a study by Hahne the safety attitudes of the shipping companies and maritime personnel towards the ISM Code were examined. The purpose of the study was to find out the problematic areas encountered with the implementation of the ISM Code. Researchers came to the conclusion that the main obstacle to the successful implementation of the ISM Code was the widespread resistance by the seafarers to the obligatory establishment of the safety culture. According to Hahne, the maritime industry was not ready for the ISM Code at that time.

6.1 The initiatives of implementation process

Update and collect information relating to obligations of the state under international conventions for consolidation of existing system and for improvement. Set application dates for certification well in advance of enforcement date. Assembly resolution 848(20) and MSC Circ.881, remind us of the importance to expedite the process of ISM implementation and to pre-plan schedules for the implementation process to be in place before 1 July 2002. Instruct companies to prepare themselves to avoid delays in auditing and certification. The safety culture of people involved may require dramatic change and cannot be accomplished overnight.

Establish an appropriate inspection service with enough discretion and provide the necessary resources to supervise the application of the measures taken under the various conventions. Assign responsibilities within the administration to update,

evaluate and revise the goals and policies as necessary as part of a long term strategic plan. The plan should support a control program of all administrative work for early correction of errors. More detailed national legislation to address actions to be taken in the event of unsafe and unseaworthy conditions on ships or when safe conditions cannot be maintained on ships.

Establish further inspection procedures to monitor classification society standards when conditions of national ships are doubtful. Institute random ship inspection to monitor classification society standards. Carry out technical audits of class once yearly. Verification of classification societies to ensure they are not too lenient in the control of conformity with the class requirements. Review and redesign courses conducted locally to reflect contemporary training structures and encourage a safety culture among seafarers. Such measures should be supplemented by relevant information ILO Conventions standards referred in I.L.O. 147 to ensure that healthy living and working conditions contribute to good morale and motivation.

The administration should feel free to report on its implementation process to IMO, which can advise on actions necessary. Development of a web site addressing quality while encouraging close electronic interaction and probably collaboration in compilation of casualty data and near misses.

6.2 The profits of Implementation

The shipping industry is the second activity after the underwater mining in accident indices. After investigation on several accidents occurred, it is concluded that never indeed one accident is initiated due to a single cause. Usually a series of situations and not proper actions have to be realized to result a serious accident. These among others might be but not limited to the bad judgment, the lack of procedures, not proper training, lack of maintenance, lack of infrastructure and standards, bad management of resources etc. The annual review from the OECD notes that during the previous decade about 2,400 ships were totally lost worldwide. In those accidents 5,492 seamen lost their lives. During the same period 346 accidents resulted oil spilt into the seawater of quantities more than 7 tones. Totally 1,096 million tons were spilt into the sea.

The ISM Code actually did not bring the prospective results. Several ship managers consider that it is useless to realize what is declared and reported in papers. This might be the only questionable issue around the Code. This gap is covered by the intensive Port State inspections. However the implementation of the Code brought good results in the performance of the ships particularly to the direction of adoption of all international regulations. In addition it can be used as a supervisory tool for all the activities performed by the ship. As a result a more effective monitoring may be achieved. This in the long run might reduce the operational costs.

The exemplary implementation of the Code in no way substitutes the naval profession and the practical experience which is the most important legacy for the

safe operation of ships. The safety awareness should be based more in socially moral principles than in the fear of getting caught after violations.

It is evident that at least during booming periods, the ship managers who operate their vessels in high standards enjoy better freights and sea routes ensuring long managerial viability. In the contrary the financial losses are increasing for the substandard operators on the long run.

The splintering off the market in several speeds based on the inspections, the environmental awareness, the fines and the infrastructure, benefits in the short run the opportunists and not the decent businessmen. A more balanced market will deduct the pressure for competitive advantages from the ship managers giving them the opportunity to operate smoothly, safely and for long term.

Conclusively, the shipping company which wishes to stay in the market for long period is benefited from the correct implementation of the International Safety Management Code. To the contrary, for an opportunist who aims for super profits in short time, as long as he is operating at the minimum level of implementation, the bigger the profits earned.

6.3 The Need for a Management System

After several years of experiencing dangers and consequent accidents in shipping, caused in most cases on human factor, the IMO decided to set a safety standard embracing all the activities performed by a shipping company and a merchant ship. This level of safety according to the IMO, will be achieved by using a management system which has to control and monitor through procedures and instructions the safety awareness both for the people on board and ashore. Compared to the past this new situation needs several resources in order to be implemented, and frequently verified from a recognized body like the classification societies. Although it seems that the cost for each company is dependent to her size, actually it is based on the company's mentality around the interpretation of safety. To the same direction each company has to take into consideration the issue that for each activity, several external economies are produced.

This cost is getting paid in most times from others than the producers, the shipping company in our situation. By introducing a safety management system the shipping company aims to reduce these external economies and incorporate a small portion of them in her management cost. By this way, the society in general is benefited since several measures are paid from the causal, and the dangers (accidents as well) affecting the environment and the society are in a serious level getting reduced. Although it is simple as that, particularly in the shipping sector, it is quite rare to find a company operating its ships under that perception and consequently to be willing to spent money for it. So the level that each company aims to achieve is dependent to her safety awareness.

The ISM Code indeed did not bring something extremely new in shipping. The truth is that it is very generically written based on logical statements regarding the safe way of operating ships embracing all ship's activities. A well-organized company should not have a problem implementing this new code. Also for this type of companies the additional cost of implementation is small. The approach is based on the concept that each new regulation is more than certain that it is not welcomed by the ship-owners or managers. The main reason is that every new regulation is associated with additional cost which has to be paid at least primarily by the shipping company. This cost has many forms, sometimes as technical expenses, extra staff on board and/or ashore, training for staff, infrastructure etc.

The year 1998 is generally considered in the shipping industry as a turning point. The reason is the adoption of the new chapter IX of SOLAS convention regarding the development and implementation of a Safety Management System from each shipping company who manages vessels involved in international trading over a certain tonnage. Actually this is the first time where a certificate is applied for the managing company and not only to the ship. Also it is the first time in the shipping history where the inadequate or inappropriate level of management is legally penalized. The responsibility of the managing company is clear and directly related to the way its ships are operated. This innovation has even more complicated implications; even if all ship's certificates are valid and in accordance with all regulations, the ship is not allowed to sail and be chartered if the ISM certificates both for the company and the ship are for some reasons withdrawn or not valid. Therefore the existence of the ISM certificates is of vital importance. The aim of this new regulation was to reduce the rate of accidents through total control and monitoring of the operations and the technical systems of the ships. After almost ten years of implementation, there is enough feedback to obtain in order to have the statistical results regarding the rate of accidents compared to the total number of tons per mile.

However up to now there are enough papers and information among the shipping industry related to the contribution of the ISM Code towards a safer transportation. This paper is an attempt to identify other parameters related to the introduction of this new regulation; the cost a shipping company has to pay in order to implement a safety management system and the relation of the expenditure of money and the level of implementation. All contemporary parameters are taken into account like, the environmental penalties after a pollution case, the intensive controls and inspections from third parties, the expansion of the Port State Controls, the chartering requirements, the new technical regulations (double hull tankers), the new risk management processes etc.

CHAPTER 7 Legal Aspects

The idea of safety management systems emerged from the success associated with quality assurance systems. The quality movement that led to the formation of the International Organisation for Standardization (ISO) started after World War II. It started with quality control, then evolved into quality assurance and eventually to the present principles of quality management. A quality system is supposed to ensure complete customer satisfaction. It therefore ensures customer focus by the supplier, who could be a manufacturing firm or a service provider (e.g. maritime transport).

Originally written in 1987, the ISO 9000 series of standards were meant to be voluntary quality standards that companies could use to evaluate the quality management systems of potential suppliers. Although this series was revised in 1994, this revision only covered minor enhancements and clarification of ambiguities. A complete rewrite concluded in December 2000. This quality assurance standard (the 1994 version) entered almost every aspect of ship operations in the middle of the 1980s and by 1998 (when the first ships were expected to comply with the ISM Code) it became difficult to operate a ship unless some kind of quality assurance accreditation was in place. Some shipping companies implemented it as it was and received ISO accreditation while others sought to redefine it into Codes specifically targeted for the shipping industry.

One of the pioneers of this effort was the International Ship Managers Association (ISMA). The ISMA Code was probably the most widely known code of ship management, before the ISM Code. It was the cornerstone for the formation of the International Ship Managers Association and was adopted and published in 1991. The members took the ISO 9002 model for quality and tried to interpret the standard in a way that would be general for all ship managers, this included requirements such as those in IMO resolution 741(18) or ISM Code, requirements of major oil companies, and functions of insurance and accounting. Originally initiated by a group of five ship management companies, the association expanded to a group of 35 ship management companies by 30th April 1991, the condition of membership being in compliance with the Code. ISMA's goal was to have its membership managing over 65% of the world tonnage in the two years up to 1994 and it hoped that other companies having equivalent management standards would have about 15% of this tonnage which would leave 20% to either be encouraged to join or exit the industry. Whether they achieved this or not is not clear. What is clear is that in a study by an IMO group of experts it was found that at least 27% of companies use the ISMA Code (IMO, 2005).

The scope of this Code is wide and encompasses all areas of ship management or any other business for that matter. Safety Management requirements are explicitly included in the form of a requirement to implement the ISM Code. This, however, can still cause the safety function to be over looked in favor of other constituent parts of the Code, since the management system so implemented is a quality management system and not a safety management system.

According to ISMA, they set an example that triggered a continuing quality movement of as yet unknown proportions, with classification societies introducing their own Codes. These Codes covered the same areas of safety and environment protection, however most of them were not widely adopted except for the Safety, Environment and Pollution (SEP) Code from Det Norske Veritas (DNV). These rules were developed specifically to establish requirements applicable to safety management in ship operation recognizing the principles of ISO 9000 and loss control principles developed by the insurance industry. They were divided into four sections which are: Section 1: Classification and Certification, Section 2: Safety and Environmental Protection, Section 3: Company Safety and Environment Protection (SEP) Management system, Section 4: Shipboard (SEP) management system.

In reality the differences between the ISM and SEP are not readily identifiable by the industry and certainly not by clients, still they were voluntary and although quality management systems have always been voluntary, their application was not wide spread.

The ISMA Code, or some other quality management system were the ones in existence by the time the ISM Code became mandatory. Some shipping companies operating these kinds of systems had effective safety control measures which had resulted in an impeccable safety record. This was possible because in as much as these were not “pure” safety management systems, it is difficult to see how a ship can provide quality service if not assured of safety. However, all these Codes and standards together represented a variety of different requirements with which a particular ship owner or ship manager could have had difficulties coping.

It has often been emphasized by the IMO that shipping is an international business involving a host of players from different parts of the world, both developing and developed. This originated from the centuries old doctrine of the “Freedom of the Seas” and makes maritime safety management a global concern rather than it being a concern of only the big shipping companies. So despite all the best efforts of the shipping industry through ISMA and classification societies like DNV and Lloyd Register (LR) in leading the way by encouraging implementation of safety management systems, the IMO had to come up with a mandatory, uniform, and general standard to ensure every ship owner’s compliance.

In a quality management system, you say what you do, do what you say and show that you do what you say. The problem arises when a shipping company’s standards for safety are not up to the internationally agreed standards, and yet this shipping company may have a quality assurance system in place. This follows from the fact that the concept of quality assurance does not guarantee similar levels of product or service quality but rather procedures aimed at consistent quality within the parameters specified by each producer of goods or services. What makes it worse is that a cargo owner is not generally held responsible for knowingly choosing a ship that is not safe but slightly cheaper to decrease the freight charges on themselves. A quality standard such as the present leads to the manufacture of products and provision of services which are free from health and safety risks, but will not necessarily lead to good standards of health and safety in the production process. In other words, if a

shipowner or manager avails to the customer a safe ship, it will not guarantee that the process by which the safe state of ship was attained is safe. With the ISM Code, however, the required technical standards for safety are already built in the regulations prescribed from the IMO.

The Code was also expected to encourage proactive safety management by requiring shipping companies to establish safeguards against all identified risks. This definitely calls for a periodic risk assessment of all the company's activities that would put the seafarer, property or the marine environment at risk. In other words, it is expected to discourage the reactive approach, when action is only taken after an accident or serious incident has taken place. Present day safety management practices by ship management companies are centered on compliance with the ISM Code. Just like any other safety certificate provided for in the various IMO conventions, safety management certificates (SMC) and documents of compliance (DOC) provided for in the Code are presented as sufficient evidence of compliance with the Code especially during port state control. These documents are issued on the understanding that the company and ship have a functioning safety management system in place. Yet, as noted earlier there is a tendency to comply with minimum standards as stipulated in regulations predominated the era of traditional safety management. We have to point out that in a compliance – oriented SMS, safety measures that address different types of hazards are managed and executed by separated staffs often under different technical disciplines. They also add that technical requirements mandated by regulations and industry are usually too narrowly focused and lack the momentum for continuous improvement. It therefore seems a bit contradictory that the same method of compliance should be used to compel ship managers to implement safety management practices as contained in the ISM Code. Despite these arguments, when used as a regulatory tool SMSs have considerable potential to stimulate self – organisation and self – regulation of business enterprises, which encourages internal self-critical reflection, continuous improvement, and cultural change.

A safety management system involves monitoring safety performance of an organisation by ensuring that safety management is done in a systematic, proactive and explicit manner. It is an explicit element of the corporate management responsibility which sets out a company's safety policy and defines how it intends to manage safety as an integral part of its overall business. SMS is a structured, systematic means for ensuring that an organisation or a defined part of it is capable of achieving and maintaining high standards of safety. It comprises those arrangements made by the organisation for the management of safety in order to promote a strong safety culture which consequently results in good safety performance. The ISM Code itself defines an SMS as a structured and documented system enabling company personnel to implement effectively the company safety and environmental protection policy (IMO, 2002).

7.1 Documents

Documents have been introduced to fulfil the intention of the ISM code i.e. to learn from mistakes and apply the lessons learnt to improve safety and protection of the environment. The question that has been debated over the years is whether such

documentation may be misused by flag states, Port states, claimants, insurers and courts against companies.

A proper and functional SMS generates enormous documentation and may incriminate an owner or senior officials of management and also the D.P.A. Losing the right to limit the financial liability, due to a paper trail, in the event of an involvement of the ship in a major incident is a legitimate fear of owners. The question that arises is whether all documents should be public and allowed for scrutiny by claimants. Exposing a management to all sorts of claims may jeopardise the existence and the good intentions of the company having the commitment to improve its management system. Furthermore, it might even be a deterrent if more time is spent in courts rather than spearheading efforts to enhance safe procedures on board.

However, the documentation generated may become a source of interest during court proceedings on what really happened and with hindsight, serve to highlight incidents which have been the precursor of the actual accident. It may even be possible to establish grounds for a proper analysis of what went wrong, why things went wrong, what owners have done and what they should have done. Provided that reports on corrective actions can be promptly produced, the owner may be incriminated by his own documents. He may be charged on grounds of fault and privacy, by having knowledge, and recklessness with intent by being aware of the risks but disregarded them.

There might be cases that, charterers, shippers, insurers may misuse the ISM documentation to secure a commercial advantage or exert pressure to improve their negotiating powers or even break valid contracts and charter parties. One of the well-known cases of documentation misuse is the Coors Brewing Company of Colorado. The company, which was not violating any terms of the permit of operation conducted an internal audit of its systems and found that the plant was emitting more air pollutants than the Federal requirement because the Government's approved method of determining emissions were inaccurate. The company brought modifications to its systems to reduce the level of air pollution and wanted to share the information with the Government. To plaintiffs, the ISM is an ideal tool for increased exposure of owners/operators to criminal culpability and criminal negligence. The owner/operator may be tempted not to document the reports of non-conformities or writing the bare minimum. Such a move may, in fact, result in a deficiency of the ISM Code and constitutes a major non-conformity.

In case of strict liability arising from a pollution incident, documents play a secondary role. The ship-owner will automatically be liable for clean-up costs and damages caused. However the documentary evidence of actions taken prior to the spill ranging from emergency preparedness procedures, training, corrective measures and audits can be very helpful to prove that due diligence was exercised to mitigate the results of any probable spill. Thus, punitive actions can be limited. Documents may be helpful to limit liability but will most likely be self-incriminating in many instances. There are risks that the documentation produced may be misused against a good operator. Documentary evidence of procedures has been introduced to identify

problems, rectify shortcomings and improve on existing procedures in order to avoid accidents occurring.

While risks of misuse of the documentation are evident, claimants should not be deprived of a fair deal. It would also be against the objective of the ISM Code to expose a good owner to unnecessary claims arising from his non-conformity reports. Good operators are more likely to strive for a safety culture and they should be encouraged to record non-conformities and correct deficiencies without fear. Suggestions are that administrations may enact legislation to provide some protection to self-incriminating ISM documentation. In that connection, reports, policies, plans, instructions, audits and other materials prepared for compliance with the ISM Code should not be accepted from admission as evidence in any civil, criminal or administrative proceedings other than those proceedings to ensure compliance with the ISM code. It is further suggested that primary documents used in the implementation of the code should be distinguished from other subsequent documents produced during operation of the vessel. The former documents may be considered as private and confidential. They will be attributed a privileged status and be classified as documents whose exposure is to be disclosed to judges while the latter may be classified under documents to be produced and available for inspection to litigants. Contrary to production, disclosure would mean that they are exempted from being opened to scrutiny while there is an obligation to make these documents known.

Other legal options suggested comprise consideration by the administration to protect the attorney and client privilege over any legal advice of non-conformities following a casualty. To encourage conformity with the code and protect documents generated by the ISM code from being wrongly used, administrations may encourage companies to audit own system in parallel with the audit performed by outside company to evaluate deficiencies with the ISM requirements. Such audits are steered by the company and are not mandatory and might not be asked for. Keep the ISM documentation as simple as it can possibly be. Take care not to fall into the trap of over documentation. Clearly identify documents related to trade secrets, and finally keep documents as long as is necessary as there is no mandatory requirement to keep the documents for any length of time.

7.2 Certification, Verification and Control

As said earlier, the ship should be operated by a Company which is issued a document of compliance relevant to that ship. A document of compliance should be issued for every Company complying with the requirements of the ISM Code by the Administration, by an organization recognized by the Administration or by the Government of the country, acting on behalf of the Administration in which the Company has chosen to conduct its business. This document should be accepted as evidence that the Company is capable of complying with the requirements of the Code. A copy of such a document should be placed on board in order that the Master, if so asked, may produce it for the verification of the Administration or organizations recognized by it. A Certificate, called a Safety Management Certificate, should be issued to a ship by the Administration or organization recognized by the Administration. The Administration should, when issuing a certificate, verify that the

Company and its shipboard management operate in accordance with the approved SMS. The Administration or an organization recognized by the Administration should periodically verify the proper functioning of the ship's SMS as approved.

CHAPTER 8 Conclusion

Human errors are considered the most important reason for maritime accidents. The international safety management code (the ISM Code) has been established to clarify the responsibilities of safety on vessels and to cut down the occurrence of human errors by creating a safety-oriented organizational culture for the maritime industry. The ISM Code came into operation in worldwide shipping in 1998. The literature review showed us that the ISM Code has significantly contributed to the progress of maritime safety in recent years. Shipping companies and ships' crews are more environmentally friendly and more safety-oriented than 12 years ago. This has been showed by several studies which have been analyzed for this research (Othman, 2003; Anderson, 2003; IMO, 2005; Paris MoU, 2008; Report ISM, May 2008).

The relationships and communication between shore and sea personnel has improved due to the applications of the ISM Code. Communication between the officers and the crew has improved. The working culture on board is no more autocratic. The safety attitude of maritime personnel has improved. Improved attitudes are expressed especially in safety training. The well-organized training increases the motivation of the personnel. Hence, the ISM Code itself has been made an unseparated tool for shipping companies and sea trade personnel alike.

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